

Express Runtime



InfoCenter

Version 2 Release 1

Express Runtime



InfoCenter

Version 2 Release 1

Note

Before using this information and the product it supports, read the information in "Notices," on page 669.

Second Edition (November 2005)

This edition applies to version 2, release 1, modification 1 of IBM Express Runtime (product number 5724-J10) and to all subsequent releases and modifications until otherwise indicated in new editions.

© Copyright International Business Machines Corporation 2003, 2005. All rights reserved.

US Government Users Restricted Rights – Use, duplication or disclosure restricted by GSA ADP Schedule Contract with IBM Corp.

Contents

Chapter 1. Overview 1

Introduction to Express Runtime.	1
What's new in Express Runtime Version 2.1.1?	2
Express Runtime audience.	3
Express Runtime middleware components	4
The relationship between Express Runtime and the components.	4
Express Runtime user roles	4
Express Runtime business partner roadmap	5
Express Runtime end user roadmap	6
Express Runtime sizing guide	6

Chapter 2. Tutorials 11

Accessing the Express Runtime cheat sheets	11
Express Runtime tutorial for IBM business partners	11
Introduction	11
Express Runtime system requirements	12
Installing	19
Customize a solution	19
Testing deployment.	23
Exporting to CD or DVD images	24
Deliver the solution to the end user	25
Documentation for contained products	25
Congratulations	26
Express Runtime tutorial for end users	27
Introduction	27
Express Runtime system requirements	27
Installing	34
Deploying	35
Testing the deployment	35
Documentation for contained products	36
Congratulations	37

Chapter 3. Installation 39

Express Runtime system requirements	39
Supported Web browsers	46
Installing a newer version of Express Runtime.	46
Installing from a disk or network location	47
Launch pad	47
Select language	47
Welcome	48
Accept license agreement.	48
Select installation	48
Select installation location	48
Select installation type.	49
Select platforms for middleware applications	49
Select an Eclipse-based product.	49
Review the installation summary	50
Monitor the installation progress	50
Verify successful installation.	50
Troubleshoot installation problems.	51
Using the Express Runtime First Steps	52
Installing from a local network	52
Install Express Runtime silently.	53
Generate a response file	53

Sample Express Runtime installation response file	54
Sample middleware installation response file	57
Sample application development toolkit installation response file	58
Uninstallation	60
Uninstall Express Runtime	60
Uninstall the deployed components	61

Chapter 4. Planning 67

Defining a solution for deployment	67
Selecting components for the solution	67
Selecting components and applications for a solution	67
Defining installation tasks	68
Defining manual tasks.	68
Ordering tasks	68
Specifying shared application variables	68
Planning solution licensing	69
Planning solution packaging.	69
Planning solution deployment	69
What is a wrapper?.	69
Creating and using wrappers	70
Supplied sample solution wrappers	70
Supplied application wrappers	71
Planning an application wrapper	72
Planning a solution wrapper.	73

Chapter 5. Using the Express Runtime developer 75

Environment setup	75
Express Runtime developer perspective	75
Eclipse preferences	76
Express Runtime developer projects	77
Application project structure.	78
Solution project structure.	78
Organizing projects into categories	78
Creating a new category	79
Deleting a category.	79
Moving a category	79
Renaming a category	80
Moving projects into a category	80
Editors	80
Using the application editor	81
Using the solution editor	98
Testing a solution in the deployment wizard	117
Debugging a solution during deployment	117
Generators	118
Application generator	118
Solution generator	119
Deployment package generator	120
Headless operation	120
Project import	121
Application generation	121
Solution generation	122
Deployment package creation	122

Solution launcher image export	122
Importing	124
Importing existing application and solution projects	124
Importing files into an application and solution project.	125
Exporting	125
Exporting solution projects	126
Exporting to CD or DVD images	126
Silent installation of a solution launcher image	129

Chapter 6. Deploying solutions to target computers 133

Using the deployment wizard	133
Selecting tasks to deploy	133
Define target computers	133
Configuring deployment parameters	134
Deploying tasks to target computers.	135
Viewing deployment status.	135
Deployment logging options	135
Deployment wizard preferences	136
Target Computer Data panel	137
Password Management panel	138

Chapter 7. Maintaining 139

An introduction to the Express Runtime console	139
The Express Runtime console audience	139
The Express Runtime components	139

Chapter 8. Reference 141

Troubleshooting	141
Viewing product version information	141
Problem analysis and reporting	141
Express Runtime Web site	150
Messages	152
IRU00000 messages	152
IRU01000 messages	183
IRU02000 messages	189
IRU03000 messages	194
IRU04000 messages	213
IRU05000 messages	218
IRU06000 messages	305
IRU07000 messages	335
IRU08000 messages	338
IRU10000 messages	363
IRU10800 messages	369
IRU10900 messages	391
IRU11000 messages	409
IRU11100 messages	419
IRU11200 messages	422
IRU11300 messages	427
IRU11400 messages	433
IRU15000 messages	435
IRU18000 messages	443
Sample application messages	448
Supplied application wrappers	453
Sample application for Windows	455
Sample application for Linux	458
Sample Application for i5/OS (OS/400)	460

IBM DB2 Universal Database Express Edition Version 8.2 Fix Pack 3 for Windows	462
IBM DB2 Universal Database Express Edition Version 8.2 with Fix Pack 3 for Linux	464
IBM DB2 Universal Database Express Edition Version 8.2 with Fix Pack 3 for Linux on POWER	470
IBM WebSphere Application Server - Express Version 6.0.2 for Windows	476
IBM WebSphere Application Server - Express Version 6.0.2 for Linux	481
IBM WebSphere Application Server - Express Version 6.0.2 for Linux on POWER	485
IBM WebSphere Application Server - Express Version 6.0.2 for i5/OS (OS/400) installation	489
IBM WebSphere Application Server - Express Version 6.0.2 for i5/OS (OS/400) configuration	490
IBM HTTP Server 6.0.2 for Windows	491
IBM HTTP Server 6.0.2 for Linux	492
IBM HTTP Server 6.0.2 for Linux on POWER	492
IBM HTTP Server 6.0 for OS/400 (i5/OS)	493
Web server plugin for IBM WebSphere Application Server - Express 6.0.2 for Windows	494
Web server plug-in for IBM WebSphere Application Server - Express 6.0.2 for Linux	495
Web server plug-in for IBM WebSphere Application Server - Express 6.0.2 for Linux on POWER	496
Integrated Solutions Console for Linux	497
Integrated Solutions Console for Linux on IBM POWER	500
Integrated Solutions Console for Windows	503
Console management extension for IBM DB2 Universal Database Express Edition Version 8.2 for Linux	506
Console management extension for IBM DB2 Universal Database Express Edition Version 8.2 for Linux on IBM POWER	507
Console management extension for IBM DB2 Universal Database Express Edition Version 8.2 for Windows	508
Informix Dynamic Server Express 10.00.UC3E for Linux	508
Informix Dynamic Server Express 10.00.TC3E for Windows	509
Console management extension for IBM HTTP Server for Linux	511
Console management extension for IBM HTTP Server for Linux on IBM POWER.	512
Console management extension for IBM HTTP Server for Windows	513
Console management extension for IBM i5/OS	514
Console management extension for IBM WebSphere Application Server - Express for Linux	515
Console management extension for IBM WebSphere Application Server - Express for Linux on IBM POWER	517
Console management extension for IBM WebSphere Application Server - Express for Windows	518

Console management extension for Informix Dynamic Server Express for Linux	519
Console management extension for Informix Dynamic Server Express for Windows	520
Application Development Toolkit for IBM DB2 Universal Database Express Edition Version 8.2 with Fix Pack 3 for Linux	521
Application Development Toolkit for IBM DB2 Universal Database Express Edition Version 8.2 with Fix Pack 3 for Linux on IBM POWER	534
Application Development Toolkit for IBM DB2 Universal Database Express Edition Version 8.2 with Fix Pack 3 for Windows	545
Application Development Toolkit for IBM WebSphere Application Server - Express Version 6.0.2 for i5/OS (OS/400).	555
Application Development Toolkit for IBM WebSphere Application Server - Express Version 6.0.2 for Linux	555
Application Development Toolkit for IBM WebSphere Application Server - Express Version 6.0.2 for Linux on POWER	560

Application Development Toolkit for IBM WebSphere Application Server - Express Version 6.0.2 for Windows	564
Reading XML schemas	570
XML schemas	572
Application elements	572
Solution elements	627
Task Elements	654
Trademarks	662

Chapter 9. Accessibility 665

Accessibility overview	665
Accessibility features	665
Navigating by keyboard.	665

Chapter 10. Related information 667

Documentation for contained products	667
--	-----

Appendix. Notices 669

Chapter 1. Overview

Introduction to Express Runtime

Solutions for customer requirements usually involve multiple products that work and share data together. In today's e-business environment, product requirements often include the Web, data storage, and an application server. IBM® Express Runtime offers a cohesive set of middleware components as a single offering, enabling hardware and software assets to work together. IBM Express Runtime provides the packaging and installation technology to create and deploy complete packages across multiple platforms.

Express Runtime can be used to quickly deploy IBM middleware to an end-user system. You can then install a solution so it integrates with the components. You might need to deploy the required middleware components and application to the end user as a single package. Express Runtime can greatly reduce the time, effort and complexity associated with installing and configuring middleware components. Every remote computer to which you want to deploy solutions to, must have the IBM Installation Agent installed and configured. For more information on the IBM Installation Agent, refer to the Express Runtime InfoCenter at the following URL:

<http://publib.boulder.ibm.com/infocenter/iru21inf/>

Express Runtime provides tooling that helps you integrate applications with IBM middleware components into a cohesive solution, and deploy the solution to end users. The tooling that is provided with Express Runtime consists of the following tools:

- Express Runtime application development toolkit
- Express Runtime developer
- Deployment wizard
- Solution launcher
- Express Runtime console and logging

Express Runtime application development toolkit

This solution helps you deploy IBM Rational® Web Developer and the development tools and samples for the included IBM middleware. This solution consists of the following components:

- DB2® UDB Express 8.2 Fixpack 3 with development samples
- IBM Rational Web Developer 6.0 with development sample
- WebSphere® Application Server - Express 6.0.2 with development samples

Express Runtime developer

The Express Runtime developer is an Eclipse-based plug-in that provides a standard platform for solution development. Express Runtime helps you offer a complete solution, including integrated installation and configuration. The Express Runtime developer features custom editors that help you to assemble solutions quickly and effectively.

Deployment wizard

The deployment wizard helps you deliver a solution to target computers. The deployment wizard offers an interface that helps you deploy a

solution task-by-task. You can use the deployment wizard to deploy solutions to remote computers that have the IBM Installation Agent installed and running on them. For more information regarding the IBM Installation Agent, refer to the IBM Installation Agent InfoCenter.

Solution launcher

The solution launcher is a utility that helps you to start the deployment wizard and deploy a solution directly from one or more CDs or DVDs. The Express Runtime developer provides an export function that creates CD images in solution launcher format.

Express Runtime console and logging

The Express Runtime console helps you manage middleware components and provides a single, Web-based console for performing frequent administrative tasks.

Express Runtime common logging provides a single, integrated point of problem determination for all the software components in a middleware solution. Open and industry standard technologies are used to manage and correlate logs of various products across various hosts. It enhances administrative capabilities in the Express Runtime console to provide a centralized location for monitoring and troubleshooting solutions.

What's new in Express Runtime Version 2.1.1?

New features and functions in Express Runtime 2.1.1:

- Extended middleware support
 - Informix[®] Dynamic Server Express as an alternative integrated database component
- Enhanced system management capabilities
 - Common logging for Express Runtime middleware components for a single, integrated point of problem determination for all the software components in a middleware solution for improved troubleshooting
 - Integration of common logging into Express Runtime console for a centralized system management console
- Improved usability and function
 - Improved Express launch pad feature enables faster installations, reduced space requirements, and a consistent look and feel.
 - Lighter, more context oriented help system
 - Custom validation for variables
 - Simplified installations for single server solutions
 - Reduced installation image size without the loss of any function
 - AIX[®] is now supported as a deployment target for added components
 - Support for the execution of ANT scripts based on Apache ANT Version 1.6.5 technology
- Support for the latest middleware, platforms, and fixpacks
 - Mozilla 1.7
 - Firefox 1.0
 - Red Hat Enterprise Linux[®] 4.0
 - DB2 UDB Express Edition Version 8.2 Fixpack 3
 - WebSphere Application Server - Express Version 6.0.2
 - IBM HTTP Server Version 6.0.2

- Informix Dynamic Server Express 10.00
- Web server plug-in for IBM WebSphere Application Server 6.0.2

New features and functions in Express Runtime 2.1:

- Support for Enterprise Java™ Beans (EJBs) as part of the ISV solution.
- Support for Java Messaging Services (JMS) as part of the ISV solution.
- Express Runtime console provides consolidated and remote administration of the middleware components.
- Rational Application Developer license included for the ISV's application development use.
- Express Runtime application development toolkit provides middleware and development resources.

Usability Enhancements:

- Solution Development wizards added to replace editing of XML files
- Solution Deployment wizards added to simplify deployment of the solution
- Express Certified - meets the IBM standards for Express Architecture and Design

Middleware Components:

New versions of the following middleware:

- WebSphere Application Server - Express 6.0.2
- DB2 UDB - Express 8.2 FP3
- Informix Dynamic Server Express 10.00
- IBM HTTP Server 6.0.2
- Web server plug-in for IBM WebSphere Application Server 6.0.2

Platforms:

IBM® i5/OS™ Version 5 Release 3 is the next generation of OS/400®. The information in this information center might refer to i5/OS™ or OS/400®.

Express Runtime audience

Express Runtime provides a comprehensive set of tools to develop and deliver a complete business solution to customers.

Customers of mid-sized companies can utilize the development and installation resources of software developers to build applications incorporating a middleware infrastructure, comprised of database and server software, into a single cohesive unit that can be easily deployed.

Express Runtime helps offer a complete and affordable solution to mid-sized companies by providing the following advantages:

- An affordable middleware infrastructure for customers to run their business applications.
- A framework that provides a complete business solution that is easily deployable in the customer environment.

Express Runtime middleware components

Express Runtime includes development and deployment tools, sample application wrappers and the following middleware components:

IBM WebSphere Application Server - Express

IBM WebSphere Application Server - Express is a tool that you can use to develop, deploy, and manage both static and dynamic Web sites. Through the use of wizards and templates, IBM WebSphere Application Server - Express generates code, provides views of database information, and performs database updates. It also creates and uses Web services.

IBM DB2 Universal Database™ Express Edition for Windows® and Linux (OS/400 (i5/OS) database is embedded in the operating system)

Designed for small and medium business needs, DB2 UDB Express Edition features self-tuning, self-managing, and self-configuring capabilities that increase reliability while reducing complexity and required skills.

Informix Dynamic Server Express

Informix Dynamic Server Express is an extensible object-relational database server. Informix Dynamic Server Express supports on-demand computing, WebSphere, and OLTP and OLAP data management applications in the SQL, Dynamic SQL, C++, and Java language.

IBM HTTP Server for Windows, Linux, and OS/400 (i5/OS)

The foundation of any e-business application is the Web server. The IBM HTTP Server provides support for SSL secure connections, a fast response cache accelerator, and an administration server to administer and configure IBM HTTP servers.

IBM WebSphere HTTP Plug-in

The IBM WebSphere HTTP plug-in provides a means of securely offering Web applications through a Web server. The IBM WebSphere HTTP Plug-in is featured as part of the IBM HTTP Server product for OS/400 (i5/OS)

The relationship between Express Runtime and the components

Express Runtime provides a complete solution that integrates configuration and installation. For example, you can design a solution to prompt the end-user to input a host name during the configuration process. Express Runtime then applies the data that the end-user enters to the application and the IBM middleware components appropriately. This reduces the time, effort, and complexity associated with installing and configuring a solution.

Express Runtime makes creating solutions a simple process. Select only the middleware required for a solution, thereby reducing the size of the solution. Tailor a solution to meet specific customer requirements. Whether only one or all of the middleware components is necessary, Express Runtime provides a single IBM product license and a single point of contact for service. Express Runtime also includes ready-to-use wrappers for the middleware components, and sample application wrappers that enable quick and easy installation of a complete solution that can include components on multiple platforms.

Express Runtime user roles

The following user roles are associated with Express Runtime:

Application developer

The application developer creates the IBM Business Partner application. The application developer can use the application development tools provided by the Express Runtime tools installation.

Solution developer

The solution developer builds solutions to integrate the installation and configuration of applications with selected middleware. The solution developer should be familiar with Java and XML development. The solution developer edits sample application wrappers, creates new application and solution wrappers, and assembles solutions to integrate the configuration and installation of applications and selected middleware.

Solution distributor

The solution distributor distributes solutions to customers using the Express Runtime deployment wizard. Alternatively, the solution distributor could be the end user who receives the solution on a set of CDs and uses the deployment wizard to deploy the solution to the target computers.

End user

The end user uses the deployment wizard to automate deployment. The deployment wizard helps deploy a solution to multiple target computers and run multiple operating systems.

Express Runtime business partner roadmap

This roadmap helps business partners determine what high-level topics apply to help him or her use Express Runtime. A business partner might have the role of application developer, solution developer, solution distributor, or any combination of these.

1. "Introduction to Express Runtime" on page 1

Gives an overview of Express Runtime, the defined user roles, and other high-level information.

2. "Express Runtime tutorial for IBM business partners" on page 11

Describes in general terms the tasks to install Express Runtime, use the Express Runtime developer to customize an existing solution, test the solution, and prepare the solution to deliver to the end user.

3. "Installing from a disk or network location" on page 47

Instructs how to install Express Runtime to create a solution for end users.

4. "Accessing the Express Runtime cheat sheets" on page 11

Aids with an interactive interface in completing common business partner tasks.

5. "Defining a solution for deployment" on page 67

Presents decisions for you to make before creating a solution, such as determining the contents of your solution and licensing considerations.

6. "Editors" on page 80

Provides an overview of the Express Runtime development environment that you can use to create wrapper files to set the solution configuration for end users.

7. "Using the deployment wizard" on page 133

Describes how to use the deployment wizard to test how the end user will deploy a solution.

Express Runtime end user roadmap

This roadmap helps end users determine what high-level topics apply to help him or her use IBM Express Runtime.

1. Overview

Gives an overview of Express Runtime, the defined user roles, and other high-level information.

2. End user tutorial

Describes in general terms the tasks to deploy an Express Runtime solution from your business partner.

3. Deploying

Describes how to use the deployment wizard to deploy your supplied solution.

Express Runtime sizing guide

As you plan to install and use Express Runtime, use this guide to help you determine how much hard disk space you need. Determine which functions of the Express Runtime product you need, and use the table to determine how much space you need to install it. Two common scenarios are included so you have examples of how to size your installation. Remember that this guide does not reflect the amount of disk space you need to install the IBM middleware components or any third-party applications: those products contain sizing information in those products' documentation.

If you install Express Runtime for the purpose of deploying either a customized solution or only the IBM middleware, you use the solution launcher. The solution launcher installs files on the deploying computer, and removes them when you close the deployment wizard. In that case, this sizing guide helps you determine how much disk space you need for the deployment, but after deployment is complete, you regain the disk space.

General sizings

Table 1. Deployment Packages

Function	Sizing	Comments
Middleware for Windows	1.88 GB	Contains all middleware deployment packages for Windows
Middleware for Linux	2.65 GB	Contains all middleware deployment packages for Linux
Middleware for OS/400	1.18 GB	Contains all middleware deployment packages for OS/400
Middleware for Power Linux	1.80 GB	Contains all middleware deployment packages for Power Linux
Total for all deployment packages	7.52 GB	

Table 2. Windows

Function	Sizing	Comments
All deployment packages	7.52 GB	See table above for breakdown of deployment packages by operating system
Express Runtime developer	2.2 GB	Includes the sample workspace
Deployment wizard	694 MB	Deployment wizard installation is required for all but "Middleware only" type of installation
IBM Installation Agent	80 MB	Only required for deployment to remote computer, installed on target computer(s)
Express Runtime console	677 MB	Only required for middleware component management, installed on target computer(s)

Table 3. Linux

Function	Sizing	Comments
All deployment packages	7.52 GB	See table above for breakdown of deployment packages by operating system
Express Runtime developer	2.0 GB	Includes the sample workspace
Deployment wizard	694 MB	Deployment wizard installation is required for all but "Middleware only" type of installation
IBM Installation Agent	80 MB	Only required for deployment to remote computer, installed on target computer(s)
Express Runtime console	695 MB	Only required for middleware component management, installed on target computer(s)

Table 4. Linux on POWER

Function	Sizing	Comments
All deployment packages	7.52 GB	See table above for breakdown of deployment packages by operating system
Express Runtime developer	2.0 GB	Includes the sample workspace

Table 4. Linux on POWER (continued)

Function	Sizing	Comments
Deployment wizard	1.16 GB	Deployment wizard installation is required for all but "Middleware only" type of installation
IBM Installation Agent	80 MB	Only required for deployment to remote computer, installed on target computer(s)
Express Runtime console	704 MB	Only required for middleware component management, installed on target computer(s)

Table 5. OS/400

Function	Sizing	Comments
IBM Installation Agent	16 MB	Only required for deployment to remote computer, installed on target computer

End user sizings

As the end user, you might want to install Express Runtime in order to deploy only the IBM middleware. This is how you should plan the computer resources you need. You need to plan additional space for when you deploy the middleware components. See the documentation for each middleware component to determine what resources you need when you deploy and install them.

Table 6. Windows

Function	Sizing	Comments
Middleware for Windows	778 MB	778MB of temporary space is required to deploy the middleware. If the user chooses to save the solution, then 6MB is left on the system.
Express Runtime console	677 MB	Only required for middleware component management, installed on target computer

Table 7. Linux

Function	Sizing	Comments
Middleware for Linux	784 MB	784MB of temporary space is required to deploy the middleware. If the user chooses to save the solution, then 8MB is left on the system.

Table 7. Linux (continued)

Function	Sizing	Comments
Express Runtime console	695 MB	Only required for middleware component management, installed on target computer

Business partner sizings

As the business partner, you might want to install Express Runtime in order to create a solution for your end user that contains your application and IBM middleware components. This is how you should plan the computer resources you need. You need to plan additional space for when you deploy the middleware components. See the documentation for each middleware component to determine what resources you need when you deploy and install them.

Table 8. Windows

Function	Sizing	Comments
All deployment packages	7.52 GB	See the table above for breakdown of deployment packages by operating system
Express Runtime developer	2.2 GB	Includes the sample workspace
Deployment wizard	694 MB	

Table 9. Linux

Function	Sizing	Comments
All deployment packages	7.52 GB	See table above for breakdown of deployment packages by operating system
Express Runtime developer	2.0 GB	Includes the sample workspace
Deployment wizard	694 MB	

Table 10. Linux on POWER

Function	Sizing	Comments
All deployment packages	7.52 GB	See table above for breakdown of deployment packages by operating system
Express Runtime developer	2.0 GB	Includes the sample workspace
Deployment wizard	1.16 GB	

Chapter 2. Tutorials

Accessing the Express Runtime cheat sheets

Tutorials are provided with Express Runtime in the form of cheat sheets to help you learn the process for performing common tasks. The tutorials use the Express Runtime interface, and help you to perform various tasks step-by-step. The following tutorials are available:

- Creating an application wrapper
- Creating a solution wrapper
- Exporting and deploying the sample solution
- Exporting and deploying a solution launcher image

To access the tutorials, perform the following steps:

1. From the Express Runtime developer, select **Help > Cheat Sheets**.
2. From the Cheat Sheet selection dialog, select **Express Runtime**. Select the Cheat Sheet that you want to work with in the right pane of the dialog.
3. Click **OK**.

Express Runtime tutorial for IBM business partners

Welcome to the Express Runtime tutorial. Solution providers who plan to deploy applications bundled with IBM middleware components as complete business solutions can use this tutorial to understand the end-to-end process of working with Express Runtime. This tutorial provides information that helps solution providers understand the following concepts:

- The basic capabilities of Express Runtime
- Installing Express Runtime
- Customizing the default solution file
- Testing the solution
- Creating an installation image to provide to end users

To navigate to the various topics in this tutorial, expand the Express Runtime tutorial for IBM business partners in the navigation pane and click the corresponding link. The same links are displayed in this topic. To return to the previous topic, use the back button in your Web browser.

Introduction

Express Runtime provides a cohesive set of middleware components as a single offering, enabling hardware and software assets to work together to provide a well-defined total business solution. Express Runtime provides the packaging and installation technology to create and deploy complete packages across multiple platforms. The complete packages that you deploy with Express Runtime are referred to as *solutions*. A solution typically contains an ISV application that is bundled with one or more IBM middleware components. When you deploy a solution to an end user, only one installation is necessary to install the application, and all of the middleware that the application requires.

Express Runtime includes the following middleware components:

- WebSphere Application Server - Express 6.0.2
- DB2 UDB - Express 8.2 FP3
- Informix Dynamic Server Express 10.00
- IBM HTTP Server 6.0.2
- Web server plug-in for IBM WebSphere Application Server 6.0.2
- Express Runtime console 2.1.1

In addition to the middleware components that Express Runtime provides, you can also deploy the Express Runtime console to end users. The Express Runtime console provides a single, Web-based utility for performing administrative tasks. By providing a consistent Web-based user interface, the Express Runtime console simplifies the experience of managing the IBM middleware.

Express Runtime system requirements

This topic lists the hardware and software prerequisites for installing and using Express Runtime.

Operating system support

The following tables show which specific operating systems are supported for each basic platform type:

Windows

Operating System	Development or Deployment	Deployable as Target OS?
Windows XP Professional SP™ 2	both	No
Note: Informix Dynamic Server is the only Express Runtime middleware that supports Windows XP Professional SP 2.		
Windows 2000 Server SP 4	both	Yes
Windows 2000 Advanced Server SP 4	both	Yes
Windows 2000 Professional SP 3	both	Yes
Windows Server 2003, Standard Edition SP 1	both	Yes
Windows Server 2003, Enterprise Edition SP 1	both	Yes

Linux (Intel® Pentium® or equivalent platforms only)

Operating System	Development or Deployment	Deployable as Target OS?
Red Flag Advanced Server 4.1	deployment only	Yes
Red Hat Enterprise Linux 3.0 WS/AS/ES	both	Yes
Red Hat Enterprise Linux 4.0 WS/AS/ES	deployment only	Yes
SUSE LINUX Enterprise Server 8.0	deployment only	Yes
Note: Informix Dynamic Server is not supported on SUSE LINUX Enterprise Server 8.0		
SUSE LINUX Enterprise Server 9.0	both	Yes

Linux (IBM POWER5™ processor-based technology systems only)

Operating System	Development or Deployment	Deployable as Target OS?
Linux on POWER™ (using SUSE LINUX Enterprise Server 9.0 Red Hat Enterprise Linux AS 3.0 Red Hat Enterprise Linux AS 4.0	deployment only	Yes
AIX 5.3	neither	Yes

OS/400

Operating System	Development or Deployment	Deployable as Target OS?
V5R2	neither	Yes

i5/OS¹

Operating System	Development or Deployment	Deployable as Target OS?
V5R3 and V5R3M5	neither	Yes

Windows development requirements

- A minimum of 1 GB of memory. Additional memory might be required if middleware is installed on the same computer. Refer to the middleware specific requirements for more details
- At minimum, an Intel Pentium or equivalent processor with a minimum clock speed of 600 MHz. A Pentium or equivalent class processor with a minimum clock speed of 1.2 GHz recommended.
- The following network support must be configured when deploying solutions to network-attached target computers:
 - TCP/IP
 - DNS
- A local area network (LAN) connection.
- An SVGA monitor with a minimum 1024 x 768 video resolution configured to display a minimum color depth of 256 colors.
- One of the following Web browsers:
 - Internet Explorer 6.0 SP1 +
 - Mozilla 1.7
 - Firefox 1.0
- Approximately 19 GB of disk space to install and run Express Runtime (9 GB of the 19 GB is temporary space used during the installation).
- Administrative authority (required for product installation and uninstallation).
- Eclipse versions supported (IBM JRE 1.4.2.1 required) - based on the following:
 - IES - Eclipse Full SDK - 3.0.1

1. The OS/400 operating system is known as the i5/OS operating system beginning with V5R3.

- eclipse.org - Eclipse SDK - 3.0.1

Linux development requirements

- A minimum of 1 GB of memory. Additional memory might be required if middleware is installed on the same computer. Refer to the middleware specific requirements for more details
- At minimum, an Intel Pentium or equivalent processor with a minimum clock speed of 600 MHz. A Pentium or equivalent class processor with a minimum clock speed of 1.2 GHz recommended.
- The following network support must be configured when deploying solutions to network-attached target computers:
 - TCP/IP
 - DNS
- A local area network (LAN) connection.
- An SVGA monitor with a minimum 1024 x 768 video resolution configured to display a minimum color depth of 256 colors.
- Any Linux supported video card that supports the resolution requirements.
- One of the following Web browsers:
 - Mozilla 1.7
 - Firefox 1.0
- Approximately 19 GB of disk space to install and run Express Runtime (9GB of the 19GB is temporary space used during the installation).
- Administrative authority (required for product installation and uninstallation).
- The 32 bit version of the compat-libstdc rpm package.
- Eclipse versions supported (IBM JRE 1.4.2.1 required) - based on the following:
 - IES - Eclipse Full SDK - 3.0.1
 - eclipse.org - Eclipse SDK - 3.0.1

Windows deployment server requirements

- A minimum of 512 MB of memory; 1 GB recommended. Additional memory might be required if middleware is installed on the same computer. Refer to the middleware specific requirements for more details.
- At minimum, an Intel Pentium or equivalent processor with a minimum clock speed of 600 MHz. A Pentium or equivalent class processor with a minimum clock speed of 1.2 GHz recommended.
- The following network support must be configured when deploying solutions to network-attached target computers:
 - TCP/IP
 - DNS
- A local area network (LAN) connection.
- An SVGA monitor with a minimum 1024 x 768 video resolution configured to display a minimum color depth of 256 colors.
- One of the following Web browsers:
 - Internet Explorer 6.0 SP1 +
 - Mozilla 1.7
 - Firefox 1.0
- Approximately 14 GB of disk space to install and run Express Runtime (7 GB of the 14 GB is temporary space used during the installation).

- Administrative authority (required for product installation and uninstallation).

Linux deployment server requirements

- A minimum of 512 MB of memory; 1 GB recommended. Additional memory might be required if middleware is installed on the same computer. Refer to the middleware specific requirements for more details.
- At minimum, an Intel Pentium or equivalent processor with a minimum clock speed of 600 MHz. A Pentium or equivalent class processor with a minimum clock speed of 1.2 GHz recommended.
- The following network support must be configured when deploying solutions to network-attached target computers:
 - TCP/IP
 - DNS
- A local area network (LAN) connection.
- An SVGA monitor with a minimum 1024 x 768 video resolution configured to display a minimum color depth of 256 colors.
- Any Linux supported video card that supports the resolution requirements.
- One of the following Web browsers:
 - Mozilla 1.7
 - Firefox 1.0
- Approximately 14 GB of disk space to install and run Express Runtime (7 GB of the 14 GB is temporary space used during the installation).
- Administrative authority (required for product installation and uninstallation).
- The 32 bit version of the compat-libstdc rpm package is required.

Linux on IBM POWER deployment server requirements

- 2 GB of memory.
- A RS64-IV processor with a minimum clock speed of 600 MHz.
- The following network support must be configured when deploying solutions to network-attached target computers:
 - TCP/IP
 - DNS
- A local area network (LAN) connection.
- An SVGA monitor with a minimum 1024 x 768 video resolution configured to display a minimum color depth of 256 colors.
- Any Linux supported video card that supports the resolution requirements.
- One of the following Web browsers:
 - Mozilla 1.7
 - Firefox 1.0
- Approximately 14 GB of disk space to install and run Express Runtime (7GB of the 14GB is temporary space used during the installation).
- Administrative authority (required for product installation and uninstallation).
- The 32 bit version of the compat-libstdc rpm package is required.

Windows deployment target requirements

- A minimum of 512 MB of memory; 1 GB recommended. Additional memory might be required if middleware is installed on the same computer. Refer to the middleware specific requirements for more details.

- At minimum, an Intel Pentium or equivalent processor with a minimum clock speed of 600 MHz. A Pentium or equivalent class processor with a minimum clock speed of 1.2 GHz recommended.
- The following network support must be configured when deploying solutions to network-attached target computers:
 - TCP/IP
 - DNS
- A local area network (LAN) connection.
- An SVGA monitor with a minimum 1024 x 768 video resolution configured to display a minimum color depth of 256 colors.
- One of the following Web browsers:
 - Internet Explorer 6.0 SP1 +
 - Mozilla 1.7
 - Firefox 1.0
- Approximately 150 MB of disk space to install and run the IBM Installation Agent (75 MB of the 150 MB is temporary space used during the installation).
- Administrative authority (required for product installation and uninstallation).

Linux deployment target requirements

- A minimum of 512 MB of memory; 1 GB recommended. Additional memory might be required if middleware is installed on the same computer. Refer to the middleware specific requirements for more details.
- At minimum, an Intel Pentium or equivalent processor with a minimum clock speed of 600 MHz. A Pentium or equivalent class processor with a minimum clock speed of 1.2 GHz recommended.
- The following network support must be configured when deploying solutions to network-attached target computers:
 - TCP/IP
 - DNS
- A local area network (LAN) connection.
- An SVGA monitor with a minimum 1024 x 768 video resolution configured to display a minimum color depth of 256 colors.
- Any Linux supported video card that supports the resolution requirements
- One of the following Web browsers:
 - Mozilla 1.7
 - Firefox 1.0
- Approximately 160 MB of disk space to install and run the IBM Installation Agent (80 MB of the 160 MB is temporary space used during the installation).
- Administrative authority (required for product installation and uninstallation).
- The 32 bit version of the compat-libstdc rpm package is required.

Linux on IBM POWER deployment target requirements

- 1 GB of memory; 1.5 GB recommended. Additional memory might be required if middleware is installed on the same computer. Refer to the middleware specific requirements for more details.
- A RS64-IV processor with a minimum clock speed of 600 MHz.
- The following network support must be configured when deploying solutions to network-attached target computers:
 - TCP/IP

- DNS
- A local area network (LAN) connection.
- An SVGA monitor with a minimum 1024 x 768 video resolution configured to display a minimum color depth of 256 colors.
- Any Linux supported video card that supports the resolution requirements.
- One of the following Web browsers:
 - Mozilla 1.7
 - Firefox 1.0
- Approximately 160 MB of disk space to install and run the IBM Installation Agent (80 MB of the 160 MB is temporary space used during the installation).
- Administrative authority (required for product installation and uninstallation).
- The 32 and 64 bit versions of the compat-libstdc rpm package is required.

AIX deployment target requirements

- 1 GB of memory. Additional memory might be required if middleware is installed on the same computer. Refer to the middleware specific requirements for more details.
- An IBM® POWER3™ -II processor with a minimum clock speed of 400® MHz.
- A monitor with a minimum 1024 x 768 video resolution configured to display a minimum color depth of 256 colors (only required for GUI-based tasks, such as interactive installation; not needed for silent installation or command-line functions).
- The following network support, which must be configured:
 - TCP/IP
 - DNS
- A local area network (LAN) connection.
- Mozilla 1.7 Web browser
- Approximately 75 MB of disk space to install the IBM Installation Agent, plus 75 MB available in the system temporary folder. Additional space is required to deploy and run each application that you install on a target computer.

i5/OS and OS/400 deployment target requirements

- OS/400 V5R2 (5722SS1) or i5/OS V5R3 (5722SS1) or i5/OS V5R3M5 (5722SS1)
 - For V5R2, SF99520 Cumulative PTF pack and SF99169 Java Group PTF
 - For V5R3Mx, SF99530 Cumulative PTF pack and SF99269 Java Group PTF
- Host Servers (5722SS1, option 12)
- QShell (5722SS1, option 30) -
- Java Developer Kit 1.4 (5722JV1, option 6)
- Crypto Access Provider 128-bit (5722AC3)
- XML Toolkit (5733XT1)
- The most recent WebSphere version 6 group and cumulative PTFs
- The following network support must be configured:
 - TCP/IP
 - DNS
- A local area network (LAN) connection.
- Approximately 20 MB of disk space to install and run the IBM Installation Agent (an additional 80 MB require temporary space used during the installation).
- Administrative authority (required for product installation and uninstallation).

Middleware requirements

DB2 UDB - Express 8.2 FP3

The hardware and software requirements are provided in the DB2 UDB - Express InfoCenter:

<http://publib.boulder.ibm.com/infocenter/db2help/index.jsp>

Informix Dynamic Server - Express TC3E for Windows and Informix Dynamic Server UC3E for Linux

The hardware and software requirements are provided in the Informix Dynamic Server InfoCenter:

<http://publib.boulder.ibm.com/infocenter/ids9help/index.jsp>

For Linux platforms, the following prerequisite RPM packages are required:

- libstdc++-3.*
- pam-0.75*
- libgcc-3.2*
- glibc-2.3.*
- ncurses-5.*

For Linux platforms, the following are required for Informix Storage Manager:

- glibc-devel-2.3.*
- pdksh*

For Linux platforms, the following are required to use optional graphical tools:

- openmotif-2.2*
- XFree86-libs-4.* (xorg-x11-libs-6.8.1 on Red Hat Enterprise Linux 4.0)

Note: * = the build number is irrelevant.

If Informix Dynamic Server is to be used on Windows platforms, the drive where Informix Dynamic Server is to be installed must be formatted as NTFS.

WebSphere Application Server - Express 6.0.2

The hardware and software requirements are provided in the WebSphere Application Server - Express InfoCenter:

<http://publib.boulder.ibm.com/infocenter/wasinfo/v6r0/index.jsp>

IBM HTTP Server

The hardware and software requirements are provided in the WebSphere Application Server - Express InfoCenter:

<http://publib.boulder.ibm.com/infocenter/wasinfo/v6r0/index.jsp>

Rational Web Developer 6.0

The hardware and software requirements are provided in the Rational Web Developer InfoCenter:

<http://www.ibm.com/software/awdtools/developer/web/sysreq/>

Note: for Linux platforms, Rational Web Developer requires that Mozilla 1.4 be installed before it can be run.

Express Runtime console

The hardware and software requirements are provided in the Express Runtime console InfoCenter:

<http://publib.boulder.ibm.com/infocenter/iru21inf/index.jsp>

Installing

You can install Express Runtime from either CD or a network location. When the installation of Express Runtime begins, the setup files unpack automatically. This can take anywhere from a few seconds to several minutes, depending on the system speed, the condition of the hard disk, and the disk access speed. Laptop computers with slower disk access can require several minutes to complete this process. You should notice disk and CPU activity during this process. Wait while the unpacking completes.

The Express Runtime launchpad panel starts automatically from the installation CD, or when you run the launchpad program from a network location. If it does not start automatically, you can start it by using the launchpad.exe program on Windows or the launchpad.sh program on Linux. By default, you can find these programs on installation medium in the *disk1* directory.

You can use the Express Runtime launchpad for the following information and tasks:

- Release information
- Prerequisite information
- Migration information
- Installation information
- Installation of Express Runtime

For step-by-step instructions on installing Express Runtime, refer to the “Installing from a disk or network location” on page 47 topic of the Express Runtime InfoCenter.

Customize a solution

Express Runtime provides solutions for you to use to deploy IBM middleware to end users. Use the solutions provided with Express Runtime to customize for use with your applications. Express Runtime provides a development environment called the Express Runtime developer. You can use Express Runtime developer to create and build application and solution files, or to customize existing application and solution files. Use the specialized export function in the Express Runtime developer to export the deployable solutions that you develop.

Each solution contains one or more applications. Each application contains variables that you configure so that the application integrates seamlessly with IBM middleware on the end user's computer.

Open Express Runtime developer

Use Express Runtime developer to edit application and solution files. Express Runtime developer provides editors that help you to supply information that applications and solutions use when you deploy them to end users.

To open Express Runtime developer on Windows, select **Start > Programs > IBM Express Runtime 2.1 > Express Runtime developer**.

To open Express Runtime developer on Linux, select **Main Menu > IBM Express Runtime 2.1 > Express Runtime developer**.

When you start Express Runtime developer, a welcome page is displayed that offers you links to helpful resources. To work with Express Runtime developer, close the welcome page.

Express Runtime developer provides an Eclipse perspective that consists of the following views:

- Express Runtime explorer
- Package explorer
- Navigator
- Properties
- Outline
- Tasks
- Console

The following list provides an overview of each of the Express Runtime developer views:

Express Runtime explorer

The Express Runtime explorer view displays all of the Express Runtime developer projects organized by application and solution projects.

Package explorer

Standard usage as with plain Java projects.

Navigator

For viewing and operating on the contents of the bin output folder. Also helpful for viewing the non-Java resources in your projects.

Properties

If the Eclipse platform includes a specialized XML editor such as the one available with the XML plug-in in Rational Developer for the Web, then attribute information is displayed in the Properties view for an element selected in the XML editor's design page.

Outline

Standard usage as with plain Java projects.

Tasks Standard usage as with plain Java projects.

Console

Displays messages from solution and application generators. The Express Runtime developer console is not the same as the Express Runtime console.

When you open Express Runtime developer, you can customize applications and generate solutions that incorporate the changes you make. You can also use Express Runtime developer to test the deployment of solutions, and package them as solution launcher images that you can save on various types of distributable media to provide to end users.

Customize an existing application

To customize a solution, you need to specify values for the variables that the middleware uses. The values that you provide represent things such as port numbers, user IDs, passwords, and other information that enables the middleware to integrate with bundled applications. If you do not provide values for the variables that the middleware components use, end users must provide this information after the installation process. By providing values for variables, you ensure that end users can use solutions without customization after the installation process.

To provide values for variables in Express Runtime developer, perform the following steps:

1. Close the Welcome page.
2. Double-click the application project in the Express Runtime explorer view.
3. Click the **Variables** tab. The Application Variable Information panel is displayed. All of the variables that the application uses are displayed in the Application Variables window.
4. Select a variable to provide configuration information.
5. In the Variable Value Configuration section of the Application Variable Information panel, provide values for the variable. The following types of variables exist:

Boolean variable

Use Boolean variables when requesting one of two possible values from the user.

Drop-down list variable

Use drop-down list variables to request a value from a list of three or more choices shown by clicking an arrow.

Password variable

Use password variables for data input that is displayed as "*" characters for security reasons.

String variable

This is the standard variable type used for data input.

6. Provide variable value configuration information. Variable value configuration information consists of the following values:

Required

Select the Required check box if the variable is required.

Make uppercase

Select the Make uppercase check box if all input is converted to uppercase.

Make lowercase

Select the Make lowercase check box if all input is converted to lowercase.

Default value

The default value is what is used by the application during installation. If you do not provide a default value, end users must provide a value after the installation.

Minimum length

Provide a minimum number of characters for the variable. This field accepts numeric input.

Maximum length

Provide a maximum number of characters for the variable. This field accepts numeric input.

Options

Optionally enter validation rules or define drop-down list values for variables.

7. Repeat the previous steps for each variable that you want to customize.
8. Save the application project.

To modify other values of the application wrapper, see **Using the Express Runtime developer > Editors > Using the application editor**.

Add a new application to an existing solution

To integrate your application with IBM middleware so that they can be delivered as a single package to your customers, complete the following steps as applicable:

1. Prepare to create an application wrapper. See **Planning > Creating and Using Wrappers > Planning an Application Wrapper**.
2. Create an application wrapper that describes this application. The Express Runtime developer provides an application project wizard that takes you through the steps to create an application wrapper. After you create the application wrapper, use the application editor to finish customizing your application wrapper. See **Using the Express Runtime developer > Editors > Using the application editor > Creating an application wrapper**.
3. Modify an existing solution wrapper. See **Using the Express Runtime developer > Editors > Using the solution editor > Modifying an existing solution wrapper**.
4. Add your application to the solution. See **Using the Express Runtime developer > Editors > Using the solution editor > Creating a solution wrapper > Adding applications and tasks > Adding applications to solutions**.

Customize a solution with your company's information

To personalize a solution, you can modify various solution information so that your customer identifies the solution as your company's when he opens the solution in the deployment wizard. Consider providing your own graphics and text for the deployment wizard splash screen, title bar, welcome page, and "about" screen. For more information about modifying these variables, see **Using the Express Runtime developer > Editors > Using the solution editor > Creating a solution wrapper > Providing general solution information**.

Generate the solution file

Before the changes that you have made to an application file take effect, you must generate the solution that contains the application. When you generate a solution, all of the applications that are part of the solution are generated too.

To generate a solution, perform the following steps:

1. In the Express Runtime explorer view of the Express Runtime developer, right-click the solution that you want to build. From the context menu, select **Generate Solution**.
2. View the status of the generation. First the applications generate, followed by the solution.
3. When the solution has been generated, a dialog is displayed that alerts that the generation is successful. Click **OK**.

When a solution has been successfully generated, you can test it in the deployment wizard. If you encountered errors during the generation of a solution, refer to the Express Runtime InfoCenter for more information.

To generate a deployment package, or generate or import an application or solution project without starting an Eclipse-based development environment, use the Eclipse generator batch files that are provided with Express Runtime. For more information using the Eclipse generator batch files, refer to the Express Runtime InfoCenter.

Testing deployment

When you have generated a solution, test it by deploying the solution to the local computer. Express Runtime features a deployment wizard that helps you deploy solutions to target computers. With the exception of localhost, all the target computers that you deploy a solution to using the deployment wizard must have the IBM Installation Agent installed and running. More information regarding the IBM Installation Agent is in the Express Runtime InfoCenter. To deploy a solution with the deployment wizard, you need to know the following information about each target computer:

- The operating system
- The fully-qualified host name or IP address if the target computer is not localhost.
- If it is not localhost, you need to know if it has the IBM Installation Agent installed and running and the password used to authenticate communication between the IBM Installation Agent and the deployment wizard..

When you test a solution in the deployment wizard, you deploy the middleware and applications to the target computers. Keep in mind that you are actually deploying code to target computers when you test a solution.

To test a solution in the deployment wizard, perform the following steps:

1. In the Express Runtime Explorer view of the Express Runtime developer, right-click the solution that you want to test in the deployment wizard. Select **Test in Deployment Wizard** from the context menu. The deployment wizard is displayed.
2. Read the Welcome panel of the deployment wizard. Click **Next**.
3. Select the tasks that you want to deploy by selecting the checkboxes that correspond with the tasks. Click **Next**.
4. Select the subtasks of the tasks that you want to deploy. Click **Next**. You need to repeat this step for each task that you selected in Step 3. When you finish, the specify targets panel is displayed.
5. In the Specify Targets panel, type localhost for the target. Click **Add**. Click **Next**. You need to repeat this step for each subtask that you selected for each

task that you selected. When you finish, the configuration parameters panel is displayed. Click the **Test Connections** button to ensure that you can connect to the target computers.

6. Provide any configuration parameters that the deployment wizard prompts for. Configuration parameters are unique to specific tasks. Click **Next**. You need to repeat this step for each subtask that you selected for each task that you selected. When you finish, the summary panel is displayed
7. Review the summary information. Click **Deploy All**. The status panel is displayed.
8. When the status panel displays that the solution has been successfully deployed, the test is successful.

If you encounter errors during the deployment of the solution, you can debug the solution. For more information on debugging solutions, refer to the "Troubleshooting" on page 141 section of the Express Runtime InfoCenter.

Exporting to CD or DVD images

The Express Runtime developer provides an export wizard that you can use for exporting your solution project to one or more CDs or DVDs for distribution. The CDs or DVDs contain a complete image of the solution that you have created, and when end users insert the media, the deployment wizard is displayed and provides the solution to them. When end users complete the deployment of the solution, the deployment wizard is uninstalled and leaves no "footprints" on their computer. Media that contains the combination of solutions and the deployment wizard are referred to as solution launcher images.

The solution launcher image is an easy way to distribute and deploy a solution. The solution you export to the solution launcher image can then be deployed through the deployment wizard. The deployment wizard is installed on the staging server through a graphical user interface similar to the one used for IBM Express Runtime.

There is also the option to silently install the deployment wizard and silently deploy the solution contained in the solution launcher image. To silently install and deploy a solution launcher image, you must place the task file you want to use in the *tasks* directory of the solution. A task file is an .xml file that stores information about the tasks that are part of a solution, and target computers that each task in a solution is deployed to. For instructions for silent installation, see "'Silent installation of a solution launcher image" on page 129."

The solution launcher image you export can display one or more license agreements as part of an installation. If you want to include licenses, place all the license files in the license directory of the solution project, in the appropriate language folder. If you have translated license files, place them in the other language folders. In order for the solution launcher to detect translated license files correctly, the filenames of the different translations should be the same, simply placed in different folders. In the following example, if the default language is English, the translated versions of license1.txt are displayed for Spanish and German computers, and the English version of license1.txt is displayed for all other languages. Additionally, the English version of license2.txt is displayed for all languages, since no translations were provided.

```
Solution/  
  license/  
    en/  
      license1.txt
```



```
license2.txt
es/
license1.txt
de/
license1.txt
```

The solution launcher image can also include a launch pad with links to a readme file and documentation for the solution. If you choose to include either a readme file or documentation, you must include the files in the solution. The readme file must be placed in the `readme` folder in the solution, and the documentation files must go in the `info` folder in the solution. The files must be placed in the appropriate language folder. Place any translated files in the appropriate language folders.

Deliver the solution to the end user

After you have exported a solution to a solution launcher image, copy the solution launcher image that resides in the **To directory** that you specified when you exported the solution to a distributable media, for example, one or more CDs or DVDs.

Refer to the documentation distributed with the CD or DVD burning software that you use to copy the contents of this directory to on or more CDs or DVDs. When an end user inserts the first distribution CD or DVD into his or her CD or DVD ROM drive, the solution launcher is displayed and provides instructions for the solution installation.

If you intend to deliver a solution to end users on a distributable media other than a CD or DVD, be sure to let end users know that they need to double-click the `<os>Setup.exe`, in the `disk1` directory of the distributable media, where `os` is the target operating system.

Documentation for contained products

IBM Express Runtime

Installed on the target computer:

- **Windows:** Start > Programs > IBM Express Runtime 2.1 > Documentation > Express Runtime Documentation
- **RedHat Linux :** Extras > Other > IBM Express Runtime 2.1 > Documentation > Express Runtime Documentation
- **SUSE Linux :** Start > Programs > IBM Express Runtime 2.1 > Documentation > Express Runtime Documentation

DB2 UDB Express

On the Web: <http://www.ibm.com/software/data/db2/udb/> (for **iSeries™** : <http://www.ibm.com/servers/eserver/series/db2/>)

After DB2 Express is installed you can access its documentation through menu shortcuts:

- **Windows:** Start > Programs > IBM DB2 > Information > Information Center
- **RedHat Linux :** Extras > Other > IBM DB2 > Information > Information Center
- **SUSE Linux :** Start > Programs > IBM DB2 > Information > Information Center

Informix Dynamic Server - Express

On the Web: <http://publib.boulder.ibm.com/infocenter/ids9help/index.jsp>

After Informix Dynamic Server is installed, you can access its documentation through menu shortcuts:

- **Windows:** Start > Programs > Informix Dynamic Server 10.0 > Documentation notes
- **RedHat Linux :** Extras > Other > Informix Dynamic Server 10.0 > Documentation notes
- **SUSE Linux :** Start > Programs > Informix Dynamic Server 10.0 > Documentation notes

IBM HTTP Server

On the Web: <http://www.ibm.com/software/webservers/httpservers/> (for **iSeries:** <http://www.ibm.com/servers/eserver/series/software/http/>)

After IBM HTTP Server is installed you can access its documentation through menu shortcuts:

- **Windows:** Start > Programs > IBM HTTP Server > Documentation
- **RedHat Linux :** Extras > Other > IBM HTTP Server > Documentation
- **SUSE Linux :** Start > Programs > IBM HTTP Server > Documentation

WebSphere Application Server - Express

On the Web: <http://www.ibm.com/software/webservers/appserv/express/> (for **iSeries:** <http://www.ibm.com/servers/eserver/series/software/websphere/>)

When WebSphere Application Server Express is installed you can access its documentation through menu shortcuts:

- **Windows:** Start > Programs > IBM WebSphere Application Server - Express 6.0.2 > FirstSteps, Readme, Getting Started
- **RedHat Linux :** Extras > Other > IBM WebSphere Application Server - Express 6.0.2 > FirstSteps, Readme, Getting Started
- **SUSE Linux :** Start > Programs > IBM WebSphere Application Server - Express 6.0.2 > FirstSteps, Readme, Getting Started

Integrated Solutions Console

After the Integrated Solutions Console (ISC) is installed you can access its documentation through the user interface:

- **Windows:** Log on to ISC. Click the help icon at the top right corner of the screen.
- **RedHat Linux :** Log on to ISC. Click the help icon at the top right corner of the screen.
- **SUSE Linux :** Log on to ISC. Click the help icon at the top right corner of the screen.

Congratulations

You have now completed the Express Runtime tutorial. For more information about Express Runtime, refer to the Express Runtime InfoCenter.

Express Runtime tutorial for end users

Welcome to the Express Runtime tutorial. End users who plan to install business solutions can use this tutorial to understand the end-to-end process of working with Express Runtime. This tutorial provides information that helps end users understand the following concepts:

- Installing solutions
- Testing solutions
- Using other information resources

To navigate to the various topics in this tutorial, click the corresponding link in the navigation pane on the left.

Introduction

Express Runtime provides a cohesive set of middleware components as a single offering, enabling hardware and software assets to work together to provide a well-defined total business solution. Express Runtime provides the packaging and installation technology to create and deploy complete packages across multiple platforms. The complete packages that you deploy with Express Runtime are referred to as solutions. A solution typically contains an ISV application that is bundled with one or more IBM middleware components. Only one installation is necessary to install the application, and all of the middleware that the application requires.

To install an Express Runtime solution, you work with an installation program that launches a wizard that helps you deploy the solution to one or more target computers. You provide specific information to the wizard so that the solutions you deploy integrate on the target computers seamlessly.

Express Runtime system requirements

This topic lists the hardware and software prerequisites for installing and using Express Runtime.

Operating system support

The following tables show which specific operating systems are supported for each basic platform type:

Windows

Operating System	Development or Deployment	Deployable as Target OS?
Windows XP Professional SP 2	both	No
Note: Informix Dynamic Server is the only Express Runtime middleware that supports Windows XP Professional SP 2.		
Windows 2000 Server SP 4	both	Yes
Windows 2000 Advanced Server SP 4	both	Yes
Windows 2000 Professional SP 3	both	Yes
Windows Server 2003, Standard Edition SP 1	both	Yes
Windows Server 2003, Enterprise Edition SP 1	both	Yes

Linux (Intel Pentium or equivalent platforms only)

Operating System	Development or Deployment	Deployable as Target OS?
Red Flag Advanced Server 4.1	deployment only	Yes
Red Hat Enterprise Linux 3.0 WS/AS/ES	both	Yes
Red Hat Enterprise Linux 4.0 WS/AS/ES	deployment only	Yes
SUSE LINUX Enterprise Server 8.0	deployment only	Yes
Note: Informix Dynamic Server is not supported on SUSE LINUX Enterprise Server 8.0		
SUSE LINUX Enterprise Server 9.0	both	Yes

Linux (IBM POWER5 processor-based technology systems only)

Operating System	Development or Deployment	Deployable as Target OS?
Linux on POWER (using SUSE LINUX Enterprise Server 9.0)	deployment only	Yes
Red Hat Enterprise Linux AS 3.0		
Red Hat Enterprise Linux AS 4.0		
AIX 5.3	neither	Yes

OS/400

Operating System	Development or Deployment	Deployable as Target OS?
V5R2	neither	Yes

i5/OS²

Operating System	Development or Deployment	Deployable as Target OS?
V5R3 and V5R3M5	neither	Yes

Windows development requirements

- A minimum of 1 GB of memory. Additional memory might be required if middleware is installed on the same computer. Refer to the middleware specific requirements for more details
- At minimum, an Intel Pentium or equivalent processor with a minimum clock speed of 600 MHz. A Pentium or equivalent class processor with a minimum clock speed of 1.2 GHz recommended.
- The following network support must be configured when deploying solutions to network-attached target computers:

2. The OS/400 operating system is known as the i5/OS operating system beginning with V5R3.

- TCP/IP
- DNS
- A local area network (LAN) connection.
- An SVGA monitor with a minimum 1024 x 768 video resolution configured to display a minimum color depth of 256 colors.
- One of the following Web browsers:
 - Internet Explorer 6.0 SP1 +
 - Mozilla 1.7
 - Firefox 1.0
- Approximately 19 GB of disk space to install and run Express Runtime (9 GB of the 19 GB is temporary space used during the installation).
- Administrative authority (required for product installation and uninstallation).
- Eclipse versions supported (IBM JRE 1.4.2.1 required) - based on the following:
 - IES - Eclipse Full SDK - 3.0.1
 - eclipse.org - Eclipse SDK - 3.0.1

Linux development requirements

- A minimum of 1 GB of memory. Additional memory might be required if middleware is installed on the same computer. Refer to the middleware specific requirements for more details
- At minimum, an Intel Pentium or equivalent processor with a minimum clock speed of 600 MHz. A Pentium or equivalent class processor with a minimum clock speed of 1.2 GHz recommended.
- The following network support must be configured when deploying solutions to network-attached target computers:
 - TCP/IP
 - DNS
- A local area network (LAN) connection.
- An SVGA monitor with a minimum 1024 x 768 video resolution configured to display a minimum color depth of 256 colors.
- Any Linux supported video card that supports the resolution requirements.
- One of the following Web browsers:
 - Mozilla 1.7
 - Firefox 1.0
- Approximately 19 GB of disk space to install and run Express Runtime (9GB of the 19GB is temporary space used during the installation).
- Administrative authority (required for product installation and uninstallation).
- The 32 bit version of the compat-libstdc rpm package.
- Eclipse versions supported (IBM JRE 1.4.2.1 required) - based on the following:
 - IES - Eclipse Full SDK - 3.0.1
 - eclipse.org - Eclipse SDK - 3.0.1

Windows deployment server requirements

- A minimum of 512 MB of memory; 1 GB recommended. Additional memory might be required if middleware is installed on the same computer. Refer to the middleware specific requirements for more details.

- At minimum, an Intel Pentium or equivalent processor with a minimum clock speed of 600 MHz. A Pentium or equivalent class processor with a minimum clock speed of 1.2 GHz recommended.
- The following network support must be configured when deploying solutions to network-attached target computers:
 - TCP/IP
 - DNS
- A local area network (LAN) connection.
- An SVGA monitor with a minimum 1024 x 768 video resolution configured to display a minimum color depth of 256 colors.
- One of the following Web browsers:
 - Internet Explorer 6.0 SP1 +
 - Mozilla 1.7
 - Firefox 1.0
- Approximately 14 GB of disk space to install and run Express Runtime (7 GB of the 14 GB is temporary space used during the installation).
- Administrative authority (required for product installation and uninstallation).

Linux deployment server requirements

- A minimum of 512 MB of memory; 1 GB recommended. Additional memory might be required if middleware is installed on the same computer. Refer to the middleware specific requirements for more details.
- At minimum, an Intel Pentium or equivalent processor with a minimum clock speed of 600 MHz. A Pentium or equivalent class processor with a minimum clock speed of 1.2 GHz recommended.
- The following network support must be configured when deploying solutions to network-attached target computers:
 - TCP/IP
 - DNS
- A local area network (LAN) connection.
- An SVGA monitor with a minimum 1024 x 768 video resolution configured to display a minimum color depth of 256 colors.
- Any Linux supported video card that supports the resolution requirements.
- One of the following Web browsers:
 - Mozilla 1.7
 - Firefox 1.0
- Approximately 14 GB of disk space to install and run Express Runtime (7 GB of the 14 GB is temporary space used during the installation).
- Administrative authority (required for product installation and uninstallation).
- The 32 bit version of the compat-libstdc rpm package is required.

Linux on IBM POWER deployment server requirements

- 2 GB of memory.
- A RS64-IV processor with a minimum clock speed of 600 MHz.
- The following network support must be configured when deploying solutions to network-attached target computers:
 - TCP/IP
 - DNS

- A local area network (LAN) connection.
- An SVGA monitor with a minimum 1024 x 768 video resolution configured to display a minimum color depth of 256 colors.
- Any Linux supported video card that supports the resolution requirements.
- One of the following Web browsers:
 - Mozilla 1.7
 - Firefox 1.0
- Approximately 14 GB of disk space to install and run Express Runtime (7GB of the 14GB is temporary space used during the installation).
- Administrative authority (required for product installation and uninstallation).
- The 32 bit version of the compat-libstdc rpm package is required.

Windows deployment target requirements

- A minimum of 512 MB of memory; 1 GB recommended. Additional memory might be required if middleware is installed on the same computer. Refer to the middleware specific requirements for more details.
- At minimum, an Intel Pentium or equivalent processor with a minimum clock speed of 600 MHz. A Pentium or equivalent class processor with a minimum clock speed of 1.2 GHz recommended.
- The following network support must be configured when deploying solutions to network-attached target computers:
 - TCP/IP
 - DNS
- A local area network (LAN) connection.
- An SVGA monitor with a minimum 1024 x 768 video resolution configured to display a minimum color depth of 256 colors.
- One of the following Web browsers:
 - Internet Explorer 6.0 SP1 +
 - Mozilla 1.7
 - Firefox 1.0
- Approximately 150 MB of disk space to install and run the IBM Installation Agent (75 MB of the 150 MB is temporary space used during the installation).
- Administrative authority (required for product installation and uninstallation).

Linux deployment target requirements

- A minimum of 512 MB of memory; 1 GB recommended. Additional memory might be required if middleware is installed on the same computer. Refer to the middleware specific requirements for more details.
- At minimum, an Intel Pentium or equivalent processor with a minimum clock speed of 600 MHz. A Pentium or equivalent class processor with a minimum clock speed of 1.2 GHz recommended.
- The following network support must be configured when deploying solutions to network-attached target computers:
 - TCP/IP
 - DNS
- A local area network (LAN) connection.
- An SVGA monitor with a minimum 1024 x 768 video resolution configured to display a minimum color depth of 256 colors.
- Any Linux supported video card that supports the resolution requirements

- One of the following Web browsers:
 - Mozilla 1.7
 - Firefox 1.0
- Approximately 160 MB of disk space to install and run the IBM Installation Agent (80 MB of the 160 MB is temporary space used during the installation).
- Administrative authority (required for product installation and uninstallation).
- The 32 bit version of the compat-libstdc rpm package is required.

Linux on IBM POWER deployment target requirements

- 1 GB of memory; 1.5 GB recommended. Additional memory might be required if middleware is installed on the same computer. Refer to the middleware specific requirements for more details.
- A RS64-IV processor with a minimum clock speed of 600 MHz.
- The following network support must be configured when deploying solutions to network-attached target computers:
 - TCP/IP
 - DNS
- A local area network (LAN) connection.
- An SVGA monitor with a minimum 1024 x 768 video resolution configured to display a minimum color depth of 256 colors.
- Any Linux supported video card that supports the resolution requirements.
- One of the following Web browsers:
 - Mozilla 1.7
 - Firefox 1.0
- Approximately 160 MB of disk space to install and run the IBM Installation Agent (80 MB of the 160 MB is temporary space used during the installation).
- Administrative authority (required for product installation and uninstallation).
- The 32 and 64 bit versions of the compat-libstdc rpm package is required.

AIX deployment target requirements

- 1 GB of memory. Additional memory might be required if middleware is installed on the same computer. Refer to the middleware specific requirements for more details.
- An IBM® POWER3™ -II processor with a minimum clock speed of 400 MHz.
- A monitor with a minimum 1024 x 768 video resolution configured to display a minimum color depth of 256 colors (only required for GUI-based tasks, such as interactive installation; not needed for silent installation or command-line functions).
- The following network support, which must be configured:
 - TCP/IP
 - DNS
- A local area network (LAN) connection.
- Mozilla 1.7 Web browser
- Approximately 75 MB of disk space to install the IBM Installation Agent, plus 75 MB available in the system temporary folder. Additional space is required to deploy and run each application that you install on a target computer.

i5/OS and OS/400 deployment target requirements

- OS/400 V5R2 (5722SS1) or i5/OS V5R3 (5722SS1) or i5/OS V5R3M5 (5722SS1)
 - For V5R2, SF99520 Cumulative PTF pack and SF99169 Java Group PTF
 - For V5R3Mx, SF99530 Cumulative PTF pack and SF99269 Java Group PTF
- Host Servers (5722SS1, option 12)
- QShell (5722SS1, option 30) -
- Java Developer Kit 1.4 (5722JV1, option 6)
- Crypto Access Provider 128-bit (5722AC3)
- XML Toolkit (5733XT1)
- The most recent WebSphere version 6 group and cumulative PTFs
- The following network support must be configured:
 - TCP/IP
 - DNS
- A local area network (LAN) connection.
- Approximately 20 MB of disk space to install and run the IBM Installation Agent (an additional 80 MB require temporary space used during the installation).
- Administrative authority (required for product installation and uninstallation).

Middleware requirements

DB2 UDB - Express 8.2 FP3

The hardware and software requirements are provided in the DB2 UDB - Express InfoCenter:

<http://publib.boulder.ibm.com/infocenter/db2help/index.jsp>

Informix Dynamic Server - Express TC3E for Windows and Informix Dynamic Server UC3E for Linux

The hardware and software requirements are provided in the Informix Dynamic Server InfoCenter:

<http://publib.boulder.ibm.com/infocenter/ids9help/index.jsp>

For Linux platforms, the following prerequisite RPM packages are required:

- libstdc++-3.*
- pam-0.75*
- libgcc-3.2*
- glibc-2.3.*
- ncurses-5.*

For Linux platforms, the following are required for Informix Storage Manager:

- glibc-devel-2.3.*
- pdksh*

For Linux platforms, the following are required to use optional graphical tools:

- openmotif-2.2*
- XFree86-libs-4.* (xorg-x11-libs-6.8.1 on Red Hat Enterprise Linux 4.0)

Note: * = the build number is irrelevant.

If Informix Dynamic Server is to be used on Windows platforms, the drive where Informix Dynamic Server is to be installed must be formatted as NTFS.

WebSphere Application Server - Express 6.0.2

The hardware and software requirements are provided in the WebSphere Application Server - Express InfoCenter:

<http://publib.boulder.ibm.com/infocenter/wasinfo/v6r0/index.jsp>

IBM HTTP Server

The hardware and software requirements are provided in the WebSphere Application Server - Express InfoCenter:

<http://publib.boulder.ibm.com/infocenter/wasinfo/v6r0/index.jsp>

Rational Web Developer 6.0

The hardware and software requirements are provided in the Rational Web Developer InfoCenter:

<http://www.ibm.com/software/awdtools/developer/web/sysreq/>

Note: for Linux platforms, Rational Web Developer requires that Mozilla 1.4 be installed before it can be run.

Express Runtime console

The hardware and software requirements are provided in the Express Runtime console InfoCenter:

<http://publib.boulder.ibm.com/infocenter/iru21inf/index.jsp>

Installing

Express Runtime provides solutions to end users in the form of a single installation. This installation program provides a wizard for end users to install code that helps them deploy solutions to target computers that they specify. After you deploy a solution, the installation program uninstalls the wizard, so no legacy code is left behind on your computer. If you need to deploy a solution again, you run the installation program additional times.

The following sample provides a step-by-step example of a typical installation of an Express Runtime solution:

1. If you received a solution from a solution provider on one or more CDs, insert the first CD into the CD or DVD ROM drive. The installation program starts automatically. If you are installing a solution from a network location, other medium, or the installation program does not start automatically, go to the location where the installation program resides, and double click *OsSetup.exe*, where *Os* is the operating system of the computer where you are installing the solution.
2. Wait while a progress indicator is displayed.

3. When the deployment wizard is displayed, refer to the “Using the deployment wizard” on page 133 in the Express Runtime InfoCenter to navigate through the deployment of the solution.

When the deployment of a solution is complete, the deployment wizard is uninstalled.

Deploying

Express Runtime features a deployment wizard that helps you deploy solutions to target computers. With the exception of localhost, all the target computers that you deploy a solution to using the deployment wizard must have the IBM Installation Agent installed and running. More information regarding the IBM Installation Agent is in the Express Runtime InfoCenter.

To deploy a solution with the deployment wizard, you need to know the following information about each target computer:

- The operating system
- The fully-qualified host name or IP address
- If it is not localhost, you need to know if it has the IBM Installation Agent installed and running.

To use the deployment wizard to deploy a solution, perform the following steps:

1. Read the Welcome panel of the deployment wizard. Click **Next**.
2. Select the tasks that you want to deploy by selecting the checkboxes that correspond with the tasks. Click **Next**.
3. Select the subtasks of the tasks that you want to deploy. Click **Next**. You need to repeat this step for each task that you selected in Step 2. When you finish, the Specify Targets panel is displayed.
4. In the Specify Targets panel, type localhost for the target. Click **Add**. Click **Next**. You need to repeat this step for each subtask that you selected for each task that you selected. When you finish, the configuration parameters panel is displayed.
5. Provide any configuration parameters that the deployment wizard prompts for. Configuration parameters are unique to specific tasks. Click **Next**. You need to repeat this step for each subtask that you selected for each task that you selected. When you finish, the summary panel is displayed.
6. Review the summary information. Click **Deploy All**. The status panel is displayed.
7. When the status panel displays that the solution has been successfully deployed, the test is successful.

If you encounter errors during the deployment of the solution, you can debug the solution. For more information on debugging solutions, refer to the topic “Debugging a solution during deployment” on page 117.

If at any time you exit a deployment, Express Runtime uninstalls the deployment wizard. If you exit the deployment wizard before a solution is deployed, you need to install the solution again.

Testing the deployment

When the status panel of the deployment wizard displays that the solution has been successfully deployed, the test is successful. If you encounter errors during

the deployment of the solution, you can debug the solution. For more information on debugging solutions, refer to the Express Runtime InfoCenter.

You can manually test the deployment of a solution by starting the application that you have deployed on one of the target computers that you have deployed to.

Documentation for contained products

IBM Express Runtime

Installed on the target computer:

- **Windows:** Start > Programs > IBM Express Runtime 2.1 > Documentation > Express Runtime Documentation
- **RedHat Linux :** Extras > Other > IBM Express Runtime 2.1 > Documentation > Express Runtime Documentation
- **SUSE Linux :** Start > Programs > IBM Express Runtime 2.1 > Documentation > Express Runtime Documentation

DB2 UDB Express

On the Web: <http://www.ibm.com/software/data/db2/udb/> (for **iSeries:** <http://www.ibm.com/servers/eserver/iseries/db2/>)

After DB2 Express is installed you can access its documentation through menu shortcuts:

- **Windows:** Start > Programs > IBM DB2 > Information > Information Center
- **RedHat Linux :** Extras > Other > IBM DB2 > Information > Information Center
- **SUSE Linux :** Start > Programs > IBM DB2 > Information > Information Center

Informix Dynamic Server - Express

On the Web: <http://publib.boulder.ibm.com/infocenter/ids9help/index.jsp>

After Informix Dynamic Server is installed, you can access its documentation through menu shortcuts:

- **Windows:** Start > Programs > Informix Dynamic Server 10.0 > Documentation notes
- **RedHat Linux :** Extras > Other > Informix Dynamic Server 10.0 > Documentation notes
- **SUSE Linux :** Start > Programs > Informix Dynamic Server 10.0 > Documentation notes

IBM HTTP Server

On the Web: <http://www.ibm.com/software/webservers/httpservers/> (for **iSeries:** <http://www.ibm.com/servers/eserver/iseries/software/http/>)

After IBM HTTP Server is installed you can access its documentation through menu shortcuts:

- **Windows:** Start > Programs > IBM HTTP Server > Documentation
- **RedHat Linux :** Extras > Other > IBM HTTP Server > Documentation
- **SUSE Linux :** Start > Programs > IBM HTTP Server > Documentation

WebSphere Application Server - Express

On the Web: <http://www.ibm.com/software/webservers/appserv/express/> (for iSeries: <http://www.ibm.com/servers/eserver/series/software/websphere/>)

When WebSphere Application Server Express is installed you can access its documentation through menu shortcuts:

- **Windows:** Start > Programs > IBM WebSphere Application Server - Express 6.0.2 > FirstSteps, Readme, Getting Started
- **RedHat Linux :** Extras > Other > IBM WebSphere Application Server - Express 6.0.2 > FirstSteps, Readme, Getting Started
- **SUSE Linux :** Start > Programs > IBM WebSphere Application Server - Express 6.0.2 > FirstSteps, Readme, Getting Started

Integrated Solutions Console

After the Integrated Solutions Console (ISC) is installed you can access its documentation through the user interface:

- **Windows:** Log on to ISC. Click the help icon at the top right corner of the screen.
- **RedHat Linux :** Log on to ISC. Click the help icon at the top right corner of the screen.
- **SUSE Linux :** Log on to ISC. Click the help icon at the top right corner of the screen.

Congratulations

You have now completed the Express Runtime tutorial. For more information about Express Runtime, refer to the Express Runtime InfoCenter.

Chapter 3. Installation

Express Runtime system requirements

This topic lists the hardware and software prerequisites for installing and using Express Runtime.

Operating system support

The following tables show which specific operating systems are supported for each basic platform type:

Windows

Operating System	Development or Deployment	Deployable as Target OS?
Windows XP Professional SP 2	both	No
Note: Informix Dynamic Server is the only Express Runtime middleware that supports Windows XP Professional SP 2.		
Windows 2000 Server SP 4	both	Yes
Windows 2000 Advanced Server SP 4	both	Yes
Windows 2000 Professional SP 3	both	Yes
Windows Server 2003, Standard Edition SP 1	both	Yes
Windows Server 2003, Enterprise Edition SP 1	both	Yes

Linux (Intel Pentium or equivalent platforms only)

Operating System	Development or Deployment	Deployable as Target OS?
Red Flag Advanced Server 4.1	deployment only	Yes
Red Hat Enterprise Linux 3.0 WS/AS/ES	both	Yes
Red Hat Enterprise Linux 4.0 WS/AS/ES	deployment only	Yes
SUSE LINUX Enterprise Server 8.0	deployment only	Yes
Note: Informix Dynamic Server is not supported on SUSE LINUX Enterprise Server 8.0		
SUSE LINUX Enterprise Server 9.0	both	Yes

Linux (IBM POWER5 processor-based technology systems only)

Operating System	Development or Deployment	Deployable as Target OS?
Linux on POWER (using SUSE LINUX Enterprise Server 9.0 Red Hat Enterprise Linux AS 3.0 Red Hat Enterprise Linux AS 4.0)	deployment only	Yes
AIX 5.3	neither	Yes

OS/400

Operating System	Development or Deployment	Deployable as Target OS?
V5R2	neither	Yes

i5/OS³

Operating System	Development or Deployment	Deployable as Target OS?
V5R3 and V5R3M5	neither	Yes

Windows development requirements

- A minimum of 1 GB of memory. Additional memory might be required if middleware is installed on the same computer. Refer to the middleware specific requirements for more details
- At minimum, an Intel Pentium or equivalent processor with a minimum clock speed of 600 MHz. A Pentium or equivalent class processor with a minimum clock speed of 1.2 GHz recommended.
- The following network support must be configured when deploying solutions to network-attached target computers:
 - TCP/IP
 - DNS
- A local area network (LAN) connection.
- An SVGA monitor with a minimum 1024 x 768 video resolution configured to display a minimum color depth of 256 colors.
- One of the following Web browsers:
 - Internet Explorer 6.0 SP1 +
 - Mozilla 1.7
 - Firefox 1.0
- Approximately 19 GB of disk space to install and run Express Runtime (9 GB of the 19 GB is temporary space used during the installation).
- Administrative authority (required for product installation and uninstallation).
- Eclipse versions supported (IBM JRE 1.4.2.1 required) - based on the following:
 - IES - Eclipse Full SDK - 3.0.1

3. The OS/400 operating system is known as the i5/OS operating system beginning with V5R3.

- eclipse.org - Eclipse SDK - 3.0.1

Linux development requirements

- A minimum of 1 GB of memory. Additional memory might be required if middleware is installed on the same computer. Refer to the middleware specific requirements for more details
- At minimum, an Intel Pentium or equivalent processor with a minimum clock speed of 600 MHz. A Pentium or equivalent class processor with a minimum clock speed of 1.2 GHz recommended.
- The following network support must be configured when deploying solutions to network-attached target computers:
 - TCP/IP
 - DNS
- A local area network (LAN) connection.
- An SVGA monitor with a minimum 1024 x 768 video resolution configured to display a minimum color depth of 256 colors.
- Any Linux supported video card that supports the resolution requirements.
- One of the following Web browsers:
 - Mozilla 1.7
 - Firefox 1.0
- Approximately 19 GB of disk space to install and run Express Runtime (9GB of the 19GB is temporary space used during the installation).
- Administrative authority (required for product installation and uninstallation).
- The 32 bit version of the compat-libstdc rpm package.
- Eclipse versions supported (IBM JRE 1.4.2.1 required) - based on the following:
 - IES - Eclipse Full SDK - 3.0.1
 - eclipse.org - Eclipse SDK - 3.0.1

Windows deployment server requirements

- A minimum of 512 MB of memory; 1 GB recommended. Additional memory might be required if middleware is installed on the same computer. Refer to the middleware specific requirements for more details.
- At minimum, an Intel Pentium or equivalent processor with a minimum clock speed of 600 MHz. A Pentium or equivalent class processor with a minimum clock speed of 1.2 GHz recommended.
- The following network support must be configured when deploying solutions to network-attached target computers:
 - TCP/IP
 - DNS
- A local area network (LAN) connection.
- An SVGA monitor with a minimum 1024 x 768 video resolution configured to display a minimum color depth of 256 colors.
- One of the following Web browsers:
 - Internet Explorer 6.0 SP1 +
 - Mozilla 1.7
 - Firefox 1.0
- Approximately 14 GB of disk space to install and run Express Runtime (7 GB of the 14 GB is temporary space used during the installation).

- Administrative authority (required for product installation and uninstallation).

Linux deployment server requirements

- A minimum of 512 MB of memory; 1 GB recommended. Additional memory might be required if middleware is installed on the same computer. Refer to the middleware specific requirements for more details.
- At minimum, an Intel Pentium or equivalent processor with a minimum clock speed of 600 MHz. A Pentium or equivalent class processor with a minimum clock speed of 1.2 GHz recommended.
- The following network support must be configured when deploying solutions to network-attached target computers:
 - TCP/IP
 - DNS
- A local area network (LAN) connection.
- An SVGA monitor with a minimum 1024 x 768 video resolution configured to display a minimum color depth of 256 colors.
- Any Linux supported video card that supports the resolution requirements.
- One of the following Web browsers:
 - Mozilla 1.7
 - Firefox 1.0
- Approximately 14 GB of disk space to install and run Express Runtime (7 GB of the 14 GB is temporary space used during the installation).
- Administrative authority (required for product installation and uninstallation).
- The 32 bit version of the compat-libstdc rpm package is required.

Linux on IBM POWER deployment server requirements

- 2 GB of memory.
- A RS64-IV processor with a minimum clock speed of 600 MHz.
- The following network support must be configured when deploying solutions to network-attached target computers:
 - TCP/IP
 - DNS
- A local area network (LAN) connection.
- An SVGA monitor with a minimum 1024 x 768 video resolution configured to display a minimum color depth of 256 colors.
- Any Linux supported video card that supports the resolution requirements.
- One of the following Web browsers:
 - Mozilla 1.7
 - Firefox 1.0
- Approximately 14 GB of disk space to install and run Express Runtime (7GB of the 14GB is temporary space used during the installation).
- Administrative authority (required for product installation and uninstallation).
- The 32 bit version of the compat-libstdc rpm package is required.

Windows deployment target requirements

- A minimum of 512 MB of memory; 1 GB recommended. Additional memory might be required if middleware is installed on the same computer. Refer to the middleware specific requirements for more details.

- At minimum, an Intel Pentium or equivalent processor with a minimum clock speed of 600 MHz. A Pentium or equivalent class processor with a minimum clock speed of 1.2 GHz recommended.
- The following network support must be configured when deploying solutions to network-attached target computers:
 - TCP/IP
 - DNS
- A local area network (LAN) connection.
- An SVGA monitor with a minimum 1024 x 768 video resolution configured to display a minimum color depth of 256 colors.
- One of the following Web browsers:
 - Internet Explorer 6.0 SP1 +
 - Mozilla 1.7
 - Firefox 1.0
- Approximately 150 MB of disk space to install and run the IBM Installation Agent (75 MB of the 150 MB is temporary space used during the installation).
- Administrative authority (required for product installation and uninstallation).

Linux deployment target requirements

- A minimum of 512 MB of memory; 1 GB recommended. Additional memory might be required if middleware is installed on the same computer. Refer to the middleware specific requirements for more details.
- At minimum, an Intel Pentium or equivalent processor with a minimum clock speed of 600 MHz. A Pentium or equivalent class processor with a minimum clock speed of 1.2 GHz recommended.
- The following network support must be configured when deploying solutions to network-attached target computers:
 - TCP/IP
 - DNS
- A local area network (LAN) connection.
- An SVGA monitor with a minimum 1024 x 768 video resolution configured to display a minimum color depth of 256 colors.
- Any Linux supported video card that supports the resolution requirements
- One of the following Web browsers:
 - Mozilla 1.7
 - Firefox 1.0
- Approximately 160 MB of disk space to install and run the IBM Installation Agent (80 MB of the 160 MB is temporary space used during the installation).
- Administrative authority (required for product installation and uninstallation).
- The 32 bit version of the compat-libstdc rpm package is required.

Linux on IBM POWER deployment target requirements

- 1 GB of memory; 1.5 GB recommended. Additional memory might be required if middleware is installed on the same computer. Refer to the middleware specific requirements for more details.
- A RS64-IV processor with a minimum clock speed of 600 MHz.
- The following network support must be configured when deploying solutions to network-attached target computers:
 - TCP/IP

- DNS
- A local area network (LAN) connection.
- An SVGA monitor with a minimum 1024 x 768 video resolution configured to display a minimum color depth of 256 colors.
- Any Linux supported video card that supports the resolution requirements.
- One of the following Web browsers:
 - Mozilla 1.7
 - Firefox 1.0
- Approximately 160 MB of disk space to install and run the IBM Installation Agent (80 MB of the 160 MB is temporary space used during the installation).
- Administrative authority (required for product installation and uninstallation).
- The 32 and 64 bit versions of the compat-libstdc rpm package is required.

AIX deployment target requirements

- 1 GB of memory. Additional memory might be required if middleware is installed on the same computer. Refer to the middleware specific requirements for more details.
- An IBM® POWER3™ -II processor with a minimum clock speed of 400 MHz.
- A monitor with a minimum 1024 x 768 video resolution configured to display a minimum color depth of 256 colors (only required for GUI-based tasks, such as interactive installation; not needed for silent installation or command-line functions).
- The following network support, which must be configured:
 - TCP/IP
 - DNS
- A local area network (LAN) connection.
- Mozilla 1.7 Web browser
- Approximately 75 MB of disk space to install the IBM Installation Agent, plus 75 MB available in the system temporary folder. Additional space is required to deploy and run each application that you install on a target computer.

i5/OS and OS/400 deployment target requirements

- OS/400 V5R2 (5722SS1) or i5/OS V5R3 (5722SS1) or i5/OS V5R3M5 (5722SS1)
 - For V5R2, SF99520 Cumulative PTF pack and SF99169 Java Group PTF
 - For V5R3Mx, SF99530 Cumulative PTF pack and SF99269 Java Group PTF
- Host Servers (5722SS1, option 12)
- QShell (5722SS1, option 30) -
- Java Developer Kit 1.4 (5722JV1, option 6)
- Crypto Access Provider 128-bit (5722AC3)
- XML Toolkit (5733XT1)
- The most recent WebSphere version 6 group and cumulative PTFs
- The following network support must be configured:
 - TCP/IP
 - DNS
- A local area network (LAN) connection.
- Approximately 20 MB of disk space to install and run the IBM Installation Agent (an additional 80 MB require temporary space used during the installation).
- Administrative authority (required for product installation and uninstallation).

Middleware requirements

DB2 UDB - Express 8.2 FP3

The hardware and software requirements are provided in the DB2 UDB - Express InfoCenter:

<http://publib.boulder.ibm.com/infocenter/db2help/index.jsp>

Informix Dynamic Server - Express TC3E for Windows and Informix Dynamic Server UC3E for Linux

The hardware and software requirements are provided in the Informix Dynamic Server InfoCenter:

<http://publib.boulder.ibm.com/infocenter/ids9help/index.jsp>

For Linux platforms, the following prerequisite RPM packages are required:

- libstdc++-3.*
- pam-0.75*
- libgcc-3.2*
- glibc-2.3.*
- ncurses-5.*

For Linux platforms, the following are required for Informix Storage Manager:

- glibc-devel-2.3.*
- pdksh*

For Linux platforms, the following are required to use optional graphical tools:

- openmotif-2.2*
- XFree86-libs-4.* (xorg-x11-libs-6.8.1 on Red Hat Enterprise Linux 4.0)

Note: * = the build number is irrelevant.

If Informix Dynamic Server is to be used on Windows platforms, the drive where Informix Dynamic Server is to be installed must be formatted as NTFS.

WebSphere Application Server - Express 6.0.2

The hardware and software requirements are provided in the WebSphere Application Server - Express InfoCenter:

<http://publib.boulder.ibm.com/infocenter/wasinfo/v6r0/index.jsp>

IBM HTTP Server

The hardware and software requirements are provided in the WebSphere Application Server - Express InfoCenter:

<http://publib.boulder.ibm.com/infocenter/wasinfo/v6r0/index.jsp>

Rational Web Developer 6.0

The hardware and software requirements are provided in the Rational Web Developer InfoCenter:

<http://www.ibm.com/software/awdtools/developer/web/sysreq/>

Note: for Linux platforms, Rational Web Developer requires that Mozilla 1.4 be installed before it can be run.

Express Runtime console

The hardware and software requirements are provided in the Express Runtime console InfoCenter:

<http://publib.boulder.ibm.com/infocenter/iru21inf/index.jsp>

Supported Web browsers

Express Runtime supports the following Web browsers to use the Express Runtime launch pad, the First Steps, and to access the product InfoCenter.

- Firefox 1.x
- Microsoft® Internet Explorer Version 6.0 with Service Pack 1 and later
- Mozilla 1.7

Express Runtime does not support any versions of the following Web browsers:

- Konquerer
- Opera

Installing a newer version of Express Runtime

If you are installing a newer version of Express Runtime over a previous version, consider the following:

- Express Runtime 2.1.1 is installed in a different directory, and can thus coexist with Integrated Runtime 1.1.
- Express Runtime 2.1.1 replaces any Express Runtime 2.1.x version, without providing the option to rollback to the previous 2.1.x version.
- When installing Express Runtime 2.1.1 over a previous version, all components of the previous version will be upgraded.
- All Express Runtime-provided .ser files, all Express Runtime-supplied application and solution projects, and all projects created in the following workspaces are saved:
 - Runtime21/SolutionEnabler/workspace
 - Runtime21/ SolutionEnabler /WindowsSampleWorkspace
 - Runtime21/ SolutionEnabler /LinuxSampleWorkspace
 - Runtime21/SolutionEnabler/*.ser

Note: There are a small number of Express Runtime-supplied projects from Express Runtime 2.1 that are being updated under the same project name. If you have changed one of those projects, you can recover the changes from the Runtime21/Backup/WorkspaceBackupForReinstall*version*.zip file where *version* is the currently installed version. You can then merge the

changes with the new versions of these projects. Specific projects are saved in the .zip file with the project name on the path of the content files.

- Before installing a new version of Express Runtime, exit the Express Runtime developer and the Express Runtime deployment wizard.
- You can specify whether to migrate the previous version of Express Runtime to the current version in the response file for the silent installation.

Installing from a disk or network location

When you start the installation process, the setup files are automatically unpacked. This can take anywhere from a few seconds to several minutes, depending on the speed of your system, the condition of your hard disk (how fragmented it is), and the speed of your disk access. Because laptop computers have slower disk access, they might require several minutes to complete this process. You can see disk and CPU activity during this process. Wait until the setup files are unpacked.

If you are installing over an existing version of Express Runtime, you can only install features not selected in a previous installation or a newer version of Express Runtime. For information on installing a new version of Express Runtime over an existing version, refer to *Installing a newer version of Express Runtime*.

Note: Only users with administrative user access can install Express Runtime. Check that the logged-on user has administrative access to the system prior to running the installation. Every remote computer to which you want to deploy solutions to, must have the IBM Installation Agent installed and configured. For more information on the IBM Installation Agent, refer to the Express Runtime InfoCenter at the following URL:

<http://publib.boulder.ibm.com/infocenter/iru21inf/>

Launch pad

On Windows computers, the launch pad starts automatically from the installation CD or DVD. If it does not start automatically, you can start it by using the launchpad.exe program. To start the launch pad on Linux, Linux on POWER, or AIX computers, use the launchpad.sh program. By default, the launchpad programs are on the first CD or DVD in the installation media.

The launch pad provides links for completing the following tasks:

- Viewing the IBM Express Runtime release information (Readme file)
- Viewing the hardware and software prerequisites for installing and running Express Runtime
- Viewing information on migrating from a previous version of Express Runtime
- Installing Express Runtime

Click a link on the launch pad to perform any of these tasks, or click **Exit** to quit.

Select language

When you select either Install IBM Express Runtime from the launch pad, or double-click the launchpad program for the operating system you use from the disk1 folder of the installation CD or DVD, you are prompted to select a language.

Select the language to use for the installation of Express Runtime and click **OK**.

The following languages are supported:

- English
- Spanish
- French
- German
- Italian
- Brazilian Portuguese
- Japanese
- Simplified Chinese
- Traditional Chinese
- Korean

Welcome

This dialog displays the name of the product to be installed: IBM Express Runtime product.

Read the dialog text and click **Next**.

Accept license agreement

To install IBM Express Runtime, you must accept the terms of the license agreement.

Read the license agreement information. Select **I accept the terms in the license agreement** and click **Next**. Otherwise, select **I do not accept the terms of the license agreement** and click **Cancel** to exit the installation.

Select installation

You can choose to install any of the following:

- IBM Express Runtime developer, the deployment wizard, and the IBM middleware components that work with Express Runtime
- The IBM middleware components only
- The Express Runtime application development toolkit

If you select to install only the IBM middleware components or application development toolkit, you need only to specify the destination directory and the installation will proceed.

Click **Next**.

Select installation location

The installation directory dialog prompts for a destination to install Express Runtime. This dialog is not displayed if Express Runtime is already installed, for example, if you want to install components that you did not install originally.

Either accept the default destination or select a new destination. Additional subdirectories are created under the destination directory.

You can either manually enter a directory or click **Browse** to navigate to a directory where you want to install Express Runtime.

Click **Next**.

Select installation type

Choose from the following types of installations:

Typical installation

A typical installation installs all of the components of IBM Express Runtime, including the documentation, license, shortcuts, and runtime environments. This is the default type of installation. During a typical installation you can select the platforms to which you deploy middleware applications.

Deployment Wizard Only installation

A deployment wizard only installation installs only the components that are needed to create a staging server. This type of installation installs the deployment wizard component of Express Runtime. During a deployment wizard only installation, you can select the platforms to which you deploy middleware applications.

Click **Next**.

Select platforms for middleware applications

You can choose to install middleware applications for the following platforms:

- Windows
- Linux
- Linux on POWER
- i5/OS (OS/400⁴)

You can save space and installation time by installing only the middleware applications for the platforms that you target.

Note: If the folders for an Express Runtime middleware application are not available, you will not be able to select that component. For example, if you downloaded the folders for Express Runtime from the IBM Extreme Leverage Web site, but did not download the folder for the Windows Middleware application, you will not be able to select the Windows platform for installation.

Select the middleware for the platforms that you target and click **Next**.

Select an Eclipse-based product

You can install the Express Runtime developer plug-in into an existing Eclipse-based product, or you can select to install IBM Rational Web Developer version 6.0.

Note:

- If you downloaded the folders for Express Runtime from the IBM Extreme Leverage Web site, but did not download the folders for Rational Web Developer for Windows or Linux, you will not be able to select to install Rational Web Developer.
- The Eclipse-based product must be at level 3.0.1 or higher.
- If the Eclipse-based product that you have selected meets the requirements for the development environment, however, is in use by

4. The OS/400 operating system is known as the i5/OS operating system beginning with V5R3.

another instance of the development environment, you must either specify another Eclipse-based product, or cancel this installation.

- If you install the Express Runtime developer plug-in into an already installed Eclipse-based product, the product's default workspace opens when the program starts. You must manually change the workspace in the Eclipse-based product in order to work with the Express Runtime developer workspace. IBM JRE 1.4.2.1 is the only supported JRE for the Express Runtime developer plug-in.

Select the Eclipse-based product to use as the development environment and click **Next**.

Reconfigure Express Runtime developer

The Reconfigure Express Runtime developer dialog provides a way to quickly restore the Express Runtime developer back to a working state if the Eclipse plug-in is no longer installed. The option to reconfigure the Express Runtime developer is available in the following situations:

- The Eclipse plug-in was uninstalled and the Express Runtime installation process is restarted.
- The IBM Rational Web Developer installation failed.

When you reconfigure the Express Runtime developer, you do not need to reinstall the entire Express Runtime product.

Select to either reconfigure the Express Runtime developer, or continue with the standard installation, and click **Next**.

Review the installation summary

The summary dialog summarizes installation information such as the installation directory, the features to be installed, and the estimated total size of the features that you selected to install.

Review this installation summary before beginning the installation. To make changes, click **Back** to return to the previous dialogs and make any necessary changes.

Click **Next** to begin the installation.

Monitor the installation progress

The Monitor installation progress dialog displays the status of the features of Express Runtime as they are installed.

The Express Runtime development environment is installed as part of the Express Runtime installation. You can follow the installation progress by monitoring the progress bar. Installing IBM Rational Web Developer adds significantly to the time that is needed for the installation process. Disk and CPU activity takes place during this process. When all of the features of Express Runtime are installed, a verification dialog is displayed.

Verify successful installation

The final installation dialog, indicates whether the installation was successful. You can choose to start First Steps for Express Runtime. First Steps provides links to

information and functions to help familiarize you with the Express Runtime and its capabilities. If you want to start First Steps, click **Launch First Steps**. Click **Finish** to exit the installation wizard.

To verify that the installation was successful, verify that the deployment wizard launches without any errors. For more on using the deployment wizard, see the Product Documentation available from the Express Runtime First Steps.

To verify that the Express Runtime developer was successfully installed, open the Express Runtime developer and check that any existing projects imported without error and that a solution can be generated. For more on using the Express Runtime developer, see the Product Documentation available from the Express Runtime First Steps.

Log files created during the product's installation also provide useful information about the installation process.

Note: Log messages are not logged for non-administrator users on Windows or Linux operating systems. You must have administrative access to install or uninstall IBM Express Runtime.

The Express Runtime log file, IRU_Install.log, is found in the Runtime21/SolutionEnabler/logs/ directory.

Troubleshoot installation problems

If you encounter errors during the installation process, or cannot complete an installation, complete the following tasks to identify the cause of the error or unsuccessful installation:

- Verify that the system where you are installing Express Runtime meets the hardware and software prerequisites for installation.
- View IRU_Install.log, which is located in the \Runtime21\SolutionEnabler\logs directory for detailed information regarding the events of an installation.

Note: If the installation prerequisites are not met, the log file will be created in a temporary folder even if there is a log file from a previous installation. If the installation log doesn't contain the most current installation information, check the log file in one of these locations:

- **For Windows:** C:\Documents and Settings\\Local Settings\Temp
 - **For Linux and Linux on POWER:** /tmp
 - **For i5/OS (OS/400):** /tmp or /InstallShield
- Record any messages that the Express Runtime installation program returns. Messages beginning with IRU008xx are related to the installation of Express Runtime.

Note: Log messages are not logged for non-administrator users on Windows or Linux operating systems. You must have administrative access to install or uninstall IBM Express Runtime.

If you attempted a silent installation and do not see a log file generated, be sure that you have administrative privileges. Only users with administrative access can install IBM Express Runtime on Windows or Linux operating systems. During a silent installation, most errors are written to a log file; however, log messages cannot be logged for non-administrative users.

Using the Express Runtime First Steps

The Express Runtime First Steps provides links to documentation and functions to help familiarize you with the Express Runtime and its capabilities. When you finish installing Express Runtime, you can choose to start First Steps. You can also start First Steps from the Start menu.

Express Runtime First Steps provides the following links:

Readme

Provides a link to information on both what is new and changed as well as updates, limitations, and known issues in this release of Express Runtime.

Tutorials

Contains documentation and examples for using Express Runtime to develop and deploy solutions.

Sample Solution

Contains a sample solution designed to help a developer understand the development environment and how an application can be included in an integrated solution. There is also a demonstration of a deployment of an integrated solution to a single platform.

Start the Express Runtime developer

Starts the Express Runtime developer tool and opens the full workspace provided with Express Runtime. This workspace contains all of the application and solution wrappers for the supported operating systems. The workspace is named workspace and is a separate workspace from the sample. Changes made in the sample workspace are not reflected in this workspace.

Start the Express Runtime Deployment Wizard

Starts the deployment wizard with no solution selected. Select **File > Open** to select a solution to be deployed.

Product Documentation

Provides a link to the Express Runtime information center.

Installing from a local network

To install Express Runtime from CD or DVD images copied to a local network, perform the following steps:

1. Use the Express Runtime sizing guide to determine the amount of free disk space you need on a target computer to support the type of Express Runtime installation that you need.
2. Create a folder for each CD or DVD named disk x where x corresponds to the number of the CD or DVD.
3. Copy the contents of each CD or DVD into the corresponding folder.
4. Navigate to the disk1 folder, and double-click the launchpad program for the operating system you use.
5. Follow the instructions in the launch pad to initiate the installation of Express Runtime.
6. When the installation has begun, follow the installation instructions for Express Runtime found in the Express Runtime InfoCenter.

Install Express Runtime silently

You can install IBM Express Runtime, only the IBM middleware components, or the Express Runtime application development toolkit silently by using a response file to set the installation options. Sample response files are located on disk 1 of the IBM Express Runtime disks. The response files names are as follows:

- **For Express Runtime:** IRU_ExpressRuntime.iss
- **For IBM middleware components:** IRU_MiddlewareOnly.iss
- **For the Express Runtime application development toolkit:** IRU_DevTools.iss

Start the silent installation using a command similar to the following:

```
WindowsSetup -options x:\yyy\...\ExpressRuntime_setup.iss -is:silent
```

The executable programs and the sample response files are on disk1 of the IBM Express Runtime disks. The -options parameter must be the fully-qualified name of the response file. The installation results are in the IRU_install.log in the specified installation directory.

The following are the Express Runtime setup executable names:

- **For Windows:** WindowsSetup.exe
- **For Linux:** LinuxSetup
- **For Linux on POWER:** LinuxPPCSetup

Note: If you downloaded the folders for Express Runtime from the IBM Extreme Leverage Web site, but did not download the folders for any component specified in the Feature Selection section of the Express Runtime silent installation response file, a message will be logged and the installation will stop. For example, if you the IBM Express Runtime Middleware for Windows is set to true in the response file, but you did not download the folder for the Windows Middleware application, the installation will fail.

Installation results are not written to IRU_install.log if a user without administrator or root privileges performs a silent installation on the following operating systems:

- Windows 2000
- Windows XP
- Red Hat Enterprise Linux
- SUSE Linux (Intel platforms)

You can also deploy a solution file silently at installation time by editing the response file so that it calls a task file. For more on silently deploying, see the silent deployment topic that describes how to silently install a solution launcher image in the Express Runtime InfoCenter. Every remote computer to which you want to deploy solutions to, must have the IBM Installation Agent installed and configured. For more information on the IBM Installation Agent, refer to the Express Runtime InfoCenter at the following URL:

<http://publib.boulder.ibm.com/infocenter/iru21inf/>

Generate a response file

You can install IBM[®] Express Runtime silently by using a response file to set the installation options. You can use the same options that you would select during the

interactive installation. The options are set in the response file. You can generate two types of response files automatically with Express Runtime.

- An *options record* is a response file containing values recorded during an installation of Express Runtime. This options record can be used to perform silent installations with identical options in the future.

To create an options record, use a command similar to:

```
WindowsSetup -options-record x:\yyy\...\IRU_setupRecord.iss
```

- An *options template* This is a sample response file. This file contains commonly used options, along with instructions for their use. You modify the file, specifying the values that you want to use for the installation. This template can then be saved and used to perform installations later.

To create an options template, use a command similar to:

```
WindowsSetup -options-template x:\yyy\...\IRU_setupTemplate.iss
```

Sample Express Runtime installation response file

Use the following sample response file to set the options for your installation. This file is named IRU_ExpressRuntime.iss and is located on disk1 of the IBM Express Runtime disks.

```
#####  
# Licensed Materials - Property of IBM  
#  
# 5724-J10  
#  
# (C) Copyright IBM Corporation 2005  
#  
# US Government Users Restricted Rights - Use, duplication or disclosure  
# restricted by GSA ADP Schedule Contract with IBM Corp.  
#  
# This is sample code made available for use in accordance with terms set  
# forth in the license agreement document for the IBM Integrated Runtime.  
#  
# SAMPLE RESPONSE FILE FOR SILENT IBM EXPRESS RUNTIME VERSION 2.1.1 INSTALLATION  
#  
# NOTE: No spaces are allowed before the options (-P, -W, -G)  
#  
#####  
  
#####  
# Specify that the installation should run silently.  
#  
# NOTE: The following option is needed for successful silent installation.  
# Do not modify it. By doing so, you prevent the ability to choose a setup type  
# during installation.  
#  
-silent  
  
#####  
#  
# Provide an alternative installation destination for IBM Express Runtime.  
#  
# Default installation path for Windows: C:\Program Files\IBM  
# Default installation path for Linux: /opt/IBM  
#  
# To modify the default installation path, uncomment the line below and  
# insert a valid path for the location. The following characters are  
# invalid characters for the shortcut folder name for Windows and Linux:  
#  
# Windows: " * / ; < > ? |  
# Linux: ! " # $ % & ' ( ) * , : ; < = > ? @ [ \ ] ^ ` { | } ~, and any native characters  
#  
#-P IBM_IRU.installLocation="C:\Program Files\IBM"
```

```

#####
# Migrate previous version of IBM Express Runtime to the current version.
# Migrate to current version set: migration.navigationOptions=3
# Do not migrate to the current version set: migration.navigationOptions=4
#
-W migration.navigationOptions=3

#####
# NOTE: The following option is needed for successful feature selections.
# Do not modify it.
#

-W setupTypes.active=false

#####
#
# Setup Type Selection
#
# This section of the response file allows you to select from 2 different types
# of set up:
#
# Typical Installation
# Deployment Wizard Only Installation
#
#
# Typical Installation (installs the entire product)
#
# Install IBM Express Runtime development tools and documentation. You can select
# the platforms to which you deploy middleware applications.
# Space required: 1 GB - 3.5 GB
#
# Deployment Wizard Only Installation
#
# Install IBM Express Runtime deployment tools and documentation. You can select
# the platforms to which you deploy middleware applications.
# Space required: 1 GB - 2.5 GB
#
# To enable the Typical Installation setup type, set the following option equal to "typical".
# To enable the Deployment Wizard Only Installation setup type, set the following option equal to
#

-W setupTypeAction.installType="typical"

#####
#
# Feature Selection
#
# The following is the feature selection associated with Typical Installation and
# Deployment Wizard Only Installation.
#
# Set the feature's active property to "True" to select a feature for installation.
# Set the feature's active property to "False" to prevent a feature from being installed.
#
#
# IBM Express Runtime Middleware for Windows
#
#-P WinDPFeature.active=True
#
#
# IBM Express Runtime Middleware for Linux
#
#-P LnxDPFeature.active=False
#

```

```

#
# IBM Express Runtime Middleware for Linux On POWER
#
#-P PwrLnxDpFeature.active=False
#
#
# IBM Express Runtime Middleware for OS/400 (i5OS)
#
#-P OS400DpFeature.active=False
#
#

#####
#
# Eclipse Product Selection
#
# By default, Rational Web Developer 6.0 is installed during a Typical Installation.
# If you do not want to install Rational Web Developer, specify the eclipse folder
# location for an existing Eclipse 3.0 product to plug into.
#
# For example, if the location of the eclipse folder in your Eclipse environment
# is "C:\Program Files\eclipse" then you would specify the following:
#
#-W eclipseProductListings.eclipseDirectory="C:\Program Files\eclipse"

#####
#
# Reconfigure Express Runtime Developer
#
# The following option is used when IBM Express Runtime is already installed
# with the Solution Developer feature, but the Eclipse development environment
# that it was installed into has been removed. See the "Eclipse Product Selection"
# section above to specify which Eclipse environment to plug into.
#
# To reconfigure the Solution Developer and restore it to a working state,
# set the following userSelection option equal to 1.
#
# To perform a full installation, set the following userSelection option equal to 2.
#
#-W userSelection.userSelection=1
#

#####
# Indicates the user's response to whether to replace a file that exists
# on their system. The possible values are: "yesToAll", and "noToAll".
# Note that this option is only available at installation.
#

-G replaceExistingResponse="yesToAll"

#####
# Indicates the user's response to whether to replace a file if that
# file is newer than the file being installed.
# The possible values are: "yesToAll", and "noToAll".
# Note that this option is only available at installation.
#

-G replaceNewerResponse="yesToAll"

#####
# Indicates the user's response to whether to remove a file that has been
# modified since it was last installed.

```



```

# The possible values are: "yesToAll", and "noToAll".
# Note that this option is only available at uninstallation.
#

-G removeModifiedResponse="yesToAll"

#####
#
# !!!!DO NOT REMOVE OR MODIFY THE FOLLOWING VALUES!!!!
#
-W installationPath.expressRuntime=true
-W installationPath.middleware=false
-W installationPath.adt=false

```

Sample middleware installation response file

Use the following sample response file to set the options for your installation. This file is named IRU_MiddlewareOnly.iss and is located on disk1 of the IBM Express Runtime disks.

```

#####
# Licensed Materials - Property of IBM
#
# 5724-J10
#
# (C) Copyright IBM Corporation 2005
#
# US Government Users Restricted Rights - Use, duplication or disclosure
# restricted by GSA ADP Schedule Contract with IBM Corp.
#
# This is sample code made available for use in accordance with terms set
# forth in the license agreement document for the IBM Integrated Runtime.
#
# SAMPLE RESPONSE FILE FOR SILENT IBM EXPRESS RUNTIME VERSION 2.1.1 INSTALLATION
#
# NOTE: No spaces are allowed before the options (-P, -W, -G)
#
#####

#####
# Specify that the installation should run silently.
#
# NOTE: The following option is needed for successful silent installation.
# Do not modify it. By doing so, you prevent the ability to choose a setup type
# during installation.
#

-silent

#####
#
# Install Location
#
# Specify a location to install temporary files, solution files, and log files.
# Files are installed under the "Runtime21\MiddlewareOnly".
#
# Default location path for Windows: C:\Program Files\IBM
# Default installation path for Linux: /opt/IBM
#
#-W userFilesDirectoryBean.destination="C:\Program Files\IBM"

#####
#
# Task File Name Option - Middleware Only
#

```

```

# If performing a silent installation of IBM Express Middleware, specify the
# full path to the TaskFile for the solution(s) you want to deploy. If the
# TaskFile deploys to any remote machines it must also specify a key phrase
# for use during deployment.
#
#-W taskFileBean.sourceFile="C:\TaskFileLocation\taskList.xml"
#

#####
# Indicates the user's response to whether to replace a file that exists
# on their system. The possible values are: "yesToAll", and "noToAll".
# Note that this option is only available at installation.
#

-G replaceExistingResponse="yesToAll"

#####
# Indicates the user's response to whether to replace a file if that
# file is newer than the file being installed.
# The possible values are: "yesToAll", and "noToAll".
# Note that this option is only available at installation.
#

-G replaceNewerResponse="yesToAll"

#####
# Indicates the user's response to whether to remove a file that has been
# modified since it was last installed.
# The possible values are: "yesToAll", and "noToAll".
# Note that this option is only available at uninstallation.
#

-G removeModifiedResponse="yesToAll"

#####
#
# !!!DO NOT REMOVE OR MODIFY THE FOLLOWING VALUES!!!!
#
-W installationPath.expressRuntime=false
-W installationPath.middleware=true
-W installationPath.adt=false

```

Sample application development toolkit installation response file

Use the following sample response file to set the options for your installation. This file is named IRU_DevTools.iss and is located on disk1 of the IBM Express Runtime disks.

```

#####
# Licensed Materials - Property of IBM
#
# 5724-J10
#
# (C) Copyright IBM Corporation 2005
#
# US Government Users Restricted Rights - Use, duplication or disclosure
# restricted by GSA ADP Schedule Contract with IBM Corp.
#
# This is sample code made available for use in accordance with terms set
# forth in the license agreement document for the IBM Integrated Runtime.
#
# SAMPLE RESPONSE FILE FOR SILENT IBM EXPRESS RUNTIME VERSION 2.1.1 INSTALLATION

```

```

#
# NOTE: No spaces are allowed before the options (-P, -W, -G)
#
#####

#####
# Specify that the installation should run silently.
#
# NOTE: The following option is needed for successful silent installation.
# Do not modify it. By doing so, you prevent the ability to choose a setup type
# during installation.
#

-silent

#####

#
# Install Location - Express Runtime Application Development Toolkit
#
# Specify a location to install temporary files, solution files, and log files.
# Files are installed under the "Runtime21\ADT".
#
# Default location path for Windows: C:\Program Files\IBM
# Default installation path for Linux: /opt/IBM
#
#-W userFilesDirectoryBean.destination="C:\Program Files\IBM"

#####

#
# Task File Name Option - Application Development Toolkit
#
# If performing a silent installation of IBM Express Middleware or Express Runtime
# application development toolkit, specify the full path to the TaskFile for the
# solution(s) you want to deploy. If the TaskFile deploys to any remote machines
# it must also specify a key phrase for use during deployment.
#
#-W taskFileBean.sourceFile="C:\TaskFileLocation\taskList.xml"
#

#####

# Indicates the user's response to whether to replace a file that exists
# on their system. The possible values are: "yesToAll", and "noToAll".
# Note that this option is only available at installation.
#

-G replaceExistingResponse="yesToAll"

#####

# Indicates the user's response to whether to replace a file if that
# file is newer than the file being installed.
# The possible values are: "yesToAll", and "noToAll".
# Note that this option is only available at installation.
#

-G replaceNewerResponse="yesToAll"

#####

# Indicates the user's response to whether to remove a file that has been
# modified since it was last installed.
# The possible values are: "yesToAll", and "noToAll".
# Note that this option is only available at uninstallation.

```

```
#
-G removeModifiedResponse="yesToAll"

#####
#
# !!!DO NOT REMOVE OR MODIFY THE FOLLOWING VALUES!!!!
#
-W installationPath.expressRuntime=false
-W installationPath.middleware=false
-W installationPath.adt=true
```

Uninstallation

Uninstalling IBM Express Runtime removes Express Runtime files from the computer, including the Windows registry entries on computers running Microsoft Windows.

Directories and files that were installed as part of Express Runtime are removed unless the files have been added or modified after installation. Review these modified files to ensure that you want to delete them, and then manually delete the files and directories.

Deployed products are not uninstalled when Express Runtime is uninstalled. Deployed products must be uninstalled separately. See [Uninstall the deployed components](#) for instructions.

Administrative authority

You must have administrative authority to install or uninstall Express Runtime. If you attempt to uninstall the product on Linux or Windows after having applied a fixpack, you may receive the error dialog titled: "InstallShield Wizard Panel" with the message "The java class is not found:run". This message occurs because you do not have Administrator authority. Log off the system and then log back on as a user with Administrator authority.

Uninstall Express Runtime

You must have administrative authority to uninstall Express Runtime. If you do not have administrative authority, errors will occur when you run the uninstallation and a log file may not be created. Check that the logged-on user has administrative authority before uninstalling Express Runtime.

To uninstall Express Runtime, choose from the following options:

- For **Windows**, follow these steps:
 1. Select **Control Panel > Add or Remove Programs**.
 2. Select **IBM Express Runtime** from the Add or Remove Programs dialog.
 3. Click **Change/Remove**.
 4. Follow the prompts in the uninstallation program.
- For **Linux**, follow these steps:
 1. Run `<install dir>/IBM/Runtime21/uninst`.
 2. Select a language for the uninstallation program from the dialog that is displayed. Click **OK**.
 3. The uninstallation Welcome dialog is displayed. Click **Next**.
 4. Verify the list of product features that are marked for uninstallation. Click **Next**.

5. Click **Finish** to close the uninstallation program.

Note: Some folders and files might not be automatically removed when Express Runtime is uninstalled. You can delete these folders and files manually.

If you encounter errors during uninstallation, you can view the IRU_Install.log, located in Runtime21/SolutionEnabler/logs,

Uninstall the deployed components

Deployed components are not uninstalled when Express Runtime is uninstalled. Deployed components must be uninstalled separately.

Important: The uninstallation process might not remove all of the files from the installation directories. Review these files to ensure you want to delete them, and then manually delete the files and remove the directories.

Refer to each product's documentation for more details about uninstalling each product.

To uninstall the deployed components, follow these steps:

Remove the sample application

- Manually delete the sample files. The sample files are located in the directory that you specified at deployment time. Delete the files and remove the directory. The names specified in these instructions are the names set in the sample's properties file "DocMgmtSample.prop" and the sample's default configuration and dynamically based on user input.
- Remove the database from the database system. For example, use the DB2 control center or with the DB2 command **db2 drop database DOCMGTD7**. To drop the Informix Dynamic Server database, use the dbaccess utility or after setting the Informix Dynamic Server environment, run **echo drop database DOCMGTD7 | dbaccess -**.
- Remove the application from WebSphere Application Server. Complete the following steps using the Web administration console (for example, <http://localhost:9060/ibm/console>):
 1. Select **Applications > Enterprise Applications**.
 2. Select the sample application.
 3. Click **Stop** to stop the application.
 4. Select the sample application.
 5. Click **Uninstall**.
 6. Save the configuration changes.
- Remove the J2C Authentication data entry by completing the following steps:
 1. Select **Resources > JDBC Providers**.
 2. Set the scope to Node.
 3. Click the provider named IRDB2Provider in the case of DB2. For Informix Dynamic Server, it is Informix_JDBC_Driver.
 4. Under "Additional Properties," click **Data sources**.
 5. Click the data source named DocMgmtEx.
 6. Under "Related Items," click J2C authentication data entries.
 7. Select **DB2AuthAlias**.
 8. Click **Delete**.

- Remove the JDBCProvider object from WebSphere Application Server. Complete the following steps using the Web Administration console (for example, `http://localhost:9060/ibm/console`):
 1. Select **Resources > JDBC Providers**.
 2. Set the scope to Node.
 3. Select **Select IRDB2Provider for DB2 and Informix_JDBC_Driver for Informix Dynamic Server**.
 4. Click **Delete**.
 5. Save the configuration changes.

Uninstall WebSphere Application Server - Express for Windows

1. Select **Control Panel > Add or Remove Programs**.
2. Select **WebSphere Application Server - Express** from the Add or Remove Programs dialog.
3. Click **Change/Remove**.
4. Follow the prompts in the uninstallation program.

Uninstall WebSphere Application Server - Express for Linux

Use the uninstallation executable program that is provided in the `WASinstallDir/_uninst` directory. This file starts an interactive uninstallation process. A JRE is required to run this uninstallation. If you are prompted for a JRE while uninstalling, you can use the JRE provided with the IBM Installation Agent or Express Runtime to perform the uninstallation. For example, `<IIAInstallDir>/IIAJRE/bin/java -jar <WASInstallDir>/_uninst/uninstall.jar` starts the interactive uninstallation.

Uninstall WebSphere Application Server - Express for i5/OS (OS/400)

Follow these steps:

1. Verify that the host server jobs have been started on your iSeries server. The host server jobs allow the uninstallation code to run on the iSeries server. Enter the following command on a CL command line:

```
STRHOSTSVR SERVER(*ALL)
```

2. Choose from the following uninstallation options:

- To uninstall the product only, run the following command from Qshell:
`/QIBM/ProdData/WebSphere/AppServer/V6/Base/bin/uninstall`

Note: Uninstalling WebSphere Application Server from the iSeries server does not delete any customer data, such as application servers or deployed applications, but removes only the product libraries, directories, and files. The user-defined information is not removed and can be reused if you reinstall the product.

- To uninstall the product and all user data (profiles), run the following command:

```
/QIBM/ProdData/WebSphere/AppServer/V6/Base/bin/uninstall -W deleteallprofiles.active="true"
```

Uninstall IBM HTTP Server for Windows

Important: If the Web server plug-in for IBM WebSphere Application Server is installed, uninstall the plug-in before uninstalling the IBM HTTP Server.

1. Select **Control Panel > Add or Remove Programs**.
2. Select IBM HTTP Server from the Add or Remove Programs dialog.
3. Click **Change/Remove**.
4. Follow the prompts in the uninstallation program.

Uninstall IBM HTTP Server for Linux

Important: If the Web server plug-in for IBM WebSphere Application Server is installed, uninstall the plug-in before uninstalling the IBM HTTP Server.

Use the `uninstall.jar` file provided in the `<IHSInstallDir>/_uninst` directory. This file starts an interactive uninstallation process. A JRE is required to run this uninstallation. If you are prompted for a JRE while uninstalling, you can use the JRE provided with the IBM Installation Agent or Express Runtime to perform the uninstallation. For example, `<IIAInstallDir>/IIAJRE/bin/java -jar <IHSInstallDir>/_uninst/uninstall.jar` starts the interactive uninstallation.

Uninstall IBM HTTP Server for iSeries

Remove the product by completing the following steps:

1. Type `ENDTCPSVR SERVER(*HTTP) HTTPSVR(*ALL)`.
2. Type `ALCOBJ OBJ((QHTTPSVR/QHTTPSVR *SBSD *EXCL)) WAIT(120)`.
3. Type `ENDSBS SBS(QHTTPSVR) OPTION(*IMMED)`.
4. Type `DLCOBJ OBJ((QHTTPSVR/QHTTPSVR *SBSD *EXCL))`.
5. Run `DLTLICPGM LICPGM(5722DG1)`,

Uninstall Web server plug-in for IBM WebSphere Application Server for Windows

1. Select **Control Panel > Add or Remove Programs**.
2. Select WebSphere Application Server - Express plug-in for IBM HTTP Server from the Add or Remove Programs dialog.
3. Click **Change/Remove**.
4. Follow the prompts in the uninstallation program.

Uninstall Web server plug-in for IBM WebSphere Application Server for Linux

Use the uninstallation executable program that is provided in the `<plug-inInstallDir>/_uninst` directory. If WebSphere Application Server - Express and IBM HTTP Server are installed on the same system, the `<plug-inInstallDir>` is `<IHSInstallDir>/Plugins`. If WebSphere Application Server - Express and IBM HTTP Server are installed on different systems, the plug-in is installed on the system with IBM HTTP Server, and the `<plug-inInstallDir>` is `IHSInstallDir/Plugins`.

Uninstall Web server plug-in for IBM WebSphere Application Server for iSeries

This plug-in is packaged and installed as part of the HTTP server product 5722DG1 for OS/400. Therefore, it is not separately uninstallable, but it is uninstalled with the HTTP server.

Uninstall DB2 UDB Express for Windows

1. Select **Control Panel > Add or Remove Programs**.
2. Select DB2 Universal Database Express Edition from the Add or Remove Programs dialog.
3. Click **Change/Remove**.
4. Follow the prompts in the uninstallation program.

If you created databases, the DB2 instance is not deleted. You can manually delete any DB2 instances that were created. The default instance created at DB2 install time is <db2InstallDrive>:/DB2.

If the sample was installed and you are not deleting the DB2 instance, remove the sample database from DB2 before uninstalling DB2. See instructions for uninstalling the Sample Application.

Uninstall deployed components for DB2 UDB Express for Linux

1. In a Command Prompt window, switch to root user by entering the command **su**.
2. List all DB2 instances by entering the command **/opt/IBM/db2/V8.1/instance/db2ilist**.
3. Remove each DB2 by entering the command **/opt/IBM/db2/V8.1/instance/db2idrop <instancename>**.
4. Remove the DB2 administrative server by entering the commands **/opt/IBM/db2/V8.1/instance/dasdrop** and **/opt/IBM/db2/V8.1/instance/daslist**.
5. Enter the command **/opt/IBM/db2/V8.1/_uninst/db2_deinstall**.
6. Delete the DB2 admin user ID (db2admin by default) if you no longer need the user ID. Use the command **userdel -r <db2admin user>**.
7. Delete the DB2 instance user ID (db2inst by default) if you no longer need the user ID. Use the command **userdel -r <db2inst user>**.
8. Delete group for the DB2 admin user (db2admin by default) if the user was deleted. Use the command **groupdel <db2admin group>**.
9. Delete group for the DB2 instance user (db2inst by default) if the user was deleted. Use the command **groupdel <db2inst group>**.

If the sample was installed and you are not deleting the DB2 instance user ID, you should drop the sample database from DB2 before uninstalling DB2. Switch to the DB2 instance user and type **db2 drop database DOCMGTD7**.

Uninstall DB2 UDB Express for i5/OS (OS/400)

DB2 is an integral part of the database function imbedded in the i5/OS (OS/400) operating system. It cannot be uninstalled.

Uninstall IBM Informix Dynamic Server Express for Windows

For detailed information about uninstalling the Informix Dynamic Server, see the Informix Dynamic Server information center at the following Web site:

<http://publib.boulder.ibm.com/infocenter/ids9help/index.jsp>

To uninstall IBM Informix Dynamic Server Express from a Windows computer, follow these steps:

1. Select **Control Panel > Add or Remove Programs**.
2. Select **Informix Dynamic Server 10.00** from the Add or Remove Programs dialog.
3. Click **Change/Remove**.
4. If you choose to only remove executable programs or to revert to a previous version, shut down the SNMP service if it is installed on the target computer and wait for the OnSNMP process to terminate.
5. If you elect to remove all database server files and information, the uninstall program prompts you to confirm your action.
 - Click **Yes** to proceed. The uninstall program removes the database server files.
 - Click **No** to cancel the uninstall operation.
6. Specify whether to remove ISM servers, if appropriate.

Note: If other Informix database servers are running, it is recommended that you keep the ISM servers.

- Click **Yes** to remove ISM servers.
 - Click **No** to preserve ISM servers.
7. If SNMP is installed on the target computer, specify whether to remove SNMP extension agents, if appropriate.

Note: The uninstallation process might not remove the installation directory. Delete the installation directory if it remains after the uninstallation program is complete.

Uninstall IBM Informix Dynamic Server Express for Linux

For detailed information about uninstalling the Informix Dynamic Server, see the Informix Dynamic Server information center at the following Web site:

<http://publib.boulder.ibm.com/infocenter/ids9help/index.jsp>

To uninstall the IBM Informix Dynamic Server from a Linux computer, choose one of the following methods:

- As **root**, run the following command:
`java -jar uninstall_ids/uninstall.jar` This will uninstall in console mode. Follow the prompts to complete the uninstall.
- To uninstall the server in GUI mode, run the following command, as **root**:
`java -jar uninstall_ids/uninstall.jar -gui` Follow the prompts to complete the uninstall.
- To uninstall the server in silent mode, run the following command, as **root**:
`java -jar uninstall_ids/uninstall.jar -silent`

Note: The uninstallation process might not remove the installation directory. Delete the installation directory if it remains after the uninstallation program is complete.

Chapter 4. Planning

Defining a solution for deployment

Begin defining a solution by developing a high-level plan for the main aspects of the solution. You need to familiarize yourself with the deployment wizard graphical user interface provided by Express Runtime to ensure that the presentation is consistent with your vision. For an overview of the interface, refer to (Deploying your solution).

When defining your solution, you should consider how to address the following decisions:

- Choosing software applications
- Arranging the software applications into installation tasks
- Sharing between application variables
- Defining manual tasks for the solution
- Ordering the installation tasks and manual tasks
- Customizing the presentation of the deployment wizard
- Licensing your solution
- Packaging your solution
- Providing user documentation
- Providing customer support

Selecting components for the solution

To create a complete solution, it is necessary to determine the Express Runtime middleware components to include with the applications. Specify the middleware components to be used in the solutions during the installation of Express Runtime. Only the component images of the middleware selected, or JAR files, are loaded onto the development computer. The deployer's computer functions as a staging server. When a solution is deployed to a target computer, the component installations are launched.

As an alternative, solutions can be deployed using CDs. In that situation, the solution is installed and launched locally.

Selecting components and applications for a solution

The Express Runtime components and software applications you develop (hereafter referred to as "applications") are the building blocks of solutions. Complete the following steps, as appropriate, to plan for a solution.

1. Select the specific version and release of each component and application early in the planning process. In addition, consider any manual tasks, customized code, operating system commands, or application data that might be needed to complete the solution.
2. Determine if your solution requires components and applications that run on different operating systems. Express Runtime supports packaging a solution based on multiple operating systems.
3. Consider whether you will need multiple installation images. For example, choosing an application or component that requires different levels of encryption affects the number of wrappers required.

4. Be sure that all software applications and customized code can start from the command line and run without user intervention.
5. Beyond the individual component and application configuration, determine if there is any integration required between applications for the solution to work properly. Based on your knowledge of the components and your software applications, determine if this integration can be performed through application utilities or if you will have to provide customized integration code.
6. After you determine all of the components and applications to include as part of the solution, decide the best order for deploying them. For example, if you have any customized integration code, it should be applied after the applications that it integrates are deployed. See *Planning a solution wrapper* for more information.
7. Identify any post-deployment configuration that you want to provide with the solution. Keep in mind that the user must perform any required post-deployment configuration that the solution does not complete.

Defining installation tasks

The main content of a solution are the installation tasks and the applications those installation tasks include.

Each installation task specifies one or more applications to be installed in that task, named by the file name of the binary application file. You must have access to the binary file for each application that you want to include. In addition, if an installation task contains more than one application, determine the order in which you want them to be installed within that task, and whether or not you want the solution deployment to continue if a particular application installation fails. All software applications that are deployed through the deployment wizard must be defined as part of an installation task.

Defining manual tasks

During the solution deployment, you might want to provide instructions for the user to manually complete before continuing with the next task. This is done using a manual task. Identify any such instructions required by the solution.

Ordering tasks

After the installation tasks and manual tasks have been defined, you must determine the order in which these tasks will be deployed. Some applications might need to be installed before another can be, or a manual task might need to be completed before the next installation task begins. For example, a task might determine if the solution deployment should continue if a component deployment fails.

Specifying shared application variables

You might have related applications in your solution that contain variables which should always hold the same value. For example, if one application contains a product, and another application contains a service pack for that product, you might want the installation paths for the two applications to be the same. To do this, you specify within the solution which variables should share values.

Determine which variables, if any, in your solution should share values.

Planning solution licensing

An important step in creating a solution is determining the kind of license that best suits the solution. Consult expert legal counsel for advice on your solution's licensing requirements. These requirements are based on the legal requirements of all components contained in your solution, including Express Runtime. The licensing you develop for your solution affects a solution in areas such as packaging, pricing and support. If license text is specified in the solution, the license text is displayed at deployment time. The user must select "Agree" for deployment to start.

Planning solution packaging

When planning for solution packaging, determine how to package the solution product media. Some solution packaging options supported by Express Runtime include repackaging the product media with any custom code as the solution media, or packaging the solution with custom code and no product media. When choosing what to package consider the size of the resulting solution package versus the convenience to the customer. Including product media increases the size but avoids the need for the customer to obtain the media independently. The end-user must then obtain the media through other channels. You can also package prebuilt images of applications as part of a solution so the end-user does not have to create deployment packages during deployment.

Planning solution deployment

You might want to use the deployment wizard to deploy a solution without installing any of the Express Runtime components to a staging server. Express Runtime includes the solution launcher specifically for this scenario. The solution launcher starts the deployment wizard on a computer that acts as your staging server and removes all components of Express Runtime when deployment is complete.

You can customize the deployment wizard interface. You can define the titles, icons, the splash screen, and product information to reflect information about you as a solution provider. This helps you maintain consistent market branding in solution presentations.

When planning changes to the deployment wizard interface, be sure to consider the languages you want Express Runtime to support.

What is a wrapper?

The Express Runtime InfoCenter uses the term wrapper frequently. A wrapper is an Express Runtime developer project that refers to an XML file that defines the way an application or solution is installed and configured on the target computer. An application wrapper helps to install an application on a target computer silently, and does so with exposing the least possible amount of variables to the user. There is an application wrapper provided for each item of middleware that is shipped with Express Runtime. An overview of each of the specific application wrappers that are shipped with Express Runtime is provided in the reference section of the Express Runtime InfoCenter.

A solution wrapper includes one or more application wrappers. You can use solution wrappers to define the way a solution is installed and configured, and include multiple items of middleware and custom applications to target computers. Express Runtime provides several solution wrappers, such as a solution wrapper to

install all of the middleware that is shipped with Express Runtime, and a sample solution wrapper that provides a typical solution that incorporates a custom application and middleware.

Creating and using wrappers

The Express Runtime developer gives you the framework to develop a complete solution for the end user, including integrated installation and configuration. A complete solution includes middleware components provided with Express Runtime and applications you create for the customer. The solution is contained in a wrapper, which contains individual application wrappers.

For more information on wrappers, refer to the “What is a wrapper?” on page 69 of the Express Runtime InfoCenter.

An *application wrapper* contains an XML file defining the application, several language-specific XML files for globalization purposes, and any scripts or Java programs necessary to begin and configure the installation of the application. A *solution wrapper* is made up of one or more of these application wrappers.

The Express Runtime developer offers a custom editor to help you create wrappers that enable each application to be part of a single solution.

Express Runtime provides sample application wrappers and the wrappers for the IBM middleware components that ship with the product. You can obtain wrappers to create a solution in several ways:

- Copy Express Runtime’s sample application wrapper and edit the copy so that you can use it with your own application. You can also make modifications based on information contained in white papers posted on the Virtual Innovation Center at www.expressenablement.com.
- Create new application wrappers “from scratch.”
- Use the IBM middleware component wrappers supplied in Express Runtime.

When the development of your application wrappers is complete, you can use the Express Runtime developer to prepare a solution for deployment. The Express Runtime developer assembles all the wrappers, including the middleware components and your applications, into deployable packages. These packages include JAR files that contain the application installation images, user program Java classes, and any script files necessary to install your solution. You then use the deployment wizard to deploy the solution.

Supplied sample solution wrappers

IBM Express Runtime ships with four sample solutions. You can modify these solutions using the Express Runtime developer and deploy them as needed using the deployment wizard. For information about modifying the solutions, see [Modifying an existing solution wrapper](#).

The following list provides the names of the sample solutions and information about the components each solution contains. The solution ID is noted in parentheses next to the solution name. Click the solution name to learn more about deploying each solution.

- IBM Express Runtime 2.1.1 Middleware (IRU2_1_1MiddlewareAll.ser)
This solution includes all of the Express Runtime middleware components for all supported platforms.

- IBM Express Runtime 2.1.1 Sample Solution (IRU2_1_1SampleSolution.ser)
This solution includes all of the Express Runtime middleware components and the sample application for all supported platforms.
- IBM Express Runtime 2.1.1 Sample for Linux (IRU2_1_1SampleSolutionLnx.ser)
This solution includes the Express Runtime middleware components and sample application for Linux platforms only.
- IBM Express Runtime 2.1.1 Sample for Windows (IRU2_1_1SampleSolutionWin.ser)
This solution includes the Express Runtime middleware components and sample application for Windows platforms only.

Supplied application wrappers

When building your solution with the Express Runtime developer, you can create your own application wrappers or choose from the list of application wrappers included in Express Runtime. The following is a list of the application wrappers that are available. The unique application ID for each wrapper is listed in parentheses next to the name of the application.

- Sample application for Windows (IRU2_1SampleWin)
- Sample application for Linux (IRU2_1SampleLnx)
- Sample application for OS/400 (i5/OS) (IRU2_1SampleI5OS)
- IBM DB2 Universal Database Express Edition Version 8.2 for Windows (IRU2_1_1DB2Express8_2Win)
- IBM DB2 Universal Database Express Edition Version 8.2 for Linux (IRU2_1_1DB2Express8_2Lnx)
- IBM DB2 Universal Database Express Edition Version 8.2 for Linux on POWER (IRU2_1_1DB2Express8_2LnxOnPwr)
- IBM WebSphere Application Server-Express for Windows (IRU2_1_1WASExpress6_0Win)
- IBM WebSphere Application Server-Express for Linux (IRU2_1_1WASExpress6_0Lnx)
- IBM WebSphere Application Server-Express for Linux on POWER (IRU2_1_1WASExpress6_0LnxOnPwr)
- IBM WebSphere Application Server-Express for i5/OS (OS/400) installation (IRU2_1_1WasExpress6_0I5OS)
- IBM WebSphere Application Server-Express for i5/OS (OS/400) configuration (IRU2_1_1WASConfigI5OS)
- IBM HTTP Server 6.0.2 for Windows (IRU2_1_1IHS6_0Win)
- IBM HTTP Server 6.0.2 for Linux (IRU2_1_1IHS6_0Lnx)
- IBM HTTP Server 6.0.2 for Linux on POWER (IRU2_1_1IHS6_0LnxOnPwr)
- IBM HTTP Server for i5/OS (OS/400) installation, V5R2 (IRU2_1IHS520OS400)
- IBM HTTP Server for i5/OS (OS/400) installation, V5R3 (IRU2_1IHS530I5OS)
- IBM HTTP Server for i5/OS (OS/400) configuration (IRU2_1IHSCConfigI5OS)
- Web server plug-in for IBM WebSphere Application Server - Express 6.0.2 for Windows (IRU2_1_1WebServerPluginForWAS6_0Win)
- Web server plug-in for IBM WebSphere Application Server - Express 6.0.2 for Linux (IRU2_1_1WebServerPluginForWAS6_0Lnx)
- Web server plug-in for IBM WebSphere Application Server - Express 6.0.2 for Linux on POWER (IRU2_1_1WebServerPluginForWAS6_0LnxOnPwr)
- Integrated Solutions Console for Windows (IRU2_1_1ConsoleWin)

- Integrated Solutions Console for Linux (IRU2_1_1ConsoleLnx)
- Integrated Solutions Console on Linux on POWER (IRU2_1_1ConsoleLnxOnPwr)
- Console Management Extension for IBM DB2 Universal Database Express Edition Version 8.2 for Windows
- Console Management Extension for IBM DB2 Universal Database Express Edition Version 8.2 for Linux
- Console Management Extension for IBM DB2 Universal Database Express Edition Version 8.2 for Linux on POWER
- Console Management Extension for IBM HTTP Server for Windows (IRU2_1_1IHSMgmtExt6_0Win)
- Console Management Extension for IBM HTTP Server for Linux (IRU2_1_1IHSMgmtExt6_0Lnx)
- Console Management Extension for IBM HTTP Server for Linux on POWER (IRU2_1_1IHSMgmtExt6_0LnxOnPwr)
- Console Management Extension for WebSphere Application Server - Express for Windows
- Console Management Extension for WebSphere Application Server - Express for Linux
- Console Management Extension for WebSphere Application Server - Express for Linux on POWER
- Console Management Extension for WebSphere Application Server - Express for i5/OS (OS/400)
- Application Development Toolkit wrapper for IBM DB2 Universal Database Express Edition Version 8.2 for Windows (IRU2_1_1DB2ExpressDev8_2Win)
- Application Development Toolkit wrapper for IBM DB2 Universal Database Express Edition Version 8.2 for Linux (IRU2_1_1DB2ExpressDev8_2Lnx)
- Application Development Toolkit wrapper for IBM DB2 Universal Database Express Edition Version 8.2 for Linux on POWER (IRU2_1_1DB2ExpressDev8_2LnxOnPwr)
- Application Development Toolkit wrapper IBM WebSphere Application Server-Express for Windows (IRU2_1_1WASExpressDev6_0Win)
- Application Development Toolkit wrapper IBM WebSphere Application Server-Express for Linux (IRU2_1_1WASExpressDev6_0Lnx)
- Application Development Toolkit wrapper IBM WebSphere Application Server-Express for Linux on POWER (IRU2_1_1WASExpressDev6_0LnxOnPwr)
- Application Development Toolkit wrapper IBM WebSphere Application Server-Express for i5/OS (OS/400) (IRU2_1_1WasExpressDev6_0I5OS)

Planning an application wrapper

Applications are the building blocks of a solution file, and the application wrapper prepares them to be included in a solution file. When planning application wrappers, perform the following tasks:

- Choose a unique application ID.
- Gather general application information.
- Identify the operating systems the application supports.
- Decide the language translations you support.
- Determine the steps required to install the application and the steps required when the installation is complete. Consider how post-installation configuration can be automated or how you can instruct the user to complete required configuration steps using manual tasks.

- Determine the steps to perform prior to installing the application. Consider checking for prerequisites or if the application is already installed. Identify conditions that would prevent a successful install. A Predeployment Checker user program is used to perform these checks prior to install. The Predeployment Checker is run before the install image for the application is sent to the target computer and unpacked. An Entry program can also be used to perform steps prior to installation. An Entry program is run after the install image is unpacked, therefore the Entry program has access to the install image.
- Determine the steps required to install the application. A Main program is used to install the application.
- Determine the steps required when the installation is complete. Consider how post-installation configuration can be automated. Automated post-install tasks can be performed in a Main or an Exit user program.
- Identify the manual tasks the user must perform.
- Identify any variables that you want to use.
- Determine any other files needed to perform deployment.
- Determine the files you put into the install image for the application.
- Identify the main program.
- Identify any variables that you want to use.
- Identify any other files needed to perform deployment.
- Determine if any user programs are needed.

Consider deploying the IBM middleware components you require to a development system using one of the supplied solutions. You can then manually install your application, paying close attention to the configuration steps that you need to perform to complete the installation. Knowledge of the configuration steps is helpful for gathering the information listed above and for defining manual tasks that the end-user needs to perform. When you can manually install and run an application successfully on a target computer, you can rule out errors in the application's installation program as something that could cause the unsuccessful deployment of a solution.

Planning a solution wrapper

When you finish planning the application wrappers for the solution, you can plan the solution wrapper. Planning the solution wrapper is similar to planning application wrappers, but it introduces a different set of issues. As part of your planning, perform the following tasks:

- Select a unique solution ID.
- Gather general solution information.
- Identify the installation tasks and the applications included in each installation task.
- Identify sharing between application variables.
- Identify any manual tasks to include in the solution.
- Order the installation tasks and manual tasks in the solution.
- Decide which language translations to support.
- Determine whether to put the tasks into groups to help navigate through the components of a solution.

Chapter 5. Using the Express Runtime developer

Environment setup

This section provides information about the set up and configuration of the Express Runtime developer.

Express Runtime developer perspective

Use the Express Runtime developer to edit application and solution files. The Express Runtime developer provides editors that help you to supply information that applications and solutions use when you deploy them to end users.

To open the Express Runtime developer on Windows, select **Start > Programs > IBM Express Runtime 2.1 > Express Runtime developer**.

To open the Express Runtime on Linux, select **Main Menu > IBM Express Runtime 2.1 > Express Runtime developer**.

When you start the Express Runtime developer, a welcome page is displayed that offers you links to helpful resources. To work with the Express Runtime developer, close the welcome page.

The Express Runtime developer provides an Eclipse perspective that consists of the following views:

- Express Runtime Explorer
- Navigator
- Package Explorer
- Properties
- Tasks
- Problems
- Console

The following list provides an overview of each of the Express Runtime developer views:

Express Runtime Explorer

Projects are grouped into categories you name for easier navigation.

Navigator

For viewing and operating on the contents of the bin output folder. Also helpful for viewing the non-Java resources in your projects.

Package Explorer

Standard usage as with plain Java projects.

Properties

If an element with additional attributes is selected in another view or in a specialized editor, the attribute information is displayed in the Properties view.

Tasks Standard usage as with plain Java projects.

Problems

If errors are detected while building Java programs, or while working with wrapper files, they are displayed in this view.

Console

Displays messages from solution and application generators. The Express Runtime developer console is not the same as the Express Runtime console.

Eclipse preferences

The Eclipse environment offers the ability to modify some of its preferences.

Java Compiler preferences

The Express Runtime developer automatically modifies the setting that excludes certain types of resources from being copied to the output folder. This setting is available from Java > Compiler preferences, on the "Build Path" tab. The Express Runtime developer adds *.xml, and *.sxml, to the current setting. You can manually add other resource types to this filter setting.

Certain Eclipse-based products modify a standard Eclipse preference setting, causing a conflict with Express Runtime developer requirements. Open the Java > Compiler preference page, click the "Build Path" tab, and ensure the **Enable use of exclusion patterns in source folders** check box is selected.

IBM JRE 1.4.2.1

Ensure that the Eclipse environment has been configured to use IBM JRE 1.4.2.1. To use the IBM JRE, you can modify the path that the -vm argument of the invocation for the JRE uses. The correct invocation should be as in the following example:

```
<path to eclipse>\eclipse.exe -configuration "<runtime installation directory>SolutionEnabler\eclipseSupport\eclipse\configuration" -data "<path to workspace>" -vm "<runtime installation directory>SolutionEnabler\DJTJRE\bin\javaw.exe" -vmargs -Xj9
```

This is only necessary if you have installed a different Eclipse environment than the one provided with Express Runtime.

Workbench file association preferences

This setting is available from Workbench > File Associations. Use this preference setting to associate a file type with one or more editors. Associate file type *.xml with your preferred XML editor if the Eclipse-based product you use does not include an XML editor. To manually add workbench file associations, perform the following steps:

1. Select **Window > Preferences**.
2. Select **Workbench > File Associations**.
3. Click **Add** for File types. Enter the file type that you want to add.
4. Repeat step 3 to add additional file types.
5. Select the newly added file types. Click **Add** for Associated editors. Select an editor, and click **OK**.

Workbench editors preference

This section contains information regarding file encoding, as it relates to the XML wrapper translation files.

The following are recommendations for those who use Eclipse's integrated text editor to edit:

- Set the global text file encoding preference Workbench > Editors to "UTF-8".
- If an encoding other than UTF-8 is required, set the encoding on the individual file rather than using the global preference setting. To do this use the File > Properties > Info menu selection to set the encoding on an individual file.

If you set the global encoding preference to an alternate encoding, attempts to use the text editor could result in an error. Using UTF-16 as an example, the text editor window might display the following:

Character Encoding Problems

This file is unreadable using the "UTF-16" character encoding.

If you insert characters from an extended character set into a wrapper file using the text editor, but have not set the text file encoding appropriately, you might encounter an error when you build your wrapper files. For example, if you inserted extended characters from the UTF-8 character set into a wrapper file, but you have not followed the above recommendation to change the global text file encoding to UTF-8, you can encounter one of the following problems:

Application wrapper build failure (console output)

```
IRU06002: A Java exception occurred. (applicationBuilder.log)
java.lang.Exception: java.io.UTFDataFormatException: Invalid byte
x of y-byte UTF-8 sequence.
```

Solution wrapper build failure (error dialog popup)

The solution failed to build. Reason: invalid byte x of y-byte UTF-8 sequence.

For a list of the supported encoding, see "Supported Encodings" on the Java Web site.

Express Runtime developer projects

An Express Runtime developer project is a construct based on the Eclipse Platform Integrated Development Environment. Structure and function follow standard Eclipse Platform guidelines.

Certain default resources are placed in the project to assist you, the Express Runtime developer. Also, certain tools, views, wizards, and menu selections are made available that are specific to solution development.

You can create two types of Express Runtime projects:

- An application project
- A solution project

An Express Runtime application project provides a specific project folder structure, populated with a basic application .axml file and an empty translation .xml file. Complete the application definition by specifying information in the application .axml file and adding resources, such as user programs, to the project.

An Express Runtime solution project provides a specific project folder structure, populated with a basic solution .sxml file and an empty translation .xml file. Complete the solution definition by specifying information and adding tasks to the solution, and adding resources, such as graphics, readme files, license files, and documentation to the project.

Application project structure

The application project must contain certain resources.

An application project contains a minimum of the following resources:

```
<PROJECT_ROOT>/
  externalSupportJars/
  src/<applicationID>
    userPrograms/ (empty - for Express Runtime developer use)
  <appWrapperFilename>.sxml
    <appWrapperFilename>_<language>.xml (based on user input during project creation)
    logs/
  bin/ (empty until a build is performed)
```

Often, an application requires a response file. It is recommended that you add such a resource in the application project's <applicationID> folder.

Solution project structure

A solution project contains, at a minimum, the following resources:

```
<PROJECT_ROOT>/
  externalSupportJars/
  src/
    graphics/ (empty - for Express Runtime developer use)
    <solWrapperFilename>.sxml
    <solWrapperFilename>_<language>.xml (based on user input during project creation)
  bin/ (empty until a build is performed)
  info/ (Solution documentation should be placed under this folder)
    /de/
    /en/
    /es/
    ...
  license/
    /de/
    /en/
    /es/
    ...
  readme/
    /de/
    /en/
    /es/
    ...
  tasks/ (task files for this solution should be placed in this folder)
```

Organizing projects into categories

You can create personalized categories in order to better organize your application and solution projects. By moving projects into categories, you easily see all the projects in one place. Instead of scrolling through all the IBM middleware component projects and your own projects, move the ones you use most into a new category you customize.

Once you create a category, you can delete it, move it, rename it, or drag-and-drop projects and subcategories into or out of it.

Creating a new category

Categories enable you to customize the organization of application and solution projects. Complete the following steps to create each new category:

1. To launch the New Category wizard, right-click any category in the Express Runtime Explorer view and select **Create category**, or click the button next to the Express Runtime Explorer tab.
2. Click the parent category you want this new category to be under and type the name of the new category. If you want the new category to be a top-level category, select **Express Runtime Explorer** as the parent category.
3. Click **Finish** to create the new category with no contents. Or, click **Next** to specify the contents of the new category.
4. When the window is displayed prompting for the contents of the new category, click the boxes beside the categories and projects you want contained in the new category. Or click **Select all** if you want checks beside all the projects and categories. Or click **Deselect all** if you want to remove checks beside all the projects and categories. If you select a category to be contained in the new category, all the contents of the subcategory maintain the same content structure under the new category.
5. Click **Finish** to create the new category with the contents you specified.

Deleting a category

If a category contains applications or solutions, the category is a property of those projects. If you delete the category, you also delete its contained projects. You can delete a category and its contents from the file system, or you can delete it only from the workspace. If you delete the category and its contents from the workspace, you can later re-import them back into the workspace.

To delete a category that contains applications or solutions in the category, complete the following steps:

1. Right-click the category you want to delete, and click **Delete**.
2. Click **Also delete the contents...** to delete the category and its contained projects completely from the file system. Or, click **Do not delete contents** to delete the category and its contained projects only from the workspace. If you specify Do not delete contents, you can later re-import the category and its contents to the workspace, if needed.
3. Click **Yes**. The category and its contained projects are no longer displayed in the Express Runtime Explorer view.

To delete a category that does not contain any projects, complete the following steps:

1. Right-click the category you want to delete, and click **Delete**. You are prompted to confirm that you want to delete the category.
2. Click **Yes**. The category and its empty subcategories are deleted.

Moving a category

You can move a category by dragging and dropping the category to a new location in the Express Runtime Explorer view. The following items apply to moving categories:

- To move a category to be a subcategory, drag the category on top of the desired parent category until that parent category is highlighted and drop it.

- To move a category to the highest level, drag the category to slightly above another top-level category until a solid black line appears and drop it.
- The categories are alphabetized within each parent category, so you cannot change the order of the subcategories.
- If you put a subcategory into a parent category that already contains a subcategory with the same name, you are prompted to merge the categories.
- If you put a subcategory under its existing parent category, you are prompted to merge the categories.

Renaming a category

In the Express Runtime Explorer view, you can change the name of a category at any time. To change rename a category, complete the following steps:

1. Right-click the category you want to rename, and click **Rename**. The original category name is highlighted and becomes editable in the Express Runtime Explorer view.
2. Type over the original category name with the new category name, and press **Enter**. The new category name is now displayed.

Moving projects into a category

You can move application and solution projects into a category by dragging and dropping the project to a new location in the Express Runtime Explorer view. The following items apply to moving projects into categories:

- Subcategories are alphabetized within categories. Projects are alphabetized within each category. All subcategories are listed before any of the projects. You cannot otherwise control the order of the projects.
- If you try to move a project into the category that already contains it, the project does not move.
- To uncategorize a project, or to have a project appear at the top level, drag the project to slightly above a category until a solid black line appears and drop it.

Editors

Express Runtime contains the Express Runtime developer, which is an Eclipse-based plug-in that provides an integrated development environment for developing application and solution wrappers. With the Express Runtime developer you can organize your application and solution files in a standard Eclipse workbench project structure. The Express Runtime developer provides a graphical user interface to create and generate the wrappers into deployable binary files. For more information about Eclipse, visit (www.eclipse.org).

After you have developed a set of application wrappers, you can develop a solution wrapper to group a specific set of applications, along with the solution configuration. The application wrappers you develop can be included in multiple solutions.

After defining a solution wrapper, you use the Express Runtime developer to generate a binary solution file. The binary solution file is the input that you provide to the deployment wizard to perform the actual deployment of the solution.

You can use the Express Runtime cheat sheets, which are part of the Express Runtime developer, to help guide you through common tasks. To access the cheat

sheets, click **Help > Cheat sheets...** from the Express Runtime developer. Or you can access the cheat sheets from the welcome pages.

Using the application editor

The application editor provides a way to create and edit application wrappers without having to hand-code the XML source. The editor contains the following pages:

General

Configure general information about the application, including supported translation languages and operating systems.

Programs

Add and edit user programs that run when you deploy the application.

Variables

Define variables that the end-user can configure from the deployment wizard.

Files List the files that are needed to deploy this application or any external JAR files that your user programs need in their classpaths.

Source

Helps you to edit the application wrapper XML source directly.

Creating an application wrapper

In the planning process for creating an application wrapper, identify the tasks necessary during implementation:

- Define the application ID.
- Define the general application information.
- Define the main deployment program, along with any other user programs needed.
- Define variables for any configuration parameters.
- Specify the names of all files required to run the application's user programs.

After the planning phase for the application wrapper, implementation can begin. To begin developing an application wrapper with the Express Runtime developer, click **Start > Programs > Express Runtime 2.1 > Express Runtime developer** on Windows, or **Main Menu > Express Runtime 2.1 > Express Runtime developer** on Linux.

When the application wrapper is created, the next step is to generate a binary application from the application wrapper.

Creating an application project: To create an Express Runtime application project, perform the following steps:

1. From the Express Runtime developer perspective, click **File > New > Express Runtime Application Project**.
2. Type the project name. Click **Next**.
3. Type a version number and estimated installation time for the application.
4. Select the default language and operating system for the application.
5. Click **Finish** to generate the application project.

The project includes the standard folder structure, including the externalSupportJars folders populated with all default resources. It also includes a basic application .axml file that is created in the src/<applicationID> folder.

Notice that there is a warning icon on the Programs tab. Before a new application can be generated successfully, you must enter additional information on the Programs page. See **Using the Express Runtime developer > Editors > Using the application editor > Creating an application wrapper > Providing user programs information** in the Express Runtime InfoCenter for more information.

Providing general application information: When a new application project is created, the application XML file is displayed in the application editor of Express Runtime developer. You can customize the application project by providing information to the editor. To start the editor, select **Start > Programs > IBM Express Runtime 2.1 > Express Runtime developer** on Windows, or **Main Menu > IBM Express Runtime 2.1 > Express Runtime developer** on Linux. You can create a new application project, or work with an existing application project. To work with an existing application project, double-click the project you want to work with in the Express Runtime Explorer view.

To provide general application information to the editor, perform the following steps:

1. Click the **General** tab.
2. The application name, application ID, version number, operating systems and default language provided during the project creation are displayed on this tab. An asterisk denotes a required field in the editor. The following information is optional:

Installation time (minutes)

Displays the estimated time and progress information that is required to install the application. The default is 5 minutes. Note that each user program in an application has a default timeout of 90 minutes. If the total installation time is greater than 90 minutes, modify the timeout value for your main program to allow enough time for your application to install. If you are using a predeployment checker, entry program, or exit program that exceeds 90 minutes to install, you should also adjust its timeout value. To change the timeout value of a user program, see **Providing user programs information > Specifying advanced user program configuration**.

Provider name

The display name for the application provider. For example, *My Company*.

License text

Contains the text for the application license. The license is displayed in the Application Properties License Acceptance window. If license text is also specified in the solution XML file, the application license text is not displayed.

Deployment package protected

Used to prevent regeneration of the deployment package.

Deployment package name

Determines the name of the deployment package .jar file. If nothing is specified, the application ID is used.

Configuration instructions

Provides the text that is displayed in the application deployment parameters panel which describes, in general terms, what the user is to do. For example, "Provide the following information."

3. Save the application wrapper.

Configuring translation languages: Select the translation languages that you want to provide for the application wrapper. For every language that you select, you must provide an XML file that provides translated strings for that language. The following table shows the languages that you can select to use in an application wrapper, and the corresponding XML file names that you need to provide for each language that you use. The XML file name depends on the file name of the application wrapper. The following file names are based on an application wrapper file name of application.xml

Table 11.

Language	XML file name
Brazilian Portuguese	application_brazilianportuguese.xml
English	application_english.xml
French	application_french.xml
German	application_german.xml
Italian	application_italian.xml
Japanese	application_japanese.xml
Korean	application_korean.xml
Simplified Chinese	application_simplifiedchinese.xml
Spanish	application_spanish.xml
Traditional Chinese	application_traditionalchinese.xml

To specify the languages you want to use for an application wrapper, perform the following steps:

1. Open the Express Runtime developer. Create a new application project, or open an existing application project.
2. Click the General tab of the application editor.
3. Select a default language for the application wrapper.
4. Select the check boxes that correspond with the languages you want to use for the application wrapper.
5. For each language selected, create a corresponding XML file from the table above.

For more information about the behavior of wrapper translation, and the steps necessary to use the translation mechanism, refer to “Enabling an application wrapper for globalization” on page 96.

Configuring operating systems: You can specify the operating systems that the application runs on. Choose from the following operating systems:

- AIX
- Linux
- Linux on POWER
- OS/400 (i5/OS)
- Windows

To select one or more operating systems that the application runs on, perform the following steps:

1. Open the Express Runtime developer. Create a new application project, or open an existing application wrapper.

2. Click the General tab of the application editor.
3. Select the check boxes that correspond with the operating systems your application supports.

Click **Select All** to select all of the available operating systems, or click **Deselect all** to clear all the selections you have made.

If any of your application's user programs are custom programs, or InstallShield executables, it is likely that your application supports only one operating system.

Providing user programs information: User programs run during the application deployment to perform the main installation, and pre- or post-installation operations. A user program can be a Java program, a stand-alone executable, or a script, but it must be able to run silently. A main user program is required in an application wrapper. Other user programs, such as a predeployment checker, an entry program, and an exit program, can be included in an application wrapper.

The support framework APIs are shipped with the media for your reference to help you write user programs. You can access these APIs from the `..\SolutionEnabler\Support_Framework` directory by opening `index.html`.

Predeployment checker

Before an entry, exit, or main program is run, the application's deployment package must be transferred to the target computer. A predeployment checker runs before the application entry, main and exit programs, and before the deployment package is transferred to the target computer. It can ensure that the target computer is ready for the deployment. For example, a predeployment checker might ensure the following criteria are met:

- Adequate disk space is available on the target computer.
- System requirements are sufficient.
- There is no conflicting software.
- No previous version of the application exists.

When the predeployment checker exits, it returns one of the following return codes:

- **0** indicates that the application deployment should continue.
- **1** indicates that the application deployment should be skipped because the application is already installed or the application does not apply. The deployment wizard continues to the next application.
- **A negative value** indicates that the application cannot be deployed because of a fatal error, ending the deployment.

Entry program

Entry programs are typically used to perform pre-configuration or setup required before the main installation program runs.

Main program

The main user program is the installation program that is run on the target computer. Any type of installation program is acceptable as a main program if it can be invoked from a command-line and run silently. A main program is required for every application. If there is no main program specified in an application, a

warning icon is displayed and the application will not be able to be generated.

Exit program

Exit programs are typically used for post-configuration or cleanup required following the product installation. Exit programs can also be used to determine if a main installation program installed successfully.

Note: The return code values for all predeployment checkers, entry, exit, and main programs running on Linux or OS/400 (i5/OS)⁵ platforms must be between -128 and +127.

Specifying basic user program configuration: Specify basic information about a user program by performing the following steps:

1. Open the Express Runtime developer. Create a new application project, or open an existing application project.
2. Click the Programs tab of the application editor.
3. Select an existing user program from the tabs across the top to edit, or click the **Enable program** checkbox to add a new user program.
4. Select a program type. The main user program is the installation program that is run on the target computer. Any type of installation program is acceptable as a main program if it can be invoked from a command-line and run silently. A main program is required for every application. The following types of programs are available:

Custom program

Use to run a custom script, executable, or system command.

InstallShield executable

Use to run an InstallShield installation.

Java program

Use to run a Java program from a .class file.

5. Specify a program name. If you have already specified the files needed to run this user program, and you know the name of the program, type it directly into the **Program** field. Alternatively, you can click **Set...** to use the Set Program wizard.

Using the Set Program wizard

To use the Set Program wizard to add user programs, or configure existing user programs, perform the following steps:

1. Click the **Enable program** checkbox. The wizard is displayed and prompts you to select a type of user program that you want to add. Select a type of user program, and click **Next**. If you are configuring an existing user program, select **Set...** beside the **Program** field. Verify that the program type as displayed in the wizard is correct. Click **Next**.
2. Specify any software image files needed to run the user program on the **Add software image files** page.
3. Click **Next**. A list of detected files (or classes, in the case of Java programs) is provided on the last panel of the wizard. If the program you want this user program to run is not displayed in the list, ensure that you have added the

5. The OS/400 operating system is known as the i5/OS operating system beginning with V5R3.

program files correctly (as explained in step 2). After you specify a valid main program, the informational exclamation mark icon is no longer displayed.

Specifying custom program options: Custom programs and Java programs support additional options that are unique to these types of user programs, and are not required by other program types. You can use the following additional options:

Custom programs

Identify custom programs that use the shell interpreter of the operating system to run the program by selecting **System command** in the Custom program options section. For example, the command "ping" would be a system command since it is located in the system path, and not provided to the target computer by the application. If you provide a "ping" executable (by including it in the application project or listing it in the software image files list), **System command** should not be checked.

Specifying Java program options: Custom programs and Java programs allow additional options that are unique to these types of user programs, and are not required by other program types. You can use the following additional options:

Java programs

Provide the classpath of any additional resources a Java program uses in the Java Program options section.

Specifying advanced user program configuration: Provide advanced configuration information for a user program by performing the following steps:

1. Open the Express Runtime developer. Create a new application project, or open an existing application project.
2. Click the Programs tab of the application editor.
3. Select an existing user program from the tabs across the top to edit, or click the **Enable program** checkbox to add a new user program.
4. After providing the required Basic Program Configuration information, expand the Advanced Program Configuration information section and provide the following information as needed:

Wait for completion

Set by default, deployment of the next program does not begin until this program has completed. If set to false, the success type for the user program must be "Assume Success". This option must be set as true for predeployment checkers.

Program reboots

Select to indicate that the user program reboots the target computer after it is finished running. If set to true, the success type for the user program must be "Assume Success".

Note: This option is not available for predeployment checkers.

Force reboot

Select to force an automatic reboot of the target computer on successful completion of the user program.

Include Ant

Select to include the Apache Ant 1.6.5 runtime with an application wrapper.

Note: Selecting the Include Ant checkbox causes all the files required for the Ant runtime to be added to the user programs .jar file for

the application. Additionally, this causes the JAVA_HOME environment variable to point to the JRE that is installed with Express Runtime or the IBM Installation Agent. If you want to use a different JRE for this application, you must add a JAVA_HOME environment setting for the application.

To invoke Ant on Windows, you must specify `iru_ant\bin\ant.bat` as the program. To invoke Ant on Linux, i5/OS, or AIX, you must specify `iru/bin/ant` as the program. The program must be defined in the **Basic Program Configuration** section of the **Programs** tab. When you include Ant, and one of the above invocations is used, the `--noconfig` argument is added to the invocation as the first argument. This ensures that the version that is deployed with Express Runtime is used.

Timeout

Specify the number of minutes the deployment wizard waits for a program to complete. If this time limit is exceeded, the program times out, and the deployment wizard indicates failure. The default value is 90 minutes. Be sure to calculate the installation time for each user program when specifying the estimated installation time. To set the estimated installation time for the application, see **Providing general application information** in this InfoCenter.

Environment variables

Specify any environment variables that you want set while the user program runs. You can override environment variables, or specify new ones to be defined. To add an environment variable Click **Add**. Provide a variable name and variable value. Click **Finish**.

Specifying success type and log file search strings: The success type of a user program defines how the deployment wizard determines if it ran successfully. In the Success type section, select a success type and provide any additional required configuration. The following success types are available:

Check return code

Installation is considered successful if a return code of 0 is returned.

Check log file for string

Success is determined by searching the user program's log file for specific strings.

Assume success

Installation is always considered successful.

If you use the success type of **Search log file for string**, you can add a string that the Express Runtime developer searches for to evaluate if the program runs successfully. For example, you can establish a rule that if the log file that is generated by the program contains the word "exception", the program encountered an error when it ran.

To add a search string, perform the following steps:

1. Click **Add**. The Add Log File Search String dialog is displayed.
2. Provide a search string, and select whether the presence of that search string indicates success or failure.
3. Click **Finish**.

To remove a search string, select the search string that you want to remove, and click **Remove**.

Specifying program arguments: In the Arguments field of the Program Arguments section, click **Add** to add program arguments. Program arguments that are available depend on the way the user programs are configured. For example, if the application project does not use variables, variable values cannot be used as program arguments. The following types of arguments are available:

Log file name

Passes the fully-qualified path of the log file to the user program.

Response file name

Passes the fully-qualified path of the response file to the user program. The file name of the response file might be different than the original file name when it is created on the target computer. Always use the response file name argument type instead of entering the response file name directly as a string argument.

String argument

Passes the provided string to the user program.

Variable value

Passes the value of an application variable to the user program.

Select the radio button that corresponds to the type of argument that you use in the Add Arguments dialog. Click **Next**. Provide the string, response file, log file, or variable, and click **Finish**.

By default, arguments are passed to the user program individually. In some cases, multiple arguments need to be grouped together. For example, a user program might require a single argument in the form

```
-installLocation=<PATH>
```

where `-installLocation=` is a simple string argument, and `<PATH>` is a variable for the desired installation path an end user can change.

To combine two arguments into a single argument, perform the following steps:

1. Right-click the first argument.
2. Select Properties from the context menu. The properties dialog is displayed.
3. Set the **Concatenate With Next Argument** property to true.
4. Click **OK**.

User-controlled messages: You can control the messages and icons that appear in the messages table of the deployment wizard. Express Runtime provides an API that facilitates the posting of a user-defined message associated with one of the following four icons:

- Success
- Information
- Warning
- Failure

Note: You cannot use user-controlled messages if a solution from a release earlier than Express Runtime, Version 2.1, is used in the deployment wizard.

The wrapper developer creates the message within the user program. All substitutions and translations are performed before calling the support framework API.

Sending a message between a user program and the IBM Installation Agent is accomplished by storing the message in a serialized message object file. The Express Runtime support framework generates the serialized file. The serialized file name is formed from an ISO time stamp with a ".ser" extension. The serialized file is placed in the logs directory and is deleted when the logs directory is removed. Leaving the serialized file in the logs directory facilitates debugging. The user program creates a message with a call to SupportHelper. All displayed messages are logged in the deployment wizard log (IRU_DeploymentWizard.log).

When an attempt to send a message fails, consult the log files on both the IBM Installation Agent and the deployment wizard. Most often, the error is logged in the IBM Installation Agent log. To debug further, run the IBM Installation Agent with the "-leaveFiles" option. See the IBM Installation Agent documentation for how to run the IBM Installation Agent with options. When the -leaveFiles option is specified, the log directory is not removed at the conclusion of the install. The log directory includes serialized files (.ser) for each attempted message post. The support framework produces the serialized file name from a collapsed time stamp (no spaces, dashes, or colons) appended with an integer value. For example, the following is the name of a serialized file for a message that was posted on March 11, 2004 at 1:55:58 PM; it was the second message posted for this installation session, so the suffix is "2": 200403111355582.ser.

To determine the cause of a message posting problem, consult the log directory for the existence of the appropriate serialized message files. If the file exists, the support framework created a message and attempted to send it. In this case, consult the IBM Installation Agent log file for stack traces of exceptions that the deployment wizard logged. If the file is not there, consult the IBM Installation Agent trace log file for evidence of an incorrect invocation. If the log files do not have error information, and a corresponding serialized file exists, the problem might have occurred on the source computer. Check the logs on the source computer.

User-controlled messages API: The following example shows an informational message in a user program:

```
setMessage("HelloWorld!"); // Create the message
getHelper().log(this); // Log the message to the file
getHelper().postInformationMessageToDeployerUI(this);
// Display the message on the deployment wizard
```

To obtain a translated message from a resource bundle, invoke the following API shown in the following example. In this example, the directory "testsuite" resides in the "unpacked" directory of the target computer. "Unpacked" is the working directory for user programs. The resource bundles with the name "TestSuiteMessagesNls" reside in the testsuite directory and have a package testsuite qualifier at the beginning of their source files.

```
setLocale(getHelper().getDeployerLocale(this));
setMessageResourcePath("testsuite.TestSuiteMessagesNls");
```

To post a translated error message with no substitution parameters, invoke the API as shown in the following example:

```
setKey("Group_User_Create_Failed");
setMessageSubstitutionString(null);
setMessage(getHelper().getTranslatedMessage(this));
getHelper().postErrorMessageToDeployerUI(this);
```

To post a translated warning message with one substitution parameter, invoke the API as shown in the following example:

```

setKey("Missing_Prerequisite");
setMessageSubstitutionString("Tivoli Storage Manager");
setMessage(getHelper().getTranslatedMessage(this));
getHelper().postWarningMessageToDeployerUI(this);

```

To post a translated message with more than one substitution parameter, invoke the API shown in the following example (note the comma delimiter between the two substitution parameters):

```

setKey("Install_Conflict");
setMessageSubstitutionString("HelloWorld, WebSphere Commerce Analyzer");
setMessage(getHelper().getTranslatedMessage(this));
getHelper().postWarningMessageToDeployerUI(this);

```

Support Base API

The following methods from the SupportBase class are used to set the message information.

Table 12.

Method name	Description	Signature
setMessage	Sets the message directly.	public void setMessage (String data)
setMessageResourcePath	Identifies the location of the message resources files. Used in combination with setKey to set the information to look up a translated message.	public void setMessageResourcePath (String path)
setKey	Identifies the key used to look up a translated message. Used in combination with setMessageResourcePath to set the information to look up a translated message.	public void setKey (String data)
setMessageSubstitutionString	Used to set the values of the parameters in the message. Values sent to the setMessageSubstitutionString method are separated by commas.	public void setMessageSubstitutionString (String subs)
setMessageSubstitutionArray	Used to set the values of the parameters in the message. Each element in the array passed to setMessageSubstitutionStringArray is associated with one parameter in the message.	public void setMessageSubstitutionStringArray (String[] subArray)

Support Helper API

The following methods from the SupportHelper class are used to set the message information.

Table 13.

Method name	Description	Signature
getDeployerLocale	Used to retrieve the appropriate translated message based on the values set in the SupportBase class instance.	public Locale getDeployerLocale (SupportBase s)
getTranslatedMessage	Used to retrieve the appropriate translated message based on the values set in the SupportBase class instance.	public String getTranslatedMessage (SupportBase s)
postErrorMessage ToDeployerUI	Posts the message that was set in the SupportBase class instance with the error icon to the detailed messages panel of the deployment wizard.	public void postErrorMessageToDeployerUI (SupportBase s)
postInformationMessage ToDeployerUI	Posts the message that was set in the SupportBase class instance with the information icon to the detailed messages panel of the deployment wizard.	public void postInformationMessageToDeployerUI (SupportBase s)
postSuccessMessage ToDeployerUI	Posts the message that was set in the SupportBase class instance with the success icon to the detailed messages panel of the deployment wizard.	public void postSuccessMessageToDeployerUI (SupportBase s)
postWarningMessage ToDeployerUI	Posts the message that was set in the SupportBase class instance with the warning icon to the detailed messages panel of the deployment wizard.	public void postWarningMessageToDeployerUI (SupportBase s)
postErrorMessage ToDeployerMainUI	Does what the method of the same name without "Main" in it does, except it also shows the message on the main deployment wizard status panel.	public void postErrorMessageToDeployerMainUI (SupportBase s)
postInformationMessage ToDeployerMainUI	Does what the method of the same name without "Main" in it does, except it also shows the message on the main deployment wizard status panel.	public void postInformationMessageToDeployerMainUI (SupportBase s)
postSuccessMessage ToDeployerMainUI	Does what the method of the same name without "Main" in it does, except it also shows the message on the main deployment wizard status panel.	public void postSuccessMessageToDeployerMainUI (SupportBase s)

Table 13. (continued)

Method name	Description	Signature
postWarningMessageToDeployerMainUI	Does what the method of the same name without "Main" in it does, except it also shows the message on the main deployment wizard status panel.	public void postWarningMessageToDeployerMainUI (SupportBase s)

Providing application variable information: Define variables to display configuration parameters to the end user during deployment.

Specifying the variable type: Define variables to display the deployment parameters to the user at deployment. The variables are displayed in the deployment wizard's configuration parameters panel. There are four types of variables:

Boolean variable

To request a true or false value from the user. The field is displayed as **Yes** and **No** radio buttons on the deployment wizard interface.

Drop-down list variable

To request a value from a list of three or more choices shown by clicking an arrow. The field is displayed with either a default value or blank on the deployment wizard interface. A drop-down list displays the list of possible choices when clicked. This type of variable requires variable value configuration.

Password variable

To request data input that masks the entered value for security reasons. It is displayed as an asterisk-masked text field on the deployment wizard interface.

String variable

To request a standard text field for data input. It is displayed as a text field on the deployment wizard interface.

To add a variable, perform the following steps:

1. Click the **Variables** tab.
2. In the Application Variables section, click **Add**.
3. From the Add Variable dialog, select one of the following variable types:
 - Boolean variable
 - Drop-down list variable
 - Password variable
 - String variable
4. Provide a variable name and description. Click **Finish**.

Adding label and help text to an application variable: After a variable is added, you can add or change basic configuration information by performing the following steps:

1. Click the Variables tab.
2. In the Application Variables section, select the variable you want to change. When you select the variable, notice that the fields on the right populate with the variable's information.
3. In the Basic Variable Configuration section, change any of the following fields:

Label text

This field specifies the text that labels an input field on a task's application customization parameters panel in the deployment wizard.

Help text

This optional field specifies help text for the variable. Help text is displayed in a tooltip that is shown when hovering the mouse over an input field, or when Ctrl + F1 is pressed while the cursor is in an input field.

Type

Choose whether this variable is a "Typical Variable" or an "Advanced Variable". In the deployment wizard interface, typical variables are displayed on a separate tab than advanced variables. Expose commonly changed variables (such as installation locations) as typical variables, and rarely changed variables (such as port numbers) as advanced variables. Additionally, assign acceptable default values to advanced variables so the end user is not required to change any value on the advanced configuration tab in the deployment wizard to deploy a solution.

Creating variable associations: After you complete the basic configuration of a variable, configure the variable associations. Variable associations make the variable values available to the user programs by including these values in response files or properties files.

To pass the value of a variable to a user program as an argument, see "Specifying program arguments" on page 88.

To configure variable associations, perform the following steps:

1. In the Variable Associations Configuration section, click **Add**.
2. In the Add Association dialog, select the type of association that you want to add. You can create the following types of associations:

CID response file association

The Configuration, Installation, and Distribution response file format supported by DB2 applications.

ISMP response file association

The response file format for InstallShield MultiPlatform Edition installations.

ISS response file association

The response file format for InstallShield installations.

Properties association

Standard properties file format. Java-based user programs can access the value of a variable through this type of association, using the support framework.

3. Click **Next**
4. Provide the information needed to insert the value of the variable into the file type specified:
 - CID response file association
 - Choose which response file to insert the value of the variable into.
 - Choose the keyword to store the value of the variable under. If the keyword exists in the response file, the value of the variable is substituted for the existing value. Otherwise, the keyword is created at the end of the response file.

- ISMP response file association
 - Choose which response file to insert the value of the variable into.
 - Choose the property key and the property key type to store the value of the variable under. If the property key and the property key type exist in the response file, the value of the variable is substituted for the existing value. Otherwise, the property key and the property key type are created at the end of the response file.
 - ISS response file association
 - Choose which response file to insert the value of the variable into.
 - Choose the response file section to store the value of the variable under. If the section type exists in the response file, the value of the variable is substituted for the existing value. Otherwise, the section is created at the end of the response file.
 - Choose the keyword to store the value of the variable under. If the keyword exists in the response file, the value of the variable is substituted for the existing value. Otherwise, the keyword is created at the end of the specified section.
 - Properties file association
 - Choose the keyword under which to store the value of the variable. The variable's value is stored in a standard Java properties file. Java-based user programs can access the value using the support framework provided with Express Runtime.
5. Click **Finish**.
 6. If the variable you are adding an association to is a Boolean variable and you want different values for the association other than the standard "true" and "false" values, you can configure the `valueIfTrue` and `valueIfFalse` properties of the association. To configure these values, right-click the variable association, select **Properties**, then edit the `valueIfTrue` and `valueIfFalse` properties.

Defining or restricting values for variables: If you want to define or restrict values that end users can enter for variables, or provide a default value for the variable, use the Variable Value Configuration section.

To provide value information for application variables, perform the following steps:

1. Select the **Variables** tab in the application editor.
2. To add or modify validation information for a variable, select the variable in the left pane.
3. In the right pane, you can specify the following information:

Required

If selected, indicates that a value must be entered for this variable. If no default value is provided, the end user needs to enter or select a value before deploying the application. Boolean variables are always required.

Make uppercase

If selected, transforms any value entered for the variable to be uppercase only.

Make lowercase

If selected, transforms any value entered for the variable to be lowercase only.

Default value

Specifies the default value for a variable. Any variable specified here

must comply with any other validation restrictions placed on this variable. For a drop-down list variable, the default must also be displayed in the Options field.

Minimum length

Specifies the minimum number of characters allowed for the value of the variable.

Maximum length

Specifies the maximum number of characters allowed for the value of the variable.

Validator

Browse to a custom program to validate the variable in the deployment wizard. To create a validator program, click on **Validator** and enter the name of your new validator program. Implement the `validate()` method of the new class to perform your custom validation by following the description in the Javadoc documentation of the `validate()` method.

The Java class specified as the validator must exist in the application project. That class can refer to any other Java classes that exist in the application project or in the external support JAR files for the application.

Options

Offers more restrictions or values for the variable. To specify values that are must be part of the value of the variable, create a valid validation rule. To specify values that are not allowed to be part of the value of a variable, create an invalid validation rule. To specify choices for a drop-down variable, create possible selections. You can specify one of the following pieces of information for each validation rule. Not all restrictions are available for all variable types.

Complete string

a sequence of characters that either must match or is not allowed to match the complete variable value

Partial string

a sequence of characters that either must match or is not allowed to match a sequence of characters in the variable value

Prefix a sequence of characters that either must occur or is not allowed to occur at the beginning of the variable value

Suffix a sequence of characters that either must occur or is not allowed to occur at the end of the variable value

Specific characters

a list of characters, where sequence does not matter, that either must occur or is not allowed to occur in the variable value

Range of values

a minimum and maximum numerical value that represents either a valid or invalid range of values for the variable

Drop-down list option

an exact value that a user can select from the drop-down list variable. Create separate options for each possible value in the drop-down list. You must define the default value in the Default value field and in the Options field.

4. Save the application project.

Providing application file information: An application wrapper must list all of the files that need to be transferred to a target computer to run the application successfully during a deployment.

Two categories of files are required:

Software image files

This group of files typically includes the files necessary to run the main application installation. These files are placed in the deployment package, which is transferred to the target computer after the application's predeployment checker determines whether or not the deployment should proceed. You do not need to add the application project files to the software image files list because those files are already included in the deployment package.

External JAR files

Specify any external JAR files an application's user programs require to run. Any external JAR files are automatically added to the classpath of any Java user programs. You do not need to add the support framework JAR files, because those files are already included during the deployment.

After you determine which files your application needs, and which category they should be placed in, perform the following steps to add the files to the application wrapper:

1. Click the **Files** tab.
2. Specify a source directory for your software image files by clicking the **(Click to set)** link in the Software Image Files section. Browse to the root folder used for the source directory, and click **OK**.
3. Click **Add** in the Software Image Files section to add software image files. If you did not already specify a source directory in the previous step, you are prompted to specify one now in order to add software image files. After you set a source directory, the Add Files dialog is displayed. Select the folders and files to add, or click **Add root directory** to include all the folders and files under the source directory. Click **Finish**.
4. Click **Add** in the External JAR Files section to add external JAR files. The Add External JAR Files dialog is displayed. Browse to and select JAR files to add. Click **Add**. Repeat this step for each folder or file you want to add.
5. Save the application project.

Enabling an application wrapper for globalization

There are many strings in application and solution wrappers that are displayed to end users in the deployment wizard interface. These strings can be specified directly in the wrapper files, or they can be placed in translatable XML files. To enable translation for an application or solution wrapper, perform the following steps:

1. Decide which translation languages your application or solution will support, and create the necessary translatable XML files, as described in the topic [Translation Language Configuration](#)
2. Populate the default-language XML file with all the translatable strings for the wrapper, giving each string a meaningful key name. If you have already created a wrapper, you can copy the translatable strings from your wrapper into the default-language XML file. Keys must consist of alphanumeric characters only (no white-space), and must begin with a letter. The following example shows what a default-language XML file for a simple solution might look like.


```

<?xml version="1.0" ?>
<SolutionID>
  <solutionTitle>Solution Title</solutionTitle>
  <task1Details>Details for task #1</task1Details>
  <task1Description>Description for task #1</task1Description>
</SolutionID>

```

3. Using the application or solution editor, replace all the translatable strings with references to their keys in the default-language XML file.
If using the GUI editor, simply enter the key name, prefixed with a percent sign (%).
Following the example, the solution title field would be set to: %solutionTitle
If editing the XML source directly, use the translatedKey attribute. Following the example, the <title> element in the solution wrapper would be specified as:

```
<title translatedKey="solutionTitle" />
```
4. Place the translations of the strings in the default-language XML file in the appropriate language XML files. This step can be performed separately, if translations are not immediately available. If a string does not exist for a particular translation language, the string from the default-language XML file is used.
5. Generate the application or solution wrapper. Any missing translatable strings are detected, and the appropriate error messages are displayed in the console.

Modifying an existing application wrapper

You can modify an existing application wrapper. When you modify an existing application wrapper, you use the application editor to replace values with ones that are appropriate for a new application wrapper.

To modify an existing application wrapper, perform the following steps:

1. Select an existing application project in the Navigator view and press **Ctrl + C** to copy the application wrapper.
2. Press **Ctrl + V** to paste the application project in the Navigator view.
3. Specify a new name for the duplicate application project in the Copy project dialog.
4. Click **OK**.
5. Expand the application project in the Navigator view.
6. Expand the src folder.
7. Double-click the file with the .axml extension. The application editor opens.
8. Select the **General** tab of the application editor.
9. Specify a new ID for the application project.
10. Use the application editor to modify the application project.
11. Save the application project.

The following topics contain more in-depth information about the specific tasks involved in modifying an application wrapper:

- “Providing general application information” on page 82
- “Providing user programs information” on page 84
- “Providing application variable information” on page 92

Using the solution editor

The solution editor provides a way to create and edit solution wrappers without having to hand-code the XML source. The editor contains the following pages:

General

Configure general information about the solution, including supported translation languages.

Tasks Add applications and configure tasks that run when the solution is deployed..

Source

Helps you to edit the solution wrapper XML source directly.

Creating a solution wrapper

You can use Express Runtime to package an application or applications into a solution. This is done with an .xml file that references existing applications and provides additional configuration information. This .xml file is called a solution wrapper.

Creating a solution project: To create an Express Runtime solution project, perform the following steps:

1. From the Express Runtime perspective, click **File > New > Solution Project**.
2. Type a project name. Click **Next**.
3. Type a solution ID and a solution title.
4. Select the default language for the solution.
5. Click **Finish**.

The project includes the standard folder structure, populated with all default resources. It also includes a basic solution .xml file in the src folder.

Providing general solution information: When a new solution project is created, the solution XML file is displayed in the solution editor of Express Runtime developer. You can customize the solution project by providing information to the editor. To start the editor, select **Start > Programs > IBM Express Runtime 2.1 > Express Runtime developer** on Windows, or **Main Menu > IBM Express Runtime 2.1 > Express Runtime developer** on Linux. You can create a new solution project, or work with an existing solution project. To work with an existing solution project, double click the project you want to work with in the Express Runtime Explorer view.

To enter or edit the general solution information, perform the following steps:

1. Select the **General** tab in the right pane of the Express Runtime developer.
2. Enter or modify the following information for the basic solution configuration. Fields designated with an asterisk (*) are required. All other fields are optional.

ID Enter an ID for the solution. This ID must begin with an alphabetic character, be less than 200 characters in length, and consist only of alphanumeric characters, underscores, hyphens, and periods.

Title Enter a descriptive title for the solution. This title is displayed in the title bar of the deployment wizard main window and in the Product Information window.

Version

Enter the version number of the solution.

Task group selection prompt

Enter text to be displayed at the top of the task selection panel in the deployment wizard.

Icon Select an image file to be displayed next to the title of the solution.

Splash screen image

Select an image file to use in the splash screen for the solution. The image is displayed when the solution is opened in the deployment wizard.

3. Specify information for the license. License configuration information can include the following:

License prompt

Enter text to display on the license agreement dialog.

License text

Enter the text of the solution license agreement. The license agreement is displayed when a deployment to a target computer is started. If license text is specified here, license text from the application is not displayed.

4. Specify information for the welcome screen. Welcome screen configuration information can include the following:

Welcome screen image

Select an image file to use in the welcome screen for the solution.

Welcome screen title

Enter a title for the welcome screen.

Welcome screen text

Enter text to be displayed on the welcome screen for the solution.

5. Specify information for the "About" screen. "About" screen configuration information can include the following:

About screen image

Select an image file to use in the About screen for the solution.

About screen text

Provide legal information about the solution in an accessible format.

6. Specify advanced solution configuration. Advanced solution configuration information can include the following:

Deploy only to localhost

Indicate that the solution is deployed only to the computer that is running the solution media (the local computer). In the deployment wizard, the end user is not prompted to specify target computers, and localhost is assumed to be the only target computer.

Disable individual task deployment

Indicate that the end user is not allowed to deploy tasks individually. If selected, the deployment wizard deploys all selected tasks together.

Deployment package path

Enter a location for the deployment packages.

Maximum number of target connections

Enter the maximum number of target computers that can be connected simultaneously with the staging server. The valid range is 1 to 100 target computers.

Maximum number of data connections

Enter the maximum number of active data connections that a staging server can have at one time. The valid range is 1 to 100 data connections.

Data port

Specify the TCP/IP port number the deployment wizard uses to send data such as deployment packages to target computers. If this port number is not available, specify a different port number between 0 to 65535. Note that ports 1 to 1023 are usually reserved for use by other programs such as FTP and Telnet.

Communication port

Specify the TCP/IP port number the deployment wizard uses to communicate with the target computers. If this port number is not available, specify a different port number between 0 to 65535. Note that ports 1 to 1023 are usually reserved for use by other programs such as FTP and Telnet.

7. Specify supported language configuration. Supported language configuration information can include the following:

Default

Select the default language for the solution from the drop-down list. You must select a language in the Languages field for that language to appear in the drop-down list.

Languages

Select each language into which the solution is translated. You cannot deselect a language that you selected for the Default field.

8. Save the solution wrapper.

Adding applications and tasks: A solution defines a list of tasks which are performed at deployment time. You can add the following applications and tasks to solutions.

Applications

Programs that are deployed to the target computers that the end user specifies. Applications are contained in install tasks

Install tasks

Install tasks consist of an application or set of applications to be deployed to one or more target computers. All of the applications in an install task are deployed to all of the target computers the end user specifies for the task. For each install task, you can specify whether it can be deployed to one or multiple target computers. For example, you might want to have a database client application installed to several target computers, and a Web application server and portal server installed to a different target computer. Each of these would be a separate install task, with the database client application task allowed to target multiple computers, and the Web application server and portal server task only allowed to target a single computer. If a solution contains install tasks that are not required for all customers or in all situations, you can specify the tasks as optional so that the customer can decide whether to deploy them or not. All target computers specified in an install task must have the same operating system.

Manual tasks

Manual tasks display instructions that you can customize during deployment of the solution, and wait for the user to indicate the

instructions have been followed. For example, a manual task might instruct the end user to copy a script generated on one system during installation to another system and run that script.

Task groups

Task groups are collections of install tasks and manual tasks. Similar tasks (both install tasks and manual tasks) can be grouped into task groups, if desired. For example, one solution could have three sets of install tasks, each configured for a different target computer operating system. These install tasks could be placed into three task groups, allowing the user to easily select and configure install tasks for a particular operating system. If all of the tasks in a task group are optional, the task group becomes optional.

You can also override hidden variables and configure shared variable values in this section.

Adding applications to solutions: To deploy an application using the deployment wizard, you must first add the application to an install task in a solution. To add an application to an install task, perform the following steps:

1. Select the **Tasks** tab in the solution editor.
2. In the solution tasks section, click **Add**.
3. Select **Application**. Click **Next**.
4. Select the install task you want to add applications to, or specify the information for a new install task..
5. From the list of compatible applications, select the applications you want to add.
6. Click **Finish**.

Use the Properties view to enter optional information about the application. Right-click the application in the editor and select Properties from the context menu. Specify information for the following optional attributes:

stopDeploymentOnFail

Set to true to stop solution deployment if the installation of this particular application fails on a target computer.

deploymentPackagePrompt

You can specify a prompt that is displayed to end users if the deployment package is not available at deployment time.

Reusing Express Runtime applications: When building your solution with the Express Runtime developer, you can create your own application wrappers or choose from the list of application wrappers included in Express Runtime. You can use the following wrappers:

- IBM DB2 Universal Database Express Edition Version 8.2 for Windows
- IBM DB2 Universal Database Express Edition Version 8.2 for Linux
- IBM DB2 Universal Database Express Edition Version 8.2 for Linux on POWER
- IBM WebSphere Application Server-Express for Windows
- IBM WebSphere Application Server-Express for Linux
- IBM WebSphere Application Server-Express for Linux on POWER
- IBM WebSphere Application Server-Express for OS/400 (i5/OS)
- IBM HTTP Server 6.0 for Windows
- IBM HTTP Server 6.0 for Linux

- IBM HTTP Server 6.0 for Linux on POWER
- IBM HTTP Server for OS/400 (i5/OS)
- IBM HTTP Server for OS/400 (i5/OS) configuration
- IBM WebSphere HTTP plug-in for Windows
- IBM WebSphere HTTP plug-in for Linux
- IBM WebSphere HTTP plug-in for Linux on POWER
- Integrated Solutions Console for Linux
- Integrated Solutions Console on Linux on POWER
- Integrated Solutions Console for Windows
- Console Management Extension for IBM DB2 Universal Database Express Edition Version 8.2 for Linux
- Console Management Extension for IBM DB2 Universal Database Express Edition Version 8.2 for Linux on POWER
- Console Management Extension for IBM DB2 Universal Database Express Edition Version 8.2 for Windows
- Console Management Extension for IBM HTTP Server for Linux
- Console Management Extension for IBM HTTP Server for Linux on POWER
- Console Management Extension for IBM HTTP Server for Windows
- Console Management Extension for WebSphere Application Server - Express for i5/OS
- Console management extension for IBM WebSphere Application Server - Express for Linux
- Console management extension for IBM WebSphere Application Server - Express for Linux on IBM POWER
- Console Management Extension for WebSphere Application Server - Express for Windows
- Sample application for Linux
- Sample Application for OS/400 (i5/OS)
- Sample application for Windows

See “Supplied application wrappers” on page 71 for descriptions of the wrappers.

Adding response file variables for middleware applications: Each middleware image that is available for installation with Express Runtime is typically installed using the deployment wizard. An application wrapper defines information about a software image, such as the necessary parameter configuration, files needed, and installation location. By default, the middleware application wrappers that Express Runtime provides are configured to specify parameter values for only the parameters typically used during an installation. Since the application wrappers are only defined for “typical” variables, advanced variables are not displayed in the deployment wizard. In some cases, advanced technical users might need to configure parameters that are not displayed in the deployment wizard. Using Express Runtime, you can easily add these advanced parameters to an application wrapper at deployment time.

To add response file variables for middleware applications, perform the following steps:

1. In the Package Explorer, open the appropriate application wrapper folder by double-clicking the folder icon.
2. Inside the application folder, open the src folder.

3. Inside the src folder, double-click on the package. The package name matches the name of the application wrapper.
4. Inside the package, double-click the file application.xml.
5. Click the **Variables** tab.
6. To add an advanced variable, click **Add** beside the Application Variables list box.
7. Select a variable type from the drop down. The variable type determines how the variable is displayed in the deployment wizard.
 - Boolean variables are displayed as two radio buttons. Boolean variables are used to specify items to have one of two possible values, such as Yes or No.
 - Drop-down list variables are displayed as one box with either a default value or blank on the deployment wizard interface. An arrow to the right of the field displays the list of possible choices when clicked. This type of variable requires advanced variable configuration.
 - Password variables are displayed as text fields where the value the user enters is filled with the '*' character. Use this variable type when privacy of the information is important, such as password fields.
 - String variables are displayed as text fields where the value entered by the user is readable as plain text.
8. Enter a variable name and variable description. Click **Finish**.
9. Select the new variable in the Application Variables list box. To the right of the list box, locate the Variable Associations Configuration list box. Click **Add** to the right of the Variable Associations Configuration list box.
10. Select the appropriate association type for the variable and click **Next**.
11. Specify a keyword under which the variable's value will be stored.
12. Click **Finish**.
13. Save the application project.

Changing the appearance of a variable: All of the variables defined within an application are displayed as editable fields on the configuration parameters panel in the deployment wizard. When an application is added to a solution, variables within the application can be hidden or made read-only for a particular configuration parameters panel.

To change the appearance of variables, perform the following steps:

1. Click the **Tasks** tab in the solution editor.
2. In the Solution Tasks section, expand the install task and select the application that contains variables you want to change.
3. In the Overridden Application Variables section, click **Add** to select the variables to change.

Notes:

- a. If the variables you want to change are already listed, modify them without going through the Override Application Variables wizard. Skip to step 6 on page 104.
 - b. If all the variables defined in the application are already listed, skip to step 6 on page 104.
4. In the Override Application Variables wizard, select the variables you want to change from the checklist. Click **Next**.

Note: If the application project is not available in the workspace, no list of variables is provided. Instead, you must enter the name of the variable you want to change.

5. For each variable selected in step 4 on page 103, you are presented with a wizard page that helps you change the appearance of a variable. Choose the appearance from the list, then click **Next** or **Finish** for each variable. While on this panel you can share the value of the variable with other applications, or modify the default value of the variable. The following options are available for the appearance of a variable:

Editable

This is the default type of variable.

Read-only

Makes the variable read-only, but still visible in the deployment wizard. Read-only variables must have valid default values, since the end-user cannot change their values.

Hidden

Hides the variable in the deployment wizard. Hidden variables must have valid default values, since the end-user cannot change their values.

6. To change the appearance of a variable that is already in the Overridden Application Variables list, right-click on the variable, choose Properties, then set the following properties as desired:
 - hidden
 - readonly
 - sharedAs
 - value

Sharing variables between applications: Sometimes, applications need to access the variable values of another application in the same solution. An example would be a solution which contained DB2 and a DB2 fix pack, in which the fix pack would need to have access to the main DB2 installation location. The solution editor provides a way to “link” or “share” variables between applications. Doing so ensures that any value entered for one application’s variable is stored in any other variables that are shared with it.

To share variables between applications, perform the following steps:

1. Click the **Tasks** tab in the solution editor.
2. In the Solution Tasks section, expand the install task and select the application that contains variables that you want to share.
3. In the Overridden Application Variables section, click **Add** to select the variables to share.

Note: If the variables you want to share are already listed, modify them without going through the Override Application Variables wizard. Skip to step 7 on page 105.

4. In the Override Application Variables wizard, select the variables you want to share from the checklist. Click **Next**.

Note: If the application project is not available in the workspace, no list of variables is provided. Instead, you must enter the name of the variable you want to share.

5. For each variable selected in step 4 on page 104, you see a wizard page that allows you to specify how that variable is shared.
 - a. In the Behavior drop-down list, select Share the value with other variables.
 - b. If you have already shared variables from other applications in the solution, the sharedAs names of those variables are listed in the Shared as drop-down list. Select one of the existing sharedAs names from the list in order to link this value with all other variables with the same sharedAs name. If this is the first application whose variables you are sharing, or you want to share this value with variables that are not listed yet, then type in a unique name to share this variable as.
6. Once you finish configuring each variable, click **Next** or **Finish**.
7. To share a variable that is already in the Overridden Application Variables list, right-click on the variable, choose Properties, then set the sharedAs property as desired.
 - hidden
 - readonly
 - sharedAs
 - value
8. Change the appearance of this variable in the Overridden Application Variables section.
9. Configure any validation for shared variables in the Shared Variable Value Configuration section.

Modifying the default value of a variable: Applications can provide default values for any variables they define. Sometimes, it is necessary to set or override those default values at the solution level, as in the following cases:

- If a solution changes the appearance of a variable to make it hidden or read only, and the variable does not have a valid default value, then the solution must provide a valid default.
- If a solution includes applications that, if deployed with their default values, would not work correctly (for example, the default installation locations would conflict), the solution must override the necessary default values of the variables.

To change the default value of an application variable, perform the following steps:

1. Click the **Tasks** tab in the solution editor.
2. In the Solution Tasks section, expand the install task and select the application that contains variables you want to change.
3. In the Overridden Application Variables section, click **Add** to select the variables to change.

Notes:

- a. If the variables you want to change are already listed, modify them without going through the Override Application Variables wizard. Skip to step 6 on page 106.
 - b. If all variables defined in the application are already listed, skip to step 6 on page 106.
4. In the Override Application Variables wizard, select the variables you want to change from the checklist. Click **Next**.
 5. For each variable selected in step 4, you are presented with a wizard page that helps you to change the default value of that variable. In the Behavior drop down, select Modify the default value, then enter the new default value in the

Default value text field. You can also change the appearance of this variable from this page. Once you have finished setting the default value, click **Next** or **Finish**.

6. To change the default value of a variable that is already in the Overridden Application Variables list, right-click on the variable, choose Properties, then set the following read-only and hidden properties as desired:
 - hidden
 - readonly
 - sharedAs
 - value

Adding install tasks to a solution: Install tasks can be parts of a parent task group.

An install task consists of a set of applications that are to be deployed to one or more target computers. Each of the install tasks in a solution is displayed in the deployment wizard. From the deployment wizard you can select any combination of install tasks for deployment to one or more target computers.

To add an install task to a solution, perform the following steps:

1. Select the **Tasks** tab in the solution editor.
2. In the Solution tasks section, click **Add**.
3. Select **Install task**.
4. Click **Next**.
5. Select a **Parent task group** (if applicable).
6. Enter a **Task description**.
7. Select an **Operating system** for the task.
8. Click **Finish**.

Use the Properties view to specify optional information about the install task. Right-click the task in the editor and choose Properties from the context menu. Specify information for the following optional attributes:

addLocalHost

Set to true to initialize the install task with localhost as the target.

isOptional

Set to true to make the selected task optional.

Note: If the `isOptional` attribute is set to false, `selectedByDefault` is returned as **true**.

oneTargetDeployment

Set to true to restrict deployment of the selected task to only one computer.

selectedByDefault

Set to true to deploy the selected task by default

taskDetails

Enter a text description to display a brief description of the task on the task selection panel of the deployment wizard.

Adding manual tasks to a solution: A manual task is an instruction that is displayed during the deployment of the solution. The user must complete the manual task

before continuing with the solution deployment. For example, a manual task might instruct the user to verify that the user ID specified has the appropriate administrative authority.

To add a manual task to the solution, perform the following steps:

1. Select the **Tasks** tab in the solution editor.
2. In the solution section, Click **Add**.
3. Select **Manual task**. Click **Next**.
4. Select a **Parent task group** (if applicable).
5. Enter a **Task description**.
6. Provide a brief description of the task and the instructions needed to complete it in the **Task instructions** field.
7. Click **Finish**.

Use the Properties view to specify optional information about the manual task. Right-click the task in the editor and choose Properties from the context menu. Specify information for the following optional attributes

isOptional

Set to true to make the selected task optional.

selectedByDefault

Set to true to deploy the selected task by default.

Note: If the `isOptional` attribute is set to false, `selectedByDefault` is returned as **true**.

taskDetails

Enter a text description to display a brief description of the task on the task selection panel of the deployment wizard.

Adding task groups to a solution: A task group is used to group related tasks. The deployment wizard presents the end user with a list of all the task groups in the solution. Users select the tasks to deploy.

To add a task group to a solution, follow these steps:

1. Select the **Tasks** tab in the right pane of solution editor.
2. Click **Add**.
3. Select **Task group**. Click **Next**.
4. Enter a **Task group title**.
5. Enter a **Task group prompt**. This prompt is displayed on the task selection panel in the deployment wizard.
6. Click **Finish**.

Use the Properties view to specify optional information about the task group. Right-click a task group in the editor and choose **Properties** from the context menu. Specify information for the following optional attributes in the corresponding Value field:

taskGroupDetails

Any text specified is displayed along with the task group title on the task group selection panel in the deployment wizard.

Reordering tasks within a solution: To reorder tasks in a solution, perform the following steps:

1. From the left pane of the Express Runtime developer, select the **Package Explorer** view.
2. Select the appropriate solution project file.
3. Open the src/ directory and open the *.xml file.
4. Select the **Tasks** tab in the right pane of the Express Runtime developer.
5. Select the task you want to move.
6. Click **Up** to place the task earlier in the solution, or **Down** to place it later in the solution.

You can also drag and drop tasks from one group to another in the Navigator and Package Explorer views of the Express Runtime solution editor.

Providing variables validation and values information: To provide validation and value information for solution variables, perform the following steps:

1. Select the **Tasks** tab in the solution editor.
2. If there are shared solution variables to add to the validation list, select the variable in the Overridden Application Variables section and click **Add**.
3. If there are shared solution variables to delete from the validation list, select the variable in the Overridden Application Variables section and click **Remove**.
4. To add or modify validation information for a variable, select the variable in the Overridden Application Variables section.
5. In the Shared Variable Value Configuration section, you can specify the following information:

Required

If selected, indicates that a value must be entered for this variable. If no default value is provided, the end user needs to enter or select a value before deploying the application. Boolean variables are always required.

Make uppercase

If selected, transforms any value entered for the variable to be uppercase only.

Make lowercase

If selected, transforms any value entered for the variable to be lowercase only.

Make editable at least once

Specifies that the shared variable is displayed the first time the deployment wizard encounters it, so that the user can input a value at least one time. Use this setting for variables that might not be displayed based on other selections, but for which the user must specify a value.

Default value

Specifies the default value for a variable. Any variable specified here must comply with any other validation restrictions placed on this variable. For a drop-down list variable, the default must also be displayed in the Options field.

Minimum length

Specifies the minimum number of characters allowed for the value of the variable.

Maximum length

Specifies the maximum number of characters allowed for the value of the variable.

Validator

Browse to a custom program to validate the variable in the deployment wizard. To create a validator program, click on **Validator** and enter the name of your new validator program. Implement the `validate()` method of the new class to perform your custom validation by following the description in the Javadoc documentation of the `validate()` method.

The Java class specified as the validator must exist in the solution project. That class can refer to any other Java classes that exist in the solution project, the included application projects, or in the external support JAR files for the application projects.

If the validator refers to a class that exists in more than one referenced application project, the validator might use any of the projects' classes. For this reason, if you plan to use solution-level validators, which will refer to application-level Java classes, and your application projects contain different Java classes with the same name, consider package-qualifying the application-level Java classes with the application ID.

Options

Offers more restrictions or values for the variable. To specify values that are must be part of the value of the variable, create a valid validation rule. To specify values that are not allowed to be part of the value of a variable, create an invalid validation rule. To specify choices for a drop-down variable, create possible selections. You can specify one of the following pieces of information for each validation rule. Not all restrictions are available for all variable types.

Complete string

a sequence of characters that either must match or is not allowed to match the complete variable value

Partial string

a sequence of characters that either must match or is not allowed to match a sequence of characters in the variable value

Prefix a sequence of characters that either must occur or is not allowed to occur at the beginning of the variable value

Suffix a sequence of characters that either must occur or is not allowed to occur at the end of the variable value

Specific characters

a list of characters, where sequence does not matter, that either must occur or is not allowed to occur in the variable value

Range of values

a minimum and maximum numerical value that represents either a valid or invalid range of values for the variable

Drop-down list option

an exact value that a user can select from the drop-down list variable. Create separate options for each possible value in the drop-down list. You must define the default value in the Default value field and in the Options field.

6. Save the solution.

Enabling a solution for globalization

There are many strings in application and solution wrappers that are displayed to end users in the deployment wizard interface. These strings can be specified directly in the wrapper files, or they can be placed in translatable XML files. To enable translation for an application or solution wrapper, perform the following steps:

1. Decide which translation languages your application or solution will support, and create the necessary translatable XML files, as described in the topic [Translation Language Configuration](#)
2. Populate the default-language XML file with all the translatable strings for the wrapper, giving each string a meaningful key name. If you have already created a wrapper, you can copy the translatable strings from your wrapper into the default-language XML file. Keys must consist of alphanumeric characters only (no white-space), and must begin with a letter. The following example shows what a default-language XML file for a simple solution might look like.

```
<?xml version="1.0" ?>
<SolutionID>
  <solutionTitle>Solution Title</solutionTitle>
  <task1Details>Details for task #1</task1Details>
  <task1Description>Description for task #1</task1Description>
</SolutionID>
```

3. Using the application or solution editor, replace all the translatable strings with references to their keys in the default-language XML file.

If using the GUI editor, simply enter the key name, prefixed with a percent sign (%).

Following the example, the solution title field would be set to: %solutionTitle

If editing the XML source directly, use the translatedKey attribute. Following the example, the <title> element in the solution wrapper would be specified as:

```
<title translatedKey="solutionTitle" />
```

4. Place the translations of the strings in the default-language XML file in the appropriate language XML files. This step can be performed separately, if translations are not immediately available. If a string does not exist for a particular translation language, the string from the default-language XML file is used.
5. Generate the application or solution wrapper. Any missing translatable strings are detected, and the appropriate error messages are displayed in the console.

Modifying an existing solution wrapper

You can modify an existing solution wrapper as an alternative to creating a new solution. When you modify an existing solution wrapper, you use the solution editor to replace values with ones that are appropriate for a new solution wrapper. This is a good approach if you want to add your application to one of the provided solutions. You can change the title, splash screen image, welcome screen image, and other items on the general tab so this shows as your branded solution.

To modify an existing solution wrapper, perform the following steps:

1. Select an existing solution project in the Express Runtime explorer view and press **Ctrl + C** to copy the solution wrapper.
2. Select the category that you want to contain the copied solution wrapper, and press **Ctrl + V** to paste the solution project in the Express Runtime explorer view.

3. Specify a new name for the duplicate solution project in the Copy project dialog.
4. Click **OK**.
5. Double-click the solution project in the Express Runtime explorer view.
6. Select the **General** tab of the solution editor.
7. Specify a new ID for the solution project.
8. Use the solution editor to add, edit, or remove tasks, applications, or configuration information for the solution project.
9. Save the solution project.

IBM Express Runtime 2.1.1 Middleware: This solution helps you to deploy all of the Express Runtime middleware and the Express Runtime console to any of the platforms supported by Express Runtime. The solution includes the following components:

- DB2 Universal Database - Express 8.2
- Informix Dynamic Server 10.0
- WebSphere Application Server - Express 6.0.2
- IBM HTTP Server 6.0.2
- Express Runtime console 2.1.1

To deploy the IBM Express Runtime 2.1.1 Middleware, perform the following steps:

1. Open the deployment wizard.
2. Select **File > Open**.
3. Select IRU2_1MiddlewareAll.ser and click **Open**.
4. Review the informational text to confirm that you selected the proper solution and click **Next**.
5. The Select Task window opens. Select the middleware you want to deploy and click **Next**.
6. Select the platforms to which you want to deploy each middleware component and click **Next**.
7. Specify the host name or IP address for each target computer you want the middleware deployed to. Click **Add** after you enter each address. You must provide this information for each operating system to which you are deploying. In addition, if you selected to deploy the Express Runtime console, you must provide target information separately for each operating system to which the console is deployed.

Note: The IBM Installation Agent must be running on all target systems other than localhost before you can deploy the solution.

When you are finished adding targets, click **Next**.

8. Provide the required configuration information for each platform selected for deployment. You must provide this information for each middleware component and for the Express Runtime console. Fields marked with an asterisk (*) are required. To review validation requirements for each field, refer to the specific application wrapper topic for each of the components. These topics are found in the Reusing Express Runtime applications section of the Express Runtime 2.1 InfoCenter.

Note: Some variable values are shared between applications. For example, the value for the location of the IHS installation directory is shared between

the IBM HTTP Server and the WebSphere Express plug-in for IBM HTTP Server applications. If, in the process of configuring this solution for deployment you change the value in one location, it is automatically changed in the other location. For more information on shared variables, see “Specifying shared application variables” on page 68 and “Sharing variables between applications” on page 104.

9. The Summary Panel for the solution opens. This panel provides information about the tasks you are about to deploy and includes an estimated time that each task should take. To make corrections to tasks before deploying, click **Back**. To deploy an individual task, click the **Deploy task** button associated with it. To deploy all tasks as configured, click **Deploy all**.
10. The Deployment Status window opens and provides status information in percent completed and estimated time remaining. The window also displays the time and date that you initiated the deployment, as well as a brief description of each task being deployed. To review information in more detail, click **Detailed messages** or **Master log**.
If you want to cancel the deployment, click **Stop Deployment**. You must click **Yes** on the resulting dialog box to confirm cancellation of the deployment.

IBM Express Runtime 2.1.1 Sample Solution for all platforms: This solution helps you to deploy all of the Express Runtime middleware, the Express Runtime console, and the sample application to any of the platforms supported by Express Runtime. The solution includes the following components:

- WebSphere Application Server - Express 6.0.2
- DB2 UDB - Express 8.2 FP10
- Informix Dynamic Server 10.00 TC3E/UC3E
- IBM HTTP Server 6.0.2
- Web server plug-in for IBM WebSphere Application Server 6.0.2
- Express Runtime Document Publishing Manager

Note: Express Runtime Document Publishing Manager is the sample application.

Deploying the sample solution

To deploy the IBM Express Runtime 2.1.1 Sample for all platforms, perform the following steps:

1. Open the deployment wizard. Select **Start > Programs > Express Runtime 2.1 > Deployment Wizard** on Windows or **Main Menu > Programs > Express Runtime 2.1 > Deployment Wizard** on Linux.
2. Select **File > Open**.
3. Select IRU2_1SampleSolution.ser, and click **Open**.
4. Review the informational text to confirm that you selected the proper solution, and click **Next**. The Select Task window is displayed.
5. Select the tasks you want to deploy, and click **Next**. The Sample Application window is displayed.
6. Select the platforms to which you want to deploy the middleware components and the sample application, and click **Next**.
7. Select the platforms to which you want to deploy the Express Runtime console, and click **Next**.
8. Specify the host name or IP address for each target computer you want the sample application and middleware deployed to. Click **Add** after you enter

each address. You must provide this information for each operating system to which you are deploying. In addition, if you selected to deploy the Express Runtime console, you must provide target information separately for each operating system to which the console is deployed.

Note: The IBM Installation Agent must be running on all target systems other than localhost before you can deploy the solution.

When you are finished adding targets, click **Next**.

9. Provide the required configuration information for each platform selected for deployment. You must provide this information for each middleware component, sample application, and Express Runtime console deployment. Fields marked with an asterisk (*) are required. To review validation requirements for each field, refer to the specific application wrapper topic for each of the components. These topics are found in the Reusing Express Runtime applications section of the Express Runtime 2.1.1 InfoCenter.

Note: Some variable values are shared between applications. For example, the value for the location of the IHS installation directory is shared between the IBM HTTP Server and the WebSphere Express plug-in for IBM HTTP Server applications. If, in the process of configuring this solution for deployment you change the value in one location, it is automatically changed in the other location. For more information on shared variables, see “Specifying shared application variables” on page 68 and “Sharing variables between applications” on page 104.

10. Click **Next**. The Summary Panel for the solution is displayed. This panel provides information about the tasks you are about to deploy and includes an estimated time that each task should take. To make corrections to tasks before deploying, click **Back**.
11. To deploy an individual task, click the **Deploy task** button associated with it. To deploy all tasks as configured, click **Deploy all**. The Deployment Status window is displayed and provides status information in percent completed and estimated time remaining. The window also displays the time and date that you initiated the deployment, as well as a brief description of each task being deployed.
If you want to cancel the deployment, click **Stop Deployment**. You must click **Yes** on the resulting dialog box to confirm cancellation of the deployment.
12. To review information in more detail, click **Detailed messages** or **Master log**.

Note: A known issue exists that a message is displayed reporting that the onSNMP subagent for SNMP-based monitoring of the Informix Dynamic Server has not been installed because the SNMP service cannot be located when Informix Dynamic Server is deployed to a Windows computer that does not have the SNMP service installed. This message is displayed in the log, however the installation and manageability of the Informix Dynamic Server is not effected. For more information on this message, refer to the Informix Dynamic InfoCenter.

Starting the sample solution

To start the sample application, perform the following steps:

1. Open a supported Web browser.
2. Navigate to the following URL:
`http://<hostname>/RuntimeDocumentMgmt`

where *<hostname>* is the fully-qualified host name of the target computer where the sample solution was deployed.

3. If you changed the default port for the sample solution during deployment, you need to append that port number to the URL. For example:

```
http://<hostname>:<port>/RuntimeDocumentMgmt
```

where *<port>* is the port number that you provided during deployment.

IBM Express Runtime 2.1.1 Sample for Linux: This solution helps you to deploy all of the Express Runtime middleware and the sample application to a computer running a Linux platform. This sample is located in the sample workspace in the Linux development environment. It contains a single install task that demonstrates how to include your application in a solution and how to automate the configuration required for your application. You can work with this solution by selecting Develop Sample Solution or Deploy Sample Solution in the Express Runtime First Steps. The solution includes the following components:

- WebSphere Application Server - Express 6.0.2
- DB2 UDB - Express 8.2 FP10
- Informix Dynamic Server 10.00 TC3E/UC3E
- IBM HTTP Server 6.0.2
- Web server plug-in for IBM WebSphere Application Server 6.0.2
- Express Runtime Document Publishing Manager

Note: Express Runtime Document Publishing Manager is the sample application.

Deploying the sample solution

To deploy the IBM Express Runtime 2.1.1 Sample for Linux, perform the following steps:

1. Open the deployment wizard. Select **Main Menu > Programs > Express Runtime 2.1 > Deployment Wizard**.
2. Select **File > Open**.
3. Select IRU2_1SampleSolutionLnx.ser and click **Open**.
4. Review the informational text to confirm that you selected the proper solution and click **Next**.
5. The Select Task window opens. As there is only one task in the solution, it is preselected for you. Click **Next**.
6. Specify the host name or IP address for each target computer you want the sample application deployed to. Click **Add** after you enter each address.

Note: All targets specified must be running a Linux operating system. In addition, the IBM Installation Agent must be running on all target systems other than localhost before you can deploy the solution. When you are finished adding targets, click **Next**.

7. Provide the required configuration information for each component. Fields marked with an asterisk (*) are required. To review validation requirements for each field, refer to the specific application wrapper topic for each of the components. These topics are found in the Reusing Express Runtime applications section of the Express Runtime 2.1.1 InfoCenter.

Note: Some variable values are shared between applications. For example, the value for the location of the IHS installation directory is shared between the IBM HTTP Server and the WebSphere Express plug-in for IBM HTTP Server applications. If, in the process of configuring this solution for deployment you change the value in one location, it is automatically changed in the other location. For more information on shared variables, see “Specifying shared application variables” on page 68 and “Sharing variables between applications” on page 104.

8. The Summary Panel for the solution opens. This panel provides information about the task you are about to deploy and includes an estimated time that the deployment should take. To make corrections to the task before deploying, click **Back**. To deploy the task, click **Deploy all**.
9. The Deployment Status window opens and provides status information in percent completed and estimated time remaining. The window also displays the time and date that you initiated the deployment, as well as a brief description of each task being deployed. To review information in more detail, click **Detailed messages** or **Master log**.

If you want to cancel the deployment, click **Stop Deployment**. You must click **Yes** on the resulting dialog box to confirm cancellation of the deployment.

Starting the sample solution

To start the sample application, perform the following steps:

1. Open a supported Web browser.
2. Navigate to the following URL:
`http://<hostname>/RuntimeDocumentMgmt`

where *<hostname>* is the fully-qualified host name of the target computer where the sample solution was deployed.

3. If you changed the default port for the sample solution during deployment, you need to append that port number to the URL. For example:
`http://<hostname>:<port>/RuntimeDocumentMgmt`

where *<port>* is the port number that you provided during deployment.

IBM Express Runtime 2.1.1 Sample for Windows: This solution helps you to deploy all of the Express Runtime middleware and the sample application to a computer running a Windows platform. This sample is located in the sample workspace in the Windows development environment. It contains a single install task that demonstrates how to include your application in a solution and how to automate the configuration required for your application. You can work with this solution by selecting **Develop Sample Solution** or **Deploy Sample Solution** in the Express Runtime First Steps. The solution includes the following components:

- WebSphere Application Server - Express 6.0.2
- DB2 UDB - Express 8.2 FP10
- Informix Dynamic Server 10.00 TC3E/UC3E
- IBM HTTP Server 6.0.2
- Web server plug-in for IBM WebSphere Application Server 6.0.2
- Express Runtime Document Publishing Manager

Note: Express Runtime Document Publishing Manager is the sample application.

Deploying the sample solution

To deploy the IBM Express Runtime 2.1.1 Sample for Windows, perform the following steps:

1. Open the deployment wizard. Select **Start > Programs > Express Runtime 2.1 >Deployment Wizard**.
2. Select **File > Open**.
3. Select IRU2_1SampleSolutionWin.ser and click **Open**.
4. Review the informational text to confirm that you selected the proper solution and click **Next**.
5. The Select Task window opens. As there is only one task in the solution, it is preselected for you. Click **Next**.
6. Specify the host name or IP address for each target computer you want the sample application deployed to. Click **Add** after you enter each address.

Note: All targets specified must be running a Windows operating system. In addition, the IBM Installation Agent must be running on all target systems other than localhost before you can deploy the solution.

When you are finished adding targets, click **Next**.

7. Provide the required configuration information for each component. Fields marked with an asterisk (*) are required. To review validation requirements for each field, refer to the specific application wrapper topic for each of the components. These topics are found in the Reusing Express Runtime applications section of the Express Runtime 2.1.1 InfoCenter.

Note: Some variable values are shared between applications. For example, the value for the location of the IHS installation directory is shared between the IBM HTTP Server and the WebSphere Express plug-in for IBM HTTP Server applications. If, in the process of configuring this solution for deployment you change the value in one location, it is automatically changed in the other location. For more information on shared variables, see “Specifying shared application variables” on page 68 and “Sharing variables between applications” on page 104.

8. The Summary Panel for the solution opens. This panel provides information about the task you are about to deploy and includes an estimated time that the deployment should take. To make corrections to the task before deploying, click **Back**. To deploy the task, click **Deploy all**.
9. The Deployment Status window opens and provides status information in percent completed and estimated time remaining. The window also displays the time and date that you initiated the deployment, as well as a brief description of each task being deployed. To review information in more detail, click **Detailed messages** or **Master log**.

If you want to cancel the deployment, click **Stop Deployment**. You must click **Yes** on the resulting dialog box to confirm cancellation of the deployment.

Note: A known issue exists that a message is displayed reporting that the onSNMP subagent for SNMP-based monitoring of the Informix Dynamic Server has not been installed because the SNMP service cannot be located when Informix Dynamic Server is deployed to a Windows computer that does not have the SNMP service installed. This message is displayed in the log, however the installation and manageability of the Informix Dynamic Server is not effected. For more information on this message, refer to the Informix Dynamic InfoCenter.

Starting the sample solution

To start the sample application, perform the following steps:

1. Open a supported Web browser.
2. Navigate to the following URL:
`http://<hostname>/RuntimeDocumentMgmt`

where *<hostname>* is the fully-qualified host name of the target computer where the sample solution was deployed.

3. If you changed the default port for the sample solution during deployment, you need to append that port number to the URL. For example:
`http://<hostname>:<port>/RuntimeDocumentMgmt`

where *<port>* is the port number that you provided during deployment.

Testing a solution in the deployment wizard

Testing a solution in the deployment wizard helps you to see how a solution is displayed to an end user, and to perform the following tasks:

- Verify the solution's presentation.
- Verify the behavior of the applications that are a part of the solution.
- Review the deployment on the target computer.
- Debug the user programs for an application as they run on a target computer.

To test a solution in the deployment wizard, perform the following steps:

1. From the left pane of the Express Runtime developer, select the **Express Runtime Explorer** view.
2. Select the appropriate solution project.
3. Select **Project > Test in Deployment Wizard**.
4. Configure the solution and deploy it.

When you deploy a solution in the deployment wizard, the applications are installed on the target computers. Keep in mind that you are actually deploying code to target computers just as an end user would.

Debugging a solution during deployment

You can debug Java user programs in the Express Runtime developer while you deploy them to local and remote Windows or Linux computers using the deployment wizard.

To debug a Java user program during deployment, perform the following steps:

1. Start Express Runtime developer on the staging server. Ensure the application project containing the Java user program is open in the Express Runtime developer workspace.
2. Open the Java user program source file you want to debug, and insert a breakpoint where you want to pause during execution.
3. Start the deployment wizard by selecting a solution that contains the application you want to debug. Right-click the solution, and select **Test in deployment wizard** from the context menu.
4. Deploy the Java user program to a local or remote Linux or Windows computer.

If you set a breakpoint on a line that is executed, you have the option to switch to the debug perspective. Click **Yes**. You can debug the user program as you would a normal Java program.

Troubleshooting debugging

If a message is displayed stating that debugging cannot be enabled because port 1099 is in use when you start the Deployment Wizard from the Express Runtime developer, you must free port 1099. When you free port 1099, restart the Deployment Wizard from the Express Runtime developer to debug user programs. The IBM Installation Agent uses port 1099. You cannot simultaneously debug user programs and run the Installation Agent on the same computer.

If your user program does not suspend execution during deployment, enabling debugging, verify that the following conditions exist:

- You set a breakpoint in the correct Java file, and on a line that is executed.
- There is an application project in the Express Runtime developer workspace for the user program you want to deploy.
- A Linux or Windows computer is the deployment target.
- The type of the user program is Java.
- There is no firewall between the server and agent, or if there is, that port 1099 is open.
- Port 1099 is not in use by any other applications on the server.

If a message is displayed during deployment stating that the debugger cannot connect, ensure that there is no firewall between the server and agent, or if there is, that port 8000-8004 is open.

Generators

You can generate solution and application wrappers contained in solution and application projects using menu selections from the context menu on the Navigator or Package Explorer views, or from the Project menu. Deployment packages can also be generated from these menu selections.

Application generator

Generate application .ser files from application projects using the application generator.

Invoking the application generator

You can start the application generator in the following ways:

- Right-click an application project or an application .axml resource and choose **Generate Application**.
- Select the application project or an application .axml resource and choose **Project > Generate Application**.
- Right-click within an application editor and choose **Generate Application**.

When you select Create Deployment Package for an application wrapper, the Express Runtime developer package generator is invoked using the binary application file as input.

Application generator output

The application generator produces one or more binary application files having an extension of .ser. A binary application file is created for each operating system specified in the application wrapper and these files are stored in the project under the bin/<application_ID> folder.

The log file for the application generators is stored in the bin/<application_ID>/log folder and is named applicationBuilder.log.

Solution generator

You can generate a solution .ser file from a solution project using the solution generation.

When you generate a solution, the following actions occur:

1. The Express Runtime developer examines the solution XML file to determine what application wrappers are included in the solution.
2. The application generator is invoked against each application wrapper referenced in the solution wrapper. If the application wrapper is up-to-date, this step is skipped.
3. When all required application wrappers have been generated, the solution generator is invoked against the solution wrapper. The solution generation step is skipped if the solution wrapper and all of its referenced application wrappers are up-to-date.
4. Finally, the user programs package generator is invoked for each application wrapper, creating packages containing all user programs specified in the application project. If the required user program packages already exist and are up-to-date, this step is skipped.

The user programs package generator requires that your user programs be located in the bin folder of the project containing the corresponding application wrapper. If application wrappers specify user programs that are defined in non-Express Runtime developer projects (or even outside of the Eclipse workspace environment), the generator cannot locate them. Be sure to import all required user programs (including any other resources they need, such as message bundles) as described in Importing external resources.

Deployment packages are not created as part of a solution generation, and must be created separately.

Invoking the solution generator

You can start the solution generator in the following ways:

- Right-click the solution project or the solution .sxml file and choose **Generate Solution** from the context menu.
- Select the solution project or the solution .sxml file and choose **Project > Generate Solution**.
- Right-click within the solution editor and choose **Generate Solution**.

Solution generator output

The solution generator creates one binary solution file with a .ser extension. This file is stored in the root bin folder of the solution project.

The log file for the solution generator is stored in the bin/log folder and is named solutionBuilder.log.

Deployment package generator

Generate deployment packages from application projects using the deployment package generator.

Invoking the deployment package generator

You can start the deployment package generator in the following ways:

- Right-click an application project or an application .axml resource and choose **Generate Deployment Package**.
- Select the application project or an application .axml resource and choose **Project > Generate Deployment Package**.
- Right-click within an application editor and choose **Generate Deployment Package**.

When you select Create Deployment Package for an application wrapper, the Express Runtime developer package generator is invoked using the binary application file as output.

Before you create a deployment package for an application, the application's software image root must be set. To set a software image root, perform the following steps:

1. Click the **Files** tab in the application editor.
2. In the Software Image Files section, make sure the source directory is set.
3. If the source directory is not set, or set incorrectly, click the link and browse to the location of the software image files.

Deployment package generator output

The deployment package generator creates a deployment package JAR file. This package contains the software image files pointed to by the software image root specified for an application wrapper. This package is not stored within the application wrapper's project. Instead, it is placed in the IRU_common_resources project, which is intended to be a repository for common resources that multiple projects might need to access. Express Runtime developer creates the IRU_common_resources project as needed. The package is placed in the mediaJars folder of this project.

The deployment package builder's log file is stored in the bin/<application_ID>/log folder and is named softwareImageDeploymentPkgBuilder.log.

Headless operation

To generate a deployment package, or generate or import an application or solution project without starting an Eclipse-based development environment, use the headless operation script files that are provided with Express Runtime. These files are located in the Express Runtime installation directory, in the Solution Enabler folder. To use the headless operation files, invoke them with the required parameters provided in the corresponding help topic.

The following files are provided:

IRU_ApplicationGenerator.bat (Windows) / IRU_ApplicationGenerator (Linux)

Use this file to generate an application project without starting the Eclipse development environment.

IRU_DeploymentPackageGenerator.bat (Windows) /**IRU_DeploymentPackageGenerator (Linux)**

Use this file to generate a deployment package without starting the Eclipse development environment.

IRU_ImportProject.bat (Windows) / IRU_ImportProject (Linux)

Use this file to import a project into a predefined workspace without starting the Eclipse development environment.

Note: You can only import projects that exist in the workspace in the file system.

IRU_SolutionGenerator.bat (Windows) / IRU_SolutionGenerator (Linux)

Use this file to generate a solution project without starting the Eclipse development environment.

IRU_ExportProject.bat (Windows) / IRU_ExportProject (Linux)

Use this file to export a solution project without starting the Eclipse development environment.

The information required to invoke the headless operation files is provided in the corresponding help topic for each file.

Project import

Use the headless project import script to import an application or solution project into the Express Runtime developer. Invoke the headless project import script by running it from the command line with the following arguments:

- data [workspace path]

The path of the workspace that contains the project that is to be imported. This path can be either a full path, for example "C:\ProgramFiles\IBM\Runtime\SolutionEnabler\workspace", or a path that is relative to the working directory, for example, "..\workspace".

-project [project name]

The name of the application or solution project.

Application generation

Use the headless application generation script to generate an application project without starting the Express Runtime developer. Invoke the headless application generation script by running it from the command line with the following arguments:

-data [workspace path]

The path of the workspace that contains the application project that is to be generated. This path can be either a full path, for example "C:\ProgramFiles\IBM\Runtime\SolutionEnabler\workspace", or a path that is relative to the working directory, for example, "..\workspace".

-project [project name]

The name of the application package to generate.

-replace

Use this option to replace any previously generated versions of the application .ser file.

The log file for the application generators is stored in the bin/<application_ID>/log folder and is named applicationBuilder.log.

Solution generation

Use the headless solution generation script to generate a solution project without starting the Express Runtime developer. Invoke the headless solution generation script by running it from the command line with the following arguments:

-data [workspace path]

The path of the workspace that contains the solution project that is to be generated. This path can be either a full path, for example "C:\ProgramFiles\IBM\Runtime\SolutionEnabler\workspace", or a path that is relative to the working directory, for example, "..\workspace".

-project [project name]

The name of the solution project.

-replace

Use this option to replace any previously generated versions of the solution .ser file or user program packages.

The log file for the application generators is stored in the bin/<application_ID>/log folder and is named applicationBuilder.log.

Deployment package creation

Use the headless deployment package creation script to create a deployment package without starting the Express Runtime developer. Invoke the headless deployment package creation script by running it from the command line with the following arguments:

-data [workspace path]

The path of the workspace that contains the application project that is to have its deployment package generated. This path can be either a full path, for example "C:\ProgramFiles\IBM\Runtime\SolutionEnabler\workspace", or a path that is relative to the working directory, for example, "..\workspace".

-softwareimageroot [source path]

The path to the software that a solution installs. This path can be either a full path, for example "C:\path\software\", or a path that is relative to the working directory, for example, "..\software".

-project [project name]

The name of the application project.

-replace

Use this option to replace any previously generated versions of the deployment packages.

The deployment package builder's log file is stored in the bin/<application_ID>/log folder and is named softwareImageDeploymentPkgBuilder.log.

Solution launcher image export

Use the headless solution launcher image export script to export a solution launcher image without starting the Express Runtime developer. Invoke the headless solution launcher image export script by running it from the command line with the following arguments:

- options [FILE]**
Properties file containing export options. You can place all command-line options (except -data) in this file instead.
- data [PATH]**
Workspace location containing the solution to export
- solutionProject [PROJECT]**
Solution project to export
- mediaSize [SIZE]**
Target media size (in megabytes)
- destinationDirectory [PATH]**
Destination directory
- replace**
Overwrite existing files in destination directory
- displayLanguage [LANGUAGE]**
Language used to display the solution launcher. Valid language values are zh_CN, zh_TW, en, fr, de, it, ja, ko, pt_BR, and es. If the -displayLanguage option is not specified, the default locale of the computer the solution launcher is running on will be used.
- installationDirectory [DIRECTORY]**
Name of the installation directory for the solution launcher user files
- includeDirectory [PATH]**
Directory to include files from
- includeWindows**
Include the Solution Launcher for Windows
- includeLinux**
Include the Solution Launcher for Linux
- includeLinuxOnPOWER**
Include the Solution Launcher for LinuxOnPOWER
- silent**
Run the Solution Launcher install and deployment silently
- taskFile [FILE]**
Task file filename, located in the tasks folder of the solution.
- defaultLanguage [LANGUAGE]**
Default language to use for license files, readme files, and documentation files. Valid language values are zh_CN, zh_TW, en, fr, de, it, ja, ko, pt_BR, and es.
- languages [LANGUAGE1;LANGUAGE2]**
List of languages to generate launch pad properties files for. Valid language values are zh_CN ,zh_TW, en, fr, de, it, ja, ko, pt_BR, and es.
- includeLicense**
Include license files
- licenseType [TYPE]**
License files type. Valid license types include "LICR", "TEXT" or "HTML".
- licenseFiles [FILE1;FILE2]**
License files to display if type is TEXT/HTML

- licenseEncodings [LOCALE=ENCODING;LOCALE=ENCODING]**
Optional list of encodings to use to display licenses. The default for all locales is UTF-8. Valid locale values are zh_CN, zh_TW, en, fr, de, it, ja, ko, pt_BR, es, cs, pl, and tr.

Note: When you provide encodings, delineate them with ; on Windows computers, and : on Linux computers.
 - readmeFile [FILE]**
File name of the readme file
 - docFile [FILE]**
File name of the documentation file
 - includeLaunchpad**
Include launch pad files
 - launchpadReadme**
Include a link to the readme file on the launch pad
 - launchpadDoc**
Include a link to the documentation file on the launch pad
 - launchpadBackground [FILE]**
Fully qualified background image file name
 - launchpadIcon [FILE]**
Fully qualified icon image file name
 - launchpadLogo [FILE]**
Fully qualified logo image file name
-

Importing

You can import application and solution projects into the Express Runtime developer workspace, or import resources into existing Express Runtime application and solution projects.

Importing existing application and solution projects

You can move or copy an application or solution project from one Eclipse workspace to another, while retaining original resource property values.

The Express Runtime developer's import wizard works in conjunction with the export wizard. When you select a project contents directory that contains an application or solution project, it will automatically create that project in your Eclipse workbench. It will also initialize all resource properties with the original values from the source workspace. The project is ready to use, just as it was in the source workspace.

This wizard works similarly to the standard Eclipse wizard for importing existing projects into the workspace. Like the standard Eclipse wizard, the Express Runtime developer's import wizard does not move or copy the files from the project contents directory.

If you prefer to have your imported project's files physically reside under the target workspace folder, then you must ensure that the project to be imported is placed there prior to the import.

If you want to import arbitrary resources from the file system, you must use the standard Eclipse file system import wizard.

Importing files into an application and solution project

You can import files and folders into existing application and solution projects.

To import files and folders into existing application and solution projects, perform the following steps:

1. Right click the project that you want to import files or folders into in the Navigator view.
2. Select **Import** from the context menu.
3. Select **File System**, then click **Next**.
4. In the From directory field, type or browse to select the directory containing the files that you want to import. The Filter Types button can be used to filter the types of files that will be imported. If you are importing class files in a package structure, such as user programs, be sure to select the directory that contains the entire package structure.
5. The **Into folder** field should already be filled in with the name of the project.
6. In the Options area, options are given to:
 - Overwrite existing resources without warning
 - Create complete folder structure or Create selected folders only
7. Click **Finish**.

Exporting

You can export files and folders from the Express Runtime developer either by:

- dragging and dropping to the file system, or copying and pasting to the file system
- using the Eclipse Export wizard.

To use the operating system's file system explorer to export a copy of a folder or file from the Express Runtime developer to the file system, perform the following steps:

1. Drag the files or folders from the Navigator view to the file system explorer.
2. Hold down the Ctrl key while dragging to ensure the file is copied.
3. You can also export by selecting the file in the Navigator and choosing **Edit > Copy**, then pasting it in the file system explorer.

To use the Eclipse Export wizard to export files or folders to the file system, perform the following steps:

1. Right-click the project that you want to export in the Navigator view.
2. Select **Export** from the context menu. The Eclipse Export wizard is displayed.
3. In the Export wizard, select **File system**.
4. Click **Next**.

To export an application or solution project's source files, use the standard Eclipse file system export wizard (**File > Export File System**).

Exporting solution projects

A solution project has two distinct characteristics. One characteristic is that of a solution definition consisting of various source files (such as XML wrappers and Java files). The other characteristic is the deployable parts of a solution (such as user programs packages and the solution .ser file) that are generated when you build the solution.

The Express Runtime developer provides a wizard to export deployable solution parts. To invoke the export wizard, select a solution project in the Navigator or Package Explorer view and right-click it to display the context menu.

- Select **Export > Express Runtime Solution**.
- Select the solution to export
- Enter the destination directory

When this export wizard is run, the binary solution file and the user program packages are exported to the selected directory.

Exporting to CD or DVD images

The Express Runtime developer provides an export wizard that you can use for exporting your solution project to one or more CDs or DVDs for distribution. The CDs or DVDs contain a complete image of the solution that you have created, and when end users insert the media, the deployment wizard is displayed and provides the solution to them. When end users complete the deployment of the solution, the deployment wizard is uninstalled and leaves no "footprints" on their computer. Media that contains the combination of solutions and the deployment wizard are referred to as solution launcher images.

The solution launcher image is an easy way to distribute and deploy a solution. The solution you export to the solution launcher image can then be deployed through the deployment wizard. The deployment wizard is installed on the staging server through a graphical user interface similar to the one used for IBM Express Runtime.

There is also the option to silently install the deployment wizard and silently deploy the solution contained in the solution launcher image. To silently install and deploy a solution launcher image, you must place the task file you want to use in the *tasks* directory of the solution. A task file is an .xml file that stores information about the tasks that are part of a solution, and target computers that each task in a solution is deployed to. For instructions for silent installation, see "'Silent installation of a solution launcher image" on page 129."

The solution launcher image you export can display one or more license agreements as part of an installation. If you want to include licenses, place all the license files in the license directory of the solution project, in the appropriate language folder. If you have translated license files, place them in the other language folders. In order for the solution launcher to detect translated license files correctly, the filenames of the different translations should be the same, simply placed in different folders. In the following example, if the default language is English, the translated versions of license1.txt are displayed for Spanish and German computers, and the English version of license1.txt is displayed for all other languages. Additionally, the English version of license2.txt is displayed for all languages, since no translations were provided.

```
Solution/  
  license/  
    en/  
      license1.txt  
      license2.txt  
    es/  
      license1.txt  
  de/  
    license1.txt
```

The solution launcher image can also include a launch pad with links to a readme file and documentation for the solution. If you choose to include either a readme file or documentation, you must include the files in the solution. The readme file must be placed in the readme folder in the solution, and the documentation files must go in the info folder in the solution. The files must be placed in the appropriate language folder. Place any translated files in the appropriate language folders.

Solution launcher export: Step 1 of 5

To export a deployable solution to a solution launcher image, complete the following steps:

1. From the left pane of the Express Runtime Developer, select the **Express Runtime Explorer** view from the top pane, or the **Navigator** or **Package Explorer** view from the bottom pane.
2. Select the appropriate solution project.
3. Click **File > Export** from the main menu.
4. Select **Express Runtime Solution Launcher Image** from the list of available wizards.
5. Click **Next**.
6. Select the solution project that you want to export.
7. In the **Media size (MB)** field, enter the capacity, in MB, of the media that the solution launcher image will be distributed on. You can enter a value or select one from the list.
8. Use the **Include files from** field to include external files in the image. Enter the path, or click **Browse** to select the root directory of the files to include.
9. In the **Export files to** field, enter a destination directory or **Browse** to an export destination directory.
10. In the **Display language** field, select the language in which you want the deployment wizard panels to be displayed. If you want the installation to detect and use the language for the default locale on the computer running the solution launcher, select **Detect automatically**.
11. Enter the **Installation directory** for the solution launcher logs and solution files that contain the configuration information for the solution. The installation uses the directory name SolutionFiles by default. For Windows this is *<Drive where temp directory is located>\<directory specified in export wizard>* and on Linux it is *!<directory specified in export wizard>*.
12. Select the operating systems on which the solution launcher will run.
13. Select the **Run installation silently** field to include a task file in the image. A task file is required to install the solution launcher image silently. Use the **Task file** field to enter the path to the task file. For information on creating a task file, refer to the “Creating a task file for silent deployment of a solution launcher image” on page 130 topic of the Express Runtime InfoCenter.
14. Click **Next**.

Note: The deployment packages are located in the launcher CD in the bin\com\ibm\jsdt\webserver\tree folder.

Solution launcher export: Step 2 of 5

To export a deployable solution to a solution launcher image, complete the following steps:

1. In the Deployment package export type field, specify how the export wizard should export deployment packages. You can select one of the following options:

Export all deployment packages

This option exports all of the deployment packages for all of the applications that are included as a part of the solution. All deployment packages must be generated to use this option.

Export available deployment packages

This option exports all of the generated deployment packages for the applications that are included as part of the solution. If an application does not have a generated deployment package it must have a deployment package prompt specified, so the end user can provide the deployment package at deployment time. For information on how to provide a deployment package prompt, refer to the topic “Adding applications to solutions” on page 101.

Do not export any deployment packages

This option requires the end user to provide the location of all of the deployment packages that are included as part of the solution. All of the applications must have deployment package prompts. For information on how to provide a deployment package prompt, refer to the topic “Adding applications to solutions” on page 101.

Customize which deployment packages to export

You can use this option to select which deployment packages to export as part of the solution. You can only export generated deployment packages. If a deployment package is not generated, or you select not to export a deployment package, you must provide a deployment package prompt for the application. For information on how to provide a deployment package prompt, refer to the topic “Adding applications to solutions” on page 101.

2. If the type of deployment package export type you select requires you to select individual deployment packages for export, you can select them in the **Deployment packages to export** field.
3. Click **Next**.

Solution launcher export: Step 3 of 5

To export a deployable solution to a solution launcher image, complete the following steps:

1. In the **Default language** field, select the default language for the solution on the target computer. The default language must be selected in the **Languages** list.
2. In the **Languages** list, select the languages for which you provide translated license, readme, or documentation files so that if the installation detects one of those languages as the locale of the target computer, the appropriate translated documentation will be displayed. If the locale is not one of the specified languages, or if you did not provide the translated file, the file will be displayed in the specified default language.
3. Click **Next**.

Note: The deployment packages are located in the launcher CD in the bin\com\ibm\jsdt\webserver\tree folder.

Solution launcher export: Step 4 of 5

To export a deployable solution to a solution launcher image, complete the following steps:

1. Use the **Install license files** options to specify the license files included with the image. If you select **Text/HTML files** as the license type, you must choose at least one file from the **Text/HTML files** field. Ensure each license file is encoded properly. A license file that is not encoded properly is not displayed correctly during installation.
2. For a list of the supported encoding, see "Supported Encodings" on the Java Web site.
3. Click **Next**.

Solution launcher export: Step 5 of 5

1. Use the **Install readme file** options to include a readme file in the image.
2. Use the **Install documentation files** options to include product documentation with the image.
3. Use the **Display launch pad as part of solution launcher installation** to include the launch pad and its options with the image. The banner image is 800 x 66 pixels and must be in .gif or .jpg format. The logo image is 100 x 66 pixels and must be in .gif or .jpg format. The icon image is 16 x 16 pixels and must be in .ico format. If you do not provide custom images that match the default dimensions, the appearance of the launch pad is not displayed correctly. If you do not provide custom images, the launch pad uses the default images. If you provide incorrect paths to images, or image types other than .ico, .gif, or .jpg, the export wizard displays an error and requires you to provide a valid image and path.
4. Specify whether you want the launch pad to link to the readme or documentation. If you include a readme file and product documentation, but do not include the launch pad or do not include a link to the documentation and readme file from the launch pad, you must provide another way for customers to access the readme file and product documentation. No shortcuts to the documentation or readme file are included in the solution launcher image. This option is only available if you have readme and documentation files in the solution project.
5. Click **Finish**.

Silent installation of a solution launcher image

You can perform a silent installation of the solutions provided by Express Runtime as solution launcher images. The solution launcher export wizard creates a response file for a silent installation named IRU_install.iss.

To complete a silent installation of a solution launcher image, you need a task file. A task file is an .xml file that stores information about the tasks that are part of a solution, and target computers that each task in a solution is deployed to. By default, the task file is named *solution name_Task.xml* where *solution name* corresponds to the name of the solution that the task file is associated with. By using a task file, you can specify tasks to deploy, target computers, and other information, such as the password that is used by the IBM Installation Agent so that you can silently deploy to remote computers.

When you have created a task file, you can initiate a silent installation.

To initiate a silent installation, perform the following steps:

1. Copy the contents of the disk1 folder, and the bin subdirectory of all folders for disk2 and above from the output folder where the solution launcher image resides, to the computer that you are deploying from.
2. Navigate to the disk1 folder, and double-click the <OS>Setup executable program for the operating system you use. Installation progresses without any panels being displayed.
3. View log files to confirm a successful installation. The log files are in the location that is specified in the User files default location section of IRU_install.iss.

Creating a task file for silent deployment of a solution launcher image

To silently deploy a solution launcher image, you must first create a task file for the solution, then export the solution to the solution launcher image for silent deployment.

To create a task file, perform the following steps:

1. In the Express Runtime Developer, expand the solution and right-click the tasks folder. Select **New > File**.
2. In the New File dialog, ensure the tasks folder is displayed in the Enter or select the parent folder field and type in the task file name you want to create (for example, MyTaskFile.xml). Click **Finish**.
3. In the Express Runtime installation CD1 or DVD1, locate the sample task file in \IRU2_1_1MiddlewareAll\tasks\IRU2_1_1MiddlewareAll_Task.xml. You can use this file as a template.
4. Copy the header and taskSet tags and paste them into the task file.
5. Update the fields in your task.xml file as follows:
 - Search for the <targetHostname> </targetHostname> tag and specify the target computer name here.
 - If the target computer is not localhost, search for <createkey phrase="password"/> and provide the password for the IBM Installation Agent on the target computer.
 - Search for <taskSet solutionFileName="SolutionFileLocation/IRU2_1_1MiddlewareAll.ser">tag. Replace the "IRU2_1_1MiddelwareAll.ser" with your solution file name, followed by ".ser". For example, if the solution name is "MySolution", the value will be "MySolution.ser". Note: Do not remove the SolutionFileLocation tag.
 - Search for <deploy taskNumber=""> tag. Fill in value for "taskNumber". The taskNumber should map to the sequence number of the same task in your solution.sxml.
 - Search for <application id=""> tag. Fill in the value for "id". Use the Application ID from the Application.xml file.
 - Search for <variable id=""> For each required variable for the application, fill in the variable id and the variable value. You can also specify optional variables.

Sample task file

The following sample task file shows which tags to update.

```
<iru:tasks
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:iru="http://www.ibm.com/xmlns/prod/iru/task"
xsi:schemaLocation="http://www.ibm.com/xmlns/prod/iru/task IRU_task.xsd">
<createkey phrase="password"/>
<taskSet solutionFileName="SolutionFileLocation/*** PUT THE SOLUTION ID.ser HERE ***">
<deploy taskNumber="*** PUT THE TASK NUMBER HERE ***">
<targetHostnames>
<targetHostname>localhost</targetHostname>
</targetHostnames>
<applications>
<application id="*** PUT APPLICATION ID HERE ***">
<variables>
<variable id="someVariable">*** PUT VARIABLE VALUE HERE ***</variable>
</variables>
</application>
</applications>
</deploy>
</taskSet>
</iru:tasks>
```

Chapter 6. Deploying solutions to target computers

Using the deployment wizard

The deployment wizard provides a simple graphical user interface for deploying a solution (.ser file) to target computers that you specify.

Navigate the steps of the deployment wizard by completing them in order and clicking **Back** and **Next** to switch to the previous or next step.

If no solution is open in the deployment wizard, or the next button is not enabled, you can open a solution to begin the deployment process.

To open a solution, perform the following steps:

1. Open the deployment wizard
2. Click **File > Open**
3. Click the solution with the .ser file extension that you want to deploy and click **Open**. The deployment wizard Welcome dialog is displayed.
4. Click **Next**.

Note: If you are deploying from a solution launcher image, such as the Express Runtime application development toolkit, the default solution will automatically open in the deployment wizard.

Selecting tasks to deploy

The deployment wizard provides a list of all of the tasks that are part of the solution. A task is a set of actions that are performed together. Select any combination of tasks listed in the wizard for deployment to one or more target computers.

To select tasks for deployment, perform the following steps:

1. Select at least one task from the list that is displayed in the deployment wizard, by selecting the corresponding check box.
2. Click **Next**.
3. Tasks might contain one or more sets of subtasks. Select at least one subtask for each task.
4. Click **Next**.

Define target computers

Define one or more target computers for each task that you select for deployment. You can define up to 100 target computers. To define a target computer, the fully-qualified domain name or the IP address of that computer is required. A fully-qualified domain name includes all higher level domain names up to the top-level domain name.

Use the following guidelines to ensure the correct format of a domain name:

- An alphanumeric text string up to 24 characters in length, containing any of the letters A-Z, digits between 0-9, and the - and . characters

- The first character must be an alphabetical.
- You can use upper and lowercase letters.
- The last character cannot be a minus sign or a period.
- Only use periods to delimit components of a domain name.
- Do not use blank or space characters.
- localhost represents the local computer.

Use the following guidelines to ensure the correct format for an IP Address:

- A 32-bit numeric address written containing four numbers.
- Each of these four numbers can range from 0 to 255.
- Each of the four numbers is separated by periods.

To define a target computer, perform the following steps:

1. In the target field, type the fully-qualified domain name, or the IP address of the target computer.
2. Click **Add**.
3. Repeat steps one and two for all additional target computers.
4. Click **Test Connections** to verify the deployment wizard can connect to the specified target computers. The Target Computer Data window is displayed and shows the status for each target computer. If the deployment wizard cannot connect to a target computer, verify that the fully-qualified domain name or IP address is correct. Also, ensure that the IBM Installation Agent is installed and running on each target computer. If this information is correct, contact the computer owner to determine if the target computer is running and connected to a network.
5. Click **Next**.

If a firewall exists between the staging server and the target computer, ensure that the firewall permits communication on the specified port. If no firewall is running, you should use the default port 0. Using port 0 causes the deployment wizard to allocate an open port. You should only use ports other than 0 if a firewall is in use. Ensure that communication is open from both sides of the firewall.

Configuring deployment parameters

The deployment parameters dialog contains the deployment parameters for an application associated with a selected task. Use deployment parameters to configure an installation during deployment. Examples of deployment parameters include user IDs, passwords, and target directories.

In many cases, the deployment parameters can have default values. You can use or modify the default values. The values are shared with all target computers associated with a task.

Complete all the fields on the deployment parameters dialog denoted with an asterisk. Provide deployment parameters for every task in the solution selected for deployment, and click **Next**.

Modify parameters listed on the **Typical** tab only. The parameters on the **Advanced** tab are for advanced users only. Do not modify advanced parameters unless you understand the potential results of changing the parameter.

When the deployment wizard encounters an error with variable validation, and additional information is available for the validation of that variable, a link is displayed. To learn more about the validation rules for a specific variable, and the input that is required, you can click the link below the variable.

Deploying tasks to target computers

The summary dialog of the deployment wizard displays a summary of the tasks that have been selected to deploy and the target computers selected for deployment. An estimate of the time to install each task is provided, along with the summary of the task. This dialog also shows the status of the last attempted deployment for each task.

There are two methods for deploying tasks. Click **Deploy Task** to deploy each task individually. Click **Deploy All** to deploy all of the tasks that are displayed on the summary dialog sequentially.

If the files required for deployment span more than one disk or cannot be located, a dialog prompts you for the correct location of each disk or deployment package JAR file that cannot be found. A dialog prompts you for each item needed to complete the deployment.

Viewing deployment status

The status dialog of the deployment wizard provides detailed information on the deployment process. It contains deployment status and messages that explain the reason for any errors that occurred during deployment. To view a list of all the messages that are displayed during deployment, click **Detailed Messages**. Detailed messages provides the name of the solution, time, and the target computer for the deployment of each solution.

To view a log of the tasks that were performed during deployment, click **Master Log**. The Master log provides a list of every action that occurred as part of deployment. You might need to refer to this information when debugging unsuccessful deployments.

Deployment logging options

You can use specific logging options in the deployment wizard to generate log files that provide information that is useful to have when resolving problems that you might encounter during deployment. You can enable logging to provide diagnostic information that is related to the support framework, the deployment wizard, or both. Support framework diagnostic information (to display user-defined messages that are created during solution development), and deployment wizard diagnostic information that might be helpful to debug a deployment is logged in separate files. You can specify the name that you want to use for each log file, and the maximum amount of space that each log file can physically occupy.

Use diagnostic logging only when it is necessary for troubleshooting a deployment.

To use deployment logging, perform the following steps:

1. From the deployment wizard select **Edit > Preferences**.
2. From the Deployment Preference dialog, click **Diagnostic Trace**.

3. In the Diagnostic Trace dialog, select the checkbox that corresponds to the type of diagnostic information you want logged. You can select support framework information, deployment wizard information, or both.
4. Provide a name for the file to which diagnostic information is recorded.
5. Provide a value for the maximum amount of space that each log file can physically occupy.
6. From the Diagnostic Trace dialog, click **OK**.
7. From the Deployment Preference dialog, click **OK**.

The log files that the deployment wizard generates are saved in the following locations:

- *Installation_Directory/SolutionEnabler/logs/*
- *Installation_Directory/IIA/logs/*

You can also use deployment diagnostic logging when you start the deployment wizard from the command line.

To use deployment diagnostic logging when you start the deployment wizard from the command line, you can apply the following arguments:

- **-enableSolutionDeployerTrace** - Enables the deployment wizard diagnostic logging.
- **-solutionDeployerTraceFile** - Sets the name of the deployment wizard log file.
- **-maxSolutionDeployerTraceFileSize** - Sets the maximum size of the deployment wizard log file.
- **-enableSupportFrameworkTrace** - Enables the support framework diagnostic logging.
- **-supportFrameworkTraceFile** - Sets the name of the support framework log file.
- **-maxSupportFrameworkTraceFileSize** - Sets the maximum size of the support framework log file.

The following command provides an example of a command line invocation of a solution that uses all of the available arguments to perform diagnostic values:

```
DJTJRE\bin\java -jar DJT_ibmnsit.jar -enableSolutionDeployerTrace
-solutionDeployerTraceFile myTrace.log -maxSolutionDeployerTraceFileSize 10
-enableSupportFrameworkTrace -supportFrameworkTraceFile mySupportTrace.log
-maxSupportFrameworkTraceFileSize 2
```

Note: If you enable the support framework trace and perform a remote installation, the support framework trace information is not logged. For this information to be logged, you need to start the IBM Installation Agent on the remote computer with the **-enableSupportFrameworkTrace** option.

Deployment wizard preferences

Use the deployment wizard preferences to specify default settings that the deployment wizard uses, configure logging options, and specify display settings.

Path

A deployment package contains resources that the task being deployed requires. The deployment package path is the location where all the deployment package

files are stored. By default, the deployment package path is:
<installation_directory>\Runtime21\SolutionEnabler\com\ibm\jsdt\webserver\tree.

Communication ports

Select the data and communication port numbers that you want the deployment wizard to use. If you specify a 0 for either the data or communication port, the deployment wizard automatically determines an unused port to use. Specify the maximum number of connections that can be used by both the communication and the data ports.

Troubleshooting

You can use specific logging options in the deployment wizard to generate log files that provide information that is useful to have when resolving problems that you might encounter during deployment. You can enable logging to provide diagnostic information that is related to the support framework, the deployment wizard, or both. Support framework diagnostic information and deployment wizard diagnostic information are logged in separate files. You can specify the name that you want to use for each log file, and the maximum amount of space that each log file can physically occupy.

Use diagnostic logging only when it is necessary for troubleshooting a deployment.

Display settings

Click **display settings** to toggle between the default deployment wizard, and the display settings of your computer. You can change the display settings to those of your computer to enable more accessible viewing.

Target Computer Data panel

The Target Computer Data panel displays information for all target computers associated with a task, and indicates whether the deployment wizard can connect to the target computer. A green check mark to the left of the Target column indicates the deployment wizard can connect to the IBM Installation Agent on the target computer. A black question mark to the left of the Target column indicates that the deployment wizard is collecting data or was unable to determine the operating system of the target computer because the target computer is running a down-level version of the Installation Agent. A red circle with an X to the left of the Target column indicates the deployment wizard cannot connect to the Installation Agent on the target computer. Possible reasons for failure to connect include:

- The computer does not exist on the network.
- The computer is not running the IBM Installation Agent.
-

See the *Details* column for more information on the target computer's status.

Password Management panel

Password management protects against unauthorized use of the IBM® Installation Agent. Before installing any software, generate a set of passwords on both the staging server and the selected target computers. You must specify the same text string or phrase on the staging server and each target computer in order for the authentication to be successful.

You can run password manager using one of the following methods:

- Password manager shortcut
- IIA_TaskInvocation for i5/OS (known as OS/400® prior to Version 5 Release 3) systems only: Syntax IIA_TaskInvocation -task createkey -phrase <security phrase>
- Command-line interface: IBM Installation Agent\JRE\bin\java -jar DJT_ibmnsit.jar -task createKey -phrase <security phrase> [-options] where <security phrase> is a text string or phrase and [-options] includes:

-logFileName <filename> - name of the file to which are written any messages received during task execution

The security phrase can be any combination of alphanumeric characters and can be any length. Make the phrase something you can remember, but not something that is easy for someone else to guess.

Remember that the phrase on the staging server must be the same phrase you entered on each target computer. Remember also that the phrase is case-sensitive. Write down this phrase and keep it in a secure place.

If a staging server makes five consecutive attempts to deploy to a target computer without correct matching passwords, the passwords on the target computer will be deleted. You must then go to the target computer and create the passwords again using the Password Manager utility.

Important: You must be able to create the phrase on both the staging server and all of the target computers. For this reason, do not use any language- or keyboard-unique characters when specifying the phrase.

Chapter 7. Maintaining

An introduction to the Express Runtime console

The Express Runtime console provides a single, Web-based utility for performing administrative tasks. By providing a consistent Web-based user interface, the Express Runtime console simplifies the experience of managing the following IBM Express Runtime middleware components:

- WebSphere Application Server – Express
- DB2 UDB Express
- IBM HTTP Server
- Informix Dynamic Server Express

The Express Runtime console helps you to manage multiple instances of each of the IBM Express Runtime middleware components. The IBM Express Runtime middleware components that you manage can be on one or more computers. You can use the Express Runtime console to perform the administrative tasks:

- Check status, start and stop application servers, Web servers, and DB2 databases.
- Configure log settings and view logs.
- Analyze logs from multiple components
- Check server status and database health.
- Perform a one-step database backup.
- Modify WebSphere Application Server – Express configuration settings.
- Filter tasks according to the role you perform.

You can access the Express Runtime console from a Web browser so you can manage IBM Express Runtime middleware components remotely. The Express Runtime console can be configured for use with a certificate from a certifying authority for added security.

The Express Runtime console audience

The Express Runtime console is intended for use by anyone who manages or performs administrative tasks on any of the Express Runtime middleware components. If you are a system administrator, a software developer, or a software deployer, the Express Runtime console can help you by providing a Web-based central location to perform many middleware management and administration tasks, including all tasks for WebSphere Application Server – Express.

The Express Runtime components

The Express Runtime consists of development and deployment tools combined with IBM middleware that you can use to create robust business solutions; the middleware components and the Express Runtime console can be deployed as part of your solutions. The Express Runtime console allows you to set up a system to manage all of the middleware components. There are separate console modules for each combination of middleware component type (application server, database, and Web server) and target operating system.

All of these components can be deployed using the Express Runtime deployment wizard.

The deployment of a middleware component includes a *management extension*, which contains the support needed for the console to remotely manage the facilities of that middleware component. When any management extension is deployed to a system, the deployment wizard also installs a console agent, which controls the communications with the console.

When you select any console module to deploy, the deployment wizard also installs the Integrated Solutions Console, which provides the framework for the console. Refer to the Integrated Solutions Console InfoCenter for more information. The deployment wizard also installs the base Express Runtime console at that time, including the base help topics for the console.

Chapter 8. Reference

Troubleshooting

The topics in this category provide information and procedures that help you diagnose problems.

Viewing product version information

To properly troubleshoot and report problems, you might need specific product version information. The way you access this information depends on the particular issue and portion of the product that you are using.

To access this information for Express Runtime products follow these steps:

Express Runtime developer

From within Express Runtime developer, click **Help > About Express Runtime developer**. Click the icon at the far right of the dialog to view both version and build information.

Deployment wizard

From within the deployment wizard, select **Help > About**. The window displays the build ID for the deployment wizard and JVM version information.

Problem analysis and reporting

Express Runtime creates several log files. You can use these log files to determine the cause of a problem. These files contain information that you might need to supply to the IBM Support Center if there is a problem with the Express Runtime product itself. There are three distinct phases during which Express Runtime can generate these logs: during installation, during development, and during deployment of Express Runtime.

The Express Runtime logs are located in the <install dir>\Runtime21\SolutionEnabler\logs folder, including those created during installation. Logs that are generated at deployment time are placed in the /deployment/logs folder on the target computer.

Diagnosing a problem

In many cases, you might wait until an error happens two or three times before actually taking the time to diagnose it. When you decide to diagnose a system problem, follow these steps:

- When the problem occurs, collect the symptom data and determine what type of problem it is.
- Once you determine the type of problem, determine if the problem is a product problem or a user problem.
- Build a search argument from the data collected.
- Report the problem to IBM. Provide the search argument that you built to determine if the problem has already been reported.

The following topics help you understand what information to gather in order to diagnose the problem.

Selecting the proper form to submit to the Virtual Innovation Center

Below is a sample of the types of information that should be included by request or report type.

Your first selection is one of the most important. It indicates the type of submission you want to make. There are three forms to choose from:

- **Participant Issue**

Participation Issue forms can be submitted to reflect problems or issues in your interaction with the Virtual Innovation Center Community site. These types of issues vary from problems accessing educational material to accessing resources.

Information for this type of report includes component, browser and version, error number and message (if applicable), and the specific problem you are experiencing.

- **Product Issue**

Product Issue forms can be submitted for either Express Runtime, IBM WebSphere Application Server - Express or DB2 Universal Database (UDB)-Express. These reports indicate specific problems with the product that are considered to be a suspected defect (for example, the product is not performing to specifications).

Information for this type of report includes error number and message, product component (for example, for WebSphere Application Server - Express, the problem might exist in the development environment or the deployment environment), and steps required to re-create the problem.

- **Request for Porting Assistance**

The Request for Porting Assistance form is only available to companies and participants that have requested such assistance, and have been approved by IBM. The ability to access this feature is part of the registration process.

The Request for Porting Assistance form provides advanced help is provided to companies utilizing the product code to develop or port applications.

Information for this type of request includes product, component, company project, and the specific assistance that is required.

Types of information to gather before submitting a problem to the Virtual Innovation Center

In order to efficiently and quickly resolve problems, provide as much information as possible to the IBM Virtual Innovation Center team. This includes providing steps for recreating the problem, as well as explanations of errors, lack of action you experienced, or unexpected actions that occurred.

Fill out the form

The information that you provide forms the basis of the resolution process for your submission and must be as accurate and complete as possible.

- **Product** The product for which you are submitting the problem or request. Depending on the type of form, the choices vary. For Participant Issues, the type of system is the product.
- **Version** The version of the product. The version choices change to represent the proper list when you select a product.
- **Component** The component of the product currently selected. The choices for component change to represent the proper list when you select a product.
- **Browser** The Web browser that you were using when the problem occurred.

Hint: This information is important, especially for Participation Issues, because some errors only occur when using certain browsers but function properly in others.

- **Browser version** The version of the Web browser. The choices change to represent the proper list when you make your browser selection.
- **Operating System** The type of operating system you are using. Knowing the operating system assists in the process of recreating the problem. Ensure that you also include any service pack revisions or upgrades applied to your operating system.
- **Recreatable** The determination whether the problem that you are experiencing is recreatable. In other words, does the problem occur each time you attempt a certain action, or did it occur a single time. Report issues that are recurring, recreatable problems.

If the problem seems to have gone away or fixed itself, do not submit it as an issue. Report sporadic issues through the e-Tutors. You can also use e-mail, which is available in the Virtual Innovation Center Site, under the Help Options or e-Support features.

- **Error Number** The error number that is displayed when the error occurs. For example, when you navigate to a page and get a 'Page cannot be displayed' message, you also see 'HTTP 404' displayed either at the top or bottom of the page.
- **Error Message** The error message that is displayed. If the message is too large to include within the field, paste the message into a text or document file. Then upload it to the IBM Virtual Innovation Center team. See the file attachment fields at the bottom of the data entry panel.
- **Steps to recreate** The steps that were followed when the problem occurred. If there isn't enough room to document the steps within the size of the entry field, paste the message into a text or document file. Then upload it to the IBM Virtual Innovation Center team. See the file attachment fields at the bottom of the data entry panel.
- **Unexpected actions** The events that resulted in a significantly unusual occurrence, for example, a link that previously brought you to one location now brings you to a completely different location, or no longer works.
- **Other Information** Any additional information that is relevant in order for IBM to help resolve the problem. If the information that you need to include exceeds the size of the entry field, paste the message into a text or document file. Then upload it to the IBM Virtual Innovation Center team. See the file attachment fields at the bottom of the data entry panel.
- **File Attachment/Uploading Files** Fields that allow you to attach any necessary files to your report submission.

Tip: Before attaching any files, use a Zone Information Protocol (ZIP) compression utility to compress all of your files into one *.zip file. Click **Browse** to select your *.zip file. Once selected, click **Submit**.

Support for end-user customer defects

The IBM Support Center offers service during normal business hours. Two methods of reporting Express Runtime end-user customer defects are:

- Contact IBM software support at (<http://www.ibm.com/software/support>)
- Contact your local IBM Support Center by telephone, using the number that was provided to you in the original "Welcome" letter you received after completing the original equipment manufacturer (OEM)/ISV Agreement process for the IBM Express Runtime software product.

When contacting the IBM Support Center, you will be asked to provide the following information:

- IBM customer number
- Telephone number and caller name
- Company name
- The name of product for which you need support (for example, the IBM Express Runtime product). Although Express Runtime includes WebSphere Application Server - Express, DB2 UDB Express and other components, specify the initial problem report with Express Runtime as the product.

Before Contacting the IBM Support Center

Take the following steps before you contact the IBM Support Center. Gather information about the problem, and have it on hand when you discuss the problem with the IBM Support Center.

The following checklist can help you identify the problem.

1. **Define the problem:** Use the Problem Resolution Work Sheet to help you identify the problem and communicate the specifics about the problem to the IBM Support Center.
2. **Gather background information**
To effectively and efficiently solve a problem, provide all of the relevant information about the problem. Being able to answer the following questions can help in resolving your software problem:
3. **Gather relevant diagnostic information:** It is often necessary that the IBM Support Center analyzes specific diagnostic information, such as storage dumps, traces, and so on, in order to resolve the problem. Gathering this information is often the most critical step in resolving the problem. Product-specific diagnostic documentation can be very helpful in identifying what information is typically required to resolve problems. If you are unsure about what documentation might be of use, The IBM Support Center is available to provide you assistance and guidance.
4. **Reporting the software problem:** IBM does not warrant that products are defect free; however IBM endeavors to fix them to work as designed.
Tasks you might need to complete to provide information include:
 - Capturing documentation at the time of a failure
 - Applying a trap or trace code to your system
 - Formatting the output from the trap or trace
 - Sending documentation or trace information, in hardcopy or soft copy, to the IBM Support Center.

Occasionally, you might be asked to remove installed fixes in the process of isolating problems. Fixing a problem might mean the installation of a later release of the software, because some fixes cannot be retrofitted into earlier code.

Be aware of your responsibilities when working with the IBM Support Center, as stated in your OEM/ISV Agreement. If you do not have the required skill or cannot complete the diagnostic tasks, you can engage a service provider (for an additional fee) such as IBM Global Services (IGS) to assist you.

Problem Identification Worksheet

Complete this form before calling the IBM Support Center. This form helps you identify problems and assists the IBM Support Center in finding solutions.

- System information
 - What is the failing product?
 - What is the version number and the release number?
 - What machine model, operating system, and version are you running?
- Problem Description
 - What are the expected results?
 - What statement or command is specified?
 - What are the exact symptoms and syntax?
 - What is happening? What is the message text and error number?
 - Is anyone else experiencing the problem?
 - Is this the first time this operation has been attempted?
 - Is this the first time this problem has occurred?
- Environment
 - When did this activity work last?
 - What has changed since the activity last worked?
 - __ Hardware type/model __ Application
 - __ Operating system/version __ Level of usage
 - __ New product version/release __ Maintenance applied
- If the problem does not occur every time, under what conditions does the problem occur?
- Is there any other software running on the system that might conflict with this product?
- Problem Isolation
 - Identify the specific feature of the software causing the problem.
 - Can you reproduce the problem? If so, provide a reproducible test case or instructions on how to reproduce the error condition

Problem analysis and problem identification tutorial education

The Problem Determination Mastery Self-Study Series is a tutorial that is designed for the following groups:

- Users that support applications in a database environment
- Users that develop applications in a database environment
- Users of WebSphere Application Server products.

The complimentary tutorial teaches you the following skills:

- To identify product issues
- To isolate product issues
- To resolve product issues

With these skills you can reduce the time it takes to resolve a problem, as well as reduce your dependence on the IBM Support Center. Currently a mastery examination is available for DB2 Universal Database and WebSphere Application Server.

- DB2 UDB Tutorial - (<http://www.ibm.com/software/data/support/pdm/>)

- WebSphere Application Server Tutorial - (<http://www-3.ibm.com/software/webservers/appserv/express/support/pdt.html>)

Ensure you have administrator privileges

You must have administrative access to install or uninstall IBM Express Runtime. If you attempted a silent installation and do not see a log file generated, be sure that you have administrative privileges. Only users with administrative access can install IBM Express Runtime on Windows or Linux operating systems. During a silent installation, most errors are written to a log file; however, log messages cannot be logged for non-administrative users.

Note: Log messages are not logged for non-administrator users on Windows or Linux operating systems.

If you attempt to deploy wrappers when the provided user ID does not have the administrative access, the wrappers can display a successful deployment, but do not work correctly when you attempt to start them. This is because in most cases, to start the IBM middleware, the user ID requires administrator privileges.

Installation log files

The Express Runtime installation is actually broken into two installation phases:

- The first phase of the installation process installs the launch pad, which contains a link to install the rest of Express Runtime.
- The second phase of the installation process is called from the WindowsSetup program on Windows, the LinuxSetup program on Linux, or the LinuxPPCSetup program on Linux on IBM POWER. You can run these programs directly.

The launch pad starts automatically on Windows computers when you load the installation CD. If it does not start automatically, you can start it by using the launchpad.exe program on Windows or the launchpad.sh program on Linux or Linux on POWER. Once the installation CD loads, the launch pad starts.

Both phases of the installation process create logs. These logs are merged into a single file, IRU_Install.log, which is contained in the <install dir>/Runtime21/SolutionEnabler/logs folder. The installation generally completes successfully, however, if an error does occur during installation, you can consult this log file.

If you attempted a silent installation and do not see a log file generated, be sure that you have administrative privileges. Only users with administrative access can install IBM Express Runtime on Windows or Linux operating systems. During a silent installation, most errors are written to a log file; however, log messages cannot be logged for non-administrative users.

Development log files

With Express Runtime installed, use the Express Runtime development environment to create and build your application wrappers and your solution wrappers. The Express Runtime development environment, in turn, uses three tools to build a solution:

- The application generator compiles the application wrapper and builds manifest files.
- The solution generator compiles the solution wrapper.
- The deployment package generator creates the user JAR files.

Each of the above tools also creates a log file. The tools place these log files, listed in table 2, into the workspace associated with the Express Runtime developer workbench. The location of the application generator log is dependent on whether you are building an application or a solution:

Table 14. Log files created at development time.

Log file name	Location	Description
applicationBuilder.log	When you are building an application: <application project>\bin\ <application id>\log	The application generator writes status and error information to this log file as it creates the application .ser file. In addition, Extensible Markup Language (XML) parser information about the application wrapper is written to this file.
solutionBuilder.log	When you are building a solution: <solution project>\bin \log	The solution generator writes status and error information to this log file as it creates the solution .ser file.
deploymentPackageBuilder.log	<solution project>\bin \<application id>\log or <application project>\bin\<application id>\log	The deployment package generator writes status and error information to this log file as it creates the user .jar file.

Manifest files are useful for making certain that the correct files are included in the JAR user files and the media JAR files. The manifest files, MANIFEST.MF and USERPROGRAMS.MF, are located in the Eclipse workspace under the application project. For example, <workspace location>\<application id>\bin\<application id>default.

Deployment log files and using a trace

There are several types of files that can aid your debugging effort during the deployment phase:

- Log files
- User program and media files
- Response files
- Property file

In general, the location of these files depends on whether the deployment is remote or local.

Performing the deployment

To perform a remote deployment, use the IBM Installation Agent (IIA) and the deployment wizard, which are both Express Runtime tools. The Installation Agent must be running on the target computers and the deployment wizard must be running on the source computer (also called the staging server).

To perform a deployment on a local computer, you only need to use the deployment wizard.

Keeping temporary deployment files

Some of the files that are used during deployment are temporary files. If you want to prevent Express Runtime from deleting temporary files after a deployment, you must use the command line option `-leavefiles`. This option is prebuilt in a batch file on Windows platforms (`IRU_DebugInstallationAgent.bat`) and a script file on Linux platforms (`IRU_DebugInstallationAgent.sh`).

Keeping temporary deployment files on Windows platforms

To prevent Express Runtime from deleting temporary files after a deployment, perform these steps:

1. Stop the IBM Installation Agent service if it is running.
2. Start the IBM Installation Agent again using the `IRU_DebugInstallationAgent.bat` file.
3. Start the deployment wizard with the `-leavefiles` option, using the following command:

```
./IRU_TaskInvocation -task deployer -leavefiles
```

Keeping temporary deployment files on Linux platforms

To prevent Express Runtime from deleting temporary files after a deployment, perform these steps:

1. Stop the IBM Installation Agent if it is running, using the following command:
2. Start the IBM Installation Agent again using `IRU_DebugInstallationAgent.sh.script`.
3. Start the deployment wizard with the `-leavefiles` option, using the following command:

```
./IRU_TaskInvocation -task deployer -leavefiles
```

Keeping temporary deployment files on OS/400 (i5/OS)

To prevent Express Runtime from deleting temporary files after a deployment, perform these steps:

1. Stop the IBM Installation Agent, using the following command:
2. Start the IBM Installation Agent again, using the following command:

```
IRU_iaa_stop-agent
```

```
IRU_iaa_start-agent -leavefiles
```

By specifying the `-leavefiles` command line option, Express Runtime does not delete the media and user files after deploying an application. Instead, Express Runtime leaves them in the unpacked directory. These files can be useful for

ensuring that Express Runtime transferred the user and media JAR files to the target computer correctly. For remote and local deployments, the unpacked directory is located in <ER install drive>/iru. If there is already a directory with this name on the target computer, a numerical suffix is added to create a unique name for the unpacked directory (for example, <ER install dir>/iru1).

To determine what values were specified for those configuration parameters that have fileAssociations XML entries associated with them, examine the contents of response files. The names are controlled by the application wrappers.

Similarly, to determine what values were specified for those configuration parameters that have propertiesAssociations XML entries associated with them, you can examine the contents of the property file, ibmnsi.properties. To find the response files and the property files, look in the following directories:

- For remote deployments, these files are located in the <IIA install dir>/IIA/deployment/logs
- For local deployments, these files are located in the <ER install dir>/Runtime21/SolutionEnabler/deployment/logs

Deployment logging and requesting a trace

You can use specific logging options in the deployment wizard to generate log files that provide information that is useful to have when resolving problems that you might encounter during deployment. You can enable logging to provide diagnostic information that is related to the support framework, the deployment wizard, or both. Support framework diagnostic information (to display user-defined messages that are created during solution development), and deployment wizard diagnostic information that might be helpful to debug a deployment is logged in separate files. You can specify the name that you want to use for each log file and the maximum amount of space that each log file can physically occupy.

Logging diagnostic information is CPU intensive, and therefore slows system performance. Use diagnostic logging only when it is necessary for troubleshooting a deployment.

To learn more about these logging options and how to request a trace, refer to **Deploying solutions to target computers > Deployment logging options** in this InfoCenter.

Deployment logs

During deployment, there are four types of log files:

Express Runtime

The file is named IRU_DeploymentWizard.log.

The file is located in <ER install dir>/Runtime21/SolutionEnabler/logs.

This log file contains messages and exceptions that are stored on the staging server (for both local deployment and remote deployment).

Installation Agent

The file is named IRU_IIATrace.log.

The file is located in <ER install dir>/Runtime21/SolutionEnabler/logs if you are performing a local deployment.

The file is located in <IIA install dir>/IIA/deployment/logs if you are performing a remote deployment.

This log file allows you to add print instructions to your user programs, which can aid you when debugging a problem. Data that you write to either the System.out or System.err file is displayed in this log. In addition, exceptions that occur while a user program is running also is displayed in this log.

NSI The file is named `ibmnsi.log`.

The file is located in <ER install dir>/Runtime21/SolutionEnabler/deployment/logs if you are performing a local deployment.

The file is located in <IIA install dir>/IIA/deployment/logs if you are performing a remote deployment.

This log file can be used for debugging user programs. It contains the command line call of the most recent user program. You can run this command string from a command prompt to start the user program directly without having to go through the deployment wizard. In this way, you can run your user program with all of the scaffolding that would be there if your user program had been started by the normal process.

Application

Different types of user programs each create a log file.

The file is located in <ER install dir>/Runtime21/SolutionEnabler/deployment/logs if you are performing a local deployment.

The file is located in <IIA install dir>/IIA/deployment/logs if you are performing a remote deployment.

The creation of application logs is controlled by the application wrapper and the user programs.

Each of the different types of user programs can create a log file, if desired. The `logFile` attribute in the application wrapper controls the name of the log file. This attribute can be displayed in each of the following XML elements:

- `<preDeploymentChecker>`
- `<entryProgram>`
- `<mainProgram>`
- `<exitProgram>`

These log files are controlled by user programs. Using these logs, you can gauge the progress of your programs. You determine what data should be logged in the application logs.

Recommendation: Consider data such as logging exceptions, return codes, parameters, calls, progress, and so on, in order to determine what information should be logged to allow you to debug errors.

Express Runtime Web site

The Express Runtime Web site is located at the following URL:

<http://www.ibm.com/software/webservers/expressruntime/>

The Express Runtime Web site features valuable support and documentation resources in addition to the latest Express Runtime news.

You can also use IBM Express Runtime technical education, enablement, and predeployment support within the overall IBM PartnerWorld(R) Web site ((<http://www.ibm.com/partnerworld>)). The PartnerWorld® home page provides links to a variety of information and resources depending on your needs. To access the full complement of resources, join the IBM PartnerWorld for Developers and IBM PartnerWorld for Software programs. These programs offer a broad range of benefits to partners working with the IBM Express Runtime software product.

A key part of Express Runtime is provided through the Virtual Innovation Center ((<http://www.ibm.com/partnerworld/vic>)). The Virtual Innovation Center provides complementary resources that enable mid-market companies and businesses to build technical, sales, and product skills using Express Runtime, as well as the IBM Express products (for example , IBM WebSphere Application Server (R) Express, Database 2(TM) UDB Express), and other IBM software.

Benefits of the Virtual Innovation Center

By using the Virtual Innovation Center, you receive benefits that include:

- Early assistance in building your applications on IBM software
- Code for development and training purposes at no charge
- Complimentary online IBM education courses
- Access to online technical support using e-mail or chat tools
- Access to online sales and marketing materials

Virtual Innovation Center Topics

The following list of topics can help you start to understand, plan, and build technical, sales, and product skills. It can guide you through information in the Virtual Innovation Center for IBM Express Runtime, IBM Express products and other IBM Software:

- Education with mentoring
 - Technical Education
 - Marketing Sales
- Support
 - Self-service approach
 - FAQ's
 - White papers
 - Hints, tips, and tricks
 - Topical forums and discussion groups
 - Telephone support, help, and marketing
 - Online support available
 - Mentoring and relationship management
 - Additional porting assistance for qualified customers
 - Express solutions
 - Pre and post sales support

Messages

This chapter lists the messages generated by the deployment wizard, the IBM Installation Agent, and their respective installation programs. You can use the information in this chapter to identify and resolve an error using the appropriate recovery action. You can also use this information to understand where messages are generated and logged.

The user responses for several messages suggest that you print the log file before calling your solution provider. Some log files are displayed in the deployment wizard messages detail window during an active session. Log files are typically returned in the language of the target computer. When using the deployment wizard, some log files might not be readable if the language of the log file is not supported by the operating system on the staging server. Similarly, some log files might not be readable if the language of the log file is not supported by the operating system on the target computer.

Message identifiers consist of a 3-character message prefix followed by a five-digit message number. Tokens, such as {0}, {1}, and so on, are used in many messages. These tokens represent computer names, application names, files names, or directory names. The appropriate value is substituted for the token when the message is displayed.

IRU00000 messages

IRU00000 messages

IRU00000 **Explanation:**

The command issued during deployment. : The following command was issued:
{0}

User response:

This is an informational message. No action is required.

IRU00001

Exception occurred issuing command. Exception: {0}

Explanation:

The command failed due to the listed exception.

User response:

This is an informational message. No action is required.

IRU00002

There are no files defined for this software.

Explanation:

There are no files defined for this software in the application wrapper.

User response:

Contact your solution provider.

IRU00003

The path specified does not contain the files necessary to create this deployment package.

Explanation:

If you copied the solution components to a network drive, you might not have maintained the directory structure of the original install image. The file structure of the install image must be maintained when copying files to a local area network (LAN) or other location.

User response:

If the files were copied to a LAN, ensure that the file structure is the same as the original install image. You should also try the deployment from the original image.

If the problem persists, contact your solution provider.

IRU00004

The directory specified is not valid.

Explanation:

The directory cannot be accessed.

User response:

Verify that the directory that you specified actually exists. If the problem persists, contact your solution provider.

IRU00005

The process of creating a deployment package completed successfully.

Explanation:

The deployment wizard successfully created the package for the application.

User response:

For information only. No action required.

IRU00006

An error occurred processing the command {0}.

Explanation:

The deployment wizard encountered an internal error on the staging server.

User response:

Restart the deployment wizard. If the problem persists, contact your solution provider.

IRU00007

The solution file {0} does not exist.

Explanation:

You must give a binary solution file name as a parameter for the `-solutionFileName` option when starting the deployment wizard.

User response:

Enter the binary solution file name, for example, *mysolution.ser*.

IRU00008

The file {0} was not found in either of the following search paths: {1} or {2}.

Explanation:

A file required to create the deployment package was not found.

User response:

Unless you specified it differently, the default log file is `IRU_DeploymentWizard.log` and is located in the directory where Express Runtime is installed. The log file indicates which file was not found. Make sure that the specified file exists and retry the create step.

IRU00009

The process of creating a deployment package was cancelled.

Explanation:

The process of creating a deployment package did not complete because of user intervention.

User response:

For information only. No action required.

IRU00010

The software image root was not specified.

Explanation:

A software image root must be specified before the deployment package creation can proceed. There is no default available.

User response:

Enter the software image root.

IRU00011

The deployment package could not be created in the deployment package path for the following reason: {0}.

Explanation:

There was a problem creating the deployment package.

User response:

Ensure that the directories specified in the file list for your application wrapper exist and that the image root (either `softwareImageRoot` or `userProgramsRoot`) specified locates those directories correctly. If the problem persists, contact your solution provider.

IRU00012

The deployment package path is not valid.

Explanation:

The specified directory cannot be found. There are several possible reasons:

- The directory was never created.
- The directory was deleted.
- The directory resides on a drive that the staging server cannot currently access (for example, an unmapped network drive).

User response:

Specify a valid deployment package path.

IRU00013

A communication socket was created on port {0}.

Explanation:

The communication port was created successfully.

User response:

For information only. No action required.

IRU00014

Failed creating file {0}

Explanation:

The file could not be created.

User response:

Refer to message IRU00013 for the reason the file could not be created.

IRU00015

Port {0} is not available.

Explanation:

The port specified on the preferences panel is already in use.

User response:

Specify a different port.

IRU00016

The IBM Installation Agent must run with {0} special authority to perform an install.

Explanation:

The special authority, listed in the message, is required to perform the necessary install actions.

User response:

Stop the IBM Installation Agent and restart it from a user ID with the correct authority.

IRU00017

The log file for this application does not exist.

Explanation:

There was a problem creating the log file.

User response:

Ensure that the file is valid and is not set as read-only.

IRU00018

{0} is an invalid file name or write access is denied.

Explanation:

The specified file name is not valid or you do not have write access.

User response:

Ensure that the specified file name is valid and that you have write access to the file.

IRU00019

Group PTF {0} level {1} for product {2} applied successfully.

Explanation:

The group PTF was successfully applied to the system.

User response:

This is an informational message. No action is required.

IRU00020

Both phrases are required.

Explanation:

Passwords are required on both the Deployment wizard and the IBM Installation Agent.

User response:

Enter both the passwords again.

IRU00021

The two phrases do not match.

Explanation:

The passwords do not match.

User response:

Enter the password again.

IRU00023

If you exit now, the current deployment will end. Do you want to exit the deployment wizard now?

Explanation:

You requested to close the deployment wizard while it is deploying applications. If you exit now, the deployment will not be completed.

User response:

Select Yes to end the deployment and close the deployment wizard. Select No to continue the deployment.

IRU00025

Stopping now will abnormally end the deployment on a target computer. Are you sure you want to stop now?

Explanation:

You requested to stop the deployment process on the staging server while it is deploying applications on a target computer. If you stop the process now, the deployment on the target computer will not be complete and will end abnormally.

User response:

Select OK if you want to stop the deployment.

IRU00028

You must restart the deployment wizard for the port number changes to take effect.

Explanation:

Changes will not take effect until you close and restart the deployment wizard.

User response:

If you want the port number changes to take effect immediately, restart the deployment wizard now.

IRU00029

You cannot add more than 100 computers to each task.

Explanation:

You are trying to add more computers to a task than permitted. Only 100 computers can be included in each task.

User response:

To deploy this task to more than 100 target computers, you will need to deploy the task more than once, modifying the target host name list for each deployment.

IRU00034

The specified target computer, {0}, is already included in the list.

Explanation:

The target computer is already specified in the list, either by the name indicated, or by an alias.

User response:

Specify a different target computer.

IRU00035

The icon label you entered is not valid.

Explanation:

The icon label that you entered for a computer ID is not valid.

User response:

Enter a valid icon label.

IRU00036

You did not enter information for a required field.

Explanation:

All required fields must contain information before you can continue to the next step.

User response:

Enter the required information in all fields marked with an asterisk (*).

IRU00039

You cannot view or edit the deployment parameters for this software.

Explanation:

No deployment parameters are required for the software.

User response:

For information only. No action required.

IRU00044

A host name must begin with an alphabetic character (A-Z). An IP address must begin with a numeric character (0-9).

Explanation:

Host names can be specified as either a name or IP address.

User response:

Enter a valid host name or IP address.

IRU00045

A host name cannot end with a period (.).

Explanation:

Host names can be specified as either a name or IP address.

User response:

Enter a valid host name.

IRU00046

A host name cannot end with a dash (-).

Explanation:

Host names can be specified as either a name or IP address.

User response:

Enter a valid host name.

IRU00048

A host name can consist only of alphanumeric characters (A-Z, 0-9), a dash (-), or a period (.).

Explanation:

Host names can be specified as either a name or IP address.

User response:

Enter a valid host name.

IRU00049

A period (.) can only be used as a delimiter in a host name.

Explanation:

A period can only be used in a host name when you specify an IP address. An example of a valid IP address is: 3.65.255.0

User response:

Enter a valid host name.

IRU00050

An IP address must be entered as 4 numbers separated by periods (.).

Explanation:

The IP address that you entered is not valid. An example of a valid IP address is: 3.65.255.0

User response:

Enter a valid IP address.

IRU00051

Each number in an IP address must be between 0 and 255, inclusive.

Explanation:

The IP address that you entered is not valid. An example of a valid IP address is:
3.65.255.0

User response:

Enter a valid IP address.

IRU00052

An IP address can contain only numeric characters (0-9) and use periods (.) as delimiters.

Explanation:

The IP address that you entered is not valid. An example of a valid IP address is:
3.65.255.0

User response:

Enter a valid IP address.

IRU00053

The number of tokens provided did not match the number expected for resource bundle {0} with key {1}. The expected number of tokens is {2}.

Explanation:

An internal error prevented the message from being displayed.

User response:

Contact your solution provider.

IRU00054

The resource bundle {0} with key {1} is not valid in the abstraction object.

Explanation:

An internal error prevented the message from being displayed.

User response:

Contact your solution provider.

IRU00055

The key {1} you provided is not valid for the resource bundle {0}.

Explanation:

An internal error prevented the message from being displayed.

User response:

Contact your solution provider.

IRU00056

The resource bundle name {0} is not valid.

Explanation:

An internal error prevented the message from being displayed.

User response:

Contact your solution provider.

IRU00057

Token abstractions are missing for a message in resource bundle {0} with key {1}. The missing tokens are {2}.

Explanation:

An internal error prevented the message from being displayed.

User response:

Contact your solution provider.

IRU00058

There are currently no software packages available for this operating system and language. Do you want to continue?

Explanation:

There are currently no software packages available for this operating system and language.

User response:

Determine whether there's another language that you can use that is available for the software package.

IRU00059

No software packages are available for this combination of operating system and language.

Explanation:

No software packages are available for this combination of operating system and language.

User response:

Ensure you specified the correct operating system. Determine whether there's another language that you can use that is available for the software package.

IRU00060

Failed to re-establish communication with the staging server.

Explanation:

The staging server that initiated the deployment has been restarted or is no longer network accessible.

User response:

Restart the staging server to reestablish the communication with the IBM Installation Agent.

IRU00061

Communication with the staging server successfully re-established.

Explanation:

The IBM Installation Agent has restarted and reestablished a connection to an existing deployment.

User response:

For information only. No action required.

IRU00062

The target computer will restart during the {0} deployment. You will be notified once the target computer is restarted.

Explanation:

The deployment requires the target computer to be restarted.

User response:

For information only. No action required.

IRU00063

The target computer has restarted.

Explanation:

The deployment required the target computer to be restarted.

User response:

For information only. No action required.

IRU00066

Another process modified the original solution. Do you want to overwrite those changes?

Explanation:

The currently loaded solution was modified by another application.

User response:

Select Yes to overwrite the other changes, or select No to keep the other changes. You can also use the SaveAs option to avoid losing your changes and not overwriting the other changes.

IRU00067

The solution has changed. Do you want to save the changes before exiting?

Explanation:

You made changes that affected the solution file that will be lost if the solution is closed without saving.

User response:

Select Yes to save these changes. Select No to discard them.

IRU00068

A file with the same name already exists. Do you want to overwrite that file?

Explanation:

A file with the same name already exists.

User response:

Select Yes to overwrite the existing file. Otherwise, select No .

IRU00069

The file name you specified is not valid.

Explanation:

The specified file name is not valid.

User response:

Check the file name to be sure it does not include special characters.

IRU00070

The file {0} cannot be saved in a read-only directory. You must select another location to save to.

Explanation:

The specified file is located in a read-only directory, and therefore cannot be saved to that directory.

User response:

Choose the File->Save As menu option and select another directory in which to save the file.

IRU00071

The solution file {0} exists in a read-only location. The Solution Deployer will not be able to save any changes made to the solution. To save your changes, open the solution file from another location.

Explanation:

The solution file exists in a read-only location. The solution deployer cannot save any changes made to the solution.

User response:

To save your changes, open the solution file from another location.

IRU00072

Do you want to exit the deployment wizard?

Explanation:

You asked to exit the deployment wizard.

User response:

This is an informational message. No action is required.

IRU00073

Exiting the solution launcher causes the deployment wizard to be uninstalled. Do you want to continue?

Explanation:

You asked to exit the solution launcher without completing the installation of the deployment wizard.

User response:

Be sure you want to exit the solution launcher.

IRU00087

Help could not be loaded; the help set {0} was not found.

Explanation:

The deployment wizard help panels could not be loaded.

User response:

Contact your solution provider.

IRU00088

The help set was not found.

Explanation:

The deployment wizard help panels could not be loaded.

User response:

Contact your solution provider.

IRU00089

The file {0} could not be loaded.

Explanation:

The specified file either could not be found or it contained an error within the file.

User response:

Ensure that the file exists and is a valid file.

IRU00090

The invocation option -{0} is not valid.

Explanation:

The specified invocation option is not valid for the task invoked.

User response:

Specify a valid invocation option. To see all of the valid options for this task, use the -? option.

IRU00091

The invocation option -{0} requires {1} arguments and {2} arguments were provided.

Explanation:

The specified invocation option requires a different number of arguments than you provided.

User response:

Provide the correct number of arguments.

IRU00092

A dash (-) must precede each invocation option.

Explanation:

You did not include the required dash (-) before the invocation option.

User response:

Enter the invocation option again.

IRU00093

The invocation option `-{0}` is required.

Explanation:

You must include the specified invocation option for the task.

User response:

Enter the invocation option again.

IRU00094

A dash (-) is not a valid invocation option.

Explanation:

You did not include the name of the invocation option, only the dash.

User response:

Enter the invocation option again using all required options.

IRU00095

The invocation option `-{0}` requires `{1}` arguments and only 1 argument was provided.

Explanation:

The specified invocation option requires a different number of arguments than you provided.

User response:

Enter the invocation option again using the full name of the invocation option.

IRU00096

The argument `{0}` is not valid for option `-{1}`.

Explanation:

You cannot use the specified argument with this invocation option.

User response:

Enter the invocation option again.

IRU00097

See log file {0} for more details.

Explanation:

The specified log file contains the details of the situation.

User response:

Check the log file for information.

IRU00098

Either the `-phrase` or `-display` option must be used, but not both.

Explanation:

You must use one of the two options, but not both of them.

User response:

Choose the option that you want to use, and enter the invocation option again.

IRU00099

The deployment parameters are not configured for task {0}.

Explanation:

You cannot install the software for the specified task until deployment parameters are configured.

User response:

Configure the software before you try to install it.

IRU00100

Not all deployment packages for task {0} have been created.

Explanation:

Not all deployment packages for task have been created.

User response:

IRU00101

The install task {0} does not exist for the solution {1}.

Explanation:

You entered a task number that does not exist in the solution specified.

User response:

Enter a valid task name.

IRU00103

There is no software for task {0}.

Explanation:

There are currently no software applications defined for the specified task.

User response:

For information only. No action required.

IRU00104

The deployment package {0} could not be created.

Explanation:

The specified deployment package could not be created.

User response:

Ensure that the required files are present. Also, check the log files for any further error messages.

IRU00105

An error occurred processing file set.

Explanation:

An error occurred accessing a file.

User response:

Ensure that the directory where the Application generator is invoked has free space and is not write protected.

IRU00108

The deployment package path {0} does not exist.

Explanation:

You specified a path that does not currently exist.

User response:

Verify that the path that you specified is correct.

IRU00109

The solution file {0} does not support the {1} language.

Explanation:

You specified a language that is not supported in the solution.

User response:

Either create a new solution to include the language for the software, or change the language of the software.

IRU00110

The software {0} does not support the {1} language.

Explanation:

You specified a software application that does not support the solution language.

User response:

Either create a new solution to include the language for the software, or change the language of the software.

IRU00111

The solution {0} could not be opened.

Explanation:

The specified binary solution file could not be accessed. It could be corrupted or it might not exist with the name that you entered.

User response:

Ensure that the specified name is spelled correctly and that the file resides in the correct location. If you still have problems, contact your solution provider.

IRU00112

The solution {0} is invalid.

Explanation:

The path specified for the deployment packages is not valid.

User response:

Ensure that the specified path exists and points to a writable directory.

IRU00113

The software {0} does not support the {1} operating system.

Explanation:

You specified a software application that does not support the solution operating system.

User response:

Either create a new solution to include the operating system for the software, or change the operating system of the software.

IRU00114

All task groups must contain at least one task.

Explanation:

The task group is empty

User response:

Include at least one task in the group.

IRU00115

You do not have write access to the deployment package path {0}.

Explanation:

The path specified for deployment packages must be writeable.

User response:

Specify a writeable deployment package path to store the deployment packages.

IRU00116

The deployment package path {0} is read-only, so the deployment package(s) can not be removed.

Explanation:

The deployment package cannot be deleted because it is located in a path with read-only access.

User response:

Specify a writable deployment package path to store the deployment packages.

IRU00117

The saved deployment package path is invalid. The default path {0} has been restored.

Explanation:

An invalid build images path was specified, or no build images path was specified. A default path will be used.

User response:

No action required. However, if a specific build images path is desired, ensure that the path specified exists.

IRU00118

The deployment wizard version {0} detected agent version {1} which is not compatible.

Explanation:

The computer that you have targeted is running an agent version that is not compatible with the version of the deployment wizard that you are using.

User response:

Ensure that the computer that you want to deploy software on has a version of the agent that is compatible with the version of the deployment wizard that you are using.

IRU00119

WARNING: The log file is larger than 2MB. Only the most recent 2MB of log information is displayed below. Please see IRU_IIA.log for more details.

Explanation:

The log file is too large to display through the deployment wizard interface.

User response:

For information only. No action required.

IRU00120

Specify the {0} attribute or the {1} attribute, or both attributes, when you invoke the task {2}.

Explanation:

At least one of the two options must be called when invoking this task.

User response:

Invoke the task again, calling at least one of the specified options.

IRU00121

The invocation option -{0} will not be used.

Explanation:

You specified an unnecessary invocation on the command line, which will not be used by the generator.

User response:

For information only. No action required.

IRU00122

Jar file {0} created successfully.

Explanation:

The JAR file specified was successfully created.

User response:

For information only. No action required.

IRU00123

The user {0} does not have {1} authority. You must have {1} authority to perform any tasks.

Explanation:

The current user does not have the proper permissions to run the agent.

User response:

Login as a user with the proper authority and try again.

IRU00125

The files required to assemble {0} ({1}) can not be found in the path {2}.

Explanation:

The task cannot be built because the path that was specified was incorrect.

User response:

Specify the correct path.

IRU00126

The files required to assemble one or more deployment packages can not be found in the path {0}.

Explanation:

The files required to assemble one or more deployment packages can not be found in the path.

User response:

Specify the correct path.

IRU00127

Your user ID {0} either does not belong to the local Administrators group or does not have the privileges assigned to that group. To perform the desired task, you must either belong to the local Administrators group or you must have the privileges assigned to that group.

Explanation:

The user ID that was specified either does not belong to the local administrators group or does not have the privileges assigned to that group.

User response:

To perform the task, the user ID must either belong to the local administrators group or you must assign the correct privileges to the group to which the ID belongs.

IRU00128

A problem occurred starting the help system.

Explanation:

A problem occurred starting the help system.

User response:**IRU00130**

The configuration of the solution has changed. Do you want to save the changes?

Explanation:

You have made changes to the solution; these changes will be lost if you open another solution without saving the changes.

User response:

Click Yes to save the changes. Click No to discard the changes.

IRU00131

An error occurred when copying files required by the solution. See {0} for details.

Explanation:

There was a copying error.

User response:

Examine the reference location to determine the cause.

IRU00301

The data port configured for the deployment wizard is not available.

Explanation:

The port specified for data communications is already being used.

User response:

Select a different port. If a firewall exists between the staging server and the target computer, ensure that the firewall permits communication on the specified port. If no firewall is running, you should use the default port 0. Using port 0 causes the deployment wizard to allocate an open port. You should only use ports other than 0 if a firewall is in use.

IRU00302

The value {0} exceeds the range {1} - {2}.

Explanation:

The value that you specified is outside of the valid range.

User response:

Specify a valid value within the range {1} - {2}.

IRU00303

The deployment wizard is configured to use port number {0} as its communication port. That port is already being used by another process.

Explanation:

The specified port number for the communication port is already being used.

User response:

Specify a different communication port number. If a firewall exists between the staging server and the target computer, ensure that the firewall permits communication on the specified port. If no firewall is running, you should use the default port 0. Using port 0 causes the deployment wizard to allocate an open port. You should only use ports other than 0 if a firewall is in use.

IRU00304

The communication port {0} is already assigned.

Explanation:

The communication port that you specified in the preferences is being used by another process.

User response:

Modify the user communication port setting to a port not in use. If a firewall exists between the staging server and the target computer, ensure that the firewall permits communication on the specified port. If no firewall is running, you should use the default port 0. Using port 0 causes the deployment wizard to allocate an open port. You should only use ports other than 0 if a firewall is in use.

IRU00308

Are you sure you want to exit? No changes will be saved.

Explanation:

The user is attempting to exit the deployment wizard during a deployment.

User response:

For information only. No action required.

IRU00800

The install program you are running is not compatible with the operating system.

Explanation:

You have selected to install a program that is incompatible with the operating system.

User response:

Verify the operating system before installing the product.

IRU00801

The directory name must include at least 1 character.

Explanation:

The installation path on UNIX systems must have at least 1 character.

User response:

Enter a path name that consists of at least one character.

IRU00803

The directory name must be at least 3 characters.

Explanation:

A Windows destination was specified with less than three characters.

User response:

Enter a valid destination path.

IRU00804

The first character in the directory name must be a valid drive letter.

Explanation:

An invalid character was entered at the beginning of the directory name.

User response:

Enter a valid drive letter as the first character in the destination path. The range is from A to Z.

IRU00805

The second character in the directory name must be a colon (:).

Explanation:

The second character in a Windows path name must be a colon.

User response:

Enter a valid path using a colon as the second character.

IRU00808

Path names cannot contain double backslashes (\\)

Explanation:

Windows path names cannot contain double backslashes (\\).

User response:

Enter a valid path.

IRU0809

The directory you selected does not have enough space. Please select another location.

Explanation:

A destination path does not contain enough space to complete the installation.

User response:

Enter another path.

IRU00810

The temporary directory does not have sufficient space. Click Browse to select an alternate temporary location.

Explanation:

The temporary directory must contain enough space to initiate the installation.

User response:

Enter another path.

IRU0811

The directory does not exist. Do you want to create it?

Explanation:

The requested destination directory does not exist.

User response:

Click Yes to create the directory.

IRU0814

The installation aborted. Some of the program files might not have been removed.

Explanation:

The installation was aborted, either by user request or by program failure, but some installation files might remain on the computer.

User response:

Analyze the log file for details about why the installation aborted. Remove any remaining program files from the directory you specified during the installation.

IRU0815

Installation language = {0}

Explanation:

Specifies the language the user selected for the Express Runtime installation program.

User response:

This is an informational message. No action is required.

IRU0816

Installation directory = {0}

Explanation:

Specifies the location in which the Express Runtime program is installed.

User response:

This is an informational message. No action is required.

IRU00817

Installation is complete.

Explanation:

Informs the user that the install has completed.

User response:

This is an informational message. No action is required.

IRU00818

The destination directory should contain a maximum of 40 characters.

Explanation:

The destination panel restricts the user to enter no more than 40 characters for the destination directory.

User response:

Enter a destination directory with 40 or fewer characters.

IRU00824

The base Express Runtime product is not installed on this system.

Explanation:

The fix cannot be applied because the base Express Runtime product is not installed.

User response:

Install the base Express Runtime product and try installing the fix again.

IRU00826

This fix does not apply to the installed version of the base Integrated Runtime product.

Explanation:

The version of the Express Runtime product that you have installed is not compatible with the fix you are trying to install.

User response:

Obtain the correct fix for your version of the base Express Runtime product.

IRU00829

The same or higher level of Express Runtime fix pack is already installed. Click Cancel to exit the installation.

Explanation:

The fix cannot be applied because it or a higher version is installed.

User response:

For information only. No action required.

IRU00831

The following user data files are updated by this fix pack: {1} These files are also backed up individually in their original location for quick access.

Explanation:

Any user data files updated by this fix pack are listed.

User response:

For information only. No action required.

IRU00832

An error occurred while backing up these files: {0}. If you want to continue you may manually back up these files, though this action is not required.

Explanation:

Errors occurred while backing up a set of the files.

User response:

Manually back up the files listed.

IRU00833

An error occurred while backing up these files: {0}. If you want to continue you may manually back up these files, though this action is not required. Note: You are not able to roll back this fix pack because of this error. Any previous rollbacks are removed.

Explanation:

Errors occurred while backing up all the files. If you want to continue installing the fix pack, then you will be unable to roll it back. If you have any other fix packs installed, then you will be unable to roll them back either.

User response:

Manually back up the files listed before completing the rollback.

IRU00834

The following files can not be rolled back because a backup error occurred during the fix pack install: {0}. If you want to continue, you may manually restore these files if you backed them up as suggested during the fix pack install.

Explanation:

The following files can not be rolled back because a backup error occurred during the fix pack install: {0}. If you want to continue, you may manually restore these files if you backed them up as suggested during the fix pack installation.

User response:

Manually restore the files listed before continuing.

IRU00835

An error occurred while rolling back the fix pack. Contact support.

Explanation:

An error occurred during the rollback.

User response:

Contact support.

IRU00836

This rollback installation restores the product to the previous level, {0}. Click Next to continue to the rollback, or click Cancel to stop the rollback.

Explanation:

If you continue, your system is restored to the previous level.

User response:

For information only. No action required.

IRU00837

The rollback is complete.

Explanation:

For information only.

User response:

No action required.

IRU00838

You modified the following user data files since the fix pack installation. Select the files you want to back up into a new file {0} located in the Runtime directory. For the files that you do not select in the following list, your changes will be lost.

Explanation:

These files have been modified since applying the fix pack. The files you select will be backed up before the rollback is applied.

User response:

Select the files you want to back up.

IRU00839

The file {0} was not found.

Explanation:

The rollback cannot continue because the backup file is not found.

User response:

Contact support.

IRU00840

The file {0} cannot be found and cannot be renamed.

Explanation:

The file could not be found before applying the fix pack; therefore, it was not renamed in the directory.

User response:

For information only. No action required.

IRU00841

The file {0} is renamed to {2} and is found in directory {1}.

Explanation:

This file has been renamed correctly.

User response:

For information only. No action required.

IRU00842

The file {0} cannot be renamed. The file might be open or corrupted, or the directory might be unwriteable.

Explanation:

This file could not be renamed because it is open, corrupted, or unwriteable.

User response:

Locate the file from the zip file located in the Backup folder.

IRU00843

Information required for file {0} cannot be located. You can continue with the installation of this fix pack; however, you may not be able to roll back this fix pack or any previous fix packs installed on the system.

Explanation:

There is a problem locating information from the Rollback.properties file. The problem might be that the file does not exist or the file is corrupted. This file is used to perform a successful backup of any previous fix packs.

User response:

If you want to continue installing the fix pack, you run the risk of not being able to roll back the fix.

IRU00844

Information required for file {0} cannot be located; therefore, you cannot roll back the fix pack. Contact support.

Explanation:

There appears to be a problem locating information from the file Rollback.properties. The problem might be that the file does not exist or the file is corrupted. This file is used to perform the rollback.

User response:

Contact support.

IRU01000 messages

IRU01000 messages

IRU01000

Installation of WebSphere Express is in progress.

Explanation:

The WebSphere Express application installation has started.

User response:

This is an informational message. No action is required.

IRU01001

Installation of WebSphere Express was successful.

Explanation:

The WebSphere Express application installation completed successfully.

User response:

This is an informational message. No action is required.

IRU01002

Installation of WebSphere Express failed.

Explanation:

The installation did not complete successfully.

User response:

Refer to the log file for more information.

IRU01003

Configuring WebSphere ports.

Explanation:

The configuration script to modify the WebSphere ports has been invoked.

User response:

This is an informational message. No action is required.

IRU01004

Port assignment {0} = {1}.

Explanation:

The WebSphere port assignment was successful.

User response:

This is an informational message. No action is required.

IRU01005

Configuring WebSphere Administration ports.

Explanation:

The configuration script to modify the WebSphere Administration ports has been invoked.

User response:

This is an informational message. No action is required.

IRU01006

Installation of WebSphere Administration console is in progress.

Explanation:

The script to install the WebSphere Administration console has been invoked.

User response:

This is an informational message. No action is required.

IRU01007

Installation of WebSphere Administration console was successful.

Explanation:

The WebSphere Administration console has been deployed.

User response:

This is an informational message. No action is required.

IRU01008

Installation of WebSphere Administration console failed.

Explanation:

The WebSphere Administration console has not been deployed.

User response:

Refer to the log file for more information.

IRU01009

Starting WebSphere Express Application Server.

Explanation:

The WebSphere Express Application server has been started during deployment.

User response:

This is an informational message. No action is required.

IRU01010

Stopping WebSphere Express Application Server.

Explanation:

The WebSphere Express Application server has been stopped during deployment.

User response:

This is an informational message. No action is required.

IRU01011

WebSphere Express install directory: {0}

Explanation:

The message lists the installation directory for WebSphere Express.

User response:

This is an informational message. No action is required.

IRU01012

Configuring WebSphere ports failed.

Explanation:

The configuration of the WebSphere ports failed.

User response:

Refer to the log file for more information.

IRU01013

Configuring WebSphere Administration ports failed.

Explanation:

The configuration of the WebSphere Administration ports failed.

User response:

Refer to the log file for more information.

IRU01014

Started WebSphere Express Application Server.

Explanation:

The WebSphere Express Application server has been started successfully.

User response:

This is an informational message. No action is required.

IRU01015

Stopped WebSphere Express Application Server.

Explanation:

The WebSphere Express Application server has been stopped successfully.

User response:

This is an informational message. No action is required.

IRU01016

Failed to start WebSphere Express Application Server.

Explanation:

The WebSphere Express Application server did not start successfully.

User response:

Refer to the log file for more information.

IRU01017

Failed to stop WebSphere Express Application Server.

Explanation:

The WebSphere Express Application server was not stopped successfully.

User response:

Refer to the log file for more information.

IRU01018

Creation of WebSphere Express Application Server {0} was successful.

Explanation:

The named application server was successfully created.

User response:

This is an informational message. No action is required.

IRU01019

Creation of WebSphere Express Application Server {0} failed.

Explanation:

A failure occurred when trying to create the named application server.

User response:

Refer to the log file for more information.

IRU01020

There is already a WebSphere Express Application Server named {0} on the target system.

Explanation:

It is not possible to create the named application server because a server with that name already exists. While server names on OS/400 (i5/OS) are case sensitive, two servers cannot exist where the names vary only by upper and lower case.

User response:

Either select a different server name or delete the existing server before retrying.

IRU01021

Deployment of sample application snoop was successful.

Explanation:

The snoop servlet was successfully deployed in the new application server.

User response:

This is an informational message. No action is required.

IRU01022

Deployment of sample application snoop failed.

Explanation:

The snoop servlet was not able to be deployed in the new application server.

User response:

Refer to the log file for more information.

IRU01023

The range of WebSphere ports {0} overlaps with the HTTP server port {1}.

Explanation:

The range of WebSphere ports selected for the application server cannot overlap with the port selected for the HTTP server. This results in a conflict at runtime.

User response:

Enter a different value for either the starting WebSphere port or for the HTTP server port.

IRU02000 messages

IRU02000 messages

IRU02000

The first character of the drive notation must be an alphabetic character (A-Z).

Explanation:

An incorrect drive notation was specified.

User response:

Specify the drive with an alphabetic character.

IRU02001

The second character of the drive notation must be a colon (:).

Explanation:

The drive notation was specified incorrectly.

User response:

Specify the drive using an alphabetic character, followed immediately by a colon.

IRU02002

The third character of the drive notation must be a backslash (\\).

Explanation:

The third character of the drive notation must be two backslashes (\\).

User response:

Include a backslash as the third character when you specify the drive notation.

IRU02003

The character {0} is not allowed.

Explanation:

User response:

IRU02004

Specify the drive and folder name, for example, c:\\Software.

Explanation:

A folder name was not specified after the drive notation.

User response:

Specify a folder name when you specify the drive.

IRU02005

The drive and path you specified contains too many characters.

Explanation:

More than 100 characters were specified for the drive, and path.

User response:

Ensure the combination of the drive and the path that you specify does not exceed 100 characters.

IRU02006

The entry {0} is not valid for {1}.

Explanation:

The value that you entered for the field {1} is not a valid value.

User response:

Enter a valid value in the field.

IRU02007

A required value for {0} was not found.

Explanation:

No value was entered for the required field {0}.

User response:

Enter a valid value for the required field.

IRU02008

The prefix {0} is not valid for {1}.

Explanation:

The value that you entered contains a substring that is not allowed.

User response:

Edit your entry to remove the invalid substring.

IRU02009

A required prefix for {0} was not found.

Explanation:

The value that you entered must begin with a specific prefix.

User response:

Enter a valid prefix and the remainder of the value for this field. See the online help for configuration.

IRU02010

The suffix {0} is not valid for {1}.

Explanation:

The value that you entered must end with a specific suffix.

User response:

Enter a value that ends with a valid suffix.

IRU02011

A required suffix for {0} was not found.

Explanation:

The value that you entered must end with a specific suffix.

User response:

Enter the value for this field and end it with a valid suffix. See the online help for configuration.

IRU02012

The substring {0} is not valid for {1}.

Explanation:

The value that you entered contains a substring that is not allowed.

User response:

Edit your entry to remove the invalid substring.

IRU02013

A required substring for {0} was not found.

Explanation:

The value that you entered must contain a specific substring for {0}.

User response:

Enter a valid value that includes the required substring.

IRU02014

The character {0} is not valid for {1}.

Explanation:

The value that you entered contains an invalid character: {0}.

User response:

Enter the value without the invalid character.

IRU02015

A required character for {0} was not found.

Explanation:

The value that you entered must contain a specific character.

User response:

Enter a valid value that includes the required character.

IRU02016

The entry for {2} is outside of the range {0} to {1}.

Explanation:

The value must be within the range {0} to {1}.

User response:

Enter a value within the specified range.

IRU02017

The entry for {2} is within the range {0} to {1}.

Explanation:

The value cannot be within the range {0} to {1}.

User response:

Enter a value outside of the specified range.

IRU02018

The selection is not valid.

Explanation:

The item selected is not valid.

User response:

Select a different item.

IRU02019

The maximum length is {0} characters.

Explanation:

The value entered exceeds the maximum length of {0}.

User response:

Enter no more than {0} characters.

IRU02020

The minimum length is {0} characters.

Explanation:

The value entered is fewer than the minimum length of {0}.

User response:

Enter at least {0} characters.

IRU02021

The fields do not match.

Explanation:

The confirm value for the password does not match.

User response:

Enter the password and confirm value again.

IRU02022

The solution file, {0}, does not exist or cannot be written to.

Explanation:

The specified file could not be found or is not writeable.

User response:

Ensure that the specified file exists and is writeable.

IRU02023

Incompatible variable types are attempting to share variable \"{0}\".

Explanation:

User response:**IRU02024**

The following applications must be configured before this task will be deployable: {0}. Would you like to run the deployment wizard to configure them now?

Explanation:

A task cannot be deployed until all of the applications are configured.

User response:

Run the deployment wizard and configure the applications or abort the deployment of the task.

IRU02025

One or more of the configuration parameters contain invalid values. Each invalid parameter is marked with a red X. Correct the errors, and continue.

Explanation:

One or more of the configuration parameters contain values that are not valid. Each nonvalid parameter is marked with a red X.

User response:

Correct the errors, and continue.

IRU03000 messages

IRU03000 messages

IRU03000

The deployment was successful for {0}.

Explanation:

The software deployed successfully on the target computer.

User response:

For information only. No action required.

IRU03001

The deployment failed for {0}.

Explanation:

The software failed to deploy on the target computer.

User response:

Analyze the log file associated with the failed deployment to determine the source of the error. Try to correct the error and then try the deployment again. If the problem persists, print the log file and contact your solution provider.

IRU03002

The deployment wizard timed out waiting for {0} to complete deployment.

Explanation:

The deployment of the application exceeded the maximum timeout allowed by the staging server.

User response:

If there is an active connection and the target computer is operating normally, restart the IBM Installation Agent on the target computer and the deployment wizard on the staging server. Try the deployment again.

If the problem persists, print the log file and contact your solution provider.

IRU03003

The deployment wizard could not establish a network connection with computer {0}.

Explanation:

The deployment wizard could not establish a network connection with the target computer. This error could occur because the IBM Installation Agent is not installed or running on the target computer or because the computer is not currently online, powered on, or connected to the network. This error could also be encountered if the deployment wizard was terminated while deploying applications to the target computer.

User response:

Check the target computer to see if the agent is installed and running. If there is an active connection and the target computer is operating normally, restart the IBM Installation Agent on the target computer and the deployment wizard on the staging server. Try the installation again.

If the problem persists, print the log file and contact your solution provider.

IRU03004

The passwords on the deployment wizard and the target computer {0} do not match.

Explanation:

The passwords must be identical on the deployment wizard and all target computers. The password for the IBM Installation Agent on the specified target computer does not currently match that in the deployment wizard.

User response:

Generate a new password on the target computer to match the one you entered in the deployment wizard.

IRU03005

There was a problem when comparing the passwords on the server and client.

Explanation:

Before the IBM Installation Agent will accept an installation from the staging server, it verifies that there are matching passwords on both the target computer and the staging server.

User response:

Ensure the following:

- There are matching passwords on the target computer and the staging server.
- There is sufficient authority to write to the target computer.
- There is enough space on the target computer.

If the problem persists, print the log file and contact your solution provider.

IRU03006

An error occurred on computer {0}.

Explanation:

The deployment wizard encountered an internal error on the specified target computer.

User response:

Contact your solution provider.

IRU03007

The deployment process was terminated.

Explanation:

The deployment process was terminated from either the staging server or the target computer.

User response:

For information only. No action required.

IRU03008

All RPMs are already installed.

Explanation:

All files associated with the application are already installed.

User response:

For information only. No action required.

IRU03009

RPM {0} is already installed.

Explanation:

The RPM package is already installed.

User response:

For information only. No action required.

IRU03010

The deployment for RPM {0} is starting.

Explanation:

Deployment is in progress for the specified RPM package.

User response:

For information only. No action required.

IRU03011

The host name of the target computer cannot be resolved by the Domain Name Server.

Explanation:

The host name identified for the target computer is either not correct or the Domain Name Server is down.

User response:

Verify that the host name is correct and that the <domain name> server is up and running.

IRU03012

The deployment wizard cannot connect to the IBM Installation Agent on the target computer.

Explanation:

The deployment wizard is unable to connect to the target computer. The IBM Installation Agent might not be started or installed.

User response:

Verify that the agent is installed and running on the target computer.

IRU03013

The connection to computer {0} was lost.

Explanation:

The network connection to the target computer was lost.

User response:

Verify that both the staging server and the target computer can communicate with the network.

IRU03014

The deployment failed.

Explanation:

Deployment of the application did not complete successfully.

User response:

See the deployment log file for details of the problem.

IRU03015

A data socket was created on port {0}.

Explanation:

The data communications port was created on the specified port.

User response:

For information only. No action required.

IRU03016

The deployment wizard is configured to use port number {0} as its data port. That port is already being used by another process.

Explanation:

You are trying to use the same port for two programs. This is not allowed by the operating system. One possible way you received this error is if you started the deployment wizard twice from the same solution only a few seconds apart. The deployment wizard in the background might seem locked; this is because the second instance of the deployment wizard starting caused an error.

User response:

Close the second instance of the deployment wizard. Or, if you need two Deployers running simultaneously, change the value for the data port and the second instance of the deployment wizard, and save the new solution with a different file name using the File -> SaveAs menu function.

IRU03017

An internal programming error occurred.

Explanation:

An unknown internal programming error occurred.

User response:

Contact your solution provider.

IRU03018

The task deployment is complete.

Explanation:

The selected task deployment has completed for this target computer.

User response:

For information only. No action required.

IRU03019

The task deployment failed.

Explanation:

One or more of the selected solution applications in the task failed to deploy.

User response:

Analyze the log file associated with the failed deployment to determine the source of the error. Try to correct the error and then try the deployment again. If the problem persists, print the log file and contact your solution provider.

IRU03020

The operating system of the target computer does not match the operating system of the task.

Explanation:

The operating system defined for this task is not the same as the operating system of the target computer.

User response:

Delete this target host name from the task.

IRU03021

The target computer could not obtain the software from the staging server.

Explanation:

The target computer could not obtain the necessary files from the staging server. There might be problems with the network, or there might not be enough free disk space on the target computer to receive the files.

User response:

If there is an active network connection and the target computer is operating normally, restart the IBM Installation Agent on the target computer and the deployment wizard on the staging server. Try the installation again.

Ensure that there is enough free disk space available on the target computer and try the installation again.

IRU03022

Deployment is in progress for {0}.

Explanation:

The deployment wizard has started the deployment process for the specified software.

User response:

For information only. No action required.

IRU03023

Deployment of {0} did not take place.

Explanation:

The specified application is already installed on the target computer.

User response:

The solution provider has determined that the specified application should not be installed on the target computer. This typically occurs if the application is already installed on the target computer or is not compatible with the target computer.

IRU03024

{0} is not an executable file.

Explanation:

The deployment wizard could not execute the specified command because the files associated with the software installation did not have the correct permission attributes.

User response:

Contact your solution provider.

IRU03025

An error occurred while unpacking the deployment package for {0}.

Explanation:

The deployment wizard encountered an internal error on the target computer while unpacking the deployment package for the application.

User response:

There are a number of possible reasons for this problem. Most likely, you do not have enough space on your IBM Installation Agent working directory, which is the install location. If this is not the cause of your problem, contact your solution provider.

IRU03026

The target computer cannot find the deployment package {0}.

Explanation:

The deployment wizard cannot find the specified file. This file is necessary for the software installation.

User response:

Restart the deployment wizard on the staging server and IBM Installation Agent on the target computer and then start the installation again. If the problem persists, print the log file and contact your solution provider.

IRU03027

The target computer cannot obtain the deployment package {0}.

Explanation:

The deployment wizard encountered a network error while trying to obtain the specified file. This file is necessary for the software installation.

User response:

If there is an active connection and the target computer is operating normally, restart the IBM Installation Agent on the target computer and the deployment wizard on the staging server. Try the installation again.

If the problem persists, print the log file and contact your solution provider.

IRU03028

The expected operating system for the target computer is {0}.

Explanation:

Based on the task configuration, the deployment wizard expected the operating system for the computer to be the value represented by the token {0}.

User response:

For information only. No action required.

IRU03029

The operating system of the target computer is {0}.

Explanation:

The operating system of the target computer is {0}.

User response:

For information only. No action required.

IRU03030

The target computer cannot obtain custom application configuration information.

Explanation:

The target computer cannot obtain custom application configuration information.

User response:

IRU03031

Required files could not be received or unpacked on the target computer: {0}

Explanation:

There is insufficient room on a target computer to either receive or unpack required files.

User response:

Ensure that the target computer meets the prerequisites.

IRU03032

Deployment in progress for {0}.

Explanation:

The deployment wizard has started the deployment process for the application.

User response:

For information only. No action required.

IRU03033

Deployment failed for {0}.

Explanation:

The specified application failed to deploy on the target computer.

User response:

Analyze the log file associated with the failed deployment to determine the source of the error. Try to correct the error and then retry the deployment. If the problem persists, print the log file and contact your solution provider.

IRU03034

{0} is already installed on the target computer.

Explanation:

The specified application is already installed on the target computer.

User response:

For information only. No action required.

IRU03035

The prerequisite {0} is not installed on the target computer.

Explanation:

The specified prerequisite is missing.

User response:

Install the missing prerequisite or contact your solution provider.

IRU03036

The required port {0} is not available.

Explanation:

The specified port number is currently in use by another application.

User response:

Move the application using the port to another port number and repeat the deployment.

IRU03037

The deployment wizard could not read file {0}.

Explanation:

This error occurs on the target computer when the deployment wizard is unable to read the specified file. There are several reasons this could occur. Common causes are that the file specified does not exist, or the user does not have read access to the destination.

User response:

Try the deployment again. If the problem persists, print the log file and contact your solution provider.

IRU03038

The deployment wizard could not update file {0}.

Explanation:

This error occurs on the target computer when the deployment wizard is unable to update the specified file. There are several reasons this could occur. Common causes are that the file specified does not exist, or the user does not have write access to the destination.

User response:

Try the deployment again. If the problem persists, print the log file and contact your solution provider.

IRU03039

The deployment wizard could not create user or group.

Explanation:

The deployment wizard was not able to create the user or group on the target computer.

User response:

Consult the solution provider documentation. If you are still unable to resolve the problem, contact your solution provider.

IRU03040

There is not enough free disk space available on {0} for installation.

Explanation:

The specified target directory does not have enough free space available to install this application.

User response:

Ensure that there is enough free disk space available on the drive or mount point specified and try the installation again.

IRU03041

The deployment wizard cannot write to path {0}.

Explanation:

The deployment wizard is unable to save information to the specified directory.

User response:

Ensure that the target directory is not read-only.

IRU03042

{0} could not be installed because {1} is already installed.

Explanation:

The application that you are trying to install already exists on the target computer.

User response:

For information only. No action required.

IRU03043

{0} requires Windows NT Service Pack {1} or higher.

Explanation:

The deployment wizard cannot install the specified application on the target computer because it requires Windows NT[®] Service Pack {1} or higher.

User response:

Upgrade the service pack on the Windows NT operating system and start the deployment again.

IRU03044

The Windows NT Service Pack is {0}.

Explanation:

The Service Pack level for the Windows NT operating system is the value represented by the token {0}.

User response:

For information only. No action required.

IRU03045

The deployment wizard was not able to obtain the Windows NT Service Pack number.

Explanation:

The deployment wizard was unable to obtain the Windows NT service pack level from the registry.

User response:

For information only. No action required.

IRU03046

{0} is not installed.

Explanation:

The specified application is not installed on the target computer.

User response:

For information only. No action required.

IRU03047

The Windows 2000 Service Pack is {0}.

Explanation:

The Service Pack level for the Windows 2000 operating system is the value represented by the token {0}.

User response:

For information only. No action required.

IRU03048

{0} requires Windows 2000 Service Pack {1} or higher.

Explanation:

The product represented by token {0} requires Windows 2000 Service Pack level {1} or higher.

User response:

Upgrade the Windows 2000 Service Pack level and try the deployment again.

IRU03049

The deployment wizard cannot determine the version of the Windows 2000 Service Pack installed on the target computer.

Explanation:

The Service Pack level for the Windows 2000 operating system cannot be determined by the deployment wizard.

User response:

For information only. No action required.

IRU03050

Successfully updated file {0}.

Explanation:

The specified file was updated.

User response:

For information only. No action required.

IRU03051

The specified user ID {0} and password were created successfully.

Explanation:

The user ID and password were created.

User response:

For information only. No action required.

IRU03052

The specified user ID {0} and password already exist on the target computer.

Explanation:

The user ID and password already exist.

User response:

For information only. No action required.

IRU03053

The {0} file was successfully copied to the {1} location.

Explanation:

The specified file was copied successfully.

User response:

For information only. No action required.

IRU03054

The {0} file could not be copied to the {1} location.

Explanation:

The specified file was not copied.

User response:

For information only. No action required.

IRU03055

Incorrect invocation.

Explanation:

The invocation command entered was not valid.

User response:

Enter a valid invocation. Contact your solution provider for details.

IRU03056

The password for user {0} is not valid.

Explanation:

The password entered is not valid for the specified user.

User response:

Enter the valid password.

IRU03057

There is no password defined on the staging server.

Explanation:

Before the IBM Installation Agent will accept an installation from the staging server, it verifies that there are matching passwords on both the target computer and the staging server. There was no password found for the staging server.

User response:

Create a matching password on the staging server and try the deployment again. If the problem persists, print the log file and contact your solution provider.

IRU03058

Internet Explorer 6.0 is not installed.

Explanation:

Internet Explorer 6.0 must be installed on the target computer.

User response:

View the log files associated with this message for a course of action or contact your solution provider.

IRU03059

A minimum of {0} version {1} is required.

Explanation:

You must have the application and version specified installed on the target computer.

User response:

Install the required version of the specified application or contact your solution provider.

IRU03060

The method {0} is not available with Specification-Version {1}.

Explanation:

The current specification version does not support the type of method used.

User response:

This is an informational message. No user action is required.

IRU03061

The deployment failed for {0}: {1}

Explanation:

The user program specified by {0} could not be executed for the reason specified in {1}.

User response:

Ensure that your user program name and location are correct. If the problem persists, contact your solution provider.

IRU03063

You are not ready to deploy. Please go back and ensure all previous steps have been completed

Explanation:

You are not ready to deploy the task.

User response:

Ensure that you have completed all previous steps before deploying the task.

IRU03064

The IBM Installation Agent on the target computer is not responding. The deployment was terminated.

Explanation:

The IBM Installation Agent on the target computer has been stopped or was never started. The deployment must terminate.

User response:

Restart the agent on the target computer, or reboot the target computer, and attempt the deployment again.

IRU03065

Passwords do not exist on the target computer {0}

Explanation:

A password does not exist on the target computer. Either it was never created, or was deleted because of multiple failed authentication attempts on the IBM Installation Agent.

User response:

Create a password on the target computer.

IRU03066

{0} is already installed on the target computer.

Explanation:

The specified application is already installed on the target computer.

User response:

For information only. No action required.

IRU03070

Required files could not be received or unpacked on the target computer:
{0}

Explanation:

The required files could not be received or unpacked on the target computer.

User response:

IRU03071

The .ser file you selected is invalid.

Explanation:

You see this message when you open either an application.ser file, or some other file that ends in .ser. Also, this message is displayed when you attempt to open a non-PPA solution with a PPA version of the deployment wizard..

User response:

Ensure that the .ser file you select to open in the deployment wizard is valid.

IRU03072

Invalid key store.

Explanation:

This is a log message indicating that the key store is in an invalid state.

User response:

Reset the password.

IRU03073

The target computer {0} is running version {1} of the IBM Installation Agent.

Explanation:

This is an informational message.

User response:

No user response is required.

IRU03074

The Deployment Wizard on the staging server {0} is version {1}.

Explanation:

This is an informational message.

User response:

No user response is required.

IRU03075

User program jar {0} was not found. Deployment of {1} did not take place.

Explanation:

A required .JAR file was not found.

User response:

Ensure that the .JAR file exists. You can reinstall Express Runtime, or contact your solution provider if you cannot find the required .JAR file.

IRU03081

The method {0} is not available with the current deployment wizard Specification-version. To ensure success use a deployment wizard with a Specification-version of {1} or later.

Explanation:

You cannot use this method with the version of the deployment wizard you are using.

User response:

Use the listed version of the deployment wizard, or a later version.

IRU03802

Start of log file {0}.

Explanation:

This message marks the start of the content of an added log file.

User response:

This is an informational message. No user response is required.

IRU03803

End of log file {0}.

Explanation:

This message marks the end of the content of an added log file.

User response:

This is an informational message. No user response is required.

IRU03804

Invalid deployment prompt. Contact the solution deployer. Deployment will stop.

Explanation:

This is an informational message.

User response:

No user action is required.

IRU04000 messages

IRU04000 messages

IRU04001

The software size must be greater than 0 and cannot contain decimal values.

Explanation:

The software size must be greater than 0 and cannot contain decimal values.

User response:

Specify a valid software size.

IRU04002

The root directory you specified does not exist.

Explanation:

The root directory you specified does not exist.

User response:

Specify a valid root directory.

IRU04004

{0} is not a valid file.

Explanation:

The specified file is not valid.

User response:

Specify a valid file name.

IRU04005

The specified deployment package name is already in use by the {0} custom software.

Explanation:

The specified deployment package name is already in use by the custom software.

User response:

Specify a unique name for the deployment package.

IRU04007

If you choose logfile as the response method, all input fields are required.

Explanation:

If you choose logfile as the response method, all input fields are required.

User response:

Either specify values for all input fields or choose a response method other than logfile.

IRU04009

The custom software was not added because an error occurred.

Explanation:

The custom software was not added because an error occurred.

User response:

Provide the message output to the IBM Support Center representative.

IRU04010

The configuration being opened contains the following custom software whose resources are not available: {0}. Do you want to remove the custom software from your configuration?

Explanation:

The configuration being opened contains the following custom software whose resources are not available.

User response:

IRU04011

There was an error loading the following custom software: {0}.

Explanation:

There was an error loading the specified custom software.

User response:

Contact your solution provider.

IRU04013

The file name field cannot be empty.

Explanation:

This is an error message that is displayed on the Diagnostic Trace Settings panel when the user tries to enter an empty trace file name.

User response:

Provide a name in the Name field.

IRU04014

The {0} cannot contain a {1}

Explanation:

This is used as an error message that is displayed on the Diagnostic Trace Settings panel or the command line when the user enters an invalid character for a file name. {0} is the file and {1} is the invalid character.

User response:

The file name contains an invalid character. Do not use special characters in file names.

IRU04015

{0} is an invalid file size.

Explanation:

This message is displayed in the command line when the user enters a non-integer maximum file size for either trace file.

User response:

Use a whole number for a file size.

IRU04016

The trace log has exceeded its maximum size. No additional trace information will be logged.

Explanation:

This message is logged when either trace file exceeds its set maximum size.

User response:

Enter a larger maximum file size for the trace log and deploy the solution again.

IRU04017

The number of arguments specified is not valid.

Explanation:

The number of arguments specified is not valid.

User response:

Specify the correct number of arguments.

IRU04018

The value specified for the solution {0} is not valid.

Explanation:

The value specified for the solution is not valid.

User response:

Specify a valid value for the solution.

IRU04019

The value specified for the target solution {0} is not valid.

Explanation:

The value specified for the target solution is not valid.

User response:

Specify a valid value for the target solution.

IRU04020

The value specified for the configuration file {0} is not valid.

Explanation:

The value specified for the configuration file is not valid.

User response:

Specify a valid value for the configuration file.

IRU04021

An unexpected error occurred during migration.

Explanation:

An unexpected error occurred during migration.

User response:

Contact your solution provider.

IRU04022

The value specified for the configuration key {0} is not valid.

Explanation:

The value specified for the configuration key is not valid.

User response:

Specify a valid value for the configuration key.

IRU04023

The configuration file format is not valid.

Explanation:

The configuration file format is not valid.

User response:

Specify a valid configuration file format.

IRU04024

The group {0} was not migrated because the operating system {1} is not supported in the target solution.

Explanation:

The group was not migrated because the operating system is not supported in the target solution.

User response:

Contact your solution provider.

IRU04025

The group {0} was not migrated because the language {1} is not supported in the target solution.

Explanation:

The group was not migrated because the language is not supported in the target solution.

User response:

Choose another language to migrate the target solution. If the problem persists, Contact your solution provider.

IRU04026

The product {0} was not migrated for the group {1} because it is not supported in the target solution.

Explanation:

The product was not migrated for the group because it is not supported in the target solution.

User response:

Contact your solution provider.

IRU04027

The product {0} was not migrated for the computer {1} because it is not supported in the target solution.

Explanation:

The product was not migrated because it is not supported in the target solution.

User response:

Contact your solution provider.

IRU04028

An error occurred setting the SBSSolution flag.

Explanation:

An error occurred setting the SBSSolution flag.

User response:

Contact your solution provider.

IRU04029

The group {0} contains the following computers: {1}.

Explanation:

The group contains the computers in the message.

User response:

This is an informational message. No action is required.

IRU05000 messages

This chapter lists the messages generated by the console. You can use the information in this chapter to identify and resolve an error using the appropriate recovery action. You can also use this information to understand where messages are generated and logged.

The user responses for several messages suggest that you print the log file before calling your service provider.

Message identifiers consist of a three-character message prefix followed by a five-digit message number. Tokens, such as {0}, {1}, and so on, are used in many messages. These tokens represent computer names, application names, files names, or directory names. The appropriate value is substituted for the token when the message is displayed.

IRU05000

Failed: Incorrect user ID or password

Explanation:

An authentication failed due to either incorrect user ID or password.

User response:

Enter the correct user ID and password.

IRU05001

Failed: Select a resource before clicking Edit or Test connection.

Explanation:

A resource was not selected on which to perform the function.

User response:

Select a resource and relaunch the task.

IRU05002

Failed: Select only one resource before clicking Edit.

Explanation:

Multiple instances were selected to edit simultaneously.

User response:

Select one resource at a time.

IRU05003

Specify a server.

Explanation:

A valid server was not specified in order to perform the task.

User Response:

Provide a valid server.

IRU05004

Specify a port.

Explanation:

A valid port number was not specified in order to perform the task.

User response:

Provide a valid port number.

IRU05005

Specify a console agent port.

Explanation:

A valid console agent port number was not specified in order to perform the task.

User response:

Provide a valid console agent port.

IRU05006

Could not connect to server.

Explanation:

The Express Runtime console could not connect to specified server.

User response:

Check the error logs and the troubleshooting section of the Express Runtime Information Center to find more details on how to resolve this problem.

IRU05007

The requested function is not available for this resource.

Explanation:

You cannot perform this task using the selected resource.

User response:

Choose an appropriate task for the selected resource.

IRU05008

The specified component node is null.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05009

Select at least one component from the table.

Explanation:

No component was selected from the table to perform the task.

User response:

Select at least one component in the table for the task.

IRU05010

Provide a title before clicking Add.

Explanation:

A title was not provided.

User response:

Provide a title before clicking **add**.

IRU05011

The requested action was canceled by the user.

Explanation:

The task was canceled before it could be completed.

User response:

Run the task again.

IRU05012

Could not connect to the console agent.

Explanation:

The Express Runtime console could not connect to the console agent.

User response:

Consult the troubleshooting section of the Express Runtime console Information Center to get details on how to solve this problem.

IRU05013

Could not find any instances for component {0}.

Explanation:

The Express Runtime console could not find any instances for the specified component.

User response:

Consult the troubleshooting section in the Express Runtime Information Center for details to solve this problem.

IRU05014

One or more thresholds were modified to ensure consistency.

Explanation:

The Express Runtime console had to modify one or more thresholds to maintain consistency.

User response:

This is an informational message. No action is necessary.

IRU05016

The specified title, {0}, already exists. Select a different title.

Explanation:

A title was selected that already exists.

User response:

Select a new title.

IRU05017

The certificate verification for the following server, {0}, at agent port, {1}, failed.

Explanation:

The certificate was not accepted by the server.

User response:

Ensure that you have updated your certificate.

IRU05019

The user has been locked out of the agent.

Explanation:

An attempt was made to log in to the console agent too many times. As a security measure, the agent has locked the user out for a specified amount of time.

User response:

Consult the troubleshooting section of the Express Runtime Information Center to find more information on how to solve this problem.

IRU05020

One or more components were deleted while you were working with this group.

Explanation:

One of the components in a component group you are actively working with has been removed.

User response:

Close the task and reopen it; the revised component list will not include the component that caused the error.

IRU05021

The specified server information, {0}, already exists. Please verify your server information.

Explanation:

You have specified a server which is already defined.

User response:

Specify a different server and perform the operation again.

IRU05022

Error reading {0} from {1}.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05023

Failed: User ID does not have sufficient authority to perform the requested operation.

Explanation:

You are not authorized to perform the operation.

User response:

Log on with the proper authorization and perform the operation.

IRU05024

Could not connect to the following server, {0} at agent port, {1}.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05030

Method entry

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05031

Method exit

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05032

An exception has occurred: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05033

Error creating/invoking UserTaskManager.

Explanation:

There was an error launching the portlet.

User response:

Provide the message output to the IBM Support Center representative.

IRU05034

Cannot set portlet help URL link because one of the following is null:
server is {0}; helpport is {1}; path to file is {2}.

Explanation:

There was an error creating the help link for the portlet.

User response:

Provide the message output to the IBM Support Center representative.

IRU05035

Help URL is null; cannot append more detailed message.

Explanation:

There was an error while creating the More Details link. The detailed message cannot be appended to the help file.

User response:

Provide the message output to the IBM Support Center representative.

IRU05036

Context: {0}

Explanation:

There was a problem working with the context.

User response:

Provide the message output to the IBM Support Center representative.

IRU05037

Error handling: {0}

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05040

Error restarting adapter: {0}

Explanation:

There was an error while reloading a portlet.

User response:

Provide the message output to the IBM Support Center representative.

IRU05041

User ID is null.

Explanation:

There was an error while retrieving the application adapter for the portlet.

User response:

Provide the message output to the IBM Support Center representative.

IRU05042

Error launching page

Explanation:

A request to launch a missing or nonvalid page was processed.

User response:

Provide the message output to the IBM Support Center representative.

IRU05043

Error closing page

Explanation:

There was an error while trying to close a page.

User response:

Provide the message output to the IBM Support Center representative.

IRU05044

Error sending message

Explanation:

There was an error while trying to send a queued message request to a portlet.

User response:

Provide the message output to the IBM Support Center representative.

IRU05045

An error occurred while trying to read configuration data.

Explanation:

There was an error while attempting to work with Java preferences.

User response:

Provide the message output to the IBM Support Center representative.

IRU05046

An error occurred while trying to create a component.

Explanation:

An error occurred while trying to create a component.

User response:

Provide the message output to the IBM Support Center representative.

IRU05047

A component with an unknown type was passed: component name = {0};
component type = {1}.

Explanation:

A component other than a Web server, an application server, or a database is being used.

User response:

Provide the message output to the IBM Support Center representative.

IRU05049

Attempted to edit with a null key value.

Explanation:

There is a problem with the selected item and it can not be edited.

User response:

Provide the message output to the IBM Support Center representative.

IRU05050

Invalid argument: {0}

Explanation:

An nonvalid argument was passed to a method.

User response:

Provide the message output to the IBM Support Center representative.

IRU05051

Unexpected value, {0}, received for the following object: {1}.

Explanation:

An incorrect trace value was parsed from the console agent properties.

User response:

Check the console agent properties file to ensure the trace value is set properly.

IRU05100

Missing a value for the following key: {0}; cannot execute command.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05101

The directory name provided ({0}) is not a proper directory.

Explanation:

The Express Console agent can not access the specified remote directory. This problem occurs most commonly because the console agent has been configured incorrectly. The task can not be completed.

User response:

Some configuration errors can be corrected by reinstalling the management extension that is related to the task you are running. For example, if you are accessing the **Servers->HTTP Servers->Details** dialog, this error message occurs, and reinstalling the HTTP management extension might correct the problem. In other cases, contact the IBM Support Center.

IRU05102

Unable to retrieve contents of the following directory: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05103

Incorrect password

Explanation:

A valid user ID and password combination are needed for this administration task.

User response:

Use the following table to determine what type of user ID and password combination is needed:

Table 15.

Management extension	Operating system	User ID and password type
IBM HTTP Server	All windows platforms	Any valid operating system user ID and password with administration authority
IBM HTTP Server	All Linux platforms	Any valid operating system user ID and password with root authority
IBM HTTP Server	OS/400	Any valid operating system user ID and password that has *IOSYSCFG authority
WebSphere Application Server – Express	All windows platforms	The user ID and password used to secure the WebSphere Application Server – Express server
WebSphere Application Server – Express	All Linux platforms	The user ID and password used to secure the WebSphere Application Server – Express server
WebSphere Application Server – Express	OS/400	Any valid operating system user ID and password that has *IOSYSCFG and *ALLOBJ authority
DB2 UDB Express	All windows platforms	Any valid DB2 admin user ID and password
DB2 UDB Express	All Linux platforms	Any valid DB2 admin user ID and password
DB2 UDB Express	OS/400	Any valid operating system user ID and password that has DB2 admin authority

IRU05104

Could not retrieve the correct logger in order to set the trace levels.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05105

Could not read the Windows registry.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05106

Unsupported callback type

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05107

Error retrieving CPU usage.

Explanation:

The console agent has encountered an error while monitoring the CPU usage of one or more of the Express Runtime software components . The system health indicator and associated performance graphs are available.

User response:

Provide the message output to the IBM Support Center representative.

IRU05108

Starting the console agent server.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05109

Stopping the Console Agent Server.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05110

Remote client {0} has been added to the warning list.

Explanation:

A remote user tried to access the console agent, but the access failed. This occurs most commonly because an incorrect user ID or password was given. This error can also occur if an incomplete or partial request was received.

User response:

Usually this error occurs because a user has forgotten a user ID and password combination. However, if multiple failed attempts from the same remote user continue to occur, this could be an attempt to break into the system. If you believe that there is an attempted breakin, contact your security representative.

IRU05111

Remote client {0} has been exiled due to too many consecutive warnings. The client will be unable to access the server for 1 hour.

Explanation:

A remote user has repeatedly failed to enter the correct user ID and password combination. Most likely, this error occurred because someone is trying to break into the system by guessing user ID and password pairs. To aid in the prevention of this hacking technique, the remote user will automatically be locked out of the system for one hour.

User response:

Take appropriate steps to determine the origin of the erroneous requests. You should also take necessary steps to protect or shutdown the server until the cause of erroneous requests can be resolved.

IRU05112

Remote client {0} has accessed the server. The remote client was previously exiled from the server.

Explanation:

This message can occur after a user has been locked out of the system (exiled) for some period of time. The original login problem was resolved and the remote user then logged in with the correct user ID and password. This message can also occur if the hacking technique of guessing user ID and password pairs is left unchecked and the hacker eventually guessed the correct user ID and password combination.

User response:

Inspect the security logs on the target system and investigate the cause of the problem.

IRU05113

Remote client {0} attempted to access the server. The remote client is exiled from the server.

Explanation:

A remote user has repeatedly failed to enter the correct user ID and password combination. Most likely, this error occurred because someone is trying to hack into the system by guessing user ID and password pairs. To aid in the prevention of this hacking technique, the remote user has been automatically locked out of the system for one hour. During the lockout period, the user is continuing to attempt to access the server but the request is being ignored.

User response:

Take appropriate steps to determine the origin of the erroneous requests. Also take necessary steps to protect or shutdown the server until the cause of erroneous requests can be resolved.

IRU05114

Remote client {0} issued an unknown server command. This command did not originate from the IBM Express Runtime console.

Explanation:

Erroneous or poorly formatted requests to the console agent are ignored, and most likely did not originate from the IBM Express Runtime console. Repeated requests can be a sign of an attempt to hack into the system.

User response:

Take appropriate steps to determine the origin of the erroneous requests.

IRU05115

User {0} on remote client {1} accessed IBM HTTP Server instance {2} by browsing folder: {3}.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05116

User {0} on remote client {1} accessed IBM HTTP Server instance {2} by viewing log file: {3}.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05117

User {0} on remote client {1} accessed IBM HTTP Server instance {2} by changing the log settings.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05118

User {0} on remote client {1} accessed IBM HTTP Server instance {2} by issuing the command: {3}.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05119

User {0} on remote client {1} accessed IBM HTTP Server instance {2} by querying the state of the server.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05120

User {0} on remote client {1} accessed WebSphere Application Server instance {2} by issuing the command: {3}.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05121

User {0} on remote client {1} accessed WebSphere Application Server instance {2} by querying the state of the server.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05122

User {0} on remote client {1} queried traceLevel settings.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05123

User {0} on remote client {1} set traceLevel settings.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05124

User has been locked out of the system.

Explanation:

A remote user has repeatedly failed to enter the correct user ID and password combination. Most likely, this error occurred because someone is trying to hack into the system by guessing user ID and password pairs. To aid in the prevention of this hacking technique, the remote user will automatically be locked out of the system for one hour.

User response:

Take appropriate steps to determine the origin of the erroneous requests. You should also take necessary steps to protect or shutdown the server until the cause of erroneous requests can be resolved.

IRU05125

Could not find server instance.

Explanation:

The instance of the IBM HTTP Server that you are attempting to administer cannot be found. Most likely this error occurred due to an incorrect console agent configuration or an incorrect installation of the IBM HTTP Server.

User response:

If the problem persists, reinstall the HTTP management extension, or reinstall the IBM HTTP Server. If the problem persists, contact the IBM Support Center.

IRU05126

Invalid Port: {0}

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05127

Could not find the Apache service name for configuration file {0}.

Explanation:

The console agent can only start and stop instances of IBM HTTP Server that are configured as a Windows service. There was not a Windows service entry corresponding to the requested IBM HTTP Server instance.

User response:

Configure the IBM HTTP Server instance to be a Windows Service. See IBM HTTP Server documentation.

IRU05128

IBM HTTP Server instance {0} could not be found.

Explanation:

The instance of the IBM HTTP Server you are attempting to administer cannot be found. Most likely this error occurred due to an incorrect console agent configuration or an incorrect installation of the IBM HTTP Server.

User response:

You might need to reinstall the HTTP management extension, or reinstall the IBM HTTP Server. If the problem persists, contact the IBM Support Center.

IRU05129

The page you requested is not supported.

Explanation:

The console agent does not support the request made by the Express Runtime console.

User response:

No action is required; the function is not supported by this operating system.

IRU05130

The specified WebSphere Application Server port ({0}) could not be found.

Explanation:

To administer the WebSphere Application Server, the administrative console port must be specified. The default port is 9080, but can be changed during installation.

User response:

Ensure that the port number that was entered corresponds to the administrative console port. To change the port click **Add / remove servers**. Select the server name from the server list and click **Edit**. Type in the new administrative console port number and click **Apply**. You can test the new value by clicking **Test connection**.

IRU05131

The console agent is not configured to manage WebSphere Application Servers.

Explanation:

The console agent is not configured to manage WebSphere Application Server – Express servers.

User response:

If WebSphere Application Server – Express is installed on this system and you want to manage the system, install the WebSphere Application Server – Express management extensions.

IRU05132

The console agent is not configured to manage IBM HTTP Server instances.

Explanation:

The console agent is not configured to manage IBM HTTP Server instances.

User response:

If the IBM HTTP Server is installed on this system and you want to manage the server, install the IBM HTTP Server management extensions.

IRU05140

New server listener created: server IP address={0} server port={1}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05141

Cannot find file: {0}.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05142

Added new command: {0}.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05143

Entered the ServiceMain() method.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05144

Start server control signal detected.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05145

Server started successfully.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05146

Server is shutting down.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05147

Server did not start successfully.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05148

Stop server control signal detected.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05149

Checking server PID: exists={0}.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05150

Server listener stopped.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05151

New remote connection detected and created. Starting new thread for connection.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05152

Request body: <start>{0}<end>

Explanation:

This is an informational message.

User response:

No action is required.

IRU05153

Response body: <start>{0}<end>

Explanation:

This is an informational message.

User response:

No action is required.

IRU05154

Request header: <start>{0}<end>

Explanation:

This is an informational message.

User response:

No action is required.

IRU05155

Request header key={0} value={1}

Explanation:

This is an informational message.

User response:

No action is required.

IRU05156

Response header: <start>{0}<end>

Explanation:

This is an informational message.

User response:

No action is required.

IRU05157

Found command in request URI: {0}.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05158

Found keys in request: {0}.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05159

Starting execution of command: {0}.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05160

Type of OS: {0}

Explanation:

This is an informational message.

User response:

No action is required.

IRU05161

Mapping virtual name: {0} to configuration file: {1}.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05162

Loading configuration file: {0}.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05163

No server instance found. Setting to default instance: {0}.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05164

Cookies for execute command: {0}

Explanation:

This is an informational message.

User response:

No action is required.

IRU05165

Keys for execute command: {0}

Explanation:

This is an informational message.

User response:

No action is required.

IRU05166

Found servivceName mapping for configuration file: {0} to service: {1}.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05167

About to execute command: <start>{0}<end>.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05168

Output of command: <start>{0}<end>

Explanation:

This is an informational message.

User response:

No action is required.

IRU05169

Found HTTP Service for serviceName: {0}.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05170

Arguments for the service are: {0}.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05171

Adding service mapping for confFile: {0} to serviceName {1}.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05172

Looking for process ID for server instance: {0} at {1}.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05173

Looking for log file at {0}.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05174

Verifying log file {0}.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05175

Client locale: {0}

Explanation:

This is an informational message.

User response:

No action is required.

IRU05176

User is set to: {0}.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05177

No persistent agents declared.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05178

Stopping persistent agent: {0}.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05179

Configuration file {0} failed verification. It will not be added to the list of available servers.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05180

Server Started on {0}, port: {1}.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05181

Pluggable authentication module error: {0}

Explanation:

This is an informational message.

User response:

No action is required.

IRU05182

Error while decoding URL: {0}.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05183

Unable to keep up with polling interval: {0} ms.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05184

Invalid process ID: {0}

Explanation:

This is an informational message.

User response:

No action is required.

IRU05185

Error getting children for process ID: {0}.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05200

Server data entered is not incorrect: server= {0} port={1} agent port={2}.

Explanation:

You entered incorrect data for either the WebSphere Application Server – Express server host name, the WebSphere Application Server – Express console port, or the console agent port, while trying to configure the server.

User response:

The user should verify the data entered in the Add/remove portlet is correct. The fields should not be left blank.

IRU05201

Could not find portlet instance data; returning default URL: portlet instance ID:{0} user ID:{1} user key: {2}.

Explanation:

The necessary information needed to build the URL for the Websphere Application Systems console task is missing. The default URL will be used.

User response:

Provide the message output to your service representative.

IRU05202

No task was defined; using a default URL.

Explanation:

The specific Websphere Application Server console task data is not defined. The task URL cannot be built without the data; the default URL is being used.

User response:

Provide the message output to the IBM Support Center representative.

IRU05203

The current user is already in the hash table.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05204

The current user is not in the hash table; creating a new one.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05205

No portal user defined; cannot continue.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05206

Unable to log out from server {0}.

Explanation:

The logout request to the specified Websphere Application Server was not successful. There is chance that user was not completely logged out of the server. The user may have a login conflict on the next login to the server.

User response:

Check the error logs and the trouble shooting section for more details. Provide the message output to the IBM Support Center representative.

IRU05207

Could log out since an exception occurred: {0}. The URL for logout was {1}.

Explanation:

The logout request to the Websphere Application Server server threw an exception. There is chance that user was not completely logged out of the server. The user may have a login conflict on the next login to the server.

User response:

Check the error logs and the trouble shooting section for more details. Provide the message output to the IBM Support Center representative.

IRU05208

User key is null; could not log out.

Explanation:

The necessary user information needed for the logout request for a Websphere Application Server is missing. The user was not logged out of the server. The user may have a login conflict on the next login to the server.

User response:

Check the error logs and the trouble shooting section for more details. Provide the message output to the IBM Support Center representative.

IRU05209

Server is null; did not attempt to log out.

Explanation:

The necessary server information needed for the logout request for a Websphere Application Server is missing. The user was not logged out of the server. The user may have a login conflict on the next login to the server.

User response:

Check the error logs and the trouble shooting section for more details. Provide the message output to the IBM Support Center representative.

IRU05210

Could not log out since user {0} does not exist in list.

Explanation:

The Express Runtime console's Websphere Application Server management extension could not log out the specified user, since the user was not found in the list. The user may have a login conflict on the next login to the server.

User response:

Check the error logs and the troubleshooting section for more details. Provide the message output to the IBM Support Center representative.

IRU05211

Could not log out since userkey was missing.

Explanation:

The Express Runtime console's Websphere Application Server management extension could not log out the user, since the data needed to determine the user is missing. The user may have a login conflict on the next login to the server.

User response:

Check the error logs and the trouble shooting section for more details. Provide the message output to the IBM Support Center representative.

IRU05212

Exception occurred while cleaning out workspace.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05213

Could not connect to server, since the port provided is not a HTTP port.

Explanation:

The connection to the server could not be established, since the Websphere Application Server administrative port provided is not a valid HTTP port. Most likely the port provided is the HTTPS port.

User response:

Ensure that the administrative port provided is a valid HTTP port. If it is not, modify the configuration for the server. Check the troubleshooting section for more details, including how to determine the administrative HTTP port.

IRU05214

Could not connect to server because of unexpected return code: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05215

Exception occurred during redirect. The message is: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05216

Could not determine the version of WebSphere Application Server for the following server: {0}. Version information is {1}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05217

Error with WebSphere Application Server version, {0}; thus cannot log out of the WebSphere Application Server, {1}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05218

No version information was provided.

Explanation:

You must provide version information.

User response:

Provide version information.

IRU05219

The version, {0}, entered is not supported.

Explanation:

The provided version is not supported.

User response:

Provide a supported version.

IRU05230

Server={0}, port={1}

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05231

The list of visited servers is: {0}. The list size is {1}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05232

The active state is {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05233

The parameter list from the portlet XML is {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05234

Trying to log out from server {0}, using this URL: {1}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05235

Adding a close request for the following page: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05236

Does the user need to be prompted for a profile conflict: {0}?

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05237

Do we have a profile conflict: {0}?

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05238

Was the instance removed successfully: {0}?

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05239

Trying to remove the following instance: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05240

The parameter list, after parsing, is: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05241

The current user is already in the hash table.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05242

The current user is not in the hash table; creating a new one.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05243

The WebSphere Application Server console task ID is: {0}.

Explanation:

This is an informational message.

User response:

No action is required.

IRU05260

The referrer value from {1} is {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05261

The session ID is {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05262

The request URL is {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05263

Name={0}, value={1}

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05264

Information in the task data is: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05265

The session is already invalidated; cannot log out. The following exception occurred: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05266

The action command is: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05267

The login action was successful.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05268

The action going forward is: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05269

Treating request as a new task launched from Integrated Solutions Console.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05270

The redirect URL is the new value with WebSphere Application Server parameters: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05271

Found existing key {0}, with value: {1}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05272

Treating request as a refresh from Integrated Solutions Console.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05273

The user mapped to session list is: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05274

The application server user from session is: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05275

The workspace is: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05276

Changes not found; clearing workspace.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05277

Changes found; not clearing workspace.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05278

No matches found in the hash table to track portlets.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05279

The referrer matches with a value in the hash; the matching key is {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05280

The stored task data for the key, {0}, is: {1}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05281

Treating request as normal processing and continuing to save the drill-down information.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05282

Treating request as a redirect URL.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05283

The unique portlet key/ID is {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05284

The full URL to store is {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05285

The session is not associated with Integrated Solutions Console.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05286

Adding user key {0} to the user mapped to session list.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05287

The value of the previous task key is: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05288

Starting filter {0} processing.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05289

Finishing filter {0} processing.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05290

The session has been invalidated.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05291

The state of the session according to the server is: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05292

The session ID to state list is: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05300

Base administration page is {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05301

Error in processing the DOM: {0}

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05302

Node name: {0}

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05303

In prompt user - Panel={0} UTM={1}

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05305

The SSL certificate dialog is about to be displayed to the user. The dialog will be nonmodal.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05306

The SSL certificate dialog has been displayed to the user. The dialog is nonmodal.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05307

The SSL certificate dialog is about to be displayed to the user. The dialog will be modal.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05308

The SSL certificate dialog has been displayed to the user. The dialog was modal.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05309

SSL certificate was accepted.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05310

SSL certificate was not accepted.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05311

The command is null.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05312

The following command is {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05313

There are no error messages to display.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05314

Displaying the following messages: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05315

There are no items to remove.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05316

The number of items to remove is {0}. The items are {1}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05317

Removing context from hash, since the selected context was set to null.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05318

Sending message with the following context: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05319

Retrieving the following context for the hash: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05320

The URL is {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05321

Did not find the last selected context; looking for a persistent context.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05322

Found the following persistent context: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05323

The help URL is {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05324

Returning since no change found in context list.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05325

Could not find context in list.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05326

Context is null or empty.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05327

TrustManager={0} Size={1}

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05328

Received an Integrated Solutions Console save context action. Saving the context.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05329

Sending the context as the message.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05330

The action was handled by `sendContextAsMessage`. It is returning without calling `super.actionPerformed`.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05332

Object {0} has a null value.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05333

The action {0} is being passed to the superclass for handling.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05334

Key={0} Value={1}

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05335

The read line is: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05336

Adding cookie: key={0}, value={1}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05337

String buffer is: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05338

Setting cookies [{0}].

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05339

Opening connection: sUrl={0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05340

Working with key {0} value {1} pair.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05341

Did not find a message; returning false.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05342

Removing the message from context.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05343

Returning since persistedContext = {0} or userName = {1}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05344

Object {0} is either null, empty, has a size of 0, or has nothing left to iterate through.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05345

Sending the new context to {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05346

Creating credentials with session ID(uo) {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05347

Found user ID {0} for resource {1}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05348

Deleting the credentials for the following resource: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05349

Creating the following credential slot ID: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05350

Updating the following credential slot id: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05351

Retrieving the credentials with resource {0} and session ID {1}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05352

Attempting to start a server.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05353

Attempting to stop a server.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05354

IBM Express Runtime, Version {0} build:{1} component:{2}

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05355

Attempting to use multi-threaded certificate check.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05356

UserTaskManager is null or could not be found.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05357

Starting isAlive() for: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05358

The result for isAlive() is: {0} = {1}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05406

The selected IBM HTTP Server instance is : {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05407

The IBM HTTP Server instance list is null.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05408

New node created with ID: {0} and display name: {1}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05409

The selected tree node is: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05410

The status for IBM HTTP Server {0} is {1}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05411

The console agent URL is : {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05412

The process ID value of the IBM HTTP Server being administered is: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05413

The fully qualified PID value of IBM HTTP Server being administered is: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05414

The log settings level is: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05415

The host name lookup status is: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05416

The cookie status tracking is : {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05417

The root node is: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05418

The node is : {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05419

The string to be parsed is : {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05420

The node value is : {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05421

Attributes: [{0}]

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05422

The children of the node are {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05500

Error parsing the return for the agent, {0}.

Explanation:

This message is displayed when a port number cannot be resolved into an integer.

User response:

Verify the agent installation.

IRU05501

Specify a host name.

Explanation:

Provide a fully-qualified host name.

User response:

Provide a fully-qualified host name.

IRU05502

Failed: Select a host name before clicking Edit.

Explanation:

A host name must be selected before you can edit the properties of the host.

User response:

Select a host name.

IRU05503

Failed: Select only one host name before clicking Edit.

Explanation:

You can only select one host name at a time to edit.

User response:

Select only one host name at a time when editing host properties.

IRU05504

Failed: Select at least one host name.

Explanation:

You must select at least one host name to continue with the task.

User response:

Select a host name.

IRU05505

Failed: Provide user ID and password for the host name, {0}.

Explanation:

You must provide a user ID and a password to authenticate with a host.

User response:

Provide a user ID and password.

IRU05506

An error has occurred while determining the status of the following component, {0}.

Explanation:

The status of a component cannot be determined.

User response:

This is an informational message. No user action is required.

IRU05507

Select at least one custom solution from the table.

Explanation:

You must select at least one custom solution to complete the task.

User response:

Select at least one custom solution.

IRU05508

No components/custom solutions located on the following host name, {0}.

Explanation:

No components or custom solutions have been located on the host.

User response:

This is an informational message. No user action is required.

IRU05509

The certificate verification for the following host name, {0}, at agent port, {1}, failed.

Explanation:

The certificate was not accepted by the user or the host.

User response:

Ensure that you have an updated certificate, or that you accept a certificate when authenticating with a host.

IRU05510

Could not connect to the following host name, {0}.

Explanation:

A connection with the host cannot occur.

User response:

Ensure that the host name and that the console agent port is correct. Also ensure that the console agent is installed and running.

IRU05511

The requested function is not available for the following host name, {0}.

Explanation:

You cannot perform this task using the selected resource.

User response:

You must upgrade the version of the console agent.

IRU05512

Failed: incorrect user ID or password on the following host name, {0}.

Explanation:

The user ID and password provided are incorrect.

User response:

Ensure that you provide the correct user ID and password.

IRU05513

Failed: The user is locked out on the following host name, {0}.

Explanation:

An attempt was made to log in to the console agent too many times. As a security measure, the agent has locked the user out for a specified amount of time.

User response:

Contact the system administrator.

IRU05514

Unable to determine status. Check the console logs.

Explanation:

The console cannot determine the status of a component or custom solution.

User response:

This is an informational message. No user action is required.

IRU05515

Unknown component type.

Explanation:

The component type on the host is not known or recognized.

User response:

This is an informational message. No user action is required.

IRU05525

Error while parsing custom solution XML file, {0}. Check console agent logs on {1} for details.

Explanation:

An error occurred parsing the XML file.

User response:

View the console agent log for more information.

IRU05526

The HTTP Server instance, {0}, referenced in the custom solution XML, {1}, is not configured.

Explanation:

The agent cannot locate the specific HTTP Server instance.

User response:

Ensure that the HTTP Server instance is configured.

IRU05527

Unable to parse the HTTP Server instance from the custom solution XML, {0}.

Explanation:

The XML cannot be parsed for the HTTP Server.

User response:

Ensure that the XML is formatted and formed correctly.

IRU05528

The WebSphere Application Server profile, {0}, referenced in the custom solution XML, {1}, is not configured.

Explanation:

The agent cannot locate the specific WebSphere Application Server instance.

User response:

Ensure that the WebSphere Application Server instance is configured.

IRU05529

Unable to parse the WebSphere Application Server profile from the custom solution XML, {0}.

Explanation:

The XML cannot be parsed for the WebSphere Application Server.

User response:

Ensure that the XML is formatted and formed correctly.

IRU05530

Could not find the translated text for the following key, {0}, from the custom solution XML, {1}.

Explanation:

A translated value cannot be located in a properties file.

User response:

Ensure that translated text is located in a properties file for all possible values.

IRU05531

An IO exception occurred while reading the custom solution XML file on {0}.

Explanation:

The XML is not formatted or formed correctly.

User response:

Ensure that the XML is formatted and formed correctly.

IRU05532

A parse exception occurred while reading the custom solution XML file on {0}.

Explanation:

The XML is not formatted or formed correctly.

User response:

Ensure that the XML is formatted and formed correctly.

IRU05533

A SAX exception occurred while reading the custom solution XML file on {0}.

Explanation:

The XML is not formatted or formed correctly.

User response:

Ensure that the XML is formatted and formed correctly.

IRU05534

The customSolutions folder is missing on {0}. The path being used for the folder is {1}.

Explanation:

The folder where the console agent expects to find XML files is missing.

User response:

Ensure that the customSolutions folder exists.

IRU05535

Error adding the profile {0} to the node on {1}.

Explanation:

No information can be discovered about the specified component.

User response:

This is an informational message. No user action is required.

IRU05536

The RAC port is missing from the properties file on {0}.

Explanation:

The properties file requires the RAC port to be provided.

User response:

Provide a RAC port number.

IRU05537

The context provided {0} is not valid for {1}.

Explanation:

The information sent to the agent from the client cannot be identified.

User response:

This is an informational message. No user action is required.

IRU05800

Error getting dispatcher or service request.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05801

Null value found for asyncBackup.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05802

Null value found for resultsUtm.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05803

Authentication failed for {0}.

Explanation:

This message indicates that there was a failure in authentication.

User response:

Ensure that the correct authentication credentials are entered and try again.

IRU05804

Login attempt to {0} by {1}.

Explanation:

This message contains security audit information.

User response:

No action is required.

IRU05805

Get database list for server {0}; the instance is {1}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05806

Could not retrieve the list of databases.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05807

AppAdapter or UTM is null; cannot refresh.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05808

Method getDirectory - getDirectoryList failed.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05809

Method getName returned null for {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05810

Error parsing time {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05811

Failed to load JDBC driver.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05812

JDBC connection requires valid database remote name: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05813

JDBC connection URL:

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05814

JDBC driver metadata:

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05815

Failed to establish JDBC connection: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05816

JDBC connection was closed successfully.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05817

Failed to close JDBC connection.

Explanation:

This message contains information for use by service.

User response:

Provide the message output to your service representative.

IRU05818

Failed to retrieve AdminClient: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05819

Failed to invoke MBean: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05820

Failed to find MBean: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05821

Failed to retrieve user message for SQL code: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05822

DASFileSystemService failed during the DAS API call: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05823

Catalog

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05824

Database catalog requires a valid context file: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05825

Current catalog entries: {0}

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05826

Database key not found: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05827

DB2Alert requires valid arguments: ID, timestamp.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05828

Failed JDBC call: {0}

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05829

Failed to recover DB2 port: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05830

DB2Database requires valid arguments: alias, name, host name, instanceName, db2portNumber, jmxPortNumber, and version.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05831

DB2Database requires valid DB2 port: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05832

DB2Database requires valid argument: jmxPortNumber: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05833

Failed DAS execution SQL code check: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05834

Instance db2start command failed and returned {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05835

Instance db2start command succeeded and returned {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05836

Instance db2stop command failed and returned {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05837

Instance db2stop command succeeded and returned {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05838

Instance ATTACH command failed and returned {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05839

Instance ATTACH command succeeded and returned {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05840

Database not available due to: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05841

Implemented in the connector through a call to TableUDF: SNAPSHOT_DATABASE.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05842

Database backup requires valid: instanceName, dbName, userID, passwd, path.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05843

Failed to set up success code sets: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05844

DAS execution failed and backup script returned {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05845

Database backup command failed and returned {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05846

Database backup succeeded and returned {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05847

Admin command failed and returned {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05848

Admin command failed unexpectedly: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05849

Asynchronous command to be executed in less than {0} seconds.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05850

Command execution did not finish after {0} seconds.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05851

Command execution failed.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05852

Command execution failed unexpectedly.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05853

Failed to retrieve DATABASES from DB2 Server: [{0}] with error code: [{1}] due to SQL error: [{2}].

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05854

Failed to retrieve database configuration: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05855

Retrieved [{0}] from [{1}] discovered databases on host: [{2}].

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05856

Failed to retrieve databases for TCPIP node: [{0}] from DB2 Server: [{1}] with error code: {2} - SQL error: [{3}].

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05857

DB2 node found: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05858

Stored procedure call: {0}

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05859

SQLCAMEssage SP execution failed with error code {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05860

Failed to retrieve error message.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05861

Failed during the SP call: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05862

DB2 udfStmt: {0}

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05863

Failed during the UDF call: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05864

Retrieved: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05865

Failed to build query: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05866

Failed to query MBeanServer: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05867

Failed to find MBeanServer for: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05868

Failed to contact JMX on port {0}: {1}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05869

Failed to contact JMX on port {0}/{1}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05870

Instance (node) state: {0}

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05871

DB2 management services initialization

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05872

Retrieve DB2 Services configuration file.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05873

Failed to load configuration file: [{0}] due to: {1}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05874

Failed to access configuration file [{0}] due to: {1}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05875

Erroneous DB2 services configuration: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05876

Logger configuration type: {0}

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05877

Initialized DB2 common trace: [{0}].

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05878

Failed to open/write trace file: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05879

Failed to initialize DB2 common trace: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05880

Asynchronous execution response delay: {0} seconds

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05881

DB2 management services registered: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05882

Failed to register [{0}] due to: {1}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05883

Attempting to load [db2srvapi] shared library.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05884

Failed to load [db2srvapi] shared library: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05885

Successfully loaded [db2srvapi] shared library.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05886

Error code is expected to be an integer: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05887

DB2ServiceDispatcher requires a valid context: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05888

Found in catalog database: {0}

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05889

User response: {0}

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05890

Failed to retrieve platform; unsupported type: {0}.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05891

DB2Database requires valid arguments: locale, dbAlias, userID, passwd.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU05900

User ID={0}, remote host name={1}, action=initialize portlet {2}

Explanation:

This is a security audit log message. It occurs when a portlet is loaded.

User response:

No action is required.

IRU05901

User ID={0}, action=close portlet {1}

Explanation:

This is a security audit log message. It occurs when a portlet is closed.

User response:

No action is required.

IRU05903

Integrated Solutions Console user {0} failed to log on to server {1} using the Web server user ID {2}.

Explanation:

This is a security audit log message. It occurs when a user in the Integrated Solutions Console attempted to administer a Web server with invalid credentials.

User response:

No action is required.

IRU05904

Integrated Solutions Console user {0} has changed configuration on Web server {1} using Web user ID {2}.

Explanation:

This is a security audit log message. It occurs when the configuration for a Web server is changed.

User response:

No action is required.

IRU05907

Integrated Solutions Console user {0} failed to log in to server {1} with console agent user ID {2}.

Explanation:

This is a security audit log message. It occurs when a user tries to connect to the console agent to work with configuration settings with invalid credentials.

User response:

No action is required.

IRU05908

User {0} has issued a {1} command on {2}: {3}.

Explanation:

This is a security audit log message. It occurs when a user starts or stops a DB2 database.

User response:

No action is required.

IRU05909

User {0} has issued a Backup command on {1}: {2}.

Explanation:

This is a security audit log message. It occurs when a user issues the backup command for a DB2 database.

User response:

No action is required.

IRU06000 messages

IRU06000 messages

IRU06001

The program was not started correctly.

Explanation:

The program could not be started using the invocation command you provided.

User response:

Enter a valid invocation command.

IRU06002

A Java exception occurred.

Explanation:

An internal program error occurred while building the binary file.

User response:

Contact your solution provider.

IRU06003

A SAX exception occurred.

Explanation:

A SAX parsing error occurred while building the binary file.

User response:

Contact your solution provider.

IRU06004

An empty stack exception occurred: Invalid XML file.

Explanation:

An internal program error occurred while building the binary file.

User response:

Contact your solution provider.

IRU06005

An error occurred when invoking method {0} for class {1}.

Explanation:

An internal program error occurred while building the binary file.

User response:

Contact your solution provider.

IRU06006

An error occurred when accessing the constructor.

Explanation:

An internal program error occurred while building the binary file.

User response:

Contact your solution provider.

IRU06007

The factory handler could not be started.

Explanation:

An internal program error occurred while building the binary file.

User response:

Contact your solution provider.

IRU06008

The manifest file for locale {0} could not be loaded.

Explanation:

An internal program error occurred while building the binary file.

User response:

Contact your solution provider.

IRU06009

The binary application file {1} could not be created from the application wrapper {0}.

Explanation:

The binary application file was not successfully created.

User response:

Check the log file for error details. Contact your solution provider.

IRU06010

The response file template was not added.

Explanation:

The response file specified in the application wrapper was not found.

User response:

Ensure that the file specified exists.

IRU06011

The {0} key in the {1} bundle cannot be found.

Explanation:

The string resource that you specified was not found.

User response:

Ensure that the specified key exists in the specified resource bundle.

IRU06012

The install size specified is not valid.

Explanation:

The value specified for the install size must be a positive integer.

User response:

Ensure that the install size value is a positive integer.

IRU06013

The variable was not added.

Explanation:

A specified variable could not be added to the solution.

User response:

Check the log file for details. Ensure that the variable specified is not a duplicate.

IRU06014

The binary application file was not created.

Explanation:

The binary application file could not be created.

User response:

Check the log file for error details. Contact your solution provider.

IRU06015

The binary application file {1} was created from the application wrapper {0}.

Explanation:

The binary application file was successfully created.

User response:

For information only. No action required.

IRU06016

The schema validation could not be enabled.

Explanation:

The SAX parser could not be enabled for schema validation.

User response:

Ensure that the reference to the schema in your XML wrapper is correct. Also ensure that the schema exists where you specified.

IRU06017

The XML document is ready to be processed.

Explanation:

The SAX parsing process is starting.

User response:

For information only. No action required.

IRU06018

The binary file {0} was successfully created.

Explanation:

The binary file was successfully created from the XML wrapper.

User response:

For information only. No action required.

IRU06020

The XML document is being processed.

Explanation:

The parser detected the beginning of your XML wrapper.

User response:

For information only. No action required.

IRU06021

The XML document finished processing.

Explanation:

The parser detected the end of your XML wrapper.

User response:

For information only. No action required.

IRU06022

The fileset {0} for the language {1} was not found.

Explanation:

A language was specified for which no files are associated.

User response:

Ensure that your solution wrapper specifies a file set for each language.

IRU06023

The language {0} is not supported.

Explanation:

A language was specified that is not currently supported by Express Runtime.

User response:

Ensure that your solution wrapper specifies only supported languages.

IRU06024

The manifest file {0} could not be created.

Explanation:

An internal program error occurred while creating the binary solution file.

User response:

Contact your solution provider.

IRU06025

A SAX warning occurred at {0} : {1}

Explanation:

The SAX parser encountered a warning level problem.

User response:

Check your solution wrapper for syntax errors at the line and column indicated.

IRU06026

A SAX error occurred at {0} : {1}

Explanation:

The SAX parser encountered an error level problem.

User response:

Check your solution and application wrappers for syntax errors at the line and column indicated.

IRU06027

A SAX fatal error occurred at {0} : {1}

Explanation:

The SAX parser encountered a fatal level problem.

User response:

Check your solution wrapper for syntax errors at the line and column indicated.

IRU06028

{0} is not a valid operating system.

Explanation:

An operating system was specified that is not currently supported by Express Runtime.

User response:

Ensure that your solution wrapper specifies only supported operating systems.

IRU06030

Software {0} could not be added to the solution.

Explanation:

An internal program error occurred while building the binary file.

User response:

Contact your solution provider.

IRU06031

The XML tag <{0}> in {1} could not be translated.

Explanation:

A translatedKey attribute specified a value that was not found in the translated file.

User response:

Ensure that the value for {0} exists in the translated file {1}.

IRU06036

The Solution generator is reading the binary application file {0}.

Explanation:

The application is being included in the solution.

User response:

For information only. No action required.

IRU06037

The contents of the binary application file {0} are not valid.

Explanation:

An internal program error occurred while creating the binary file.

User response:

Contact your solution provider.

IRU06038

File {0} is not a valid binary application file.

Explanation:

The class for the application being added to the solution is not valid.

User response:

See the log file for details on the invalid class. Contact your solution provider.

IRU06040

The data "{0}" specified for element {1} is not valid.

Explanation:

The value specified for the input validation is not correct.

User response:

Specify valid data for the input validation.

IRU06041

The external JAR {0} was not found.

Explanation:

The file specified as the external JAR was not found.

User response:

Ensure that the specified file exists.

IRU06042

The value specified for the external JAR {0} is not a .jar file.

Explanation:

The file specified as the external JAR does not have a file type of .jar.

User response:

Specify a file that is a Java .jar file.

IRU06043

The entry program was already used in the solution. {0}

Explanation:

The entry program was already used in the solution.

User response:

This is an informational message. No action is required.

IRU06044

The entry program could not be added to the solution.

Explanation:

The entry program could not be added to the solution.

User response:**IRU06045**

The exit program was already used in the solution. {0}

Explanation:

The exit program was already used in the solution.

User response:

Specify another exit program.

IRU06046

The exit program could not be added to the solution.

Explanation:

The exit program could not be added to the solution.

User response:**IRU06047**

Default data "{0}" for the shared variable {1} was removed.

Explanation:

Shared variables cannot have default data specified.

User response:

Ensure that default data is not specified for the variable.

IRU06048

The file {0} was not found.

Explanation:

The file specified could not be found.

User response:

Ensure that the file name specified is correct, and verify that the file exists.

IRU06049

The software {0} could not be added to the solution.

Explanation:

The specified software could not be added to the solution.

User response:

See the log file for details. Contact your solution provider.

IRU06050

The software {0} could not be added to the solution because the solution does not exist.

Explanation:

The solution that you specified does not exist.

User response:

Ensure that the file name specified for the solution is correct.

IRU06051

The value of the timeout attribute for the entry program must be greater than 0.

Explanation:

The value for the timeout attribute is not valid. It must be a positive integer.

User response:

Specify a valid timeout value.

IRU06052

The value of the timeout attribute for the main program must be greater than 0.

Explanation:

The value for the timeout attribute is invalid. It must be a positive integer.

User response:

Specify a valid timeout value.

IRU06053

The value of the timeout attribute for the exit program must be greater than 0.

Explanation:

The value for the timeout attribute is invalid. It must be a positive integer.

User response:

Specify a valid timeout value.

IRU06054

Software {0} cannot be specified as a prerequisite because it does not exist.

Explanation:

The specified software cannot be specified as a prerequisite because it does not exist.

User response:

Specify valid software.

IRU06055

Software {0} cannot be specified as a consumer because it does not exist.

Explanation:

The specified software cannot be specified as a consumer because it does not exist.

User response:

Specify valid software.

IRU06056

Software {0} cannot be specified as a provider because it does not exist.

Explanation:

The specified software cannot be specified as a provider because it does not exist.

User response:

Specify valid software.

IRU06057

Application {0} cannot be specified as a conflict because it does not exist.

Explanation:

The specified application cannot be specified as a conflict because it does not exist.

User response:

Specify a valid application.

IRU06058

A default translation language must be specified.

Explanation:

One of the languages specified must be set as the default.

User response:

Use the default attribute on the translationLanguages element to specify the default translation language you want.

IRU06059

Multiple default translation languages are not allowed.

Explanation:

You can specify only one language as the default translation language.

User response:

Ensure that the default attribute on the translationLanguages element occurs only once and contains only one language.

IRU06061

The element {0} specifies the translatedKey attribute but also contains element data. You cannot include both.

Explanation:

An element cannot specify data and the translatedKey attribute at the same time.

User response:

Remove either the element data or the translatedKey attribute.

IRU06062

A logMessage element with the type attribute {0} is required.

Explanation:

Both types, error and success, are required when defining a logMessage. You included one, but not the other.

User response:

Ensure that both error and success are specified.

IRU06069

{0} is required for program type {1}.

Explanation:

The specified element or attribute must be included when the program type is {1}.

User response:

Update the XML file to include the required element or attribute.

IRU06070

{0} is a duplicate host name in group {1}.

Explanation:

There is a duplicate host name in the specified group.

User response:

Specify a valid host name.

IRU06071

{0} is a duplicate computer name in group {1}.

Explanation:

A duplicate computer name was specified in the group.

User response:

Specify a unique computer name.

IRU06072

Media file list was not specified for language {0}. At least one media fileset should be specified for each language.

Explanation:

A media file list was not specified for a language.

User response:

Specify at least one media fileset for each language.

IRU06073

Software {0} does not exist in group {1}.

Explanation:

The specified software does not exist in the group.

User response:

Specify a valid software name in the specified group.

IRU06074

Software {0} already exists on computer {1}.

Explanation:

The software already exists on the computer.

User response:

This is an informational message. No action is required.

IRU06075

The software {0} does not exist in the solution for this operating system and language.

Explanation:

The software does not exist in the solution for this operating system and language.

User response:

Specify the correct software for this operating system and language.

IRU06076

The variable name {0} is not valid for software {1}.

Explanation:

The variable name is not valid for this software.

User response:

Specify a valid variable name for the software.

IRU06077

Input {0} is not valid for variable {1}.

Explanation:

The input that was specified is not valid for the variable.

User response:

Specify valid input.

IRU06078

The operating system {0} is not supported by Express Runtime.

Explanation:

You are attempting to install Express Runtime to an unsupported operating system.

User response:

Check the product documentation for a list of operating systems supported by Express Runtime.

IRU06079

{0} is a duplicate group name.

Explanation:

A duplicate group name was specified.

User response:

Specify a valid group name.

IRU06080

Software {0} already exists in group {1}

Explanation:

The specified software already exists in the group.

User response:

This is an informational message. No action is required.

IRU06086

A programName attribute cannot be specified when the programType attribute value is "rpm".

Explanation:

The programName attribute is not valid for an RPM program type.

User response:

Delete the programName attribute or change the programType attribute.

IRU06088

All group name attributes must be at least 1 character in length.

Explanation:

All group name attributes must be at least 1 character in length.

User response:

Specify valid group name attributes that are at least 1 character in length.

IRU06089

The operating system {1} is not supported by the solution {0}.

Explanation:

You specified an operating system that is not defined for the given solution.

User response:

Specify a valid operating system for the solution.

IRU06090

The language {0} is not supported by Express Runtime.

Explanation:

A language was specified that is not currently supported by Express Runtime.

User response:

Ensure that your XML wrapper specifies only supported languages.

IRU06091

The language {1} is not supported by the solution {0}.

Explanation:

You specified a language that is not defined for the given solution.

User response:

Specify a valid language for the solution.

IRU06092

The <rpmPackages> element is not valid when the programType attribute value is not "rpm".

Explanation:

You cannot use the rpmPackages element when the program type is not defined as RPM.

User response:

Either delete the rpmPackages element, or change the program type to be RPM.

IRU06094

All computer host name attributes must be at least 1 character in length.

Explanation:

One or more computer host name attributes were not at least 1 character in length.

User response:

Specify all computer host name attributes so that each is at least 1 character in length.

IRU06095

The solutionFileName must be specified in either the command line or the solution wrapper.

Explanation:

The solutionFileName is required.

User response:

Specify the solutionFileName in either the command line or the solution wrapper.

IRU06096

All computer name attributes must be at least 1 character in length.

Explanation:

One or more computer name attributes were not at least 1 character in length.

User response:

Specify all computer host name attributes so that each is at least 1 character in length.

IRU06097

The deployment wizard cannot save the changes to the solution file.

Explanation:

Changes were made to the solution, but the deployment wizard cannot save them.

User response:

For information only. No action required.

IRU06098

There are no computers in the task to deploy to.

Explanation:

No computers are defined in this task.

User response:

For information only. No action required.

IRU06099

The file {0} must have an extension of .xml.

Explanation:

The specified file is not identified as an XML document with a file extension of .xml.

User response:

Ensure the file is an XML document. If so, rename it to include a file extension of .xml.

IRU06100

Defaulting to the file {0}.

Explanation:**User response:****IRU06109**

No computer was identified.

Explanation:

The task does not include any target computers.

User response:

Add the appropriate target host names to the task.

IRU06110

The attribute specified {0} conflicts with the attribute {1}.

Explanation:

The indicated attributes cannot be used together. You can use one or the other, but not both.

User response:

Correct the XML document to include only one of the attributes.

IRU06111

The language specified as the default for the <translationLanguages> element must also be included as a <language> element.

Explanation:

You specified a language as the default translation language that is not currently defined as a valid language for this application.

User response:

Either change the default language to one that is included, or add the default language using the language element.

IRU06129

The {0} key in the {1} bundle for {2} locale cannot be found.

Explanation:

An internal error prevented the message from being displayed.

User response:

Contact your solution provider.

IRU06130

The SAX parser {0} is not in your classpath.

Explanation:

The parser is required and must be included in the classpath.

User response:

Add the parser to your classpath.

IRU06131

The binary application file {1} was created from the solution wrapper {0}.

Explanation:

The binary application file was successfully created.

User response:

For information only. No action required.

IRU06132

The attributes {0} and {1} cannot both be true for the {2} element.

Explanation:

The specified attributes cannot both have a value of true.

User response:

Change one of the attribute values to false.

IRU06136

The application {0} does not support the language specified in the task.

Explanation:

You entered a language that is not supported in the task.

User response:

Specify a language supported by the task.

IRU06137

The application {0} already exists in the task.

Explanation:

The application specified by the file name was added more than once to the task.

User response:

Remove all but one occurrence of the application from the task.

IRU06138

{0} is not a valid application ID.

Explanation:

An invalid application ID was specified, either in the application XML or on the command line. Application IDs must be fewer than 200 characters in length, must begin with an alphabetic character, and can be made up only of alphanumeric characters, underscores, dashes and periods.

User response:

Modify the application XML or command-line invocation to include a valid application ID.

IRU06139

{0} is not a valid solution ID.

Explanation:

An invalid solution ID was specified, either in the solution XML or on the command line. Solution IDs must be fewer than 200 characters in length, must begin with an alphabetic character, and can be made up only of alphanumeric

characters, underscores, dashes and periods.

User response:

Modify the solution XML or command-line invocation to include a valid solution ID.

IRU06140

Task {0} does not exist in the solution.

Explanation:

The task number that you specified does not exist in the solution.

User response:

Check the number of tasks in the solution and ensure that you are specifying a valid task number.

IRU06141

Task {0} is not an install task.

Explanation:

The task is not an installation task.

User response:

Specify a valid installation task.

IRU06142

Task {0} is not an install task.

Explanation:

The task number that you specified exists, but is not an install task.

User response:

Check the tasks in the solution and ensure that the task number you specify denotes an install task.

IRU06143

The solution {0} failed to build. See {1} for details

Explanation:

User response:

IRU06144

The application referenced by {0} does not exist.

Explanation:

The application does not exist.

User response:**IRU06146**

{0} is an invalid shared name.

Explanation:

The shared name cannot contain the underscore (_) character.

User response:

Modify the shared name to remove the underscore.

IRU06147

Shared booleanVariable {0} cannot have validation info.

Explanation:

The specified variable is being shared with a variable containing validation information. Boolean variables cannot be associated with shared variables containing validation information (for example, minimum and maximum length, valid or invalid specifications and so on). A boolean variable can only hold values equal to "true" or "false" and associating them with variables containing validation information would cause solution deployment to fail.

User response:

Remove the validation information from the shared variable.

IRU06148

Hidden or read-only variable {0} must have valid data.

Explanation:

The variable specified contains invalid default data. Variables set to be hidden or read-only must have valid default data because the user is unable to edit their values.

User response:

Modify the variable to contain valid default data.

IRU06149

Hidden or read-only variable {0} must either have valid data or be shared with an editable variable.

Explanation:

The variable specified contains invalid default data. Shared variables set to be hidden or read-only must have valid default data or must be shared with another variable that is not hidden or read-only. The user is unable to edit the values.

User response:

Add valid default data to the specified variable, or make one of the shared variables editable.

IRU06150

The deployment package creation failed. Refer to the log file for more information.

IRU06151

A `preDeploymentChecker` was specified. For each `install` locale, you must specify a `fileList` with the `userPrograms` attribute set to `true`.

Explanation:

Because a `preDeploymentChecker` was specified, user program `fileList` information must be provided for each locale.

User response:

Ensure that the `preDeploymentChecker` files are included in a user programs file list for each locale.

IRU06152

The XML `builderVersion` of {0} does not match the current version of {1}.

Explanation:

The `builderVersion` attribute in the application or solution XML does not match the current version of Express Runtime.

User response:

Update the XML so that the `builderVersion` attribute matches the current version of Express Runtime (for example, "3.0.1").

IRU06153

The `.SER` file `builderVersion` of {0} does not match the current version of {1}.

Explanation:

The `builderVersion` attribute in the `.ser` file does not match the current version of Express Runtime. The `.ser` file was built with a previous version of Express Runtime.

User response:

Update the `builderVersion` stored in the `.ser` file by rebuilding the solution using the current version of Express Runtime.

IRU06154

`{0}` is not a valid deployment package name.

Explanation:

A nonvalid deployment package name was specified.

User response:

Specify a valid deployment package name.

IRU06156

Deployment package already exists; specify the `-replace` option to overwrite it.

Explanation:

The deployment package already exists.

User response:

Specify the `-replace` option to overwrite it.

IRU06157

You do not need to build a user program deployment package because you did not specify any user programs in your application wrapper. The user programs deployment package is not built.

Explanation:

Applications that do not require user programs do not contain `fileList` elements with the `userPrograms` attribute. The deployment wizard requires `fileList` elements with the `userPrograms` attribute to build a user programs deployment package.

User response:

Either add user programs containing `fileList` elements with the `userPrograms` attribute to your application wrapper or do not attempt to create a user programs deployment package.

If you encounter this error while using the Express Runtime developer, no action is required. The Express Runtime developer will automatically attempt to build the user programs deployment package when it builds the solution.

IRU06158

Access to `{0}` directory and its contents is denied.

Explanation:

The user does not have read or write access authority to the directory.

User response:

Verify that you specified the correct software image root directory. The software image root can be specified in three places: the command line, the softwareImageRoot attribute in the application xml file, or the software image root property of the application xml file in the Express Runtime developer (right-click on the application xml file and make sure the correct software image root is displayed on the Properties panel). If the software image root directory is correct, verify that you can access all the directories you specified in the fileList element in the application xml.

IRU06159

The software image root {0} does not exist.

Explanation:

The directory specified as the software image root is not a valid directory.

User response:

Specify a valid directory as the software image root.

IRU06160

The software image root {0} is empty.

Explanation:

The directory specified as the software image root is an empty directory.

User response:

Ensure that the directory specified as the software image root contains the necessary files or specify another directory.

IRU06161

The file {0} must have an extension of .xml.

Explanation:

The file does not have an extension of .xml.

User response:

Provide a file name that has an extension of .xml.

IRU06162

The file {0} must have an extension of .xml.

Explanation:

The file does not have an extension of .axml.

User response:

Provide a file name that has an extension of .axml.

IRU06163

The solution file {0} does not exist.

Explanation:

The solution file specified in the task file does not exist.

User response:

Ensure that the solution file name is entered correctly in the task file and that the solution file exists in the path specified.

IRU06164

Task {0} in solution {1} is not an install task.

Explanation:

The specified task in the task file is not an install task. Only install tasks can be deployed from a task file; manual tasks cannot.

User response:

Ensure that the task specified is an install task in the solution.

IRU06165

Task {0} does not exist in the solution {1}.

Explanation:

The task number specified in the task file is not a valid task number in the solution.

User response:

Enter a valid task number for the solution.

IRU06166

The application {0} does not exist in task number {1} in solution {2}.

Explanation:

The application id specified in the task file does not exist in the task in this solution.

User response:

Ensure that the application id was entered correctly in the task file and that it matches the id of the application.

IRU06167

Task number {0} has already been added in the taskSet for solution {1}.

Explanation:

A task cannot be deployed more than once in the same task set.

User response:

Remove one of the tasks from the task set. If the task must be deployed more than once in a task file, create another task set and include this task in the new task set.

IRU06168

The variable {0} does not exist in application {1}.

Explanation:

The variable id specified in the task file does not exist in the application.

User response:

Ensure that the variable id was entered correctly in the task file and that it matches the id of the variable as specified in the application XML.

IRU06169

Variable validation failed.

Explanation:

The validation failed for this variable.

User response:

When you receive this message, details regarding the failure of the variable validation will be provided in a more specific message displayed above this one. That message will vary, depending on the circumstances of the failure.

IRU06170

Variable {0} in application {1} in task number {2} in solution {3} is not editable. The input value {4} will be ignored.

Explanation:

This variable is a shared variable. It was defined in the solution as either read-only or hidden. Its value cannot be edited from a task file. Its value can only be modified based on another variable. The value entered will be ignored.

User response:

Ensure that the value for this variable is being set on the correct shared variable.

IRU06171

The element {0} cannot be empty.

Explanation:

The element specified is either empty or contains only white space characters. Valid data is required.

User response:

Fill in the element with appropriate data. Consult your solution provider for details.

IRU06172

Task {0} in solution {1} deployed successfully.

Explanation:

The task specified was successfully deployed.

User response:

For information only. No action required.

IRU06173

Task {0} in solution {1} failed.

Explanation:

The deployment of the task specified failed.

User response:

Consult the log file for details on the cause of the failure. Correct any errors listed and attempt the deployment again.

IRU06175

The element {0} specifies the {1} attribute but also contains element data. You cannot include both.

Explanation:

Data cannot be specified for the argument element when the variableName attribute is used.

User response:

Remove either the data or the variableName attribute from the argument element.

IRU06176

The variableName attribute references the variable {0} which is not defined in the XML.

Explanation:

The variableName attribute of the argument element points to a variable that does not exist in the application XML file.

User response:

Specify a variable that is defined in the application XML file.

IRU06177

The user programs root {0} does not exist.

Explanation:

The user programs root does not exist.

User response:

Specify a valid root.

IRU06178

The user programs root {0} is empty.

Explanation:

The user programs root is empty.

User response:

Specify a valid root.

IRU06179

Task {0} must contain at least one application.

Explanation:

The task does not contain at least one application.

User response:

Specify at least one application for the task..

IRU06180

The installation time specified is not valid.

Explanation:

The installation time that was specified is not valid.

User response:

Specify a valid installation time.

IRU06181

The XML attribute {0} is deprecated.

Explanation:

The XML attribute is deprecated.

User response:

Specify a valid XML attribute.

IRU06182

The XML element {0} is deprecated.

Explanation:

The XML element is deprecated.

User response:

Specify a valid XML element.

IRU06183

The file {0} contains invalid, non-UTF data.

Explanation:

The file contains nonvalid, non-UTF data.

User response:

Specify a file with valid UTF data.

IRU06184

The element {0} in file {1} contains invalid, non-UTF data beginning at character {2}.

Explanation:

The element in file contains nonvalid, non-UTF data beginning at the specified character.

User response:

Specify an element that contains valid UTF data.

IRU06185

An application may not contain fileSet elements with different languages.

Explanation:

The application might not contain fileSet elements with different languages.

User response:

Specify fileSet elements with the appropriate languages.

IRU06190

More than one task uses task ID {0}. Task IDs must be unique.

Explanation:

A duplicate task ID has been detected.

User response:

Provide a unique name for each task ID that you use.

IRU06195

The environment variable key {0} will be made upper-case.

Explanation:

The key of the environment variable that you provided will be made upper-case.

User response:

For informational purposes only. No action required.

IRU06196

The deployment prompt is invalid. Please ensure that the replacement arguments are correct: {0}.

Explanation:

An incorrect argument has been provided.

User response:

Provide correct arguments.

IRU07000 messages

IRU07000 messages

IRU07000

The IBM Installation Agent is listening on port {0}.

Explanation:

The IBM Installation Agent is listening on the specified port. This message indicates that the target computer is waiting for deployment wizard to start a deployment process.

User response:

For information only. No action required.

IRU07001

The IBM Installation Agent failed to start. RC={0}

Explanation:

The RMI registry naming service failed to start on port 1099. The agent might be currently running or the Java RunTime Environment on the target computer might be corrupted.

User response:

Run the IRU_ia_stop-agent executable file, and restart the IBM Installation Agent. For Windows, use the service control manager to stop the Agent. If the problem persists, restart the target computer and the agent again.

IRU07002

The solution deployment was not successful.

Explanation:

Some of the selected software failed to deploy on the target computer.

User response:

Analyze the log file associated with the failed deployments to determine the source of the error. Try to correct the error and then try the deployment again. If the problem persists, print the log file and contact your solution provider.

IRU07003

The IBM Installation Agent cannot obtain the deployment package.

Explanation:

The Agent was unable to obtain the deployment package.

User response:

Contact your solution provider.

IRU07004

IBM Installation Agent, Version {0}, is starting.

Explanation:

This message is logged each time the IBM Installation is started. The token {0} represents the full version of the agent.

User response:

Informational purposes only. No action required.

IRU07011

The IBM Installation Agent failed to start.

Explanation:

An internal programming error occurred.

User response:

Contact your solution provider.

IRU07012

The value specified for the communicationPort is not valid.

Explanation:

The value specified for the port is out of the valid range.

User response:

Specify a port number within the valid range.

IRU07013

The communication link between the target computer and the staging server failed.

Explanation:

The port specified for the communication link is probably being used by another process.

User response:

Change the port number and try again. If a firewall exists between the staging server and the target computer, ensure that the firewall permits communication on the specified port. If no firewall is running, you should use the default port 0. Using port 0 causes the deployment wizard to allocate an open port. You should only use ports other than 0 if a firewall is in use.

IRU07014

The IBM Installation Agent has terminated.

Explanation:

The IBM Installation Agent has stopped.

User response:

For information only. No action required.

IRU08000 messages

IRU08000 messages

IRU08010

IBM Installation Agent is already installed on the target computer.

Explanation:

This is an informational message.

User response:

No action is required.

IRU08011

The install program you are running is not compatible with the operating system.

Explanation:

You have selected to install a program that is incompatible with the operating system.

User response:

Verify the operating system before installation.

IRU08012

Both phrases are required.

Explanation:

Users are required to enter the password and the confirm password on the password maker panel.

User response:

Enter both the password and the confirm password.

IRU08013

Phrases do not match.

Explanation:

The password and the confirm password did not match on the password maker panel.

User response:

Enter matching pair of passwords .

IRU08014

The deployment wizard will not install software without valid passwords . You can generate the passwords at a later time using the Password Manager program. Are you sure you want to continue without generating the passwords?

Explanation:

Display this message if the user selects the skip password creation check box on the password maker panel.

User response:

Select Yes to continue without generating passwords. Select No to exit the deployment wizard and create passwords.

IRU08015

The directory name must include at least 1 character.

Explanation:

The installation path on UNIX[®] systems must have at least 1 character.

User response:

Enter a path that has at least 1 character.

IRU08016

The first character in the directory name must be a slash (/).

Explanation:

The installation path must start with a /.

User response:

Enter a path that begins with /.

IRU08017

The directory name must be at least 3 characters.

Explanation:

You entered a Windows destination containing fewer than three characters.

User response:

Enter a valid destination path.

IRU08018

IBM Installation Agent is already installed on the target computer.

Explanation:

This is an informational message.

User response:

Cancel the operation.

IRU08019

The first character in the directory name must be a valid drive letter.

Explanation:

You entered an invalid character in the beginning of the directory name.

User response:

Enter a valid drive letter as the first character in the destination path. The acceptable range is from A to Z.

IRU08020

The second character in the directory name must be a colon (:).

Explanation:

The second character in a Windows path name must be a colon.

User response:

Enter a valid path.

IRU08021

The third character in the directory name must be a backslash (\).

Explanation:

The third character in a Windows path name must be a backslash.

User response:

Enter a valid path.

IRU08022

The following characters are not allowed in the directory name: : < > * ? ;
 \ | /

Explanation:

You entered a Windows path name containing invalid path characters.

User response:

Enter a path that does not contain invalid characters.

IRU08023

The character {0} is not valid in the destination path.

Explanation:

You entered a UNIX path name containing invalid path characters.

User response:

Enter a path that does not include invalid characters. Invalid characters are ! \ # \$ % & / () * , ; < = > ? @ [] ^ { } |

IRU08024

Double backslashes (\\) are not allowed in the directory name.

Explanation:

Windows path names cannot contain \\.

User response:

Enter a valid path.

IRU08025

Double slashes (//) are not allowed in the directory name.

Explanation:

UNIX path names cannot contain //.

User response:

Enter a valid path.

IRU08027

Install language = {0}

Explanation:

The language selected by the user for installation is {0}.

User response:

For information only. No action required.

IRU08028

Install Directory = {0}

Explanation:

The install directory specified by the user is {0}.

User response:

For information only. No action required.

IRU08029

Passwords were created.

Explanation:

Password creation was successful.

User response:

For information only. No action required.

IRU08030

Passwords were not created.

Explanation:

The passwords were not created because the user chose to skip password creation during the installation or a problem was encountered when writing the passwords to the disk.

User response:

Run the password manager.

IRU08035

The Windows registry was updated.

Explanation:

The Windows registry was updated.

User response:

For information only. No action required.

IRU08036

Installation is complete.

Explanation:

The installation has been successfully completed.

User response:

For information only. No action required.

IRU08039

The directory does not exist. Do you want to create it?

Explanation:

You specified an installation directory that does not exist.

User response:

Select Yes to create the directory or No to enter an existing directory.

IRU08040

You must select at least one run level.

Explanation:

The user did not select a run level. The agent will be started and listening when the machine is running at the run level selected.

User response:

Select at least one run level check box.

IRU08041

Insufficient authority to install or uninstall {0}. Installation requires root authority.

Explanation:

You are not authorized to perform the operation.

User response:

Log on with the proper authorization and perform the operation.

IRU08042

The password you entered is not valid.

Explanation:

The password provided for this user is not valid

User response:

Enter valid password for this user.

IRU08043

The user name field must not be blank.

Explanation:

The user name field is a required value.

User response:

Enter a user name.

IRU08044

Both password fields are required.

Explanation:

The password and confirm password fields are required values.

User response:

Enter passwords in both the password and confirm password fields.

IRU08045

The passwords do not match.

Explanation:

The values provided in the password and confirm password fields must match.

User response:

Enter matching values in the password and confirm password fields.

IRU08046

Installing {0} ...

Explanation:

The IBM Installation Agent service is in installing.

User response:

For information only. No action required.

IRU08047

The user name you entered does not have administrator authority.

Explanation:

The user name provided must have administrator authority to install the service.

User response:

Enter an existing user name that has administrator authority.

IRU08048

The user name must not be longer than 20 characters.

Explanation:

The value specified for the user name exceeded 20 characters.

User response:

Enter a user name 20 characters or fewer in length.

IRU08049

The character {0} is not allowed in the user name.

Explanation:

You specified an invalid character in the user name field. The following characters are invalid: * + , / : ; < = > ? [\] |

User response:

Enter a valid user name.

IRU08050

{0} installation was successful.

Explanation:

The IBM Installation Agent service was successfully installed.

User response:

For information only. No action required.

IRU08052

Unable to connect to the service control manager for {0} installation.

Explanation:

Could not connect to the service control manager for service installation.

User response:

Uninstall the IBM Installation Agent and reinstall.

IRU08053

{0} installation failed.

Explanation:

The IBM Installation Agent service could not be created.

User response:

Uninstall the IBM Installation Agent and reinstall.

IRU08054

{0} already exists.

Explanation:

Write message to log during the installation of the IBM Installation Agent service.

User response:

Uninstall the old agent and install the new agent.

IRU08055

{0} update failed.

Explanation:

The update of the agent from a previously existing version failed.

User response:

Delete the HKEY_LOCAL_MACHINE\SYSTEM\ CurrentControlSet\Services\IIAService registry key, reboot the computer, and try the installation again.

IRU08056

This operating system is not supported.

Explanation:

The supported operating systems are Windows 98, NT, 2K, XP, Linux, AIX, and OS/400 (i5/OS).

User response:

Check product documentation for a list of supported platforms.

IRU08057

You specified an invalid directory for {0} installation.

Explanation:

Write message to log during the installation of the IBM Installation Agent service.

User response:

Enter a valid directory.

IRU08058

Unable to start {0}.

Explanation:

Write message to log during the installation of the IBM Installation Agent service.

User response:

Analyze the log file associated with the failed installation to determine the source of the error. Try to correct the error and attempt the installation again. If the problem persists, print the log file and contact your solution provider.

IRU08059

Failed to add registry entry for Windows 98 service.

Explanation:

No registry entry for the agent service on Windows 98 was made.

User response:

Analyze the log file associated with the failed installation to determine the source of the error. Try to correct the error and attempt the installation again. If the problem persists, print the log file and contact your solution provider.

IRU08060

Could not write service setup information file.

Explanation:

There was a problem writing the service setup information file.

User response:

Retry the installation.

IRU08062

Installation of {0} requires a user name.

Explanation:

You did not enter a user name for the installation.

User response:

Enter a valid user name.

IRU08063

Installation of {0} requires a run level.

Explanation:

Install program failed.

User response:

Contact solution provider.

IRU08065

Failed to create user for {0}.

Explanation:

The user name or password was invalid.

User response:

Retry the installation using a valid user ID and password.

IRU08066

Errors occurred during {0} installation.

Explanation:

An unknown error occurred during the installation of the IBM Installation Agent service.

User response:

Analyze the log file associated with the failed installation to determine the source of the error. Try to correct the error and attempt the installation again. If the problem persists, print the log file and contact your solution provider.

IRU08067

Uninstalling {0} ...

Explanation:

This message is displayed when the IBM Installation Agent service is being uninstalled.

User response:

For information only. No action required.

IRU08068

Invalid run level set for {0} installation.

Explanation:

An internal software error occurred when trying to establish the run level.

User response:

Provide a valid run level in the installation response file.

IRU08069

The rc file was not found for {0} installation.

Explanation:

The rc directory corresponding to the selected run level was not found on the system.

User response:

Retry the installation. If the error persists, contact your solution provider.

IRU08070

Cannot install the script for {0} installation.

Explanation:

The installer failed to install the script that controls the IBM Installation Agent service.

User response:

Analyze the log file associated with the failed installation to determine the source of the error. Try to correct the error and attempt the installation again. If the problem persists, print the log file and contact your solution provider.

IRU08071

Failed to get the current run level for {0} installation.

Explanation:

The run level could not be determined.

User response:

This is an informational message. No action is required.

IRU08072

Unable to start {0} for this run level.

Explanation:

The IBM Installation Agent service was not started because the current run level was not specified.

User response:

Restart machine in the run level specified during installation.

IRU08073

Failed to create a link.

Explanation:

The installer failed to create a symbolic link from the rc directory to the service script.

User response:

Retry the installation. If the error persists, contact your service provider.

IRU08074

Failed to remove {0} password.

Explanation:

The passwords were not removed during uninstallation.

User response:

Manually remove the password file in the installation directory.

IRU08075

Failed to stop {0}.

Explanation:

The IBM Installation Agent service failed to stop during uninstall.

User response:

Stop the IBM Installation Agent manually and retry the uninstall. If the error persists, contact your solution provider.

IRU08077

Failed to remove a symbolic link for {0}.

Explanation:

The installer failed to remove a symbolic link from the rc directory to the service script during uninstall.

User response:

Analyze the log file associated with the installation and attempt to manually remove symbolic link. If problem persists, contact your solution provider.

IRU08078

Failed to remove script file for {0}.

Explanation:

The installer failed to remove the script that controls the IBM Installation Agent service.

User response:

Contact your solution provider.

IRU08079

The {0} uninstallation was successful.

Explanation:

The uninstallation was successful.

User response:

For information only. No action required.

IRU08080

Errors occurred during {0} uninstallation. See the log file for details.

Explanation:

An unknown error occurred during the uninstallation of the IBM Installation Agent service.

User response:

Analyze the log file associated with the failed uninstall to determine the source of the error. Try to correct the error and attempt the uninstall again. If the problem persists, print the log file and contact your solution provider.

IRU08081

The user name you entered for {0} is {1}.

Explanation:

This message logs what user name was entered to start the Agent for Windows installs.

User response:

For information only. No action required.

IRU08082

The run level you entered for {0} is {1}.

Explanation:

This message logs what run levels were selected to start the Agent for UNIX installs.

User response:

For information only. No action required.

IRU08083

Password cannot contain any space.

Explanation:

The password that you entered contained a space.

User response:

Enter a password that does not contain spaces.

IRU08086

The rpm-build package is not installed on this computer.

Explanation:

The RPM build package is not installed. Although an RPM entry for this install will not be created, the install will complete successfully.

User response:

For information only. No action required.

IRU08087

Only the root user has authority to uninstall the IBM Installation Agent.

Explanation:

The user does not have root authority. The uninstall will be aborted.

User response:

Log in as root and uninstall the agent.

IRU08088

The current user ID does not have Administrator authority. Only users with Administrator authority can uninstall the IBM Installation Agent.

Explanation:

The user does not have Administrator authority. The uninstall will be aborted.

User response:

Log in as Administrator and uninstall the agent.

IRU08090

The Provider ID {0} can not be used to install to the destination provided. This destination already contains a copy of Express Runtime with another Provider ID. Please click Back and enter another destination location or click Cancel to abort the installation.

Explanation:

During the install of Express Runtime, if the destination path specified already contains a copy of Express Runtime with another Provider ID, then the installation cannot continue. For an interactive install, you can go back and re-enter the destination path. For a silent install, it automatically aborts the installation.

User response:

Restart the install and specify a different Provider ID.

IRU08091

The Provider ID can not contain the characters : < > * ? \ " | / .

Explanation:

The Provider ID cannot contain the characters mentioned for a Windows Express Runtime installation.

User response:

Enter a valid Provider ID.

IRU08092

The Provider ID can not contain more than 25 characters.

Explanation:

If the Provider ID in the response file for an Express Runtime installation contains more than 25 characters, then the installation is aborted and this message is displayed in the log file.

User response:

Enter a valid Provider ID.

IRU08093

There was a problem creating the RPM entry {0}.

Explanation:

During the installation of Express Runtime, the RPM entries were not created.

User response:

For information only. No action required.

IRU08094

There was a problem removing the old RPM entry for Express Runtime: {0}

Explanation:

During an upgrade or uninstall of Express Runtime, RPM entries were not removed.

User response:

For information only. No action required.

IRU08095

This is not a supported distribution of {0}.

Explanation:

The distribution of the operating system is not supported.

User response:

Check product documentation for supported operating system distributions and restart the install on a supported platform.

IRU08096

An earlier version of the IBM Installation Agent was found on this machine.

Explanation:

During the install of the Agent, an earlier version was found and the installation must be aborted.

User response:

Uninstall the previous version and restart the install.

IRU08102

The top level shortcut folder, {0}, already contains an installation of Express Runtime from a different location. Click Cancel to exit the installation.

Explanation:

During the install of Express Runtime, if the folder name where all shortcuts are placed is already in use by another Express Runtime installation, then the installation cannot continue. This message is displayed in the log file for silent installs and on the panel for interactive installs.

User response:

Specify a different shortcut folder in the response file.

IRU08103

The system requirements are not met. For more information on system requirements, refer to your product documentation.

Explanation:

During an OS/400 (i5/OS) installation of the agent, if system requirements are not met, then this message is displayed and the installation cannot continue. If the installation is silent, then the message is displayed in the log file and the install is automatically aborted.

User response:

Check product documentation for system requirements.

IRU08109

{0} requires a user with "secofr" authority.

Explanation:

During an installation to an OS/400 (i5/OS) machine, if the logged in user does not have "secofr" access, then the installation is aborted and the message is logged.

User response:

Log in as a user with SECOFR authority.

IRU08110

The character {0} is not valid in the shortcut folder name.

Explanation:

An invalid character was specified for the shortcut folder name in the response file.

User response:

Specify a valid shortcut folder name and retry the installation.

IRU08111

The Provider ID can not contain the character {0}.

Explanation:

An invalid Provider ID was specified in the response file.

User response:

Specify a valid Provider ID and retry the installation.

IRU08112

The installation has been aborted.

Explanation:

The installation was aborted. Analyze the log file for details.

User response:

For information only. No action required.

IRU08113

Directory name can not contain any space.

Explanation:

This error message is displayed if spaces were put in the destination path for UNIX-based operating systems.

User response:

Enter a valid UNIX destination path.

IRU08115

The IBM Installation Agent will be upgraded to a new version.

Explanation:

An earlier version of the IBM Installation Agent was detected and will be upgraded to a new version.

User response:

For information only. No action required.

IRU08116

Express Runtime will be migrated to a new version.

Explanation:

An earlier version of Express Runtime was detected and will be upgraded to a new version.

User response:

For information only. No action required.

IRU08117

The following features were not selected, but must be upgraded because they were part of a previous installation:

Explanation:

During an upgrade of Express Runtime, if previously installed features were not selected to upgrade, they will automatically be upgraded.

User response:

For information only. No action required.

IRU08118

IBM Installation Agent is already installed on the target computer, so installation was terminated.

Explanation:

During a silent install of the Agent, if a current or later version of it is already installed, then the installation is aborted.

User response:

For information only. No action required.

IRU08119

This is not a supported distribution of {0}, so installation was terminated.

Explanation:

During a silent install of the IBM Installation Agent or Express Runtime on the machine, if the distribution is not supported then the installation is aborted.

User response:

Check product documentation for supported Linux distributions and restart the install on a supported platform.

IRU08120

An earlier version of the IBM Installation Agent was found on this machine.

Explanation:

During a silent install of the agent, if an earlier version is already installed and cannot be upgraded, the installation is aborted.

User response:

For information only. No action required.

IRU08121

The deployment wizard was unable to stop the agent service for the previous installation. To continue, you must manually stop and restart the agent service.

Explanation:

During the upgrade of the agent, if the agent service fails to stop, the old agent will continue to run. To run the new agent, the service must be manually stopped and restarted.

User response:

Manually stop and restart the agent service.

IRU08122

The directory you selected does not have enough space. Please select another location.

Explanation:

One-click installs require a certain amount of temporary disk space. The directory that you selected does not meet the space requirement.

User response:

Provide a location that has sufficient disk space for the one-click install.

IRU08123

The solution file could not be found. Please contact your service provider.

Explanation:

The installer could not find the solution file specified in the setup.iss response file.

User response:

Ensure that the solution file name specified in the response file is valid and that the file exists in the bin directory. If the error persists, contact your service provider.

IRU08124

You did not select any Eclipse-based or Workbench products for the Express Runtime developer extension. You can select them at a later time by running this installer again.

Explanation:

An Eclipse-based or Workbench product was not selected to link to the Express Runtime developer extension. Therefore, the extension will not start with any product.

User response:

Install an Eclipse-based or Workbench product before retrying the installation of Express Runtime.

IRU08125

Invalid command line arguments specified... exiting.

Explanation:

Invalid options were included in the command line invocation of the launch pad.

User response:

Invoke the launch pad using only the following options:

-p <property file>: Runs the launch pad with the specified properties file (required)
-d: Runs the launch pad in the default locale (optional) -o <options file> : Runs the launch pad with the specified options file (optional) -l <locale> : Runs the launch pad in the specified locale (optional)

IRU08126

Using the options file {0} instead of command line arguments.

Explanation:

Informs you that the launch pad is using the options file provided.

User response:

For information only. No action required.

IRU08127

Could not open options file.

Explanation:

The options file specified could not be found or opened.

User response:

Designate a valid options file.

IRU08128

Could not load resource bundle... exiting.

Explanation:

The resource bundle could not be opened given the specified properties file. For example, if you provide SE_LaunchPad.properties as the properties file, you must ensure that you have an SE_LaunchPad_xx.properties file for each of the locales you support, where xx is the two letter locale code.

User response:

Ensure that appropriate properties files exist for each supported locale.

IRU08129

Unknown builtin command: {0}

Explanation:

An unknown builtin command was specified in the properties file.

User response:

The only supported builtin command is exit. Do not use any other builtin commands.

IRU08130

Unknown command type: {0}

Explanation:

The command specified in the properties file is not supported. The supported commands are: file://, exec://, builtin://, html://, and exec_usepath://.

User response:

Provide a supported command in your properties file.

IRU08131

Unable to display HTML document. See logfile.

Explanation:

The HTML file you are attempting to load cannot be displayed.

User response:

Review the log file (in Express Runtime, the log file is IRU_DeploymentWizard.log; in the IBM Installation Agent, the log file is IRU_IIA.log). If the problem cannot be resolved, contact your solution provider.

IRU08132

Unable to launch command. See logfile.

Explanation:

There is a problem completing the command, such as a command to run the deployer, run the Express Runtime developer, or to start and stop the agent.

User response:

Review the log file (in Express Runtime, the log file is IRU_DeploymentWizard.log; in the IBM Installation Agent, the log file is IRU_IIA.log). If the problem cannot be resolved, contact your solution provider.

IRU08133

The Express Runtime developer is already installed on this machine.

Explanation:

The Express Runtime developer is already installed on the system. This might be from another solution provider's installation of the Express Runtime developer. You can have only one copy of the Express Runtime developer installed on a system at one time.

User response:

For information only. No action required.

IRU08134

The install program is unable to finish writing files to the temporary directory {0} because there is not enough space.

Explanation:

This message is displayed when you click on Install in the launch pad if there is not enough space in the default temporary directory to store the temporary files needed to run the installation.

User response:

Launch the installation from the command line specifying `-is:tempdir <temp location>` as a command line option to relocate the temporary files.

IRU08135

You are attempting to install a new version of the Express Runtime developer function of Express Runtime, but a previous version of the Express Runtime developer is already installed on this system. You must uninstall the existing version of Express Runtime first. After you uninstall Express Runtime, refer to the migration steps provided to your Development group for reinstallation instructions so that you can migrate your user data from the previous version.

Explanation:

The user is attempting to install a new version of the Express Runtime developer on a machine with an older version already installed.

User response:

Contact your solution provider.

IRU08136

The Solution Launcher was unable to locate the following license file - {0}. Contact your solution provider.

Explanation:

The Solution Launcher was unable to find the specified license file.

User response:

Contact your solution provider.

IRU08137

An error occurred while reading the license file. The encoding of {0} might not match the encoding specified in the response file. The exception is printed below.

Explanation:

The encoding of the license file does not match the encoding specified in the response file for the current locale.

User response:

Correct the encoding in the response file to match that of the license file.

IRU08139

Unable to create the temp directory {0}.

Explanation:

The Solution Launcher was unable to create a temporary directory in which to install the components for this solution deployment.

User response:

Ensure that the parent directory of the temporary directory specified is writable. If the error persists, contact your solution provider.

IRU08140

The installation agent is already installed in a directory other than the one you specified in the response file. You cannot install the installation agent to multiple locations. The installation aborted.

Explanation:

The IBM Installation Agent cannot be installed to more than one location on the target computer.

User response:

Either uninstall the existing installation agent and reinstall it in the new directory, or change the directory in the response file to the location where the existing agent is already installed. Retry the installation.

IRU08142

Only a user belonging to the local administrator group or a domain administrator can install {0}.

Explanation:

You are not authorized to perform the operation.

User response:

Log on with the proper authorization and perform the operation.

IRU08143

Insufficient authority to install the {0}. Installation requires root authority.

Explanation:

You are not authorized to perform the operation.

User response:

Log on with the proper authorization and perform the operation.

IRU08144

Solution files will be placed in directory:

Explanation:

This is an informational message.

User response:

No action is required.

IRU08145

The IBM Installation Agent will not be upgraded to a new version.

Explanation:

This is an informational message.

User response:

No action is required.

IRU10000 messages

IRU10000 messages are log messages that are created during solution deployment. They are logged during the deployment of multiple applications.

IRU10000**Explanation:**

The command issued during deployment. : The following command was issued:
{0}

User response:

This is an informational message. No action is required.

IRU10001

Exception occurred issuing command. Exception: {0}

Explanation:

The command failed due to the listed exception.

User response:

This is an informational message. No action is required.

IRU10002

Get properties failed : The properties file could not be read during deployment.

User response:

This is an informational message. No action is required.

IRU10003

Copy file {0} to {1} was successful

Explanation:

The file copy was successful.

User response:

This is an informational message. No action is required.

IRU10004

Copy file {0} to {1} failed

Explanation:

The file could not be copied.

User response:

This is an informational message. No action is required.

IRU10005

Unzipping file {0}

Explanation:

The file listed is being unzipped.

User response:

This is an informational message. No action is required.

IRU10006

Unzipped file {0} successfully

Explanation:

The file was unzipped successfully.

User response:

This is an informational message. No action is required.

IRU10007

Failed to unzip file {0}.

Explanation:

The file could not be unzipped.

User response:

This is an informational message. No action is required.

IRU10008

Extracting from tar file {0}.

Explanation:

Files are being extracted from the listed tar file.

User response:

This is an informational message. No action is required.

IRU10009

Failed to extract from tar file {0}.

Explanation:

Files could not be extracted from the listed tar file.

User response:

This is an informational message. No action is required.

IRU10010

Command failed with return code {0}.

Explanation:

The issued command failed with the listed return code.

User response:

This is an informational message. No action is required.

IRU10011

Command succeeded.

Explanation:

The command completed successfully.

User response:

This is an informational message. No action is required.

IRU10012

Creating file {0}.

Explanation:

The file listed is being created.

User response:

This is an informational message. No action is required.

IRU10013

Exception occurred creating file. {0}

Explanation:

The file could not be created due to the listed exception.

User response:

This is an informational message. No action is required.

IRU10014

Failed creating file {0}

Explanation:

The file could not be created.

User response:

Refer to message IRU10013 for the reason the file could not be created.

IRU10015

IBM HTTP Server is a prerequisite product.

Explanation:

The IBM HTTP server must be installed.

User response:

Install the IBM HTTP server.

IRU10016

The IBM Installation Agent must run with {0} special authority to perform an install.

Explanation:

The special authority, listed in the message, is required to perform the necessary install actions.

User response:

Stop the IBM Installation Agent and restart it from a user ID with the correct authority.

IRU10017

PTF {0} for product {1} applied successfully.

Explanation:

The PTF was successfully applied to the system.

User response:

This is an informational message. No action is required.

IRU10018

Failed to apply PTF {0} for product {1}.

Explanation:

The PTF could not be applied to the system.

User response:

This is an informational message. No action is required. This condition could result when a particular language feature is not installed for the product.

IRU10019

Group PTF {0} level {1} for product {2} applied successfully.

Explanation:

The group PTF was successfully applied to the system.

User response:

This is an informational message. No action is required.

IRU10020

Failed to apply group PTF {0} level {1} for product {2}.

Explanation:

The group PTF was not able to be applied to the system.

User response:

This is an informational message. No action is required.

IRU10023

Port {0} is in use.

Explanation:**User response:****IRU10024**

Error reading file {0} \n {1}

Explanation:

The group PTF was not able to be applied to the system.

User response:

This is an informational message. No action is required.

IRU10028

Missing required values for service user id, password, or both.

Explanation:

These variables are conditional. If you specify a value for one of them, you must also specify a value for the others.

User response:

Specify values for all fields listed in the message.

IRU10029

Specified user ID, {0}, does not exist on target system.

Explanation:

The specified user ID does not exist on target system.

User response:

Specify a valid user ID.

IRU10030

The installation of {0} cannot continue because there is a conflict with {1}, which is installed on the target computer.

Explanation:

The installation cannot continue because there is a conflict with the product, which is installed on the target computer.

User response:

Contact your solution provider.

IRU10034

The operating system is not supported for this product.

Explanation:

The operating system is not supported.

User response:

This is an informational message. A list of supported operating systems is provided in the product documentation.

IRU10800 messages

IRU10800 messages are related to the install of the Express Runtime.

IRU10800

The install program you are running is not compatible with the operating system.

Explanation:

You have selected to install a program that is incompatible with the operating system.

User response:

Verify the operating system before installing the product.

IRU10801

The directory name must include at least 1 character.

Explanation:

The installation path on UNIX systems must have at least 1 character.

User response:

Enter a path name that consists of at least one character.

IRU10802

The first character in the directory name must be a slash (/).

Explanation:

The installation path must start with a slash (/).

User response:

Enter a path that begins with a slash.

IRU10803

The directory name must be at least 3 characters.

Explanation:

A Windows destination was specified with less than three characters.

User response:

Enter a valid destination path.

IRU10804

The first character in the directory name must be a valid drive letter.

Explanation:

An invalid character was entered at the beginning of the directory name.

User response:

Enter a valid drive letter as the first character in the destination path. The range is from A to Z.

IRU10805

The second character in the directory name must be a colon (:).

Explanation:

The second character in a Windows path name must be a colon.

User response:

Enter a valid path using a colon as the second character.

IRU10806

The third character in the directory name must be a backslash (\).

Explanation:

The third character in a Windows path name must be a backslash (\).

User response:

Enter a valid path using a backslash as the third character.

IRU10807**Explanation:**

A Windows path name contains characters that are not valid.

User response:

Enter a path that contains valid characters.

IRU10808

Path names cannot contain double backslashes (\\)

Explanation:

Windows path names cannot contain double backslashes (\\).

User response:

Enter a valid path.

IRU10809

The directory you selected does not have enough space. Please select another location.

Explanation:

A destination path does not contain enough space to complete the installation.

User response:

Enter another path.

IRU10810

The temporary directory does not have sufficient space. Click Browse to select an alternate temporary location.

Explanation:

The temporary directory must contain enough space to initiate the installation.

User response:

Enter another path.

IRU10811

The directory does not exist. Do you want to create it?

Explanation:

The requested destination directory does not exist.

User response:

Click Yes to create the directory.

IRU10812

The character `\{0}` is not valid in the destination path.

Explanation:

A Windows destination was specified with an invalid character.

User response:

Enter a valid destination path.

IRU10813

Double slashes (`//`) are not allowed in the directory name.

Explanation:

A Windows destination was specified with an invalid character combination.

User response:

Enter a valid destination path.

IRU10814

The installation aborted. Some of the program files might not have been removed.

Explanation:

The installation was aborted, either by user request or by program failure, but some installation files might remain on the computer.

User response:

Analyze the log file for details about why the installation aborted. Remove any remaining program files from the directory you specified during the installation.

IRU10815

Installation language = `{0}`

Explanation:

Specifies the language the user selected for the Express Runtime installation program.

User response:

This is an informational message. No action is required.

IRU10816

Installation directory = {0}

Explanation:

Specifies the location in which the Express Runtime program is installed.

User response:

This is an informational message. No action is required.

IRU10817

Installation is complete.

Explanation:

Informs the user that the install has completed.

User response:

This is an informational message. No action is required.

IRU10818

The destination directory should contain a maximum of 40 characters.

Explanation:

The destination panel restricts the user to enter no more than 40 characters for the destination directory.

User response:

Enter a destination directory with 40 or fewer characters.

IRU10819

Uninstallation directory = {0}

Explanation:

This is an informational message.

User response:

No action is required.

IRU10820

Uninstallation is complete. Check for any error messages in this log file.

Explanation:

The uninstallation process is finished.

User response:

Verify that no errors occurred.

IRU10821

A version of the IBM Express Runtime program is already installed. Click Next to replace the installed version, or click Cancel to exit the installation.

Explanation:

There is already an installation.

User response:

Continue and replace the previous installation, or cancel the installation.

IRU10822

Only a user belonging to the local administrator group or a domain administrator can install or uninstall IBM Express Runtime.

Explanation:

You are not authorized to perform the installation.

User response:

Log on with the proper authorization and restart the installation.

IRU10823

Insufficient authority to install or uninstall IBM Express Runtime. Installation requires root authority.

Explanation:

You are not authorized to perform the installation.

User response:

Log on with the proper authorization and restart the installation.

IRU10824

The base IBM Express Runtime product is not installed on the system.

Explanation:

The required prerequisite is not installed.

User response:

Abandon this installation or correct the problem and restart the installation.

IRU10825

The base IBM Installation Agent product is not installed on the system.

Explanation:

The required prerequisite is not installed.

User response:

Abandon this installation or correct the problem and restart the installation.

IRU10826

This fix does not apply to the installed version of the base IBM Express Runtime product.

Explanation:

The required prerequisite is not installed.

User response:

Abandon this installation or correct the problem and restart the installation.

IRU10827

This fix does not apply to the installed version of the IBM Installation Agent product.

Explanation:

The required prerequisite is not installed.

User response:

Abandon this installation or correct the problem and restart the installation.

IRU10828

The same or higher level of IBM Installation Agent fix pack is already installed. Click Next to replace the installed fix pack, or click Cancel to exit the installation.

Explanation:

There is another fix pack installed.

User response:

Abandon this installation or continue the installation.

IRU10830

Stopping IBM Installation Agent...

Explanation:

This is an informational message.

User response:

No action is required.

IRU10831

The following user data files are updated by this fix pack: {1} These files are backed up to the Backup directory in the {0} file. These files are also backed up individually in their original location for quick access.

Explanation:

This is an informational message.

User response:

No action is required.

IRU10832

An error occurred while backing up these files: {0}. If you want to continue you can manually back up these files, though this action is not required.

Explanation:

This is an informational message.

User response:

No action is required; you can manually back up the files, if needed.

IRU10833

An error occurred while backing up these files: {0}. If you want to continue you can manually back up these files, though this action is not required. Note: You are not able to roll back this fix pack because of this error. Any previous rollbacks are removed.

Explanation:

This is an informational message.

User response:

No action is required; you can manually back up the files, if needed.

IRU10834

The following files cannot be rolled back because a backup error occurred during the fix pack install: {0}. If you want to continue, you can manually restore these files if you backed them up as suggested during the fix pack install.

Explanation:

This is an informational message.

User response:

No action is required; you can manually restore the files, if needed.

IRU10835

An error occurred while rolling back the fix pack. Contact service.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU10836

This rollback installation restores the product to the previous level, {0}. Click Next to continue with the rollback or click Cancel to stop the rollback.

Explanation:

The rollback installation can be continued or aborted.

User response:

Continue if you want the rollback done, or cancel the installation.

IRU10837

The rollback is complete.

Explanation:

This is an informational message.

User response:

No action is required.

IRU10838

You modified the following user data files since the fix pack installation. Select the files you want to back up into a new file {0} located in the Runtime21 directory. For the files you do not select in the list below, your changes will be lost.

Explanation:

This is an informational message.

User response:

No action is required; you can select files to be backed up.

IRU10839

The file {0} was not found.The file {0} was not found.

Explanation:

This is an informational message.

User response:

No action is required.

IRU10840

Uninstallation language = {0}.

Explanation:

This message returns the uninstallation language.

User response:

This is an informational message. No action is required.

IRU10841

The file {0} is renamed to {2} and is found in directory {1}.

Explanation:

This is an informational message.

User response:

No action is required.

IRU10842

The file {0} cannot be renamed. The file might be open or corrupted, or the directory might not be writable.

Explanation:

This is an informational message.

User response:

No action is required.

IRU10843

Information required for file {0} cannot be located. You can continue with the installation of this fix pack; however, you might not be able to roll back this fix pack or any previous fix packs installed on the system.

Explanation:

The file cannot be used for rolling back the fix pack.

User response:

No action is required. You can correct the problem, and restart the installation, if desired.

IRU10844

Information required for file {0} cannot be located, therefore you cannot roll back the fix pack. Contact service.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU10845

The current user ID does not have administrator authority. Only users with administrator authority can uninstall the IBM Express Runtime.

Explanation:

You are not authorized to perform the installation.

User response:

Log on with the proper authorization and restart the installation.

IRU10846

The task file {0} is not valid.

Explanation:

This is an informational message.

User response:

No action is required.

IRU10847

This version of the IBM Express Runtime program is already installed with the following features: Express Runtime developer, Deployment Wizard. Click Next to replace the installed version, or click Cancel to exit the installation.

Explanation:

The product is already installed.

User response:

Confirm that you have the correct installation, or exit the installation process.

IRU10848

This version of the IBM Express Runtime program is already installed with the following features: Deployment Wizard. Click Next to replace the installed version, or click Cancel to exit the installation.

Explanation:

The product is already installed.

User response:

Confirm that you have the correct installation, or exit the installation process.

IRU10849

IBM Express Runtime, Version {0} is already installed with the following features: Express Runtime developer, Deployment Wizard. Click Next to upgrade to the new version, or click Cancel to exit the installation.

Explanation:

Another version of the product is already installed.

User response:

Confirm that you have the correct installation, or exit the installation process.

IRU10850

IBM Express Runtime, Version {0} is already installed with the following features: Deployment Wizard. Click Next to upgrade to the new version, or click Cancel to exit the installation.

Explanation:

Another version of the product is already installed.

User response:

Confirm that you have the correct installation, or exit the installation process.

IRU10851

IBM Express Runtime, Version {0} is already installed on this machine. This version cannot be installed on top of a later version. Click Cancel to exit the installation.

Explanation:

Another version of the product is already installed.

User response:

Confirm that you have the correct installation, or exit the installation process.

IRU10852

A backup of your workspace was successfully created in the file: {0}.

Explanation:

This is an informational message.

User response:

No action is required.

IRU10853

There was an error backing up the workspace files. If the following directories exist in the Runtime21 folder, back them up before continuing: SolutionEnabler/workspace, SolutionEnabler/WindowsSampleWorkspace, and SolutionEnabler/LinuxSampleWorkspace.

Explanation:

The workspace files could not be backed up; they are in danger of being lost if you continue.

User response:

Locate the files and manually back them up before continuing.

IRU10854

The following features were not selected, but must be upgraded because they were part of a previous installation:

Explanation:

This is an informational message.

User response:

No action is required.

IRU10855

You chose to upgrade only the Deployment Wizard. However, because the Express Runtime developer is installed, you must choose either a Typical or Custom Developer installation. The installation is canceled.

Explanation:

You did not choose a valid installation option.

User response:

Restart the installation with the correct installation option.

IRU10856

You chose to upgrade only the Deployment Wizard. However, because the Express Runtime developer is installed, you must choose either a Typical or Custom Developer installation. Click Back to choose an alternative setup type, or click Cancel to exit the installation.

Explanation:

You did not choose a valid installation option.

User response:

Go back and continue the installation with the correct installation option.

IRU10857

IBM Express Runtime is already installed in a directory other than the one you specified in the response file. You cannot install IBM Express Runtime to multiple locations. The installation is canceled.

Explanation:

You did not choose a valid installation location.

User response:

Restart the installation with the correct installation location.

IRU10858

The IBM Installation Agent is in use. Wait for the solution installation to complete before uninstalling the agent.

Explanation:

The agent cannot be uninstalled while it is performing an installation.

User response:

Attempt the uninstallation again after the agent has completed the installation in progress.

IRU10859

The Eclipse Workbench product selected is not supported for the Express Runtime developer plug-in.

Explanation:

You did not choose a valid installation option.

User response:

Restart the installation with the correct installation option.

IRU10860

To continue the installation, you must select at least one feature.

Explanation:

You did not choose a valid installation option.

User response:

Restart the installation with the correct installation option.

IRU10862

Directory name cannot contain any spaces.

Explanation:

You did not enter a valid installation destination.

User response:

Restart the installation with the correct installation destination.

IRU10863

{0} is already installed on the target computer.

Explanation:

Another version of the product is already installed.

User response:

Confirm that you have the correct installation, or exit the installation process.

IRU10864

An earlier version of {0} is installed on this machine. No migration was requested, so installation was terminated.

Explanation:

This is an informational message.

User response:

No action is required.

IRU10865

{0} will be upgraded to version {1}.

Explanation:

This is an informational message.

User response:

No action is required.

IRU10866

{0} is already installed in a directory other than the one you specified in the response file. You cannot install to multiple locations. The installation aborted.

Explanation:

You did not enter a valid installation destination.

User response:

Restart the installation with the correct installation destination.

IRU10867

The Console Agent cannot be uninstalled. The following products are registered to use the Console Agent and must be uninstalled first: {0}.

Explanation:

You did not uninstall these products before starting the uninstallation.

User response:

Restart the uninstallation after uninstalling these products.

IRU10868

The installation of Rational Web Developer 6.0 failed. See the log file located in {0} for further details. Run the installation program once more to try again or to plug in to another Eclipse-based product.

Explanation:

The installation could not complete.

User response:

Restart the installation and choose another Eclipse-based product.

IRU10869

A more recent version of {0} is installed. Click Cancel to end the installation.

Explanation:

This message is displayed when a more recent version is installed..

User response:

Click Cancel to end the installation.

IRU10870

A newer version of Integrated Solutions Console is installed.

Explanation:

This is an informational message.

User response:

No action is required.

IRU10871

An internal error occurred. Contact product service.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU10872

Cannot locate the application server using path {0}.

Explanation:

This is an informational message.

User response:

No action is required.

IRU10873

Unable to start the Integrated Solutions Console. Check log files in {0}.

Explanation:

The Integrated Solutions Console failed to start.

User response:

Check the log file for errors; correct the error and retry.

IRU10874

Additional log files for the Integrated Solutions Console can be found in the system temporary directory and {0}.

Explanation:

This is an informational message.

User response:

No action is required.

IRU10875

The Integrated Solutions Console has been installed successfully. It can be found at {0}.

Explanation:

This is an informational message.

User response:

No action is required.

IRU10879

The current version of Integrated Solutions Console is already installed.

Explanation:

This is an informational message.

User response:

No action is required.

IRU10880

Integrated Solutions Console is not installed on this system.

Explanation:

This is an informational message.

User response:

No action is required.

IRU10881

Security is not enabled on the specified WebSphere Application Server installation.

Explanation:

This is an informational message.

User response:

No action is required.

IRU10882

Security using the local operating system is enabled on the specified WebSphere Application Server installation.

Explanation:

This is an informational message.

User response:

No action is required.

IRU10883

Security using a database user registry is enabled on the specified WebSphere Application Server installation.

Explanation:

This is an informational message.

User response:

No action is required.

IRU10884

Security using LDAP is enabled on the specified WebSphere Application Server installation.

Explanation:

This is an informational message.

User response:

No action is required.

IRU10885

You must make a selection before continuing the uninstallation process.

Explanation:

You did not make a required selection.

User response:

Make the selection and continue.

IRU10887

Error deploying {0} module.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU10887

The {0} module has already been deployed.

Explanation:

The module already exists.

User response:

Install a later version of the module, or cancel installation.

IRU10888

The prerequisite, IBM DB2, Version 8.2 is not installed. Install this prerequisite and then invoke this install program again.

Explanation:

The required version of DB2 was not installed.

User response:

Install the required version of DB2 and restart the installation.

IRU10889

The installation path for IBM DB2, Version 8.2 could not be determined. Ensure IBM DB2, Version 8.2 is properly installed and then invoke this install program again.

Explanation:

The required version of DB2 could not be located.

User response:

Install the required version of DB2 and restart the installation.

IRU10890

The IBM Express Runtime or IBM Installation Agent must be installed on this machine in order to install this product. Install one of these applications and then invoke this install program again.

Explanation:

The required prerequisite product could not be located.

User response:

Install the required product and restart the installation.

IRU10892

The {1} port: {0}, is currently in use.

Explanation:

The port number you specified is not available.

User response:

Choose another port and continue the installation.

IRU10893

Ports required by this installation program are currently in use. See the log file for additional details.

Explanation:

The port numbers you specified are not available.

User response:

Determine the used port numbers from the log file. Choose other ports and continue the installation.

IRU10894

Values required by this installation program were not specified. See the log file for additional details.

Explanation:

You did not specify all the required values.

User response:

Determine the missing information from the log file and restart the installation.

IRU10895

A valid value for the user ID was not specified. Specify a valid value for this field and then invoke this install program again.

Explanation:

You did not specify a valid user ID.

User response:

Use a valid user ID and restart the installation.

IRU10896

A valid value for the password was not specified. Specify a valid value for this field and then invoke this install program again.

Explanation:

You did not specify a valid password.

User response:

Use a valid password and restart the installation.

IRU10897

This version of the management extension for IBM DB2 is already installed. Click Cancel to exit the installation.

Explanation:

The product is already installed.

User response:

Cancel the installation.

IRU10898

The DB2 install location that was used to configure the DB2 Management Extension has changed. Click Next to reconfigure the Management Extension for IBM DB2 for the new DB2 install location. Click Cancel to exit the installation and perform a complete uninstall and reinstall.

Explanation:

The location where the product was previously installed has been changed; the installation cannot continue.

User response:

Cancel the installation. You must uninstall the product and install it anew.

IRU10899

Only a user belonging to the local administrator group or a domain administrator can install or uninstall the management extension for IBM DB2.

Explanation:

You are not authorized to perform the installation.

User response:

Log on with the proper authorization and restart the installation.

IRU10900 messages

IRU10900 messages

IRU10900

A version of the Mozilla Web browser was not found on the local computer; you cannot administer the console from the local computer.

Explanation:

You do not have the required Web browser.

User response:

Install the Mozilla Web browser and restart.

IRU10901

You need to restart Integrated Solutions Console before changes take effect.

Explanation:

The changes have not yet been applied fully.

User response:

Stop and restart the Integrated Solutions Console.

IRU10902

An older version of Integrated Solutions Console is installed.

Explanation:

This is an informational message.

User response:

No action is required.

IRU10903

Insufficient authority to install or uninstall management extension for IBM HTTP Server. Installation requires root authority.

Explanation:

You are not authorized to perform the installation.

User response:

Log on with the proper authorization and restart the installation.

IRU10904

The host name {0} specified in the response file does not match the fully-qualified host name of this computer. The install program will terminate.

Explanation:

The response file did not have a valid host name.

User response:

Enter the fully qualified host name of your computer and restart the installation.

IRU10905

Certificate creation failed.

Explanation:

This is an informational message.

User response:

No action is required.

IRU10906

JaasLogon service installation failed.

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU10907

The file {0} cannot be found and cannot be renamed.

Explanation:

This is an informational message.

User response:

No action is required.

IRU10908

There is no Eclipse-based product at the specified location.

Explanation:

This is an informational message.

User response:

No action is required.

IRU10909

Insufficient authority to install or uninstall management extension for IBM DB2. Installation requires root authority.

Explanation:

You are not authorized to perform the installation.

User response:

Log on with the proper authorization and restart the installation.

IRU10910

The installation was successful.

Explanation:

This is an informational message.

User response:

No action is required.

IRU10911

The installation failed. See {0} for details.

Explanation:

The installation could not be completed.

User response:

Determine the cause and restart the installation after correcting it.

IRU10912

Only a user belonging to the local administrator group or a domain administrator can enable SSL security for this product. Specify a user who meets this requirement.

Explanation:

You are not authorized to perform the operation.

User response:

Log on with the proper authorization and perform the operation.

IRU10913

The user ID and password specified do not match. Specify a valid user ID and password.

Explanation:

You did not enter a valid user ID and password.

User response:

Enter the correct user ID and password; retry the operation.

IRU10914

Invalid user data was specified. Please see the log file for additional details.

Explanation:

You did not enter valid user data.

User response:

Enter the correct user data; retry the operation.

IRU10915

The DB2 install location for the initial install was {0}, but is now {1}. The management extension for IBM DB2 will be reconfigured for the new IBM DB2 install location.

Explanation:

This is an informational message.

User response:

No action is required.

IRU10916

The console agent is still required by other products; it will not be uninstalled.

Explanation:

This is an informational message.

User response:

No action is required.

IRU10917

A valid destination directory was not specified. Specify a valid destination directory and then invoke this install program again.

Explanation:

You did not enter a valid installation destination.

User response:

Restart the installation with the correct installation destination.

IRU10918

The destination directory specified was not used, because an existing management extension was found at {0}. This destination will be used instead.

Explanation:

This is an informational message.

User response:

No action is required.

IRU10919

Only a user belonging to the local administrator group or a domain administrator can install or uninstall the management extension for IBM HTTP Server.

Explanation:

You are not authorized to perform the installation.

User response:

Log on with the proper authorization and restart the installation.

IRU10920

You must choose an IBM HTTP Server location.

Explanation:

You did not choose a valid location.

User response:

Select a valid location and continue.

IRU10921

The Embedded Websphere Application Server failed to start. Refer to product documentation for possible causes and resolution.

Explanation:

The product could not start.

User response:

Refer to the Websphere Application Server documentation.

IRU10922

The console agent failed to start. Refer to product documentation for possible causes and resolution.

Explanation:

The console agent could not start.

User response:

Refer to the troubleshooting section of the documentation.

IRU10923

The installation of the IBM Express Runtime console failed. See the log file {0} for details.

Explanation:

The installation did not succeed.

User response:

Correct any problems found using the log file and restart the installation.

IRU10924

A valid license file was not found. Provide a valid license file and begin the installation again.

Explanation:

You did not have the required license file.

User response:

Provide the required license file and restart the installation.

IRU10925

The prerequisite, IBM WebSphere Application Server - Express, Version 6.0, is not installed to the location specified; install this prerequisite and then invoke this install program again.

Explanation:

The required version of IBM WebSphere Application Server - Express could not be located.

User response:

Install the required version of IBM WebSphere Application Server - Express and restart the installation.

IRU10926

Only a user belonging to the local administrator group or a domain administrator can install or uninstall this product.

Explanation:

You are not authorized to perform the installation.

User response:

Log on with the proper authorization and restart the installation.

IRU10928

Server has been stopped successfully for profile {0}.

Explanation:

This is an informational message.

User response:

No action is required.

IRU10929

A problem occurred stopping the server; check the stopServer log of the current profile.

Explanation:

The operation could not complete.

User response:

Determine the cause of the problem by examining the log file; then retry the operation.

IRU10930

Server has been started successfully for profile {0}.

Explanation:

This is an informational message.

User response:

No action is required.

IRU10931

A problem occurred starting the server; check the startServer log of the current profile.

Explanation:

The operation could not complete.

User response:

Determine the cause of the problem by examining the log file; then retry the operation.

IRU10932

The Management Extension for DB2 already exists on the target computer. If you change the ports that Management Extension for DB2 used previously, you need to update the port numbers in the Express Runtime console for the new installation.

Explanation:

The DB2 Management Extension already exists.

User response:

This is an informational message. No action is required.

IRU10933

The console agent exists on the target computer and reinstallation is not required. The console agent configuration data specified in the response file will be ignored.

Explanation:

The console agent already exists.

User response:

This is an informational message. No action is required.

IRU10934

The database module has already been deployed.

Explanation:

The database module has already been deployed.

User response:

This is an informational message. No action is required.

IRU10935

An error occurred while replacing the database module. Refer to the readme for more information.

Explanation:

An error occurred.

User response:

Refer to the readme for more information.

IRU10936

An error occurred while removing the database module. Refer to the readme for more information.

Explanation:

An error occurred.

User response:

Refer to the readme for more information.

IRU10937

There are no features to update. Click Cancel to exit the installation.

Explanation:

The entire product was installed and there are no updates that need to be made.

User response:

Click Cancel to exit the installation.

IRU10938

IBM Express Runtime is already installed with the following features: Deployment Wizard Click Next to install the Express Runtime developer feature, or click Cancel to exit the installation.

Explanation:

Additional features can be installed.

User response:

This is an informational message. No action is required.

IRU10940

This fix pack is already installed. Click Next to update the product with this fix pack or click Cancel to exit the installation.

Explanation:

This fix pack has already been applied. If you have updated any features from the base installation, then you can reapply this fix pack.

User response:

Click Next to update the product or Cancel to exit.

IRU10941

Fix pack {0} has been installed multiple times. This installation rollback only reverts to the level of the product installed before the last application of the fix pack.

Explanation:

The fix pack was installed multiple times. The installation rollback only reverts to the level of the product installed before the last application of the fix pack.

User response:

Click Next to update the product or Cancel to exit.

IRU10942

Fix pack {0} is already installed. Reinstall the fix pack to ensure that all features are updated.

Explanation:

Ensure that all features are updated by reinstalling the fix pack.

User response:

Reinstall the fix pack.

IRU10943

Phrase contains at least one invalid character.

Explanation:

There is an error in the phrase text.

User response:

Correct the error and retry.

IRU10944

The task file {0} does not have a valid extension. Task files must have an .xml extension.

Explanation:

There is an error in the file name.

User response:

Correct the error and retry.

IRU10945

The {0} user specified does not belong to the local administrator group or a domain administrator.

Explanation:

The user does not have administrator authority.

User response:

Log in as administrator and retry.

IRU10946

The {0} user specified does not exist on the system.

Explanation:

The user ID is not valid.

User response:

Log in with a correct user ID and retry.

IRU10947

{0} is not a fully-qualified host name. Refer to the product documentation for how to setup your computer with a fully-qualified host name.

Explanation:

The host name of the computer is not fully-qualified.

User response:

Assign a fully-qualified host name to the computer.

IRU10948

The {0} module has already been deployed.

Explanation:

The module does not need to be deployed again.

User response:

This is an informational message. No action is required.

IRU10949

{0} started successfully.

Explanation:

The designated component has started.

User response:

This is an informational message. No action is required.

IRU10950

The uninstallation of the {0} plug-in failed. Run {1} to uninstall the plug-in.

Explanation:

The designated plug-in could not be uninstalled.

User response:

Run the designated procedure to uninstall the plug-in.

IRU10951

The following condition failed:

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU10952

Return code: {0}

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU10953

Process output: {0}

Explanation:

This message is used only by the IBM Support Center.

User response:

Provide the message output to the IBM Support Center representative.

IRU10954

You must make a selection before continuing the uninstallation process.

Explanation:

You did not make a selection.

User response:

Make a selection and retry.

IRU10955

There is no management extension installed for this instance of WebSphere Application Server Express.

Explanation:

This is an informational message.

User response:

No action is required.

IRU10956

DB2 management extension is not installed on this system.

Explanation:

This is an informational message.

User response:

No action is required.

IRU10957

Console agent is not installed on this system.

Explanation:

This is an informational message.

User response:

No action is required.

IRU10958

Installation has ended because no components were selected, or the fix packs you selected are already installed.

Explanation:

You did not make a selection, or have already installed this fix pack.

User response:

If necessary, make a selection and retry.

IRU10959

Rollback has ended because no components were selected, or the components you selected do not need to be rolled back.

Explanation:

You did not make a selection, or the selected components cannot be rolled back.

User response:

If necessary, make a selection and retry.

IRU10960

Installation has ended because the {0} user ID or password has not been specified.

Explanation:

You did not enter a valid user ID or password.

User response:

Enter the correct user ID or password and retry.

IRU10961

Rollback has ended because the {0} user ID or password has not been specified.

Explanation:

You did not enter a valid user ID or password.

User response:

Enter the correct user ID or password and retry.

IRU10962

The management extension for Websphere Application Server - Express does not need to be upgraded. The installation has been aborted.

Explanation:

This is an informational message.

User response:

No action is required.

IRU10963

The management extension for the installation of Websphere Application Server - Express does not need to be rolled back. The rollback has been aborted.

Explanation:

This is an informational message.

User response:

No action is required.

IRU10964

Either the specified WebSphere Application Server - Express location is invalid or the management extension is not installed.

Explanation:

You did not enter a valid location, or the management extension is not installed..

User response:

Enter a valid location or deploy the management extension, and retry.

IRU10965

The installation of {0} fix pack failed. See log file {1} for details.

Explanation:

There was a failure during installation.

User response:

Examine the log file to determine the cause.

IRU10966

The rollback of {0} failed. See log file {1} for details.

Explanation:

A failure occurred trying to roll back the installation.

User response:

Examine the log file to determine the cause.

IRU10967

Rollbacks are not available for any of the Express Runtime components detected.

Explanation:

This is an informational message.

User response:

No action is required.

IRU10968

Upgrades are not available for any of the Express Runtime components detected.

Explanation:

This is an informational message.

User response:

No action is required.

IRU10969

For information on the overall rollback see {0}.

Explanation:

This is an informational message.

User response:

No action is required.

IRU10970

The Console for Express Runtime must be running before you can apply a Fixpack. Refer to the readme for more information.

Explanation:

The Express Runtime console is not running.

User response:

Ensure that the Express Runtime console is running.

IRU10971

The Console for Express Runtime must be running before you can apply a Rollback. Refer to the readme for more information.

Explanation:

The Express Runtime console is not running.

User response:

Ensure that the Express Runtime console is running.

IRU10972

The Console for Express Runtime administrator user ID, password, or both are not recognized. Enter a valid user ID and password.

Explanation:

The user ID and password provided do not match.

User response:

Ensure that the user ID and password are correct.

IRU10973

An error occurred while replacing the {0} module. Refer to the readme for more information.

Explanation:

An error occurred.

User response:

Refer to the readme for more information.

IRU10974

An error occurred while removing the {0} module. Refer to the readme for more information.

Explanation:

An error occurred.

User response:

Refer to the readme for more information.

IRU10975

IBM Express Runtime, Version {0} is installed on this computer and must be uninstalled before installation can begin. Click Cancel to exit the installation.

Explanation:

An earlier version of Express Runtime is installed.

User response:

Uninstall the earlier version of Express Runtime.

IRU10976

{0} Version {1} is installed on this computer. Click Next to upgrade to a newer version, or Cancel to end the installation

Explanation:

You can perform an upgrade.

User response:

This is an informational message. No action is required.

IRU10977

The locale {0} is invalid or not supported. Defaulting to the computer's locale.

Explanation:

The locale is not supported. The default locale will be used.

User response:

This is an informational message. No action is required.

IRU10978

The computer's locale {0} is not supported. Defaulting to English.

Explanation:

The locale is not supported. The default locale will be used.

User response:

This is an informational message. No action is required.

IRU10980

The following resource folder is missing: {0}.

Explanation:

The resource folder cannot be located.

User response:

Ensure that the location of the resource folder is correct.

IRU10981

One or more folders are missing for the following feature selection: {0}.

Explanation:

One or more folders that contain resources necessary for the selected feature cannot be found.

User response:

Ensure that the path to the folders is correct. You might need to reinstall if the folders cannot be located.

IRU11000 messages

IRU11000 messages are logged during the deployment of the WebSphere Express application.

IRU11000

Installation of WebSphere Express is in progress.

Explanation:

The WebSphere Express application installation has started.

User response:

This is an informational message. No action is required.

IRU11001

Installation of WebSphere Express was successful.

Explanation:

The WebSphere Express application installation completed successfully.

User response:

This is an informational message. No action is required.

IRU11002

Installation of WebSphere Application Server - Express failed.

Explanation:

The installation did not complete successfully.

User response:

Refer to the log file for more information.

IRU11003

Configuring WebSphere ports.

Explanation:

The configuration script to modify the WebSphere ports has been invoked.

User response:

This is an informational message. No action is required.

IRU11004

Port assignment {0} = {1}.

Explanation:

The WebSphere port assignment was successful.

User response:

This is an informational message. No action is required.

IRU11005

Configuring WebSphere Administration ports.

Explanation:

The configuration script to modify the WebSphere Administration ports has been invoked.

User response:

This is an informational message. No action is required.

IRU11006

Installation of WebSphere Administration console is in progress.

Explanation:

The script to install the WebSphere Administration console has been invoked.

User response:

This is an informational message. No action is required.

IRU11007

Installation of WebSphere Administration console was successful.

Explanation:

The WebSphere Administration console has been deployed.

User response:

This is an informational message. No action is required.

IRU11008

Installation of WebSphere Administration console failed.

Explanation:

The WebSphere Administration console has not been deployed.

User response:

Refer to the log file for more information.

IRU11009

Starting WebSphere Application Server - Express.

Explanation:

The WebSphere Application Server - Express started during deployment.

User response:

This is an informational message. No action is required.

IRU11010

Stopping WebSphere Application Server - Express.

Explanation:

WebSphere Application Server - Express was stopped during deployment.

User response:

This is an informational message. No action is required.

IRU11011

WebSphere Application Server - Express installation directory: {0}

Explanation:

The message lists the installation directory for WebSphere Application Server - Express.

User response:

This is an informational message. No action is required.

IRU11012

Configuring WebSphere ports failed.

Explanation:

The configuration of the WebSphere ports failed.

User response:

Refer to the log file for more information.

IRU11013

Configuring WebSphere Administration ports failed.

Explanation:

The configuration of the WebSphere Administration ports failed.

User response:

Refer to the log file for more information.

IRU11014

Started WebSphere Application Server - Express.

Explanation:

The WebSphere Application Server - Express started successfully.

User response:

This is an informational message. No action is required.

IRU11015

Stopped WebSphere Application Server - Express.

Explanation:

The WebSphere Application Server - Express was stopped successfully.

User response:

This is an informational message. No action is required.

IRU11016

Failed to start WebSphere Application Server - Express.

Explanation:

WebSphere Application Server - Express did not start successfully.

User response:

Refer to the log file for more information.

IRU11017

Failed to stop WebSphere Application Server - Express.

Explanation:

The WebSphere Application Server - Express was not stopped successfully.

User response:

Refer to the log file for more information.

IRU11018

Creation of WebSphere Express Application Server {0} was successful.

Explanation:

The named application server was successfully created.

User response:

This is an informational message. No action is required.

IRU11019

Creation of WebSphere Express Application Server {0} failed.

Explanation:

A failure occurred when trying to create the named application server.

User response:

Refer to the log file for more information.

IRU11020

There is already a WebSphere Express Application Server named {0} on the target system.

Explanation:

It is not possible to create the named application server because a server with that name already exists. While server names on OS/400 (i5/OS) are case sensitive, two servers cannot exist where the names vary only by upper and lower case.

User response:

Either select a different server name or delete the existing server before retrying.

IRU11021

Deployment of sample application snoop was successful.

Explanation:

The snoop servlet was successfully deployed in the new application server.

User response:

This is an informational message. No action is required.

IRU11022

Deployment of sample application snoop failed.

Explanation:

The snoop servlet was not able to be deployed in the new application server.

User response:

Refer to the log file for more information.

IRU11023

The range of WebSphere ports {0} overlaps with the HTTP server port {1}.

Explanation:

The range of WebSphere ports selected for the application server cannot overlap with the port selected for the HTTP server. This results in a conflict at runtime.

User response:

Enter a different value for either the starting WebSphere port or for the HTTP server port.

IRU11024

WebSphere Application Server - Express has not been configured to start automatically after a reboot.

Explanation:

WebSphere Application Server - Express must be started manually given the current configuration.

User response:

For informational purposes only. No action required.

IRU11025

WebSphere Application Server - Express installation directory {0} already exists.

Explanation:

There is already an installation directory for WebSphere Application Server - Express in the location specified. A new directory does not need to be created.

User response:

For informational purposes only. No action required.

IRU11026

User {0} does not have sufficient rights or privileges. Upgrading the user's rights to meet installation requirements.

Explanation:

The access rights and privileges of the specified user must be upgraded before continuing.

User response:

For informational purposes only. No action required.

IRU11027

The WebSphere Application Server - Express was installed successfully. However, the verification test failed. See the log file for more details.

Explanation:**User response:****IRU11028**

WebSphere Application Server - Express has been configured to start manually after a reboot.

Explanation:

WebSphere Application Server - Express has been configured to start manually after a reboot.

User response:

This is an informational message. No action is required.

IRU11029

WebSphere Application Server - Express restart after a reboot has been disabled.

Explanation:

The WebSphere Application Server - Express restart function, after a reboot, has been disabled.

User response:

This is an informational message. No action is required.

IRU11030

User {0} does not have sufficient rights or privileges. Upgrading the user's rights to meet install requirements.

Explanation:

The user ID does not have sufficient rights or privileges.

User response:

IRU11031

The WebSphere Application Server was installed successfully. However the verification test failed. See the log for more details.

Explanation:

The WebSphere Application Server was installed successfully. However the verification test failed. See the log for more details.

User response:

Review the log.

IRU11032

Instructed to ignore port conflicts.

Explanation:

The program will ignore port conflicts

User response:

This is an informational message. No action is required.

IRU11033

Cell name = {0}.

Explanation:

This message displays a cell name, for example wasNode02Cell1.

User response:

This is an informational message. No action is required.

IRU11034

Node name = {0}.

Explanation:

This message displays a node name, for example wasNode02.

User response:

This is an informational message. No action is required.

IRU11035

Host name = {0}.

Explanation:

This message displays a host name, for example was.

User response:

This is an informational message. No action is required.

IRU11036

Profile name = {0}.

Explanation:

This message displays a profile name, for example default.

User response:

This is an informational message. No action is required.

IRU11037

WebSphere Application Server - Express installation directory {0} already exists.

Explanation:

The WebSphere Application Server - Express installation directory already exists.

User response:

Specify a new directory path.

IRU11038

WebSphere Application Server - Express will restart with user ID {0}.

Explanation:

WebSphere Application Server - Express will restart with the user ID specified.

User response:

This is an informational message. No action is required.

IRU11039

Another version of WebSphere Application Server - Express is already installed in the target directory. The version found is {0} and the version to install is {1}.

Explanation:

Another version of WebSphere Application Server - Express is already installed in the target directory. The version that was found and the version to install are displayed in the message.

User response:

IRU11040

Deployment failed because product {0}, option {1} is not installed.

Explanation:

The deployment failed because the required product and option specified were not installed on the system.

User response:

Install the missing product and option and run the deployment again.

IRU11046

An unknown version of WebSphere Application Server - Express has been found on this computer while trying to install version {0}.

Explanation:

This message indicates that the deployment will fail because it cannot install over an existing version of WebSphere Application Server.

User response:

Specify a different target directory or uninstall the detected version of WebSphere Application Server.

IRU11047

Another WebSphere Application Server product has been detected on the computer.

Explanation:

This message indicates that the deployment will fail because it cannot install over an existing version of WebSphere Application Server.

User response:

Specify a different target directory or uninstall the detected version of WebSphere Application Server.

IRU11100 messages

IRU11100 messages

IRU11100

Upgrade of DB2 Express from version {0} to version {1} in progress.

Explanation:

There is an existing version of DB2 Express on the system. Express Runtime is upgrading DB2 Express to the version it includes.

User response:

For informational purposes only. No action required.

IRU11102

No Satellite Id provided. You must provide a Satellite Id or deselect Satellite Synchronization.

Explanation:

These variables are conditional. If you select Satellite Synchronization, you must specify a value for the Satellite ID field.

User response:

Specify values for all fields listed in the message.

IRU11103

Missing required values for the DB2 Administration User Id, the DB2 Administrator Password, or both. These values are required if any of the following fields have a value: DB2 Administration User Id, DB2 Administrator Password, and DB2 Administration User Domain.

Explanation:

These variables are conditional. If you specify a value for one of them, you must also specify a value for the other.

User response:

Specify values for all fields listed in the message.

IRU11104

Missing required values for DB2 Metadata Database user name or DB2 Metadata Database user password. You must provide values for both fields or leave both of them blank.

Explanation:

These variables are conditional. If you specify a value for one of them, you must also specify a value for the other.

User response:

Specify values for all fields listed in the message.

IRU11105

Missing required values for the Administrative Contact Name or Administrative Contact email fields. You must provide values for both fields or leave both of them blank.

Explanation:

These variables are conditional. If you specify a value for one of them, you must also specify a value for the other.

User response:

Specify values for all fields listed in the message.

IRU11106

Missing one or more required values for DB2 fenced user name, DB2 fenced user password, DB2 fenced group name, or DB2 fenced home directory. You must provide a value for all fields or leave them all blank.

Explanation:

These variables are conditional. If you specify a value for one of them, you must also specify a value for the others.

User response:

Specify values for all fields listed in the message.

IRU11107

Missing one or more required values for DB2 tools catalog database name, DB2 tools catalog schema name, or DB2 tools catalog instance name. You must provide a value for all fields or leave them all blank.

Explanation:

These variables are conditional. If you specify a value for one of them, you must also specify a value for the others.

User response:

Specify values for all fields listed in the message.

IRU11108

Missing one or more required values for DB2 Informix database server name, or DB2 Informix database client install directory. You must provide a value for all fields or leave them all blank.

Explanation:

These variables are conditional. If you specify a value for one of them, you must also specify a value for the other.

User response:

Specify values for all fields listed in the message.

IRU11109

A more recent version of DB2 UDB has been detected. The version detected on the system is {0}. Deployment canceled.

Explanation:

A more recent version of DB2 UDB cannot be overwritten by a back-level version.

User response:

For informational purposes only. No action required.

IRU11110

Upgrading DB2 Server from unknown version to {0}.

Explanation:

The DB2 server is being upgraded.

User response:

This is an informational message. No action is required.

IRU11111

Unknown version of DB2 already installed.

Explanation:

A version of DB2 already installed.

User response:

This is an informational message. No action is required.

IRU11112

The DB2 UDB Express upgrade installation will occur. For migration information, refer to the DB2 information center.

Explanation:

A version of DB2 is going to be upgraded.

User response:

This is an informational message. No action is required.

IRU11200 messages

IRU11200 messages

IRU11200

HTTP Server for OS/400 (i5/OS) release level {0} not installed. Target system OS/400 (i5/OS) release level is {1}.

Explanation:

The HTTP server application for OS/400 (i5/OS) is tied to the operating system release level. This application could not be installed on the target system because of a mismatch.

User response:

The HTTP server application for the appropriate target OS/400 (i5/OS) release will install successfully. If no HTTP server applications exist for the OS/400 (i5/OS) release of the target system, specify a different target system that has a valid OS/400 (i5/OS) release installed.

IRU11201

Configuration of OS/400 (i5/OS) HTTP server failed. OS/400 release must be at release level {0} or later.

Explanation:

The HTTP server could not be created and configured because the target system is not at the minimum OS/400 (i5/OS) release or later.

User response:

Specify a target system that has a valid OS/400 (i5/OS) release installed.

IRU11202

Configuration of OS/400 (i5/OS) HTTP server failed. The HTTP server product {0} is not installed on target system.

Explanation:

The HTTP server could not be created and configured because the HTTP server product is not installed on the target system.

User response:

Deploy the HTTP server application task to the target system.

IRU11203

Configuration of OS/400 (i5/OS) HTTP server failed. An HTTP server named {0} is already defined on the target system.

Explanation:

The HTTP server could not be created and configured because there is already a server on the target system with the same name.

User response:

Either specify a different server name or delete the existing server before retrying.

IRU11204

The HTTP server root directory {0} already exists. Renaming the directory to {1} and creating a new root directory.

Explanation:

The server root directory needs to be created for the new server, but the directory already exists. The existing directory will be renamed and a new one created in its place with the necessary contents and authorities for the new server.

User response:

This is an informational message. No action is required.

IRU11205

Configuration of IBM HTTP server {0} was successful.

Explanation:

The HTTP server was created and configured successfully.

User response:

This is an informational message. No action is required.

IRU11206

Configuration of OS/400 (i5/OS) HTTP server {0} failed.

Explanation:

The HTTP server could not be created or configured successfully.

User response:

Refer to the log file for more information.

IRU11207

Configuration of OS/400 (i5/OS) HTTP server configuration file {0} was successful.

Explanation:

The configuration file was created and written successfully.

User response:

This is an informational message. No action is required.

IRU11208

Configuration of OS/400 (i5/OS) HTTP server configuration file {0} failed.

Explanation:

The configuration file was not created successfully.

User response:

Refer to the log file for more information.

IRU11209

Creation of directory {0} was successful.

Explanation:

The specified directory was created.

User response:

This is an informational message. No action is required.

IRU11210

Creation of directory {0} failed.

Explanation:

The specified directory was not created.

User response:

Refer to the log file for more information.

IRU11211**Explanation:**

The HTTP server instance file was created and written successfully.

User response:

This is an informational message. No action is required.

IRU11212

Configuration of OS/400 (i5/OS) HTTP server instance file {0} failed.

Explanation:

The HTTP server instance file was not created successfully.

User response:

Refer to the log file for more information.

IRU11213

Configuration of OS/400 (i5/OS) HTTP server failed. The WebSphere Express Application Server named {0} does not exist on the target system.

Explanation:

The HTTP server configuration was not modified because the named WebSphere Express Application server could not be found on the target system.

User response:

Refer to the log file for more information.

IRU11214

IBM HTTP Server is using port {0}.

Explanation:**User response:**

This is an informational message. No action is required.

IRU11215

The administration user id and password were not provided for deployment. Security for the IBM HTTP Administration Server has not been enabled. Refer to the IBM HTTP Server documentation to enable security.

Explanation:

You have not enabled security for the IBM HTTP Administration Server. Data might be compromised.

User response:

This is an informational message. No action is required.

IRU11216

Upgrading HTTP Server from version {0} to {1}.

Explanation:**User response:**

This is an informational message. No action is required.

IRU11217

Installation of HTTP Server successful.

Explanation:

The HTTP Server was successfully installed.

User response:

This is an informational message. No action is required.

IRU11218

Installation of HTTP Server failed. Check previous messages or system logs for more details.

Explanation:

The HTTP Server installation failed.

User response:

Check previous messages or system logs for more details.

IRU11219

This version of IHS is already installed at {0}.

Explanation:**User response:**

This is an informational message. No action is required.

IRU11220

A more recent version of IBM HTTP Server has been detected. The version detected on the system is {0}. Deployment canceled.

Explanation:

A more recent version of the IBM HTTP Server has been detected. The version detected on the system is displayed in the message text.

User response:

The deployment is canceled. No action is required.

IRU11221

Unknown version of IBM HTTP Server already installed.

Explanation:

A version of IBM HTTP Server is already installed.

User response:

This is an informational message. No action is required.

IRU11222

Upgrading HTTP Server from unknown version to {0}.

Explanation:

The IBM HTTP Server is being upgraded to the version displayed in the message text.

User response:

This is an informational message. No action is required.

IRU11223

IHS upgrade from release {0} to {1} is not supported.

Explanation:

IBM HTTP cannot be upgraded from the old release that was specified to the new release that was specified.

User response:

This is an informational message. No action is required.

IRU11300 messages

IRU11300 messages

IRU11300

The version of the HTTP Server on the system must be the same version as the HTTP Server plug-in you are installing. Installation cancelled.

Explanation:

The versions of the HTTP Server installed on the system and the plug-in installation you are attempting do not match.

User response:

Deploy installation of appropriate version of the HTTP Server if the installed version is older and try the deployment of the plug-in again, or upgrade the plug-in if the version of the HTTP Server is newer.

IRU11301

A newer version of the HTTP plug-in was found on the computer: {0}. Installation is canceled.

Explanation:

You are trying to install an out-of-date version of the plug-in.

User response:

For informational purposes only. No action required.

IRU11302

You must enter the WebSphere Application Server host name or installation location. Installation could not proceed.

Explanation:

Required information was not entered using the deployment wizard.

User response:

Use the deployment wizard to provide either the WebSphere Application Server host name (if this is a remote deployment) or the WebSphere Application Server installation location (if this is a local deployment). Then run the deployment again.

IRU11303

An existing plug-in, cfg.xml, was found. Manual configuration steps must be completed after installation.

Explanation:

The existence of the plug-in cfg.xml indicates that another plug-in is either still on the system or was not completely uninstalled.

User response:

Complete the necessary post-installation configuration steps.

IRU11304

The WebSphere Application Server - Express signature file was not found. Installation is canceled.

Explanation:

You indicated during deployment that IBM WebSphere Application Server - Express is installed on the target computer, but it was not found.

User response:

Exit the plug-in installation and install WebSphere Application Server - Express or connect to a remote installation.

IRU11305

The version of WebSphere Application Server Express and the version of the HTTP Plug-in do not match. Installation is cancelled.

Explanation:

You are deploying a plug-in installation to a host with WebSphere Application Server - Express installed. During installation, the plug-in is configured to use the local installation of WebSphere Application Server - Express, but the version of the Application Server and the plug-in do not match.

User response:

Deploy installation of appropriate version of WebSphere Application Server - Express and try the plug-in deployment again. Upgrade plug-in to match the version of Application Server if the Application Server version is newer than that of the plug-in.

IRU11306

The HTTP Server httpd.conf file was not found. Installation cancelled.

Explanation:

The HTTP Server httpd.conf file was not found. The installation was cancelled.

User response:

Specify the correct httpd.conf file name and retry the installation.

IRU11307

The version of the IBM HTTP Server installed on this system, {0}, is not valid for this version of the HTTP plug-in. plug-in installation is canceled.

Explanation:

The version of the plug-in deployed is more recent than the version of IBM HTTP Server installed.

User response:

Exit the plug-in installation and install the appropriate version of IBM HTTP Server.

IRU11308

A newer version of the IBM HTTP Server was found on the system {0}. plug-in installation continues.

Explanation:

The existing installation of IBM HTTP Server is newer than the version expected by the plug-in.

User response:

For informational purposes only. No action required.

IRU11309

The version of the IBM WebSphere Application Server - Express installed on this system, {0}, is not valid for this version of the HTTP plug-in. plug-in installation is canceled.

Explanation:

The version of the plug-in deployed is more recent than the version of WebSphere Application Server - Express installed.

User response:

Exit the plug-in installation and install the appropriate version of WebSphere Application Server - Express or connect to a remote installation that is the right version.

IRU11310

A newer version of the IBM WebSphere Application Server - Express was found on the system. Installation continues.

Explanation:

The existing installation of WebSphere Application Server - Express is newer than the version expected by the plug-in.

User response:

For informational purposes only. No action required.

IRU11311

An older version of the HTTP plug-in {0} was found in the target directory. The newer version of the plug-in will be installed.

Explanation:**User response:**

For informational purposes only. No action required.

IRU11312

An error occurred while checking for the version of IBM HTTP Server installed on this computer. Version found {0} has an unrecognized format. Version to be installed is {1}. Plug-in installation canceled.

Explanation:

An error occurs while comparing the expected version of the HTTP Server against the version that is actually installed. For example, the version string of the installed version might contain an alphabetic character.

User response:

Check the version information and take appropriate actions.

IRU11313

An error occurred while checking for the version of IBM WebSphere Application Server - Express installed on this computer. Version found {0} has an unrecognized format. Version to be installed is {1}. Plug-in installation canceled.

Explanation:

An error occurs while comparing the expected version of WebSphere Application Server - Express against the version that is actually installed. For example, the version string of the installed version might contain an alphabetic character.

User response:

Check the version information and take appropriate actions.

IRU11314

An error occurred while checking for the version of IBM WebSphere Application Server - Express plug-in for the IBM HTTP Server installed on this computer. Version found {0} has an unrecognized format. Version to be installed is {1}. Plug-in installation canceled.

Explanation:

An error occurs while comparing the expected version of WebSphere Application Server - Express HTTP plug-in and the version actually installed. For example, the version string of the installed version might contain an alphabetic character.

User response:

Check the version information and take appropriate actions.

IRU11315

A valid WebSphere Application Server - Express installation was not found. Plug-in installation cancelled.

Explanation:

A valid WebSphere Application Server - Express installation was not found. The plug-in installation cancelled.

User response:

Specify a valid WebSphere Application Server - Express and retry the plug-in installation.

IRU11316

Multiple installations of WebSphere Application Server - Express were found, configuration parameters did not specify which installation to use. Plug-in installation cancelled.

Explanation:

Multiple installations of WebSphere Application Server - Express were found, and the configuration parameters did not specify which installation to use. The plug-in installation was cancelled.

User response:

Specify the correct installation of WebSphere Application Server - Express and retry the plug-in installation.

IRU11317

Multiple installations of WebSphere Application Server - Express were found, but the specified installation {0}, was not found. Plug-in installation cancelled.

Explanation:

Multiple installations of WebSphere Application Server - Express were found, but the specified installation was not found. Plug-in installation cancelled.

User response:

Specify the correct installation of WebSphere Application Server - Express and retry the plug-in installation.

IRU11318

The WebSphere Application Server - Express installation directory, {0} was detected and will be used instead of the specified directory, {1}. Plug-in installation continues.

Explanation:

The WebSphere Application Server - Express installation directory was detected and will be used instead of the specified directory. The plug-in installation continues.

User response:

This is an informational message. No action is required.

IRU11319

The plugin-cfg.xml file was not found at the specified location, {0}. Plug-in installation will continue and a new plugin-cfg.xml file will be created.

Explanation:

The plugin-cfg.xml file was not found at the specified location. The plug-in installation will continue and a new plugin-cfg.xml file will be created.

User response:

This is an informational message. No action is required.

IRU11320

The HTTP plug-in installation has completed but a partial complete return code was issued by the installation program. Check the log file for details of the installation.

Explanation:

The HTTP plug-in installation has completed but a return code was issued by the installation program denoting that the installation was only partially complete.

User response:

Check the log file for errors that occurred during the installation.

IRU11321

The HTTP plug-in installation is complete, but manual configuration steps are required by the installation program. Check log file for details of the installation.

Explanation:

User response:

Complete the necessary post-installation configuration steps.

IRU11400 messages

IRU11400 messages are logged during the deployment of the Express Runtime Sample application.

IRU11400

Installation of the Express Runtime Sample Application is in progress.

Explanation:

The installation of the Express Runtime sample application has started.

User response:

This is an informational message. No action is required.

IRU11401

No WebSphere script was run

Explanation:

The WebSphere script for the Express Runtime sample application was not invoked.

User response:

This is an informational message. No action is required.

IRU11402

No DB2 script was run

Explanation:

The DB2 script for the Express Runtime sample application was not invoked.

User response:

For informational purposes only. No action required.

IRU11403

Unable to read the value of {0} from file {1}.

Explanation:

The DB2 script for the Express Runtime Sample application was not invoked.

User response:

This is an informational message. No action is required.

IRU11404

User profile {0} does not exist.

Explanation:

The user profile does not exist on the target system.

User response:

Specify a valid user profile name for the target system.

IRU11405

An error occurred attempting to swap to user {0}.

Explanation:

The swap to the user profile failed.

User response:

Specify a valid user profile name and password for the target system.

IRU15000 messages

IRU15000 messages are log messages that are created during solution deployment. They are logged during the deployment of the console.

IRU15000

Integrated Solutions console is not installed on this system.

Explanation:

The Integrated Solutions console is not installed on this system.

User response:**IRU15001**

The current version of Integrated Solutions Console is installed on this system.

Explanation:

The current version of Integrated Solutions Console is installed on this system.

User response:

This is an informational message. No action is required.

IRU15002

An older version of Integrated Solutions console is installed on this system.

Explanation:

An older version of Integrated Solutions console is installed on this system.

User response:

Install the most current version of Integrated Solutions console.

IRU15003

A newer version of Integrated Solutions Console is installed on this system.

Explanation:

A newer version of Integrated Solutions Console is installed on this system.

User response:

This is an informational message. No action is required.

IRU15004

DB2 Express version: {0} is a prerequisite product. Installation cancelled.

Explanation:

The DB2 Universal Database Express Edition version that was specified in the message text is a prerequisite product. The installation was cancelled.

User response:

Obtain the correct version of DB2 Universal Database Express Edition and retry the installation.

IRU15005

The user ID specified for enabling SSL for Embedded WebSphere Application Server, {0}, does not exist on target system.

Explanation:

The user ID that was specified to enable SSL for Embedded WebSphere Application Server does not exist on target system.

User response:

Specify a valid user ID.

IRU15006

The user ID specified for installing the Console Agent service, {0}, does not exist on target system.

Explanation:

The user ID that was specified to install the Console Agent service does not exist on target system.

User response:

Specify a valid user ID.

IRU15007

User ID and password specified for {0} do not match.

Explanation:

The user ID and password that were specified do not match.

User response:

Specify a valid user ID and password.

IRU15008

Installation of Console Management Extension for i5/OS successful.

Explanation:

The Console Management Extension was successfully installed.

User response:

This is an informational message. No action is required.

IRU15009

Installation of Console Management Extension for i5/OS failed. Check the previous messages or system logs for more details.

Explanation:

The Console Management Extension was not successfully installed.

User response:

Check the previous messages or system logs to determine the cause of the problem.

IRU15010

WebSphere Application Server - Express version: {0} was not found in required location: {1}. Installation cancelled.

Explanation:

The WebSphere Application Server - Express version was not found in the correct location. The installation was cancelled.

User response:

Specify the correct location for the WebSphere Application Server - Express version and retry the installation.

IRU15011

The user ID specified for administrating the WebSphere Application Server, {0}, does not exist on target system.

Explanation:

The user ID that was specified in order to administer the WebSphere Application Server does not exist on target system.

User response:

Specify a valid user ID.

IRU15012

Management Extensions for WebSphere is not installed on this system.

Explanation:

The Management Extensions for WebSphere product is not installed on this system.

User response:

IRU15013

The current version of Management Extensions for WebSphere is installed on this system.

Explanation:

The current version of Management Extensions for WebSphere is installed on this system.

User response:

This is an informational message. No action is required.

IRU15014

An older version, {0}, of Management Extensions for WebSphere is installed on this system.

Explanation:

An older version of Management Extensions for WebSphere is installed on this system.

User response:

Install the correct version of Management Extensions for WebSphere.

IRU15015

A newer version, {0}, of Management Extensions for WebSphere is installed on this system.

Explanation:

A newer version of Management Extensions for WebSphere is installed on this system.

User response:

This is an informational message. No action is required.

IRU15016

An unknown version, {0}, of Management Extensions for WebSphere is installed on this system.

Explanation:

An unknown version of Management Extensions for WebSphere is installed on this system.

User response:**IRU15017**

Management Extensions for DB2 is not installed on this system.

Explanation:

Management Extensions for DB2 is not installed on this system.

User response:**IRU15018**

The current version of Management Extensions for DB2 is installed on this system.

Explanation:

Management Extensions for DB2 is already installed on this system.

User response:

This is an informational message. No action is required.

IRU15019

An older version, {0}, of Management Extensions for DB2 is installed on this system.

Explanation:

An older version of Management Extensions for DB2 is installed on this system.

User response:

Install the correct version of Management Extensions for DB2.

IRU15020

A newer version, {0}, of Management Extensions for DB2 is installed on this system.

Explanation:

A newer version of Management Extensions for DB2 is installed on this system.

User response:

This is an informational message. No action is required.

IRU15021

An unknown version, {0}, of Management Extensions for DB2 is installed on this system.

Explanation:

An unknown version of Management Extensions for DB2 is installed on this system.

User response:

Ensure that the correct version of Management Extensions for DB2 is installed.

IRU15022

Management Extensions for IBM HTTP Server is not installed on this system.

Explanation:

Management Extensions for IBM HTTP Server is not installed on this system.

User response:

Install Management Extensions for IBM HTTP Server.

IRU15023

The current version of Management Extensions for IBM HTTP Server is installed on this system.

Explanation:

Management Extensions for IBM HTTP Server is installed on this system.

User response:

This is an informational message. No action is required.

IRU15024

An older version, {0}, of Management Extensions for IBM HTTP Server is installed on this system.

Explanation:

An older version of An older version, {0}, of Management Extensions for IBM HTTP Server is installed on this system. is installed on this system.

User response:

Install the current version of Management Extensions for IBM HTTP Server.

IRU15025

A newer version, {0}, of Management Extensions for IBM HTTP Server is installed on this system.

Explanation:

A newer version of Management Extensions for IBM HTTP Server is installed on this system.

User response:

This is an informational message. No action is required.

IRU15026

An unknown version, {0}, of Management Extensions for IBM HTTP Server is installed on this system.

Explanation:

An unknown version of Management Extensions for IBM HTTP Server is installed on this system.

User response:

Install the current version of Management Extensions for IBM HTTP Server.

IRU15027

IBM HTTP Server version: {0} was not found in required location: {1}. Installation cancelled.

Explanation:

The IBM HTTP Server version was not found in the correct location. The installation was cancelled.

User response:

Install the correct version of IBM HTTP Server.

IRU15028

The DB2 Express found installed on the system, release {0}, is not compatible with this version of Management Extension. The required release is: {1}. Installation canceled.

Explanation:

The version of DB2 Express found installed on the system, release is not compatible with this version of Management Extension. The installation was canceled.

User response:

Ensure the version of DB2 Express that you are installing is compatible with this version of Management Extension.

IRU15031

Management extensions have been detected on the target computer in: {0}.
The installation will use {0}.

Explanation:

This message is displayed when management extensions are installed on the target computer and their installation location is different from the location where the user wants to install them.

User response:

This is an informational message. No action is required.

IRU15046

An older version of the Console Management Extension has been found on this computer while trying to install version {0}. The installed version is {1}.

Explanation:

An older version of the Console Management Extension is installed on the target computer.

User response:

This is an informational message. No action is required.

IRU15047

A newer version of the Console Management Extension has been found on this computer while trying to install version {0}. The installed version is {1}.

Explanation:

A newer version of the Console Management Extension is installed on the target computer.

User response:

This is an informational message. No action is required.

IRU15048

An unknown version of the Console Management Extension has been found on this computer while trying to install version {0}. The installed version is {1}.

Explanation:

An unknown version of the Console Management Extension is installed on the target computer.

User response:

This is an informational message. No action is required.

IRU15050

IRU15050: The version {0} of Rational Agent Controller found on the computer is not supported with this version of the console management extension. The supported versions are between are between {1} and {2}.

Explanation:

An unsupported version of the Rational Agent Controller has been detected.

User response:

Upgrade to a supported version of the Rational Agent Controller.

IRU18000 messages

IRU18000 messages

IRU18000

{0} will not be upgraded to a new version.

Explanation:

This is an informational message.

User response:

No user action is required.

IRU18001

{0} will be upgraded to a new version.

Explanation:

This is an informational message.

User response:

No user action is required.

IRU18002

The port from the previously installed version of the Console Agent will be preserved. The port has been set to {0}.

Explanation:

Users are required to enter the password and the confirm password on the password maker panel.

User response:

Enter both the password and the confirm password.

IRU18003

The SOAP port from an installed version of {0} will be preserved. The port has been set to {1}

Explanation:

This is an informational message.

User response:

No user action is required.

IRU18004

The path {0} must include at least one character.

Explanation:

A path needs to include at least one character.

User response:

Provide a correct path.

IRU18005

The path {0} does not have enough space for temporary installation files. Refer to the product documentation for instructions on running the installation with an alternative temporary location.

Explanation:

The provided path does not have sufficient space to store the installation files.

User response:

Provide a path that has sufficient storage space to store the installation files.

IRU18006

The following error occurred while attempting to validate the specified installation location {0}: {1}.

Explanation:

An error occurred.

User response:

Refer to the product documentation for more help.

IRU18007

Upgrades are not available for any of the Express Runtime components detected.

Explanation:

This is an informational message.

User response:

No user action is required.

IRU18008

The Rational Agent Controller failed to start. Refer to the product documentation for possible causes and instructions for resolving the problem.

Explanation:

This is an information message.

User response:

No user action is required.

IRU18009

You must install The IBM XML Toolkit (5733-XT1) to run Rational Agent Controller. Please contact a system administrator for installation assistance, and refer to the product documentation for instructions on how to stop and start the Console Agent.

Explanation:

Users are required to enter the password and the confirm password on the password maker panel.

User response:

Enter both the password and the confirm password.

IRU18010

An older version of the IBM Rational Agent Controller was found on this computer. Please uninstall the Agent Controller and then install this Management Extension.

Explanation:

You must upgrade to a more recent version of the IBM Rational Agent Controller.

User response:

Upgrade to a more recent version of the IBM Rational Agent Controller.

IRU18011

No commands were specified.

Explanation:

This is an informational message.

User response:

No user action is required.

IRU18012

The provided console agent user ID does not have the proper Windows user rights to manage an Informix database. Windows error code {0} was returned. Please see the InfoCenter for details.

Explanation:

Administrator authority is required to install or uninstall the product.

User response:

Ensure that you have administrator authority to install or uninstall.

IRU18013

IBM Solution Assembly Toolkit, Version {0} is already installed on this computer. This version cannot overwrite a later version. Click Cancel to exit the installation.

Explanation:

The installation cannot continue.

User response:

This is an informational message. No action is required.

IRU18014

IBM Solution Assembly Toolkit, Version {0} is already installed on this computer. If you chose to continue the developer will be installed, but you must reapply the fixpack.

Explanation:

This installation requires that you reinstall a fixpack.

User response:

This is an informational message. No action is required.

IRU18015

IBM Solution Assembly Toolkit, Version {0} is already installed on this computer. If you chose to continue the developer will be installed.

Explanation:

The Express Runtime developer will be installed.

User response:

This is an informational message. No action is required.

IRU18016

IBM Solution Assembly Toolkit, Version {0} is already installed on this computer. If you chose to continue the Eclipse link file will be recreated.

Explanation:

The IBM Solution Assembly Toolkit is already installed.

User response:

This is an informational message. No action is required.

IRU18017

The IBM Solution Assembly Toolkit is already installed with the following features: Deployment Wizard Click Next to install the IBM Solution Assembly Toolkit developer feature, or click Cancel to exit the installation.

Explanation:

The IBM Solution Assembly Toolkit developer feature will be installed.

User response:

This is an informational message. No action is required.

IRU18018

This version of the IBM Solution Assembly Toolkit program is already installed with the following features: IBM Solution Assembly Toolkit developer Deployment Wizard Click Next to replace the installed version, or click Cancel to exit the installation.

Explanation:

The IBM Solution Assembly Toolkit is already installed with specific features.

User response:

This is an informational message. No action is required.

IRU18019

This version of the IBM Solution Assembly Toolkit program is already installed with the following features: Deployment Wizard Click Next to replace the installed version, or click Cancel to exit the installation.

Explanation:

The IBM Solution Assembly Toolkit is already installed with specific features.

User response:

This is an informational message. No action is required.

IRU18020

The Eclipse Workbench product selected is not supported for the IBM Solution Assembly Toolkit developer plug-in.

Explanation:

You have selected an unsupported Eclipse environment.

User response:

Select a supported Eclipse environment.

IRU18021

The computer cannot determine the correct Windows user rights in order for the provided console agent user ID to manage an Informix database. See the Express Runtime Console InfoCenter for details.

Explanation:

The computer cannot determine which user can manage the Informix Database.

User response:

Refer to the Express Runtime console InfoCenter or Informix Dynamic Server InfoCenter for more information about user privileges.

Sample application messages

Sample application messages.

IRUS0000

The following command was issued:\n {0}

Explanation:

The command issued during deployment.

User response:

This is an informational message. No action is required.

IRUS0001

Exception occurred issuing command. Exception: {0}

Explanation:

The command failed due to the listed exception.

User response:

This is an informational message. No action is required.

IRUS0003

Copy file {0} to {1} was successful

Explanation:

The file copy was successful.

User response:

This is an informational message. No action is required.

IRUS0004

Copy file {0} to {1} failed

Explanation:

The file could not be copied.

User response:

This is an informational message. No action is required.

IRUS0010

Command failed with return code {0}.

Explanation:

The issued command failed with the listed return code.

User response:

This is an informational message. No action is required.

IRUS0015

Properties file not specified.

Explanation:

A properties file (also referred to as a response file) is required and was not specified.

User response:

Check the call to the predeployment checker or main program to ensure that a properties file is passed in as a parameter.

IRUS0016

Required property {0} not specified.

Explanation:

The specified property was not defined in the properties file.

User response:

Check the properties file that is used with the sample application and ensure that the property listed in the error is present and spelled correctly.

IRUS0017

OS/400 (i5/OS) release must be at release level {0} or later.

Explanation:

The version of OS/400 (i5/OS) on the target computer is not compatible with the sample application.

User response:

Upgrade your version of OS/400 (i5/OS) to the level specified or send the installation of the sample application to a computer with at least the specified version of OS/400 (i5/OS) installed.

IRUS1016

Failed to start WebSphere Application Server - Express.

Explanation:

WebSphere Application Server - Express did not start successfully.

User response:

Refer to the log file for more information.

IRUS1017

Failed to stop WebSphere Application Server - Express.

Explanation:

The WebSphere Application Server - Express was not stopped successfully.

User response:

Refer to the log file for more information.

IRUS1018

WebSphere Express server product {0} is not installed.

Explanation:

The named WebSphere product could not be found on the target computer. It is a prerequisite for the sample application.

User response:

Install WebSphere Application Server - Express Version 6.0 on the target computer or send the sample installation to a target computer that has WebSphere Application Server - Express installed.

IRUS1019

The WebSphere Application Server - Express named {0} does not exist on the target system.

Explanation:

The WebSphere Application Server name you provided is not configured. The sample application cannot be installed.

User response:

Ensure that the server name you provided is correct, and that it is configured properly.

IRUS1100

DB2 is not installed.

Explanation:

The sample application requires that DB2 is installed on the target computer.

User response:

Install DB2 and attempt the installation again.

IRUS1200

Failed to start IBM HTTP Server.

Explanation:

The installation of the sample application stops and restarts the IBM HTTP Server. If an error is detected while attempting the restart, you receive this message. The command output is also displayed.

User response:

Check the command output for the error message before this one for more information.

IRUS1201

Failed to stop IBM HTTP Server.

Explanation:

The installation of the sample application stops and restarts the IBM HTTP Server. If an error is detected while attempting to stop the server, you receive this message. The command output is also displayed.

User response:

Check the command output for the error message before this one for more information.

IRUS1202

The HTTP server product {0} is not installed on target system.

Explanation:

The IBM HTTP Server could not be found on the target computer and the sample application requires it for installation.

User response:

Install IBM HTTP Server on the target computer or send the sample application installation to a remote target with IHS already installed.

IRUS1203

The HTTP server instance {0} does not exist.

Explanation:

The HTTP server name you provided is not configured. The sample application cannot be installed.

User response:

Ensure that the server name you provided is correct, and that it is configured properly.

IRUS1401

No WebSphere script was run

Explanation:

The WebSphere script for the Express Runtime sample application was not invoked.

User response:

This is an informational message. No action is required.

IRUS1402

No DB2 script was run.

Explanation:

The DB2 script for the Express Runtime sample application was not invoked.

User response:

For informational purposes only. No action required.

IRUS1403

Unable to read the value of {0} from file {1}.

Explanation:

The DB2 script for the Express Runtime Sample application was not invoked.

User response:

This is an informational message. No action is required.

IRUS1404

User profile {0} does not exist.

Explanation:

The user profile does not exist on the target system.

User response:

Specify a valid user profile name for the target system.

IRUS1405

An error occurred attempting to swap to user {0}.

Explanation:

The swap to the user profile failed.

User response:

Specify a valid user profile name and password for the target system.

Supplied application wrappers

When building your solution with the Express Runtime developer, you can create your own application wrappers or choose from the list of application wrappers included in Express Runtime. The following is a list of the application wrappers that are available. The unique application ID for each wrapper is listed in parentheses next to the name of the application.

- Sample application for Windows (IRU2_1SampleWin)
- Sample application for Linux (IRU2_1SampleLnx)
- Sample application for OS/400 (i5/OS) (IRU2_1SampleI5OS)
- IBM DB2 Universal Database Express Edition Version 8.2 for Windows (IRU2_1_1DB2Express8_2Win)

- IBM DB2 Universal Database Express Edition Version 8.2 for Linux (IRU2_1_1DB2Express8_2Lnx)
- IBM DB2 Universal Database Express Edition Version 8.2 for Linux on POWER (IRU2_1_1DB2Express8_2LnxOnPwr)
- IBM WebSphere Application Server-Express for Windows (IRU2_1_1WASExpress6_0Win)
- IBM WebSphere Application Server-Express for Linux (IRU2_1_1WASExpress6_0Lnx)
- IBM WebSphere Application Server-Express for Linux on POWER (IRU2_1_1WASExpress6_0LnxOnPwr)
- IBM WebSphere Application Server-Express for i5/OS (OS/400) installation (IRU2_1_1WasExpress6_0I5OS)
- IBM WebSphere Application Server-Express for i5/OS (OS/400) configuration (IRU2_1_1WASConfigI5OS)
- IBM HTTP Server 6.0.2 for Windows (IRU2_1_1IHS6_0Win)
- IBM HTTP Server 6.0.2 for Linux (IRU2_1_1IHS6_0Lnx)
- IBM HTTP Server 6.0.2 for Linux on POWER (IRU2_1_1IHS6_0LnxOnPwr)
- IBM HTTP Server for i5/OS (OS/400) installation, V5R2 (IRU2_1_1IHS520OS400)
- IBM HTTP Server for i5/OS (OS/400) installation, V5R3 (IRU2_1_1IHS530I5OS)
- IBM HTTP Server for i5/OS (OS/400) configuration (IRU2_1_1IHSConfigI5OS)
- Web server plug-in for IBM WebSphere Application Server - Express 6.0.2 for Windows (IRU2_1_1WebServerPluginForWAS6_0Win)
- Web server plug-in for IBM WebSphere Application Server - Express 6.0.2 for Linux (IRU2_1_1WebServerPluginForWAS6_0Lnx)
- Web server plug-in for IBM WebSphere Application Server - Express 6.0.2 for Linux on POWER (IRU2_1_1WebServerPluginForWAS6_0LnxOnPwr)
- Integrated Solutions Console for Windows (IRU2_1_1ConsoleWin)
- Integrated Solutions Console for Linux (IRU2_1_1ConsoleLnx)
- Integrated Solutions Console on Linux on POWER (IRU2_1_1ConsoleLnxOnPwr)
- Console Management Extension for IBM DB2 Universal Database Express Edition Version 8.2 for Windows
- Console Management Extension for IBM DB2 Universal Database Express Edition Version 8.2 for Linux
- Console Management Extension for IBM DB2 Universal Database Express Edition Version 8.2 for Linux on POWER
- Console Management Extension for IBM HTTP Server for Windows (IRU2_1_1IHSMgmtExt6_0Win)
- Console Management Extension for IBM HTTP Server for Linux (IRU2_1_1IHSMgmtExt6_0Lnx)
- Console Management Extension for IBM HTTP Server for Linux on POWER (IRU2_1_1IHSMgmtExt6_0LnxOnPwr)
- Console Management Extension for WebSphere Application Server - Express for Windows
- Console Management Extension for WebSphere Application Server - Express for Linux
- Console Management Extension for WebSphere Application Server - Express for Linux on POWER
- Console Management Extension for WebSphere Application Server - Express for i5/OS (OS/400)

- Application Development Toolkit wrapper for IBM DB2 Universal Database Express Edition Version 8.2 for Windows (IRU2_1_1DB2ExpressDev8_2Win)
- Application Development Toolkit wrapper for IBM DB2 Universal Database Express Edition Version 8.2 for Linux (IRU2_1_1DB2ExpressDev8_2Lnx)
- Application Development Toolkit wrapper for IBM DB2 Universal Database Express Edition Version 8.2 for Linux on POWER (IRU2_1_1DB2ExpressDev8_2LnxOnPwr)
- Application Development Toolkit wrapper IBM WebSphere Application Server-Express for Windows (IRU2_1_1WASExpressDev6_0Win)
- Application Development Toolkit wrapper IBM WebSphere Application Server-Express for Linux (IRU2_1_1WASExpressDev6_0Lnx)
- Application Development Toolkit wrapper IBM WebSphere Application Server-Express for Linux on POWER (IRU2_1_1WASExpressDev6_0LnxOnPwr)
- Application Development Toolkit wrapper IBM WebSphere Application Server-Express for i5/OS (OS/400) (IRU2_1_1WasExpressDev6_0I5OS)

Sample application for Windows

Use this application wrapper to deploy the sample application to computers running Windows. You can also edit this wrapper using Express Runtime developer to create a wrapper for deploying your custom applications to computers running Windows.

Application ID: IRU2_1_1SampleWin

Table 16. Exposed variables

Field	Explanation	Default value	Validation requirements
Database Manager	<i>Required.</i> The type of database system to be used by this sample solution.	Nothing selected by default.	Must select one Database Manager from the drop down menu containing DB2 and Informix Dynamic Server.
Document Directory	<i>Required.</i> The directory where the application documents are installed.	C:\RuntimeDocs	<ul style="list-style-type: none"> • Must start with drive letter, colon (:), then backslash (\) • Invalid characters: asterisk (*), question mark (?), quotation marks ("), pipe (), forward slash (/), semicolon (;), tilde (~), brackets ([]), less than or greater than symbols (< >)

Table 16. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
Database Name	<i>Required.</i> The name of the database used by this application.	DOCMGTD7	<ul style="list-style-type: none"> • Must be 1 to 8 characters in length. • Must begin with an alphabetic character, at symbol (@), number sign (#), or dollar sign (\$) • Valid characters: A - Z, a - z, 0 - 9, dollar sign (\$), number sign (#), at symbol (@), underscore (_)
DB2 Administrator User ID	<i>Required if DB2 is selected.</i> The administrator ID used to connect to DB2.		<ul style="list-style-type: none"> • Valid characters: A - Z, a - z, 0 - 9, dollar sign (\$), number sign (#), at symbol (@), or underscore (_) • Must be from 2 to 30 characters in length. • Invalid prefix: IBM, SQL, SYS, underscore (_) • Invalid values: ADMINS, GUESTS, USERS, PUBLIC, LOCAL, and SQL-reserved words
DB2 Administrator Password	<i>Required if DB2 is selected.</i> The password used with the DB2 Administrator User ID specified to connect to DB2..		<ul style="list-style-type: none"> • Valid characters: A - Z, a - z, 0 - 9, dollar sign (\$), number sign (#), at symbol (@), or underscore (_). • Must be from 6 to 127 characters in length.

Table 16. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
Informix Dynamic Server Installation Directory	<i>Required if Informix is selected.</i> The directory name where Informix Dynamic Server is installed.	C:\Program Files\IBM\Informix	<ul style="list-style-type: none"> • Must start with drive letter, colon (:), then backslash (\) • Invalid characters: asterisk (*), question mark (?), quotation marks ("), pipe (), forward slash (/), semicolon (;), tilde (~), brackets ([]), less than or greater than symbols (< >)
Informix Dynamic Server ServerName	<i>Required if Informix is selected.</i> The Informix Dynamic Server ServerName, for the specified installation directory to set up the Informix Dynamic Server environment.	demo_on	<ul style="list-style-type: none"> • Must be 1 to 128 characters in length. • Must begin with an alphabetic character, at symbol (@), number sign (#), or dollar sign (\$) • Valid characters: A - Z, a - z, 0 - 9, dollar sign (\$), number sign (#), at symbol (@), underscore (_)
Informix Dynamic Server User ID	<i>Required if Informix is selected.</i> The Administrator user id to connect to Informix Dynamic Server. This value must be Informix.	informix	Must be informix.
Informix Dynamic Server Password	The Password used with the id specified to connect to Informix Dynamic Server. This is required field if Informix Dynamic Server is selected.		<ul style="list-style-type: none"> • Valid characters: A - Z, a - z, 0 - 9, dollar sign (\$), number sign (#), at symbol (@), or underscore (_). • Must be from 6 to 127 characters in length.

Table 16. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
WebSphere Application Server Installation Directory	The directory where WebSphere Application Server is installed	c:\Program Files\IBM\WebSphere\AppServer	<ul style="list-style-type: none"> • Must start with drive letter, colon (:), then backslash (\) • Invalid characters: asterisk (*), question mark (?), quotation marks ("), pipe (), forward slash (/), semicolon (;), tilde (~), brackets ([]), less than or greater than symbols (< >)

Sample application for Linux

Use this application wrapper to deploy the sample application to computers running Linux. You can also edit this wrapper using Express Runtime developer to create a wrapper for deploying your custom applications to computers running Linux.

Application ID: IRU2_1_1SampleLnx

Table 17. Exposed variables

Field	Explanation	Default value	Validation requirements
Database Manager	<i>Required.</i> The type of database system to be used by this sample solution.	Nothing selected by default.	Must select one Database Manager from the drop down menu containing DB2 and IDS.
Document Directory	<i>Required.</i> The directory where the application documents are installed.	/opt/IBM/ RuntimeDocs	<ul style="list-style-type: none"> • Must start with backslash (/)
Database Name	<i>Required.</i> The name of the database to be created and used by this application.	DOCMGTD7	<ul style="list-style-type: none"> • Must be 1 to 8 characters in length.. • Must begin with an alphabetic character, at symbol (@), number sign (#), or dollar sign (\$) • Valid characters: A - Z, a - z, 0 - 9, dollar sign (\$), number sign (#), at symbol (@), underscore (_)

Table 17. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
DB2 instance owner user name	<i>Required if DB2 is selected.</i> The DB2 instance owner user ID used to connect to DB2.		<ul style="list-style-type: none"> Valid characters: A - Z, a - z, 0 - 9, dollar sign (\$), number sign (#), at symbol (@), or underscore (_) Must be from 2 to 30 characters in length. Invalid prefix: IBM, SQL, SYS, underscore (_) Invalid values: ADMINS, GUESTS, USERS, PUBLIC, LOCAL, and SQL-reserved words
DB2 instance owner password	<i>Required if DB2 is selected.</i> The password for the DB2 instance user ID.		<ul style="list-style-type: none"> Valid characters: A - Z, a - z, 0 - 9, dollar sign (\$), number sign (#), at symbol (@), or underscore (_). Must be from 6 to 127 characters in length.
Informix Dynamic Server Installation Directory	<i>Required if Informix Dynamic Server is selected.</i> The directory name where Informix Dynamic Server is installed.	/opt/IBM/informix	<ul style="list-style-type: none"> Must start with backslash (/)
Informix Dynamic Server ServerName	<i>Required if Informix Dynamic Server is selected.</i> The Informix Dynamic Server ServerName, for the specified installation directory to set up the Informix Dynamic Server environment.	demo_on	<ul style="list-style-type: none"> Must be 1 to 128 characters in length.. Must begin with an alphabetic character, at symbol (@), number sign (#), or dollar sign (\$) Valid characters: A - Z, a - z, 0 - 9, dollar sign (\$), number sign (#), at symbol (@), underscore (_)

Table 17. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
Port Number	<i>Required if Informix Dynamic Server is selected.</i> The default port used by the Informix Dynamic Server.	1526	Numeric. Valid range is from 1 to 65535.
Informix Dynamic Server User ID	<i>Required if Informix Dynamic Server is selected.</i> The Administrator User ID to connect to Informix Dynamic Server. This value must be Informix.	informix	Must be informix.
Informix Dynamic Server Password	The Password used with the ID specified to connect to Informix Dynamic Server.		<ul style="list-style-type: none"> Valid characters: A - Z, a - z, 0 - 9, dollar sign (\$), number sign (#), at symbol (@), or underscore (_). Must be from 6 to 127 characters in length.
WebSphere Application Server Installation Directory	The directory name where WebSphere Application Server is installed	/opt/IBM/WebSphere/AppServer	Must start with backslash (/).

Sample Application for i5/OS (OS/400)

Use this application wrapper to deploy the sample application to computers running i5/OS (OS/400). You can also edit this wrapper using Express Runtime developer to create a wrapper for deploying your custom applications to computers running i5/OS (OS/400).

Application ID: IRU2_1SampleI5OS

Table 18. Exposed variables

Field	Explanation	Default value	Validation requirements
Document Directory	<i>Required.</i> The directory where the application documents are installed.	/opt/IBM/ RuntimeDoc	<ul style="list-style-type: none"> Must start with a forward slash (/) Valid characters: A - Z, a - z, 0 - 9, hyphen (-), underscore (_), period (.)

Table 18. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
Database Name	The name of the database that is created and used by this application. If the database already exists, it is to be dropped.		
DB2 Administrator User ID	<i>Required.</i> The administrator user ID used to connect to DB2.	db2inst	<ul style="list-style-type: none"> • Must begin with an alphabetic character. • Valid characters: A - Z, a - z, 0 - 9, dollar sign (\$), pound sign (#), or at symbol (@). • Must be from 2 to 10 characters in length. • Invalid prefix: IBM, SQL, SYS, numeric characters, underscore (_) • Invalid values: ADMINS, GUESTS, USERS, PUBLIC, LOCAL, and SQL-reserved words
DB2 Administrator Password	<i>Conditional.</i> The password used with the administrator user ID specified to connect to DB2.		<ul style="list-style-type: none"> • Valid characters: A - Z, a - z, 0 - 9, dollar sign (\$), pound sign (#), at symbol (@), or underscore (_). • Must be from 2 to 10 characters in length.
HTTP Server Name	Specify the name of the IBM HTTP Server.		<ul style="list-style-type: none"> • Must start with an alphabetic character. • Must be from 1 to 10 characters in length.
Application server name	Specify a unique name for the application server.		

IBM DB2 Universal Database Express Edition Version 8.2 Fix Pack 3 for Windows

Include this middleware component in your solution to deploy IBM DB2 Universal Database Express Edition 8.2 with Fix Pack 3 to target computers running Windows.

Application ID: IRU2_1_1DB2Express8_2Win

Depending on your selection and configuration of other middleware components, you might need to provide values for some or all of the following fields:

Table 19. Exposed variables

Field	Explanation	Default value	Validation requirements
Target Directory	<i>Required.</i> The directory where you want the application files installed.	c:\Program Files\IBM\SQLLIB	<ul style="list-style-type: none"> Must start with an alphabetic character and colon (:), backslash (\) Invalid characters: asterisk (*), question mark (?), quotation marks ("), semicolon (;), pipe character (), tilde (~), less than symbol (<), greater than symbol (>)
Include Brazilian Portuguese	Set to true to include language support for Brazilian Portuguese. English language support is always installed.	False	Boolean
Include Simplified Chinese	Set to true to include language support for Simplified Chinese. English language support is always installed.	False	Boolean
Include German	Set to true to include language support for German. English language support is always installed.	False	Boolean
Include French	Set to true to include language support for French. English language support is always installed.	False	Boolean
Include Spanish	Set to true to include language support for Spanish. English language support is always installed.	False	Boolean

Table 19. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
Include Italian	Set to true to include language support for Italian. English language support is always installed.	False	Boolean
Include Japanese	Set to true to include language support for Japanese. English language support is always installed.	False	Boolean
Include Korean	Set to true to include language support for Korean. English language support is always installed.	False	Boolean
Include Traditional Chinese	Set to true to include language support for Traditional Chinese. English language support is always installed.	False	Boolean
Include Danish	Set to true to include language support for Danish. English language support is always installed.	False	Boolean
Include Finnish	Set to true to include language support for Finnish. English language support is always installed.	False	Boolean
Include Norwegian	Set to true to include language support for Norwegian. English language support is always installed.	False	Boolean
Include Polish	Set to true to include language support for Polish. English language support is always installed.	False	Boolean
Include Russian	Set to true to include language support for Russian. English language support is always installed.	False	Boolean
Include Swedish	Set to true to include language support for Swedish. English language support is always installed.	False	Boolean

Table 19. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
DB2 Administrator User ID	<i>Required.</i> The user ID used to connect to DB2 as the DB2 administrator.		<ul style="list-style-type: none"> Valid characters: underscore (_), A - Z, a - z, 0 - 9, at symbol (@), dollar sign (\$), number sign (#) Length cannot exceed 30 characters Invalid prefix: IBM, SQL, SYS, numeric characters, underscore (_) Invalid suffix: dollare sign (\$) Invalid values: ADMINS, GUESTS, USERS, PUBLIC, LOCAL, and SQL-reserved words
DB2 Administrator Password	<i>Required.</i> The password for the administrator connecting to DB2.		<ul style="list-style-type: none"> Must be between 8 and 14 characters in length.
Create Start menu shortcuts?	If set to true, Start menu shortcuts are created for various DB2 functions.	True	Boolean
Add features to installed version	If set to true, you can add features to an existing installation of DB2 UDB Express Version 8.2 on the target computer.		Boolean

IBM DB2 Universal Database Express Edition Version 8.2 with Fix Pack 3 for Linux

Include this middleware component in your solution to deploy IBM DB2 Universal Database Express Edition 8.2 with Fix Pack 3 to target computers running Linux.

Application ID: IRU2_1_1DB2Express8_2Lnx

Depending on your selection and configuration of other middleware components, you might need to provide values for some or all of the following fields:

Note: IRU2_1_1DB2Express8_2Lnx is for Linux platforms that are operating on the Linux 2.4 kernel. A version of this wrapper is available that supports the Linux 2.6 kernel and up. The ID of this wrapper is IRU2_1_1DB2Express8_2Lnx2_6.

Table 20. Exposed variables

Field	Explanation	Default value	Validation
Destination Directory	The directory where you want to install the application files.		
DB2 administrator user name	<i>Required.</i> The administrator user name is used to connect to DB2.	db2admin	<ul style="list-style-type: none"> Valid characters: hyphen (-), underscore (_), period (.), A - Z, a - z, 0 - 9 Invalid prefix: IBM, SQL, SYS, numeric characters, period (.), or comma (,) Invalid values: ADMINS, GUESTS, USERS, PUBLIC, LOCAL, SELECT, DROP, INSERT, WHERE
DB2 administrator group name	<i>Required.</i> The primary group to which the administrator belongs.	db2admin	<ul style="list-style-type: none"> Valid characters: hyphen (-), underscore (_), period (.), at symbol (@), dollar sign (\$), number sign (#), A - Z, a - z, 0 - 9 Invalid prefix: numeric characters, period (.), or comma (,)
DB2 administrator password	<i>Required.</i> The password for the administrator. It is used to connect to DB2.		<ul style="list-style-type: none"> Valid characters: at sign (@), dollar sign (\$), number sign (#), A - Z, a - z, 0 - 9
DB2 administrator home directory	<i>Required.</i> This is the home directory of the DB2 administrator.	/home/db2admin	<ul style="list-style-type: none"> Must start with a forward slash (/)

Table 20. Exposed variables (continued)

Field	Explanation	Default value	Validation
DB2 instance owner user name	<i>Required.</i> This instance owner user name is used to work with the DB2 instance.	db2inst	<ul style="list-style-type: none"> Valid characters: hyphen (-), underscore (_), period (.), at symbol (@), dollar sign (\$), number sign (#), A - Z, a - z, 0 - 9 Invalid prefix: IBM, SQL, SYS, numeric characters, comma (,), or period (.) Invalid values: ADMINS, GUESTS, USERS, PUBLIC, LOCAL, SELECT, DROP, INSERT, WHERE Length cannot exceed 128 characters
DB2 instance owner group name	<i>Required.</i> The primary group to which the instance owner belongs.	db2inst	<ul style="list-style-type: none"> Valid characters: hyphen (-), underscore (_), period (.), at sign (@), dollar sign (\$), number sign (#), A - Z, a - z, 0 - 9 Cannot begin with numeric characters, period (.), or comma (,) Length cannot exceed 128 characters
DB2 instance owner password	<i>Required.</i> The password for the instance owner used to work with the DB2 instance.		<ul style="list-style-type: none"> Valid characters: at sign (@), dollar sign (\$), number sign (#), A - Z, a - z, 0 - 9
DB2 instance owner home directory	<i>Required.</i> The DB2 instance owner's home directory.	/home/db2inst	<ul style="list-style-type: none"> Must start with a forward slash (/).

Table 20. Exposed variables (continued)

Field	Explanation	Default value	Validation
DB2 fenced user name	<p><i>Optional.Conditional.</i> The fenced user can run fenced user-defined functions and stored procedures. Note: This is a conditional variable. If you enter a value in any of the fenced user fields, you must include values for all of the fenced user fields.</p>	null	<ul style="list-style-type: none"> Valid characters: hyphen (-), underscore (_), period (.), A - Z, a - z, 0 - 9 Invalid prefix: IBM, SQL, SYS, numeric characters, comma (,), or period (.) Invalid values: ADMINS, GUESTS, USERS, PUBLIC, LOCAL, SELECT, DROP, INSERT, WHERE
DB2 fenced user group name	<p><i>Optional.Conditional.</i> This is the primary group to which the fenced user belongs. Note: This is a conditional variable. If you enter a value in any of the fenced user fields, you must include values for all of the fenced user fields.</p>	db2inst	<ul style="list-style-type: none"> Valid characters: hyphen (-), underscore (_), period (.), at symbol (@), dollar sign (\$), number sign (#), A - Z, a - z, 0 - 9 Cannot begin with a numeric character, a comma (,), or a period (.)
DB2 fenced user password	<p><i>Optional.Conditional.</i> The password for the fenced user used to isolate fenced user-defined functions and stored procedures. Note: This is a conditional variable. If you enter a value in any of the fenced user fields, you must include values for all of the fenced user fields.</p>		<ul style="list-style-type: none"> Valid characters: at symbol (@), dollar sign (\$), number sign (#), period (.), A - Z, a - z, 0 - 9
DB2 fenced user home directory	<p><i>Optional.Conditional.</i> The fenced user's home directory. Note: This is a conditional variable. If you enter a value in any of the fenced user fields, you must include values for all of the fenced user fields.</p>	/home/db2inst	<ul style="list-style-type: none"> Must start with a forward slash(/).

Table 20. Exposed variables (continued)

Field	Explanation	Default value	Validation
DB2 instance contact user name	<i>Required.</i> The name of the DB2 instance user to receive e-mail notifications regarding the DB2 instance.	db2admin	<ul style="list-style-type: none"> Valid characters: hyphen (-), underscore (_), period (.), A - Z, a - z, 0 - 9 Invalid prefix: IBM, SQL, SYS, numeric characters, comma (,), or period (.) Invalid values: ADMINS, GUESTS, USERS, PUBLIC, LOCAL, SELECT, DROP, INSERT, WHERE
DB2 instance contact email address	<i>Required.</i> The e-mail address of the user to receive e-mail notifications regarding the DB2 instance. If the DB2 instance contact name is specified, this field must have a value.		<ul style="list-style-type: none"> Valid characters: hyphen (-), underscore (_), period (.), at symbol (@), A - Z, a - z, 0 - 9 Invalid prefix: numeric characters, comma (,), or period (.)
DB2 instance administrative contact email address is for pager	Set this option to true if the text of the e-mail notifications should be formatted for a pager.		
SMTP Server Name	The name of the SMTP server used to send e-mail notifications regarding this instance.		
DB2 service name	<i>Required.</i> The DB2 service name as registered in the services file for TCP/IP.	db2cdb2inst1	<ul style="list-style-type: none"> Valid characters: hyphen (-), underscore (_), period (.), A - Z, a - z, 0 - 9 Invalid prefix: numeric characters, comma (,), period (.) or at sign (@)
DB2 service port number	<i>Required.</i> The DB2 service port as registered in the services file for TCP/IP.	50001	Valid range is from 1 to 65535

Table 20. Exposed variables (continued)

Field	Explanation	Default value	Validation
Include Brazilian Portuguese	Set to true to include language support for Brazilian Portuguese in addition to other languages specified. English language support is always installed.	False	Boolean
Include Simplified Chinese	Set to true to include language support for Simplified Chinese in addition to other languages specified. English language support is always installed.	False	Boolean
Include German	Set to true to include language support for German in addition to other languages specified. English language support is always installed.	False	Boolean
Include French	Set to true to include language support for French in addition to other languages specified. English language support is always installed.	False	Boolean
Include Spanish	Set to true to include language support for Spanish in addition to other languages specified. English language support is always installed.	False	Boolean
Include Italian	Set to true to include language support for Italian in addition to other languages specified. English language support is always installed.	False	Boolean
Include Japanese	Set to true to include language support for Japanese in addition to other languages specified. English language support is always installed.	False	Boolean

Table 20. Exposed variables (continued)

Field	Explanation	Default value	Validation
Include Korean	Set to true to include language support for Korean in addition to other languages specified. English language support is always installed.	False	Boolean
Include Traditional Chinese	Set to true to include language support for Traditional Chinese in addition to other languages specified. English language support is always installed.	False	Boolean
Include Polish	Set to true to include language support for Polish in addition to other languages specified. English language support is always installed.	False	Boolean
Include Russian	Set to true to include language support for Russian in addition to other languages specified. English language support is always installed.	False	Boolean
Include Czechoslovakian	Set to true to include language support for Czechoslovakian in addition to other languages specified. English language support is always installed.	False	Boolean

IBM DB2 Universal Database Express Edition Version 8.2 with Fix Pack 3 for Linux on POWER

Include this middleware component in your solution to deploy IBM DB2 Universal Database Express Edition 8.2 with Fix Pack 3 to target computers running Linux on POWER.

Application ID: IRU2_1_1DB2Express8_2LnxOnPwr

Depending on your selection and configuration of other middleware components, you might need to provide values for some or all of the following fields:

Table 21. Exposed variables

Field	Explanation	Default value	Validation requirements
DB2 administrator user name	<i>Required.</i> The user name of the administrator connecting to DB2.	db2admin	<ul style="list-style-type: none"> Valid characters: hyphen (-), underscore (_), period (.), A - Z, a - z, 0 - 9 Invalid prefix: IBM, SQL, SYS, numeric characters, period (.), or comma (,) Invalid values: ADMINS, GUESTS, USERS, PUBLIC, LOCAL, SELECT, DROP, INSERT, WHERE
DB2 administrator group name	<i>Required.</i> The primary group to which the administrator belongs.	db2admin	<ul style="list-style-type: none"> Valid characters: hyphen (-), underscore (_), at symbol (@), dollar sign (\$), number sign (#), A - Z, a - z, 0 - 9 Invalid prefix: numeric characters, period (.), or comma (,)
DB2 administrator password	<i>Required.</i> The password for the administrator connecting to DB2.		<ul style="list-style-type: none"> Valid characters: at symbol (@), dollar sign (\$), number sign (#), A - Z, a - z, 0 - 9
DB2 administrator home directory	<i>Required.</i> The administrator's home directory.	/home/db2admin	<ul style="list-style-type: none"> Must start with a forward slash (/) Valid characters: forward slash (/), hyphen (-), underscore (_), period (.), A - Z, a - z, 0 - 9

Table 21. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
DB2 instance owner user name	<i>Required.</i> User name used to work with the particular DB2 instance.	db2inst	<ul style="list-style-type: none"> Valid characters: hyphen (-), underscore (_), period (.), at symbol (@), dollar sign (\$), number sign (#), A - Z, a - z, 0 - 9 Invalid prefix: IBM, SQL, SYS, numeric characters, comma (,), or period (.) Invalid values: ADMINS, GUESTS, USERS, PUBLIC, LOCAL, SELECT, DROP, INSERT, WHERE Length cannot exceed 128 characters
DB2 instance owner group name	<i>Required.</i> The primary group to which the instance owner belongs.	db2inst	<ul style="list-style-type: none"> Valid characters: hyphen (-), underscore (_), period (.), at symbol (@), dollar sign (\$), number sign (#), A - Z, a - z, 0 - 9 Cannot begin with numeric characters, period (.), or comma (,) Length cannot exceed 128 characters
DB2 instance owner password	<i>Required.</i> The password for the DB2 instance owner user.		<ul style="list-style-type: none"> Valid characters: underscore (_), , at symbol (@), dollar sign (\$), number sign (#), A - Z, a - z, 0 - 9
DB2 instance owner home directory	<i>Required.</i> The instance owner's home directory.	/home/db2inst	<ul style="list-style-type: none"> Valid characters: forward slash (/), hyphen (-), underscore (_), period (.), A - Z, a - z, 0 - 9

Table 21. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
DB2 fenced user name	<i>Optional.Conditional.</i> The fenced user can run fenced user-defined functions and stored procedures. Note: This is a conditional variable. If you enter a value in any of the fenced user fields, you must include values for all of the fenced user fields.		<ul style="list-style-type: none"> Valid characters: hyphen (-), underscore (_), period (.), A - Z, a - z, 0 - 9 Invalid prefix: IBM, SQL, SYS, numeric characters, comma (,), or period (.) Invalid values: ADMINS, GUESTS, USERS, PUBLIC, LOCAL, SELECT, DROP, INSERT, WHERE
DB2 fenced user group name	<i>Optional.Conditional.</i> This is the primary group to which the fenced user belongs. Note: This is a conditional variable. If you enter a value in any of the fenced user fields, you must include values for all of the fenced user fields.	db2inst	<ul style="list-style-type: none"> Valid characters: hyphen (-), underscore (_), period (.), at symbol (@), dollar sign (\$), number sign (#), A - Z, a - z, 0 - 9 Cannot begin with a numeric character, a comma (,), or a period (.)
DB2 fenced user password	<i>Optional.</i> The password for the fenced user used to isolate fenced user-defined functions and stored procedures.		<ul style="list-style-type: none"> Valid characters: @ # \$. a b c d e f g h i j k l m n o p q r s t u v w x y z 0 1 2 3 4 5 6 7 8 9
DB2 fenced user home directory	<i>Optional.Conditional.</i> The fenced user's home directory. Note: This is a conditional variable. If you enter a value in any of the fenced user fields, you must include values for all of the fenced user fields.	/home/db2inst	<ul style="list-style-type: none"> Valid characters: hyphen (-), underscore (_), period (.), forward slash (/), a - z, A - Z, 0 - 9

Table 21. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
DB2 instance administrative contact name	<i>Required.</i> The name of the DB2 instance administrator user to receive e-mail notifications regarding the DB2 instance.	db2admin	<ul style="list-style-type: none"> Valid characters: hyphen (-), underscore (_), period (.), A - Z, a - z, 0 - 9 Invalid prefix: IBM, SQL, SYS, numeric characters, comma (,), or period (.) Invalid values: ADMINS, GUESTS, USERS, PUBLIC, LOCAL, SELECT, DROP, INSERT, WHERE
DB2 instance administrative contact email address	<i>Required.</i> The e-mail address of the user to receive e-mail notifications regarding the DB2 instance.		<ul style="list-style-type: none"> Valid characters: hyphen (-), underscore (_), period (.), at symbol (@), A - Z, a - z, 0 - 9 Invalid prefix: numeric characters, comma (,), or period (.)
DB2 instance administrative contact email address is for pager	Set this option to true if the text of the e-mail notifications should be formatted for a pager.		
SMTP Server Name	The name of the SMTP server used to send e-mail notifications regarding this instance.		
DB2 service name	<i>Required.</i> The DB2 service name as registered in the services file for TCP/IP.	db2cdb2inst1	<ul style="list-style-type: none"> Valid characters: hyphen (-), underscore (_), period (.), A - Z, a - z, 0 - 9 Invalid prefix: numeric characters, comma (,), period (.) or at symbol (@)
DB2 service port number	<i>Required.</i> The DB2 service port as registered in the services file for TCP/IP.	50001	Valid range is from 1 to 65535

Table 21. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
Include Brazilian Portuguese	Set to true to include language support for Brazilian Portuguese. English language support is always installed.	False	Boolean
Include Simplified Chinese	Set to true to include language support for Simplified Chinese. English language support is always installed.	False	Boolean
Include German	Set to true to include language support for German. English language support is always installed.	False	Boolean
Include French	Set to true to include language support for French. English language support is always installed.	False	Boolean
Include Spanish	Set to true to include language support for Spanish. English language support is always installed.	False	Boolean
Include Italian	Set to true to include language support for Italian. English language support is always installed.	False	Boolean
Include Japanese	Set to true to include language support for Japanese. English language support is always installed.	False	Boolean
Include Korean	Set to true to include language support for Korean. English language support is always installed.	False	Boolean
Include Traditional Chinese	Set to true to include language support for Traditional Chinese. English language support is always installed.	False	Boolean

Table 21. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
Include Polish	Set to true to include language support for Polish. English language support is always installed.	False	Boolean
Include Russian	Set to true to include language support for Russian. English language support is always installed.	False	Boolean
Include Czechoslovakian	Set to true to include language support for Czechoslovakian. English language support is always installed.	False	Boolean

IBM WebSphere Application Server - Express Version 6.0.2 for Windows

Include this middleware component in your solution to install or upgrade WebSphere Application Server Express Version 6.0.2 on target computers running Windows.

Application ID: IRU2_1_1WASExpress6_0Win

Depending on your selection and configuration of other middleware components, you might need to provide values for some or all of the following fields:

Table 22. Exposed variables

Field	Explanation	Default value	Validation requirements
Installation directory	<i>Required.</i> The fully qualified path name to the directory where you want to install IBM WebSphere Application Server - Express.	C:\Program Files\IBM\WebSphere\AppServer	<ul style="list-style-type: none"> • Must start with drive letter and colon (:), backslash (\) • Do not use these characters: asterisk (*), question mark (?), quotation marks ("), pipe (), forward slash (/), or angle brackets (< >).

Table 22. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
HTTP transport port	<i>Required.</i> A transport is the request queue between a WebSphere Application Server plug-in for Web servers and a Web container in which the Web modules of an application reside. When a user at a Web browser requests an application, the request is passed to the Web server, then sent along the transport to the Web container.	9080	Numeric. Valid range is from 1 to 65535.
Administrative console port	<i>Required.</i> The port used by the administrative console application for administering the WebSphere Application Server.	9060	Numeric. Valid range is from 1 to 65535.
HTTPS transport port	<i>Required.</i> If Application Server security is enabled, the WebSphere Application Server Web container processes HTTPS requests through this port.	9443	Numeric. Valid range is from 1 to 65535.
Secure administrative console port	<i>Required.</i> If you have security turned on, this is the port at which WebSphere Application Server - Express listens for the HTTPS requests for the administrative console to administer your application server.	9043	Numeric. Valid range is from 1 to 65535.

Table 22. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
Bootstrap port	<i>Required</i> This is the port number used to create an initial context for a Java Naming and Directory Interface (JNDI) lookup. References to Enterprise JavaBean (EJB) homes and other artifacts such as data sources are bound to the WebSphere name space. You can obtain these objects through the JNDI interface, but JNDI operations cannot be performed without an initial context.	2809	Numeric. Valid range is from 1 to 65535.
SOAP connector port	This is the port number for Java Management Extensions (JMX) connectors. JMX connectors communicate with WebSphere Application Server when you invoke a scripting process.	8880	Numeric. Valid range is from 1 to 65535.
SAS SSL ServerAuth port	<i>Required.</i> Inbound Port for SSL Secure Authentication Service.	9401	Numeric. Valid range is from 1 to 65535.
CSIV2 ServerAuth Listener Port	<i>Required.</i> Inbound port for Common Secure Interoperability Specification, Version 2.	9403	Numeric. Valid range is from 1 to 65535.
CSIV2 MultiAuth Listener port	<i>Required.</i> Inbound port for Common Secure Interoperability Specification, Version 2.	9402	Numeric. Valid range is from 1 to 65535.

Table 22. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
ORB Listener port	<i>Required.</i> The Object Request Broker (ORB) on WebSphere Application Server uses a listener port for Remote Method Invocation over the Internet Inter-ORB Protocol (RMI/IIOP) communications, which is selected dynamically during run time. If you are using a firewall, you must specify a static port for the ORB listener and open that port on the firewall so that communication can pass through the specified port.	9100	Numeric. Valid range is from 1 to 65535.
High Availability manager communication port	<i>Required.</i>	9353	Numeric. Valid range is from 1 to 65535.
Service integration port	<i>Required.</i> Applications use this port to connect to the Java Message Service (JMS) Server. The DIRECT port is for non-persistent, non-transactional, and non-durable subscriptions only.	7276	Numeric. Valid range is from 1 to 65535.
Secure service integration port	<i>Required.</i> Applications use this port to connect to the Java Message Service (JMS) Server. The DIRECT port is for non-persistent, non-transactional, non-durable subscriptions only.	7286	Numeric. Valid range is from 1 to 65535.
Service integration MQ interoperability port	<i>Required.</i> Applications use this port to connect to the Java Message Service (JMS) Server. The QUEUED port is for full-function JMS publish and subscribe support.	5558	Numeric. Valid range is from 1 to 65535.

Table 22. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
Secure service integration MQ interoperability port	<i>Required.</i> Applications use this port to connect to the Java Message Service (JMS) Server. The QUEUED port is for full-function JMS publish/subscribe support.	5578	Numeric. Valid range is from 1 to 65535.
Abort install if required ports are busy	If set to True, installation of WebSphere Application Server - Express fails if any of the TCP/IP ports are busy. If set to False, the installation can succeed, but the application server will not start.	True	Boolean
WebSphere Username	<i>Optional.</i> The username required for administering WebSphere Application Server. Used for restarting WebSphere Application secure servers.		Valid WebSphere Application Server user name and password with access to administer secure servers.
WebSphere Password	<i>Optional.</i> The password required for administering WebSphere Application Server. Used for restarting WebSphere Application secure servers.		Valid WebSphere Application Server user name and password with access to administer secure servers.
Startup type of the service	Specify how to start the server service.	automatic	Legal values are: <ul style="list-style-type: none"> • automatic: server starts when the computer starts. • manual: server starts when the user clicks Start on the Windows services panel. • disabled: does not start server

Table 22. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
Run the WebSphere Application Server as a Windows service	When activated, the WebSphere Application Server is displayed in the Windows services window.	true	Boolean

IBM WebSphere Application Server - Express Version 6.0.2 for Linux

Include this middleware component in your solution to install or upgrade WebSphere Application Server Express Version 6.0.2 on target computers running Linux.

Application ID: IRU2_1_1WASExpress6_0Lnx

Depending on your selection and configuration of other middleware components, you might need to provide values for some or all of the following fields:

Table 23. Exposed variables

Field	Explanation	Default value	Validation requirements
Installation directory	<i>Required.</i> The fully qualified path name to the directory where you want to install WebSphere Application Server - Express.	/opt/IBM/WebSphere/AppServer	Must start with forward slash (/).
HTTP transport port	<i>Required.</i> A transport is the request queue between a WebSphere Application Server plug-in for Web servers and a Web container in which the Web modules of an application reside. When a user at a Web browser requests an application, the request is passed to the Web server, then sent along the transport to the Web container.	9080	Numeric. Valid range is from 1 to 65535.

Table 23. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
Administrative console port	<i>Required.</i> The port used by the administrative console application for administering the WebSphere Application Server.	9060	Numeric. Valid range is from 1 to 65535.
HTTPs transport port	<i>Required.</i> If Application Server security is enabled, the WebSphere Application Server Web container processes HTTPS requests through this port.	9443	Numeric. Valid range is from 1 to 65535.
Secure administrative console port	<i>Required.</i> If Application Server security is enabled, this is the port at which WebSphere Application Server - Express listens for the HTTPS requests for the administrative console to administer your application server.	9043	Numeric. Valid range is from 1 to 65535.
Bootstrap port	<i>Required.</i> This is the port used to create an initial context for a Java Naming and Directory Interface (JNDI) lookup. References to Enterprise JavaBean (EJB) homes and other artifacts such as data sources are bound to the WebSphere name space. You can obtain these objects through the JNDI interface, but JNDI operations cannot be performed without an initial context.	2809	Numeric. Valid range is from 1 to 65535.

Table 23. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
SOAP connector port	<i>Required.</i> This is the port number for Java Management Extensions (JMX) connectors. JMX connectors communicate with WebSphere Application Server when you invoke a scripting process.	8880	Numeric. Valid range is from 1 to 65535.
SAS SSL ServerAuth port	<i>Required.</i> Inbound port for SSL Secure Authentication Service.	9401	Numeric. Valid range is from 1 to 65535.
CSIV2 ServerAuth Listener port	<i>Required.</i> Inbound port for Common Secure Interoperability Specification, Version 2.	9403	Numeric. Valid range is from 1 to 65535.
CSIV2 MultiAuth Listener port	<i>Required.</i> Inbound port for Common Secure Interoperability Specification, Version 2.	9402	Numeric. Valid range is from 1 to 65535.
ORB Listener port	<i>Required.</i> The Object Request Broker (ORB) on WebSphere Application Server uses a listener port for Remote Method Invocation over the Internet Inter-ORB Protocol (RMI/IIOP) communications, that is selected dynamically during run time. If you are using a firewall, you must specify a static port for the ORB listener and open that port on the firewall so that communication can pass through the specified port.	9100	Numeric. Valid range is from 1 to 65535.
High Availability manager communication port	<i>Required.</i>	9353	Numeric. Valid range is from 1 to 65535.

Table 23. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
Service integration port	<i>Required.</i> Applications use this port to connect to the Java Message Service (JMS) Server. The DIRECT port is for non-persistent, non-transactional, non-durable subscriptions only.	7276	Numeric. Valid range is from 1 to 65535.
Secure service integration port	<i>Required.</i> Applications use this port to connect to the Java Message Service (JMS) Server. The DIRECT port is for non-persistent, non-transactional, non-durable subscriptions only.	7286	Numeric. Valid range is from 1 to 65535.
Service integration MQ interoperability port	<i>Required.</i> Applications use this port to connect to the Java Message Service (JMS) Server. The QUEUED port is for full-function JMS publish/subscribe support.	5558	Numeric. Valid range is from 1 to 65535.
Secure service integration MQ interoperability port	<i>Required.</i> Applications use this port to connect to the Java Message Service (JMS) Server. The QUEUED port is for full-function JMS publish/subscribe support.	5578	Numeric. Valid range is from 1 to 65535.
Abort install if required ports are busy	If set to True, installation of WebSphere Application Server - Express fails if any of the TCP/IP ports are busy. If set to False, the installation can succeed, but the application server will not start.	True	Boolean

Table 23. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
WebSphere Username	<i>Optional.</i> The username required for administering WebSphere Application Server. Used for restarting WebSphere Application secure servers.		Valid WebSphere Application Server user name and password with access to administer secure servers.
WebSphere Password	<i>Optional.</i> The password required for administering WebSphere Application Server. Used for restarting WebSphere Application secure servers.		Valid WebSphere Application Server user name and password with access to administer secure servers.

IBM WebSphere Application Server - Express Version 6.0.2 for Linux on POWER

Include this middleware component in your solution to install or upgrade WebSphere Application Server Express Version 6.0.2 on target computers running Linux on POWER.

Application ID: IRU2_1_1WASExpress6_0LnxOnPwr

Depending on your selection and configuration of other middleware components, you might need to provide values for some or all of the following fields:

Table 24. Exposed variables

Field	Explanation	Default value	Validation requirements
Installation directory	<i>Required.</i> The fully qualified path name to the directory where you want to install WebSphere Application Server - Express.	/opt/IBM/WebSphere/AppServer	Must start with forward slash (/).

Table 24. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
HTTP transport port	<i>Required.</i> A transport is the request queue between a WebSphere Application Server plug-in for Web servers and a Web container in which the Web modules of an application reside. When a user at a Web browser requests an application, the request is passed to the Web server, then sent along the transport to the Web container.	9080	Numeric. Valid range is from 1 to 65535.
Administrative console port	<i>Required.</i> The port used by the administrative console application for administering the WebSphere Application Server.	9060	Numeric. Valid range is from 1 to 65535.
HTTPS transport port	<i>Required.</i> If Application Server security is enabled, the WebSphere Application Server Web container processes HTTPS requests through this port.	9443	Numeric. Valid range is from 1 to 65535.
Secure administrative console port	<i>Required.</i> If Application Server security is enabled, this is the port at which WebSphere Application Server - Express listens for the HTTPS requests for the administrative console to administer your application server.	9043	Numeric. Valid range is from 1 to 65535.

Table 24. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
Bootstrap port	<i>Required.</i> This is the port used to create an initial context for a Java Naming and Directory Interface (JNDI) lookup. References to Enterprise JavaBean (EJB) homes and other artifacts such as data sources are bound to the WebSphere name space. You can obtain these objects through the JNDI interface, but JNDI operations cannot be performed without an initial context.	2809	Numeric. Valid range is from 1 to 65535.
SOAP connector port	<i>Required.</i> This is the port number for Java Management Extensions (JMX) connectors. JMX connectors communicate with WebSphere Application Server when you invoke a scripting process.	8880	Numeric. Valid range is from 1 to 65535.
SAS SSL ServerAuth port	<i>Required.</i> Inbound port for SSL Secure Authentication Service.	9401	Numeric. Valid range is from 1 to 65535.
CSIV2 ServerAuth Listener port	<i>Required.</i> Inbound port for Common Secure Interoperability Specification, Version 2.	9403	Numeric. Valid range is from 1 to 65535.
CSIV2 MultiAuth Listener port	<i>Required.</i> Inbound port for Common Secure Interoperability Specification, Version 2.	9402	Numeric. Valid range is from 1 to 65535.

Table 24. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
ORB Listener port	<i>Required.</i> The Object Request Broker (ORB) on WebSphere Application Server uses a listener port for Remote Method Invocation over the Internet Inter-ORB Protocol (RMI/IIOP) communications, that is selected dynamically during run time. If you are using a firewall, you must specify a static port for the ORB listener and open that port on the firewall so that communication can pass through the specified port.	9100	Numeric. Valid range is from 1 to 65535.
High Availability manager communication port	<i>Required.</i>	9353	Numeric. Valid range is from 1 to 65535.
Service integration port	<i>Required.</i> Applications use this port to connect to the Java Message Service (JMS) Server. The DIRECT port is for non-persistent, non-transactional, non-durable subscriptions only.	7276	Numeric. Valid range is from 1 to 65535.
Secure service integration port	<i>Required.</i> Applications use this port to connect to the Java Message Service (JMS) Server. The DIRECT port is for non-persistent, non-transactional, non-durable subscriptions only.	7286	Numeric. Valid range is from 1 to 65535.
Service Integration MQ interoperability port	<i>Required.</i> Applications use this port to connect to the Java Message Service (JMS) Server. The QUEUED port is for full-function JMS publish/subscribe support.	5558	Numeric. Valid range is from 1 to 65535.

Table 24. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
Secure service Integration MQ interoperability port	<i>Required.</i> Applications use this port to connect to the Java Message Service (JMS) Server. The QUEUED port is for full-function JMS publish/subscribe support.	5578	Numeric. Valid range is from 1 to 65535.
Abort install if required ports are busy	If set to True, installation of WebSphere Application Server - Express fails if any of the TCP/IP ports are busy. If set to False, the installation can succeed, but the application server will not start.	True	Boolean
WebSphere Username	<i>Optional.</i> The username required for administering WebSphere Application Server. Used for restarting WebSphere Application secure servers.		Valid WebSphere Application Server user name and password with access to administer secure servers.
WebSphere Password	<i>Optional.</i> The password required for administering WebSphere Application Server. Used for restarting WebSphere Application secure servers.		Valid WebSphere Application Server user name and password with access to administer secure servers.

IBM WebSphere Application Server - Express Version 6.0.2 for i5/OS (OS/400) installation

Include this middleware component in your solution to install or upgrade WebSphere Application Server Express Version 6.0.2 on target computers running i5/OS (OS/400).

Application ID: IRU2_1_1WASExpress6_0I5OS

Depending on your selection and configuration of other middleware components, you might need to provide values for some or all of the fields in the following table:

Table 25. Exposed variables

Field	Explanation	Default value	Validation requirements
WebSphere Username	<i>Optional.</i> The user name required for administering WebSphere Application Server. Used for restarting WebSphere Application secure servers.		Valid WebSphere Application Server user name and password with access to administer secure servers.
WebSphere Password	<i>Optional.</i> The password required for administering WebSphere Application Server. Used for restarting WebSphere Application secure servers.		Valid WebSphere Application Server user name and password with access to administer secure servers.

IBM WebSphere Application Server - Express Version 6.0.2 for i5/OS (OS/400) configuration

Include this middleware component in your solution to configure WebSphere Application Server Express Version 6.0.2 on target computers running i5/OS (OS/400).

Application ID: IRU2_1_1WASConfigI5OS

Depending on your selection and configuration of other middleware components, you might need to provide values for some or all of the fields in the following table:

Table 26. Exposed variables

Field	Explanation	Default value	Validation requirements
Application Server starting port	<i>Required.</i> WebSphere Application Server - Express requires a block of 15 consecutive ports to perform internal services. Specify the first port number in the range. For example, if 3001 is entered, then ports 3001 through 3015 are configured for this purpose.	3001	Numeric. Valid range is from 1 to 65535.
IBM HTTP Server Port	<i>Required.</i> The default port used by the IBM HTTP Server.	80	Numeric. Valid range is from 1 to 65535.

Table 26. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
Application server name	<i>Required.</i> A unique name for the application server.	IRAppSvr	<ul style="list-style-type: none"> Length cannot exceed 100 characters. Cannot start with a numeric (0 - 9) character. Valid characters: A - Z, a - z, 0 - 9, hyphen (-), underscore (_), period (.)

IBM HTTP Server 6.0.2 for Windows

Include this middleware component in your solution to deploy IBM HTTP Server (IHS) 6.0.2 to computers running Windows.

Application ID: IRU2_1_1IHS6_0Win

Depending on your selection and configuration of other middleware components, you might need to provide values for some or all of the following fields:

Table 27. Exposed variables

Field	Explanation	Default value	Validation requirements
Installation Directory	<i>Required.</i> Where you want the IBM HTTP Server installed.	C:\Program Files\IBM HTTP Server	Must start with drive letter followed by a colon (:), backslash (\), and then at least one character.
HTTP Port	<i>Required.</i> The default port used by the IBM HTTP Server.	80	Numeric. Valid range is from 1 to 65535.
Logon as Local System	Set to true to run the IHS service as Local System.	True	
Windows Service User ID	<i>Conditional.</i> The user ID to run IHS as a Windows service.		<ul style="list-style-type: none"> Must be between 1 and 20 characters in length. Invalid characters: *+,/;<=>?[\] Not required if Logon as Local System is set to true.
Windows Service User Password	<i>Conditional.</i> The password for the user ID used to run IHS as a Windows service.		<ul style="list-style-type: none"> Length cannot exceed 14 characters Valid characters: at symbol (@), dollar sign (\$), number sign (#), underscore (_), a - z, A - Z, 0 - 9 Not required if Logon as Local System is set to true.

Table 27. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
Admin Server Port	<i>Required.</i> The network port that the Admin Server listens to.	8008	Numeric. Valid range is from 1 to 65535.
Overwrite previously installed IBM HTTP Server	Set to true to allow the installation of IHS over an existing installation.	False	Boolean

IBM HTTP Server 6.0.2 for Linux

Include this middleware component in your solution to deploy IBM HTTP Server 6.0.2 to computers running Linux.

Application ID: IRU2_1_1IHS6_0Lnx

Depending on your selection and configuration of other middleware components, you might need to provide values for some or all of the following fields:

Table 28. Exposed variables

Field	Explanation	Default value	Validation requirements
Installation Directory	<i>Required.</i> The directory where you want to install IBM HTTP Server.	/opt/IBMIHS	Must be root drive plus at least one character.
HTTP Port	<i>Required.</i> The network port the server listens to.	80	Numeric. Valid range is from 0 to 65535.
Admin Server Port	<i>Required.</i> The network port on that the Admin Server listens to.	8008	Numeric. Valid range is from 0 to 65535.
Overwrite previously installed IBM HTTP Server	If set to true, an installation over an existing installation is acceptable.	False	Boolean

IBM HTTP Server 6.0.2 for Linux on POWER

Include this middleware component in your solution to deploy IBM HTTP Server 6.0.2 to computers running Linux on POWER.

Application ID: IRU2_1_1IHS6_0LnxOnPwr

Depending on your selection and configuration of other middleware components, you might need to provide values for some or all of the following fields:

Table 29. Exposed variables

Field	Explanation	Default value	Validation requirements
Installation Directory	<i>Required.</i> The directory where you want to install IBM HTTP Server.	/opt/IBMIHS	Must be root drive plus at least one character.
HTTP Port	<i>Required.</i> The network port the server listens to.	80	Numeric. Valid range is from 0 to 65535.
Admin Server Port	<i>Required.</i> The network port on that the Admin Server listens to.	8008	Numeric. Valid range is from 0 to 65535.
Overwrite previously installed IBM HTTP Server	If set to true, an installation over an existing installation is acceptable.	False	Boolean

IBM HTTP Server 6.0 for OS/400 (i5/OS)

Include this middleware component in your solution to deploy IBM HTTP Server (IHS) 6.0 to computers running OS/400 or i5/OS.

There are three wrappers for IHS. There are two different installation wrappers. The installation wrapper you select is determined by the version of the operating system to which you are deploying IHS. Select the wrapper with application ID **IRU2_1IHS520I5OS** to install IHS to computers running OS/400 Version 5 Release 2. Select the wrapper with application ID **IRU2_1IHS530I5OS** to install IHS to computers running i5/OS Version 5 Release 3. The additional wrapper, with application ID **IRU2_1IHSCfgI5OS** is used for the configuration of an IHS server.

Depending on your selection and configuration of other middleware components, you might need to provide values for some or all of the fields in the following table, which are included in the configuration wrapper. There are no variables exposed by the installation wrappers.

Table 30. Exposed variables

Field	Explanation	Default value	Validation requirements
HTTP Server Name	<i>Required.</i> The name of the HTTP server you are configuring.	IRHTTP	<ul style="list-style-type: none"> • Must be from 1 to 10 characters in length. • Must start with: A - Z, a - z, dollar sign (\$), pound sign (#) or at symbol (@) • Remaining characters must be: A - Z, a - z, 0 - 9, dollar sign (\$), pound sign (#) or at symbol (@)
HTTP Server Port	<i>Required.</i> The network port on which the server listens.	80	Numeric. Valid range is from 1 to 65535.

Table 30. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
Application server name	<i>Required.</i> A unique name for the application server.	IRAppSvr	<ul style="list-style-type: none"> Length cannot exceed 100 characters. Cannot start with a numeric (0 - 9) character. Valid characters: A - Z, a - z, 0 - 9, hyphen (-), underscore (_), period (.)

Web server plugin for IBM WebSphere Application Server - Express 6.0.2 for Windows

Select this middleware component to deploy the Web server plug-in for WebSphere Application Server - Express Version 6.0.2 to target computers running the Windows platform.

Application ID: IRU2_1_1WebServerPluginForWAS6_0Win

Note: If you include this wrapper in your solution, you must also include the wrapper for IBM HTTP Server Version 6.0 for Windows.

Depending on your selection and configuration of other middleware components, you might need to provide values for some or all of the following fields:

Table 31. Exposed variables

Field	Explanation	Default value	Validation requirements
WebSphere Application Server - Express Host Name (if remote)	<i>Optional.</i> Host name or TCP/IP address of the WebSphere Application Server - Express if it is on a system remote from the plug-in. If not specified, the primary host name of the local system is used.		<ul style="list-style-type: none"> Must not start or end with a hyphen (-) Invalid characters: asterisk (*), question mark (?), double quotes ("), pipe (), backslash (/)
HTTP Port	<i>Required.</i> The port that the IBM HTTP Server listens to.	80	Numeric. Valid range is from 1 to 65535.
Installation location of the IBM HTTP Server	<i>Optional.</i> The installation location of the IBM HTTP Server.	c:\Program Files\IBM HTTP Server	<ul style="list-style-type: none"> Must start with drive letter and colon (:), backslash (\) Invalid characters: asterisk (*), question mark (?), double quotes ("), pipe (), forward slash (/)

Table 31. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
Installation location of WebSphere Application Server - Express Version 6	<i>Optional.</i> Configures the plug-in to use a local WebSphere Application Server in this installation directory. This field is only used when multiple WebSphere Application Servers are installed on a local system for a local installation.	c:\Program Files\IBM\WebSphere	<ul style="list-style-type: none"> • Must start with drive letter and colon (:), backslash (\) • Invalid characters: asterisk (*), question mark (?), double quotes ("), pipe (), forward slash (/)

Web server plug-in for IBM WebSphere Application Server - Express 6.0.2 for Linux

Select this middleware component to deploy the Web server plug-in for IBM WebSphere Application Server - Express 6.0.2 to target computers running the Linux platform.

Application ID:IRU2_1_1WebServerPluginForWAS6_0Lnx

Note: If you include this wrapper in your solution, you must also include the wrapper for IBM HTTP Server Version 6.0 for Linux.

Depending on your selection and configuration of other middleware components, you might need to provide values for some or all of the following fields:

Table 32. Exposed variables

Field	Explanation	Default value	Validation requirements
WebSphere Application Server - Express Host Name (if remote)	<i>Optional.</i> Host name or TCP/IP address of the WebSphere Application Server - Express if it is on a system remote from the plug-in. If not specified, the primary host name of the local system is used.		<ul style="list-style-type: none"> • Must not start or end with a hyphen (-) • Valid characters: A - Z; a - z; 0 - 9; hyphen (-), period (.)

Table 32. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
Installation location of WebSphere Application Server - Express Version 6	<i>Optional.</i> Configures the plug-in to use a local WebSphere Application Server in this installation directory. This field is only used when multiple WebSphere Application Servers are installed on a local system for a local installation.		<ul style="list-style-type: none"> • Must not start or end with a hyphen (-) • Valid characters: A - Z; a - z; 0 - 9; hyphen (-), period (.)
Installation location of the IBM HTTP Server	<i>Required.</i> The fully-qualified path to the installation directory of the IBM HTTP Server.	/opt/IBMIHS	<ul style="list-style-type: none"> • Must not start or end with a hyphen (-) • Valid characters: A - Z; a - z; 0 - 9; hyphen (-), period (.)
HTTP Port	<i>Required.</i> The port that the IBM HTTP Server listens to.	80	Numeric. Valid range is from 1 to 65535.

Web server plug-in for IBM WebSphere Application Server - Express 6.0.2 for Linux on POWER

Select this middleware component to deploy the Web server plug-in for WebSphere Application Server - Express 6.0.2 to target computers running Linux on POWER.

Application ID:IRU2_1_1WebServerPluginForWAS6_0LnxOnPwr

Note: If you include this wrapper in your solution, you must also include the wrapper for IBM HTTP Server Version 6.0 for Linux on POWER.

Depending on your selection and configuration of other middleware components, you might need to provide values for some or all of the following fields:

Table 33. Exposed variables

Field	Explanation	Default value	Validation requirements
WebSphere Application Server - Express Host Name (if remote)	<i>Optional.</i> Host name or TCP/IP address of the WebSphere Application Server - Express if it is on a system remote from the plug-in. If not specified, the primary host name of the local system is used.		<ul style="list-style-type: none"> • Must not start or end with a hyphen (-) • Valid characters: A - Z; a - z; 0 - 9; hyphen (-), period (.)

Table 33. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
Installation location of WebSphere Application Server - Express Version 6	<i>Optional.</i> Configures the plug-in to use a local WebSphere Application Server in this installation directory. This field is only used when multiple WebSphere Application Servers are installed on a local system for a local installation.		<ul style="list-style-type: none"> Valid prefix: forward slash (/) Valid characters: A - Z; a - z; 0 - 9; hyphen (-), period (.)
Installation location of the IBM HTTP Server	<i>Required.</i> The fully-qualified path to the installation directory of the IBM HTTP Server.	/opt/IBMIHS	<ul style="list-style-type: none"> Must not start or end with a hyphen (-) Valid characters: A - Z; a - z; 0 - 9; hyphen (-), period (.)
HTTP Port	<i>Required.</i> The port that the IBM HTTP Server listens to.	80	Numeric. Valid range is from 1 to 65535.

Integrated Solutions Console for Linux

You can use this application wrapper to install the Integrated Solutions Console and associated management portlets on target computers running the Linux operating system.

Application ID: IRU2_1_1ConsoleLnx

You must provide values for all of the following fields:

Field	Explanation	Default value	Validation requirements
Installation Location	<i>Required.</i> The directory where you want to install the application.	/opt/IBM	<ul style="list-style-type: none"> Must start with a forward slash (/) Must not contain *?"; ~<>
Host Name	<i>Required.</i> The fully qualified host name of the target computer.		

Field	Explanation	Default value	Validation requirements
HTTP Port	<p><i>Required.</i>The port number that Integrated Solutions Console uses. The port number must be a port that is not being used by another process on the computer. After installing Integrated Solutions Console, include this port number in the URL for opening the console. That URL is the protocol name, plus the fully qualified host name, plus the port, plus <code>ibm/console</code>. An example is:</p> <p><code>http://myhost.com:8421/ibm/console</code>.</p>	8421	Port number 1 - 65535
Bootstrap/RMI Port	<p><i>Required.</i>The Java Remote Method Invocation (RMI) bootstrap port that Integrated Solutions Console uses.</p>	8424	Port number 1 - 65535
HTTPS Port	<p><i>Required.</i>The port that Integrated Solutions Console uses for the secure HTTP (HTTPS) transport.</p>	8422	Port number 1 - 65535
SOAP Port	<p><i>Required.</i>The port that Integrated Solutions Console uses for the Simple Object Access Protocol (SOAP) transport.</p>	8425	Port number 1 - 65535
Unused HTTP	<p><i>Required.</i>The port number that the application server uses for the HTTP transport. The HTTP transport is a request queue between the application server and the HTTP server (Web server). This value must not conflict with existing port assignments on the computer.</p>	8426	Port number 1 - 65535

Field	Explanation	Default value	Validation requirements
Unused HTTPS Port	<i>Required.</i> The port number that the application server uses for the secure HTTP (HTTPS) transport. This value must not conflict with existing port assignments on the computer.	8427	Port number 1 - 65535
Unused Bootstrap/RMI Port	<i>Required.</i> The address for the bootstrap function and the port number for the Java Remote Method Invocation (RMI) connector in the application server. This value must not conflict with existing port assignments on the computer.	8428	Port number 1 - 65535
Unused SOAP Port	<i>Required.</i> The address for the Simple Object Access Protocol (SOAP) connector in the application server. This value must not conflict with existing port assignments on the computer.	8429	Port number 1 - 65535
Eclipse Port	<i>Required.</i> The port that the Eclipse technology-based help system uses to receive requests for help files. This value must not conflict with existing port assignments on the computer.	8423	Port number 1 - 65535
Administrator ID	<i>Required.</i> The administrator user ID for the console.		<ul style="list-style-type: none"> • Must be at least 3 characters, but no more than 60 characters • Can contain only lowercase a-z (case ignored), period (.), hyphen (-), and underscore (_).

Field	Explanation	Default value	Validation requirements
Password	<i>Required.</i> The administrator password for the console.		<ul style="list-style-type: none"> • Must be at least 3 characters, but no more than 60 characters • Can contain only lowercase a-z (case ignored), period (.), hyphen (-), and underscore (_).
Console plug-in for WebSphere Application Server - Express	<i>Required.</i> Specify whether to install the Cconsole plug-in for IBM WebSphere Application Server - Express.	True	Boolean
Console plug-in for a database	<i>Required.</i> Specify whether to install the Console plug-in for a database (IBM DB2 Universal Database Express or Informix Dynamic Server (IDS) Express).	True	Boolean
Console plug-in for IBM HTTP Server	<i>Required.</i> Specify whether to install the console plug-in for IBM HTTP Server.	True	Boolean

Integrated Solutions Console for Linux on IBM POWER

You can use this application wrapper to install the Integrated Solutions Console and associated management portlets on target computers running Linux on IBM POWER.

Application ID: IRU2_1_1ConsoleLnxOnPwr

You must provide values for all of the following fields:

Table 34. Exposed variables

Field	Explanation	Default value	Validation requirements
Installation Location	<i>Required.</i> The directory where you want to install the application.	/opt/IBM	<ul style="list-style-type: none"> • Must start with a forward slash (/) • Must not contain *?"; ~<>
Host Name	<i>Required.</i> The fully qualified host name of the target computer.		

Table 34. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
HTTP Port	<i>Required.</i> The port number that Integrated Solutions Console uses. The port number must be a port that is not being used by another process on the computer. After installing Integrated Solutions Console, include this port number in the URL for opening the console. That URL is the protocol name, plus the fully qualified host name, plus the port, plus <code>ibm/console</code> . An example is: <code>http://myhost.com:8421/ibm/console</code> .	8421	Port number 1 - 65535
Bootstrap/RMI Port	<i>Required.</i> The Java Remote Method Invocation (RMI) bootstrap port that Integrated Solutions Console uses.	8424	Port number 1 - 65535
HTTPS Port	<i>Required.</i> The port that Integrated Solutions Console uses for the secure HTTP (HTTPS) transport.	8422	Port number 1 - 65535
SOAP Port	<i>Required.</i> The port that Integrated Solutions Console uses for the Simple Object Access Protocol (SOAP) transport.	8425	Port number 1 - 65535
Unused HTTP	<i>Required.</i> The port number that the application server uses for the HTTP transport. The HTTP transport is a request queue between the application server and the HTTP server (Web server). This value must not conflict with existing port assignments on the computer.	8426	Port number 1 - 65535

Table 34. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
Unused HTTPS Port	<i>Required.</i> The port number that the application server uses for the secure HTTP (HTTPS) transport. This value must not conflict with existing port assignments on the computer.	8427	Port number 1 - 65535
Unused Bootstrap/RMI Port	<i>Required.</i> The address for the bootstrap function and the port number for the Java Remote Method Invocation (RMI) connector in the application server. This value must not conflict with existing port assignments on the computer.	8428	Port number 1 - 65535
Unused SOAP Port	<i>Required.</i> The address for the Simple Object Access Protocol (SOAP) connector in the application server. This value must not conflict with existing port assignments on the computer.	8429	Port number 1 - 65535
Eclipse Port	<i>Required.</i> The port that the Eclipse technology-based help system uses to receive requests for help files. This value must not conflict with existing port assignments on the computer.	8423	Port number 1 - 65535
Administrator ID	<i>Required.</i> The administrator user ID for the console.		<ul style="list-style-type: none"> • Must be at least 3 characters, but no more than 60 characters • Can contain only a-z (case ignored), period (.), hyphen (-), and underscore (_).

Table 34. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
Password	<i>Required.</i> The administrator password for the console.		<ul style="list-style-type: none"> • Must be at least 3 characters, but no more than 60 characters • Can contain only a-z (case ignored), period (.), hyphen (-), and underscore (_).
Console plug-in for WebSphere Application Server - Express	<i>Required.</i> Specify whether to install the console plug-in for IBM WebSphere Application Server - Express.	True	Boolean
Console plug-in for a database	<i>Required.</i> Specify whether to install the Console plug-in for a database (IBM DB2 Universal Database Express or Informix Dynamic Server (IDS) Express).	True	Boolean
Console plug-in for IBM HTTP Server	<i>Required.</i> Specify whether to install the console plug-in for IBM HTTP Server.	True	Boolean

Integrated Solutions Console for Windows

You can use this application wrapper to install the Integrated Solutions Console and associated management portlets over a network on target computers running the Windows operating system.

Application ID: IRU2_1_1ConsoleWin

You must provide values for all of the following fields:

Field	Explanation	Default value	Validation requirements
Installation directory	<i>Required.</i> The directory where you want to install the application.	c:\Program Files\IBM	<ul style="list-style-type: none"> • Must start with a letter, colon (:), and backslash (\) • Must not contain *?"; ~<>
Host Name	<i>Required.</i> The fully qualified host name of the target computer.		

Field	Explanation	Default value	Validation requirements
HTTP Port	<i>Required.</i> The port number that Integrated Solutions Console uses. The port number must be a port that is not being used by another process on the computer. After installing the Integrated Solutions Console, include this port number in the URL for opening the console. That URL is the protocol name, plus the fully qualified host name, plus the port, plus <code>ibm/console</code> . An example is: <code>http://myhost.com:8421/ibm/console</code> .	8421	Port number 1 - 65535
Bootstrap/RMI Port	<i>Required.</i> The Java Remote Method Invocation (RMI) bootstrap port that Integrated Solutions Console uses.	8424	Port number 1 - 65535
HTTPS Port	<i>Required.</i> The port that Integrated Solutions Console uses for the secure HTTP (HTTPS) transport.	8422	Port number 1 - 65535
SOAP Port	<i>Required.</i> The port that Integrated Solutions Console uses for the Simple Object Access Protocol (SOAP) transport.	8425	Port number 1 - 65535
Unused HTTP	<i>Required.</i> The port number that the application server uses for the HTTP transport. The HTTP transport is a request queue between the application server and the HTTP server (Web server). This value must not conflict with existing port assignments on the computer.	8426	Port number 1 - 65535

Field	Explanation	Default value	Validation requirements
Unused HTTPS Port	<i>Required.</i> The port number that the application server uses for the secure HTTP (HTTPS) transport. This value must not conflict with existing port assignments on the computer.	8427	Port number 1 - 65535
Unused Bootstrap/RMI Port	<i>Required.</i> The address for the bootstrap function and the port number for the Java Remote Method Invocation (RMI) connector in the application server. This value must not conflict with existing port assignments on the computer.	8428	Port number 1 - 65535
Unused SOAP Port	<i>Required.</i> The address for the Simple Object Access Protocol (SOAP) connector in the application server. This value must not conflict with existing port assignments on the computer.	8429	Port number 1 - 65535
Eclipse Port	<i>Required.</i> The port that the Eclipse technology-based help system uses to receive requests for help files. This value must not conflict with existing port assignments on the computer.	8423	Port number 1 - 65535
Administrator ID	<i>Required.</i> The administrator user ID for the console.		<ul style="list-style-type: none"> • Must be 3 - 60 characters • May contain only lowercase a-z, uppercase A-Z, period (.), hyphen (-), and underscore (_).

Field	Explanation	Default value	Validation requirements
Password	<i>Required.</i> The administrator password for the console.		<ul style="list-style-type: none"> • Must be 3 - 60 characters • May contain only lowercase a-z, uppercase A-Z, period (.), hyphen (-), and underscore (_).
Console plug-in for WebSphere Application Server - Express	<i>Required.</i> Specify whether to install the Console plug-in for IBM WebSphere Application Server - Express.	True	Boolean
Console plug-in for a database	<i>Required.</i> Specify whether to install the Console plug-in for a database (IBM DB2 Universal Database Express or Informix Dynamic Server (IDS) Express).	True	Boolean
Console plug-in for IBM HTTP Server	<i>Required.</i> Specify whether to install the Console plug-in for IBM HTTP Server.	True	Boolean

Console management extension for IBM DB2 Universal Database Express Edition Version 8.2 for Linux

Use this wrapper to install the console's management extension for IBM DB2 Universal Database Express Edition Version 8.2 on a target computer running the Linux operating system.

Application ID: IRU2_1_1DB2ExpressMgmtExt8_2Lnx

Depending on your selection and configuration, you might need to provide values for some or all of the following fields:

Field	Explanation	Default value	Validation requirements
Console Extensions Directory	<i>Required.</i> The directory where the console extensions are installed. If the console extension are already installed on this computer, that location is used.	/opt/IBM	<ul style="list-style-type: none"> • Can contain a-z (either case) and integers 0-9, underscore (_), period (.) • Must not contain / \ * ? " < >
Console Agent Port	<i>Required.</i> The communication port used by Console Agent.	7044	Port number 1 - 65535

Field	Explanation	Default value	Validation requirements
Console Agent Service install run level	<i>Required.</i> The run level for Console Agent Service.	3, 5	A string containing integers 1 - 5 and commas.
Overwrite previously installed management extensions	<i>Required.</i> Specify whether to enable reinstallation if the management extension is already installed on the target computer.	false	Boolean

Console management extension for IBM DB2 Universal Database Express Edition Version 8.2 for Linux on IBM POWER

Use this wrapper to install the console's management extension for IBM DB2 Universal Database Express Edition Version 8.2 on a target computer running Linux on IBM POWER.

Application ID: IRU2_1_1DB2ExpressMgmtExt8_2LnxOnPwr

Depending on your selection and configuration, you might need to provide values for some or all of the following fields:

Field	Explanation	Default value	Validation requirements
Console Extensions Directory	<i>Required.</i> The directory where the console extensions are installed. If the console extension are already installed on this computer, that location is used.	/opt/IBM/IRUExt	<ul style="list-style-type: none"> • Can contain a-z (either case) and integers 0-9, underscore (_), period (.) • Must not contain / \ * ? " < >
Console Agent Port	<i>Required.</i> The communication port used by Console Agent.	7044	Port number 1 - 65535
Console Agent Service install run level	<i>Required.</i> The run level for Console Agent Service.	3, 5	A string containing integers 1 - 5 and commas.
Overwrite previously installed management extensions	<i>Required.</i> Specify whether to enable reinstallation if the management extension is already installed on the target computer.	false	Boolean

Console management extension for IBM DB2 Universal Database Express Edition Version 8.2 for Windows

Use this wrapper to install the console's management extension for IBM DB2 Universal Database Express Edition Version 8.2 on a target computer running the Windows operating system.

Application ID: IRU2_1_1DB2ExpressMgmtExt8_2Win

Depending on your selection and configuration, you might need to provide values for some or all of the following fields:

Field	Explanation	Default value	Validation requirements
Management Extension Installation Location	<i>Required.</i> The fully qualified path name for the directory where the DB2 management extension is installed.	c:\Program Files\IBM	<ul style="list-style-type: none"> • Can contain a-z (either case) and integers 0-9, underscore (_), period (.) • Must not contain / \ * ? " < >
Console Agent Service Username	<i>Optional.</i> The user name for installing Console Agent Service.	Administrator	<ul style="list-style-type: none"> • Must be 1 - 20 characters • Must not contain * + , / ; < = > ? [\]
Console Agent Service Password	<i>Optional.</i> The password for installing Console Agent Service.	password	<ul style="list-style-type: none"> • Can be 1 - 14 characters • Can contain lowercase a-z, integers 0-9, @ # \$ -
Console Agent Port	<i>Required.</i> The communication port to be used by Console Agent.	7044	Port number 1 - 65535
Reinstall flag	<i>Required.</i> Specify whether to enable reinstallation if the management extension is already installed on the target computer.	false	Boolean

Informix Dynamic Server Express 10.00.UC3E for Linux

Include this middleware component in your solution to deploy Informix Dynamic Serve Expressr 10.00.UC3E to computers running Linux.

Application ID: IRU2_1_1IDSEExpress10_00lnx

Depending on your selection and configuration of other middleware components, you might need to provide values for some or all of the following fields:

Table 35. Exposed variables

Field	Explanation	Default value	Validation requirements
Installation Directory	<i>Required.</i> Where you want the Informix Dynamic Server installed.	/opt/IBM/Informix	Must start with forward slash (/).
Server Name	<i>Required.</i> A unique name for the Informix Dynamic Server.	ol_server	<ul style="list-style-type: none"> Length cannot exceed 128 characters. Cannot start with a numeric (0 - 9) character. Valid characters: A - Z, a - z, 0 - 9, hyphen (-), underscore (_), period (.)
Port Number	<i>Required.</i> The default port used by the Informix Dynamic Server.	1526	Numeric. Valid range is from 1 to 65535.
User ID	<i>Conditional.</i> The user ID to run IDS as a Windows service.	informix	Must be informix.
User Password	<i>Conditional.</i> The password for the user ID used to run IDS as a Windows service.		<ul style="list-style-type: none"> Length cannot exceed 14 characters Valid characters: at symbol (@), dollar sign (\$), number sign (#), underscore (_), a - z, A - Z, 0 - 9 Not required if Logon as Local System is set to true.
Overwrite previously installed Informix Dynamic Server	Set to true to allow the installation of IDS over an existing installation.	False	True or False
Create Start menu shortcuts?	Set to yes to create an icon for the installed program.	Yes	Yes or No.
Install the International Language Supplement	Set to true to allow the installation of the International Language Supplement	No	Yes or No.
WebSphere Server Installation Directory	<i>Required.</i> The directory where WebSphere Application Server is installed.	/opt/IBM/WebSphere/AppServer	Must start with forward slash (/).

Informix Dynamic Server Express 10.00.TC3E for Windows

Include this middleware component in your solution to deploy Informix Dynamic Server 10.00.TC3E Express to computers running Windows.

Application ID: IRU2_1_1IDSExpress10_00Win

Depending on your selection and configuration of other middleware components, you might need to provide values for some or all of the following fields:

Table 36. Exposed variables

Field	Explanation	Default value	Validation requirements
Installation Directory	<i>Required.</i> Where you want the Informix Dynamic Server installed.	C:\Program Files\IBM\Info	Must start with drive letter followed by a colon (:), backslash (\), and then at least one character.
Server Name	<i>Required.</i> A unique name for the Informix Dynamic Server.	ol_server	<ul style="list-style-type: none"> Length cannot exceed 128 characters. Cannot start with a numeric (0 - 9) character. Valid characters: A - Z, a - z, 0 - 9, hyphen (-), underscore (_), period (.)
Port Number	<i>Required.</i> The default port used by the Informix Dynamic Server.	1526	Numeric. Valid range is from 1 to 65535.
User ID	<i>Conditional.</i> The user ID to run IDS as a Windows service.	informix	Must be informix.
User Password	<i>Conditional.</i> The password for the user ID used to run IDS as a Windows service.		<ul style="list-style-type: none"> Length cannot exceed 14 characters Valid characters: at symbol (@), dollar sign (\$), number sign (#), underscore (_), a - z, A - Z, 0 - 9 Not required if Logon as Local System is set to true.
Install the International Language Supplement	Set to true to allow the installation of the International Language Supplement	No	Yes or No.
Overwrite previously installed Informix Dynamic Server	Set to true to allow the installation of IDS over an existing installation.	False	True or False.
Create Start menu shortcuts?	Set to yes to create an icon for the installed program.	Yes	Yes or No.

Note: A known issue exists that a message is displayed reporting that the onSNMP subagent for SNMP-based monitoring of the Informix Dynamic Server has not been installed because the SNMP service cannot be located when Informix Dynamic Server is deployed to a Windows computer that does not have the SNMP service installed. This message is displayed in the log, however the installation and manageability of the Informix Dynamic Server is not effected. For more information on this message, refer to the Informix Dynamic InfoCenter.

Console management extension for IBM HTTP Server for Linux

Use this wrapper to install the console's management extension for IBM HTTP Server on a target computer running the Linux operating system.

Application ID: IRU2_1_1IHSMgmtExt6_0Lnx

Depending on your selection and configuration, you might need to provide values for some or all of the following fields:

Field	Explanation	Default value	Validation requirements
Management Extension Target Directory	<i>Required.</i> The location that the management extension will be installed into if a management extension home directory has not already been installed. If a management extension has already been installed the existing directory is used.	/opt/IBM	<ul style="list-style-type: none"> • Must start with a forward slash (/) • Must not contain asterisk (*), question mark (?), quotation marks ("), semicolon (;), or pipe ().
HTTP Server Directory	<i>Required.</i> The location of the IBM HTTP Server	/opt/IBMIHS	<ul style="list-style-type: none"> • Must start with a forward slash (/) • Must not contain *?"; .
Console Agent Service Username	<i>Required.</i> The user name for the installation of Console Agent.		<ul style="list-style-type: none"> • Must be 1 - 20 characters • Must not contain * + , / : ; < = > ? [\]
Console Agent Service Password	<i>Required.</i> Password for the installation of Console Agent.		<ul style="list-style-type: none"> • Must be 1 - 14 characters • Can contain only lowercase a-z, integers 0-9, @ # \$ -
Console Agent Port	<i>Required.</i> The communication port to be used by Console Agent.	7044	Port number 1 - 65535
Console Agent Service install run level	<i>Required.</i> The run level for the Console Agent Service installation.	3, 5	A string containing integers 1 - 5 and commas.

Field	Explanation	Default value	Validation requirements
Overwrite previously installed management extensions	<i>Required.</i> Specify whether to enable reinstallation if the management extension is already installed on the target computer.	false	Boolean

Console management extension for IBM HTTP Server for Linux on IBM POWER

Use this wrapper to install the console's management extension for IBM HTTP Server on a target computer running Linux on IBM POWER.

Application ID: IRU2_1_1IHSMgmtExt6_0LnxOnPwr

Depending on your selection and configuration, you might need to provide values for some or all of the following fields:

Field	Explanation	Default value	Validation requirements
Management Extension Target Directory	<i>Required.</i> The location that the management extension will be installed into if a management extension home directory has not already been installed. If a management extension has already been installed the existing directory is used.	/opt/IBM	<ul style="list-style-type: none"> • Must start with a forward slash (/) • Must not contain *?"; .
HTTP Server Directory	<i>Required.</i> The location of the IBM HTTP Server	/opt/IBMIHS	<ul style="list-style-type: none"> • Must start with a forward slash (/) • Must not contain *?"; .
Console Agent Service Username	<i>Required.</i> The user name for the installation of Console Agent.		<ul style="list-style-type: none"> • Must be 1 - 20 characters • Must not contain * + , / : ; < = > ? [\]
Console Agent Service Password	<i>Required.</i> The password for the installation of Console Agent.		<ul style="list-style-type: none"> • Must be 1 - 14 characters • Can contain only lowercase a-z, integers 0-9, @ # \$ -

Field	Explanation	Default value	Validation requirements
Console Agent Port	<i>Required.</i> The communication port to be used by Console Agent.	7044	Port numbers 1 - 65535
Console Agent Service install run level	<i>Required.</i> The run level for the Console Agent Service installation.	3, 5	A string containing integers 1 - 5 and commas.
Overwrite flag	<i>Required.</i> Specify whether to enable re-installation if the management extension is already installed on the target computer.	false	Boolean

Console management extension for IBM HTTP Server for Windows

Use this wrapper to install the console's management extension for IBM HTTP Server on a target computer running the Windows operating system.

Application ID:IRU2_1_1IHSMgmtExt6_0Win

Depending on your selection and configuration, you might need to provide values for some or all of the following fields:

Field	Explanation	Default value	Validation requirements
Management Extension Target Directory	<i>Required.</i> The location that the management extension is installed into if a management extension home directory has not already been installed. If a management extension has already been installed the existing directory is used.	c:\Program Files\IBM	<ul style="list-style-type: none"> • Must start with a letter, colon (:), and backslash (\) • Must not contain asterisk (*), question mark (?), quotation marks ("), semicolon (;), or pipe ().
HTTP Server Directory	<i>Required.</i> The location of the IBM HTTP Server	c:\Program Files\IBM HTTP Server	<ul style="list-style-type: none"> • Must start with a letter, colon (:), and backslash (\) • Must not contain asterisk (*), question mark (?), quotation marks ("), semicolon (;), or pipe ().

Field	Explanation	Default value	Validation requirements
HTTP Configuration Directory	<i>Required.</i> The configuration directory for the instance of the IBM HTTP Server to be managed	C:\Program Files\IBM HTTP Server\conf /opt/IBMHTTPServer/conf	<ul style="list-style-type: none"> • Must start with a letter, colon (:), and backslash (\) • Must not contain asterisk (*), question mark (?), quotation marks ("), semicolon (;), or pipe ().
Management Extension host name	<i>Required.</i> The fully qualified host name of the server on which the management extension will run.	localhost	<ul style="list-style-type: none"> • Must not start or end with a hyphen (-) • Must not contain asterisk (*), question mark (?), quotation marks ("), semicolon (;), pipe (), or forward slash (/).
Console Agent Service Username	<i>Required.</i> The user name for the installation of Console Agent Service.	LocalSystem	<ul style="list-style-type: none"> • Must be 1 - 20 characters • Must not contain * + , / : ; < = > ? [\]
Console Agent Service Password	<i>Required.</i> The password for the installation of Console Agent.		<ul style="list-style-type: none"> • Must be 1 - 14 characters • Can contain only lowercase a-z, integers 0-9, @ # \$ -
Console Agent Port	<i>Required.</i> The communication port to be used by Console Agent.	7044	Port numbers 1 - 65535
Overwrite flag	<i>Required.</i> Specify whether to enable reinstallation if the management extension is already installed on the target computer.	false	Boolean

Console management extension for IBM i5/OS

Use this wrapper to install the Console agent or the console's management extension for IBM WebSphere Application Server - Express on a target computer running the IBM i5/OS operating system.

Application ID: IRU2_1_1ConsoleMgmtExtI5OS

Depending on your selection and configuration, you might need to provide values for some or all of the following fields:

Table 37. Exposed variables

Field	Explanation	Default value	Validation requirements
Overwrite previously installed management extension	Indicates whether the deployer performs re-installation in case the management extension is already installed on the target computer.	false	Boolean
WebSphere Username	<i>Optional.</i> The username required for administering WebSphere Application Server. Used for restarting WebSphere Application secure servers.		Valid WebSphere Application Server user name and password with access to administer secure servers.
WebSphere Password	<i>Optional.</i> The password required for administering WebSphere Application Server. Used for restarting WebSphere Application secure servers.		Valid WebSphere Application Server user name and password with access to administer secure servers.
Console agent port	The communication port to be used by the console agent. If the console agent is already installed, this value is ignored.	7044	Port number 1 - 65535
Install Console management extension for WebSphere Application Server - Express	Specify true to install the Console management extension for WebSphere Application Server along with the console agent. Specify false to bypass the management extension and only install the console agent.	false	Boolean

Console management extension for IBM WebSphere Application Server - Express for Linux

Use this wrapper to install the console's management extension for IBM WebSphere Application Server - Express on a target computer running the Linux operating system.

Application ID: IRU2_1WASExpressMgmtExt6_0Lnx

Depending on your selection and configuration, you might need to provide values for some or all of the following fields:

Field	Explanation	Default value	Validation requirements
WebSphere Management Extension Installation Location	<i>Required.</i> The fully qualified path name to the directory where you want to install the WebSphere Application Server - Express management extension. If the management extension is already installed, that directory will be used.	/opt/IBM	<ul style="list-style-type: none"> • Must start with a forward slash (/) • Must not contain !"\$&'();<>`\' *`
Target WebSphere Location	<i>Required.</i> The fully qualified path name to the directory of the WebSphere Application Server to be administered.	/opt/IBM/WebSphere/AppServer	<ul style="list-style-type: none"> • Must start with a forward slash (/) • Must not contain !"\$&'();<>`\' *`
WebSphere Username	<i>Optional.</i> The user name required for administering the WebSphere Application Server.		<ul style="list-style-type: none"> • Must be 1 - 20 characters • Must not contain / * + , ; ? < = > [\]
WebSphere Password	<i>Optional.</i> The password required for administering the WebSphere Application Server		<ul style="list-style-type: none"> • Must be no more than 14 characters • Can contain only lowercase characters a-z, numbers 0 to 9 @ # \$ and _
Console Agent Port	<i>Required.</i> The communication port to be used by Console Agent. If Console Agent is already installed, this value is ignored.	7044	Port number 1 - 65535
Overwrite previously installed management extension	Specify whether to enable reinstallation if the management extension is already installed on the target computer.	false	Boolean
Console Agent Runlevels	<i>Required.</i> The run level that Console Agent will run under.		A string containing integers 1 - 5 and commas.

Console management extension for IBM WebSphere Application Server - Express for Linux on IBM POWER

Use this wrapper to install the console's management extension for IBM WebSphere Application Server - Express on a target computer running Linux on IBM POWER.

Application ID: IRU2_1WASExpressMgmtExt6_0LnxOnPwr

Depending on your selection and configuration, you might need to provide values for some or all of the following fields:

Field	Explanation	Default value	Validation requirements
WebSphere Management Extension Installation Location	<i>Required.</i> The fully qualified path name to the directory where you want to install the WebSphere Application Server - Express management extension. If the management extension is already installed, that directory will be used.	/opt/IBM	<ul style="list-style-type: none"> • Must start with a forward slash (/) • Must not contain !"\$&'();<>\' *
Target WebSphere Location	<i>Required.</i> The fully qualified path name to the directory of the WebSphere Application Server to be administered.	/opt/IBM/WebSphere/AppServer	<ul style="list-style-type: none"> • Must start with a forward slash (/) • Must not contain !"\$&'();<>\' *
WebSphere Username	<i>Optional.</i> The user name required for administering the WebSphere Application Server.		<ul style="list-style-type: none"> • Must be 1 - 20 characters • Must not contain / * + , ; ? < = > [\]
WebSphere Password	<i>Optional.</i> The password required for administering the WebSphere Application Server		<ul style="list-style-type: none"> • Must be no more than 14 characters • Can contain only lowercase characters a-z, numbers 0 to 9 @ # \$ and _
Console Agent Port	<i>Required.</i> The communication port to be used by Console Agent. If Console Agent is already installed, this value is ignored.	7044	Port number 1 - 65535

Field	Explanation	Default value	Validation requirements
Overwrite previously installed management extension	Specify whether to enable reinstallation if the management extension is already installed on the target computer.	false	Boolean
Console Agent Runlevels	<i>Required.</i> The run level that Console Agent will run under.		A string containing integers 1 - 5 and commas.

Console management extension for IBM WebSphere Application Server - Express for Windows

Use this wrapper to install the console's management extension for IBM WebSphere Application Server - Express on a target computer running the Windows operating system.

Application ID: IRU2_1WASMgrtExt6_0Win

Depending on your selection and configuration, you might need to provide values for some or all of the following fields:

Field	Explanation	Default value	Validation requirements
WebSphere Management Extension Installation Location	<i>Required.</i> The fully qualified path name to the directory where you want to install the WebSphere Application Server - Express management extension. If the management extension is already installed, that directory will be used.	c:\Program Files\IBM	<ul style="list-style-type: none"> • Must start with a letter, colon (:), and backslash (\). • Must not contain forward slash (/), asterisk (*), question mark (?), quotation marks ("), pipe (), less than symbol (<), greater than symbol (>), or forward slash (/)
Target WebSphere Location	<i>Required.</i> The fully qualified path name to the directory of the WebSphere Application Server to be administered.	C:\Program Files\IBM\WebSphere\AppServer	<ul style="list-style-type: none"> • Must start with a letter, colon (:), and forward slash (\). • Must not contain / * ? " < > \ \
WebSphere Username	The user name required for administering the WebSphere Application Server.		<ul style="list-style-type: none"> • Must be 1 - 20 characters • Must not contain / * + ; ; ? " < = > [\]

Field	Explanation	Default value	Validation requirements
WebSphere Password	The password required for administering the WebSphere Application Server		<ul style="list-style-type: none"> • Must be no more than 14 characters • Can contain only lowercase characters a-z, numbers 0 to 9, @, #, \$, and _
Console Agent Service Username	<i>Required.</i> The user name for the installation of Console Agent Service. If the Console Agent is already installed, this value is ignored.	"LocalSystem"	<ul style="list-style-type: none"> • Must be 1 - 20 characters • Must not contain / * + : ; ? " < = > [\]
Console Agent Service Password	<i>Conditional.</i> Password for the installation of Console Agent Service. If the Console Agent Service user name is <i>LocalSystem</i> , this password is not required. If Console Agent is already installed, this value is ignored.		<ul style="list-style-type: none"> • Must be no more than 14 characters • Can contain only lowercase characters a-z, numbers 0 to 9, @, #, \$, and _
Console Agent Port	<i>Required.</i> The communication port to be used by Console Agent. If Console Agent is already installed, this value is ignored.	7044	Port number 1 - 65535
Enable Reinstall	Specify whether to enable reinstallation if the management extension is already installed on the target computer.	false	Boolean

Console management extension for Informix Dynamic Server Express for Linux

Use this wrapper to install the console's management extension for Informix Dynamic Server Express on a target computer running the Linux™ operating system.

Application ID: IRU2_1_1IDSMgmtExt10_00Lnx

Depending on your selection and configuration of other middleware components, you might need to provide values for some or all of the following fields:

Table 38. Exposed variables

Field	Explanation	Default value	Validation requirements
Target installation directory for Informix Dynamic Server Express management extensions	<i>Required.</i> Where you want the Informix Dynamic Server Express management extension installed.	/opt/IBM	Must start with forward slash (/).
Informix Dynamic Server Express installation location	<i>Required.</i> Where you want the Informix Dynamic Server Express installed.	/opt/IBM/informix	Must start with forward slash (/).
Server Name	<i>Required.</i> A unique name for the Informix Dynamic Server Express.	demo_on	<ul style="list-style-type: none"> Length cannot exceed 128 characters. Cannot start with a numeric (0 - 9) character. Valid characters: A - Z, a - z, 0 - 9, hyphen (-), underscore (_), period (.)
Overwrite previously installed Informix Dynamic Server Express management extension	Set to true to allow the installation of the Informix Dynamic Server Express management extension over an existing installation.	False	Boolean
Console Agent Port	<i>Required.</i> The communication port to be used by Console Agent.	7044	Port numbers 1 - 65535
Console Agent Runlevels	<i>Required.</i> The run level that Console Agent will run under.		A string containing integers 1 - 5 and commas.

Console management extension for Informix Dynamic Server Express for Windows

Use this wrapper to install the console's management extension for Informix Dynamic Server on a target computer running the Windows® operating system.

Application ID: IRU2_1_1IDSMgmtExt10_00Win

Depending on your selection and configuration of other middleware components, you might need to provide values for some or all of the following fields:

Table 39. Exposed variables

Field	Explanation	Default value	Validation requirements
Target installation directory for Informix Dynamic Server Express management extensions	<i>Required.</i> Where you want the Informix Dynamic Server Express management extension installed.	C:\Program Files\IBM	Must start with drive letter followed by a colon (:), backslash (\), and then at least one character.
Informix Dynamic Server Express installation location	<i>Required.</i> Where you want the Informix Dynamic Server Express installed.	C:\Program Files\IBM\Info	Must start with drive letter followed by a colon (:), backslash (\), and then at least one character.
Server Name	<i>Required.</i> A unique name for the Informix Dynamic Server Express.	ol_server	<ul style="list-style-type: none"> Length cannot exceed 128 characters. Cannot start with a numeric (0 - 9) character. Valid characters: A - Z, a - z, 0 - 9, hyphen (-), underscore (_), period (.)
Overwrite previously installed Informix Dynamic Server Express management extension	Set to true to allow the installation of the Informix Dynamic Server Express management extension over an existing installation.	False	Boolean
Console Agent Service Username	<i>Required.</i> The user name for the installation of Console Agent Service.	localhost	<ul style="list-style-type: none"> Must be 1 - 20 characters Must not contain * + , / ; < = > ? [\]
Console Agent Service Password	<i>Required.</i> The password for the installation of Console Agent.		<ul style="list-style-type: none"> Must be 1 - 14 characters Can contain only lowercase a-z, integers 0-9, @ # \$ _
Console Agent Port	<i>Required.</i> The communication port to be used by Console Agent.	7044	Port numbers 1 - 65535

Application Development Toolkit for IBM DB2 Universal Database Express Edition Version 8.2 with Fix Pack 3 for Linux

Use this wrapper to install the Application Development Toolkit for IBM DB2 Universal Database Express Edition Version 8.2 with Fix Pack 3 on a target computer running Linux.

Application ID: IRU2_1_1DB2ExpressDev8_2Lnx

Depending on your selection and configuration, you might need to provide values for some or all of the following fields:

Table 40. Exposed variables

Field	Explanation	Default value	Validation
DB2 administrator user name	<i>Required.</i> The administrator user name is used to connect to DB2.	db2admin	<ul style="list-style-type: none"> Valid characters: at sign (@), dollar sign (\$), number sign (#), forward slash (/), hyphen (-), underscore (_), period (.), A - Z, a - z, 0 - 9 Length cannot exceed 128 characters Invalid prefix: IBM, SQL, SYS, numeric characters, underscore (_). Invalid values: ADMINS, GUESTS, USERS, PUBLIC, LOCAL, SELECT, DROP, INSERT, WHERE
DB2 administrator password	<i>Required.</i> The password for the administrator. It is used to connect to DB2.		<ul style="list-style-type: none"> Must be between 6 and 8 characters in length. Valid characters: at sign (@), dollar sign (\$), number sign (#), underscore (_), a - z, 0 - 9
DB2 administrator group name	<i>Required.</i> The primary group to which the administrator belongs.	db2admin	<ul style="list-style-type: none"> Valid characters: forward slash (/), hyphen (-), underscore (_), period (.), at symbol (@), dollar sign (\$), number sign (#), a - z, 0 - 9 Invalid prefix: numeric characters, period (.), or hyphen (-) Length cannot exceed 128 characters

Table 40. Exposed variables (continued)

Field	Explanation	Default value	Validation
DB2 administrator home directory	<i>Required.</i> The home directory of the DB2 administrator.	/home/db2admin	<ul style="list-style-type: none"> Valid characters: forward slash (/), hyphen (-), underscore (_), period (.), a - z, 0 - 9 Length cannot exceed 64 characters
DB2 instance owner user name	<i>Required.</i> This instance owner user name is used to work with the DB2 instance.	db2inst	<ul style="list-style-type: none"> Valid characters: forward slash (/), hyphen (-), underscore (_), period (.), at sign (@), dollar sign (\$), number sign (#), a - z, 0 - 9 Invalid prefix: IBM, SQL, SYS, numeric characters, comma (,), or underscore (_) Invalid values: ADMINS, GUESTS, USERS, PUBLIC, LOCAL, SELECT, DROP, INSERT, WHERE Length cannot exceed 128 characters
DB2 instance owner password	<i>Required.</i> The password for the instance owner used to work with the DB2 instance.		<ul style="list-style-type: none"> Must be between 6 and 18 characters. Valid characters: at sign (@), dollar sign (\$), number sign (#), underscore (_), a - z, 0 - 9
DB2 instance owner group name	<i>Required.</i> The primary group to which the instance owner belongs.	db2inst	<ul style="list-style-type: none"> Valid characters: hyphen (-), underscore (_), period (.), at sign (@), dollar sign (\$), number sign (#), a - z, 0 - 9 Cannot begin with numeric characters, hyphen (-), period (.), or comma (,) Length may not exceed 128 characters

Table 40. Exposed variables (continued)

Field	Explanation	Default value	Validation
DB2 instance owner home directory	<i>Required.</i> The DB2 instance owner's home directory.	/home/db2inst	<ul style="list-style-type: none"> Valid characters: hyphen (-), underscore (_), period (.), a - z, 0 - 9 Length may not exceed 64 characters
DB2 fenced user name	<p><i>Conditional.</i> The fenced user can run fenced user-defined functions and stored procedures.</p> <p>Note: If you enter a value in any of the fenced user fields, you must include values for all of the fenced user fields.</p>		<ul style="list-style-type: none"> Valid characters: forward slash (/), hyphen (-), underscore (_), period (.), at sign (@), number sign (#), dollar sign (\$), a - z, 0 - 9 Invalid prefix: IBM, SQL, SYS, numeric characters, underscore (_), or period (.) Invalid values: ADMINS, GUESTS, USERS, PUBLIC, LOCAL, SELECT, DROP, INSERT, WHERE Length may not exceed 128 characters If fenced user name is not specified, the instance user is used as the fenced user. If any of the fenced parameter fields are specified, all fields must be specified.

Table 40. Exposed variables (continued)

Field	Explanation	Default value	Validation
DB2 fenced user password	<p><i>Conditional.</i> The password for the fenced user used to isolate fenced user-defined functions and stored procedures.</p> <p>Note: If you enter a value in any of the fenced user fields, you must include values for all of the fenced user fields.</p>		<ul style="list-style-type: none"> Length may not exceed 14 characters. Valid characters: at sign (@), dollar sign (\$), number sign (#), underscore (_), a - z, 0 - 9 If any of the fenced parameter fields are specified, all fields must be specified.
DB2 fenced user group name	<p><i>Conditional.</i> The primary group to which the fenced user belongs.</p> <p>Note: If you enter a value in any of the fenced user fields, you must include values for all of the fenced user fields.</p>	db2inst	<ul style="list-style-type: none"> Valid characters: hyphen (-), underscore (_), period (.), at symbol (@), dollar sign (\$), number sign (#), a - z, 0 - 9 Cannot begin with a numeric character, or an underscore (_) Length may not exceed 128 characters If any of the fenced parameter fields are specified, all fields must be specified.
DB2 fenced user home directory	<p><i>Conditional.</i> The fenced user's home directory.</p> <p>Note: If you enter a value in any of the fenced user fields, you must include values for all of the fenced user fields.</p>	/home/db2inst	<ul style="list-style-type: none"> Valid characters: hyphen (-), underscore (_), period (.), a - z, 0 - 9 Length may not exceed 128 characters If any of the fenced parameter fields are specified, all fields must be specified.
Create DB2 Administrator Contact	Set to true if you want DB2 Health Monitor Notification to be sent as an email or page to an administrator	True	

Table 40. Exposed variables (continued)

Field	Explanation	Default value	Validation
DB2 instance contact user name	<i>Required.</i> The name of the DB2 instance user to receive e-mail notifications regarding the DB2 instance.	db2admin	<ul style="list-style-type: none"> Valid characters: forward slash (/), hyphen (-), underscore (_), period (.), a - z, 0 - 9, at sign (@), number sign (#), dollar sign (\$) Invalid prefix: IBM, SQL, SYS, numeric characters, or underscore (_) Invalid values: ADMINS, GUESTS, USERS, PUBLIC, LOCAL, SELECT, DROP, INSERT, WHERE Length may not exceed 128 characters If any of the contact parameter fields are specified, all fields must be specified.
DB2 instance contact email address	<i>Required.</i> The e-mail address of the user to receive e-mail notifications regarding the DB2 instance. Note: If the DB2 instance contact name is specified, this field must have a value.		<ul style="list-style-type: none"> Valid characters: hyphen (-), underscore (_), period (.), at sign (@), a - z, 0 - 9 Invalid prefix: numeric characters, hyphen (-), at sign (@), or period (.) Length may not exceed 128 characters If any of the contact parameter fields are specified, all fields must be specified.
DB2 instance administrative contact email address is for pager	Set to true if you want the text of the e-mail notifications to be formatted for a pager.	False	

Table 40. Exposed variables (continued)

Field	Explanation	Default value	Validation
Include Brazilian Portuguese	Set to true to include language support for Brazilian Portuguese in addition to other languages specified. English language support is always installed.	False	
Include Simplified Chinese	Set to true to include language support for Simplified Chinese in addition to other languages specified. English language support is always installed.	False	
Include German	Set to true to include language support for German in addition to other languages specified. English language support is always installed.	False	
Include French	Set to true to include language support for French in addition to other languages specified. English language support is always installed.	False	
Include Spanish	Set to true to include language support for Spanish in addition to other languages specified. English language support is always installed.	False	
Include Italian	Set to true to include language support for Italian in addition to other languages specified. English language support is always installed.	False	
Include Japanese	Set to true to include language support for Japanese in addition to other languages specified. English language support is always installed.	False	

Table 40. Exposed variables (continued)

Field	Explanation	Default value	Validation
Include Korean	Set to true to include language support for Korean in addition to other languages specified. English language support is always installed.	False	
Include Traditional Chinese	Set to true to include language support for Traditional Chinese in addition to other languages specified. English language support is always installed.	False	
Include Polish	Set to true to include language support for Polish in addition to other languages specified. English language support is always installed.	False	
Include Russian	Set to true to include language support for Russian in addition to other languages specified. English language support is always installed.	False	
Include Czechoslovakian	Set to true to include language support for Czechoslovakian in addition to other languages specified. English language support is always installed.	False	
Add new function to current installed version	Set to true to ignore the product version checking. This enables new features to be installed after the initial installation of the product.	False	
Stop DB2 processes if required	Set to true to stop any existing DB2 processes during installation. This is required when upgrading from a previous version of DB2.	False	

Table 40. Exposed variables (continued)

Field	Explanation	Default value	Validation
DB2 service name	<i>Required.</i> The DB2 service name as registered in the services file for TCP/IP.	db2cdb2inst1	<ul style="list-style-type: none"> Valid characters: hyphen (-), underscore (_), period (.), at sign (@), number sign (#), dollar sign (\$), a - z, 0 - 9 Invalid prefix: numeric characters, hyphen (-), period (.) or at sign (@) Length may not exceed 14 characters.
DB2 service port number	<i>Required.</i> The DB2 service port as registered in the services file for TCP/IP.	50001	Valid range is from 1024 to 65535
Autostart DB2 Service	Set to true to automatically start the DB2 instance at system startup.	True	
Instance Authentication on Client	Set to true to specify that communication authentication occurs on the database partition where the application is invoked instead of on the server.	False	Note: Authentication defaults to SERVER.
Catalog DB2 Tools	Set to true to include this catalog that enables you to use DB2 tools such as the Task Center and scheduler.	False	If this option is selected, it sets the following as defaults: TOOLS_CATALOG_DATABASE=toolsDB TOOLS_CATALOG_DATABASE_NAME=TOOLSDB TOOLS_CATALOG_LOCATION=Local TOOLS_CATALOG_INSTANCE=db2inst1
DB2 Tools Catalog Database Name	<i>Conditional.</i> DB2 Database Name to hold the DB2 metadata. Note: If any of the tools catalog parameter fields are specified, all fields must be specified.	TOOLSDB	<ul style="list-style-type: none"> Valid characters: forward slash (/), hyphen (-), underscore (_), period (.), a - z, 0 - 9 Length may not exceed 8 characters If any of the tools catalog parameter fields are specified, all fields must be specified.

Table 40. Exposed variables (continued)

Field	Explanation	Default value	Validation
DB2 Tools Catalog Schema Name	<i>Conditional.</i> DB2 Database schema used to hold the DB2 metadata. Note: If any of the tools catalog parameter fields are specified, all fields must be specified.	SYSTOOLS	<ul style="list-style-type: none"> Valid characters: forward slash (/), hyphen (-), underscore (_), period (.), a - z, 0 - 9 o Length may not exceed 8 characters If any of the tools catalog parameter fields are specified, all fields must be specified.
DB2 Tools catalog Instance Name	<i>Conditional.</i> DB2 Instance Name to contain the catalog. Note: If any of the tools catalog parameter fields are specified, all fields must be specified.	db2inst	<ul style="list-style-type: none"> Valid characters: forward slash (/), hyphen (-), underscore (_), period (.), a - z, 0 - 9 o Length may not exceed 8 characters If any of the tools catalog parameter fields are specified, all fields must be specified.
DB2 Data Source Support	Set to true to include the federated support required to access DB2 for iSeries and DB2 for z/OS® and OS/390® data sources.	True	
Informix Data Source Support	Set to true to enable users and applications to submit distributed requests for data managed by Informix systems.	False	
Informix Server Hostname	<i>Conditional.</i> Informix Server name to use as a datasources.		<ul style="list-style-type: none"> Valid characters: forward slash (/), hyphen (-), underscore (_), period (.), a - z, 0 - 9 o Length may not exceed 1023 characters If Informix Data Support is true, all Informix fields must be specified.

Table 40. Exposed variables (continued)

Field	Explanation	Default value	Validation
Informix Install Directory	<i>Conditional.</i> Informix client installation directory. Note: If Informix Data Support is true, all Informix fields must be specified.		<ul style="list-style-type: none"> Valid characters: forward slash (/), hyphen (-), underscore (_), period (.), a - z, 0 - 9 o Length may not exceed 1023 characters If Informix Data Support is true, all Informix fields must be specified.
Client Support for LDAP	Set to true to to include LDAP exploitation that allows DB2 to use an LDAP directory to store database directory and configuration information.	True	
Client Support for Spatial Extenders	Set to true to include client support components required for communicating with Spatial Extender Servers.	False	
Client Support for XML Extenders	Set to true to include new data types, functions, and stored procedures to assist in working with XML data in DB2 databases.	True	This component is not provided with the typical default selection in UDB DB2 Express Version 8.2, but it was delivered with Integrated Runtime version 1.1 in the UDB DB2 Express Version 8.1.
Control Center	Set to true to include this Java-based tool that provides a central administration point for DB2.	True	
DB2 Instance Setup Wizard	Set to true to include this java-based tool that you can use to set up instances on your computer after installing DB2.	True	

Table 40. Exposed variables (continued)

Field	Explanation	Default value	Validation
DB2 Web Tools	Set to true to include these tools that allow you to run the Command Center and Health Center as web server applications providing DB2 server access through a web browser.	True	
SMTP Server Name	<i>Optional.</i> The SMTP server that will be used to send email notifications		<ul style="list-style-type: none"> Valid characters: at sign (@), number sign (#), dollare sign (\$), underscore (_), a - z, 0 - 9 Length may not exceed 64 characters
Data Warehouse tools	Set to true to include these tools that help you work with and manage a data warehouse.	False	
First Steps	Set to true to include the First Steps launchpad.	True	
Information Catalog Center	Set to true to include this graphical tool that is used to manage a catalog of your business data.	False	
Information Catalog Center for the Web	Set to true to include the Information Catalog Center for the Web which allows you to access information catalogs and view data through a Web browser.	False	
Information Catalog Manager Samples	Set to true to include the Samples that are used with the Information Catalog Center Tutorial	True	
Sample Applications	Set to true to include sample programs for supported languages on all DB2-supported platforms.	True	

Table 40. Exposed variables (continued)

Field	Explanation	Default value	Validation
Sample Database	Set to true to include source code to create DB2 sample databases.	True	
Warehouse Samples	Set to true to include samples that can be used to integrate applications with the Data Warehouse Center	True	
Java Development Kit	Set to true to include the IBM Enhanced Java Development Kit	True	
SQLJ Application Development Tools	Set to true to include these tools that allow you to build Java samples that contain embedded SQL (SQLJ) using the JDBC driver.	True	
SQLJ Samples	Set to true to include Java samples that contain embedded SQLJ (SQLJ) and are used with the JDBC driver	True	
XML Extender Samples	Set to true to include sample programs that you can use to learn about XML Extender technology	True	
Base Application Development Tools	Set to true to include tools and files (including header files, libraries, and a precompiler) that are needed for developing applications that work with DB2.	True	
Development Center	Set to true to include this Java-based tool for developing, building, and testing stored procedures.	True	
Warehouse Sample Database Source	Set to true to include sample data and metadata that you can use to create a sample database warehouse using the First Steps application.	True	

Table 40. Exposed variables (continued)

Field	Explanation	Default value	Validation
Spatial Extender Samples	Set to true to include examples for using Spatial Extender features.	True	

Application Development Toolkit for IBM DB2 Universal Database Express Edition Version 8.2 with Fix Pack 3 for Linux on IBM POWER

Use this wrapper to install the Application Development Toolkit for IBM DB2 Universal Database Express Edition Version 8.2 with Fix Pack 3 on a target computer running Linux on IBM POWER.

Application ID: IRU2_1_1DB2ExpressDev8_2LnxOnPwr

Depending on your selection and configuration, you might need to provide values for some or all of the following fields:

Table 41. Exposed variables

Field	Explanation	Default value	Validation
DB2 administrator user name	<i>Required.</i> The administrator user name is used to connect to DB2.	db2admin	<ul style="list-style-type: none"> Valid characters: at sign (@), dollar sign (\$), number sign (#), forward slash (/), hyphen (-), underscore (_), period (.), A - Z, a - z, 0 - 9 Length cannot exceed 128 characters Invalid prefix: IBM, SQL, SYS, numeric characters, underscore (_). Invalid values: ADMINS, GUESTS, USERS, PUBLIC, LOCAL, SELECT, DROP, INSERT, WHERE
DB2 administrator password	<i>Required.</i> The password for the administrator. It is used to connect to DB2.		<ul style="list-style-type: none"> Must be between 6 and 8 characters in length. Valid characters: at sign (@), dollar sign (\$), number sign (#), underscore (_), a - z, 0 - 9

Table 41. Exposed variables (continued)

Field	Explanation	Default value	Validation
DB2 administrator group name	<i>Required.</i> The primary group to which the administrator belongs.	db2admin	<ul style="list-style-type: none"> Valid characters: forward slash (/), hyphen (-), underscore (_), period (.), at symbol (@), dollar sign (\$), number sign (#), a - z, 0 - 9 Invalid prefix: numeric characters, period (.), or hyphen (-) Length cannot exceed 128 characters
DB2 administrator home directory	<i>Required.</i> The home directory of the DB2 administrator.	/home/db2admin	<ul style="list-style-type: none"> Valid characters: forward slash (/), hyphen (-), underscore (_), period (.), a - z, 0 - 9 Length cannot exceed 64 characters
DB2 instance owner user name	<i>Required.</i> This instance owner user name is used to work with the DB2 instance.	db2inst	<ul style="list-style-type: none"> Valid characters: forward slash (/), hyphen (-), underscore (_), period (.), at sign (@), dollar sign (\$), number sign (#), a - z, 0 - 9 Invalid prefix: IBM, SQL, SYS, numeric characters, comma (,), or underscore (_) Invalid values: ADMINS, GUESTS, USERS, PUBLIC, LOCAL, SELECT, DROP, INSERT, WHERE Length cannot exceed 128 characters

Table 41. Exposed variables (continued)

Field	Explanation	Default value	Validation
DB2 instance owner password	<i>Required.</i> The password for the instance owner used to work with the DB2 instance.		<ul style="list-style-type: none"> • Must be between 6 and 18 characters. • Valid characters: at sign (@), dollar sign (\$), number sign (#), underscore (_), a - z, 0 - 9
DB2 instance owner group name	<i>Required.</i> The primary group to which the instance owner belongs.	db2inst	<ul style="list-style-type: none"> • Valid characters: hyphen (-), underscore (_), period (.), at sign (@), dollar sign (\$), number sign (#), a - z, 0 - 9 • Cannot begin with numeric characters, hyphen (-), period (.), or comma (,) • Length may not exceed 128 characters
DB2 instance owner home directory	<i>Required.</i> The DB2 instance owner's home directory.	/home/db2inst	<ul style="list-style-type: none"> • Valid characters: hyphen (-), underscore (_), period (.), a - z, 0 - 9 • Length may not exceed 64 characters

Table 41. Exposed variables (continued)

Field	Explanation	Default value	Validation
DB2 fenced user name	<p><i>Conditional.</i> The fenced user can run fenced user-defined functions and stored procedures.</p> <p>Note: If you enter a value in any of the fenced user fields, you must include values for all of the fenced user fields.</p>		<ul style="list-style-type: none"> Valid characters: forward slash (/), hyphen (-), underscore (_), period (.), at sign (@), number sign (#), dollar sign (\$), a - z, 0 - 9 Invalid prefix: IBM, SQL, SYS, numeric characters, underscore (_), or period (.) Invalid values: ADMIN, GUESTS, USERS, PUBLIC, LOCAL, SELECT, DROP, INSERT, WHERE Length may not exceed 128 characters If fenced user name is not specified, the instance user is used as the fenced user. If any of the fenced parameter fields are specified, all fields must be specified.
DB2 fenced user password	<p><i>Conditional.</i> The password for the fenced user used to isolate fenced user-defined functions and stored procedures.</p> <p>Note: If you enter a value in any of the fenced user fields, you must include values for all of the fenced user fields.</p>		<ul style="list-style-type: none"> Length may not exceed 14 characters. Valid characters: at sign (@), dollar sign (\$), number sign (#), underscore (_), a - z, 0 - 9 If any of the fenced parameter fields are specified, all fields must be specified.

Table 41. Exposed variables (continued)

Field	Explanation	Default value	Validation
DB2 fenced user group name	<p><i>Conditional.</i> The primary group to which the fenced user belongs.</p> <p>Note: If you enter a value in any of the fenced user fields, you must include values for all of the fenced user fields.</p>	db2inst	<ul style="list-style-type: none"> Valid characters: hyphen (-), underscore (_), period (.), at symbol (@), dollar sign (\$), number sign (#), a - z, 0 - 9 Cannot begin with a numeric character, or an underscore (_) Length may not exceed 128 characters If any of the fenced parameter fields are specified, all fields must be specified.
DB2 fenced user home directory	<p><i>Conditional.</i> The fenced user's home directory.</p> <p>Note: If you enter a value in any of the fenced user fields, you must include values for all of the fenced user fields.</p>	/home/db2inst	<ul style="list-style-type: none"> Valid characters: hyphen (-), underscore (_), period (.), a - z, 0 - 9 Length may not exceed 128 characters If any of the fenced parameter fields are specified, all fields must be specified.
Create DB2 Administrator Contact	Set to true if you want DB2 Health Monitor Notification to be sent as an email or page to an administrator	True	

Table 41. Exposed variables (continued)

Field	Explanation	Default value	Validation
DB2 instance contact user name	<i>Required.</i> The name of the DB2 instance user to receive e-mail notifications regarding the DB2 instance.	db2admin	<ul style="list-style-type: none"> Valid characters: forward slash (/), hyphen (-), underscore (_), period (.), a - z, 0 - 9, at sign (@), number sign (#), dollar sign (\$) Invalid prefix: IBM, SQL, SYS, numeric characters, or underscore (_) Invalid values: ADMINS, GUESTS, USERS, PUBLIC, LOCAL, SELECT, DROP, INSERT, WHERE Length may not exceed 128 characters If any of the contact parameter fields are specified, all fields must be specified.
DB2 instance contact email address	<i>Required.</i> The e-mail address of the user to receive e-mail notifications regarding the DB2 instance. Note: If the DB2 instance contact name is specified, this field must have a value.		<ul style="list-style-type: none"> Valid characters: hyphen (-), underscore (_), period (.), at sign (@), a - z, 0 - 9 Invalid prefix: numeric characters, hyphen (-), at sign (@), or period (.) Length may not exceed 128 characters If any of the contact parameter fields are specified, all fields must be specified.
DB2 instance administrative contact email address is for pager	Set to true if you want the text of the e-mail notifications to be formatted for a pager.	False	

Table 41. Exposed variables (continued)

Field	Explanation	Default value	Validation
Include Brazilian Portuguese	Set to true to include language support for Brazilian Portuguese in addition to other languages specified. English language support is always installed.	False	
Include Simplified Chinese	Set to true to include language support for Simplified Chinese in addition to other languages specified. English language support is always installed.	False	
Include German	Set to true to include language support for German in addition to other languages specified. English language support is always installed.	False	
Include French	Set to true to include language support for French in addition to other languages specified. English language support is always installed.	False	
Include Spanish	Set to true to include language support for Spanish in addition to other languages specified. English language support is always installed.	False	
Include Italian	Set to true to include language support for Italian in addition to other languages specified. English language support is always installed.	False	
Include Japanese	Set to true to include language support for Japanese in addition to other languages specified. English language support is always installed.	False	

Table 41. Exposed variables (continued)

Field	Explanation	Default value	Validation
Include Korean	Set to true to include language support for Korean in addition to other languages specified. English language support is always installed.	False	
Include Traditional Chinese	Set to true to include language support for Traditional Chinese in addition to other languages specified. English language support is always installed.	False	
Include Polish	Set to true to include language support for Polish in addition to other languages specified. English language support is always installed.	False	
Include Russian	Set to true to include language support for Russian in addition to other languages specified. English language support is always installed.	False	
Include Czechoslovakian	Set to true to include language support for Czechoslovakian in addition to other languages specified. English language support is always installed.	False	
Add new function to current installed version	Set to true to ignore the product version checking. This enables new features to be installed after the initial installation of the product.	False	
Stop DB2 processes if required	Set to true to stop any existing DB2 processes during installation. This is required when upgrading from a previous version of DB2.	False	

Table 41. Exposed variables (continued)

Field	Explanation	Default value	Validation
DB2 service name	<i>Required.</i> The DB2 service name as registered in the services file for TCP/IP.	db2cdb2inst1	<ul style="list-style-type: none"> Valid characters: hyphen (-), underscore (_), period (.), at sign (@), number sign (#), dollare sign (\$), a - z, 0 - 9 Invalid prefix: numeric characters, hypen (-), period (.) or at sign (@) Length may not exceed 14 characters.
DB2 service port number	<i>Required.</i> The DB2 service port as registered in the services file for TCP/IP.	50001	Valid range is from 1024 to 65535
Autostart DB2 Service	Set tot true to automatically start the DB2 instance at system startup.	True	
Instance Authentication on Client	Set to true to specify that communication authentication occurs on the database partition where the application is invoked instead of on the server.	False	Note: Authentication defaults to SERVER.
Catalog DB2 Tools	Set to true to include this catalog that enables you to use DB2 tools such as the Task Center and scheduler.	False	If this option is selected, it sets the following as defaults: TOOLS_CATALOG_DATABASE=toolsDB TOOLS_CATALOG_DATABASE_NAME=toolsDB toolsDB.DATABASE_NAME=TOOLSDB toolsDB.LOCATION=Local toolsDB.INSTANCE=db2inst1
DB2 Tools Catalog Database Name	<i>Conditional.</i> DB2 Database Name to hold the DB2 metadata. Note: If any of the tools catalog parameter fields are specified, all fields must be specified.	TOOLSDB	<ul style="list-style-type: none"> Valid characters: forward slash (/), hyphen (-), underscore (_), period (.), a - z, 0 - 9 o Length may not exceed 8 characters If any of the tools catalog parameter fields are specified, all fields must be specified.

Table 41. Exposed variables (continued)

Field	Explanation	Default value	Validation
DB2 Tools Catalog Schema Name	<i>Conditional.</i> DB2 Database schema used to hold the DB2 metadata. Note: If any of the tools catalog parameter fields are specified, all fields must be specified.	SYSTOOLS	<ul style="list-style-type: none"> Valid characters: forward slash (/), hyphen (-), underscore (_), period (.), a - z, 0 - 9 o Length may not exceed 8 characters If any of the tools catalog parameter fields are specified, all fields must be specified.
DB2 Tools catalog Instance Name	<i>Conditional.</i> DB2 Instance Name to contain the catalog. Note: If any of the tools catalog parameter fields are specified, all fields must be specified.	db2inst	<ul style="list-style-type: none"> Valid characters: forward slash (/), hyphen (-), underscore (_), period (.), a - z, 0 - 9 o Length may not exceed 8 characters If any of the tools catalog parameter fields are specified, all fields must be specified.
DB2 Data Source Support	Set to true to include the federated support required to access DB2 for iSeries and DB2 for z/OS and OS/390 data sources.	True	
Control Center	Set to true to include this Java-based tool that provides a central administration point for DB2.	True	
DB2 Instance Setup Wizard	Set to true to include this java-based tool that you can use to set up instances on your computer after installing DB2.	True	
DB2 Web Tools	Set to true to include these tools that allow you to run the Command Center and Health Center as web server applications providing DB2 server access through a web browser.	True	

Table 41. Exposed variables (continued)

Field	Explanation	Default value	Validation
SMTP Server Name	<i>Optional.</i> The SMTP server that will be used to send email notifications		<ul style="list-style-type: none"> Valid characters: at sign (@), number sign (#), dollar sign (\$), underscore (_), a - z, 0 - 9 Length may not exceed 64 characters
First Steps	Set to true to include the First Steps launch pad.	True	
Information Catalog Manager Samples	Set to true to include the Samples that are used with the Information Catalog Center Tutorial	True	
Sample Applications	Set to true to include sample programs for supported languages on all DB2-supported platforms.	True	
Sample Database	Set to true to include source code to create DB2 sample databases.	True	
Warehouse Samples	Set to true to include samples that can be used to integrate applications with the Data Warehouse Center	True	
Java Development Kit	Set to true to include the IBM Enhanced Java Development Kit	True	
SQLJ Application Development Tools	Set to true to include these tools that allow you to build Java samples that contain embedded SQL (SQLJ) using the JDBC driver.	True	
SQLJ Samples	Set to true to include Java samples that contain embedded SQLJ (SQLJ) and are used with the JDBC driver	True	

Table 41. Exposed variables (continued)

Field	Explanation	Default value	Validation
XML Extender Samples	Set to true to include sample programs that you can use to learn about XML Extender technology	True	
Base Application Development Tools	Set to true to include tools and files (including header files, libraries, and a precompiler) that are needed for developing applications that work with DB2.	True	
Development Center	Set to true to include this Java-based tool for developing, building, and testing stored procedures.	True	
Warehouse Sample Database Source	Set to true to include sample data and metadata that you can use to create a sample database warehouse using the First Steps application.	True	
Spatial Extender Samples	Set to true to include examples for using Spatial Extender features.	True	

Application Development Toolkit for IBM DB2 Universal Database Express Edition Version 8.2 with Fix Pack 3 for Windows

Use this wrapper to install the Application Development Toolkit for IBM DB2 Universal Database Express Edition Version 8.2 with Fix Pack 3 on a target computer running Windows.

Application ID: IRU2_1_1DB2ExpressDev8_2Win

Depending on your selection and configuration, you might need to provide values for some or all of the following fields:

Table 42. Exposed variables

Field	Explanation	Default value	Validation requirements
Target Directory	<i>Required.</i> The directory where you want the application files installed.	c:\Program Files\IBM\SQLLIB	<ul style="list-style-type: none"> • Must start with an alphabetic character and colon (:), backslash (\) • Invalid characters: asterisk (*), question mark (?), quotation marks ("), semicolon (;), pipe character (), tilde (~), less than symbol (<), greater than symbol (>)
DB2 Instance User Id	<i>Required.</i> The user ID used to connect to the DB2 instance.		<ul style="list-style-type: none"> • Can contain lowercase a-z, integers 0-9, at sign (@), number sign (#), dollar sign (\$), underscore (_) • Must not start with IBM, SQL, SYS, numbers, _. • Must not end with dollar sign (\$) • Must not be ADMINS, GUESTS, USERS, PUBLIC, LOCAL, or SQL reserve words.
DB2 Instance Password	<i>Required.</i> The password to be used for the DB2 Instance user.		Must be between 6 and 127 characters
DB2 Instance User Domain	<i>Optional.</i> The Windows domain to which this server belongs.		<ul style="list-style-type: none"> • Must not be more than 14 characters • Can contain lowercase a-z, integers 0-9, hyphen (-) • Must not start with a hyphen (-)
Administration contact name	<i>Conditional.</i> The name of the contact for health monitor notifications. Note: This field is required if the Administration contact email address has a value.		If Administration Contact email address has a value, then this must have a value.

Table 42. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
Administration contact email address	<i>Conditional.</i> The email address used for the contact for health monitor notifications. Note: This field is required if the Administration contact name has a value.		If Administration Contact name has a value, then this must have a value.
Administration contact email address is for pager	Set to true if you want the text emailed to the Administration contact to be formatted for a pager.	False	
Notification SMTP Server	<i>Optional.</i> The SMTP server that will send email and pager notification to your administration contact.		<ul style="list-style-type: none"> • Must not be more than 64 characters • Must not contain spaces
Base Application Development Tools	Set to true to include tools and files (including header files, libraries, and a precompiler) that are needed for developing applications that work with DB2	True	
Development Center	Set to true to include this Java-based tool for developing, building, and testing stored procedures.	True	
Warehouse Samples	Set to true to include samples that can be used to integrate applications with the Data Warehouse Center.	True	
Spatial Extender Samples	Set to true to include samples for using Spatial Extender features	True	
Information Catalog Manager Samples	Set to true to include these samples that are used with the Information Catalog Center Tutorial.	True	

Table 42. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
Java Development Kit	Set to true to include the IBM Enhanced Java Development Kit	True	
Sample Applications	Set to true to include sample programs for supported languages on all DB2-supported platforms.	True	
SQLJ Application Development Tools	Set to true to include these tools that allow you to build Java samples that contain embedded SQL (SQLJ) using the JDBC driver.	True	
SQLJ Samples	Set to true to include Java samples that contain embedded SQLJ (SQLJ) and are used with the JDBC driver.	True	
Sample Database	Set to true to include source code to create DB2 sample databases.	True	
Include Brazilian Portuguese	Set to true to include language support for Brazilian Portuguese. English language support is always installed.	False	
Include Simplified Chinese	Set to true to include language support for Simplified Chinese. English language support is always installed.	False	
Include German	Set to true to include language support for German. English language support is always installed.	False	
Include French	Set to true to include language support for French. English language support is always installed.	False	

Table 42. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
Include Spanish	Set to true to include language support for Spanish. English language support is always installed.	False	
Include Spanish	Set to true to include language support for Spanish. English language support is always installed.	False	
Include Italian	Set to true to include language support for Italian. English language support is always installed.	False	
Include Japanese	Set to true to include language support for Japanese. English language support is always installed.	False	
Include Korean	Set to true to include language support for Korean. English language support is always installed.	False	
Include Traditional Chinese	Set to true to include language support for Traditional Chinese. English language support is always installed.	False	
Include Danish	Set to true to include language support for Danish. English language support is always installed.	False	
Include Finnish	Set to true to include language support for Finnish. English language support is always installed.	False	
Include Norwegian	Set to true to include language support for Norwegian. English language support is always installed.	False	
Include Polish	Set to true to include language support for Polish. English language support is always installed.	False	

Table 42. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
Include Russian	Set to true to include language support for Russian. English language support is always installed.	False	
Include Swedish	Set to true to include language support for Swedish. English language support is always installed.	False	
XML Extender Samples	Set to true to include sample programs that you can use to learn about XML Extender technology.	True	
Information Catalog Manager Samples	Set to true to include samples that are used with the Information Catalog Center Tutorial.	True	
Sample Applications	Set to true to include sample programs for supported languages on all DB2-supported platforms.	True	
Spatial Extender Client	Set to true to include the support required for communicating with a Spatial Extender Server.	True	
Java Runtime Environment	Set to true to include the IBM enhanced Java Runtime Environment.	True	
LDAP Exploitation	Set to true to allow DB2 to use an LDAP directory to store database directory and configuration information.	True	
XML Extender	Set to true to include new data types, functions, and stored procedures that assist you in working with XML data in DB2 databases.	True	

Table 42. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
Client Communication Protocols (APPC, NetBIOS, Named Pipes, TCP/IP)	Set to true to include support Components for APPC, NetBIOS, Named Pipes, and TCP/IP protocols. Protocol support is required for client/server communication.	True	
Control Center	Set to true to include this Java-based tool that provides a central administration point for DB2.	True	
Client Tools	Set to true to include a number of client tools and executable files.	True	
Configuration Assistant	Set to true to include this Java-based tool for configuring DB2 servers, clients, and database access.	True	
Database tools	Set to true to include a number of database tools and executable files.	True	
Event Analyzer	Set to true to include the Event Analyzer which is used in conjunction with event monitors to trace performance data.	True	
DB2 Web Tools	Set to true to include these tools that allow you to run the Command Center and Health Center as web server applications providing DB2 server access through a web browser.	True	
Apply	Set to true to include the replication component for copying changes to target tables.	True	

Table 42. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
Capture	Set to true to include the replication component for capturing changes from source tables.	True	
Connect Support	Set to true to include the capability to connect to host, AS/400®, and iSeries systems.	True	
Informix data source support	Set to true to include this support that enables users and applications to submit distributed requests for data managed by Informix Systems.	False	
Server Communication Protocols (NetBIOS, Named Pipes, and TCP/IP Listeners)	Set to true to include the support components for NetBIOS Listener, Named Pipes Listener, and TCP/IP Listener. Protocol Listener support is required for client/server communication.	True	
Data Warehouse Center	Set to true to include this Java-based tool used for data warehouse administration.	False	
Warehouse Server	Set to true to include control for the interaction of warehouse components, controls and monitors warehouse agents, and provides scheduling functions.	False	
Warehouse control database	<i>Required.</i> The name of the schema for the Warehouse control database. This is used only if the Data Warehouse Center or the Warehouse Server is installed.	IWH	<ul style="list-style-type: none"> Value must be entered if the Data Warehouse Center or Warehouse Server are selected to be installed. Must not be more than 30 characters

Table 42. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
Information Catalog Center	Set to true to include this graphical tool that can be used to manage a catalog of your business data.	False	
Information Catalog Center for the Web	Set to true to include this component that allows you to access information catalogs and view data from a Web browser.	False	
DB2 Tools Catalog Schema	<i>Required.</i> The name of the schema for the DB2 Tools Catalog	SYSTOOLS	Must be between 1 and 30 characters in length.
DB2 Metadata database	<i>Required.</i> The name of the database used for the DB2 tools catalog and warehouse control database.	DWCTRLDB	Must be between 1 and 8 characters in length.
DB2 Metadata database user name	<i>Conditional.</i> The username used for the DB2 Metadata database. If not specified, the DB2 instance user is used. Note: This field is required if the DB2 Metadata database user password has a value.		<ul style="list-style-type: none"> • Must not be more than 30 characters in length • Can contain lowercase a-z, integers 0-9, at sign (@), number sign (#), dollar sign (\$), underscore (_) • Must not start with IBM, SQL, SYS, numbers, underscore (_). • Must not end with dollar sign (\$) • Must not be ADMINS, GUESTS, USERS, PUBLIC, LOCAL, or SQL reserve words. • If Metadata user password has a value, this must have a value.

Table 42. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
DB2 Metadata database user password	<p><i>Conditional.</i> The password used for the DB2 Metadata database user password. If not specified, the DB2 instance user password will be used.</p> <p>Note: This field is required if the DB2 Metadata database user name has a value.</p>		<ul style="list-style-type: none"> • Must be between 6 and 127 characters in length • If Metadata database user has a value, this must have a value.
Satellite ID	<p><i>Conditional.</i> The unique identifier for this DB2 Satellite system. It is used to identify this system to the DB2 Control Server when connecting for synchronization.</p> <p>Note: This field is required if Satellite Synchronization is installed.</p>		<ul style="list-style-type: none"> • Must not be more than 20 characters in length • If Satellite Synchronization is selected, this must have a value.
Satellite Application version	<p><i>Required.</i> The version identifier for the business application that will be running on this DB2 Satellite system.</p> <p>Note: This field is required if Satellite Synchronization is installed.</p>		<ul style="list-style-type: none"> • Must not be more than 18 characters in length • If Satellite Synchronization is selected, this must have a value.
DB2 Administrators Group	This group and local administrators will have complete access to all DB2 objects through the operating system.	DB2ADMNS	Must be between 1 and 30 characters in length.
DB2 Users Group	This group will have read and execute access to all DB2 objects through the operating system.	DB2USERS	Must be between 1 and 30 characters in length.

Application Development Toolkit for IBM WebSphere Application Server - Express Version 6.0.2 for i5/OS (OS/400)

Use this wrapper to install the Application Development Toolkit for WebSphere Application Server Express Version 6.0.2 on target computers running i5/OS (OS/400).

Application ID : IRU2_1_1WASExpressDev6_0I5OS

Depending on your selection and configuration, you might need to provide values for some or all of the fields in the following table:

Table 43. Exposed variables

Field	Explanation	Default value	Validation requirements
WebSphere Username	<i>Optional.</i> The user name required for administering WebSphere Application Server. Used for restarting WebSphere Application secure servers.		Valid WebSphere Application Server user name and password with access to administer secure servers.
WebSphere Password	<i>Optional.</i> The password required for administering WebSphere Application Server. Used for restarting WebSphere Application secure servers.		Valid WebSphere Application Server user name and password with access to administer secure servers.

Table 44. Additional exposed variables for Application Development Toolkit for WebSphere Application Server Express 6.0.2 for i5/OS (OS/400)

Field	Explanation	Default value	Validation requirements
Install samples	Set to true to install the samples product feature.	True	Boolean
Install JavaDocs	Set to true to install the JavaDoc product feature.	True	Boolean

Application Development Toolkit for IBM WebSphere Application Server - Express Version 6.0.2 for Linux

Use this wrapper to install the Application Development Toolkit for WebSphere Application Server Express Version 6.0.2 on target computers running Linux.

Application ID: IRU2_1_1WASExpressDev6_0Lnx

Depending on your selection and configuration, you might need to provide values for some or all of the following fields:

Table 45. Exposed variables

Field	Explanation	Default value	Validation requirements
Installation directory	<i>Required.</i> The fully qualified path name to the directory where you want to install WebSphere Application Server - Express.	/opt/IBM/WebSphere/AppServer	Must start with forward slash (/).
HTTP transport port	<i>Required.</i> A transport is the request queue between a WebSphere Application Server plug-in for Web servers and a Web container in which the Web modules of an application reside. When a user at a Web browser requests an application, the request is passed to the Web server, then sent along the transport to the Web container.	9080	Numeric. Valid range is from 1 to 65535.
Administrative console port	<i>Required.</i> The port used by the administrative console application for administering the WebSphere Application Server.	9060	Numeric. Valid range is from 1 to 65535.
HTTPS transport port	<i>Required.</i> If Application Server security is enabled, the WebSphere Application Server Web container processes HTTPS requests through this port.	9443	Numeric. Valid range is from 1 to 65535.
Secure administrative console port	<i>Required.</i> If Application Server security is enabled, this is the port at which WebSphere Application Server - Express listens for the HTTPS requests for the administrative console to administer your application server.	9043	Numeric. Valid range is from 1 to 65535.

Table 45. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
Bootstrap port	<i>Required.</i> This is the port used to create an initial context for a Java Naming and Directory Interface (JNDI) lookup. References to Enterprise JavaBean (EJB) homes and other artifacts such as data sources are bound to the WebSphere name space. You can obtain these objects through the JNDI interface, but JNDI operations cannot be performed without an initial context.	2809	Numeric. Valid range is from 1 to 65535.
SOAP connector port	<i>Required.</i> This is the port number for Java Management Extensions (JMX) connectors. JMX connectors communicate with WebSphere Application Server when you invoke a scripting process.	8880	Numeric. Valid range is from 1 to 65535.
SAS SSL ServerAuth port	<i>Required.</i> Inbound port for SSL Secure Authentication Service.	9401	Numeric. Valid range is from 1 to 65535.
CSIV2 ServerAuth Listener port	<i>Required.</i> Inbound port for Common Secure Interoperability Specification, Version 2.	9403	Numeric. Valid range is from 1 to 65535.
CSIV2 MultiAuth Listener port	<i>Required.</i> Inbound port for Common Secure Interoperability Specification, Version 2.	9402	Numeric. Valid range is from 1 to 65535.

Table 45. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
ORB Listener port	<i>Required.</i> The Object Request Broker (ORB) on WebSphere Application Server uses a listener port for Remote Method Invocation over the Internet Inter-ORB Protocol (RMI/IIOP) communications, that is selected dynamically during run time. If you are using a firewall, you must specify a static port for the ORB listener and open that port on the firewall so that communication can pass through the specified port.	9100	Numeric. Valid range is from 1 to 65535.
High Availability manager communication port	<i>Required.</i>	9353	Numeric. Valid range is from 1 to 65535.
Service integration port	<i>Required.</i> Applications use this port to connect to the Java Message Service (JMS) Server. The DIRECT port is for non-persistent, non-transactional, non-durable subscriptions only.	7276	Numeric. Valid range is from 1 to 65535.
Secure service integration port	<i>Required.</i> Applications use this port to connect to the Java Message Service (JMS) Server. The DIRECT port is for non-persistent, non-transactional, non-durable subscriptions only.	7286	Numeric. Valid range is from 1 to 65535.
Service integration MQ interoperability port	<i>Required.</i> Applications use this port to connect to the Java Message Service (JMS) Server. The QUEUED port is for full-function JMS publish/subscribe support.	5558	Numeric. Valid range is from 1 to 65535.

Table 45. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
Secure service integration MQ interoperability port	<i>Required.</i> Applications use this port to connect to the Java Message Service (JMS) Server. The QUEUED port is for full-function JMS publish/subscribe support.	5578	Numeric. Valid range is from 1 to 65535.
Abort install if required ports are busy	If set to True, installation of WebSphere Application Server - Express fails if any of the TCP/IP ports are busy. If set to False, the installation can succeed, but the application server will not start.	True	Boolean
WebSphere Username	<i>Optional.</i> The username required for administering WebSphere Application Server. Used for restarting WebSphere Application secure servers.		Valid WebSphere Application Server user name and password with access to administer secure servers.
WebSphere Password	<i>Optional.</i> The password required for administering WebSphere Application Server. Used for restarting WebSphere Application secure servers.		Valid WebSphere Application Server user name and password with access to administer secure servers.

Table 46. Additional exposed variables for Application Development Toolkit for WebSphere Application Server Express 6.0.2 for Linux

Field	Explanation	Default value	Validation requirements
Node name	Select the node name for the application server. The node name under each cell must be unique.		
Host name	The DNS name or the IP address of the computer.		

Table 46. Additional exposed variables for Application Development Toolkit for WebSphere Application Server Express 6.0.2 for Linux (continued)

Field	Explanation	Default value	Validation requirements
Install samples	Set to true to install the samples product feature	True	Boolean
Install JavaDocs	Set to true to install the JavaDoc product feature	True	Boolean

Application Development Toolkit for IBM WebSphere Application Server - Express Version 6.0.2 for Linux on POWER

Use this wrapper to install the Application Development Toolkit for WebSphere Application Server Express Version 6.0.2 on target computers running Linux on POWER.

Application ID: IRU2_1_1WASExpressDev6_0LnxOnPwr

Depending on your selection and configuration, you might need to provide values for some or all of the following fields:

Table 47. Exposed variables

Field	Explanation	Default value	Validation requirements
Installation directory	<i>Required.</i> The fully qualified path name to the directory where you want to install WebSphere Application Server - Express.	/opt/IBM/WebSphere/AppServer	Must start with forward slash (/).
HTTP transport port	<i>Required.</i> A transport is the request queue between a WebSphere Application Server plug-in for Web servers and a Web container in which the Web modules of an application reside. When a user at a Web browser requests an application, the request is passed to the Web server, then sent along the transport to the Web container.	9080	Numeric. Valid range is from 1 to 65535.

Table 47. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
Administrative console port	<i>Required.</i> The port used by the administrative console application for administering the WebSphere Application Server.	9060	Numeric. Valid range is from 1 to 65535.
HTTPs transport port	<i>Required.</i> If Application Server security is enabled, the WebSphere Application Server Web container processes HTTPS requests through this port.	9443	Numeric. Valid range is from 1 to 65535.
Secure administrative console port	<i>Required.</i> If Application Server security is enabled, this is the port at which WebSphere Application Server - Express listens for the HTTPS requests for the administrative console to administer your application server.	9043	Numeric. Valid range is from 1 to 65535.
Bootstrap port	<i>Required.</i> This is the port used to create an initial context for a Java Naming and Directory Interface (JNDI) lookup. References to Enterprise JavaBean (EJB) homes and other artifacts such as data sources are bound to the WebSphere name space. You can obtain these objects through the JNDI interface, but JNDI operations cannot be performed without an initial context.	2809	Numeric. Valid range is from 1 to 65535.

Table 47. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
SOAP connector port	<i>Required.</i> This is the port number for Java Management Extensions (JMX) connectors. JMX connectors communicate with WebSphere Application Server when you invoke a scripting process.	8880	Numeric. Valid range is from 1 to 65535.
SAS SSL ServerAuth port	<i>Required.</i> Inbound port for SSL Secure Authentication Service.	9401	Numeric. Valid range is from 1 to 65535.
CSIV2 ServerAuth Listener port	<i>Required.</i> Inbound port for Common Secure Interoperability Specification, Version 2.	9403	Numeric. Valid range is from 1 to 65535.
CSIV2 MultiAuth Listener port	<i>Required.</i> Inbound port for Common Secure Interoperability Specification, Version 2.	9402	Numeric. Valid range is from 1 to 65535.
ORB Listener port	<i>Required.</i> The Object Request Broker (ORB) on WebSphere Application Server uses a listener port for Remote Method Invocation over the Internet Inter-ORB Protocol (RMI/IIOP) communications, that is selected dynamically during run time. If you are using a firewall, you must specify a static port for the ORB listener and open that port on the firewall so that communication can pass through the specified port.	9100	Numeric. Valid range is from 1 to 65535.
High Availability manager communication port	<i>Required.</i>	9353	Numeric. Valid range is from 1 to 65535.

Table 47. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
Service integration port	<i>Required.</i> Applications use this port to connect to the Java Message Service (JMS) Server. The DIRECT port is for non-persistent, non-transactional, non-durable subscriptions only.	7276	Numeric. Valid range is from 1 to 65535.
Secure service integration port	<i>Required.</i> Applications use this port to connect to the Java Message Service (JMS) Server. The DIRECT port is for non-persistent, non-transactional, non-durable subscriptions only.	7286	Numeric. Valid range is from 1 to 65535.
Service Integration MQ interoperability port	<i>Required.</i> Applications use this port to connect to the Java Message Service (JMS) Server. The QUEUED port is for full-function JMS publish/subscribe support.	5558	Numeric. Valid range is from 1 to 65535.
Secure service Integration MQ interoperability port	<i>Required.</i> Applications use this port to connect to the Java Message Service (JMS) Server. The QUEUED port is for full-function JMS publish/subscribe support.	5578	Numeric. Valid range is from 1 to 65535.
Abort install if required ports are busy	If set to True, installation of WebSphere Application Server - Express fails if any of the TCP/IP ports are busy. If set to False, the installation can succeed, but the application server will not start.	True	Boolean

Table 47. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
WebSphere Username	<i>Optional.</i> The username required for administering WebSphere Application Server. Used for restarting WebSphere Application secure servers.		Valid WebSphere Application Server user name and password with access to administer secure servers.
WebSphere Password	<i>Optional.</i> The password required for administering WebSphere Application Server. Used for restarting WebSphere Application secure servers.		Valid WebSphere Application Server user name and password with access to administer secure servers.

Table 48. Additional exposed variables for Application Development Toolkit for WebSphere Application Server Express 6.0.2 for Linux on POWER

Field	Explanation	Default value	Validation requirements
Node name	Select the node name for the application server. The node name under each cell must be unique.		
Host name	The DNS name or the IP address of the computer.		
Install samples	Set to true to install the samples product feature	True	Boolean
Install JavaDocs	Set to true to install the JavaDoc product feature	True	Boolean

Application Development Toolkit for IBM WebSphere Application Server - Express Version 6.0.2 for Windows

Use this wrapper to install the Application Development Toolkit for WebSphere Application Server Express Version 6.0.2 on target computers running Windows.

Application ID: IRU2_1_1WASExpressDev6_0Win

Depending on your selection and configuration, you might need to provide values for some or all of the following fields:

Table 49. Exposed variables

Field	Explanation	Default value	Validation requirements
Installation directory	<i>Required.</i> The fully qualified path name to the directory where you want to install IBM WebSphere Application Server - Express.	C:\Program Files\IBM\WebSphere\AppServer	<ul style="list-style-type: none"> • Must start with drive letter and colon (:), backslash (\) • Do not use these characters: asterisk (*), question mark (?), quotation marks ("), pipe (), forward slash (/), or angle brackets (< >).
HTTP transport port	<i>Required.</i> A transport is the request queue between a WebSphere Application Server plug-in for Web servers and a Web container in which the Web modules of an application reside. When a user at a Web browser requests an application, the request is passed to the Web server, then sent along the transport to the Web container.	9080	Numeric. Valid range is from 1 to 65535.
Administrative console port	<i>Required.</i> The port used by the administrative console application for administering the WebSphere Application Server.	9060	Numeric. Valid range is from 1 to 65535.
HTTPS transport port	<i>Required.</i> If Application Server security is enabled, the WebSphere Application Server Web container processes HTTPS requests through this port.	9443	Numeric. Valid range is from 1 to 65535.

Table 49. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
Secure administrative console port	<i>Required.</i> If you have security turned on, this is the port at which WebSphere Application Server - Express listens for the HTTPs requests for the administrative console to administer your application server.	9043	Numeric. Valid range is from 1 to 65535.
Bootstrap port	<i>Required</i> This is the port number used to create an initial context for a Java Naming and Directory Interface (JNDI) lookup. References to Enterprise JavaBean (EJB) homes and other artifacts such as data sources are bound to the WebSphere name space. You can obtain these objects through the JNDI interface, but JNDI operations cannot be performed without an initial context.	2809	Numeric. Valid range is from 1 to 65535.
SOAP connector port	This is the port number for Java Management Extensions (JMX) connectors. JMX connectors communicate with WebSphere Application Server when you invoke a scripting process.	8880	Numeric. Valid range is from 1 to 65535.
SAS SSL ServerAuth port	<i>Required.</i> Inbound Port for SSL Secure Authentication Service.	9401	Numeric. Valid range is from 1 to 65535.
CSIV2 ServerAuth Listener Port	<i>Required.</i> Inbound port for Common Secure Interoperability Specification, Version 2.	9403	Numeric. Valid range is from 1 to 65535.

Table 49. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
CSIV2 MultiAuth Listener port	<i>Required.</i> Inbound port for Common Secure Interoperability Specification, Version 2.	9402	Numeric. Valid range is from 1 to 65535.
ORB Listener port	<i>Required.</i> The Object Request Broker (ORB) on WebSphere Application Server uses a listener port for Remote Method Invocation over the Internet Inter-ORB Protocol (RMI/IIOP) communications, which is selected dynamically during run time. If you are using a firewall, you must specify a static port for the ORB listener and open that port on the firewall so that communication can pass through the specified port.	9100	Numeric. Valid range is from 1 to 65535.
High Availability manager communication port	<i>Required.</i>	9353	Numeric. Valid range is from 1 to 65535.
Service integration port	<i>Required.</i> Applications use this port to connect to the Java Message Service (JMS) Server. The DIRECT port is for non-persistent, non-transactional, and non-durable subscriptions only.	7276	Numeric. Valid range is from 1 to 65535.
Secure service integration port	<i>Required.</i> Applications use this port to connect to the Java Message Service (JMS) Server. The DIRECT port is for non-persistent, non-transactional, non-durable subscriptions only.	7286	Numeric. Valid range is from 1 to 65535.

Table 49. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
Service integration MQ interoperability port	<i>Required.</i> Applications use this port to connect to the Java Message Service (JMS) Server. The QUEUED port is for full-function JMS publish and subscribe support.	5558	Numeric. Valid range is from 1 to 65535.
Secure service integration MQ interoperability port	<i>Required.</i> Applications use this port to connect to the Java Message Service (JMS) Server. The QUEUED port is for full-function JMS publish/subscribe support.	5578	Numeric. Valid range is from 1 to 65535.
Abort install if required ports are busy	If set to True, installation of WebSphere Application Server - Express fails if any of the TCP/IP ports are busy. If set to False, the installation can succeed, but the application server will not start.	True	Boolean
WebSphere Username	<i>Optional.</i> The username required for administering WebSphere Application Server. Used for restarting WebSphere Application secure servers.		Valid WebSphere Application Server user name and password with access to administer secure servers.
WebSphere Password	<i>Optional.</i> The password required for administering WebSphere Application Server. Used for restarting WebSphere Application secure servers.		Valid WebSphere Application Server user name and password with access to administer secure servers.

Table 49. Exposed variables (continued)

Field	Explanation	Default value	Validation requirements
Startup type of the service	Specify how to start the server service.	automatic	Legal values are: <ul style="list-style-type: none"> • automatic: server starts when the computer starts. • manual: server starts when the user clicks Start on the Windows services panel. • disabled: does not start server
Run the WebSphere Application Server as a Windows service	When activated, the WebSphere Application Server is displayed in the Windows services window.	true	Boolean

Table 50. Additional exposed variables for Application Development Toolkit for WebSphere Application Server Express 6.0.2 for Windows

Field	Explanation	Default value	Validation requirements
Host name	The DNS name or the IP address of the computer.		
Node name	Select the node name for the application server, node name under one cell has to be unique.		
Windows service user ID	Provide the user name to start the WebSphere Application Server as a service. Required if you chose specified user as startup type.	LocalSystem	
Windows service user password	Provide the password to start the WebSphere Application Server as a service. Required if you chose specified user as startup type.		
Install samples	Set to true to install the samples product feature	True	
Install JavaDocs	Set to true to install the JavaDoc product feature	True	

Reading XML schemas

XML schemas use special notation to describe what child elements or character data an element can contain and what types of values an attribute can have. ("Child elements" are elements nested within parent element tags.) For example, the following content model indicates that the element `translationLanguages` contains a child element called `language` that must occur at least once within its parent and can occur up to 10 times:

```
translationLanguages ::= language1..10
```

The XML markup in your documents is an expression of a content model. For example, applying the content model for `translationLanguages`, you might create the following markup:

```
<translationLanguages default="english">
  <language>english</language>
  <language>spanish</language>
</translationLanguages>
```

Content models define the rules for valid XML files. However, content models do not define the rules the deployment wizard follows when creating a deployment package file or when installing an application. As a consequence, you can create a valid XML file, but that file can lead to errors when building a wrapper or at the time of deployment. For example, the following content model indicates that the value for the attribute `id` is string, which is any combination of ASCII characters including white space:

```
id ::= string
```

If you type the following markup, which conforms to the content model, the parser will accept the input as valid, but it will produce an error when the deployment wizard creates the deployment package file because the Solution Deployer uses the identifier to name files and file names cannot contain spaces:

```
id="WAS 32"
```

The following definitions, rules, and notation apply to the content models used in this book:

- Expression of attribute values
 - To make attribute content models easier to read, the opening and closing quotation marks around values are omitted. For example, the following content model omits the quotation marks around the value `integer`:

```
attribute ::= integer
```

Applying this content model to your wrappers, you would type the following:

```
attribute="nnn"
```

where `nnn` is the installed size in kilobytes.
- Occurrences of child elements within parents
 - The superscript notation ^{n,m} after a child element means that the child can occur a minimum of `n` times and a maximum of `m` times within its parent. If `m` is an asterisk (`*`), it indicates that the number of occurrences is unlimited. For example, the following content model indicates that the child element `language` must occur at least once in its parent element `translationLanguages` and that it can occur as many as ten times:

```
translationLanguages ::= language1..10
```

Applying this content model to your wrappers, you might type the following:

```
<translationLanguages default="english">
  <language>english</language>
  <language>spanish</language>
</translationLanguages>
```

- A vertical bar (|), also called a pipe character, between child elements in an element content model or between values in an attribute content model indicates that only one of the elements or one of the values can occur. For example, the following content model indicates that you must select either issFileAssociation or cidFileAssociation:

```
stringVariable ::= labelText1,1
  (issFileAssociation | cidFileAssociation)1,1
```

- String literals

- Single quotation marks (') indicate literal strings that must be typed exactly as they are displayed within the marks. For example, the following content model indicates that the element operatingSystem can contain only one of the specified operating systems:

```
operatingSystem ::= 'Windows' |
  'AIX' | 'Linux' | 'OS/400' | 'Solaris' | 'HP-UX'
```

Similarly, single quotation marks in an attribute content model indicate that you must type the values exactly as they are displayed. For example, the following content model indicates that you must type either "true" or "false":

```
debug ::= 'true'|'false'
```

- Keywords

- The keyword string indicates any combination of ASCII characters including white space (space characters, tabs, carriage returns, and line feeds). For example, the element description has the following content model:

```
description ::= string
```

Applying this content model to your markup, you might type the following:

```
<description>Provide the following information and select Finish
  to proceed.</description>
```

- The keyword integer indicates any whole number. For example, the following content model indicates that the value for attribute attribute

can be any whole number:

```
attribute ::= integer
```

- The keyword EMPTY in an element content model indicates an empty element tag. For example, the following content model indicates that the element conflict does not have any content:

```
conflict ::= EMPTY
```

Applying this content model to your markup, you might type the following:

```
<conflict applicationId="xxx"/>
```

where applicationId is the attribute for the element and xxx is the value of the attribute.

Similarly, the following content model indicates that the element name can be empty or that it can contain a string:

```
name ::= EMPTY | string
```

Usually, when you see the expression EMPTY | string, it means that you can either type the string between the start and end tags of the element or, if you are using language documents, that you can use the attribute translatedKey to point to a specific element in a file that contains the translated text.

- Special characters in markup

- To use special characters in strings, you must use the following syntax in the XML file:
`<element><![CDATA[special characters]]></element>`

XML schemas

Application elements

application

(Purpose)

This is the root element of an application document.

Examples

```
<iru:application
  id="DJT_sia">
  ...
</iru:application>
```

Format

Parent	Root element
Occurrences within document	Required. Can occur only once.
Element content model	<code>application ::= (translationLanguages)^{0,1} (applicationInformation)^{1,1} (fileLists)^{1,1} (fileSets)^{1,1} (preDeploymentChecker)^{0,1} (entryProgram)^{0,1} (mainProgram)^{1,1} (exitProgram)^{0,1} (variables (within the <application element>))^{0,1} (externalJars)^{0,1}</code>
Attribute content models	Required: <code>id ::= string</code> Optional: <code>debug ::= "true" "false"</code> <code>deploymentPackageName ::= string</code> <code>deploymentPackageProtected ::= "true" "false"</code> Deprecated: <code>installSize ::= string</code>

Parameters

The application element has the following attributes:

- id** Use this attribute to specify a unique identifier for the application. Express Runtime uses the identifier to name the following files:
- Deployment package (<id_value>.locale.jar)
Note:
The deploymentPackageName attribute value overrides this value if you specify a deploymentPackageName attribute value to name the deployment package files.
 - User programs package - A user programs JAR file is created with the name <id_value>.locale.userPrograms.jar.
 - Resource file (<id_value>.properties)

- Binary application file (<id value>_<operatingSystem>.ser)

where <id_value> is the value of the attribute id and <operatingSystem> is the name of the target operating system.

For example, if you use an id value of "Puzzler" for an application that runs on a Windows target operating system, the deployment package file, the resource file, and the serialized file for the application would be named Puzzler.jar, Puzzler.properties, and Puzzler_win.ser, respectively.

When specifying a value for the id attribute, do not use spaces or file name characters that are invalid on target operating systems. The length of the value must conform to the length restrictions for file names and their paths on the target operating systems. For example, if a target operating system limits the length of a file name and its path to 255 characters, do not use a value that, when appended to a path name, exceeds 255 characters. In addition, the value must begin with an alphabetic character and can be made up only of alphanumeric characters, underscores, dashes and periods.

debug Use this attribute to specify whether you want debug information to be displayed on the agent console when the application is launched from the command line. If you set this value to "true," you can see debug information while you are testing your application from the command line interface.

deploymentPackageName

Use this attribute to specify a deployment package name. This attribute will be used for the main deployment package JAR file built by the deployment wizard. The format of the JAR file name will be <deploymentPackageName>.<locale>.jar for the main jar, and <application ID>.<locale>.userPrograms.jar if user programs are specified.

When specifying a value for the deploymentPackageName attribute, do not use spaces or file name characters that are invalid on target operating systems. The length of the value must conform to the length restrictions for file names and their paths on the target operating systems. For example, if a target operating system limits the length of a file name and its path to 255 characters, do not use a value that, when appended to a path name, exceeds 255 characters.

deploymentPackageProtected

Set this attribute to true to prevent an attempt by the user to regenerate the deployment package. If the user attempts to regenerate the deployment package and this attribute is set to true, the following error message is displayed:

You cannot generate the deployment package because it already exists and is protected.

installSize (Deprecated)

The installSize attribute is deprecated. A deprecated element or attribute is one that is outdated in the latest versions of the schema. The attribute might become obsolete in future versions of the Express Runtime product and should not be used.

Usage

Use the application start tag immediately after the document type declaration in an application document. Use the end tag at the conclusion of the document.

applicationInformation (Purpose)

This element contains basic information about an application.

Examples

```
<iru:application>
  <applicationInformation
    version="1.0.0.0">

    <operatingSystems>
      <operatingSystem>Windows</operatingSystem>
      <operatingSystem>AIX</operatingSystem>
    </operatingSystems>
    <name translatedKey="name"/>
    <configurationInstructions translatedKey="configureText"/>
    <providerName translatedKey="providerName"/>
  </applicationInformation>
  ...
</iru:application>
```

Format

Parent	(application)
Occurrences within parent	Required. Must occur only once.
Element content model	applicationInformation ::= (operatingSystems) ^{1,1} (configurationInstructions) ^{0,1} (name) ^{1,1} (providerName) ^{0,1} (license) ^{0,1}
Attribute content models	Required: version ::= string Optional: None. Deprecated: builderVersion ::=string responseFileTemplate ::= string

Parameters

The applicationInformation element has the following attributes:

version

Use this attribute to specify a version number. If you use this attribute, the version number is displayed in the properties window of the Deployment Parameters panel.

builderVersion (Deprecated)

The builderVersion attribute is deprecated. A deprecated element or attribute is one that is outdated in the latest versions of the schema. The attribute might become obsolete in future versions of the Express Runtime product and should not be used.

responseFileTemplate (Deprecated)

The responseFileTemplate attribute is deprecated. A deprecated element or attribute is one that is outdated in the latest versions of the schema. The attribute might become obsolete in future versions of the Express Runtime product and should not be used.

argument (Purpose)

This element contains a program parameter for a predeployment checker, an entry program, a main program, or an exit program.

Examples

```
<preDeploymentChecker type="java">
  <arguments>
    <argument>--clientonly</argument>
    <argument>-s</argument>
    <argument concatenateWithNextArgument="true">/F1</argument>
    <argument responseFile ="true"/>
    <argument variableName ="arggie"/>
  </arguments>
</preDeploymentChecker>

<mainProgram type="java"
  programName="testsuite.HelloWorld"
  logFile="hwMain.log">
  <arguments>
    <argument variableName="shouldCreateDb"/>
  </arguments>
</mainProgram>

...

<stringVariable
  name="arggie"
  minimumLength="2"
  maximumLength="25">
  <defaultData>arggieValue</defaultData>
  <labelText>Arggie</labelText>
  <helpText>no help for you</helpText>
</stringVariable>

<booleanVariable name="shouldCreateDb">
  <defaultData>true</defaultData>
  <labelText>Create Database</labelText>
  <helpText>shouldCreateDbHelp</helpText>
  <ismpFileAssociations>
    <ismpFileAssociation
      responseFileName="wpsSwd.rsp"
      propertyKeyType="product"
      propertyKey="CfgProps.dbCreateMode"
      valueIfFalse="use"
      valueIfTrue="create"/>
  </ismpFileAssociations>
</booleanVariable>
```

Format

Parent	(arguments)
Occurrences within parent	Optional. Can occur more than once.
Element content model	argument ::= string EMPTY

Attribute content models	Optional: concatenateWithNextArgument ::= 'true' 'false' responseFile ::= 'true' 'false' logFile ::= 'true' 'false' translatedKey ::= string variableName ::= string 'true' 'false'
---------------------------------	---

Parameters

The argument element has the following attributes:

concatenateWithNextArgument

Use this attribute to merge two arguments into one. In the example above, the result would be:

```
--clientonly -s /F1c:\Program\ReponseFileName
```

responseFile

This attribute specifies that the response file name is inserted as the value of the argument.

logFile

This attribute specifies that the log file name is inserted as the value of the argument.

translatedKey

Use this attribute to indicate that the argument string has been translated and that the translated string is contained in separate translation XML files.

Note: The translatedKey must begin with an alphabetic character.

variableName

This attribute provides the capability to adjust the invocation arguments for predeployment checker, entry, main, and exit programs at run time. Use the variableName attribute to indicate a string or boolean variable declared elsewhere in the application XML file.

Usage

If the application uses multiple program arguments, use a separate argument element tag for each argument. For example:

```
<arguments>
  <argument>xxx</argument>
  <argument>yyy</argument>
</arguments>
```

arguments

(Purpose)

This element contains an unbounded number of argument elements.

Examples

```
<preDeploymentChecker
  program>
  <arguments>
    <argument>--clientonly</argument>
    <argument>-s</argument>
```



```

        <argument concatenateWithNextArgument="true">/F1</argument>
        <argument responseFile ="true" />
    </arguments>
</preDeploymentChecker>

```

Format

Parents	(preDeploymentChecker), (entryProgram), (mainProgram), (exitProgram)
Occurrences within each parent	Optional. Can occur only once.
Element content model	arguments ::= (argument) ^{0,*}

Parameters

The arguments element does not have any attributes.

booleanVariable

(Purpose)

This element contains information about an interface element, such as a radio button in an application's deployment parameters panel. The selection or deselection of the buttons maps directly to the valueIfFalse or valueIfTrue values specified in the related file association element.

Examples

```

<variables>
  <booleanVariable
    >
    <labelText>Install Domino Administrator</labelText>
    <helpText>Install the Administrator Client in addition to the Notes Client.
    </helpText>
    <issFileAssociations>
      <issFileAssociation
        responseFileName="Domino504ClientW32.iss"
        keyword="svSetupType"
        section="SdSetupType-0"
        valueIfFalse="Notes Client"
        valueIfTrue="Domino Administrator"/>
      </issFileAssociations>
    </booleanVariable>
  </variables>

```

Format

Parent	(variables)
Occurrences	Required. Can occur more than once.
Element content model	booleanVariable ::= (labelText) ^{1,1} (helpText) ^{0,1} (issFileAssociations) ^{0,1} (cidFileAssociations) ^{0,1} (propertiesAssociations) ^{0,1} (ismpFileAssociations) ^{0,1} (inputValidation) ^{0,1}
Attribute content models	Required name ::= string

Parameters

The `booleanVariable` element has the following attributes:

name Use this attribute to specify a name for the Boolean variable.

Usage

Variables (Boolean variables, drop-down list variables, string variables, and password variables) specify the content displayed on application deployment parameters panels. The top-to-bottom order in which variables are displayed on a panel depends on their order in an application wrapper. The first variable listed in a wrapper is the first variable displayed on a configuration panel; the second variable listed in a wrapper is the second variable displayed; and so on.

You can create as many variables as you need. However, the deployment wizard provides only one scrollable configuration panel.

The `valueIfFalse` or `valueIfTrue` values in the file association element must be specified for a `booleanVariable` definition to be valid.

characters (Purpose)

This element contains a string of characters that are defined as being either valid or invalid for a given variable.

Examples

```
<stringVariable
  minimumLength="2"
  maximumLength="14">
  <defaultData>siaUser</defaultData>
  <labelText translatedKey="userIdLabel"/>
  <helpText translatedKey="userIdHelp"/>
  <ismpFileAssociations>
    <ismpFileAssociation
      responseFileName="DJT_sia10setup.iss"
      propertyKeyType="product"
      propertyKey="product.username"/>
  </ismpFileAssociations>
  <inputValidation>
    <invalid>
      <prefixes>
        <prefix ignoreCase="true">BADPREFIX</prefix>
      </prefixes>
      <values>
        <value ignoreCase="true">BADVALUE</value>
      </values>
    </invalid>
    <valid>
      <characters ignoreCase="true">@#$_abcdefghijklmnopqrstuvwxyz0123456789
    </characters>
  </valid>
</inputValidation>
</stringVariable>
```

Format

Parents	(invalid), (valid)
---------	--------------------

Occurrences within parent	Optional. Can occur more than once.
Element content model	characters ::= string
Attribute content model	Optional: ignoreCase ::= 'true' 'false' translatedKey ::= 'string'

Parameters

The characters element has the following attribute:

ignoreCase

Use this attribute to specify whether to check for mixed case in the given string of characters. If the string characters are not case sensitive, set this to true. If the string characters are case sensitive, set it to false. The default is false.

translatedKey

Use this attribute to indicate that the description has been translated and that the translated descriptions are contained in separate translation XML files.

Note:

The translatedKey must begin with an alphabetic character.

Usage

See (inputValidation) for more information.

cidFileAssociation

(Purpose)

This element contains configuration parameters that are inserted into a CID file template at deployment.

Examples

```
<stringVariable
  minimumLength="3">
  ...
  <cidFileAssociations>
    <cidFileAssociation
      responseFileName="Db2_Rc_Win.rsp"
      keyword="FILE"/>
    </cidFileAssociations>
  ...
</stringVariable>
```

Format

Parents	(cidFileAssociations)
Occurrences within each parent	Required. Can occur more than once.
Attribute content models	Required: responseFileName ::= string keyword ::= string Optional: valueIfTrue ::= string valueIfFalse ::= string

Parameters

The element `cidFileAssociation` has the following attributes:

responseFileName

Use this attribute to specify the name of the CID response file used during installation. For more information, see [Specifying a response file](#).

keyword

Use this attribute to point to a particular keyword within the CID file template.

valueIfFalse

Use this attribute to specify what the value in the response file template should be if a boolean-type interface element is set to false.

valueIfTrue

Use this attribute to specify what the value in the response file template should be if a boolean-type interface element is set to true.

Usage

The deployment wizard inserts the content of the child element (`defaultData`) in the CID file template according to the keyword that you specify. For example:

```
<stringVariable
  minimumLength="3">
  ...
  <cidFileAssociation
    responseFileName="Db2_Rc_Win.rsp"
    keyword="FILE"/>
  ...
</stringVariable>
```

cidFileAssociations

(Purpose)

This element holds a group of `cidFileAssociation` elements.

Examples

```
<stringVariable
  minimumLength="3">
  ...
  <cidFileAssociations>
    <cidFileAssociation
      responseFileName="Db2_Rc_Win.rsp"
      keyword="FILE"/>
    </cidFileAssociations>
  ...
</stringVariable>
```

Format

Parents	(stringVariable), (booleanVariable), (passwordVariable), (dropDownListVariable)
Occurrences within each parent	Optional. Can occur only once.

Element content model	cidFileAssociations ::= (cidFileAssociation) ^{1..*}
------------------------------	--

Parameters

The element cidFileAssociations does not have any attributes.

configurationInstructions

(Purpose)

This element provides the text that is displayed in the application deployment parameters panel that describes, in general terms, what the user should do.

Examples

```
<iru:application>
  <applicationInformation
    version="1.0.0.0">
    <operatingSystems>
      <operatingSystem>Windows</operatingSystem>
      <operatingSystem>AIX</operatingSystem>
    </operatingSystems>
    <name translatedKey="name" />
    <configurationInstructions translatedKey="configureText" />
    <providerName translatedKey="providerName" />
  </applicationInformation>
  ...
</iru:application>
```

Format

Parent	(applicationInformation)
Occurrences within parents	Optional. Can occur only once.
Element content model	configurationInstructions ::= EMPTY string
Attribute content model	Optional: translatedKey ::= string

Parameters

The configurationInstructions element has the following attribute.

translatedKey

Use this attribute to indicate that the description has been translated and that the translated descriptions are contained in separate translation XML files.

Note:

The translatedKey must begin with an alphabetic character.

defaultData

(Purpose)

This element specifies the default value of the parent variable and is displayed on the Deployment Parameters panel.

Examples

```
<stringVariable  
  
    minimumLength="2"  
    maximumLength="14">  
    <defaultData>siaUser</defaultData>  
    <labelText translatedKey="userIdLabel"/>  
    <helpText translatedKey="userIdHelp"/>  
    <ismpFileAssociations>  
        <ismpFileAssociation  
            responseFileName="DJT_sia10setup.iss"  
            propertyKeyType="product"  
            propertyKey="product.username"/>  
    </ismpFileAssociations>  
    <inputValidation>  
        <invalid>  
            <prefixes>  
                <prefix ignoreCase="true">BADPREFIX</prefix>  
            </prefixes>  
            <values>  
                <value ignoreCase="true">BADVALUE</value>  
            </values>  
        </invalid>  
        <valid>  
            <characters ignoreCase="true">@#$_abcdefghijklmnopqrstuvwxyz0123456789  
        </characters>  
        </valid>  
    </inputValidation>  
</stringVariable>
```

Format

Parents	(sharedVariable), (booleanVariable), (passwordVariable), (stringVariable), (dropDownListVariable)
Occurrences within document	Optional. Can occur only once.
Element content model	defaultData ::= string
Attribute content model	Optional: translatedKey ::= string

Parameters

The defaultData element has the following attribute:

translatedKey

Use this attribute to indicate that the help text has been translated and that the translated text is contained in separate translation XML files.

Note:

The translatedKey must begin with an alphabetic character.

deploymentPackagePrompt (Purpose)

This element contains a string that is displayed when users select to create a deployment package. The text should point users to the location of the deployment image files (for example, Insert CD-ROM number 1) or ask the user to browse to the location of the files. When users create the deployment package, the deployment package prompt directs them to the location of the software image file.

Examples

```
<fileSets>
  <fileSet fileListId="common"/>
  <fileSet fileListId="common"/>
  <deploymentPackagePrompt translatedKey="prompt"/>
</fileSets>
```

Format

Parents	(fileSets)
Occurrences within parent	Optional. Must occur only once.
Element content model	deploymentPackagePrompt ::= EMPTY string
Attribute content model	Optional: translatedKey ::= string

Parameters

translatedKey

Use this attribute to indicate that the deployment package prompt string has been translated and that the translated string is contained in separate translation XML files.

Note:

The translatedKey must begin with an alphabetic character.

dropDownListVariable

Purpose

This element contains information about a drop-down list field in a task's application Deployment Parameters panel. The field is displayed with either a default value or blank on the deployment wizard interface. An arrow to the right of the field displays the list of possible choices when clicked.

Examples

```
<variables>
  <dropDownListVariable
    name="listVariableName"
    minimumLength="3"
    maximumLength="25"
    required="true">
    <labelText>listLabel</labelText>
    <helpText>listHelp</helpText>
    <inputValidation>
      <valid>
        <values>
          <value translatedKey="Item1Key"/>
          <value translatedKey="Item2Key"/>
          <value translatedKey="Item3Key"/>
          <value translatedKey="Item4Key"/>
        </values>
      </valid>
    </inputValidation>
    <propertiesAssociations>
      <propertiesAssociation keyword="product"/>
    </propertiesAssociations>
  </dropDownListVariable>
</variables>
```

Format

Parent	(variables)
Occurrences within parent	Required. Can occur more than once.
Element content model	dropDownListVariable ::= (labelText) ^{1,1} (labelText) ^{0,1} (helpText) ^{0,1} (issFileAssociations) ^{0,1} (cidFileAssociations) ^{0,1} (propertiesAssociations) ^{0,1} (ismpFileAssociations) ^{0,1} (inputValidation) ^{0,1} (defaultData) ^{0,1}
Attribute content model	Required: name ::= string required ::= 'true' 'false' options ::= string Optional:

Parameters

The dropDownListVariable has the following attributes:

name Use this attribute to specify a name for the drop-down list variable.

required

Use this attribute to specify whether a value for the variable is required. If a value is not required, specify false.

The default is true.

options

Use this attribute to indicate what values you want to appear on the drop-down list.

Usage

Variables (password variables, drop-down list variables, string variables, and Boolean variables) specify the content on deployment parameters panels. The top-to-bottom order in which variables are displayed on a panel depends on their order in an application document. The first variable listed in a document is the first variable displayed on a configuration panel; the second variable listed in a document is the second variable displayed; and so on.

You can create as many variables as you need. However, all variables are displayed on the same deployment parameters panel, and scrolling might be required to view them all.

entryProgram (Purpose)

This element contains information about an entry program for an application.

Examples

```
<iru:application>  
  <entryProgram  
    type="java"  
    successType="returnCode"  
    classpath="unpacked/starter"  
  >  
  program>  
</entryProgram>  
</iru:application>
```


Format

Parent	(application)
Occurrences within parent	Optional. Can occur only once.
Element content model	entryProgram ::= (arguments) ^{0..*} (environmentSettings) ^{0..1} (logMessages) ^{0..1}
Attribute content models	Required: type ::= 'installshield' 'java' 'custom' Optional: successType ::= 'returncode' 'logstring' 'ignore' programName ::= string logFile ::= string responseFile ::= string wait ::= 'true' 'false' externalCommand ::= 'true' 'false' classpath ::= string timeout ::= integer doesReboot ::= 'true' 'false' executeReboot ::= 'true' 'false' includeAnt ::= 'true' 'false'

Parameters

The entryProgram element has the following attributes:

type Use this attribute to specify a type of entry program. The deployment wizard uses this information to identify the command that starts the entry program.

installshield

InstallShield installation program.

java Java program.

custom

Anything not specified here or one of the named types that you modify.

For example, if the entry program is a Java program (type="java"), Express Runtime uses the JVM included with the IBM Installation Agent and the command java to start the program. The deployment wizard uses the value of the attribute programName to start the custom program (for example, programName="setup.exe").

If you use a type="custom" and you do not want the unpacked directory appended to your command line, be sure to specify externalCommand="true".

If you use a type="custom" on a Windows operating system, you might encounter a deployment problem where the computer hangs or is in an endless loop. If you specified a timeout setting, the deployment will terminate when that value is reached. Otherwise, the program will timeout after 90 minutes.

successType

Use this attribute to identify the method used to notify the deployment wizard that the entry program has run successfully or that it has failed. The default is returncode .

returncode

The success or failure of the entry program is determined by a return code.

Note: The return code values for all predeployment checkers, entry, exit, and main programs running on Linux and OS/400 (i5/OS)⁶ platforms must be between -128 and +127.

logstring

The success or failure of the entry program is determined by a specific string located in a log file; you must use the `logMessage` element in conjunction with this attribute type.

ignore No attempt is made to determine if the deployment was successful.

programName

Use this attribute to specify the name of an entry program.

logFile

Use this attribute to specify the name of a file to which log messages are written.

responseFile

Use this attribute to specify the name of a response file used by an entry program.

externalCommand

Set this attribute to `true` so that the unpacked directory is not appended to the command line. This attribute can only be used with a type of `custom`. The default is `false`.

classpath

Use this attribute to set the classpath for a Java program type. Any other use is ignored.

Note: If your user programs are stored in sub-folders (for example, `userPrograms/EntryProgram.java`), your classpath must specify `unpacked/<sub folders>` to ensure that the user program is executed. Refer to Adding user programs for more information.

timeout

The length of time in minutes that the program will wait before ending. Some programs can take longer than others; be sure that you allow the program long enough to complete.

doesReboot

Set this attribute to `true` to indicate that the program will reboot the target computer during the deployment. The default is `false`.

Notes[®]:

- If this attribute is set to `true`, you must set the `successType` attribute to `ignore`.
- If this attribute is set to `true` and you are deploying to a target computer running Windows XP, Windows 2000 Server or Windows NT Workstation, a user must be logged on to the target computer during deployment.

executeReboot

Set this attribute to `true` to force the target computer to reboot after the program executes. The default is `false`.

6. The OS/400 operating system is known as the i5/OS operating system beginning with V5R3.

Note: When deploying to a target computer running Windows XP, if `executeReboot` is set to `true`, a user must be logged on to the target computer during deployment.

includeAnt

Set this attribute to `true` to include the Apache Ant runtime in the application wrapper.

Usage

You can use entry programs to obtain information about target computers, ensure that target computers meet the minimum requirements for application deployments, and provide any required initialization on target computers for application deployments. Some examples of things an entry program can do include:

- Set up directories
- Check for free space
- Check locale
- Check for prerequisites
- Check operating system
- Check or add user IDs and groups

environmentSettings

(Purpose)

This element contains the environment settings for an application.

Examples

```
<iru:application>
  <entryProgram
    type="java"
    successType="returnCode"
    program
    logfile="WASStudioEntry.log">
    <environmentSettings>
      <setting>JAVA_HOME=/usr/jdk118</setting>
    /environmentSettings>
  </entryProgram>
</iru:application>
```

Format

Parents	(entryProgram), (mainProgram), (exitProgram)
Occurrences within each parent	Optional. Can occur only once.
Element content model	environmentSettings ::= (setting) ^{0,*}

Parameters

The `environmentSettings` element does not have any attributes.

Usage

Any environment settings that you define here are in addition to those already running in the current session.

exitProgram (Purpose)

This element contains information about an exit program for an application.

Examples

```
<iru:application>
  <exitProgram
    type="java"
    successType="returnCode"
    classpath="unpacked"
    programName="com.ibm.jsdt.examples.djt_sba.DJT_sbaExit">
  </exitProgram>
</iru:application>
```

Format

Parent	(application)
Occurrences within parent	Optional. Can occur only once.
Element content model	exitProgram ::= (arguments) ^{0,1} (environmentSettings) ^{0,1} (logMessages) ^{0,1}
Attribute content models	Required: type ::= 'installshield' 'java' 'custom' Optional: successType ::= 'returncode' 'logstring' 'ignore' programName ::= string logFile ::= string responseFile ::= string wait ::= 'true' 'false' externalCommand ::= 'true' 'false' classpath ::= string timeout ::= integer doesReboot ::= 'true' 'false' executeReboot ::= 'true' 'false' includeAnt ::= 'true' 'false'

Parameters

The exitProgram element has the following attributes:

type Use this attribute to specify a type of exit program. The Solution Deployer uses this information to identify the command that starts the exit program.

installshield

InstallShield installation program.

java Java program.

custom

Anything not specified here or any of the named types that you modify.

For example, if the exit program is a Java program (type="java"), the deployment wizard uses the JVM for the IBM Installation Agent and the command java to start the program. The deployment wizard uses the value of the attribute programName to start the custom program (for example, programName="setup.exe"). The following types of programs have a default value for programName; in these cases, you do not need to specify the program name.

If you use a type="custom" and you do not want the unpacked directory appended to your command line, be sure to specify externalCommand="true".

If you use a `type="custom"` on a Windows operating system, you might encounter a deployment problem where the computer hangs or is in an endless loop. If you specified a timeout setting, the deployment will terminate when that value is reached. Otherwise, the program will timeout after 90 minutes.

successType

Use this attribute to identify the method used to notify the deployment wizard that the exit program has run successfully or that it has failed. The default is `returnCode`.

returnCode

The success or failure of the exit program is determined by a return code.

Note: The return code values for all predeployment checkers, `entry`, `exit`, and `main` programs running on Linux or OS/400 (i5/OS)⁷ platforms must be between -128 and +127.

logString

The success or failure of the exit program is determined by a specific string located in a log file; you must use the `logMessage` element in conjunction with this attribute type.

ignore No attempt is made to determine if the deployment was successful.

programName

Use this attribute to specify the name of an exit program.

logFile

Use this attribute to specify the name of a file to which log messages are written.

responseFile

Use this attribute to specify the name of a response file used by an exit program.

externalCommand

Set this attribute to `true` so that the unpacked directory is not appended to the command line. This attribute can only be used with a type of `custom`. The default is `false`.

classpath

Use this attribute to set the classpath for a Java program type. Any other use is ignored.

timeout

The length of time in minutes that the program will wait before ending. Some programs can take longer than others; be sure that you allow the program long enough to complete.

doesReboot

Set this attribute to `true` to indicate that the program will reboot the target computer during the deployment. The default is `false`.

Notes:

- If this attribute is set to `true`, you must set the `successType` attribute to `ignore`.

7. The OS/400 operating system is known as the i5/OS operating system beginning with V5R3.

- If this attribute is set to true and you are deploying to a target computer running Windows XP, Windows 2000 Server or Windows NT Workstation, a user must be logged on to the target computer during deployment.

executeReboot

Set this attribute to true to force the target computer to reboot after the program executes. The default is false.

Note: When deploying to a target computer running Windows XP, if executeReboot is set to true, a user must be logged on to the target computer during deployment.

includeAnt

Set this attribute to true to include the Apache Ant runtime in the application wrapper.

Usage

You can use exit programs to verify that an application was successfully deployed and to clean up target computers (for example, to remove temporary directories).

externalJar

(Purpose)

This element specifies the name of an external JAR that is needed by your user programs at run time.

Examples

```
<iru:application>
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:iru="http://www.ibm.com/xmlns/prod/iru/application"
  xsi:schemaLocation="http://www.ibm.com/xmlns/prod/iru/application DJT_application.xsd"
  debug="true"
  id="DJT_sia"
  ...
  <externalJars>
    <externalJar>../../externalSupportJars/IRU_Support.jar</externalJar>
    <externalJar>myDir/Any.jar</externalJar>
  </externalJars>
  ...
</iru:application>
```

Format

Parent	(externalJars)
Occurrences within parent	Required. Can occur more than once.
Element content model	externalJar ::= string
Attribute content models	None

Parameters

The element has no attributes.

Usage

The `externalJar` element specified must end with `.jar` and it must exist when you execute the Application generator. The JAR file specified will automatically be added to the classpath when the deployment wizard executes your user program.

Note: To expedite the development of user programs you might want to use the APIs in the support framework JAR, `<Express Runtime Installation Path>/SolutionEnabler/externalSupportJars/IRU_Support.jar`, by specifying it as an `externalJar`. For further information on this framework, refer to User Programs.

externalJars

(Purpose)

This element specifies external jars that are required by your user programs.

Examples

```
<iru:application>
  <externalJars>
    <externalJar>../../externalSupportJars/IRU_Support.jar</externalJar>
    <externalJar>myDir/Any.jar</externalJar>
  </externalJars>
  ...
</iru:application>
```

Format

Parent	application
Occurrences within parent	Optional. Can occur only once.
Element content model	<code>externalJars ::= externalJar^{1,*}</code> (link)
Attribute content models	None

Parameters

The `externalJars` element has no attributes.

Usage

The `externalJars` element is a container element for all external JARs.

file

(Purpose)

This element contains the name of a deployment image file, an entry or exit program file, or a directory that is used during deployment. If the file specified is a directory, all files and subdirectories are recursively included in the file list.

Examples

```
<fileLists>
  <fileList id="common">
    <file>sbaImage</file>
```

```

    <file>com/ibm/jsdt/examples/djt_sba/DJT_sbaEntry.class</file>
    <file>DJT_sba/usrePrograms/DJT_sbaExit.class</file>
  </fileList>
</fileLists>

```

Format

Parent	(fileList)
Occurrences within parent	Optional. Can occur more than once.
Element content model	file ::= string
Attribute content models	None

Usage

The file element might be a directory. If so, the directory and all its subdirectories are added to the list.

fileList (Purpose)

This element contains a list of file elements.

Examples

```

<fileLists>
  <fileList id="common">
    <file>sbaImage</file>
    <file>com/ibm/jsdt/examples/djt_sba/DJT_sbaEntry.class</file>
    <file>com/ibm/jsdt/examples/djt_sba/DJT_sbaExit.class</file>
  </fileList>
</fileLists>

```

Format

Parent	(fileLists)
Occurrences within parent	Required. Can occur more than once.
Element content model	fileList ::= (file) ^{0,*}
Attribute content model	Required: id ::= string Optional: softwareImageRoot ::= string Deprecated: includeAllFilesInSoftwareImageRoot ::= 'true' 'false' userPrograms ::= 'true' 'false'

Parameters

The element fileList has the following attributes:

id Use this attribute to identify and to refer to a specific file list. The element fileSet calls this identifier.

softwareImageRoot

Use this attribute to specify the path name of all the files or directories.

includeAllFilesInSoftwareImageRoot (Deprecated)

This attribute is deprecated. A deprecated element or attribute is one that is outdated in the latest versions of the schema. The attribute might become obsolete in future versions of the Express Runtime product and should not be used.

userPrograms (Deprecated)

This attribute is deprecated. A deprecated element or attribute is one that is outdated in the latest versions of the schema. The attribute might become obsolete in future versions of the Express Runtime product and should not be used. This attribute specifies that the file list contains user programs. This attribute is used to package these files in the user programs JAR file when the product package is built. For every locale for which one or more user program file lists are specified, there should be at least one `fileList` element that does not contain the `userPrograms` attribute.

fileLists

(Purpose)

This element contains all the `fileList` elements in an application document.

Examples

```
<iru:application>
  <fileLists>
    <fileList id="common">
      <file>sbaImage</file>
      <file>com/ibm/jsdt/examples/djt_sba/DJTsbaEntry.class</file>
      <file>com/ibm/jsdt/examples/djt_sba/DJTsbaExit.class</file>
    </fileList>
  </fileLists>
</iru:application>
```

Restrictions

Parent	(application)
Occurrences within parent	Required. Must occur only once.
Element content model	fileLists ::= (fileList) ^{1,*}

Parameters

The `fileLists` element does not have any attributes.

fileSet

(Purpose)

A file set allows you to associate lists of files with a particular installation language. A list of files might be associated to multiple file sets.

Examples

```
<fileSets>
  <fileSet fileListId="common"/>
  <deploymentPackagePrompt translatedKey="prompt"/>
</fileSets>
```

Format

Parent	(fileSets)
Occurrences within parent	Required. Can occur more than once.
Element content model	fileSet ::= EMPTY string
Attribute content models	Required: fileListId ::= string Deprecated: language ::= 'english' 'french' 'german' 'italian' 'korean' 'spanish' 'simplifiedchinese' 'traditionalchinese' 'japanese' 'brazilianportuguese'

Parameters

The fileSet element has the following attributes:

fileListId

Use this attribute to specify the identifier of a file list. (See (fileList).)

language (Deprecated)

The language attribute is deprecated. A deprecated element or attribute is one that is outdated in the latest versions of the schema. The attribute might become obsolete in future versions of the Express Runtime product and should not be used.

fileSets

(Purpose)

This element contains all the fileSet elements in an application document.

Examples

```
<iru:application>
  <fileSets>
    <fileSet fileListId="common"/>
    <fileSet fileListId="common"/>
    <deploymentPackagePrompt translatedKey="prompt"/>
  </fileSets>
</iru:application>
```

Format

Parent	(application)
Occurrences	Required. Must occur only once.
Element content model	fileSets ::= (fileSet) ^{1,*} (deploymentPackagePrompt) ^{0,1} (helpText) ^{0,1}

Parameters

The fileSets element does not have any attributes.

helpText

(Purpose)

This element contains information about an interface element (stringVariable, booleanVariable, passwordVariable, or dropDownListVariable) on an application's Deployment Parameters panel. Help information about an interface element is displayed in a separate help window accessible through a help button on the configuration panel.

Examples

```
<stringVariable
  minimumLength="2"
  maximumLength="14">
  <defaultData>siaUser</defaultData>
  <labelText translatedKey="userIdLabel"/>
  <helpText translatedKey="userIdHelp"/>
  <ismpFileAssociations>
    <ismpFileAssociation
      responseFileName="DJT_sia10setup.iss"
      propertyKeyType="product"
      propertyKey="product.username"/>
  </ismpFileAssociations>
  <inputValidation>
    <invalid>
      <prefixes>
        <prefix ignoreCase="true">BADPREFIX</prefix>
      </prefixes>
      <values>
        <value ignoreCase="true">BADVALUE</value>
      </values>
    </invalid>
    <valid>
      <characters ignoreCase="true">@#$_abcdefghijklmnopqrstuvwxyz0123456789
    </characters>
    </valid>
  </inputValidation>
</stringVariable>
```

Format

Parents	(booleanVariable), (passwordVariable), (stringVariable), (dropDownListVariable), (fileSets),
Occurrences within each parent	Optional. Can occur only once.
Element content model	helpText ::= EMPTY string
Attribute content models	Optional: translatedKey ::= string

Parameters

The helpText element has the following attribute:

translatedKey

Use this attribute to indicate that the help text has been translated and that the translated text is contained in separate translation XML files.

Note:

The translatedKey must begin with an alphabetic character.

inputValidation

(Purpose)

This element allows input validation criteria to be specified on a per-variable basis. The validation occurs when the user configures the deployment parameters on the deployment wizard.

Examples

```
<stringVariable
  minimumLength="2"
  maximumLength="14">
  <defaultData>siaUser</defaultData>
  <labelText translatedKey="userIdLabel"/>
  <helpText translatedKey="userIdHelp"/>
  <ismpFileAssociations>
    <ismpFileAssociation
      responseFileName="DJT_sia10setup.iss"
      propertyKeyType="product"
      propertyKey="product.username"/>
  </ismpFileAssociations>
  <inputValidation>
    <invalid>
      <prefixes>
        <prefix ignoreCase="true">BADPREFIX</prefix>
      </prefixes>
      <values>
        <value ignoreCase="true">BADVALUE</value>
      </values>
    </invalid>
    <valid>
      <characters ignoreCase="true">@#$_abcdefghijklmnopqrstuvwxyz
        0123456789</characters>
    </valid>
  </inputValidation>
</stringVariable>
```

Format

Parents	(sharedVariable), (passwordVariable), (stringVariable), (booleanVariable), (dropDownListVariable)
Occurrences within each parent	Optional. Can occur only once.
Element content model	inputValidation ::= (valid) ^{0,*} (invalid) ^{0,*}

Parameters

The inputValidation element does not have any attributes.

Usage

You must include at least one of the elements (valid or invalid); you can include both.

invalid (Purpose)

This element contains all the invalid criteria for a specific variable.

Examples

```

<stringVariable
    minimumLength="2"
    maximumLength="14">
    <defaultData>siaUser</defaultData>
    <labelText translatedKey="userIdLabel"/>
    <helpText translatedKey="userIdHelp"/>
    <ismpFileAssociations>
        <ismpFileAssociation
            responseFileName="DJT_sia10setup.iss"
            propertyKeyType="product"
            propertyKey="product.username"/>
    </ismpFileAssociations>
    <inputValidation>
        <invalid>
            <prefixes>
                <prefix ignoreCase="true">BADPREFIX</prefix>
            </prefixes>
            <values>
                <value ignoreCase="true">BADVALUE</value>
            </values>
        </invalid>
        <valid>
            <characters ignoreCase="true">@#$_abcdefghijklmnopqrstuvwxyz0123456789
        </characters>
        </valid>
    </inputValidation>
</stringVariable>

```

Restrictions

Parent	(inputValidation)
Occurrences within parent	Optional. Can occur more than once.
Element content model	invalid ::= (prefixes) ^{0,1} (characters) ^{0,*} (substrings) ^{0,1} (values) ^{0,1} (suffixes) ^{0,1} (ranges) ^{0,1}

Parameters

The `invalid` element does not have any attributes.

ismpFileAssociation

(Purpose)

This element contains configuration parameters that are inserted into an ISMP response file template at deployment.

Examples

```

<passwordVariable
    minimumLength="2"
    maximumLength="14">
    <labelText translatedKey="passwordLabel"/>
    <helpText translatedKey="passwordHelp"/>
    <ismpFileAssociations>
        <ismpFileAssociation
            responseFileName="responsefile.iss"
            propertyKeyType="product"

```

```

        propertyKey="product.password"/>
</ismpFileAssociations>
<inputValidation>
  <valid>
    <characters ignoreCase="true">@#$_abcdefghijklmnopqrstuvwxyz
      0123456789</characters>
  </valid>
</inputValidation>
</passwordVariable>

```

Format

Parents	(ismpFileAssociations)
Occurrences within each parent	Required. Can occur more than once.
Attribute content model	Required: responseFileName ::= string propertyKeyType ::= 'product' 'global' 'wizard' propertyKey ::= string Optional: valueIfTrue ::= string valueIfFalse ::= string

Parameters

The ismpFileAssociation element has the following attributes:

responseFileName

Use this attribute to specify the name of the response file.

propertyKeyType

Use this attribute to point to a particular type of entry in the specified response file template. Key types in a response file template are indicated by a dash (-) and some ISMP key type code uppercase letter. The type of entry value provided is converted into the ISMP code to precede the propertyKey value.

propertyKey

Use this attribute to point to a particular keyword within the specified type of entry of the response file template.

valueIfFalse

Use this attribute to specify what the value in the response file template should be if a boolean-type interface element is set to false.

valueIfTrue

Use this attribute to specify what the value in the response file template should be if a boolean-type interface element is set to true.

ismpFileAssociations

(Purpose)

This element holds a group of ismpFileAssociation elements.

Examples

```

<passwordVariable
  minimumLength="2"
  maximumLength="14">
  <labelText translatedKey="passwordLabel"/>
  <helpText translatedKey="passwordHelp"/>
</ismpFileAssociations>

```

```

    <ismpFileAssociation
      responseFileName="DJT_sial0setup.iss"
      propertyKeyType="product"
      propertyKey="product.password"/>
  </ismpFileAssociations>
<inputValidation>
  <valid>
    <characters ignoreCase="true">@#$_abcdefghijklmnopqrstuvwxyz
      0123456789</characters>
  </valid>
</inputValidation>
</passwordVariable>

```

Format

Parents	(stringVariable), (booleanVariable), (passwordVariable), (dropDownListVariable)
Occurrences within each parent	Optional. Can occur only once.
Element content model	ismpFileAssociations ::= (ismpFileAssociation) ^{1,*}

Parameters

The element ismpFileAssociations does not have any attributes.

issFileAssociation
(Purpose)

This element contains configuration parameters that are inserted into an InstallShield response file template at deployment.

Examples

```

<issFileAssociations>
  <issFileAssociation
    responseFileName="WASStudio302W32Setup.iss"
    section="SdAskDestPath-0"
    keyword="szdir"/>
</issFileAssociations>

```

Format

Parents	(issFileAssociations)
Occurrences within each parent	Required. Can occur more than once.
Attribute content model	Required: responseFileName ::= string keyword ::= string section ::= string Optional: valueIfTrue ::= string valueIfFalse ::= string

Parameters

The issFileAssociation element has the following attributes:

responseFileName

Use this attribute to specify the name of the response file.

section

Use this attribute to point to a particular section in the specified response file template. Sections in a response file template are indicated by brackets ([]).

keyword

Use this attribute to point to a particular keyword within the specified section of the response file template.

valueIfFalse

Use this attribute to specify what the value in the response file template should be if a boolean-type interface element is set to false.

valueIfTrue

Use this attribute to specify what the value in the response file template should be if a boolean-type interface element is set to true.

issFileAssociations**(Purpose)**

This element holds a group of issFileAssociation elements.

Examples

```
<passwordVariable
  minimumLength="2"
  maximumLength="14">
  <labelText translatedKey="passwordLabel"/>
  <helpText translatedKey="passwordHelp"/>
  <issFileAssociations>
    <issFileAssociation
      responseFileName="DJT_sia10setup.iss"
      section="setup"
      keyword="product"/>
  </issFileAssociations>
  <inputValidation>
    <valid>
      <characters ignoreCase="true">@#$_abcdefghijklmnopqrstuvwxyz
        0123456789</characters>
    </valid>
  </inputValidation>
</passwordVariable>
```

Format

Parents	(stringVariable), (booleanVariable), (passwordVariable), (dropDownListVariable)
Occurrences within each parent	Optional. Can occur only once.
Element content model	issFileAssociations ::= (issFileAssociation) ^{1,*}

Parameters

The element issFileAssociations does not have any attributes.

labelText**(Purpose)**

This element specifies the text that labels an input field on a task's application deployment parameters panel.

Examples

```
<passwordVariable
  minimumLength="2"
  maximumLength="14">
  <labelText translatedKey="passwordLabel"/>
  <helpText translatedKey="passwordHelp"/>
  <ismpFileAssociations>
    <ismpFileAssociation
      responseFileName="DJT_sia10setup.iss"
      propertyKeyType="product"
      propertyKey="product.password"/>
  </ismpFileAssociations>
  <inputValidation>
    <valid>
      <characters ignoreCase="true">@#$_abcdefghijklmnopqrstuvwxyz
        0123456789</characters>
    </valid>
  </inputValidation>
</passwordVariable>
```

Format

Parents	(booleanVariable), (passwordVariable), (stringVariable), (dropDownListVariable)
Occurrences within each parent	Required. Must occur only once.
Element content model	labelText ::= EMPTY string
Attribute content models	Optional: translatedKey ::= string

Parameters

The labelText element has the following attribute:

translatedKey

Use this attribute to indicate that the label text has been translated and that the translated text is contained in separate translation XML files.

Note:

The translatedKey must begin with an alphabetic character.

language

(Purpose)

This element contains the name of a particular language.

Examples

```
<translationLanguages default="english">
  <language>english</language>
  <language>spanish</language>
</translationLanguages>
```

Format

Parent	(translationLanguages)
Occurrences within parent	Required. Cannot occur more than 10 times.
Element content model	language ::= 'english' 'french' 'german' 'italian' 'korean' 'spanish' 'simplifiedchinese' 'traditionalchinese' 'japanese' 'brazilianportuguese'

Parameters

The language element does not have any attributes.

Usage

The list of languages that you include should match the language translations support by Express Runtime.

license

(Purpose)

This element contains the text for the application license. The license is displayed on the Application Properties License Acceptance window.

Examples

```
<applicationInformation
  version="1.0.0.0">
  <operatingSystems>
    <operatingSystem>Windows</operatingSystem>
    <operatingSystem>AIX</operatingSystem>
  </operatingSystems>
  <name translatedKey="name"/>
  <configurationInstructions translatedKey="configureText"/>
  <providerName translatedKey="providerName"/>
  <license>This product is licensed for one user only.</license>
</applicationInformation>
```

Format

Parent	(applicationInformation)
Occurrences within parents	Optional. Can occur only once.
Element content model	license ::= EMPTY string
Attribute content model	Optional: translatedKey ::= string

Parameters

translatedKey

Use this attribute to indicate that there are different license files for different languages and that the files are referenced in separate translation XML files.

Note:

The translatedKey must begin with an alphabetic character.

Usage

If a license is specified in the solution wrapper, that overrides any license specified in an application wrapper. When you begin a remote deployment, the license prompt is displayed with the solution license content even if you specified application licenses. If you do not specify a license for either the application or the solution, the license prompt is not displayed.

If no solution license is specified but application licenses are specified, when a deployment is started, the license prompt displays the license text of all the applications in the group.

logMessage

(Purpose)

This element contains the text of a message that can be searched for in a log file.

Examples

```
<entryProgram>
  <logMessages>
    <logMessage
      type="error">ReturnCode=-</logMessage>
    </logMessages>
    ...
  </entryProgram>
```

Format

Parent	(logMessages)
Occurrences within parent	Optional. Can occur more than once.
Element content model	logMessage ::= string
Attribute content models	Optional: translatedKey ::= string type ::= 'success' 'error'

Parameters

The logMessage element has the following attributes:

translatedKey

Use this attribute to indicate that the log message has been translated and that the translated messages are contained in separate translation XML files.

Note:

The translatedKey must begin with an alphabetic character.

type Use this attribute to specify whether the log message applies to successful deployment or to failed deployments. Use a value of "success" for successful deployments and "error" for failed deployments.

Usage

The logMessage element can only be used in conjunction with a program successType of logString. The logMessage element provides a way to define specific

messages for which you want to search in the log file that you specified in the logFile attribute of your program. For example, InstallShield defines a set of 12 return codes that are displayed in the log file (for example, ReturnCode=0, ReturnCode=1, and so on). Using the logMessage element, you can define those messages as strings.

When specifying log messages, you must define at least one success type message or one error type message.

logMessages (Purpose)

This element contains all the logMessage elements for a defined program.

Examples

```
<entryProgram>
  <logMessages>
    <logMessage
      type="error">ReturnCode=-</logMessage>
    </logMessages>
  ...
</entryProgram>
```

Format

Parent	(entryProgram), (mainProgram), (exitProgram), (preDeploymentChecker)
Occurrences within each parent	Optional. Can occur only once.
Element content model	logMessages ::= (logMessage) ^{0..*}

Parameters

The logMessages element does not have any attributes.

mainProgram (Purpose)

This element contains information about the deployment program for an application.

Examples

```
<iru:application>
  <mainProgram
    type="java"
    classpath="unpacked/siaImage/DJT_sia10setup.jar"
    program
    responseFile="DJT_sia10setup.iss"
    successType="returnCode">
    <arguments>
      <argument>-options</argument>
      <argument responseFile="true"/>
    </arguments>
  </mainProgram>
  ...
</iru:application>
```

Restrictions

Parent	(application)
Occurrences within parent	Required. Must occur only once.
Element content model	mainProgram ::= (arguments) ^{0,*} (environmentSettings) ^{0,1} (logMessages) ^{0,1}
Attribute content models	Required: type ::= 'custom' 'installshield' 'java' Optional: successType ::= 'returncode' 'logstring' 'ignore' programName ::= string logFile ::= string responseFile ::= string wait ::= 'true' 'false' externalCommand ::= 'true' 'false' classpath ::= string timeout ::= integer doesReboot ::= 'true' 'false' executeReboot ::= 'true' 'false' includeAnt ::= 'true' 'false'

Parameters

The mainProgram element has the following attributes:

type Use this attribute to specify a type of deployment program. The deployment wizard uses this information to identify the command that starts the deployment program.

installshield

InstallShield installation program.

java Java program.

custom

Anything not specified here or any of the named types that you modify.

For example, if the deployment program is a Java program (type="java"), the deployment wizard uses the JVM included in the IBM Installation Agent and the command java to start the program. The Solution Deployer uses the value of the attribute programName to start the custom program (for example, programName="setup.exe"). The following types of programs have a default value for programName; in these cases, you do not need to specify the programName.

If you use a type="custom" and you do not want the unpacked directory appended to your command line, be sure to specify externalCommand="true".

If you use a type="custom" on a Windows operating system, you might encounter a deployment problem where the computer hangs or is in an endless loop. If you specified a timeout setting, the deployment will terminate when that value is reached. Otherwise, the program will timeout after 90 minutes.

successType

Use this attribute to identify the method used to notify the deployment wizard that the deployment program has run successfully or that it has failed. The default is returncode .

returncode

The success or failure of the main program is determined by a return code.

Note: The return code values for all predeployment checkers, entry, exit, and main programs running on Linux or OS/400 (i5/OS)⁸ platforms must be between -128 and +127.

logstring

The success or failure of the main program is determined by a specific string located in a log file; you must use the `logMessage` element in conjunction with this attribute type.

ignore No attempt is made to determine if the deployment was successful.

programName

Use this attribute to specify the name of a deployment program.

logFile

Use this attribute to specify the name of a file to which log messages are written.

responseFile

Use this attribute to specify the name of a response file used by a deployment program.

externalCommand

Set this attribute to `true` so that the unpacked directory is not appended to the command line. This attribute can only be used with a type of `custom`. The default is `false`.

classpath

Use this attribute to set the classpath for a Java program type. Any other use is ignored.

timeout

The length of time in minutes that the program will wait before ending. Some programs can take longer than others; be sure that you allow the program long enough to complete.

doesReboot

Set this attribute to `true` to indicate that the program will reboot the target computer during the deployment. The default is `false`.

Notes:

- If this attribute is set to `true`, you must set the `successType` attribute to `ignore`.
- If this attribute is set to `true` and you are deploying to a target computer running Windows XP, Windows 2000 Server or Windows NT Workstation, a user must be logged on to the target computer during deployment.

executeReboot

Set this attribute to `true` to force the target computer to reboot after the program executes. The default is `false`.

8. The OS/400 operating system is known as the i5/OS operating system beginning with V5R3.

Note: When deploying to a target computer running Windows XP, if `executeReboot` is set to `true`, a user must be logged on to the target computer during deployment.

includeAnt

Set this attribute to `true` to include the Apache Ant runtime in the application wrapper.

name

(Purpose)

This element contains the name of an application. The application name is displayed in deployment wizard windows (for example, the Task Configuration window).

Examples

```
<applicationInformation
  version="1.0.0.0">
  <operatingSystems>
    <operatingSystem>Windows</operatingSystem>
  </operatingSystems>
  <name translatedKey="name" />
  <configurationInstructions translatedKey="configureText" />
  <providerName translatedKey="providerName" />
</applicationInformation>
```

Restrictions

Parent	(applicationInformation)
Occurrences within parent	Required. Must occur only once.
Element content model	name ::= string
Attribute content model	Optional: translatedKey ::= string

Parameters

The name element has the following attribute:

translatedKey

Use this attribute to indicate that the name has been translated and that the translated names are contained in separate translation XML files.

Note:

The `translatedKey` must begin with an alphabetic character.

operatingSystem

(Purpose)

This element contains the name of a particular operating system on which an application runs.

Examples

```
<applicationInformation
  version="1.0.0.0">
  <operatingSystems>
    <operatingSystem>Windows</operatingSystem>
  </operatingSystems>
</applicationInformation>
```

```

</operatingSystems>
<name translatedKey="name"/>
<configurationInstructions translatedKey="configureText"/>
<providerName translatedKey="providerName"/>
</applicationInformation>

```

Format

Parent	(operatingSystems)
Occurrences within parent	Required. Cannot occur more than five times.
Element content model	operatingSystem ::= 'Windows' 'Linux' 'LinuxOnPOWER' 'OS/400' 'AIX'

Parameters

The operatingSystem element does not have any attributes.

Usage

Use this element to specify which operating system this application can be installed to. Specify 'OS/400' for the i5/OS operating system.

operatingSystems

(Purpose)

This element contains all the operatingSystem elements that this application supports.

Examples

```

<applicationInformation
  installSize="1000"
  version="1.0.0.0">
  <operatingSystems>
    <operatingSystem>Windows</operatingSystem>
  </operatingSystems>
  <name translatedKey="name"/>
  <configurationInstructions translatedKey="configureText"/>
  <providerName translatedKey="providerName"/>
</applicationInformation>

```

Format

Parents	(applicationInformation)
Occurrences within parents	Required. Must occur only once.
Element content model	operatingSystems ::= (operatingSystem) ^{1,3}

Parameters

The operatingSystems element does not have any attributes.

passwordVariable

Purpose

This element contains information about a password field in a task's application Deployment Parameters panel. The text is blocked from view and replaced with asterisks (****). A second password field is displayed so that the user can enter the password again for verification.

Examples

```
<variables>
  <passwordVariable
    minimumLength="2"
    maximumLength="14">
    <labelText translatedKey="passwordLabel"/>
    <helpText translatedKey="passwordHelp"/>
    <ismpFileAssociations>
      <ismpFileAssociation
        responseFileName="DJT_sia10setup.iss"
        propertyKeyType="product"
        propertyKey="product.password"/>
    </ismpFileAssociations>
    <inputValidation>
      <valid>
        <characters ignoreCase="true">@#$_abcdefghijklmnopqrstuvwxyz
          0123456789</characters>
      </valid>
    </inputValidation>
  </passwordVariable>
</variables>
```

Format

Parent	(variables)
Occurrences within parent	Required. Can occur more than once.
Element content model	passwordVariable ::= (labelText) ^{1,1} (helpText) ^{0,1} (issFileAssociations) ^{0,1} (cidFileAssociations) ^{0,1} (propertiesAssociations) ^{0,1} (ismpFileAssociations) ^{0,1} (inputValidation) ^{0,1} (defaultData) ^{0,1}
Attribute content model	Required: name ::= string Optional: minimumLength ::= integer maximumLength ::= integer upperCase ::= 'true' 'false' lowerCase ::= 'true' 'false' required ::= 'true' 'false'

Parameters

The passwordVariable has the following attributes:

name Use this attribute to specify a name for the password variable.

minimumLength

Use this attribute to specify the minimum number of characters allowed in the variable string.

maximumLength

Use this attribute to specify the maximum number of characters allowed in a variable string.

upperCase

Use this attribute to specify whether all the string characters must be

uppercase. If they must, specify true. If the string characters can be both uppercase and lowercase, specify false. To specify lowercase, use the lowerCase attribute. The default is false.

lowerCase

Use this attribute to specify whether all the string characters must be lowercase. If they must, specify true. If the string characters can be both uppercase and lowercase, specify false. To specify uppercase, use the upperCase attribute. The default is false.

required

Use this attribute to specify whether a value for the variable is required. If a value is not required, specify false. The default is true.

Usage

Variables (password variables, drop-down list variables, string variables, and Boolean variables) specify the content on deployment parameters panels. The top-to-bottom order in which variables are displayed on a panel depends on their order in an application document. The first variable listed in a document is the first variable displayed on a configuration panel; the second variable listed in a document is the second variable displayed; and so on.

You can create as many variables as you need. However, all variables are displayed on the same deployment parameters panel and scrolling might be required in order to view them all.

preDeploymentChecker

(Purpose)

This element contains information about a program that runs prior to the application entry and application main programs and can be used to check the target computer to determine if any version of the application is already installed.

Examples

```
<iru:application
  <preDeploymentChecker
    type="java"
    successType="returnCode"
    logfile="DJT_siaPDC.log"
    programName="com.ibm.jsdt.examples.djt_sia.DJT_siaPDC">
  </preDeploymentChecker>
  ...
</iru:application>
```

Format

Parent	(application)
Occurrences	Optional. Can occur only once.
Element content model	preDeploymentChecker ::= (arguments) ^{0,1} (environmentSettings) ^{0,1} (logMessages) ^{0,1}

Attribute content model	Required: type ::= 'custom' 'installshield' 'java' Optional: successType ::= 'returncode' 'logstring' 'ignore' programName ::= string logFile ::= string responseFile ::= string wait ::= 'true' 'false' externalCommand ::= 'true' 'false' classpath ::= string timeout ::= integer doesReboot ::= 'true' 'false' executeReboot ::= 'true' 'false' includeAnt ::= 'true' 'false'
--------------------------------	--

The `preDeploymentChecker` element has the following attributes:

type Use this attribute to specify a type of deployment program. The deployment wizard uses this information to identify the command that starts the deployment program.

installshield

InstallShield installation program.

java Java program.

custom

Anything not specified here or any of the named types that you modify.

For example, if the deployment program is a Java program (`type="java"`), the deployment wizard uses the JVM included in the IBM Installation Agent and the command `java` to start the program. The Solution Deployer uses the value of the attribute `programName` to start the custom program (for example, `programName="setup.exe"`). The following types of programs have a default value for `programName`; in these cases, you do not need to specify the `programName`.

If you use a `type="custom"` and you do not want the unpacked directory appended to your command line, be sure to specify `externalCommand="true"`.

If you use a `type="custom"` on a Windows operating system, you might encounter a deployment problem where the computer hangs or is in an endless loop. If you specified a timeout setting, the deployment will terminate when that value is reached. Otherwise, the program will timeout after 90 minutes.

successType

Use this attribute to identify the method used to notify the deployment wizard that the deployment program has run successfully or that it has failed. The default is `returnCode`.

returnCode

The success or failure of the program is determined by a return code.

Note: The return code values for all predeployment checkers, entry, exit, and main programs running on Linux or OS/400 (i5/OS)⁹ platforms must be between -128 and +127.

9. The OS/400 operating system is known as the i5/OS operating system beginning with V5R3.

logstring

The success or failure of the program is determined by a specific string located in a log file; you must use the `logMessage` element in conjunction with this attribute type.

ignore No attempt is made to determine if the deployment was successful.

programName

Use this attribute to specify the name of a deployment program.

logFile

Use this attribute to specify the name of a file to which log messages are written.

responseFile

Use this attribute to specify the name of a response file used by a deployment program.

externalCommand

Set this attribute to `true` so that the unpacked directory is not appended to the command line. This attribute can only be used with a type of `custom`. The default is `false`.

classpath

Use this attribute to set the classpath for a Java program type. Any other use is ignored.

timeout

The length of time in minutes that the program will wait before ending. Some programs can take longer than others; be sure that you allow the program long enough to complete.

doesReboot

This attribute must be set to `false` when used with a predeployment checker. The default value is `false`.

executeReboot

Set this attribute to `true` to force the target computer to reboot after the program executes. The default is `false`.

Note: When deploying to a target computer running Windows XP, if `executeReboot` is set to `true`, a user must be logged on to the target computer during deployment.

includeAnt

Set this attribute to `true` to include the Apache Ant runtime in the application wrapper.

Usage

The deployment wizard sends the user program JAR file, containing the predeployment checker, to the target computer. The predeployment checker is run, and if a return code of 0 is received, the deployment continues and the deployment package file is sent. If a return code of 1 is received, the application deployment is aborted.

prefixes**(Purpose)**

This element holds a group of prefix elements.

Examples

```
<stringVariable
  minimumLength="2"
  maximumLength="14">
  <defaultData>siaUser</defaultData>
  <labelText translatedKey="userIdLabel"/>
  <helpText translatedKey="userIdHelp"/>
  <ismpFileAssociations>
    <ismpFileAssociation
      responseFileName="DJT_sia10setup.iss"
      propertyKeyType="product"
      propertyKey="product.username"/>
  </ismpFileAssociations>
  <inputValidation>
    <invalid>
      <prefixes>
        <prefix ignoreCase="true">BADPREFIX</prefix>
      </prefixes>
      <values>
        <value ignoreCase="true">BADVALUE</value>
      </values>
    </invalid>
    <valid>
      <characters ignoreCase="true">@#$_abcdefghijklmnopqrstuvwxy
        z0123456789</characters>
    </valid>
  </inputValidation>
</stringVariable>
```

Format

Parent	(invalid), (valid)
Occurrences	Optional. Can occur only once.
Element content model	prefixes ::= (prefix) ^{1,*}

Parameters

The prefixes element does not contain any attributes.

propertiesAssociation

(Purpose)

This element contains configuration parameters that are inserted into a properties file during deployment on the target computer.

Examples

```
<stringVariable
  minimumLength="3">
  ...
  <propertiesAssociations>
    <propertiesAssociation
      keyword="FILE"/>
  </propertiesAssociations>
  ...
</stringVariable>
```

Format

Parents	(propertiesAssociations)
Occurrences within each parent	Required. Can occur more than once.
Attribute content model	Required: keyword ::= string Optional: valueIfTrue ::= string valueIfFalse ::= string

Parameters

The propertiesAssociation element has the following attributes:

keyword

Use this attribute to point to a particular keyword within the properties file.

valueIfFalse

Use this attribute to specify what the value in the file template should be if a boolean-type interface element is set to false.

valueIfTrue

Use this attribute to specify what the value in the file template should be if a boolean-type interface element is set to true.

propertiesAssociations

(Purpose)

This element holds a group of propertiesAssociation elements.

Examples

```
<stringVariable  
  minimumLength="3">  
  ...  
  <propertiesAssociations>  
    <propertiesAssociation  
      keyword="FILE"/>  
  </propertiesAssociations>  
  ...  
</stringVariable>
```

Format

Parent	(stringVariable), (booleanVariable), (passwordVariable), (dropDownListVariable)
Occurrences	Optional. Can occur only once.
Element content model	propertiesAssociations ::= (propertiesAssociation) ^{1*}

Parameters

The propertiesAssociations element does not contain any attributes.

providerName

(Purpose)

This element contains the name of the provider of an application (for example, IBM). The provider name is displayed on the deployment wizard windows (for example, the Deployment Parameters panel).

Examples

```
<applicationInformation
  version="1.0.0.0">
  <operatingSystems>
    <operatingSystem>Windows</operatingSystem>
    <operatingSystem>AIX</operatingSystem>
  </operatingSystems>
  <name translatedKey="name" />
  <configurationInstructions translatedKey="configureText" />
  <providerName translatedKey="providerName" />
</applicationInformation>
```

Format

Parents	(applicationInformation)
Occurrences within parents	Optional. Can occur only once.
Element content model	providerName ::= EMPTY string
Attribute content model	Optional: translatedKey ::= string

Parameters

translatedKey

Use this attribute to indicate that the provider name has been translated and that the translated names are contained in separate translation XML files.

Note:

The translatedKey must begin with an alphabetic character.

Usage

The provider name is added to the beginning of the application name to build the full name that is displayed.

range (Purpose)

This element contains a string representation of a range of numeric values, defined as being either valid or invalid for a given variable.

Examples

```
<stringVariable
  minimumLength="2">
  ...
  <inputValidation>
    <invalid>
      <ranges>
        <range>8091 to 8095</range>
      </ranges>
    </invalid>
  </valid>
```

```

        <characters>0123456789</characters>
    </valid>
</inputValidation>
</stringVariable>

```

Format

Parents	(ranges)
Occurrences within parent	Required. Can occur more than once.
Element content model	range ::= string
Attribute content model	Optional: translatedKey ::= string

Parameters

translatedKey

Use this attribute to indicate that the range has been translated and that the translated ranges are contained in separate translation XML files. You can specify the same or different range values for each language.

Note:

The translatedKey must begin with an alphabetic character.

Usage

Use this element to specify a numeric range for validation. The range must be specified in the following format:

n to nn

where n is the first numeric value and nn is the last numeric value in the range. The numeric value can be in decimal format, for example, 1.5.

ranges

(Purpose)

This element holds a group of range elements.

Examples

```

<stringVariable
    minimumLength="2">
    ...
    <inputValidation>
        <invalid>
            <ranges>
                <range>8091 to 8095</range>
            </ranges>
        </invalid>
        <valid>
            <characters>0123456789</characters>
        </valid>
    </inputValidation>
</stringVariable>

```

Format

Parent	(invalid), (valid)
---------------	--------------------

Occurrences	Optional. Can occur only once.
Element content model	ranges ::= (range) ^{1..*}

Parameters

The ranges element does not contain any attributes.

setting (Purpose)

This element is a key=value pair that is applied to the environment in which the given program (predeployment checker, entry program, main program, or exit program) is executing.

Examples

```
<iru:application>
  <entryProgram
    type="java"
    successType="returnCode"
    program
    logfile="WASStudioEntry.log">
    <environmentSettings>
      <setting>JAVA_HOME=/usr/jdk118</setting>
    </environmentSettings>
  </entryProgram>
</iru:application>
```

Format

Parent	(environmentSettings)
Occurrences within parent	Optional. Can occur more than once.
Element content model	setting ::= string

Parameters

The setting element does not have any attributes.

stringVariable (Purpose)

This element defines a deployment parameter to be entered by the user.

Examples

```
<stringVariable
  name="installProfile"
  minimumLength="5"
  maximumLength="25">
  <defaultData>install.prf</defaultData>
  <labelText translatedKey="profLabel"/>
  <helpText translatedKey="profHelp"/>
  <propertiesAssociations>
    <propertiesAssociation keyword="installProfile"/>
  </propertiesAssociations>
```

```

<inputValidation>
  <valid>
    <suffixes>
      <suffix>.prf</suffix>
    </suffixes>
    <characters ignoreCase="true">abcdefghijklmnopqrstuvwxy
      z0123456789._</characters>
  </valid>
  <invalid>
    <substrings>
      <substring>\\</substring>
    </substrings>
    <characters>*?"|/@#$.:</characters>
  </invalid>
</inputValidation>
</stringVariable>

```

Format

Parent	(variables)
Occurrences within parent	Required. Can occur more than once.
Element content model	stringVariable ::= (labelText) ^{1,1} (helpText) ^{0,1} (issFileAssociations) ^{0,1} (cidFileAssociations) ^{0,1} (propertiesAssociations) ^{0,1} (ismpFileAssociations) ^{0,1} (inputValidation) ^{0,1} (defaultData) ^{0,1}
Attribute content models	Required: name ::= string Optional: minimumLength ::= integer maximumLength ::= integer upperCase ::= 'true' 'false' lowerCase ::= 'true' 'false' required ::= 'true' 'false'

Parameters

The stringVariable element has the following attributes:

name Use this attribute to specify a name for the string variable.

minimumLength

Use this attribute to specify the minimum number of characters allowed in the variable string.

maximumLength

Use this attribute to specify the maximum number of characters allowed in a variable string.

upperCase

Use this attribute to specify whether all the string characters must be uppercase. If they must, specify true. If the string characters can be both uppercase and lowercase, specify false. To specify lowercase, use the lowerCase attribute. The default is false.

lowerCase

Use this attribute to specify whether all the string characters must be lowercase. If they must, specify true. If the string characters can be both uppercase and lowercase, specify false. To specify uppercase, use the upperCase attribute. The default is false.

required

Use this attribute to specify whether a value for the variable is required. If a value is not required, specify `false`. The default is `true`.

Usage

Variables (string variables, password variables, and boolean variables) specify deployment parameters to be collected from the user for the application being deployed. The top-to-bottom order in which variables are displayed on a panel depends on their order in an application document. The first variable listed in a document is the first variable displayed on a configuration panel; the second variable listed in a document is the second variable displayed; and so on.

You can create as many variables as you need. However, all variables are displayed on the same Deployment Parameters panel and scrolling might be required in order to view them all.

substring (Purpose)

This element contains a string of characters that are defined as being either valid or invalid when they are displayed in a given variable.

Examples

```
<variables>
  <stringVariable
    name="installProfile"
    minLength="5"
    maxLength="25">
    <defaultData>install.prf</defaultData>
    <labelText translatedKey="profLabel"/>
    <helpText translatedKey="profHelp"/>
    <propertiesAssociations>
      <propertiesAssociation keyword="installProfile"/>
    </propertiesAssociations>
    <inputValidation>
      <valid>
        <suffixes>
          <suffix>.prf</suffix>
        </suffixes>
        <characters ignoreCase="true">abcdefghijklmnopqrstuvwxy
          z0123456789._</characters>
      </valid>
      <invalid>
        <substrings>
          <substring>\\</substring>
        </substrings>
        <characters>*?"|/@$%:\</characters>
      </invalid>
    </inputValidation>
  </stringVariable>
</variables>
```

Format

Parents	(substrings)
Occurrences within parent	Required. Can occur more than once.
Element content model	substring ::= string

Attribute content model	Optional: translatedKey ::= string ignoreCase ::= 'true' 'false'
--------------------------------	--

Parameters

The substring element has the following attribute:

translatedKey

Use this attribute to indicate that the substring has been translated and that the translated names are contained in separate translation XML files.

Note: The translatedKey must begin with an alphabetic character.

ignoreCase

Use this attribute to specify whether to check for mixed case in the given string of characters. If the string characters are not case sensitive, specify true. If the string characters are case sensitive, specify false. The default is false.

substrings

(Purpose)

This element holds a group of substring elements.

Examples

```
<variables>
  <stringVariable
    minimumLength="4"
    maximumLength="25">
    ...
  <inputValidation>
    <invalid>
      <substrings>
        <substring>\\</substring>
      </substrings>
      <characters>*?"|/0#$.:\</characters>
    </invalid>
  </inputValidation>
</stringVariable>
</variables>
```

Format

Parent	(invalid), (valid)
Occurrences	Optional. Can occur only once.
Element content model	substrings ::= (substring) ^{1,*}

Parameters

The substrings element does not contain any attributes.

suffix

(Purpose)

This element contains a string of characters that are defined as being either valid or invalid when they are displayed at the end of the value entered for a given variable.

Examples

```
<variables>
  <stringVariable
    name="installProfile"
    minLength="5"
    maxLength="25">
    <defaultData>install.prf</defaultData>
    <labelText translatedKey="profLabel"/>
    <helpText translatedKey="profHelp"/>
    <propertiesAssociations>
      <propertiesAssociation keyword="installProfile"/>
    </propertiesAssociations>
    <inputValidation>
      <valid>
        <suffixes>
          <suffix>.prf</suffix>
        </suffixes>
        <characters ignoreCase="true">abcdefghijklmnopqrstuvwxy
          z0123456789._</characters>
      </valid>
      <invalid>
        <substrings>
          <substring>\\</substring>
        </substrings>
        <characters>*?"|/@#$.:</characters>
      </invalid>
    </inputValidation>
  </stringVariable>
</variables>
```

Format

Parents	(suffixes)
Occurrences within parent	Required. Can occur more than once.
Element content model	suffix ::= string
Attribute content model	Optional: translatedKey ::= string ignoreCase ::= 'true' 'false'

Parameters

The suffix element has the following attributes:

translatedKey

Use this attribute to indicate that the suffix has been translated and that the translated names are contained in separate translation XML files.

Note: The translatedKey must begin with an alphabetic character.

ignoreCase

Use this attribute to specify whether to check for mixed case in the given string of characters. If the string characters are not case sensitive, specify true. If the string characters are case sensitive, specify false. The default is false.

suffixes (Purpose)

This element holds a group of suffix elements.

Examples

```
<variables>
  <stringVariable
    name="installProfile"
    minimumLength="5"
    maximumLength="25">
    <defaultData>install.prf</defaultData>
    <labelText translatedKey="profLabel"/>
    <helpText translatedKey="profHelp"/>
    <propertiesAssociations>
      <propertiesAssociation keyword="installProfile"/>
    </propertiesAssociations>
    <inputValidation>
      <valid>
        <suffixes>
          <suffix>.prf</suffix>
        </suffixes>
        <characters ignoreCase="true">abcdefghijklmnopqrstuvwyz
          0123456789._</characters>
      </valid>
      <invalid>
        <substrings>
          <substring>\\</substring>
        </substrings>
        <characters>*"|/0#$.:</characters>
      </invalid>
    </inputValidation>
  </stringVariable>
</variables>
```

Format

Parent	(invalid), (valid)
Occurrences	Optional. Can occur only once.
Element content model	suffixes ::= (suffix) ^{1*}

Parameters

The suffixes element does not contain any attributes.

translationLanguages (Purpose)

This element specifies the languages supported for globalization in the application and controls the language displayed on the configuration panels.

Examples

```
<iru:application>
  <translationLanguages default="english">
    <language>english</language>
```

```

    <language>spanish</language>
  </translationLanguages>
  ...
</iru:application>

```

Format

Parent	(application)
Occurrences within parents	Optional. Can occur only once.
Element content model	translationLanguages ::= (language) ^{1,10}
Attribute content model	Required: default ::= string

Parameters

The translationLanguages element has the following attribute:

default

Use this attribute to identify the default language for this application.

Usage

See Translation considerations for more information.

valid

(Purpose)

This element contains all the valid criteria for a specific variable.

Examples

```

<passwordVariable
  minimumLength="2"
  maximumLength="14">
  <labelText translatedKey="passwordLabel"/>
  <helpText translatedKey="passwordHelp"/>
  <ismpFileAssociations>
    <ismpFileAssociation
      responseFileName="DJT_sial0setup.iss"
      propertyKeyType="product"
      propertyKey="product.password"/>
  </ismpFileAssociations>
  <inputValidation>
    <valid>
      <characters ignoreCase="true">@#$_abcdefghijklmnopqrstuvwxyz
        0123456789</characters>
    </valid>
  </inputValidation>
</passwordVariable>

```

Restrictions

Parent	(inputValidation)
Occurrences within parent	Optional. Can occur more than once.

Element content model	valid ::= (prefixes) ^{0,*} (characters) ^{0,*} (substrings) ^{0,*} (values) ^{0,*} (suffixes) ^{0,*} (ranges) ^{0,*}
------------------------------	---

Parameters

The valid element does not have any attributes.

validator (Purpose)

This element allows you to specify a custom class to validate the variable in the deployment wizard. Implement the validate() method of the new class to perform custom validation by following the description in the Javadoc documentation of the validate() method.

Examples

```
<stringVariable
  minimumLength="2"
  maximumLength="14">
  <labelText translatedKey="userIdLabel"/>
  <helpText translatedKey="userIdHelp"/>
  <validator>MyValidator</validator>
</stringVariable>
```

Format

Parents	(sharedVariable), (passwordVariable), (stringVariable), (booleanVariable), (dropDownListVariable)
Occurrences within each parent	Optional. Can occur only once.
Element content model	validator ::=string

Parameters

The validator element does not have any attributes.

Usage

To create a validator program, create a Java class that implements the Express Runtime com.ibm.jsdt.productdef.CustomValidator interface. This class has one method, called validate, which takes an object as an argument and returns null if validation is successful or returns a string that represents the error message to display on the deployment wizard if the validation fails.

value (Purpose)

This element contains a string of characters that are defined as being either valid or invalid for the value entered for a given variable.

Examples


```

<stringVariable
  minimumLength="2"
  maximumLength="14">
  <defaultData>siaUser</defaultData>
  <labelText translatedKey="userIdLabel"/>
  <helpText translatedKey="userIdHelp"/>
  <ismpFileAssociations>
    <ismpFileAssociation
      responseFileName="DJT_sia10setup.iss"
      propertyKeyType="product"
      propertyKey="product.username"/>
  </ismpFileAssociations>
  <inputValidation>
    <invalid>
      <prefixes>
        <prefix ignoreCase="true">BADPREFIX</prefix>
      </prefixes>
      <values>
        <value ignoreCase="true">BADVALUE</value>
      </values>
    </invalid>
    <valid>
      <characters ignoreCase="true">@#$_abcdefghijklmnopqrstuvwxyz
        0123456789</characters>
    </valid>
  </inputValidation>
</stringVariable>

```

Format

Parents	(values)
Occurrences within parent	Required. Can occur more than once.
Element content model	value ::= string EMPTY
Attribute content model	Optional: translatedKey ::= string ignoreCase ::= 'true' 'false'

Parameters

The value element has the following attribute:

translatedKey

Use this attribute to indicate that the value has been translated and that the translated names are contained in separate translation XML files.

Note:

The translatedKey must begin with an alphabetic character.

ignoreCase

Use this attribute to specify whether to check for mixed case in the given string of characters. If the string characters are not case sensitive, specify true. If the string characters are case sensitive, specify false. The default is false.

values

(Purpose)

This element holds a group of value elements.

Examples

```
<stringVariable
  minimumLength="2"
  maximumLength="14">
  <defaultData>siaUser</defaultData>
  <labelText translatedKey="userIdLabel"/>
  <helpText translatedKey="userIdHelp"/>
  <ismpFileAssociations>
    <ismpFileAssociation
      responseFileName="DJT_sia10setup.iss"
      propertyKeyType="product"
      propertyKey="product.username"/>
  </ismpFileAssociations>
  <inputValidation>
    <invalid>
      <prefixes>
        <prefix ignoreCase="true">BADPREFIX</prefix>
      </prefixes>
      <values>
        <value ignoreCase="true">BADVALUE</value>
      </values>
    </invalid>
    <valid>
      <characters ignoreCase="true">@#$_abcdefghijklmnopqrstuvwxy
        z0123456789</characters>
    </valid>
  </inputValidation>
</stringVariable>
```

Format

Parent	(valid), (invalid)
Occurrences	Optional. Can occur only once.
Element content model	values ::= (value) ^{1,*}

Parameters

The values element does not contain any attributes.

variables

(Purpose)

This element holds a group of variable-type elements.

Examples

```
<iru:application>
  <variables>
    ...
  </variables>
  ...
</iru:application>
```

Format

Parent	(application)
---------------	---------------

Occurrences	Optional. Can occur only once.
Element content model	variables ::= (booleanVariable) ^{0..*} (passwordVariable) ^{0..*} (stringVariable) ^{0..*}

Parameters

The variables element does not contain any attributes.

Solution elements

aboutScreen

(Purpose)

This element contains the name of a graphics file for Express Runtime.

Examples

```
<solutionInformation>
  <title translatedKey="solution_title"/>
  <license translatedKey="license"/>
  <licensePrompt translatedKey="licensePrompt"/>
  <aboutScreen translatedKey="aboutScreen"/>
  <aboutScreenText translatedKey="aboutText"/>
  <icon>graphics/IRU_samples1.gif</icon>
</solutionInformation>
```

Format

Parent	(solutionInformation)
Occurrences within parent	Optional. Can occur only once.
Element content model	aboutScreen ::= EMPTY string
Attribute content model	Optional: translatedKey ::= string

Parameters

The aboutScreen element has the following attribute:

translatedKey

Use this attribute to indicate that the graphics file with the information "Product Information" has been translated and that the translated art files are referenced in separate language documents.

Note:

The translatedKey must begin with an alphabetic character.

Usage

The file for the aboutScreen element must be in either JPG or GIF format and should be no bigger than 340 x 590 pixels. This file must exist when you run the Solution generator.

The aboutScreen graphic and aboutScreenText are displayed in the Product Information window. This window is split into two parts: the graphic side on the left, and the text side on the right. The graphic area grows to the right as needed, reducing the display space for the text. The graphic is centered vertically and horizontally aligned on the left. The text area displays scroll bars, if necessary.

aboutScreenText

(Purpose)

This element allows you to provide legal information about your solution in an accessible format.

Examples

```
<solutionInformation>
  <title translatedKey="solution_title"/>
  <license translatedKey="license"/>
  <licensePrompt translatedKey="licensePrompt"/>
  <aboutScreen translatedKey="aboutScreen"/>
  <aboutScreenText translatedKey="aboutText"/>
  <icon>graphics/DJT_samples1.gif</icon>
</solutionInformation>
```

Format

Parent	(solutionInformation)
Occurrences within parent	Optional. Can occur only once.
Element content model	aboutScreenText ::= EMPTY string
Attribute content model	Optional: translatedKey ::= string

Parameters

The aboutScreenText element has the following attribute:

translatedKey

Use this attribute to indicate that the file with the information “Product Information” has been translated and that the translated files are referenced in separate language documents.

Note:

The translatedKey must begin with an alphabetic character.

Usage

The aboutScreen graphic and aboutScreenText are displayed in the Product Information window. This window is split into two parts: the graphic side on the left, and the text side on the right. The graphic area grows to the right as needed, reducing the display space for the text. The graphic is centered vertically and horizontally aligned on the left. The text area displays scroll bars, if necessary.

application

(Purpose)

This element specifies a particular application in an installTask in the solution.

Examples

```
<installTask>
  operatingSystem="AIX">
  <description translatedKey="aixInstallTask"/>
  <applications>
  <application
    fileName="DJT_sia_aix.ser">
  <path translatedKey="BuildPath"/>
  </application>
  </applications>
</installTask>
```

Format

Parent	(applications)
Occurrences within document	Optional. Can occur more than once.
Element content model	application ::= (path) ^{0,1} (deploymentPackagePrompt) ^{0,1}
Attribute content models	Required: fileName ::= string Optional: stopDeploymentOnFail ::= "true" "false"

Parameters

The application element has the following attributes:

fileName

The file name and path of the binary application file on the staging server. This file must exist when you run the Solution generator.

stopDeploymentOnFail

If set to true, the solution deployment will stop if the installation of this particular application fails on a target machine. The installation of any subsequent applications will not be attempted on the target machine where the failure occurred, and any remaining tasks in the solution will not be deployed. Other target machines in the same task will not be affected unless the same failure occurs on those target machines as well.

applications

(Purpose)

This element contains one or more (application) elements.

Examples

```
<installTask>
  operatingSystem="AIX">
  <description translatedKey="aixInstallTask"/>
  <applications>
  <application
    fileName="DJT_sia_aix.ser">
  <path translatedKey="BuildPath"/>
  </application>
  </applications><
</installTask>
```

Format

Parent	(solution)
Occurrences within document	Optional. Can occur more than once.
Element content model	applications ::= (application) ^{1,*}

Parameters

The applications element does not have any attributes.

communicationPortNumber

(Purpose)

This element specifies the TCP/IP port number used by the deployment wizard to communicate with the target computers.

Examples

```
<solutionInformation>
  <title translatedKey="solution_title"/>
  <license translatedKey="license"/>
  <licensePrompt translatedKey="licensePrompt"/>
  <aboutScreen translatedKey="aboutScreen"/>
  <aboutScreenText translatedKey="aboutText"/>
  <icon>graphics/DJT_samples1.gif</icon>
  <maximumNumberOfActiveTargets>75</maximumNumberOfActiveTargets>
  <maximumNumberOfDataConnections>75</maximumNumberOfDataConnections>
  <deploymentPackagePath>software/images/</deploymentPackagePath>
  <dataPortNumber>0</dataPortNumber>
  <communicationPortNumber>0</communicationPortNumber>
</solutionInformation>
```

Format

Parent	(solutionInformation)
Occurrences within parent	Optional. Can occur only once.
Element content model	deploymentPackagePath ::= integer

Parameters

The communicationPortNumber element does not have any attributes.

Usage

If this port number is used by another process, you can change it to a different port number. The valid range is 0 to 65535. Consider, however, that ports 1 to 1023 are usually reserved for use by other programs (for example, FTP and Telnet).

dataPortNumber

(Purpose)

This element specifies the TCP/IP port number used by the deployment wizard to send data such as deployment packages to target computers.

Examples

```
<solutionInformation>
  <title translatedKey="solution_title"/>
  <license translatedKey="license"/>
  <licensePrompt translatedKey="licensePrompt"/>
  <aboutScreen translatedKey="aboutScreen"/>
  <aboutScreenText translatedKey="aboutText"/>
  <icon>graphics/DJT_samples1.gif</icon>
  <maximumNumberOfActiveTargets>75</maximumNumberOfActiveTargets>
  <maximumNumberOfDataConnections>75</maximumNumberOfDataConnections>
  <dataPortNumber>0</dataPortNumber>
  <communicationPortNumber>0</communicationPortNumber>
</solutionInformation>
```

Format

Parents	(solutionInformation)
Occurrences within parent	Optional. Can occur only once.
Element content model	dataPortNumber ::= integer

Parameters

The dataPortNumber element does not have any attributes.

Usage

If this port number is used by another process, you can change it to a different port number. The valid range is from 0 to 65535. Consider, however, that ports 1 to 1023 are usually reserved for use by other programs (for example, FTP and Telnet).

deploymentPackagePath

(Purpose)

This element identifies the path where the deployment packages will be located.

Examples

```
<solutionInformation>
  <title translatedKey="solution_title"/>
  <license translatedKey="license"/>
  <licensePrompt translatedKey="licensePrompt"/>
  <aboutScreen translatedKey="aboutScreen"/>
  <aboutScreenText translatedKey="aboutText"/>
  <icon>graphics/DJT_samples1.gif</icon>
  <maximumNumberOfActiveTargets>75</maximumNumberOfActiveTargets>
  <maximumNumberOfDataConnections>75</maximumNumberOfDataConnections>
  <deploymentPackagePath>software/images/</deploymentPackagePath>
  <dataPortNumber>0</dataPortNumber>
  <communicationPortNumber>0</communicationPortNumber>
</solutionInformation>
```

Format

Parent	(solutionInformation)
---------------	-----------------------

Occurrences within parent	Optional. Can occur only once.
Element content model	deploymentPackagePath ::= EMPTY string

Parameters

The deploymentPackagePath element does not have any attributes.

deploymentPackagePrompt

(Purpose)

This element contains the text that displays in dialog boxes at the time users create deployment packages. The text of the prompt points them to the location of the deployment image files (for example, "Insert CD-ROM number 1") or asks them to browse to the location of the files. When users create deployment packages, the deployment package prompt text points them to the location of the main program files.

Examples

```
<installTask>
  operatingSystem="AIX">
  <description translatedKey="aixInstallTask"/>
    <applications>
      <application
        fileName="DJT_sia_aix.ser">
        <path translatedKey="BuildPath"/>
        <deploymentPackagePrompt translatedKey="prompt"/>
      </application>
    </applications>
  </installTask>
```

Format

Parents	(application)
Occurrences within parent	Optional. Can occur only once.
Element content model	deploymentPackagePrompt ::= EMPTY string
Attribute content model	Optional: translatedKey ::= string

Parameters

translatedKey

Use this attribute to indicate that the deployment package prompt string has been translated and that the translated string is contained in separate language documents.

Note:

The translatedKey must begin with an alphabetic character.

icon

(Purpose)

This element contains the name of a graphics file for an icon that is displayed next to the name of the deployment wizard title in the title bar of the deployment wizard main window.

Examples

```
<solutionInformation>
  <title translatedKey="solution_title"/>
  <license translatedKey="license"/>
  <licensePrompt translatedKey="licensePrompt"/>
  <aboutScreen translatedKey="aboutScreen"/>
  <aboutScreenText translatedKey="aboutText"/>
  <icon>samples/graphics/IRU_samples1.gif/icon<<
</solutionInformation>
```

Format

Parent	(solutionInformation)
Occurrences within parents	Optional. Can occur only once.
Element content model	icon ::= EMPTY string
Attribute content model	Optional: translatedKey ::= string

Parameters

translatedKey

Use this attribute to indicate that there are different graphics files for different languages and that the files are referenced in separate language documents.

Note:

The translatedKey must begin with an alphabetic character.

Usage

The icon file must be in either JPG or GIF format, and it must exist when you run the Solution generator.

installTask

(Purpose)

This element defines an installation task to be displayed in the deployment wizard window.

Examples

```
<installTask
  operatingSystem="Windows"
  addLocalHost="true"
  oneTargetDeployment="true"
  isOptional="true"
  selectedByDefault="false"
  id="string">
  <description translatedKey="windowsInstallTask"/>
  <taskDetails translatedKey="taskDetails"/>
  <applications>
  <application
    fileName="DJT_sia_win.ser">
```

```

    <path translatedKey="BuildPath"/>
  </application>
</applications>
</installTask>

```

Format

Parent	(tasks)
Occurrences within parents	Unlimited.
Element content model	manualTask ::=description ^{1,1} taskDetails ^{1,1}
Attribute content model	Required: operatingSystem:=OS Optional: addLocalHost ::= 'true' 'false' isOptional ::= 'true' 'false' oneTargetDeployment ::= 'true' 'false' selectedByDefault ::= 'true' 'false' id ::= 'string' Deprecated: language ::= 'english' 'french' 'german' 'italian' 'korean' 'spanish' 'simplifiedchinese' 'traditionalchinese' 'japanese' 'brazilianportuguese'

Parameters

The installTask element has the following attributes:

operatingSystem

Use this attribute to specify the operating system of the installTask.

addLocalHost

Set this attribute to true to initialize the installTask with localHost as target.

isOptional

Set this attribute to true to specify an installTask as optional.

oneTargetDeployment

Set this attribute to true to specify that this installTask can only deploy to one target computer.

selectedByDefault

Set this attribute to true to deploy this installTask by default.

Note: If the isOptional attribute is set to false, selectedByDefault will return true

id Set this attribute to assign a unique ID to the installTask.

language (Deprecated)

The language attribute is deprecated. A deprecated element or attribute is one that is outdated in the latest versions of the schema. The attribute might become obsolete in future versions of the Express Runtime product and should not be used.

Usage

An installTask is a task to install an application to a target computer using the deployment wizard. The operatingSystem attribute of the installTask refers to the

operating system of the target computer. The `addLocalHost` attribute of the `installTask` initializes `localhost` as the target for the deployment of the `install` task. The `oneTargetDeployment` attribute of the `installTask` specifies that the `install` task can be deployed to only one computer.

instructions

(Purpose)

This element provides instructions for a `manualTask`.

Examples

```
<manualTask>
  <description translatedKey="description"/>
  <instructions translatedKey="instructions"/>
</manualTask>
```

Format

Parent	(<code>manualTask</code>)
Occurrences within parents	Required. Must occur only once.
Attribute content model	Required: <code>translatedKey</code>

Parameters

The `instructions` element has the following attribute:

translatedKey

Use this attribute to specify key in the translated XML files that contain the actual text for the description.

Note:

The `translatedKey` must begin with an alphabetic character.

Usage

The `instructions` are displayed in the deployment wizard window when deploying or configuring a manual task. They provide instructions to the user for executing the manual task.

language

(Purpose)

This element contains the name of a particular language.

Examples

```
<translationLanguages default="english">
  <language>english</language>
  <language>french</language>
  <language>traditionalchinese</language>
</translationLanguages>
```

Format

Parent	(translationLanguages)
Occurrences within parent	Required. Cannot occur more than ten times.
Element content model	language ::= 'english' 'french' 'german' 'italian' 'korean' 'spanish' 'simplifiedchinese' 'traditionalchinese' 'japanese' 'brazilianportuguese' 'arabic' 'czech' 'danish' 'dutch' 'finnish' 'greek' 'hungarian' 'hebrew' 'norwegian' 'polish' 'portuguese' 'russian' 'swedish' 'turkish' 'albanian' 'bulgarian' 'byelorussian' 'catalan' 'croatian' 'estonian' 'icelandic' 'latvian' 'lithuanian' 'macedonian' 'romanian' 'serbian' 'slovakian' 'slovenian' 'thai' 'ukranian' 'kazakh'

Parameters

The language element does not have any attributes.

Usage

This element is used with the translationLanguages element.

For translationLanguages , only a subset of the languages listed here are valid. See (translationLanguages) for the list of valid languages you can use with that element.

Note:

Be sure to match your applications and solution to the translation languages of Express Runtime. If you do not, certain panels can be displayed with multiple languages.

license (Purpose)

This element contains the text of the solution license agreement that is displayed when a deployment to a target computer is started. It is also displayed on the Application Property License panel.

Examples

```
<solutionInformation>
  <title translatedKey="solution_title"/>
  <license translatedKey="license"/>
  <licensePrompt translatedKey="licensePrompt"/>
  <aboutScreen translatedKey="aboutScreen"/>
  <aboutScreenText translatedKey="aboutText"/>
  <icon>graphics/IRU_samples1.gif</icon>
</solutionInformation>
```

Format

Parent	(solutionInformation)
---------------	-----------------------

Occurrences within parent	Optional. Can occur only once.
Element content model	license ::= EMPTY string
Attribute content models	Optional: translatedKey ::= string

Parameters

The license element has the following attribute:

translatedKey

Use this attribute to indicate that the license agreement has been translated and that the translated agreements are contained in separate language documents.

Note:

The translatedKey must begin with an alphabetic character.

Usage

If a license is specified in the solution wrapper, that overrides any license specified in an application wrapper. When you begin a remote deployment, the license prompt is displayed with the solution license content even if you specified application licenses. If you do not specify a license for either the application or the solution, the license prompt is not displayed.

licensePrompt

(Purpose)

This element contains a message displayed on the license agreement dialog.

Examples

```
<solutionInformation>
  <title translatedKey="solution_title"/>
  <license translatedKey="license"/>
  <licensePrompt translatedKey="licensePrompt"/>
  <aboutScreen translatedKey="aboutScreen"/>
  <aboutScreenText translatedKey="aboutText"/>
  <icon>graphics/IRU_samples1.gif</icon>
</solutionInformation>
```

Format

Parent	(solutionInformation)
Occurrences within document	Required. Must occur only once.
Element content model	licensePrompt ::= EMPTY string
Attribute content model	Optional: translatedKey ::= string

Parameters

The licensePrompt element has the following attribute:

translatedKey

Use this attribute to indicate that the copyright message has been translated and that the translated messages are contained in separate language documents.

Note:

The translatedKey must begin with an alphabetic character.

Usage

If a license is specified in the solution wrapper, that overrides any license specified in an application wrapper. When you begin a remote deployment, the license prompt is displayed with the solution license content even if you specified application licenses. If you do not specify a license for either the application or the solution, the license prompt is not displayed.

manualTask

(Purpose)

This element defines a manual task for display in the deployment wizard window.

Examples

```
<manualTask
  isOptional="true"
  selectedByDefault="false"
  id="string">
  <description translatedKey="description"/>
  <taskDetails translatedKey="taskDetails"/>
  <instructions translatedKey="instructions"/>
</manualTask>
```

Format

Parent	(tasks)
Occurrences within parents	Unlimited.
Element content model	manualTask ::=description ^{1,1} instructions ^{1,1} taskDetails ^{1,1}
Attribute content model	Optional: isOptional ::= 'true' 'false' selectedByDefault ::= 'true' 'false' id ::= 'string'

Parameters

The manualTask element has the following attributes.

translatedKey

Use this attribute to indicate an action that must be performed by the person installing the solution.

Note: The translatedKey must begin with an alphabetic character.

isOptional

Set this attribute to true to specify an manualTask as optional.

selectedByDefault

Set this attribute to true to deploy this manualTask by default.

Note: If the isOptional attribute is set to false, selectedByDefault will return true.

id Set this attribute to assign a unique ID to the manualTask.

Usage

Use the manualTask element to display instructions in the main window of the deployment wizard. Additionally, during the solution deployment, a manual task prompts the user to execute and confirm completion of an action or actions.

maximumNumberOfActiveTargets

(Purpose)

This element specifies the maximum number of target computers that can be connected simultaneously with the staging server.

Examples

```
<iru:solution>
  <solutionInformation>
    <title translatedKey="solution_title"/>
    <license translatedKey="license"/>
    <licensePrompt translatedKey="licensePrompt"/>
    <aboutScreen translatedKey="aboutScreen"/>
    <aboutScreenText translatedKey="aboutText"/>
    <icon>graphics/IRU_samples1.gif</icon>
    <maximumNumberOfActiveTargets>75</maximumNumberOfActiveTargets>
    <maximumNumberOfDataConnections>75</maximumNumberOfDataConnections>
    <dataPortNumber>0</dataPortNumber>
    <communicationPortNumber>0</communicationPortNumber>
  </solutionInformation>
</iru:solution>
```

Format

Parent	(solutionInformation)
Occurrences within parents	Optional. Can occur only once.
Element content model	maximumNumberOfActiveTargets ::=integer

Parameters

The maximumNumberOfActiveTargets element does not have any attributes.

Usage

Express Runtime limits you to 100 target computers. You can lower that number for a solution by using this element. The valid range is 1 to 100.

maximumNumberOfDataConnections

(Purpose)

This element specifies the maximum number of active data connections that a staging server can have at one time.

Examples

```
<iru:solution>
  <solutionInformation>
    <title translatedKey="solution_title"/>
    <license translatedKey="license"/>
    <licensePrompt translatedKey="licensePrompt"/>
    <aboutScreen translatedKey="aboutScreen"/>
    <aboutScreenText translatedKey="aboutText"/>
    <icon>graphics/IRU_samples1.gif</icon>
    <maximumNumberOfActiveTargets>75</maximumNumberOfActiveTargets>
    <maximumNumberOfDataConnections>75</maximumNumberOfDataConnections>
    <dataPortNumber>0</dataPortNumber>
    <communicationPortNumber>0</communicationPortNumber>
  </solutionInformation>
</iru:solution>
```

Format

Parent	(solutionInformation)
Occurrences within parents	Optional. Can occur only once.
Element content model	maximumNumberOfDataConnections ::=integer

Parameters

The maximumNumberOfDataConnections element does not have any attributes.

Usage

Express Runtime limits you to 100 target computers. Therefore, you can have no more than 100 active data connections. The valid range is 1 to 100.

path

(Purpose)

This element contains the path name of an entry or exit program for a solution.

Examples

```
<application
  fileName="IRU_sba_win.ser">
  <path translatedKey="BuildPath"/>
</application>
```

Format

Parent	(application)
Occurrences within parents	Optional. Can occur only once.
Element content model	path ::= EMPTY string
Attribute content model	Optional: translatedKey ::= string

Parameters

The path element has the following attribute:

translatedKey

Use this attribute to indicate that the path name has been translated and that the translated path names are contained in separate language documents.

Note:

The translatedKey must begin with an alphabetic character.

Usage

Specifies the softwareImagePath for the application.

sharedVariable

Purpose

This element defines a solution variable that might be shared by multiple application variables.

Examples

```
<variables> <sharedVariable  
  
  minimumLength="4"  
  maximumLength="25"  
  <defaultData>DJT_sba10Setup.log</defaultData>  
  <valid>  
    <suffixes>  
      <suffix>.log</suffix>  
    </suffixes>  
    <characters ignoreCase="true">abcdefghijklmnopqrstuvwxyz0123456789._  
  </characters>  
  </valid>  
  <invalid>  
    <substrings>  
      <substring>\\</substring>  
    </substrings>  
    <characters>*?"/@#$. \</characters>  
  </invalid>  
</inputValidation>  
</sharedVariable>  
</variables>
```

Format

Parent	(variables (within the top-level <solution element))
Occurrences within parent	Required. Can occur more than once
Element content model	(defaultData) ^{0,1} (inputValidation) ^{0,1}
Attribute content models	Required: name ::= string Optional: minimumLength ::= integer maximumLength ::= integer upperCase ::= 'true' 'false' lowerCase ::= 'true' 'false' required ::= 'true' 'false' makeVisibleOnce ::= 'true' 'false'

Parameters

The `sharedVariable` element has the following attributes:

name Use this attribute to specify a name for the shared variable. Note that the name cannot contain the underscore character.

minimumLength

Use this attribute to specify the minimum number of characters allowed in the variable's value.

maximumLength

Use this attribute to specify the maximum number of characters allowed in a variable value.

upperCase

Set to this attribute to `true` to specify that all of the characters in the variable must be upper case. If it is set to `false`, the characters can be both upper and lower case. The default setting is `false`.

lowerCase

Set to this attribute to `true` to specify that all of the characters in the variable must be lower case. If it is set to `false`, the characters can be both upper and lower case. The default setting is `false`.

required

Set to this attribute to `true` to specify that this is a required variable. The default setting is `false`.

makeVisibleOnce

Set to this attribute to `true` to specify that this variable is displayed the first time the deployment wizard encounters it, so that the user can input a value at least one time. Use this setting for variables that might not be displayed based on other selections, but for which the user must specify a value. The default setting is `false`.

Usage

Shared variables are defined in the solution XML in order to provide default data, minimum and maximum length requirements, upper and lower case requirements and validation requirements to any application-defined variables with the `sharedAs` attribute set to the shared variable's name.

solution

(Purpose)

This is the root element of a solution document.

Examples

```
<iru:solution
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:iru="http://www.ibm.com/xmlns/prod/iru/solution"
  xsi:schemaLocation="http://www.ibm.com/xmlns/prod/iru/solution DJT_solution.xsd"
  id="DJT_starterSSol"
  debug="true">
  ...
</iru:solution>
```

Format

Parent	Root element
Occurrences within parent	Required Must occur only once
Element content model	solution ::= (solutionInformation) ^{1,1} (translationLanguages) ^{0,1} (tasks) ^{0,1}
Attribute content models	Optional: version ::= string id ::= string debug ::= 'true' 'false' Deprecated: builderVersion ::= string

Parameters

The solution element has the following attributes:

version

Use this attribute to display a version number of a solution in the deployment wizard main window.

id Use this attribute to create an identifier for the binary wrapper that contains information about all the applications in the solution.

Note:

Solution IDs must be fewer than 200 characters in length, must begin with an alphabetic character, and can be made up only of alphanumeric characters, underscores, dashes and periods.

debug Use this attribute to display information about the commands being run by the agent on the command line.

builderVersion (Deprecated)

The builderVersion attribute is deprecated. A deprecated element or attribute is one that is outdated in the latest versions of the schema. The attribute might become obsolete in future versions of the Express Runtime product and should not be used.

Usage

Use the solution start tag immediately after the document type declaration in a solution document. Use the end tag at the conclusion of the document.

solutionInformation

(Purpose)

This element contains basic information about a solution.

Examples

```
<iru:solution>
  <solutionInformation localhostOnly="true" disableIndividualTaskDeployment="true">
    <title translatedKey="solution_title"/>
    <taskGroupSelectionPrompt translatedKey="taskGroupSelectionPrompt"/>
    <icon>graphics/IRU_samples1.gif</icon>
    <splashScreen translatedKey="splashScreen"/>
    <license translatedKey="license"/>
    <licensePrompt translatedKey="licensePrompt"/>
  </solutionInformation>
</iru:solution>
```

```

    <welcomeScreenImage translatedKey="welcomeScreenImage"/>
    <welcomeScreenTitle translatedKey="welcomeScreenTitle"/>
    <welcomeScreenText translatedKey="welcomeScreenText"/>
    <aboutScreen translatedKey="aboutScreen"/>
    <aboutScreenText translatedKey="aboutText"/>
    <maximumNumberOfActiveTargets>75</maximumNumberOfActiveTargets>
    <maximumNumberOfDataConnections>75</maximumNumberOfDataConnections>
    <dataPortNumber>0</dataPortNumber>
    <communicationPortNumber>0</communicationPortNumber>
  </solutionInformation>
</iru:solution>

```

Format

Parent	(solution)
Occurrences within parent	Required. Must occur only once.
Element content model	applicationInformation ::= (title) ^{1,1} (license) ^{0,1} (licensePrompt) ^{1,1} (aboutScreen) ^{0,1} (aboutScreenText) ^{0,1} (icon) ^{0,1} splashScreen ^{0,1}
Attribute content model	Optional: localhostOnly ::= 'true' 'false' disableIndividualTaskDeployment ::= 'true' 'false'

Parameters

The solutionInformation element has the following attributes:

localhostOnly

Set this attribute to true to restrict solution deployment to only the local computer. The panel to define target computers does not appear in the deployment wizard.

disableIndividualTaskDeployment

Set this attribute to true to force the user to deploy all the tasks together. The deployment wizard summary panel does not show the **Deploy task** or **Perform task** buttons for each task. The user can only deploy using the **Deploy all** button.

splashScreen

(Purpose)

This element specifies an image file that is used as the splash screen for the solution. It is displayed when the solution is opened in the Deployer.

Examples

```

<iru:solution>
  <solutionInformation>
    <title translatedKey="solution_title"/>
    <license translatedKey="license"/>
    <licensePrompt translatedKey="licensePrompt"/>
    <splashScreen translatedKey="splashScreen"/>
    <aboutScreen translatedKey="aboutScreen"/>
  </solutionInformation>
</iru:solution>

```

```

    <aboutScreenText translatedKey="aboutText"/>
    <icon>graphics/IRU_samples1.gif</icon>
  </solutionInformation>
</iru:solution>

```

Format

Parent	(solutionInformation)
Occurrences within parent	Optional. Can occur only once.
Element content model	splashScreen ::= EMPTY string
Attribute content model	Optional: translatedKey ::= string

Parameters

The splashScreen element has the following attribute:

translatedKey

Use this attribute to indicate that the splashScreen file name has been translated and that the translated file names are contained in separate language documents.

Note:

The translatedKey must begin with an alphabetic character.

taskDetails

(Purpose)

This element contains a brief description of a task on the task selection panel.

Examples

```

<tasks>
  <taskGroup>
    <taskGroupTitle translatedKey="WindowsTaskGroup"/>
    <taskGroupDetails translatedKey="WindowsTaskGroupDetails"/>
    <taskGroupPrompt translatedKey="WindowsTaskGroupPrompt"/>
    <installTask operatingSystem="Windows">
      <description translatedKey="WASInstallTask"/>
      <taskDetails translatedKey="WAStaskDetails"/>
      <applications>
        <application fileName="WAS_Windows.ser">
          <path translatedKey="BuildPath"/>
        </application>
      </applications>
    </installTask>

    <installTask operatingSystem="Windows">
      <description translatedKey="DB2InstallTask"/>
      <taskDetails translatedKey="DB2taskDetails"/>
      <applications>
        <application fileName="DB2_Windows.ser">
          <path translatedKey="BuildPath"/>
        </application>
      </applications>
    </installTask>

```

```

...
</taskGroup>
</tasks>

```

Format

Parent	(installTask) or (manualTask)
Occurrences within parents	Unlimited.
Element content model	taskDetails ::= EMPTY string
Attribute content model	Optional: translatedKey ::= string

Parameters

The taskDetails element has the following attributes:

translatedKey

Use this attribute to indicate that the description of the task has been translated and that the translated descriptions are contained in separate language documents.

Note: The translatedKey must begin with an alphabetic character.

taskGroup

(Purpose)

This element defines a group of related tasks.

Examples

```

<tasks>
  <taskGroup>
    <taskGroupTitle translatedKey="WindowsTaskGroup"/>
    <taskGroupDetails translatedKey="WindowsTaskGroupDetails"/>
    <taskGroupPrompt translatedKey="WindowsTaskGroupPrompt"/>
    <installTask operatingSystem="Windows">
      <description translatedKey="WASInstallTask"/>
      <taskDetails translatedKey="WAStaskDetails"/>
      <applications>
        <application fileName="WAS_Windows.ser">
          <path translatedKey="BuildPath"/>
        </application>
      </applications>
    </installTask>

    <installTask operatingSystem="Windows">
      <description translatedKey="DB2InstallTask"/>
      <taskDetails translatedKey="DB2taskDetails"/>
      <applications>
        <application fileName="DB2_Windows.ser">
          <path translatedKey="BuildPath"/>
        </application>
      </applications>
    </installTask>

    ...

  </taskGroup>
</tasks>

```

Format

Parent	(tasks)
Occurrences within parents	Unlimited.
Attribute content model	None.

Parameters

The taskGroup element has no attributes.

Usage

The taskGroup element does not require that all tasks within that group be deployed, but provides the user with a logical grouping of related tasks.

taskGroupDetails

(Purpose)

This element provides a brief description of a task group on the task group selection panel.

Examples

```
<tasks>
  <taskGroup>
    <taskGroupTitle translatedKey="WindowsTaskGroup"/>
    <taskGroupDetails translatedKey="WindowsTaskGroupDetails"/>
    <taskGroupPrompt translatedKey="WindowsTaskGroupPrompt"/>
    <installTask operatingSystem="Windows">
      <description translatedKey="WASInstallTask"/>
      <taskDetails translatedKey="WAStaskDetails"/>
      <applications>
        <application fileName="WAS_Windows.ser">
          <path translatedKey="BuildPath"/>
        </application>
      </applications>
    </installTask>

    <installTask operatingSystem="Windows">
      <description translatedKey="DB2InstallTask"/>
      <taskDetails translatedKey="DB2taskDetails"/>
      <applications>
        <application fileName="DB2_Windows.ser">
          <path translatedKey="BuildPath"/>
        </application>
      </applications>
    </installTask>

    ...

  </taskGroup>
</tasks>
```

Format

Parent	taskGroup
Occurrences within parents	Exactly one.
Element content model	taskGroupDetails ::= EMPTY string
Attribute content model	Optional: translatedKey ::= string

Parameters

The `taskGroupDetails` element has the following attributes:

translatedKey

Use this attribute to indicate that the task group description is translated and that the translated descriptions are contained in separate language documents.

Note: The `translatedKey` must begin with an alphabetic character.

taskGroupPrompt

(Purpose)

This element contains a message displayed on the task group selection panel.

Examples

```
<tasks>
  <taskGroup>
    <taskGroupTitle translatedKey="WindowsTaskGroup"/>
    <taskGroupDetails translatedKey="WindowsTaskGroupDetails"/>
    <taskGroupPrompt translatedKey="WindowsTaskGroupPrompt"/>
    <installTask operatingSystem="Windows">
      <description translatedKey="WASInstallTask"/>
      <taskDetails translatedKey="WAStaskDetails"/>
      <applications>
        <application fileName="WAS_Windows.ser">
          <path translatedKey="BuildPath"/>
        </application>
      </applications>
    </installTask>

    <installTask operatingSystem="Windows">
      <description translatedKey="DB2InstallTask"/>
      <taskDetails translatedKey="DB2taskDetails"/>
      <applications>
        <application fileName="DB2_Windows.ser">
          <path translatedKey="BuildPath"/>
        </application>
      </applications>
    </installTask>

    ...

  </taskGroup>
</tasks>
```

Format

Parent	(taskGroup)
Occurrences within parents	Exactly once.
Element content model	taskGroupPrompt ::= EMPTY string
Attribute content model	Optional: translatedKey ::= string

Parameters

The `taskGroupPrompt` element has the following attribute:

translatedKey

Use this attribute to indicate that the prompt has been translated and that the translated messages are contained in separate language documents.

The translatedKey must begin with an alphabetic character.

taskGroupTitle

(Purpose)

This element defines a name for a task group. This name is displayed next to the selection check box on the task group selection panel.

Examples

```
<tasks>
  <taskGroup>
    <taskGroupTitle translatedKey="WindowsTaskGroup"/>
    <taskGroupDetails translatedKey="WindowsTaskGroupDetails"/>
    <taskGroupPrompt translatedKey="WindowsTaskGroupPrompt"/>
    <installTask operatingSystem="Windows">
      <description translatedKey="WASInstallTask"/>
      <taskDetails translatedKey="WAStaskDetails"/>
      <applications>
        <application fileName="WAS_Windows.ser">
          <path translatedKey="BuildPath"/>
        </application>
      </applications>
    </installTask>

    <installTask operatingSystem="Windows">
      <description translatedKey="DB2InstallTask"/>
      <taskDetails translatedKey="DB2taskDetails"/>
      <applications>
        <application fileName="DB2_Windows.ser">
          <path translatedKey="BuildPath"/>
        </application>
      </applications>
    </installTask>

    ...

  </taskGroup>
</tasks>
```

Format

Parent	(taskGroup)
Occurrences within parents	Exactly once.
Element content model	taskGroupTitle ::= EMPTY string
Attribute content model	Optional: translatedKey ::= string

Parameters

The taskGroupTitle element has the following attributes:

translatedKey

Use this attribute to indicate that the name of the task group has been translated and that the translated names are contained in separate language documents.

Note: The translatedKey must begin with an alphabetic character.

tasks

(Purpose)

This is a container element for all task groups, installation tasks, and manual tasks.

Examples

```
<tasks>
  <taskGroup>
    <taskGroupTitle translatedKey="WindowsTaskGroup"/>
    <taskGroupDetails translatedKey="WindowsTaskGroupDetails"/>
    <taskGroupPrompt translatedKey="WindowsTaskGroupPrompt"/>
    <installTask operatingSystem="Windows">
      <description translatedKey="WASInstallTask"/>
      <taskDetails translatedKey="WAStaskDetails"/>
      <applications>
        <application fileName="WAS_Windows.ser">
          <path translatedKey="BuildPath"/>
        </application>
      </applications>
    </installTask>

    <installTask operatingSystem="Windows">
      <description translatedKey="DB2InstallTask"/>
      <taskDetails translatedKey="DB2taskDetails"/>
      <applications>
        <application fileName="DB2_Windows.ser">
          <path translatedKey="BuildPath"/>
        </application>
      </applications>
    </installTask>

    ...

  </taskGroup>
</tasks>
```

Format

Parent	(solution)
Occurrences within parents	Exactly once.
Attribute content model	None.

Parameters

The tasks element has no attributes.

title

(Purpose)

This element contains the name of a solution. This name is displayed in the title bar of the deployment wizard main window and in the Product Information panel.

Examples

```
<iru:solution>
  <solutionInformation>
    <title translatedKey="solution_title"/>
    <license translatedKey="license"/>
    <licensePrompt translatedKey="licensePrompt"/>
    <aboutScreen translatedKey="aboutScreen"/>
  </solutionInformation>
</iru:solution>
```

```

    <aboutScreenText translatedKey="aboutText"/>
    <icon>graphics/IRU_samples1.gif</icon>
  </solutionInformation>
</iru:solution>

```

Format

Parent	(solutionInformation)
Occurrences within parent	Required. Must occur only once.
Element content model	title ::= EMPTY string
Attribute content model	Optional: translatedKey ::= string

Parameters

The title element has the following attribute:

translatedKey

Use this attribute to indicate that the title has been translated and that the translated titles are contained in separate language documents.

Note:

The translatedKey must begin with an alphabetic character.

translationLanguages

(Purpose)

This element contains one or more language elements.

Examples

```

<iru:solution>
  <translationLanguages default="english">
    <language>english</language>
    <language>spanish</language>
  </translationLanguages>
</iru:solution>

```

Format

Parent	(solution)
Occurrences within parents	Optional. Must occur only once.
Element content model	translationLanguages ::= (language) ^{1,10}
Attribute content model	Required: default ::= string

Parameters

The translationLanguages element has the following attribute:

default

Use this attribute to identify the default language for this application.

Usage

See Translation considerations for a list of valid language values for this element, as well as other considerations.

variable (Purpose)

This element contains the data for an individual variable.

Examples

```
<applications>
  <application
    fileName="IRU_sia_win.ser">
    <variables>
      <variable id="USER_NAME"> adminUser</variable>
    </variables>
    <path translatedKey="BuildPath"/>
    <deploymentPackagePrompt translatedKey="prompt"/>
  </application>
</applications>
```

Format

Parent	(variables (within the <application element))
Occurrences within parents	Optional Can occur more than once
Element content model	Required: id ::=string Optional: sharedAs ::=string readonly ::= 'true' 'false' hidden ::= 'true' 'false'

Parameters

The variable element has the following attributes.

id Use this attribute to identify the variable. This id must match the name attribute of the variable defined in the application wrapper.

sharedAs

Use this attribute to make this variable share its value with another variable. If set, this variable will share a common value with any other variable whose sharedAs attribute is set to the same string. All default data, minimum and maximum requirements, and so on will be determined by the solution-defined sharedVariable with the same name as the sharedAs attribute. If there is no such shared variable, any application-defined default data will be removed.

Note:

This attribute cannot contain the underscore character.

readonly

Use this attribute to make this variable is displayed as a read-only field on the configuration panel. If this variable has validation requirements, or a

minimum length, the default data for the variable must be valid, because the user will be unable to configure the read-only field.

hidden

Use this attribute to keep the variable from being displayed on the configuration panel. If this variable has validation requirements, or a minimum length, the default data for the variable must be valid. The user will be unable to see or modify the variable from the configuration panel.

Usage

The variable element is used to define a default value for a deployment parameter in an application.

variables (within the top-level <solution element) (Purpose)

This element contains one or more variable elements.

Examples

```
<iru:solution>
  <variables>

  ...

  </variables>
</iru:solution>
```

Format

Parent	(solution)
Occurrences within parents	Optional. Can occur only once.
Element content model	variables ::=sharedVariable ^{1,*}

Parameters

The variables element does not have any attributes.

variables (within the <application element) (Purpose)

This element contains one or more variable elements.

Examples

```
<applications>
  <application
    fileName="IRU_sia_win.ser">
    <variables>
      <variable id="USER_NAME">adminUser</variable>
    </variables>
    <path translatedKey="BuildPath"/>
    <deploymentPackagePrompt translatedKey="prompt"/>
  </application>
</applications>
```

Format

Parent	(application)
Occurrences within parents	Optional. Can occur only once.
Element content model	variables ::=variable ^{0,*}

Parameters

The variables element does not have any attributes.

Task Elements

application

(Purpose)

This element specifies an application for an install task.

Examples

```
<iru:tasks
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:iru="http://www.ibm.com/xmlns/prod/iru/task"
  xsi:schemaLocation="http://www.ibm.com/xmlns/prod/iru/task DJT_task.xsd"
  silent="false">
  <createKey phrase="password"></createKey>
  <taskSet
    solutionFileName="TestSuite.ser"
    logFileName="IRU_DeploymentWizard.log">
  <createDeploymentPackage
    applicationId="sampleApplication"
    language="english"
    softwareImageRoot="D:\sandbox\testsuite">
  </createDeploymentPackage>
  <deploy taskNumber="1">
    <targetHostnames>
      <targetHostname>localhost</targetHostname>
    </targetHostnames>
    <applications>
      <application id="DJT_sia">
        <variables>
          <variable id="SIA_prod_path">C:\IBM</variable>
        </variables>
      </application>
    </applications>
  </deploy>
  </taskSet>
</iru:tasks>
```

Format

Parent	(applications)
Occurrences within parent	Required. Must occur at least once.
Attribute content models	Required: id ::= string

Parameters

The application element has the following attributes:

id The `id` attribute specifies an application to be configured in the task file. The application must exist in the task, and the `id` must match the `id` as defined in the `application.xml`. In addition, application IDs must be fewer than 200 characters in length, must begin with an alphabetic character, and can be made up only of alphanumeric characters, underscores, dashes and periods.

applications (Purpose)

This element contains one or more application elements.

Examples

```
<iru:tasks
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:iru="http://www.ibm.com/xmlns/prod/iru/task"
  xsi:schemaLocation="http://www.ibm.com/xmlns/prod/iru/task DJT_task.xsd"
  silent="false">
  <createKey phrase="password"></createKey>
  <taskSet
    solutionFileName="TestSuite.ser"
    logFileName="IRU_DeploymentWizard.log">
  <createDeploymentPackage
    applicationId="sampleApplication"
    language="english"
    softwareImageRoot="D:\sandbox\testsuite">
  </createDeploymentPackage>
  <deploy taskNumber="1">
  <targetHostnames>
  <targetHostname>localhost</targetHostname>
  </targetHostnames>
  <applications>
  <application id="DJT_sia">
  <variables>
  <variable id="SIA_prod_path">C:\IBM</variable>
  </variables>
  </application>
  </applications>
  </deploy>
  </taskSet>
</iru:tasks>
```

Format

Parent	(deploy)
Occurrences within parent	Optional. Can occur only once.
Attribute content models	Required: None. Optional: None.

Parameters

The applications element has no attributes

createDeploymentPackage (Purpose)

This element enables you to create a deployment package.

Examples

```
<iru:tasks
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:iru="http://www.ibm.com/xmlns/prod/iru/task"
xsi:schemaLocation="http://www.ibm.com/xmlns/prod/iru/task DJT_task.xsd"
silent="false">
  <createKey phrase="password"></createKey>
  <taskSet
    solutionFileName="TestSuite.ser"
    logFileName="IRU_DeploymentWizard.log">
    <createDeploymentPackage applicationId="sampleApplication"
      language="english"
      softwareImageRoot="D:\sandbox\testsuite">
    </createDeploymentPackage>
    <deploy taskNumber="12" />
  </taskSet>
</iru:tasks>
```

Format

Parent	(taskSet)
Occurrences within parent	Optional. Can occur more than once.
Attribute content models	Required: applicationId ::= string language ::= string softwareImageRoot ::= string Optional: deploymentPackagePath ::= string logFileName ::= string replace ::= string solutionFileName ::= string userProgramsRoot ::= string

Parameters

The createDeploymentPackage element has the following attributes:

applicationId

Use this attribute to specify the application for which you want to create the deployment package.

language

Use this attribute to specify the language for the application. The valid values are as follows:

english | german | spanish | french | italian | japanese | korean | brazilianportuguese | simplifiedchinese | traditionalchinese | arabic | czech | danish | dutch | finnish | greek | hungarian | hebrew | norwegian | polish | portuguese | russian | swedish | turkish | albanian | bulgarian | byelorussian | catalan | croatian | estonian | icelandic | latvian | lithuanian | macedonian | romanian | serbian | slovakian | slovenian | thai | ukrainian | kazakh

softwareImageRoot

Use this attribute to specify the location of the files used to create the deployment package.

deploymentPackagePath

Specifies the output path for the product image deployment package.

logFileName

Use this attribute to specify the name of the log file. Any messages received during task execution are written to the log file.

replace

Replaces previously built software with the software that is being built.

solutionFileName

Use this attribute to specify the solution with which this application is associated.

userProgramsRoot

Specifies the user program's root for the software that is being built.

createKey**(Purpose)**

This element enables you to generate a password. A set of passwords on both the staging server and the selected target computers must match in order for authentication to be successful.

Examples

```
<iru:tasks
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:iru="http://www.ibm.com/xmlns/prod/iru/task"
  xsi:schemaLocation="http://www.ibm.com/xmlns/prod/iru/task DJT_task.xsd"
  silent="false">
  <createKey phrase="password"/>
  <taskSet solutionFileName="TestSuite.ser"
    logFileName="IRU_DeploymentWizard.log">
    <createDeploymentPackage applicationId="sampleApplication"
      language="english"
      softwareImageRoot="D:\sandbox\testsuite">
    </createDeploymentPackage>
  </taskSet>
</iru:tasks>
```

Format

Parent	(tasks)
Occurrences within parent	Optional. Can occur only once.
Attribute content models	Required: phrase ::= string Optional: logFileName ::= string

Parameters

The createKey element has the following attributes:

phrase

Use this attribute to specify the key phrase to use as the password. This phrase must exactly match on both the staging server and the target computers.

logFileName

Use this attribute to specify the name of the log file. Any messages received during task execution are written to the log file.

deploy**(Purpose)**

This element enables you to deploy an install task.

Examples

```
<iru:tasks
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:iru="http://www.ibm.com/xmlns/prod/iru/task"
  xsi:schemaLocation="http://www.ibm.com/xmlns/prod/iru/task DJT_task.xsd"
  silent="false">
  <createKey phrase="password"></createKey>
  <taskSet
    solutionFileName="TestSuite.ser"
    logFileName="IRU_DeploymentWizard.log">
  <createDeploymentPackage
    applicationId="sampleApplication"
    language="english"
    softwareImageRoot="D:\sandbox\testsuite">
  </createDeploymentPackage>
  <deploy taskNumber="1">
    <targetHostnames>
      <targetHostname>localhost</targetHostname>
    </targetHostnames>
    <applications>
      <application id="DJT_sia">
        <variables>
          <variable id="SIA_prod_path">C:\IBM</variable>
        </variables>
      </application>
    </applications>
  </deploy>
  </taskSet>
</iru:tasks>
```

Format

Parent	(taskSet)
Occurrences within parent	Optional. Can occur more than once.
Attribute content models	Required: taskNumber ::= integer Note: This value represents the number of the task as displayed in the deployment wizard, and must represent an install task. A reference to a manual task will create an error. Optional: None.

Parameters

The deploy element has the following attributes:

taskNumber

Use this attribute to specify the install task that you want to deploy.

targetHostname

(Purpose)

This element defines a target host name for an install task.

Examples

```
<iru:tasks
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:iru="http://www.ibm.com/xmlns/prod/iru/task"
  xsi:schemaLocation="http://www.ibm.com/xmlns/prod/iru/task DJT_task.xsd"
  silent="false">
```

```

<createKey phrase="password"></createKey>
<taskSet
  solutionFileName="TestSuite.ser"
  logFileName="IRU_DeploymentWizard.log">
<createDeploymentPackage
  applicationId="sampleApplication"
  language="english"
  softwareImageRoot="D:\sandbox\testsuite">
</createDeploymentPackage>
<deploy taskNumber="1">
  <targetHostnames>
    <targetHostname>localhost</targetHostname>
  </targetHostnames>
  <applications>
    <application id="DJT_sia">
      <variables>
        <variable id="SIA_prod_path">C:\IBM</variable>
      </variables>
    </application>
  </applications>
</deploy>
</taskSet>
</iru:tasks>

```

Format

Parent	(targetHostnames)
Occurrences within parent	Required. Must occur at least once.
Attribute content models	Required: None. Optional: None.

Parameters

The targetHostname element does not have any attributes.

targetHostnames

(Purpose)

This element contains one or more targetHostname elements.

Examples

```

<iru:tasks
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:iru="http://www.ibm.com/xmlns/prod/iru/task"
  xsi:schemaLocation="http://www.ibm.com/xmlns/prod/iru/task DJT_task.xsd"
  silent="false">
  <createKey phrase="password"></createKey>
  <taskSet
    solutionFileName="TestSuite.ser"
    logFileName="IRU_DeploymentWizard.log">
  <createDeploymentPackage
    applicationId="sampleApplication"
    language="english"
    softwareImageRoot="D:\sandbox\testsuite">
  </createDeploymentPackage>
  <deploy taskNumber="1">
    <targetHostnames>
      <targetHostname>localhost</targetHostname>
    </targetHostnames>
    <applications>
      <application id="DJT_sia">

```

```

        <variables>
          <variable id="SIA_prod_path">C:\IBM</variable>
        </variables>
      </application>
    </applications>
  </deploy>
</taskSet>
</iru:tasks>

```

Format

Parent	(deploy)
Occurrences within parent	Required. Must occur only once.
Attribute content models	Required: None. Optional: None.

Parameters

The targetHostnames element does not have any attributes.

tasks

(Purpose)

This is the root element of a task XML document.

Examples

```

<iru:tasks
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:iru="http://www.ibm.com/xmlns/prod/iru/task"
  xsi:schemaLocation="http://www.ibm.com/xmlns/prod/iru/task DJT_task.xsd"
  silent="false">
  <createKey phrase="password"></createKey>
  <taskSet solutionFileName="TestSuite.ser"
    logFileName="IRU_DeploymentWizard.log">
    <createDeploymentPackage applicationId="sampleApplication"
      language="english"
      softwareImageRoot="D:\sandbox\testsuite">
      </createDeploymentPackage>
    <deploy taskNumber="12" />
  </taskSet>
</iru:tasks>

```

Format

Parent	Root element
Occurrences within document	Required. Must occur only once.
Element content model	tasks ::= (createKey) ^{0,1} (taskSet) ^{0,*}
Attribute content models	Optional: silent ::= 'true' "false"

Parameters

The tasks element has the following attribute:

silent Use this attribute to specify that the task file should run in silent mode, sending no messages to the screen.

Usage

Use the tasks start tag immediately after the document type declaration in a task document. Use the end tag at the conclusion of the document.

taskSet (Purpose)

This element identifies the solution that you want to execute using a task file on the command line.

Examples

```
<iru:tasks
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:iru="http://www.ibm.com/xmlns/prod/iru/task"
  xsi:schemaLocation="http://www.ibm.com/xmlns/prod/iru/task IRU_task.xsd"
  silent="false">
  <createKey phrase="password"></createKey>
  <taskSet solutionFileName="TestSuite.ser"
    logFileName="IRU_DeploymentWizard.log">
    <createDeploymentPackage applicationId="sampleApplication"
      language="english"
      softwareImageRoot="D:\sandbox\testsuite">
    </createDeploymentPackage>
    <deploy taskNumber="12" />
  </taskSet>
</iru:tasks>
```

Format

Parent	(tasks)
Occurrences within parent	Optional. Can occur more than once.
Element content model	taskSet ::= (createDeploymentPackage) ^{0,*} (deploy) ^{0,*}
Attribute content models	Required: solutionFileName ::= string Optional: logFileName ::= string

Parameters

The taskSet element has the following attributes:

solutionFileName

Use this attribute to specify the solution that you want to deploy through this task.

logFileName

Use this attribute to specify the name of the log file. Any messages received during task execution are written to the log file.

variable (Purpose)

This element configures a variable for an application in an install task.

Examples

```

<iru:tasks
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:iru="http://www.ibm.com/xmlns/prod/iru/task"
  xsi:schemaLocation="http://www.ibm.com/xmlns/prod/iru/task DJT_task.xsd"
  silent="false">
  <createKey phrase="password"></createKey>
  <taskSet
    solutionFileName="TestSuite.ser"
    logFileName="IRU_DeploymentWizard.log">
  <createDeploymentPackage
    applicationId="sampleApplication"
    language="english"
    softwareImageRoot="D:\sandbox\testsuite">
  </createDeploymentPackage>
  <deploy taskNumber="1">
    <targetHostnames>
      <targetHostname>localhost</targetHostname>
    </targetHostnames>
    <applications>
      <application id="DJT_sia">
        <variables>
          <variable id="SIA_prod_path">C:\IBM</variable>
        </variables>
      </application>
    </applications>
  </deploy>
  </taskSet>
</iru:tasks>

```

Format

Parent	(targetHostnames)
Occurrences within parent	Required. Must occur at least once.
Attribute content models	Required: id ::= string Optional: None.

Parameters

The variable element has the following attributes:

id The id attribute specifies a variable to be configured in the task file. The variable must exist in the application, and the id must match the id as defined in the application.xml.

Trademarks

The following terms are trademarks of the IBM Corporation in the United States, other countries or both:

- AIX
- DB2
- IBM
- i5/OS
- Informix
- OS/400
- WebSphere

Java, and all Java-based trademarks and logos and Solaris are trademarks or registered trademarks of Sun Microsystems, Inc. in the United States, other countries, or both.

Microsoft and Windows and Windows NT are registered trademarks of Microsoft Corporation in the United States, other countries, or both.

Linux is a registered trademark of Linus Torvalds in the United States, other countries or both.

UNIX is a registered trademark of The Open Group.

Intel and Pentium are registered trademarks of Intel Corporation in the United States, other countries, or both.

Other company, product, and service names might be trademarks or service marks of others.

Chapter 9. Accessibility

Accessibility overview

This section provides information about the accessibility features of IBM Express Runtime for IBM and its accompanying documentation. Accessibility features help a user who has a physical disability, such as restricted mobility or limited vision, to use software products successfully.

Accessibility features

These are the major accessibility features in Express Runtime:

- You can operate all features using the keyboard instead of the mouse.
- You can use screen-reader software and a digital speech synthesizer to hear what is displayed on the screen.

Note: The Express Runtime Information Center and its related publications are accessibility-enabled for the IBM Home Page Reader.

Navigating by keyboard

You can use keys or key combinations to perform operations and initiate many menu actions that can also be done with a mouse. You can navigate the Express Runtime developer, deployment wizard, and InfoCenter from the keyboard by using the following key combinations:

- To traverse to the next link, button or topic, press Tab inside a frame (page).
- To expand or collapse a tree node, press Right Arrow or Left Arrow, respectively.
- To move to the next topic node, press Down Arrow or Tab.
- To move to the previous topic node, press Up Arrow or Shift+Tab.
- To scroll all the way up or down, press Home or End, respectively.
- To go back, press Alt+Left Arrow.
- To go forward, press Alt+Right Arrow.
- To go to the next frame, press Ctrl+Tab.
- To move to the previous frame, press Shift+Ctrl+Tab.
- To print the current page or active frame, press Ctrl+P.

Note: In order to use keyboard shortcuts with the deployment wizard on a computer running Linux, ensure that the numbers lock (NumLock) option is not enabled.

Chapter 10. Related information

Documentation for contained products

IBM Express Runtime

Installed on the target computer:

- **Windows:** Start > Programs > IBM Express Runtime 2.1 > Documentation > Express Runtime Documentation
- **RedHat Linux :** Extras > Other > IBM Express Runtime 2.1 > Documentation > Express Runtime Documentation
- **SUSE Linux :** Start > Programs > IBM Express Runtime 2.1 > Documentation > Express Runtime Documentation

DB2 UDB Express

On the Web: <http://www.ibm.com/software/data/db2/udb/> (for **iSeries:** <http://www.ibm.com/servers/eserver/series/db2/>)

After DB2 Express is installed you can access its documentation through menu shortcuts:

- **Windows:** Start > Programs > IBM DB2 > Information > Information Center
- **RedHat Linux :** Extras > Other > IBM DB2 > Information > Information Center
- **SUSE Linux :** Start > Programs > IBM DB2 > Information > Information Center

Informix Dynamic Server - Express

On the Web: <http://publib.boulder.ibm.com/infocenter/ids9help/index.jsp>

After Informix Dynamic Server is installed, you can access its documentation through menu shortcuts:

- **Windows:** Start > Programs > Informix Dynamic Server 10.0 > Documentation notes
- **RedHat Linux :** Extras > Other > Informix Dynamic Server 10.0 > Documentation notes
- **SUSE Linux :** Start > Programs > Informix Dynamic Server 10.0 > Documentation notes

IBM HTTP Server

On the Web: <http://www.ibm.com/software/webservers/httpservers/> (for **iSeries:** <http://www.ibm.com/servers/eserver/series/software/http/>)

After IBM HTTP Server is installed you can access its documentation through menu shortcuts:

- **Windows:** Start > Programs > IBM HTTP Server > Documentation
- **RedHat Linux :** Extras > Other > IBM HTTP Server > Documentation
- **SUSE Linux :** Start > Programs > IBM HTTP Server > Documentation

WebSphere Application Server - Express

On the Web: <http://www.ibm.com/software/webservers/appserv/express/> (for iSeries: <http://www.ibm.com/servers/eserver/series/software/websphere/>)

When WebSphere Application Server Express is installed you can access its documentation through menu shortcuts:

- **Windows:** Start > Programs > IBM WebSphere Application Server - Express 6.0.2 > FirstSteps, Readme, Getting Started
- **RedHat Linux :** Extras > Other > IBM WebSphere Application Server - Express 6.0.2 > FirstSteps, Readme, Getting Started
- **SUSE Linux :** Start > Programs > IBM WebSphere Application Server - Express 6.0.2 > FirstSteps, Readme, Getting Started

Integrated Solutions Console

After the Integrated Solutions Console (ISC) is installed you can access its documentation through the user interface:

- **Windows:** Log on to ISC. Click the help icon at the top right corner of the screen.
- **RedHat Linux :** Log on to ISC. Click the help icon at the top right corner of the screen.
- **SUSE Linux :** Log on to ISC. Click the help icon at the top right corner of the screen.

Appendix. Notices

This information was developed for products and services offered in the U.S.A.

IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not grant you any license to these patents. You can send license inquiries, in writing, to:

IBM Director of Licensing
IBM Corporation
North Castle Drive
Armonk, NY 10504-1785
U.S.A.

For license inquiries regarding double-byte (DBCS) information, contact the IBM Intellectual Property Department in your country or send inquiries, in writing, to:

IBM World Trade Asia Corporation
Licensing
2-31 Roppongi 3-chome, Minato-ku
Tokyo 106-0032, Japan

The following paragraph does not apply to the United Kingdom or any other country where such provisions are inconsistent with local law:

INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this IBM product and use of those Web sites is at your own risk.

IBM may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Licensees of this program who wish to have information about it for the purpose of enabling: (i) the exchange of information between independently created programs and other programs (including this one) and (ii) the mutual use of the information which has been exchanged, should contact:

IBM Corporation
Software Interoperability Coordinator, Department 49XA
3605 Highway 52 N
Rochester, MN 55901
U.S.A.

Such information may be available, subject to appropriate terms and conditions, including in some cases, payment of a fee.

The licensed program described in this information and all licensed material available for it are provided by IBM under terms of the IBM Customer Agreement, IBM International Program License Agreement, or any equivalent agreement between us.

Any performance data contained herein was determined in a controlled environment. Therefore, the results obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

This information contains examples of data and reports used in daily business operations. To illustrate them as completely as possible, the examples include the names of individuals, companies, brands, and products. All of these names are fictitious and any similarity to the names and addresses used by an actual business enterprise is entirely coincidental.

COPYRIGHT LICENSE:

This information contains sample application programs in source language, which illustrate programming techniques on various operating platforms. You may copy, modify, and distribute these sample programs in any form without payment to IBM, for the purposes of developing, using, marketing or distributing application programs conforming to the application programming interface for the operating platform for which the sample programs are written. These examples have not been thoroughly tested under all conditions. IBM, therefore, cannot guarantee or imply reliability, serviceability, or function of these programs.

Each copy or any portion of these sample programs or any derivative work, must include a copyright notice as follows:

If you are viewing this information softcopy, the photographs and color illustrations may not appear.



Part Number: BH02FML
Program Number: 5724-J10

Printed in USA

(1P) P/N: BH02FML

