



IBM Software Group

Deploying a Solution

IBM Virtual Innovation Center



IBM Express Runtime

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Objectives

- **The objectives of this module are to:**
 - Demonstrate how to deploy a solution
 - Highlight some key points during the deployment

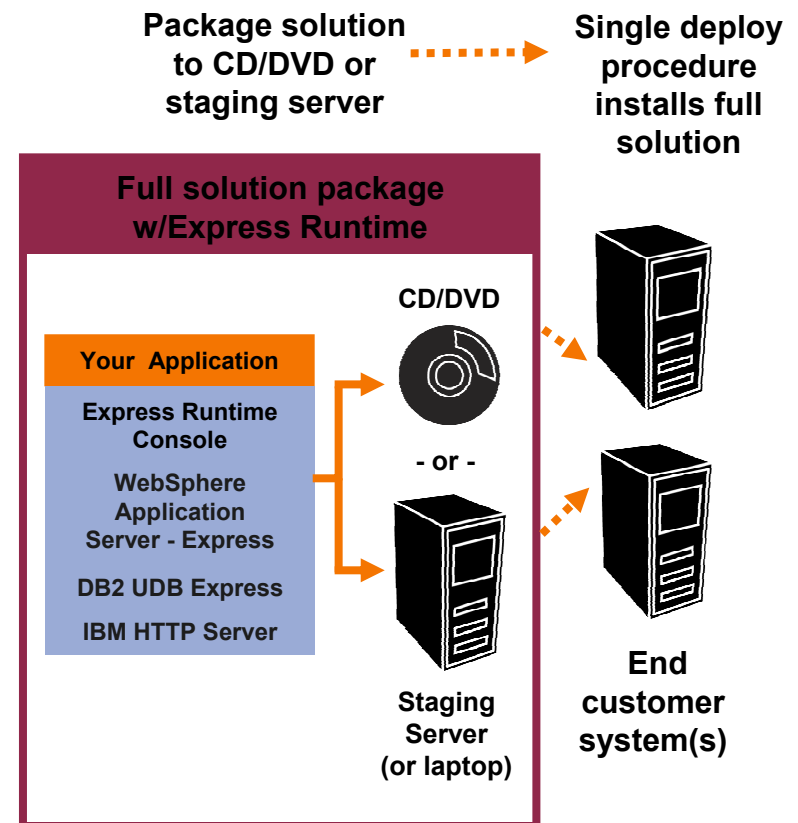
Agenda

- **Overview of deployment**
- **Configuration parameters**
- **Two ways to deploy: Solution launcher from media (CD/DVD) and staging server**
- **Deploying to the different platforms**
- **Deploying to multiple physical systems**
- **What to do if you have one of the components installed**
- **Deploying on IBM i5/OS**
- **Validating the deployment (log files, running the application)**

Overview of deployment

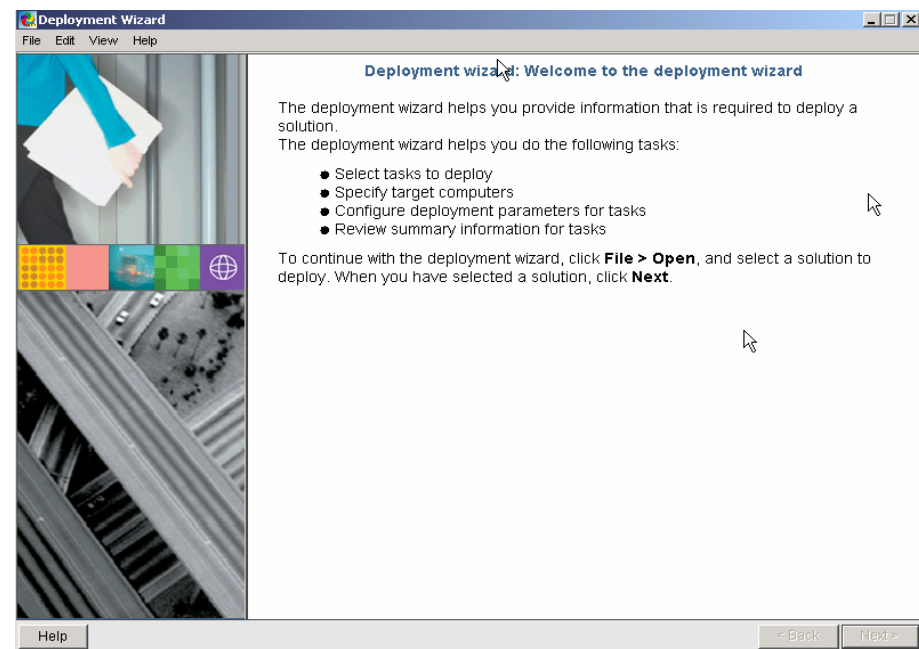
Overview of deployment

- The Deployment Wizard installs and configures the IBM middleware and applications in a single process.
- There are two distinct ways to deploy the solution with the Deployment Wizard:
 - **CD/DVD deployment** using Solution Launcher
 - **Staging Server** using a locally installed deployment wizard
 - Deployment options supported by both methods:
 - **Local deployment** using deployment wizard
 - **Remote deployment** using deployment wizard and installation agent



Deployment Wizard

- Provides a simple graphical user interface (GUI) to deploy a solution and minimize the amount of setup required
- Presents a solution as a list of tasks and accomplishes them sequentially
- End Users must provide a minimal set of required parameters and can optionally change many additional parameters



Configuration parameters

Provide configuration parameters

- Why do we need the configuration parameters?
 - To meet different deployment requirements by using different parameters for middleware components and applications
 - To ensure there are no conflicts between components
- What parameters do I provide?
 - There are a few required parameters for each component, such as user ID, password, and port number.
 - There are some optional parameters that an end user can modify.
 - For most parameters, a default value is provided by the solution.

Configurable parameters for DB2 Universal Database (UDB) Express v8.2*

- Required parameters
 - Target directory
 - DB2 administrator user ID
 - DB2 administrator password
- Optional parameters
 - Create Start menu shortcuts
 - Languages support
 - Add features to installed version

* IBM i5/OS is different. Refer to the i5/OS section.

Configurable parameters for WebSphere Application Server - Express v6.0*

- Required parameters (default values provided)
 - Modify or check the following parameters
 - Installation directory
 - HTTP Transport port
 - Administrative console port
 - HTTPS Transport port
 - Secure administrative console port

* i5/OS is different. Refer to the i5/OS section.

Configurable parameters for WebSphere Application Server - Express v6.0 (cont.)*

- Required parameters (default values provided)
 - Make sure there is no port conflict for the following parameters:
 - Bootstrap port
 - SOAP Connector port
 - SAS SSL ServerAuth port
 - CSIV2 ServerAuth Listener port
 - CSIV2 MultiAuth Listener port
 - ORB Listener port
 - High Availability manager communication port
 - Service Integration port
 - Service Integration port (Secure)
 - Service Integration MQ Interoperability port
 - Service Integration MQ Interoperability port (Secure)
 - Startup type of the service
- Optional parameters (default values provided)
 - Abort install if required ports are busy
 - Run the WebSphere Application Server - Express as a service

* i5/OS is different. Refer to the i5/OS section.

Configurable parameters for IBM HTTP Server v6.0*

- Required parameters (default values provided)
 - IBM HTTP Destination Directory
 - HTTP port
 - Admin Server port
 - Windows Service UserID (only for Windows platform)
 - IBM HTTP Server port number
 - IBM HTTP Server installation directory
 - WebSphere Express Application Server - Express installation directory
- Optional parameters
 - Windows Service User Password (only for Windows platform)
 - Admin UserID
 - Admin User Password
 - WebSphere Express Application Server - Express hostname

* i5/OS is different. Refer to the i5/OS section.

Two ways to deploy a solution

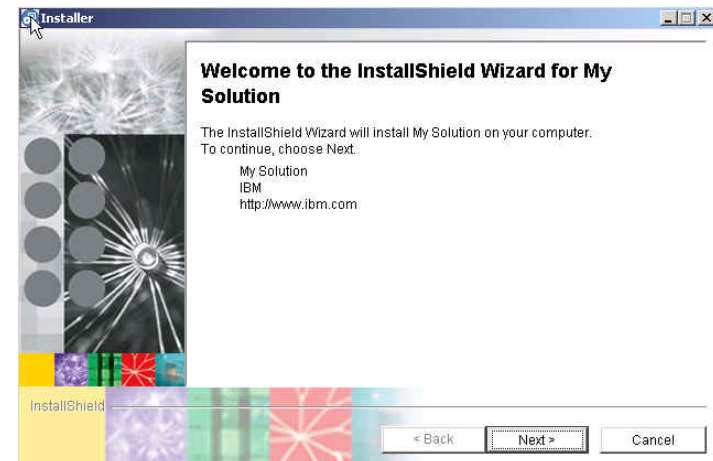
Deployment method 1: From media (CD/DVD)

- Deployment from CDs or DVDs means installing the solution using the CDs or DVDs that contain the setup programs and all files needed.
- You receive the installation CDs or DVDs from the solution developer prior to deployment.
 - Run the setup programs (Solution Launcher) from CD/DVD
 - For example, use [IRU WindowsSetup.exe](#) for the Windows platform.

Note: Deployment on Linux is similar to Windows, except for some minor display differences.

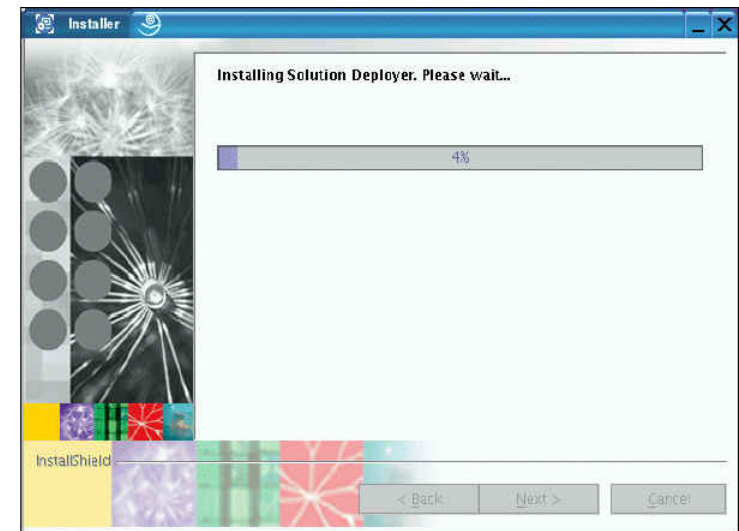
Running Solution Launcher

- Start the Solution Launcher.
- Choose the language of preference.
- The wizard starts.
- Click **Next**, and the wizard extracts all components (JAR files).



Install Deployment Wizard and begin deployment

- The wizard installs the Deployment Wizard.
- After the installation completes, the Deployment Wizard runs.



Deployment method 2: Staging Server

- The Deployment Wizard can be installed directly on a machine instead of using the Solution Launcher method which temporarily installs the deployment wizard.
- When this method is chosen the deployment wizard is started from the menu options

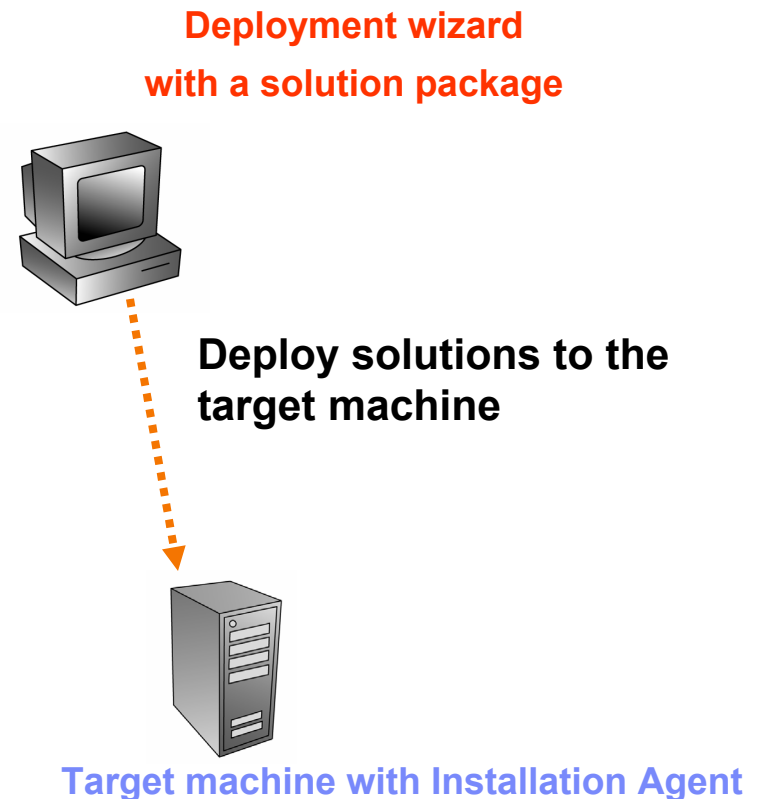
Local Deployment

- Local deployment means installing the solution on the same machine where you are running the Deployment Wizard.
- The Deployment Wizard can help you to perform the following steps for a local deployment:
 - Select tasks to deploy
 - Specify the local system
 - Configure deployment parameters for tasks
 - Review summary information for all tasks

Note: Deployment on Linux is similar to Windows, except for some minor display differences and configuration parameters for the underlying products

Remote Deployment Option

- Remote deployment means installing the solution on a remote system, which we call a **target machine**.
- IBM Installation Agent (IIA) must be installed on the target machines prior to deployment.



Note: Installing and configuring IIA on Linux is similar to Windows, except for some minor display differences.

Secure your remote installation

- To secure the remote installation, you must provide a security string on both systems
 - Specify a security string during the IIA installation.
 - You can still modify the string using the Key Manager.
 - Specify a security string in the Deployment Wizard on the staging server. You will be prompted to enter a security string if required. You can manually set the string by:
 - In the Deployment Wizard, select **Edit -> Key Manager**.
 - Type the security string that you specified during the IIA installation.

Key Manager on target machine (Linux)

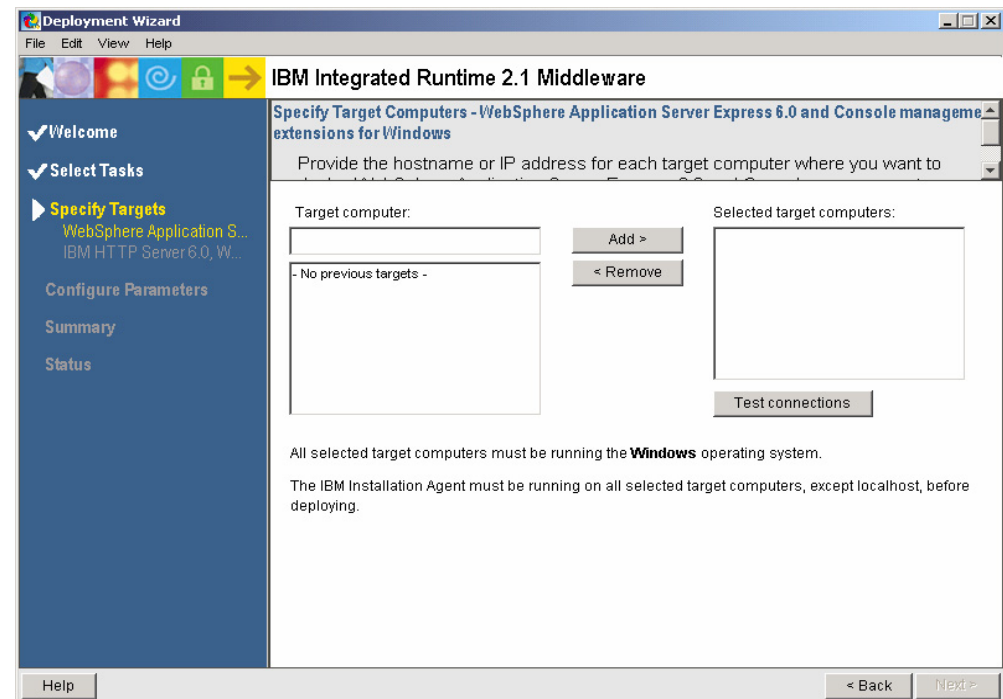
The screenshot shows a window titled "Key Management" with a close button (X) in the top right corner. The text inside the window reads: "Key management secures, controls and authenticates all deployment requests." followed by "Provide a phrase to generate a pair of security keys to establish communication between the staging server and the target computer:". Below this text are two input fields. The first is labeled "*Enter phrase:" and the second is labeled "*Verify phrase:". At the bottom of the window are three buttons: "Help", "OK", and "Cancel".

Key Manager in deployment wizard (Windows)

The screenshot shows a window titled "Key Management" with a close button (X) in the top right corner. The text inside the window reads: "Key management secures, controls and authenticates all deployment requests." followed by "Provide a phrase to generate a pair of security keys to establish communication between the staging server and the target computer:". Below this text are two input fields. The first is labeled "*Enter phrase:" and the second is labeled "*Verify phrase:". At the bottom of the window are three buttons: "Help", "OK", and "Cancel".

Remote deployment: Target machine

- Remote deployment with the Deployment Wizard is similar to a local deployment with one difference:
 - Provide Host name or IP address of remote machine at the **Specify Target** step
 - Test the remote connection by clicking the **Test connections** button
- The rest of the deployment process is the same as local deployment.



Demo 3 - Installing and configuring IIA on Windows

Deploying to different platforms

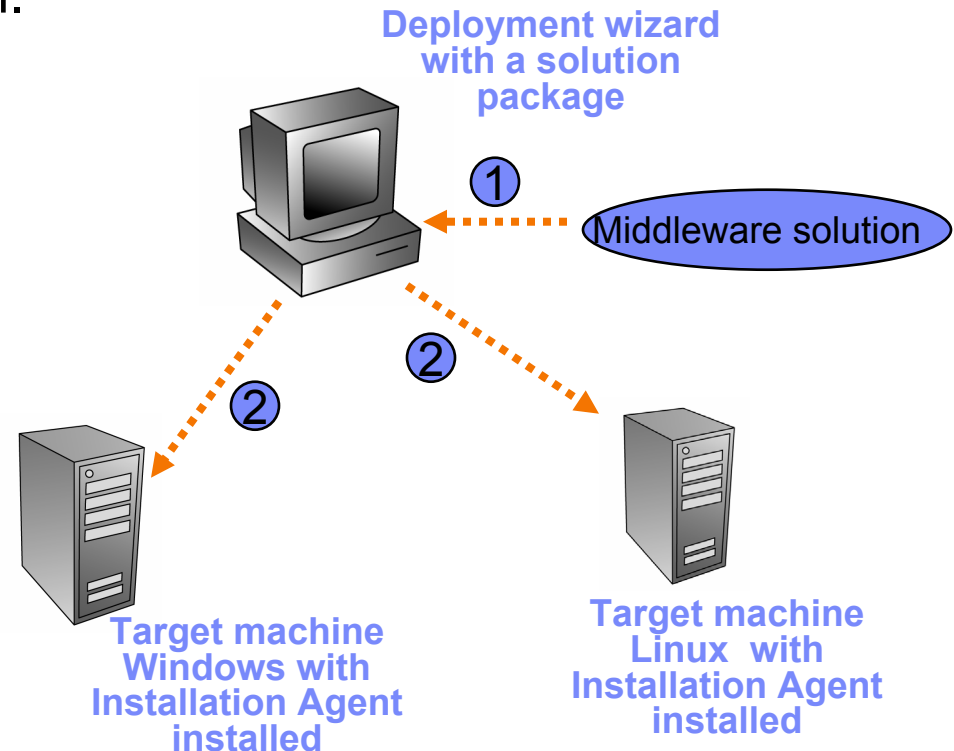
Deploying to the different platforms

- Currently, the Deployment Wizard supports the following platforms:
 - Windows
 - 2003 Server with SP1, 2000 Advanced Server with SP4, XP Professional with SP 2
 - Linux (Intel-based platform)
 - Red Hat Enterprise Linux 3.0 (AS/ES/WS), SUSE LINUX Enterprise Server (SLES) 8.0/9.0, Red Flag Advanced Server 4.1
 - Power Linux
 - SLES 9.0, Red Hat Enterprise Linux AS 3.0
 - i5/OS
 - OS/400 is known as the i5/OS operating system beginning with V5R3.
- Deployment to Windows and Linux (Intel and Power)
 - Support local, remote (and CD/DVD delete) deployment
 - Can run both deployment wizard and installation agent
- Deployment to i5/OS
 - The IBM iSeries can only be the target machine in remote deployment.
 - The iSeries can only run the installation agent.

Deploying to multiple physical systems

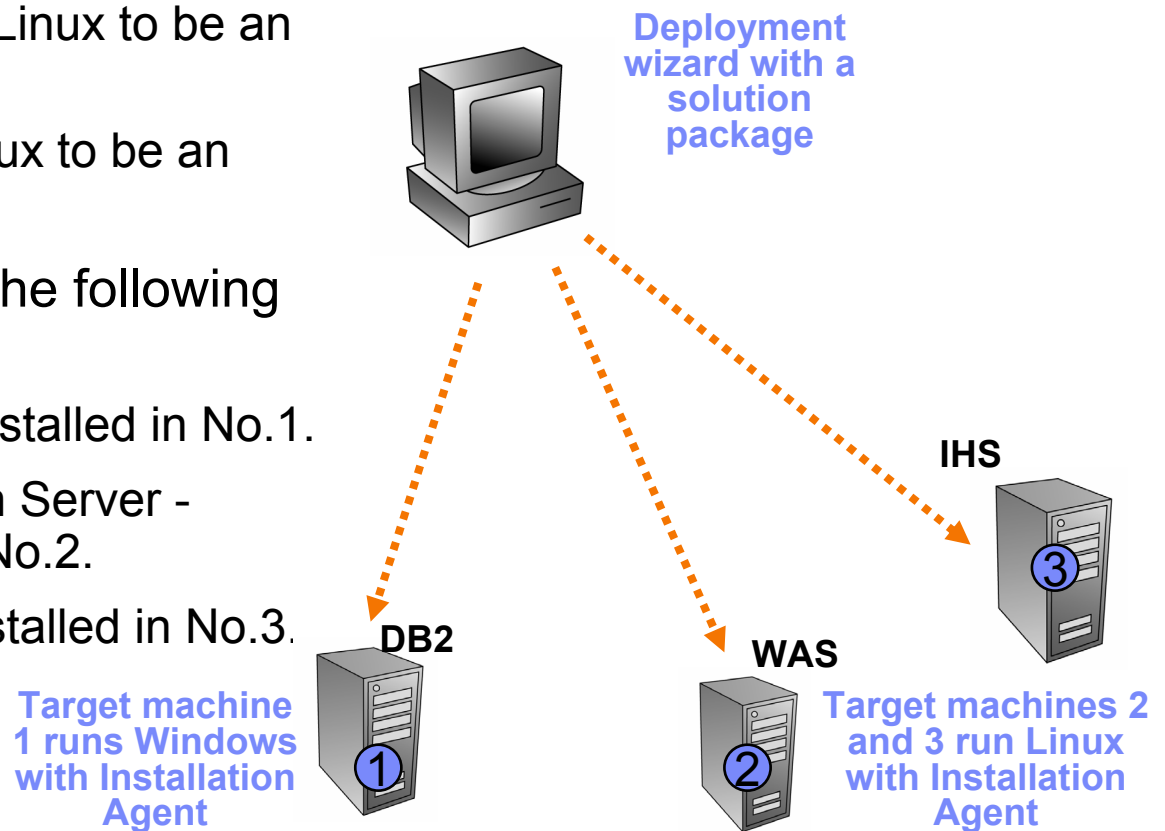
Deploying to multiple physical systems

- The Deployment Wizard supports deploying a solution to multiple physical systems.
- Refer to the demo for an example of deploying IBM middleware to the Windows and Linux system.
 - Step 1: Open the middleware solution file using the Deployment Wizard on the staging server.
 - Step 2: Deploy DB2 UDB Express, WebSphere Application Server - Express, and IBM HTTP Server to both target machines (Windows and Linux) at the same time.



A more complex scenario can be supported

- In this scenario, the solution is installed on three machines.
 - The first one is running Windows to be a database server.
 - The second is running Linux to be an application server.
 - The third is running Linux to be an HTTP server.
- In a single deployment, the following installations occur:
 - DB2 UDB Express is installed in No.1.
 - WebSphere Application Server - Express is installed in No.2.
 - IBM HTTP Server is installed in No.3.



Demo 4 - Deploying IBM middleware

What to do if you have one of the components installed?*

* This section assumes that you are using a Windows or Linux platform. For i5/OS, refer to the i5/OS section.

What to do if you have DB2 installed?

- **You can run only one DB2 on the same system.**
- **You need to consider four scenarios:**
 - An earlier version is already installed.
 - The same version is already installed.
 - A later version is already installed.
 - An unknown version is installed.

Scenario 1: An earlier version is already installed*

- **Upgrade is performed automatically by the DB2 Install package.**
- **Notice the different actions for Windows and Linux.**
 - For Windows, it is important to perform the DB2 migration steps on any data that you have prior to installing the solution.
 - For Linux, this is not so important, since the data can be migrated after the installation completes.

* Must be careful with these actions. Analyze the impact for other applications on the system.

Scenario 2: The same version is already installed

- **The Deployment wizard displays the “already exist” message and skips the installation.**

Scenario 3: A later version is already installed

- **The Deployment wizard displays a failure message and terminates the installation.**
- **Analyze other applications on the system that use DB2* and decide the actions to take.**

* Be careful with these actions. Analyze the impact for other applications on the system.

Scenario 4: An unknown version is installed

- **The Deployment wizard displays a failure message and terminates the installation.**
- **You should:**
 - Uninstall DB2 manually.*
 - Run the deployment wizard again to install a solution that includes DB2.

* Be careful with these actions. Analyze the impact for other applications on the system.

What to do if WebSphere Application Server - Express is installed?

- **You can run multiple occurrences of WebSphere Application Server - Express on the same system.**
- **You still need to consider the four scenarios:**
 - Scenario 1: An earlier version is already installed.
 - Create a new installation.
 - Scenario 2: The same version is already installed.
 - Keep the existing one.
 - Create a new one for your specific reasons.
 - Scenario 3: A later version is already installed.
 - Create a new installation.
 - Scenario 4: An unknown version is installed.
 - Create a new installation.

Choosing the WebSphere Application Server - Express installation

- **To create a new installation**
 - Choose a different <WAS INSTALL> directory to create a new WebSphere Application Server - Express installation.
 - Modify the port parameters to make sure there are no port conflicts.

- **To keep existing installation**
 - Choose the existing <WAS INSTALL> directory.
 - The Deployment Wizard terminates current installation and uses the existing version.

What to do if IBM HTTP Server is installed?

- **You can run multiple occurrences of IBM HTTP Server on the same system.**
- **You still need to consider the four scenarios:**
 - Scenario 1: An earlier version is already installed
 - Create a new installation.
 - Keep the existing one if the version is 2.0 or later.
 - Scenario 2 : The same version is already installed.
 - Keep the existing one.
 - Create a new one for your specific reasons.
 - Scenario 3 : A later version is already installed.
 - Create a new installation.
 - Scenario 4 : An unknown version is installed.
 - Create a new installation.

Choosing the IBM HTTP Server installation

- **To create a new installation**

- Choose a different <IHS INSTALL> directory to continue with a new IBM HTTP Server installation.
- Modify the port parameters to make sure there is no port conflict.

- **To keep existing installation**

- Choose the existing <IHS INSTALL> directory.
- When an earlier version (2.0 or later) of IBM HTTP Server is installed in the target directory, the Deployment Wizard upgrades it.

Tip to use existing components

- **If applications are meant to use shared, already installed, components (WebSphere Application Server - Express, IBM HTTP Server, or DB2 UDB Express)**
 - Use care to minimize the possibility of contention with another application that is sharing the same components.
 - We recommend that you add a prefix for the names to minimize chance of naming conflicts.
 - Ask the administrator of the existing components for help.

Deployment on i5/OS

Deploying to i5/OS

- **i5/OS is an integrated platform with DB2 UDB Express and IBM HTTP Server integrated into the operating system.**
 - WebSphere Application Server - Express is an optional component to be installed.
- **During deployment from IBM Express Runtime to i5/OS**
 - DB2 Express does not pertain so it is not included for i5/OS
 - IBM HTTP Server installation
 - Deployment wizard applies the latest PTFs to IBM HTTP Server on iSeries
 - WebSphere Application Server - Express installation
 - If no WebSphere Application Server - Express is installed, the Deployment Wizard installs it without creating server instances.*

* The WAS Configuration application completes the creation of server instances.

Validating the deployment

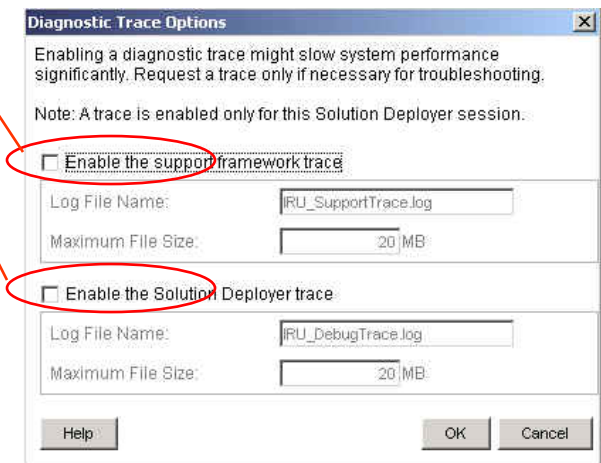
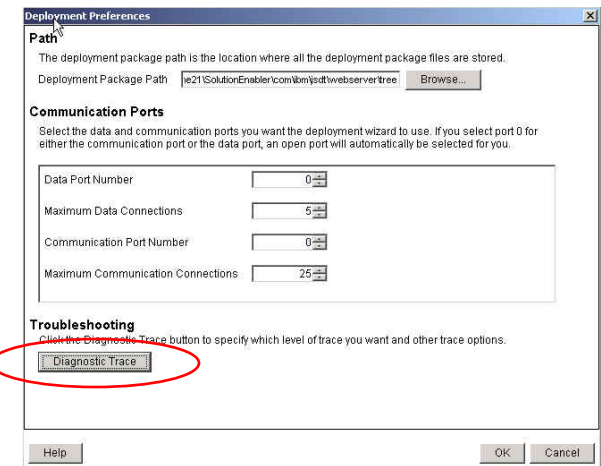
Validating the deployment

- **Deployment Wizard Status panel**
 - Lists the deployment result of each task
 - The Master log can be viewed using the **Master log** button
- **Detailed Messages panel**
 - Accessed using the **Detailed Messages** button on the Deployment Wizard Status panel
 - The log file for each message can be viewed using the **View Details** button
- **Log files**
 - View Master log – In the Deployment Wizard, select **View->Master log**
 - <Installation_Directory>/SolutionEnabler/logs/
 - <Installation_Directory>/SolutionEnabler/deployment/logs
 - <Installation_Directory>/IIA/logs/ (on a target machine only for remote deployment)

Use diagnostic logging

Use diagnostic logging only for debugging:

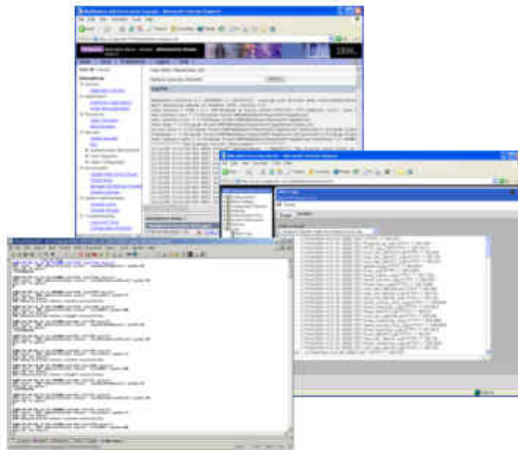
1. In the Deployment Wizard, select **Edit -> Preference**.
2. Click the **Diagnostic Trace** button.
3. Select the checkbox for the option that you want to enable.
4. Specify the file name and size of the logs.
5. Click **OK**.



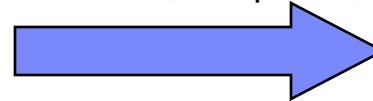
Preview of Autonomic Log and Trace Analyze

- Express Runtime Console v2.1 provides the Log and Trace Analyzer (LTA) tool
 - Process, combine, and correlate log data from any Express Runtime component or middleware
 - Simplify the process of tracing and debugging a problem

Logs of WebSphere Application Server - Express, DB2 UDB Express, IBM HTTP Server

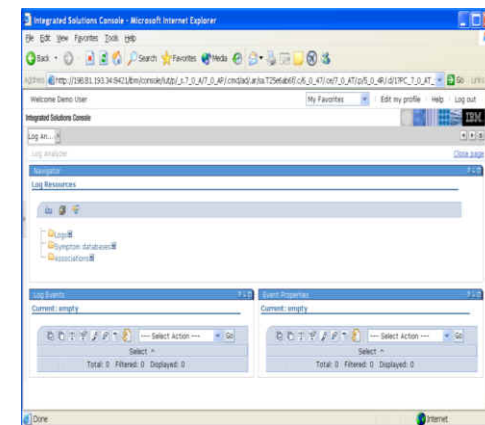


Unified, Simplified,



Effective

Log and Trace Analyzer



End of the module