



Express Runtime Getting Started Guide for Business Partners

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Chapter 1. About this document

The Express Runtime Getting Started Guide for Business Providers describes IBM® Express Runtime, Version 2.1. The product is hereafter referred to as Express Runtime.

This document provides basic information to help you understand the benefits of using Express Runtime and the process for using it effectively. For detailed information, refer to the Express Runtime InfoCenter.

This document provides overview information on the following tasks:

- Introduction to Express Runtime
- Installing Express Runtime
- Using Express Runtime
- Finding more information

Who might use this information

This document is intended for business partners who plan to use Express Runtime to create, configure, and deploy solutions containing IBM middleware. It assumes you have no previous experience with Express Runtime.

This document provides the background and understanding of basic processes necessary to use Express Runtime effectively. After reading this document, you will be prepared to use the more detailed information sources as a step-by-step guide for creating, configuring, and deploying Express Runtime solutions.

This document provides an overview of the following topics:

- The value of using Express Runtime
- Tools and components included with Express Runtime
- User roles typically required to use Express Runtime
- Process for developing an Express Runtime solution
- Options for deploying an Express Runtime solution
- Finding more detailed information

Chapter 2. Introduction to Express Runtime

Total business solutions for mid-sized company customers usually involve multiple products that work and share data together. In today's e-business environment, these solutions often depend on middleware, such as a Web server, a database, and an application server. Express Runtime offers a cohesive set of middleware components, as a single offering, that you can bundle with your custom applications. It also provides an easy method for integrating custom applications with the middleware components to deliver a total business solution to your end users as a single package.

When you provide a total business solution to end users as a single package, you simplify the end user complexity for deploying your solution and guarantee that your solution is configured correctly. Using Express Runtime, you specify configuration parameters during solution creation, which later prevent end users from installing your solution incorrectly. You also have the ability to provide your solution directly to end users for installation as needed, without requiring your further assistance for configuration or integration. Express Runtime greatly reduces the complexity and time required to deploy a total business solution to mid-sized company customers.

This chapter provides information on the tools included with Express Runtime that help you create total business solutions. The chapter covers:

- Express Runtime user roles
- Express Runtime middleware components
- Express Runtime application development toolkit
- Express Runtime solution assembly toolkit
- Express Runtime system management components

Express Runtime typical user roles

Using Express Runtime effectively to create, configure, and deploy total business solutions requires several core skills. A user role defines a set of the core skills required to perform a specific activity. Express Runtime users can be described by four user roles. One person might complete the tasks of multiple user roles, but each user role must have at least one person capable of completing its necessary tasks. You need to identify people to take on the following user roles:

Application developer

The application developer creates the business partner application.

Solution developer

The solution developer builds Express Runtime solutions to integrate the installation and configuration of applications with selected middleware. The solution developer should be familiar with Java™ and XML.

Solution distributor

The solution distributor distributes solutions to customers.

End User

The end user completes the deployment of a solution and might perform solution maintenance and administrative tasks.

Express Runtime middleware components

As a business partner, you create custom applications that meet the specific needs of your mid-sized company customers. To create a total business solution, you need to provide the middleware that these applications depend on to share data. Express Runtime offers a cohesive set of middleware components that you can bundle with your custom applications to deliver a total business solution to your end users.

Express Runtime includes the following middleware components that you can install as part of your solution:

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

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

IBM WebSphere® Application Server – Express (server only)

IBM WebSphere Application Server – Express helps you develop, deploy, and manage static and dynamic Web sites with wizards and templates that actually generate code for you. You can view information in databases, perform updates, and create and use Web services.

IBM HTTP Server for Windows, Linux, and OS/400 or 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 that helps to administer and configure itself.

Express Runtime application development toolkit

The application developer creates business partner applications to address the specific needs of your mid-sized company customers. The application developer might find the tools included with the Express Runtime tooling CD beneficial. The Express Runtime application development toolkit includes the following:

- Rational® Developer for the Web
- IBM WebSphere Application Server tooling
- IBM DB2 tooling

For more information on the tooling, see the Express Runtime application development toolkit InfoCenter available with the Express Runtime application development toolkit installation.

Express Runtime solution assembly toolkit

The solution assembly toolkit is the heart of Express Runtime and is used by the solution developer, solution distributor, and end user. The toolkit helps you create Express Runtime solutions, deploy your solutions to end users, and provide a simple method for allowing end users to deploy your solutions themselves. The following tools are included with the Express Runtime installation as part of the solution assembly toolkit:

- Express Runtime developer
- Solution launcher
- Deployment wizard
- IBM Installation Agent

Express Runtime developer

The Express Runtime developer is an Eclipse-based plug-in that provides a standard platform for solution development. To create Express Runtime solutions, you must develop or modify existing wrappers. A wrapper is an XML definition of an application or solution. The Express Runtime developer includes

custom editors that help you assemble solutions quickly and easily. The custom editors automatically generate the necessary XML wrappers as you provide simple information about your applications and solutions.

Express Runtime also includes sample application and solution wrappers for use with the Express Runtime developer. You can edit existing wrappers and create new wrappers to deliver tailored solutions to customers.

Solution launcher

The Solution launcher is a utility that helps you start the deployment wizard and deploy a solution directly from a CD. With a solution launcher image, you can give your solution directly to end users for easy installation. Creating a solution launcher image is simple and available as an export wizard within the Express Runtime developer. The solution developer should complete the creation and testing of your solution. Then, export your completed solution as a solution launcher image. With the image exported, the solution distributor can use media burning software to create CDs or DVDs of your solution for distribution to end users.

Deployment wizard

The deployment wizard is an easy-to-use tool for deploying solutions. It can be used by solution distributors and end users. End users can use solution launcher image CDs to automatically start the deployment wizard. With the deployment wizard started, the end customer is guided through the deployment of your solution. Your solution developer can choose to expose as much or as little of the configuration information of your solution as you believe necessary for your end users. By limiting the configuration information, the solution is installed with the configuration that optimizes the performance of your solution and provides the necessary security to run according to your recommendations.

The deployment wizard allows for the deployment of solutions either locally or remotely and provides assistance with the following tasks:

- Selecting tasks to deploy
- Specifying target computers for each task
- Configuring deployment parameters for each task
- Reviewing task summary information
- Deploying one or more tasks
- Monitoring deployment status

IBM Installation Agent

The IBM Installation Agent allows solutions to be installed on target computers. Each target computer, with the exception of localhost, must have an IBM Installation Agent installed and running before deployments to the target computer can begin. The deployment wizard communicates with the target computer through the IBM Installation Agent. More information on the installation agent is available in the IBM Installation Agent InfoCenter.

Express Runtime system management components

The end user must maintain and perform administrative tasks on the middleware components installed as part of your solution. Express Runtime offers a system management component for performing routine maintenance and administrative tasks on the middleware components.

Express Runtime console

The Express Runtime console helps end customer manage servers on multiple platforms from a single Web-based location. It provides a simple method for performing administrative tasks on servers hosting Express Runtime middleware components with a consistent user interface. Using the Express Runtime console, you can perform the following tasks:

- Managing the Express Runtime middleware
- Performing frequent administrative tasks
- Customizing tasks to an individual's user role

To use the Express Runtime console, you deploy the console to target computers, just like the IBM middleware components. The deployment installs the console software, and you refer to the Express Runtime console documentation to instructions on how to configure the console to monitor and administer other software.

Chapter 3. Installing Express Runtime

Express Runtime supports multiple platforms for development and deployment. Before installing Express Runtime, you should verify that the computer where you plan to install Express Runtime, and all computers that you plan to deploy a solution to remotely, meet the minimum system requirements and use a supported operating system.

This chapter includes information on:

- System requirements for Express Runtime development
- Supported operating systems for Express Runtime development
- Supported operating systems for Express Runtime deployment
- Installing Express Runtime

System requirements

The computer that the solution developer uses to develop Express Runtime solutions should meet the following minimum system requirements:

Windows development requirements

- A minimum of 512 MB; 1 GB of memory
- At minimum, an Intel(R) Pentium(R) III class processor with a minimum clock speed of 600 MHz. A Pentium® IV class processor with a minimum clock speed of 1.2 GHz. is preferred.
- 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.
- A Web browser to view the online documentation and readme.
- Approximately 13 GB of disk space to install and run Express Runtime. Refer to the readme for complete disk space requirements.

Linux development requirements

- A minimum of 512 MB; 1 GB of memory.
- At minimum, an Intel(R) Pentium(R) III class processor with a minimum clock speed of 600 MHz. A Pentium® IV class processor with a minimum clock speed of 1.2 GHz is preferred.
- The following network support must be configured when deploying solutions to network-attached target computers:
 - TCP/IP
 - DNS
- A 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.
- A Web browser to view online documentation and readme.

- Approximately 13 GB of disk space to install and run Express Runtime. Refer to the readme for complete disk space requirements.

OS/400 deployment requirements

- OS/400 V5R2 (5722SS1) or i5/OS V5R3 (5722SS1)
- Host Servers (5722SS1, option 12)
- QShell (5722SS1, option 30)
- Java Developer Kit 1.4 (5722JV1, option 6)
- Crypto Access Provider 128-bit (5722AC3)
- The most recent WebSphere version 6 group and cumulative PTFs

Supported Express Runtime operating systems

The following table illustrates the operating systems that you can use for the computer where you install Express Runtime, which is the computer from where you deploy the solution. Verify that the staging server uses a supported operating system.

Table 1.

Platform	Development	Staging server
OS/400 V5R2 & V5R3	No	No
Red Hat Linux 3.0 - Red Hat Enterprise Linux	Yes	Yes
SUSE LINUX 9.0 - SUSE LINUX Enterprise Server	Yes	Yes
SUSE LINUX 8.0 - SUSE LINUX Enterprise Server	No	Yes
LINUX on POWER™	No	Yes
RedFlag AS 4.1 Linux	No	Yes
Windows 2000 Server or Advanced Server w/SP4+	Yes	Yes
Windows 2003 Server Standard and Enterprise w/SP1+	Yes	Yes
Windows XP Professional w/SP2+	Yes	Yes
Windows 2000 Professional w/SP3+	Yes	Yes

Supported IBM Installation Agent operating systems

You must install the IBM Installation Agent on all computers that you plan to deploy to remotely. Using the table below, verify that all computers you plan to deploy to remotely use a supported IBM Installation Agent operating system.

Table 2.

Platform	Deployment targets
OS/400 V5R2 & V5R3	Yes
Red Hat Linux 3.0 - Red Hat Enterprise Linux	Yes
SUSE LINUX 9.0 - SUSE LINUX Enterprise Server	Yes
SUSE LINUX 8.0 - SUSE LINUX Enterprise Server	Yes
LINUX on POWER	Yes

Table 2. (continued)

Platform	Deployment targets
RedFlag AS 4.1 Linux	Yes
Windows 2000 Server or Advanced Server w/SP4+	Yes
Windows 2003 Server Standard and Enterprise w/SP1+	Yes
Windows XP Professional w/SP2+	No
Windows 2000 Professional w/SP3+	Yes

Installing Express Runtime and the IBM Installation Agent

This section provides basic information on installing Express Runtime and the IBM Installation Agent. The solution developer should install Express Runtime. You might also choose to install only the deployment wizard on a computer that you plan to use for initiating deployments. You need to install the IBM Installation Agent on all computers that you plan to deploy to remotely.

Installing Express Runtime on the staging server

Begin the installation of Express Runtime from the Express Runtime launchpad panel. The WindowsLaunchpad panel automatically starts from the Express Runtime installation CD or DVD. If you are deploying from a network location, or the launchpad does not automatically start, start it by using the WindowsLaunchpad program on Windows or the LinuxLaunchpad program on Linux.

The Launchpad provides controls for performing the following tasks:

- Installing Express Runtime
- Viewing the Express Runtime Readme
- Viewing a product overview of Express Runtime

For more information on installing Express Runtime, consult the Express Runtime InfoCenter.

Installing the IBM Installation Agent on a target computer

You should install the IBM Installation Agent on each target computer that you plan to deploy to remotely. Begin the installation of the IBM Installation Agent from the IBM Installation Agent Launchpad. The WindowsLaunchpad will automatically start from the installation CD. If you are deploying from a network location, or the Launchpad does not automatically start, start it by using the IIA_<OS>Launchpad program, where <OS> is the operating system of the computer where you are installing the installation agent.

The IBM Installation Agent Launchpad provides controls for performing the following tasks:

- Installing IBM Installation Agent
- Viewing the IBM Installation Agent Installation Guide
- Viewing the IBM Installation Agent Readme

More information on installing the IBM Installation Agent is available in the IBM Installation Agent Installation Guide.

Chapter 4. Using Express Runtime

This chapter presents an end-to-end scenario for developing and deploying a total business solution using Express Runtime. It contains an overview of the following tasks:

- Developing a solution
- Testing a solution
- Deploying a solution
- Distributing a solution
- Maintaining solution middleware

For more detailed information on any of the tasks, consult the Express Runtime InfoCenter.

Developing a solution

The solution developer completes the development of your solution. To create the solution, the solution developer uses the Express Runtime developer tool to generate application and solution wrappers. The wrapper file uses XML to describe your application or solution. Express Runtime includes application wrappers for each Express Runtime middleware component. These middleware application wrappers can be used by your solution developer as part of your solution. The solution developer is responsible for writing application wrappers for each of your custom applications. The solution developer must also create a solution wrapper to define the applications that your solution includes. Express Runtime provides a sample solution that the solution developer can use as a guide or modify to reuse as your solution.

The Express Runtime developer includes several useful resources for solution developers. The Express Runtime developer includes custom editors that create the XML wrappers for your solution developer as they provide descriptive information about your application or solution. The Express Runtime developer also includes cheat sheets that guide your solution developer through the process of creating a wrapper file, performing steps for the solution developer when necessary.

You should decide during solution development the method you plan to use for distributing your solution and the licensing that is most appropriate for your solution. The licensing you decide on for your solution affects areas such as packaging, pricing and support. Consult expert legal counsel for advice on your solution's licensing requirements.

Once the solution has been developed, the solution developer generates the solution and begins testing. Generating the solution produces a file with a .ser extension. This file can be opened in the deployment wizard by the solution distributor or end customer.

Testing a solution

The solution developer needs to test the solution before providing it to the solution distributor or end customer. The Express Runtime developer includes a test and debug environment. The solution can be tested in the Express Runtime developer with the Test in deployment wizard option. This option launches the deployment wizard inside the Express Runtime developer and allows the solution developer to see how the solution will be presented to the end customer and to verify that the deployment can be completed successfully. The Express Runtime developer provides a plug in to the Eclipse-based debugger and therefore can be used by your solution developer to debug problems with your solution before distribution begins.

Distributing a solution

The solution distributor might distribute your solution as a solution launcher image or by creating a staging server. If the solution is provided as a solution launcher image, the end customer is provided with a set of CDs. When the first CD is inserted in the end user's computer, the deployment wizard starts with your solution open and ready to be deployed. The solution distributor might decide to create a staging server instead of providing a solution launcher image to end users. To create a staging server, the solution distributor installs only the deployment wizard to a computer. The solution distributor then deploys your solution, either locally or remotely, to target computers from the staging server.

Deploying a solution

The solution can be deployed by the solution distributor or the end customer using the deployment wizard. The deployment wizard provides a simple graphical interface for deploying a solution.

Your solution is presented as a list of tasks in the deployment wizard. The solution developer has specified in the Express Runtime solution which tasks should be visible, required, or optional. The solution developer has also specified the configuration parameters that can be specified by the end user at deployment.

To deploy a solution, complete the following steps:

1. Open the deployment wizard.
2. Click **File > Open**.
3. Locate the file provided by your solution developer with a .ser extension.
4. Click **Open**.
5. The deployment wizard welcome screen is displayed with information provided by your solution developer about your solution. Click **Next**.
6. On the Select Tasks panel, select at least one task to deploy. Click **Next**. Repeat for all Select Tasks panels.
7. On the Target Computers panel, specify a target computer hostname or IP address and click **Add**. To deploy to more than one target computer, add additional target computer hostnames. To deploy to your computer, enter localhost as the target computer hostname. Click **Next**. Repeat for all Target Computers panels.
8. On the Specify Parameters panel, complete all required configuration parameters. Click **Next**. Repeat for all Specify Parameters panels.
9. On the Summary panel, review the tasks you have configured to deploy.
10. To deploy all configured tasks, click **Deploy All**. To deploy only a specific task, click **Deploy** associated with the task.
11. Monitor the deployment status until deployment is complete.

Chapter 5. Other documentation available

The following table provides information about other documentation that you can use:

Table 3. Other documentation

Information unit	Purpose	How to access
Express Runtime InfoCenter	Describes pertinent product information from installation, development, deployment, and maintenance instructions, to concept and troubleshooting information	From the Express Runtime CD or DVD, or from the Help menu in the deployment wizard.
Express Runtime release notes	Sometimes called a readme, describes product information that was not captured in the Express Runtime InfoCenter	From the Express Runtime CD or DVD.
IBM Installation Agent InfoCenter	Describes how to install and configure the IBM Installation Agent. Conceptual and troubleshooting information is also included.	From the IBM Installation Agent CD or DVD.
IBM Installation Agent release notes	Sometimes called a readme, describes product information that was not captured in the IBM Installation Agent InfoCenter	From the IBM Installation Agent CD or DVD.

For IBM middleware documentation, install the middleware components to view each product's documentation. You can also access documentation for each middleware component on the World Wide Web:

IBM DB2 Universal Database Express:

<http://www.ibm.com/software/data/info/db2express/>

IBM WebSphere Application Server – Express

<http://www.ibm.com/software/websphere/info/express>

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

<http://www.ibm.com/software/webservers/httpservers/>

Business partners might provide documentation regarding solutions they provide separately from the Express Runtime documentation.

Chapter 6. Troubleshooting

If you encounter errors during a deployment, perform the following tasks to identify the cause of the problem:

- On the Status dialog, click **Detailed Messages**. A table of messages appears in a new dialog. Double-click on a message to view more detailed information and to print the error details.
- Verify that your staging server can communicate with all of the target computers. Use the left navigation in the deployment wizard to click on the Specify Targets link. Click **Test Connections** on each Specify Targets dialog to verify that the agent is running on all of the target computers.
- View the log file: <InstallPath>\logs\IRU_DeploymentWizard.log, where <InstallPath> is the location where you installed Express Runtime.
- Record any displayed error messages.

Chapter 7. Accessibility

You can use screen-reader software to hear what is displayed on the user interface of the deployment wizard. You can operate all features using the keyboard instead of the mouse. Express Runtime honors system accessibility settings, such as font and color settings. Accelerator and mnemonic keys are enabled throughout Express Runtime. These are identified on the Menu bar and its associated pull-down menus.

You can use keys or key combinations to perform operations that can also be done through mouse actions. Many menu actions can be initiated from the keyboard. In those cases, the keyboard equivalent is displayed to the right of the menu item or the shortcut letter is underlined. In addition, the following keyboard shortcuts are enabled:

Tab Navigates through the user interface.

Arrow keys

Navigate within each panel in the user interface.

F3 Decreases size of selected column incrementally.

F4 Increases size of selected column incrementally.

F5 Moves selected column to the left.

F6 Moves selected column to the right

Navigating in Linux

If you have trouble navigating a panel in Linux using CTRL+Tab, use CTRL+ALT+Tab instead. If this is not your default navigation method, refer to your operating system documentation to change the navigation settings.

Chapter 8. Trademarks

The following terms are trademarks of the IBM Corporation in the United States, other countries or both:

- DB2
- DB2 Universal Database
- IBM
- i5/OS
- OS/400
- POWER
- Rational
- WebSphere

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