



WebSphere Premises Server Installation Guide

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This edition applies to IBM WebSphere Premises Server version 6, release 1, modification 0. This edition applies to all subsequent releases and modifications until otherwise indicated in new editions.

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Installing and configuring

These topics describe how to install WebSphere® Premises Server and its components.

Preparing for installation

Use these topics to plan and prepare for your WebSphere Premises Server installation.

Planning your single server topology

Use the scenarios described in this section to plan for your installation of WebSphere Premises Server.

Possible topologies

WebSphere Premises Server supports the following topology options:

- A locally installed or remote database server, which can be either Oracle or DB2®
- A locally installed or remote Bundle Repository Server
- Optional Location Awareness Services for WebSphere Premises Server component on Windows® using a DB2 database

Installation scenarios

During the product installation, you are prompted for the available tasks the installer performs.

The first task is to choose your database server. If you decide to use an existing installation of either DB2 or Oracle, you will need to provide the server information for the installer. If you decide to use the installer to install DB2 (either remotely or locally), then the installer can do that. The installer cannot install an Oracle database.

The second task is to install WebSphere Premises Server, and optionally Location Awareness Services for WebSphere Premises Server.

Restriction: Location Awareness Services for WebSphere Premises Server must be installed on a Windows operating system on the same server as WebSphere Premises Server.

With this second installation task, you also have the option of installing both the WebSphere Premises Server and the Bundle Repository Server on the same server in your environment, or you can install the Bundle Repository Server on a separate server.

For example, if you install WebSphere Premises Server and the Bundle Repository Server on Server A, and then install an additional WebSphere Premises Server on Server B, both premises servers can use the Bundle Repository Server on Server A. You can also install the Bundle Repository Server on Server C and install only WebSphere Premises Server on Servers A and B. Again, both premises servers can use the Bundle Repository Server on Server C.

Restriction: Your database server and WebSphere Premises Server must be installed on servers with the same operating system.

Planning your high availability topology

This topic helps you plan the topology of high availability for your WebSphere Premises Server.

Requirements

- Setting up a high availability system requires a WebSphere Premises Server Central Site Server license.
- All servers in the high availability system must run the same operating system.
- All cluster members must have the prerequisite software installed in the same path as the central server.

See “Prerequisite steps for a high availability system” on page 6 for more information on prerequisites.

Topology

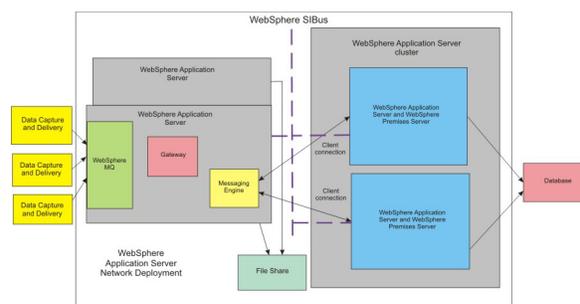
A WebSphere Premises Server high availability topology consists of the following:

- WebSphere Premises Server deployed in a WebSphere clustered configuration
- A centralized database
- A centralized WebSphere MQ server
- WebSphere Application Server Network Deployment components, which are installed on a machine called the *cluster controller*.

Note: WebSphere Application Server Network Deployment does not support local operating system security. If you need to enable security in your environment, use LDAP or the custom user registry.

The following points apply to the sample configuration diagram pictured below:

- Only two nodes are pictured in this sample, but there can be n number of nodes in your configuration.
- The two servers with WebSphere Application Server that are not part of the cluster contain some WebSphere Premises Server components as well, such as the messaging gateway. The WebSphere Application Server pictured in the background is in passive standby, while the one in the foreground is active.



Packaging

The packaging for WebSphere Premises Server includes the following software products.

- Disk 1 - Quick Start, including product documentation
- Disk 2 (DVD format)
 - WebSphere Premises Server for Windows and its prerequisite middleware
 - WebSphere Premises Server SPDs for installing with Tivoli® Provisioning Manager for Software on Windows
 - WebSphere Application Server 6.1 Supplements for Windows
 - WebSphere Application Server 6.0 Edge Components for Windows (optional)
- Disk 3 (DVD format)
 - WebSphere Premises Server for Linux® and its prerequisite middleware
 - WebSphere Application Server 6.1 Supplements for Linux
 - WebSphere Application Server 6.0 Edge Components for Linux (optional)
- Disk 4
 - WebSphere Premises Server Toolkit
- Disk 5 - IBM® Data Capture and Delivery Toolkit for WebSphere Premises Server, including Eclipse and Equinox
- Disk 6 - High Availability for WebSphere Premises Server Central Site Server on Windows (available only with a Central Site Server license)
- Disk 7 - High Availability for WebSphere Premises Server Central Site Server on Linux (available only with a Central Site Server license)

Additional software

Additional software and components are available for purchase:

- Location Awareness Services for WebSphere Premises Server for Windows
Location Awareness Services for WebSphere Premises Server is an optional component that allows you to continuously track active tags in real time in predefined areas.
- Sensor Data Services for WebSphere Premises Server for Windows or Linux
Sensor Data Services for WebSphere Premises Server installs WebSphere Premises Server on an existing WebSphere Remote Server installation.

Prerequisites

Use these topics to prepare for your WebSphere Premises Server installation.

Hardware and software requirements

Hardware requirements

Supported hardware for WebSphere Premises Server includes servers that meet the minimum hardware criteria defined below.

Table 1. Minimum supported hardware for WebSphere Premises Server

| Processor | Memory (RAM) | Free Disk Space | Temporary disk space during installation |
|------------------|--------------|-----------------|--|
| 3 GHz Pentium® 4 | 3 GB | 10 GB | 1 GB |

A two-processor configuration is recommended.

The following hardware is required for Location Awareness Services for WebSphere Premises Server *in addition* to what is listed in Table 1:

Table 2. Additional hardware required for Location Awareness Services for WebSphere Premises Server

| Processor | Memory (RAM) | Free Disk Space | Temporary disk space during installation |
|---------------|------------------|-----------------|--|
| 3 GHz or more | 1 GB recommended | 500 MB | 100 MB |

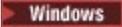
The system for the Location Awareness Services for WebSphere Premises Server Spatial Management Client must meet the following minimum requirements:

- Memory (RAM): 512 MB or more
- CPU: 1 GHz or more
- Monitor resolution: 1024 by 768 pixels, 1280 by 1024 pixels, or higher
- A LAN connection (100 M-bit or more)

Software requirements

Operating systems

WebSphere Premises Server supports the following operating systems:

-  Windows Server 2003 Standard or Enterprise editions with Service Pack 2, or Windows Server 2003 R2 Standard or Enterprise editions with Service Pack 2
-  SUSE Linux Enterprise Server V9.3 (Kernel 2.6), or SUSE Linux Enterprise Server V10.1

Notes:

- See the WebSphere Premises Server system requirements page for the latest information about supported operating platforms.
- A high availability WebSphere Premises Server topology is not supported on SUSE Linux Enterprise Server V9.3.
- Location Awareness Services for WebSphere Premises Server only supports the Windows platforms listed. It does not support Linux platforms.
- A high availability WebSphere Premises Server topology is not supported with Location Awareness Services for WebSphere Premises Server.

Browsers and other GUI software

In order to use the WebSphere Premises Server Administrative Console, you must have Mozilla Firefox or Internet Explorer 6.0 or later installed on your operating system and JavaScript™ enabled.

The following software is required on the systems where you install the Location Awareness Services for WebSphere Premises Server Spatial Management Client:

- Internet Explorer 6.0
- Adobe® Scalable Vector Graphics (SVG) Viewer

Middleware

The following software is required for WebSphere Premises Server. These software packages are installed with WebSphere Premises Server, with the exception of Oracle. See “Packaging” on page 2 for more details on how the software is delivered.

- WebSphere Application Server 6.1.0.17
- IBM HTTP Server 6.1.0.17
- WebSphere MQ 6.0.2.3
- DB2 for Linux, UNIX®, and Windows 9.1.4 Enterprise Server Edition, or Oracle 10.2.0.2 (10g driver) or Oracle 11g with the patched ojdbc5.jar file. See http://www.oracle.com/technology/software/tech/java/sqlj_jdbc/htdocs/jdbc_111060.html to download the patched file.

Installation tip: If you use an Oracle database on a remote server, you must have the Oracle client on your server with WebSphere Premises Server.

Notes:

- DB2 for Linux, UNIX, and Windows 9.1.4 Workgroup Server Edition and DB2 for Linux, UNIX, and Windows 9.5.2 are also supported, but not packaged with WebSphere Premises Server.
- If you are using Oracle with a Linux operating system, the Oracle 10g driver can be installed on SUSE Linux Enterprise Server 9 or later versions, but Oracle 11g can only be installed on SUSE Linux Enterprise Server 10 and later versions.
- Location Awareness Services for WebSphere Premises Server only supports the DB2 database versions listed. It does not support Oracle.

You can optionally use the following Tivoli products to install and manage your network:

- Tivoli Omegamon XE for Messaging for Distributed Platforms 6.0.1 (optional)
- Tivoli Composite Application Manager for WebSphere 6.1 (optional)
- Tivoli Enterprise Console® 3.9 Fix Pack 6 (optional)
- Tivoli Provisioning Manager for Software 5.1.0.2 (optional)
- IBM Tivoli Monitoring 6.2 (optional)
- IBM Tivoli Monitoring for Databases 6.2 (optional)

Tivoli Provisioning Manager for Software Software Package Definition (SPD)

files: WebSphere Premises Server provides Tivoli Provisioning Manager for Software SPD files for WebSphere Application Server, DB2 for Linux, UNIX, and Windows platforms and WebSphere MQ running on Windows platforms only. You can use Tivoli Provisioning Manager for Software to install and configure these prerequisites on WebSphere Premises Server. For instructions on how to do this, refer to “Installing using Tivoli Provisioning Manager for Software” on page 39.

Prerequisite configuration

This topic contains prerequisite information for installing WebSphere Premises Server.

Before installing WebSphere Premises Server, identify the hardware and software you require, and then refer to the topics below for any additional prerequisites.

- “Configuring Linux for the prerequisite software” on page 6
- “Configuring Internet Explorer” on page 6

- “Configuring Mozilla Firefox”

Important: If you do not plan to verify the installation after installing the software, be sure to turn off the simulated reader which is turned on by default. Turning off the simulated reader helps system performance. Refer to the topic, *Verifying the installation*, for instructions.

Configuring Linux for the prerequisite software:

About this task

You must perform the following tasks to run the prerequisite software on Linux platforms:

1. Prepare the Linux operating system for WebSphere Application Server.
2. Prepare the SUSE Linux Enterprise Server operating system for WebSphere Application Server.
 - SUSE Linux Enterprise Server 9
 - SUSE Linux Enterprise Server 10
3. Prepare the Linux operating system for WebSphere MQ
4. Check for any entries in the `/etc/hosts` file that include the IP address, `127.0.0.2`, and comment them out before installing WebSphere Premises Server.

Configuring Internet Explorer:

About this task

By default, Internet Explorer has scripting disabled when it is installed. You must enable scripting to use the WebSphere Premises Server Administrative Console with Internet Explorer.

1. In the browser, navigate to **Tools** → **Internet Options**.
2. Select the **Security** tab.
3. Click **Custom Level**.
4. Scroll down to **Scripting** → **Active Scripting**, and click **Enable**.
5. Click **Ok**, and then click **Ok** again.

Configuring Mozilla Firefox:

About this task

By default, Mozilla Firefox has scripting enabled when it is installed. If you have disabled it, make sure to re-enable it so that you can use the WebSphere Premises Server Administrative Console with Mozilla Firefox.

1. In the browser, navigate to **Tools** → **Options**.
2. Select **Content**.
3. Mark the check box next to **Enable JavaScript**, and click **Ok**.

Prerequisite steps for a high availability system

Follow the steps in this topic to prepare for your high availability system installation with WebSphere Premises Server.

Before you begin

Remember: Setting up a high availability system requires a WebSphere Premises Server Central Site Server license.

1. Install WebSphere Premises Server on a central server.

Be sure to verify that your installation is successful, and that your environment is set up for remote Data Capture and Delivery controllers. See “Planning your high availability topology” on page 2 and “Installing a remote Data Capture and Delivery controller” on page 58 for more information.

You can install WebSphere Premises Server with Location Awareness Services for WebSphere Premises Server on your central server, but the Location Awareness Services for WebSphere Premises Server applications will not run in a cluster.

2. Create a deployment manager profile on your WebSphere Premises Server central server. For details on how to do this, see Creating a deployment manager profile.

Note: Do not federate your WebSphere Premises Server into the network deployment environment.

3. On a cluster node server, install the following prerequisite software:
 - WebSphere Application Server 6.1.0.17
 - a database client, either DB2 for Linux, UNIX, and Windows or Oracle. See the WebSphere Premises Server software requirements for more information.
 - a WebSphere MQ 6.0.2.3 client. To install this, copy the contents of the `MQ_INSTALL_ROOT\java\lib\` directory from your central server to same path on your node server. `MQ_INSTALL_ROOT` is the installation path for WebSphere MQ.

Important:

- All servers in the high availability system must run the same operating system.
- A high availability WebSphere Premises Server topology is not supported on SUSE Linux Enterprise Server V9.3.
- All cluster members must have the prerequisite software installed in the same path as the central server.
- You cannot have duplicate node names in the same cell. For example, the central server is called `PremisesNode`, so none of the cluster members can have that same node name. If you have two servers with the same node name, then you will need to drop the WebSphere Application Server profile and recreate it with a new name to continue with the high availability topology.

For more detailed information on clustering, see Creating clusters.

4. On the cluster node server, federate the WebSphere Application Server nodes to WebSphere Application Server Network Deployment (deployment manager) running on the central server. To do this, run the `addNode` command:
`addNode WASND_host WASND_SOAP_port`

Tip: Make sure the deployment manager has been started on the central server before trying to federate the nodes.

5. Optional: Delete servers from WebSphere Application Server Network Deployment.
 - a. Open the WebSphere Application Server Network Deployment administrative console.
 - b. Navigate to **Servers** → **Application servers**. You will see all servers from each cluster node.
 - c. Select all servers and delete them.
 - d. Save the master configuration.

6. If you have WebSphere Application Server security enabled, disable it. The installer cannot run properly with security enabled.
7. Restart the deployment manager, all node agents, and all servers.

What to do next

Follow the instructions for “Installing a high availability system” on page 32.

Toolkit prerequisites

This topic contains prerequisite information for installing the toolkits available with WebSphere Premises Server.

Prerequisites for WebSphere Premises Server Toolkit

WebSphere Premises Server Toolkit requires the following hardware and software.

Hardware

- 2 GHz Pentium 4 (3 GHz preferred)
- 2 GB RAM

Software

-  Windows XP, or Windows Server 2003 Standard or Enterprise editions with Service Pack 2, or Windows Server 2003 R2 Standard or Enterprise editions with Service Pack 2

Note: WebSphere Premises Server Toolkit is not supported on Linux.

- Rational® Application Developer for WebSphere Software 7.0.0.5
- DB2 for Linux, UNIX, and Windows 9.1.4 Enterprise Server Edition, or Oracle 10.2.0.2 (10g driver) or Oracle 11g with the patched ojdbc5.jar file. See http://www.oracle.com/technology/software/tech/java/sqlj_jdbc/htdocs/jdbc_111060.html to download the patched file.

Installation tip: If you use an Oracle database on a remote server, you must have the Oracle client on your server with WebSphere Premises Server.

- IBM HTTP Server 6.1.0.17
- WebSphere MQ 6.0.2.3
- WebSphere Application Server 6.1.0 Fix Pack 17 installed on the WebSphere Application Server runtime that is installed with Rational Application Developer for WebSphere Software

Note: DB2 for Linux, UNIX, and Windows 9.1.4 Workgroup Server Edition and DB2 for Linux, UNIX, and Windows 9.5.2 are also supported, but not packaged with WebSphere Premises Server.

Prerequisites for IBM Data Capture and Delivery Toolkit for WebSphere Premises Server

This toolkit requires the following software:

-  Windows XP

In addition, Eclipse 3.3.2 is required for the toolkit. Eclipse can be installed by extracting the eclipse-SDK-3.3.2-win32.zip file into a local directory. The .zip file is available on the disk containing the IBM Data Capture and Delivery Toolkit for WebSphere Premises Server.

If you intend to extend the IBM Data Capture and Delivery Toolkit for WebSphere Premises Server, it is recommended that you compile all code changes against the OSGi/Minimum-1.1 specification. A reference specification is contained in the ee.minimum.jar file that you can download from OSGi at <http://www2.osgi.org/Release4/Download>. Specifically, for WebSphere Premises Server 6.1.x versions, you need Release 4 Version 4.1, available at <http://www.osgi.org/Download/Release4V41>.

This environment is recommended for small hardware platforms that run a very minimal Java™ environment. If you do not need to deploy IBM Data Capture and Delivery Toolkit for WebSphere Premises Server on such a platform, then you may choose to use a larger environment, such as CDC/Foundation. If you use an OSGi/Minimum-1.1 environment, your code will be able to run on larger Java environments as well.

Configuring the installation program paths

Use the steps in this topic to modify the default paths used by the deployment wizard.

Changing the deployment package path:

About this task

The installer copies its deployment packages temporarily to a default path:

| | |
|---|---|
|  | C:\Program Files\SolutionFiles\wizard\1 |
|  | /opt/SolutionFiles/wizard/1 |

The installer also copies additional temporary files used for installation to a location specified by the TEMP environment variable. If you want to change the location of the temporary installer files, modify the TEMP environment variable settings.

If you do not have a large partition for the default drive, there can be problems when you try to install the product because large amounts of data are temporarily copied to that location.

Note: After installation is complete, the only files that remain in that default deployment file path are the log files for the deployment wizard.

Use these steps to define the location where the deployment package files are copied after you have already started the installation program.

1. Click **Edit** → **Preferences** in menu on the Welcome panel.
2. The Deployment Preferences panel appears and you can modify the deployment package path to your desired location.
3. Click **OK** when you are finished with your changes to return to the Welcome panel.

Changing the deployment wizard path: The default path for the deployment wizard is:

| | |
|---|--------------------------------|
|  | C:\Program Files\SolutionFiles |
|---|--------------------------------|

 /opt/SolutionFiles

You can modify the location of this default path by changing the setting for the `installLocation.value` variable. This setting controls the file path for the location of the deployment wizard on the server. All log files are consolidated in a `logs` subfolder and left behind after the deployment wizard runtime is removed. There are two ways to change this location variable:

- From a command line, issue the following command, replacing *path* with your desired location:

```
 WindowsSetup.exe -W installLocation.value="path/  
SolutionFiles"
```

```
 LinuxSetup.exe -W installLocation.value="path/SolutionFiles"
```

- Or, before running the installation program, open the `IRU_install.iss` file and change the value of `$(install)` in this line to reflect your desired location:

```
-W installLocation.value="$(install)/SolutionFiles
```

Restriction: There is a known limitation with the installation of WebSphere MQ where you cannot install to a directory other than the default one. See APAR IC47296 for more information.

Prerequisite software files

If you do not choose to have the installation wizard install the prerequisite software for WebSphere Premises Server, you can extract the compressed files and install the products separately.

File locations

Windows

These files are located on Disk 2.

- `disk_root\sat_installer\bin\com\ibm\jsdt\webserver\tree\db2win.xx.jar`
- `disk_root\sat_installer\bin\com\ibm\jsdt\webserver\tree\ihswin.xx.jar`
- `disk_root\sat_installer\bin\com\ibm\jsdt\webserver\tree\ihsfpwin.xx.jar`
- `disk_root\sat_installer\bin\com\ibm\jsdt\webserver\tree\waswin.xx.jar`
- `disk_root\sat_installer\bin\com\ibm\jsdt\webserver\tree\wasupdateinstallerwin.xx.jar`
- `disk_root\sat_installer\bin\com\ibm\jsdt\webserver\tree\mqwin.xx.jar`
- `disk_root\sat_installer\bin\com\ibm\jsdt\webserver\tree\mq6rp2fp3win.xx.jar`

Linux

These files are located on Disk 3.

- `disk_root/sat_installer/bin/com/ibm/jsdt/webserver/tree/db2linux.xx.jar`
- `disk_root/sat_installer/bin/com/ibm/jsdt/webserver/tree/ihslinux.xx.jar`
- `disk_root/sat_installer/bin/com/ibm/jsdt/webserver/tree/ihsfplinux.xx.jar`
- `disk_root/sat_installer/bin/com/ibm/jsdt/webserver/tree/waslinux.xx.jar`
- `disk_root/sat_installer/bin/com/ibm/jsdt/webserver/tree/wasupdateinstallerlinux.xx.jar`
- `disk_root/sat_installer/bin/com/ibm/jsdt/webserver/tree/mqlinux.xx.jar`
- `disk_root/sat_installer/bin/com/ibm/jsdt/webserver/tree/mq6rp2fp3linux.xx.jar`

Creating the database, tablespace, tables, and data

Use this topic to manually create the database, tablespace, tables, and populate the data required for WebSphere Premises Server. If you are using the WebSphere Premises Server installer to install and create the database, you do not need to follow these steps.

Creating the database manually:

Use these instructions when a Database Administrator creates the database and tablespace manually, and then the tables and data are created during the installation of WebSphere Premises Server.

About this task

If you are using Oracle, you should have been prompted to create the SID when you installed the product. If not, refer to the Oracle documentation to set up a SID.

Note: These instructions use the database name, IBMRFID, but you can use a different database name.

1. Create the WebSphere Premises Server database for DB2 or Oracle.

For a local or remote DB2 database:

- a. Open the DB2 Control Center.
- b. Right-click **All Databases** and select **Create Database** → **Standard**.
 - 1) Enter IBMRFID as the database name.

Note: Linux commands are case-sensitive.

- 2) Select the option to **Enable database for XML (Code set will be set to UTF-8)**. For more information on this option, refer to the DB2 information center.
- c. Click **Finish**. Do not fine tune the database when it is created.
- d. Exit the DB2 Control Center.
- e. (Optional) Catalog the remote database, IBMRFID, to the local machine.

For an Oracle database, use the Database Configuration Assistant to create the new database called IBMRFID. Be sure to select the Unicode AL32UTF8 character set.

2. Create the tablespace. You can use the SQL statements provided here or you can use the sample DDL files, `amit_tablespace_db2.ddl` and `amit_tablespace_oracle.ddl`, provided in the `db_script` directory on the WebSphere Premises Server CD. These DDL files can be run from a DB2 command line or from an Oracle sqlplus tool. You must update the tablespace file name and database installation path and make sure the directory and file can be created before running the DDL files or SQL statements.

For DB2:

```
-- Drop tablespaces and buffer pool
DROP TABLESPACE LONGTABLESPACE;
DROP TABLESPACE LONGTEMPTABLESPACE;
DROP BUFFERPOOL "LONGBUFFPOOL";
```

```
-- create tablespaces and buffer pool
CREATE BUFFERPOOL "LONGBUFFPOOL" SIZE 10000 PAGESIZE 32768 NOT EXTENDED STORAGE;
CREATE REGULAR TABLESPACE LONGTABLESPACE IN DATABASE PARTITION GROUP IBMDEFAULTGROUP PAGESIZE 32768
MANAGED BY DATABASE USING (FILE 'C:\DB2\LONGTABLESPACE1' 6400) EXTENTSIZE 8 PREFETCHSIZE AUTOMATIC
BUFFERPOOL LONGBUFFPOOL OVERHEAD 12.670000 TRANSFERRATE 0.180000 DROPPED TABLE RECOVERY ON;
CREATE SYSTEM TEMPORARY TABLESPACE LONGTEMPTABLESPACE PAGESIZE 32 K MANAGED BY SYSTEM USING
('C:\DB2\LONGSYSTMP' ) EXTENTSIZE 8 OVERHEAD 12.67 PREFETCHSIZE 8 TRANSFERRATE 0.18 BUFFERPOOL
LONGBUFFPOOL ;
```

For Oracle:

```
-- Drop tablespaces
DROP TABLESPACE LONGTABLESPACE INCLUDING CONTENTS AND DATAFILES;

-- create tablespaces and buffer pool
CREATE BIGFILE TABLESPACE "LONGTABLESPACE"
DATAFILE 'C:\oracle\product\10.2.0\ORADATA\LONGTABLESPACE.ORA' SIZE 300M REUSE LOGGING EXTENT
MANAGEMENT LOCAL SEGMENT SPACE MANAGEMENT AUTO;
```

3. When installing WebSphere Premises Server, select the option to create tables and populate the data for the database.

Creating the databases using scripts:

Run the scripts provided in the db_script directory on the WebSphere Premises Server CD to create the database, tablespace, tables and populate data.

Before you begin

Before running the scripts be aware of the following restrictions and take the appropriate action:

- You must be a database user (such as db2inst1 or oracle) to run the scripts on Linux.
- For Oracle, the sqlplus executable must be added in the PATH on Linux.
- The specified tablespace directory must exist.
- You must have the authorization to access the specified tablespace directory if you are using Linux only.
- The specified tablespace file cannot be used by another database.

Example

For DB2:

Windows

```
createIBMRfid_db2.bat dbName longTablespaceFile longTempTablespaceFile
```

Linux

```
createIBMRfid_db2.sh dbName longTablespaceFile longTempTablespaceFile
```

For Oracle:

Windows

```
createIBMRfid_oracle.bat dbUser dbPassword dbSpec longTablespaceFile
```

Linux

```
createIBMRfid_oracle.sh dbUser dbPassword dbSpec longTablespaceFile
```

The database, tablespace, table and data are created under dbSpec.

Installing the product

Use these topics to install WebSphere Premises Server and its components.

Installing WebSphere Premises Server

Follow the steps in this topic to install WebSphere Premises Server and its prerequisite middleware.

Before you begin

Important: When specifying installation paths, make sure the directories contains only US English ASCII characters. Also enter only US English ASCII characters in directory paths in properties files.

Important: Enter a password that meets the password rules of the target machine. A password that is not valid will cause installation to fail.

1. Check your hardware and operating system and make sure that they meet the necessary requirements.
2. Make sure that you have completed all the prerequisite steps necessary for your environment. If you would like to modify the path used by the deployment wizard, follow the steps in “Changing the deployment wizard path” on page 9 before launching the installation program.
3. Make sure your database is encoded for UTF-8.
 - If you plan to use DB2 as your database server, and you would like to use an existing database, make sure that database was created with the option to **Enable database for XML (Code set will be set to UTF-8)**. If your DB2 database was not created with that option, you will need to delete and recreate that database if you want to use it.
 - If you are using Oracle, make sure that the database was created with the Unicode AL32UTF8 character set.

The installer will create a database for you, but you have the option to install one manually as well.

4. If you have a Windows operating system and you are running Terminal Server and Terminal Server Licensing, run the change user /install Windows command before starting the WebSphere Premises Server installation program. If you do not issue this command and you have those Windows components installed, the installation may fail because the installer cannot write to the vpd.properties file. To see if you have Terminal Server and Terminal Server Licensing installed, navigate to **Control Panel** → **Add or Remove Programs** → **Add or Remove Windows Components**. When you have successfully issued the command, the response is User session is ready to install applications. or Install mode does not apply to a Terminal server configured for remote administration. if the command was not needed. For more information, refer to the Windows Server 2003 Product Help.
5. Run the installation program located in the sat_installer directory of the WebSphere Premises Server disk appropriate for your operating system. If you have a Linux operating system, make sure you run LinuxSetup from a new shell window.

 WindowsSetup.exe
 LinuxSetup

When you run the installation program, the deployment wizard is temporarily installed on your hard drive. It will uninstall itself when the installation is complete. When the deployment wizard installation completes, it automatically launches and guides you through the installation of the product and its prerequisite software. It may take a few minutes to begin.

You can also run the installation program in silent mode. Refer to “Installing silently” on page 37 for further instructions.

6. Select the radio button beside the **I accept both the IBM and the non-IBM terms** statement if you agree to the license agreement and click **Next** to continue.

7. When the Welcome panel appears you can either:
 - Click **Next** to continue installing the product.
 - Or, if you would like to change the default path used for the deployment package, follow the instructions in “Changing the deployment package path” on page 9 before continuing with the next steps.
8. On the Select Tasks panel, click **Next** to install the product and to choose the database type.
9. Choose to use either DB2 or Oracle as your local or remote database.
 - If you choose DB2 and do not have it installed on your server, then the installer will install it for you if you want it installed locally. If you already have DB2 installed on your local server, then the installer will recognize that it is already there and check to make sure it meets the requirements.
 - Choose Oracle if you have an existing installation of that database that you would like to use.
10. Choose to install WebSphere Premises Server only and click **Next**. If you would like to install both WebSphere Premises Server and Location Awareness Services for WebSphere Premises Server, refer to “Installing WebSphere Premises Server and Location Awareness Services for WebSphere Premises Server” on page 20. If you would like to install Location Awareness Services for WebSphere Premises Server on top of an existing WebSphere Premises Server installation, refer to “Installing Location Awareness Services for WebSphere Premises Server” on page 28.
11. Click **Next** to install the required Bundle Repository Server.

Note: If you do not install Bundle Repository Server on your local server, then you need to install the prerequisite middleware on the remote server before installing Bundle Repository Server. Make sure that you have purchased a separate license for the required middleware that you install on a remote server. Also, you will need to modify the WebSphere Premises Server SystemAgent to reflect the correct location of your Bundle Repository Server.

12. On the Specify Target Computers panel for your database server, specify the target computer for DB2 or your existing Oracle database and click **Next**.
 - For a local server installation for DB2 or an existing installation of Oracle, the default value is localhost. You can either keep this value or change it.
 - If you are installing the product and DB2 on separate servers, specify the fully qualified host name, operating system, user ID, and password of the server where DB2 should be installed.
 - If you are installing the product on one server and using an existing Oracle installation on another server, specify the fully qualified host name, operating system, user ID, and password of the server where Oracle is installed.
 - Optionally, use the **Test connections** button to test access to the remote target computer. Firewalls can have an adverse effect on the installation even though the connection test result is successful.
13. On the Specify Target Computers panel for WebSphere Premises Server, specify the target computer for WebSphere Premises Server and click **Next**.
 - For a local server installation, the default value is localhost. You can either keep this value or change it.

- If you are installing WebSphere Premises Server and its required middleware on a remote server, specify the fully qualified host name, operating system, user ID, and password of the server where it should be installed.
 - Optionally, use the **Test connections** button to test access to the remote target computer. Firewalls can have an adverse effect on the installation even though the connection test result is successful.
14. On the Specify Target Computers panel for Bundle Repository Server, specify the target computer for Bundle Repository Server and click **Next**.
- For a local server installation, the default value is localhost. You can either keep this value or change it.
 - If you are installing Bundle Repository Server on a remote server, specify the fully qualified host name, operating system, user ID, and password of the server where it should be installed.

Remember: You must install the required middleware on the remote server before installing Bundle Repository Server.

- Optionally, use the **Test connections** button to test access to the remote target computer. Firewalls can have an adverse effect on the installation even though the connection test result is successful.
15. Enter your database configuration information.
- If you already have a database server installed, enter the correct user ID and password for that database server. If you are installing DB2, enter a user ID and password to be created.

Remember: Enter a password that meets the password rules of the target machine. A password that is not valid will cause installation to fail.

- If you are using Oracle, enter your correct JDBC JAR path.
 - If you would like the installation program to run database scripts to create tables and populate data on the database you have provided, check **Create and populate 6.1.0.1 tables** and click **Next**. This option is especially useful for remote databases, reinstallation on the same server, and clustered environments.
 - If you have already created your database manually with the scripts provided, select **Do not change the database**. The database creation is required for the successful installation of WebSphere Premises Server.
16. Enter the necessary information for WebSphere MQ and click **Next**.
-  **Windows** If you are installing on a Windows operating system, you are prompted to enter the installation directory for WebSphere MQ or accept the default installation directory.
 -  **Linux** If you are installing on a Linux operating system, you are prompted for a password.
17. Enter your WebSphere Application Server configuration information and click **Next**.

Important:

- If you have an existing version of WebSphere Application Server that is 6.1.0.0 or later (but not the required version 6.1.0.17), and you want the installer to update your WebSphere

Application Server version, then you must have WebSphere Application Server stopped before deploying the WebSphere Premises Server installation.

- WebSphere Application Server security is not enabled by the installer. You must set up and configure security separately.
- If you are going to use any WebSphere Premises Server APIs or the Print, Verify, and Ship application, make sure that the profile you choose to use has the **HTTP transport port** set to 9080.
- If you do not plan to install WebSphere Premises Server and WebSphere Application Server on the default drive (such as the C drive on Windows operating systems), click the **Advanced** tab for the configuration parameters and make sure your WebSphere Application Server profile path reflects the correct drive location for your installation.

18. Enter your IBM HTTP Server configuration information and click **Next**.
19. Enter the installation directory for WebSphere Premises Server.
20. Enter the configuration information for Bundle Repository Server.
21. On the Summary Panel, confirm your choices. The summary provides a list of tasks that you selected and an estimated time for their completion.
 - To start all installation and configuration tasks, click **Deploy all**.
 - If you only want to start a specific task, click **Deploy task**, but make sure that the tasks you choose are in the correct sequence on the panel. For example, you cannot deploy WebSphere Premises Server before deploying DB2 if you do not already have a database installed.

Click **Back** to make any changes. After you start the deployment, you have the option to click **Stop Deployment** if you need to stop the installation before it is finished. Once all deployment tasks are complete, the Deployment Status screen indicates if the deployment was successful.

22. When the installation is complete, check the log files for any errors. From the Deployment wizard, you can view detailed messages or the master log. Click **Master log** and select **Save as...** to save the log file. The logs can be found in `deployment_wizard_installation_dir/logs`, where `deployment_wizard_installation_dir` is the installation location of the Deployment wizard.

 `C:\Program Files\SolutionFiles\logs`
 `opt/SolutionFiles/logs`

23. Click the X at the top, right-hand side of the panel to exit the wizard. The wizard displays some messages:
 - A prompt for whether you want to save changes. If you plan to run the wizard again, click **Yes**. Otherwise, click **No**.
 - A prompt for whether you wish to exit. Click **Yes** to exit the wizard.

Results

When you have successfully completed the installation, your server should have the following products installed:

- WebSphere Premises Server in this default location:

 `C:\Program Files\IBM\RFID`
 `/opt/IBM/RFID`

- WebSphere Application Server

- WebSphere MQ
- IBM HTTP Server
- DB2 for Linux, UNIX, and Windows (if you selected to install it)
- a Bundle Repository Server (installed either locally or remotely)

The installation also creates a bundle repository in your IBM HTTP Server document root path, *IHS_HOME*\htdocs\en_US\bundles. For example, the path for a Windows operating system may be C:\Program Files\IBM HTTP Server\htdocs\en_US\bundles. This repository stores all the device application bundles for OSGi Equinox for management by the Bundle Repository Server.

Post-installation steps Before you begin

If you see errors with the installation, refer to Troubleshooting tips for possible resolutions to the problem.

1. Make sure that the WAS_HOME environment variable is set to point to the WebSphere Application Server installation directory. The default installation directories for WebSphere Application Server are:

| | |
|---------|--|
| Windows | C:\Program Files\IBM\WebSphere\AppServer |
| Linux | /opt/IBM/WebSphere/AppServer |

Important: If you have deployed WebSphere Premises Server remotely, you should log out from the target server and then log in again before continuing with the remaining post-installation steps in order to make sure that the WAS_HOME environment variable is applied correctly.

2. Make sure that the correct file paths are specified for the edge alerts and heartbeat log files in the SystemAgent.
See Log file locations and settings for the default installation locations of the edge alerts and heartbeat log files.
3. Make sure that the delete filter for Data Capture and Delivery is set correctly in the SystemAgent. See Setting the delete filter for Data Capture and Delivery.
4. Make sure that the IBM RFID and DC Queue Managers are running.
 - Windows Open the WebSphere MQ explorer and look for IBM.RFID.QM and IBM.DC.QM in the Queue Managers folder. If there are green arrows next to each queue manager, then they are running.
 - Linux Run the command `dspmqr` in `/opt/mqm/bin`. This command tells you the current status of a queue manager.

If the queue managers are not running, refer to the WebSphere MQ information center for troubleshooting topics.

5. Make sure all WebSphere Application Server applications are running. Open the WebSphere Application Server administrative console, expand **Applications**, and click **Enterprise Applications**.

The following applications should appear with green status arrows next to them:

- AMITJ2EE
- IBM_ALE_Application
- IBM_Bundles_Management

Note: If you installed Bundle Repository Server remotely, you will not see this application.

- IBM_EPCIS_Adapter
 - IBM_Premises_Admin_Console
 - IBM_Premises_Diagnostics
 - IBM_Premises_Event_Monitor
 - IBM_Premises_DockDoorApp
 - IBM_Premises_PVSConsole
 - IBM_Premises_Server
 - IBM_Premises_Server_BIRT
 - IBM_SensorEvent_Engine
 - IBM_SensorEvent_Gateway
6. Open the WebSphere Premises Server Administrative Console to verify that it is accessible.
 7. Check for errors in the WebSphere Application Server and WebSphere Premises Server log files. Refer to Log file locations and settings for information about where to find the log files.
 8. Open the config.ini file in the *IBM_RFID_HOME\dts\configuration* directory and update the server IP address, port number, bundle list file, and Data Capture and Delivery controller, as necessary.

```
com.ibm.rfid.bundle.list.url=http://IP_address:port_number/bundleadmin/GetBundle?name=http://IBM_HTTP_Server_IP_address/bundles/bundlelists/dc_core4dts.txt
```

This code specifies the URL used by the bundle loader to retrieve the list of bundles to load. If the Bundle Repository Server is on a separate server from WebSphere Premises Server, then replace the *IP_address* and *IBM_HTTP_Server_IP_address* values in this property with the IP address of the server hosting the Bundle Repository Server.

The default port number is 9080. This port number is defined when you create your WebSphere Application Server profile.

The bundle list should be set to the *dc_core4dts.txt* file.

```
com.ibm.rfid.edge.config.url=http://IP_address:port_number/ibmrfidadmin/premises.s1?action=getconfig&edge=E2&version=6.1
```

This code specifies the Data Capture and Delivery controller to use. For testing purposes, the configuration uses the default E2 controller, which is shipped as a sample Data Capture and Delivery controller with WebSphere Premises Server. The E2 controller loads the Simulated Reader to help verify your configuration before testing with a real reader. For a production environment, use the E0 controller.

Note: This step and the next one help you associate WebSphere Premises Server to a local Data Capture and Delivery device that you can use to verify your installation. In a production environment you should use remote Data Capture and Delivery controllers. See “Installing a remote Data Capture and Delivery controller” on page 58 for details on how to install them.

9. Edit the *dc_core4dts.txt* file and provide the correct IP address of your Bundle Repository Server.
The default is the localhost address, 127.0.0.1.
PREFIX `http://IP_address/bundles/`
10. If Data Transformation service is started as a service, stop it and complete the following steps as they apply to your topology and desired configuration.
 - a. Stop the Data Transformation service.

- **Windows** For Windows operating systems, stop the service by going to **Start → Control Panel → Administrative tools → Services**. Select **IBM WebSphere Premises Server DT Service** and click **Stop**.
 - **Linux** For Linux operating systems, run the `ibm_dts_service stop` command in the `IBM_RFID_HOME/dts` directory.
- b. Modify the startup sequence for WebSphere Application Server, IBM HTTP Server, WebSphere MQ, and Data Transformation service.

Windows For Windows operating systems, if you are running WebSphere Application Server, IBM HTTP Server, WebSphere MQ, and Data Transformation service on the same server, you need to ensure that the Data Transformation service starts after WebSphere Application Server and WebSphere MQ when the computer is rebooted. By default, there can be a situation where Data Transformation service starts before the other applications, resulting in errors.

- 1) Run this command.

Important: The Sc.exe command-line utility syntax requires a space after the = (equal symbol). For more information on this tool, see the Microsoft® Web site.

```
sc config IBMWebSpherePremisesServerDTService depend=
"MQSeriesServices/IBMHTTPServer6.1/IBMWAS61Service - PremisesNode"
```

- 2) Go to **Start → Control Panel → Administrative tools → Services**.
- 3) Select **IBM WebSphere Premises Server DT Service**, right-click and select **Properties → Dependencies**.

Data Transformation service should show a dependency on the starting of the WebSphere Application Server, IBM HTTP Server, and WebSphere MQ services.

Note: Setting this dependency also means that the Data Transformation service will stop if you stop any one of the WebSphere Application Server, IBM HTTP Server, or WebSphere MQ services. This dependency also assumes that all of these products are on the same server.

Linux In a Linux environment, WebSphere Application Server and IBM HTTP Server are not automatically started when the computer reboots, but Data Transformation service and WebSphere MQ are automatically started. If all of the products are installed on the same server, the startup sequence can result in errors.

To reduce the possibility of errors occurring, remove the `ibm_dts_service` from the automatic startup by issuing this command:

```
chkconfig --level 35 ibm_dts_service off
```

11. Restart the Data Transformation service manually.

- **Windows** For Windows operating systems, run the `dts.bat` file in the `IBM_RFID_HOME/dts` directory.
- **Linux** For Linux, run the `dts.sh` file in the `IBM_RFID_HOME/dts` directory.

These commands start the Data Transformation service and display a Data Transformation prompt.

12. Check the log files for any failures in loading the bundles.
13. Tune your database to improve performance.
14. If you are using the Print, Verify, and Ship example usage scenario, edit the contents of the `pvsapp.properties` file to point to the correct directory and host

name for your IBM HTTP Server. Specifically, modify the following properties: `premises.hostname`, `report.location.csv`, and `report.location.csv.url`. The `pvsapp.properties` file is located in the `\installedApps\profile_cell_name\IBM_Premises_PVSConsole.ear\ibmrfid_premises_pvsapp.war\config\` directory.

15. If you are using the Print, Verify, and Ship example usage scenario, enable ALE.
 - a. Open the WebSphere Application Server administrative console.
 - b. Navigate to **Resources** → **JMS** → **Activation specifications** → **ALEWrapperAS**.
 - c. Change the text in the **Message selector** field to `ibmse='RfidInventory/TagReport'` OR `ibmse='RfidInventory/TagAggregationReport'` OR `ibmse LIKE '%/report/TagReport'` OR `ibmse LIKE '%/report/TagAggregationReport'`.
16. Verify the WebSphere Premises Server installation. Choose **R2** as your simulated test reader.

What to do next

If you need to uninstall the WebSphere Premises Server software, refer to “Uninstalling WebSphere Premises Server” on page 81.

Installing WebSphere Premises Server and Location Awareness Services for WebSphere Premises Server

Follow the steps in this topic to install WebSphere Premises Server, Location Awareness Services for WebSphere Premises Server, and their prerequisite middleware.

Before you begin

Restriction: Location Awareness Services for WebSphere Premises Server must be installed on a Windows operating system on the same server as WebSphere Premises Server.

Important: When specifying installation paths, make sure the directories contains only US English ASCII characters. Also enter only US English ASCII characters in directory paths in properties files.

Important: Enter a password that meets the password rules of the target machine. A password that is not valid will cause installation to fail.

1. Check your hardware and operating system and make sure that they meet the necessary requirements.
2. Make sure that you have completed all the prerequisite steps necessary for your environment. If you would like to modify the path used by the deployment wizard, follow the steps in “Changing the deployment wizard path” on page 9 before launching the installation program.
3. If you would like to use an existing DB2 database, make sure that database was created with the option to **Enable database for XML (Code set will be set to UTF-8)**. If your DB2 database was not created with that option, you will need to delete and recreate that database if you want to use it.

The installer will create three databases for you, but you have the option to install databases manually as well.

4. If you are running Terminal Server and Terminal Server Licensing, run the change user /install Windows command before starting the WebSphere Premises Server installation program.

If you do not issue this command and you have those Windows components installed, the installation may fail because the installer cannot write to the vpd.properties file. To see if you have Terminal Server and Terminal Server Licensing installed, navigate to **Control Panel** → **Add or Remove Programs** → **Add or Remove Windows Components**. When you have successfully issued the command, the response is User session is ready to install applications. or Install mode does not apply to a Terminal server configured for remote administration. if the command was not needed. For more information, refer to the Windows Server 2003 Product Help.

5. Run the installation program located in the sat_installer directory of the WebSphere Premises Server disk for Windows.

Location Awareness Services for WebSphere Premises Server is only supported on Windows.

WindowsSetup.exe

When you run the installation program, the deployment wizard is temporarily installed on your hard drive. It will uninstall itself when the installation is complete. When the deployment wizard installation completes, it automatically launches and guides you through the installation of the product and its prerequisite software. It may take a few minutes to begin.

You can also run the installation program in silent mode. Refer to “Installing silently” on page 37 for further instructions.

6. Select the radio button beside the **I accept both the IBM and the non-IBM terms** statement if you agree to the license agreement and click **Next** to continue.
7. When the Welcome panel appears you can either:
 - Click **Next** to continue installing the product.
 - Or, if you would like to change the default path used for the deployment package, follow the instructions in “Changing the deployment package path” on page 9 before continuing with the next steps.
8. On the Select Tasks panel, click **Next** to install the product and to choose the database type.
9. Choose to use DB2 as either your local or remote database. If you do not have DB2 installed on your server, then the installer will install it for you if you want it installed locally. If you already have DB2 installed on your local server, then the installer will recognize that it is already there and check to make sure it meets the requirements.
10. Choose to install WebSphere Premises Server and Location Awareness Services for WebSphere Premises Server and click **Next**. If you would like to install only WebSphere Premises Server, refer to “Installing WebSphere Premises Server” on page 12. If you would like to install Location Awareness Services for WebSphere Premises Server on top of an existing WebSphere Premises Server installation, refer to “Installing Location Awareness Services for WebSphere Premises Server” on page 28.
11. Click **Next** to install the required Bundle Repository Server.

Note: If you do not install Bundle Repository Server on your local server, then you need to install the prerequisite middleware on the remote server before installing Bundle Repository Server. Make sure that you have purchased a separate license for the required middleware that you

install on a remote server. Also, you will need to modify the WebSphere Premises Server SystemAgent to reflect the correct location of your Bundle Repository Server.

12. On the Specify Target Computers panel for your database server, specify the target computer for DB2 database and click **Next**.
 - For a local server installation for DB2, the default value is localhost. You can either keep this value or change it.
 - If you are installing the product and DB2 on separate servers, specify the fully qualified host name, operating system, user ID, and password of the server where DB2 should be installed.
 - Optionally, use the **Test connections** button to test access to the remote target computer. Firewalls can have an adverse effect on the installation even though the connection test result is successful.
13. On the Specify Target Computers panel for WebSphere Premises Server including Location Awareness Services for WebSphere Premises Server, specify the target computer and click **Next**.
 - For a local server installation, the default value is localhost. You can either keep this value or change it.
 - If you are installing WebSphere Premises Server including Location Awareness Services for WebSphere Premises Server and their required middleware on a remote server, specify the fully qualified host name, operating system, user ID, and password of the server where it should be installed.
 - Optionally, use the **Test connections** button to test access to the remote target computer. Firewalls can have an adverse effect on the installation even though the connection test result is successful.
14. On the Specify Target Computers panel for Bundle Repository Server, specify the target computer for Bundle Repository Server and click **Next**.
 - For a local server installation, the default value is localhost. You can either keep this value or change it.
 - If you are installing Bundle Repository Server on a remote server, specify the fully qualified host name, operating system, user ID, and password of the server where it should be installed.

Remember: You must install the required middleware on the remote server before installing Bundle Repository Server.

- Optionally, use the **Test connections** button to test access to the remote target computer. Firewalls can have an adverse effect on the installation even though the connection test result is successful.

15. Enter your database configuration information.

- If you already have a database server installed, enter the correct user ID and password for that database server. If you are installing DB2, enter a user ID and password to be created.

Remember: Enter a password that meets the password rules of the target machine. A password that is not valid will cause installation to fail.

- If you would like the installation program to run database scripts to create tables and populate data on the database you have provided, check **Create and populate 6.1.0.1 tables** and click **Next**. This option is especially useful for remote databases, reinstallation on the same server, and clustered environments.

- If you have already created your database manually with the scripts provided, select **Do not change the database**. The database creation is required for the successful installation of WebSphere Premises Server.
16. Enter the installation directory for WebSphere MQ or accept the default installation directory and click **Next**.
 17. Enter your WebSphere Application Server configuration information and click **Next**.

Restriction: Location Awareness Services for WebSphere Premises Server can only run properly when WebSphere Application Server is installed with the default paths provided by the installer. The installation directory, the name of the profile, the path of the profile, and the ports of this profile must not be modified. Otherwise, Location Awareness Services for WebSphere Premises Server fails.

Important:

- WebSphere Application Server security is not enabled by the installer. You must set up and configure security separately.
 - If you are going to use any WebSphere Premises Server APIs or the Print, Verify, and Ship application, make sure that the profile you choose to use has the **HTTP transport port** set to 9080.
18. Enter your IBM HTTP Server configuration information and click **Next**.
 19. Enter the required information for DB2 Universal Database Enterprise Server Edition Client.
 20. Enter the installation directory for WebSphere Premises Server.
 21. Enter the configuration information for Location Awareness Services for WebSphere Premises Server.

Note: If you would like to install the samples, but your language is not in the S-1 group in DB2, then you should choose **-nosamples** in the installer panel and manually install the samples instead.

22. Enter the configuration information for Bundle Repository Server.
23. On the Summary Panel, confirm your choices. The summary provides a list of tasks that you selected and an estimated time for their completion.
 - To start all installation and configuration tasks, click **Deploy all**.
 - If you only want to start a specific task, click **Deploy task**, but make sure that the tasks you choose are in the correct sequence on the panel. For example, you cannot deploy WebSphere Premises Server before deploying DB2 if you do not already have a database installed.

Click **Back** to make any changes. After you start the deployment, you have the option to click **Stop Deployment** if you need to stop the installation before it is finished. Once all deployment tasks are complete, the Deployment Status screen indicates if the deployment was successful.

24. Insert the Location Awareness Services for WebSphere Premises Server CD when prompted.
25. When the installation is complete, check the log files for any errors. From the Deployment wizard, you can view detailed messages or the master log. Click **Master log** and select **Save as...** to save the log file. The logs can be found in `deployment_wizard_installation_dir/logs`, where `deployment_wizard_installation_dir` is the installation location of the Deployment wizard.

C:\Program Files\SolutionFiles\logs

26. Click the X at the top, right-hand side of the panel to exit the wizard. The wizard displays some messages:
 - A prompt for whether you want to save changes. If you plan to run the wizard again, click **Yes**. Otherwise, click **No**.
 - A prompt for whether you wish to exit. Click **Yes** to exit the wizard.

Results

When you have successfully completed the installation, your server should have the following products and components installed:

- WebSphere Premises Server in this default location:
 - C:\Program Files\IBM\RFID
- Location Awareness Services for WebSphere Premises Server in this default location:
 - C:\LAS
- WebSphere Application Server
- WebSphere MQ
- IBM HTTP Server
- DB2 for Linux, UNIX, and Windows (if you selected to install it)
- a Bundle Repository Server (installed either locally or remotely)

The installation also creates a bundle repository in your IBM HTTP Server document root path, *IHS_HOME*\htdocs\en_US\bundles. For example, the path for a Windows operating system may be C:\Program Files\IBM HTTP Server\htdocs\en_US\bundles. This repository stores all the device application bundles for OSGi Equinox for management by the Bundle Repository Server.

Post-installation steps

Before you begin

If you see errors with the installation, refer to Troubleshooting tips and General troubleshooting tips for possible resolutions to the problem.

1. Make sure that the WAS_HOME environment variable is set to point to the WebSphere Application Server installation directory.

Important: If you have deployed WebSphere Premises Server remotely, you should log out from the target server and then log in again before continuing with the remaining post-installation steps in order to make sure that the WAS_HOME environment variable is applied correctly.

2. Make sure that the correct file paths are specified for the edge alerts and heartbeat log files in the SystemAgent.
 - See Log file locations and settings for the default installation locations of the edge alerts and heartbeat log files.
3. Make sure that the delete filter for Data Capture and Delivery is set correctly in the SystemAgent. See Setting the delete filter for Data Capture and Delivery.
4. Make sure that the IBM RFID and DC Queue Managers are running.
 - a. Open the WebSphere MQ explorer.

- b. Look for IBM.RFID.QM and IBM.DC.QM in the Queue Managers folder. If there are green arrows next to each queue manager, then they are running.

If the queue managers are not running, refer to the WebSphere MQ information center for troubleshooting topics.

5. Make sure all WebSphere Application Server applications are running. Open the WebSphere Application Server administrative console, expand **Applications**, and click **Enterprise Applications**.

The following applications should appear with green status arrows next to them:

- AMITJ2EE
- AtlasAlertHandlerEJB
- AtlasEMailSampleServiceEAR
- AtlasEventSubscriberEAR
- AtlasImportEAR
- AtlasReportingServletEAR
- IBM_ALE_Application
- IBM_Bundles_Management

Note: If you installed Bundle Repository Server remotely, you will not see this application.

- IBM_EPCIS_Adapter
 - IBM_Premises_Admin_Console
 - IBM_Premises_Diagnostics
 - IBM_Premises_Event_Monitor
 - IBM_Premises_DockDoorApp
 - IBM_Premises_PVSConsole
 - IBM_Premises_Server
 - IBM_Premises_Server_BIRT
 - IBM_SensorEvent_Engine
 - IBM_SensorEvent_Gateway
6. Open the WebSphere Premises Server Administrative Console to verify that it is accessible.
 7. Check for errors in the WebSphere Application Server and WebSphere Premises Server log files. Refer to Log file locations and settings for information about where to find the log files.
 8. Open the config.ini file in the *IBM_RFID_HOME*\dts\configuration directory and update the server IP address, port number, bundle list file, and Data Capture and Delivery controller, as necessary.

```
com.ibm.rfid.bundle.list.url=http://IP_address:port_number/bundleadmin/GetBundle?name=http://IBM_HTTP_Server_IP_address/bundles/bundleregistry/dc_core4dts.txt
```

This code specifies the URL used by the bundle loader to retrieve the list of bundles to load. If the Bundle Repository Server is on a separate server from WebSphere Premises Server, then replace the *IP_address* and *IBM_HTTP_Server_IP_address* values in this property with the IP address of the server hosting the Bundle Repository Server.

The default port number is 9080. This port number is defined when you create your WebSphere Application Server profile.

The bundle list should be set to the dc_core4dts.txt file.

```
com.ibm.rfid.edge.config.url=http://IP_address:port_number/ibmrfidadmin/premises.s1?action=getconfig&edge=E2&version=6.1
```

This code specifies the Data Capture and Delivery controller to use. For testing purposes, the configuration uses the default E2 controller, which is shipped as a sample Data Capture and Delivery controller with WebSphere Premises Server. The E2 controller loads the Simulated Reader to help verify your configuration before testing with a real reader. For a production environment, use the E0 controller.

Note: This step and the next one help you associate WebSphere Premises Server to a local Data Capture and Delivery device that you can use to verify your installation. In a production environment you should use remote Data Capture and Delivery controllers. See “Installing a remote Data Capture and Delivery controller” on page 58 for details on how to install them.

9. Edit the `dc_core4dts.txt` file and provide the correct IP address of your Bundle Repository Server.

The default is the localhost address, 127.0.0.1.

PREFIX `http://IP_address/bundles/`

10. If Data Transformation service is started as a service, stop it and complete the following steps as they apply to your topology and desired configuration.
 - a. Stop the Data Transformation service by going to **Start** → **Control Panel** → **Administrative tools** → **Services**.
 - b. Select **IBM WebSphere Premises Server DT Service** and click **Stop**.
 - c. Modify the startup sequence for WebSphere Application Server, IBM HTTP Server, WebSphere MQ, and Data Transformation service.

If you are running WebSphere Application Server, IBM HTTP Server, WebSphere MQ, and Data Transformation service on the same server, you need to ensure that the Data Transformation service starts after WebSphere Application Server and WebSphere MQ when the computer is rebooted. By default, there can be a situation where Data Transformation service starts before the other applications, resulting in errors.

- 1) Run this command.

Important: The `Sc.exe` command-line utility syntax requires a space after the = (equal symbol). For more information on this tool, see the Microsoft Web site.

```
sc config IBMWebSpherePremisesServerDTService depend=
"MQSeriesServices/IBMHTTPServer6.1/IBMWAS61Service - PremisesNode"
```

- 2) Go to **Start** → **Control Panel** → **Administrative tools** → **Services**.
- 3) Select **IBM WebSphere Premises Server DT Service**, right-click and select **Properties** → **Dependencies**.

Data Transformation service should show a dependency on the starting of the WebSphere Application Server, IBM HTTP Server, and WebSphere MQ services.

Note: Setting this dependency also means that the Data Transformation service will stop if you stop any one of the WebSphere Application Server, IBM HTTP Server, or WebSphere MQ services. This dependency also assumes that all of these products are on the same server.

11. Restart the Data Transformation service manually by running the `dts.bat` file in the `IBM_RFID_HOME/dts` directory.

This command starts the Data Transformation service and displays a Data Transformation prompt.

12. Check the log files for any failures in loading the bundles.
13. Tune your database to improve performance.
14. If you are using the Print, Verify, and Ship example usage scenario, edit the contents of the pvsapp.properties file to point to the correct directory and host name for your IBM HTTP Server. Specifically, modify the following properties: premises.hostname, report.location.csv, and report.location.csv.url. The pvsapp.properties file is located in the \installedApps\profile_cell_name\IBM_Premises_PVSConsole.ear\ibmrfid_premises_pvsapp.war\config\ directory.
15. If you are using the Print, Verify, and Ship example usage scenario, enable ALE.
 - a. Open the WebSphere Application Server administrative console.
 - b. Navigate to **Resources** → **JMS** → **Activation specifications** → **ALEWrapperAS**.
 - c. Change the text in the **Message selector** field to `ibmse='RfidInventory/TagReport'` OR `ibmse='RfidInventory/TagAggregationReport'` OR `ibmse LIKE '%/report/TagReport'` OR `ibmse LIKE '%/report/TagAggregationReport'`.
16. Verify the WebSphere Premises Server installation. Choose **R2** as your simulated test reader.
17. Configure the Spatial Management Client for Location Awareness Services for WebSphere Premises Server.
 - a. Change directory to the Spatial Management Client root directory in IBM HTTP Server (for example, C:\Program Files\IBM\HTTPServer\htdocs\en_US\Tracking GUI).
 - b. Go to the xml directory and edit the prefsV3.xml file.
 - 1) Replace localhost with the IP address or the fully qualified host name of your server in the <host> element.

Note: The value you specify for the <host> element and the value you use to browse to the Spatial Management Client must be identical.
 - 2) Save your changes.
18. Enable security for WebSphere Application Server.
19. Synchronize the DB2 server time and WebSphere Application Server time prior to running your configuration because location events use the DB2 server time for event creation, but Common Event Infrastructure (CEI) events use the WebSphere Application Server time for event creation.
20. Configure and verify the Location Awareness Services for WebSphere Premises Server installation.
21. The default Location Awareness Services for WebSphere Premises Server installation can support small scenarios, using between 100 and 200 tags. To use Location Awareness Services for WebSphere Premises Server in a production environment or to use it with more tags, tune your ATLASDB database for additional buffer pools, and add more hard drives to avoid bottlenecks.

What to do next

If you need to uninstall the WebSphere Premises Server and Location Awareness Services for WebSphere Premises Server software, refer to “Uninstalling WebSphere Premises Server” on page 81.

Installing Location Awareness Services for WebSphere Premises Server

Follow the steps in this topic to install Location Awareness Services for WebSphere Premises Server on an existing installation of WebSphere Premises Server.

Before you begin

Restriction: Location Awareness Services for WebSphere Premises Server must be installed on a Windows operating system on the same server as WebSphere Premises Server.

Important: When specifying installation paths, make sure the directories contains only US English ASCII characters. Also enter only US English ASCII characters in directory paths in properties files.

Important: Enter a password that meets the password rules of the target machine. A password that is not valid will cause installation to fail.

1. Check your hardware and operating system and make sure that they meet the necessary requirements.
2. Make sure that you have completed all the prerequisite steps necessary for your environment. If you would like to modify the path used by the deployment wizard, follow the steps in “Changing the deployment wizard path” on page 9 before launching the installation program.
3. If you are running Terminal Server and Terminal Server Licensing, run the change user /install Windows command before starting the WebSphere Premises Server installation program.

If you do not issue this command and you have those Windows components installed, the installation may fail because the installer cannot write to the vpd.properties file. To see if you have Terminal Server and Terminal Server Licensing installed, navigate to **Control Panel** → **Add or Remove Programs** → **Add or Remove Windows Components**. When you have successfully issued the command, the response is User session is ready to install applications. or Install mode does not apply to a Terminal server configured for remote administration. if the command was not needed. For more information, refer to the Windows Server 2003 Product Help.

4. Run the installation program located in the sat_installer directory of the WebSphere Premises Server disk for Windows.

Location Awareness Services for WebSphere Premises Server is only supported on Windows.

WindowsSetup.exe

When you run the installation program, the deployment wizard is temporarily installed on your hard drive. It will uninstall itself when the installation is complete. When the deployment wizard installation completes, it automatically launches and guides you through the installation of the product and its prerequisite software. It may take a few minutes to begin.

You can also run the installation program in silent mode. Refer to “Installing silently” on page 37 for further instructions.

5. Select the radio button beside the **I accept both the IBM and the non-IBM terms** statement if you agree to the license agreement and click **Next** to continue.
6. When the Welcome panel appears you can either:
 - Click **Next** to continue installing the product.

- Or, if you would like to change the default path used for the deployment package, follow the instructions in “Changing the deployment package path” on page 9 before continuing with the next steps.
7. On the Select Tasks panel, click **Next** to install the product and to choose the database type.
 8. Choose to use DB2 as either your local or remote database. If you do not have DB2 installed on your server, then the installer will install it for you if you want it installed locally. If you already have DB2 installed on your local server, then the installer will recognize that it is already there and check to make sure it meets the requirements.
 9. Choose to install Location Awareness Services for WebSphere Premises Server and click **Next**. If you would like to install only WebSphere Premises Server, refer to “Installing WebSphere Premises Server” on page 12. If you would like to install both WebSphere Premises Server and Location Awareness Services for WebSphere Premises Server, refer to “Installing WebSphere Premises Server and Location Awareness Services for WebSphere Premises Server” on page 20.
 10. Click **Next** to install the required Bundle Repository Server.

Note: If you do not install Bundle Repository Server on your local server, then you need to install the prerequisite middleware on the remote server before installing Bundle Repository Server. Make sure that you have purchased a separate license for the required middleware that you install on a remote server. Also, you will need to modify the WebSphere Premises Server SystemAgent to reflect the correct location of your Bundle Repository Server.

11. On the Specify Target Computers panel for your database server, specify the target computer for DB2 database and click **Next**.
 - For a local server installation for DB2, the default value is localhost. You can either keep this value or change it.
 - If you are installing the product and DB2 on separate servers, specify the fully qualified host name, operating system, user ID, and password of the server where DB2 should be installed.
 - Optionally, use the **Test connections** button to test access to the remote target computer. Firewalls can have an adverse effect on the installation even though the connection test result is successful.
12. On the Specify Target Computers panel for WebSphere Premises Server including Location Awareness Services for WebSphere Premises Server, specify the target computer and click **Next**.
 - For a local server installation, the default value is localhost. You can either keep this value or change it.
 - If you are installing WebSphere Premises Server including Location Awareness Services for WebSphere Premises Server and their required middleware on a remote server, specify the fully qualified host name, operating system, user ID, and password of the server where it should be installed.
 - Optionally, use the **Test connections** button to test access to the remote target computer. Firewalls can have an adverse effect on the installation even though the connection test result is successful.
13. Enter your database configuration information.
 - If you already have a database server installed, enter the correct user ID and password for that database server. If you are installing DB2, enter a user ID and password to be created.

Remember: Enter a password that meets the password rules of the target machine. A password that is not valid will cause installation to fail.

- If you would like the installation program to run database scripts to create tables and populate data on the database you have provided, check **Create and populate 6.1.0.1 tables** and click **Next**. This option is especially useful for remote databases, reinstallation on the same server, and clustered environments.
 - If you have already created your database manually with the scripts provided, select **Do not change the database**. The database creation is required for the successful installation of WebSphere Premises Server.
14. Enter the installation directory for WebSphere MQ or accept the default installation directory and click **Next**.
 15. Enter your WebSphere Application Server configuration information and click **Next**.

Restriction: Location Awareness Services for WebSphere Premises Server can only run properly when WebSphere Application Server is installed with the default paths provided by the installer. The installation directory, the name of the profile, the path of the profile, and the ports of this profile must not be modified. Otherwise, Location Awareness Services for WebSphere Premises Server fails.

Important:

- WebSphere Application Server security is not enabled by the installer. You must set up and configure security separately.
 - If you are going to use any WebSphere Premises Server APIs or the Print, Verify, and Ship application, make sure that the profile you choose to use has the **HTTP transport port** set to 9080.
16. Enter your IBM HTTP Server configuration information and click **Next**.
 17. Enter the required information for DB2 Universal Database Enterprise Server Edition Client.
 18. Enter the installation directory for WebSphere Premises Server.
 19. Enter the configuration information for Location Awareness Services for WebSphere Premises Server.

Note: If you would like to install the samples, but your language is not in the S-1 group in DB2, then you should choose **-nosamples** in the installer panel and manually install the samples instead.

20. On the Summary Panel, confirm your choices. The summary provides a list of tasks that you selected and an estimated time for their completion.
 - To start all installation and configuration tasks, click **Deploy all**.
 - If you only want to start a specific task, click **Deploy task**, but make sure that the tasks you choose are in the correct sequence on the panel. For example, you cannot deploy WebSphere Premises Server before deploying DB2 if you do not already have a database installed.

Click **Back** to make any changes. After you start the deployment, you have the option to click **Stop Deployment** if you need to stop the installation before it is finished. Once all deployment tasks are complete, the Deployment Status screen indicates if the deployment was successful.

21. Insert the Location Awareness Services for WebSphere Premises Server CD when prompted.
22. When the installation is complete, check the log files for any errors. From the Deployment wizard, you can view detailed messages or the master log. Click **Master log** and select **Save as...** to save the log file. The logs can be found in `deployment_wizard_installation_dir/logs`, where `deployment_wizard_installation_dir` is the installation location of the Deployment wizard.
C:\Program Files\SolutionFiles\logs
23. Click the X at the top, right-hand side of the panel to exit the wizard. The wizard displays some messages:
 - A prompt for whether you want to save changes. If you plan to run the wizard again, click **Yes**. Otherwise, click **No**.
 - A prompt for whether you wish to exit. Click **Yes** to exit the wizard.

Results

When you have successfully completed the installation, your server should have Location Awareness Services for WebSphere Premises Server installed in this default location:

C:\LAS

Post-installation steps Before you begin

If you see errors with the installation, refer to General troubleshooting tips for possible resolutions to the problem.

1. Make sure all WebSphere Application Server applications are running. Open the WebSphere Application Server administrative console, expand **Applications**, and click **Enterprise Applications**.

The following applications should appear with green status arrows next to them:

- AMITJ2EE
- AtlasAlertHandlerEJB
- AtlasEMailSampleServiceEAR
- AtlasEventSubscriberEAR
- AtlasImportEAR
- AtlasReportingServletEAR
- IBM_ALE_Application
- IBM_Bundles_Management

Note: If you installed Bundle Repository Server remotely, you will not see this application.

- IBM_EPCIS_Adapter
- IBM_Premises_Admin_Console
- IBM_Premises_Diagnostics
- IBM_Premises_Event_Monitor
- IBM_Premises_DockDoorApp
- IBM_Premises_PVSConsole
- IBM_Premises_Server

- IBM_Premises_Server_BIRT
 - IBM_SensorEvent_Engine
 - IBM_SensorEvent_Gateway
2. Configure the Spatial Management Client for Location Awareness Services for WebSphere Premises Server.
 - a. Change directory to the Spatial Management Client root directory in IBM HTTP Server (for example, C:\Program Files\IBM\HTTPServer\htdocs\en_US\Tracking GUI).
 - b. Go to the xml directory and edit the prefsV3.xml file.
 - 1) Replace localhost with the IP address or the fully qualified host name of your server in the <host> element.

Note: The value you specify for the <host> element and the value you use to browse to the Spatial Management Client must be identical.
 - 2) Save your changes.
 3. Enable security for WebSphere Application Server.
 4. Synchronize the DB2 server time and WebSphere Application Server time prior to running your configuration because location events use the DB2 server time for event creation, but Common Event Infrastructure (CEI) events use the WebSphere Application Server time for event creation.
 5. Configure and verify the Location Awareness Services for WebSphere Premises Server installation.
 6. The default Location Awareness Services for WebSphere Premises Server installation can support small scenarios, using between 100 and 200 tags. To use Location Awareness Services for WebSphere Premises Server in a production environment or to use it with more tags, tune your ATLASDB database for additional buffer pools, and add more hard drives to avoid bottlenecks.

What to do next

If you need to uninstall the WebSphere Premises Server and Location Awareness Services for WebSphere Premises Server software, refer to “Uninstalling WebSphere Premises Server” on page 81.

Installing a high availability system

High availability provides several benefits, including load balancing and failover. High availability with WebSphere Premises Server consists of setting up a server cluster and then configuring those servers for load balancing.

About this task

The installer creates the cluster topology and load balances the node servers.

1. Make sure that you have completed all the prerequisite steps necessary for high availability.
2. Launch the high availability post-installation script located at the root of the High Availability for IBM WebSphere Premises Server Central Site Server disk.

 setupwin32.exe

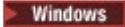
 setuplinux.bin

The Welcome panel displays.

3. Click **Next**.

4. This panel shows the installation directory for the WebSphere Premises Server high availability system.

The directory is:

 `IBM_RFID_HOME\HA`
 `IBM_RFID_HOME/HA`

Click **Next** to continue.

5. Enter the host name and port for WebSphere Application Server Network Deployment, and click **Next**.

Tip: Make sure that WebSphere Application Server Network Deployment is running. The installer verifies that it can connect to WebSphere Application Server Network Deployment using the port and host name you have provided before continuing. If it cannot connect, you will be asked to go **Back** and edit the values on the previous panel, or you can **Cancel** out of the installer.

6. Create the cluster members. Create at least one member on this panel in order to proceed with the installation.

Use the **Add Member** button to add cluster members. The created member's name, node, and weight appear in the box at the bottom of the installer panel. To delete a cluster member, select the member name from the list of created members and click **Delete Member**.

For more information on creating cluster members, see Adding members to a cluster.

7. Click **Next**.
8. A summary panel displays your installation selections. Click **Install** to continue the installation process.

When the installation is complete, another summary panel displays the installation status and prompts you to check the log file for any errors.

 `IBM_RFID_HOME\HA\logs\install.log`
 `IBM_RFID_HOME/HA/logs/install.log`

If you do see errors or exceptions in the installation log file, try uninstalling and reinstalling the high availability topology. Also check the Troubleshooting tips documentation for possible resolutions to the problem. If you are unable to resolve the errors, contact IBM Support.

9. If you see exceptions in the WebSphere Application Server SystemOut.log file on the central and node servers, follow the procedure in this technote.
10. Restart the central server and the cluster.
11. If you are using WebSphere Application Server security, enable it, and then restart the deployment manager, all node agents, and all servers.
12. Enable dynamic cache replication for all servers in the cluster.
 - a. In the WebSphere Application Server administrative console, go to **Servers** → **Application servers** → *server name* → **Container Services** → **Dynamic cache service** and check **Enable service at server startup** for each server in the cluster.
 - b. Define a new replication domain by going to **Environment** → **Replication domains** → **New**. Choose **Entire domain** when creating the new replication domain.
 - c. Navigate to **Resources** → **Cache instances** → **Object cache instances** and add the new replication to all object cache components.
 - 1) Check Enable cache replication.

- 2) Choose your cluster name for **Full group replication domain**.
 - 3) Choose **Push only** for **Replication type**.
 - 4) Set **Push frequency** to **1 seconds**.
13. Configure the Data Capture and Delivery controllers for high availability.
- a. Make sure you are using Java 1.4.2 on your Data Capture and Delivery controllers.
 - b. Set the appropriate MQ user name for your operating system in the controller's Equinox script.

Windows -Duser.name=MUSR_MQADMIN

Linux -Duser.name=mqm

If you used the sample files provided with the IBM Data Capture and Delivery Toolkit for WebSphere Premises Server to set up your remote Data Capture and Delivery controllers, modify the remoteDC script with the MQ user name.

For example: **Windows**

```
%JAVA_HOME%\bin\java" -Duser.name=MUSR_MQADMIN -Xmx256M -Xms256M
```

Linux

```
"$JAVA_HOME/bin/java" -Duser.name=mqm -Xmx256M -Xms256M
```

- c. Edit the config.ini file in the controller's Equinox configuration directory make sure the configuration is set to the dc_core4dts.txt file for the bundle list and E4 for the edge controller.

```
com.ibm.rfid.bundle.list.url=http://IP_address:port_number/bundleadmin/GetBundle?name=http://IBM_HTTP_Server_IP_address/bundles/bundlelists/dc_core4dts.txt
com.ibm.rfid.edge.config.url=http://IP_address:port_number/ibmrfidadmin/premises.s1?action=getconfig&edge=E4&version=6.1
```

The values for *IP_address* and *IBM_HTTP_Server_IP_address* are the name of the server that is hosting the Bundle Repository Server.

The second line of code points to the E4 controller, which is installed with WebSphere Premises Server specifically for high availability.

14. Check to see if Data Transformation is running (started as a service) on your central server, and if so, stop it.
15. Start the Equinox runtime on the Data Capture and Delivery controllers.
16. Start the bundle loader on the Data Capture and Delivery controllers.
 - a. Find the ID of the bundle loader bundle by running the OSGi ss command.
 - b. Start the bundle loader bundle by entering `start bundle_ID` at the OSGi prompt.
17. Test the clustered configuration using the Simulated Reader in the WebSphere Premises Server Administrative Console. Choose **R4** as your simulated test reader.

Optionally, you can test with a real reader.
18. Create a new remote Data Capture and Delivery controller based on the E4 sample to use with your real reader.

What to do next

If you need to create additional cluster members, follow the steps in "Installing additional cluster members" on page 37.

Manually configuring the clustered system for multiple messaging engines

After you have run the high availability installer for WebSphere Premises Server, you can use these instructions to add more messaging engines.

WebSphere Premises Server SIBus configuration overview

There are two SIBuses created with the WebSphere Premises Server installation, AMIT and ibmsensorevent.

The high availability cluster configuration is the default configuration created when a cluster of application servers in a cell is created. When the SIBus is created, there is only one active messaging engine on one of the cluster servers, and all service requests to cluster members are routed through this single messaging engine. Therefore, for a cluster of n servers, there is one local message put action for routing the service request on the server with the active messaging engine, and $(n-1)$ remote message put actions for each of the servers with inactive messaging engines.

For workload management, the cluster configuration requires additional configuration from the default cluster installation. The purpose of this configuration is to remove the dependence on the messaging engine remote put calls by explicitly creating an additional messaging engine for each of the servers in the cluster and defining a CoreGroup policy to "assign" the messaging engine to an individual server in the cluster. With n active messaging engines in a cluster of n servers, each service request is processed locally on the server receiving the message rather than getting routed to an active messaging engine.

Adding multiple messaging engines: About this task

These steps are specifically for the ibmsensorevent SIBus. You will also need to perform these steps for the AMIT SIBus.

1. Open the WebSphere Application Server Network Deployment administrative console and navigate to **Servers** → **Core groups** → **Core group settings** → **DefaultCoreGroup** → **Policies**.
2. Click **New** and select **One of N policy** for the policy type.
3. Click **Next**.
4. Define the new policy.
 - a. For **Name**, enter `SIBusClusterME001Policy`.
 - b. Select the checkbox for **Failback**.
 - c. Select the checkbox for **Preferred servers only**.
 - d. Click **Apply**.
5. Under **Additional Properties**, click **Match criteria**.
6. Click **New** and define the match criteria for the policy.
 - a. For **Name**, enter type.
 - b. For **Value**, enter `WSAF_SIB`.
 - c. Click **OK**.

In the next three steps, you repeat the actions in this step to define additional match criteria for the policy.

7. Click **New** and define an additional match criteria for the policy.
 - a. For **Name**, enter `WSAF_SIB_BUS`.

- b. For **Value**, enter `ibmsensorevent`.
 - c. Click **OK**.
8. Click **New** and define an additional match criteria for the policy.
 - a. For **Name**, enter `WSAF_SIB_MESSAGING_ENGINE`.
 - b. For **Value**, enter `PremisesCluster.000-ibmsensorevent`.
 - c. Click **OK**.
9. Click **New** and define an additional match criteria for the policy.
 - a. For **Name**, enter `IBM_hc`.
 - b. For **Value**, enter `PremisesCluster`.
 - c. Click **OK**.
10. Navigate back to the **SIBusClusterME001Policy** and click **Preferred servers** under **Additional Properties**.
11. Select the server name of a cluster member from the **Core group servers** and click **Add>>**.
12. Click **OK**.
13. Repeat steps 4 on page 35 through 12 to create new policies and assign each to a cluster member. Every cluster member except the central server needs a policy.
14. Create messaging engines for each cluster member.

When you ran the high availability installer, a cluster member named `PremisesCluster.000-ibmsensorevent` was created on the `ibmsensorevent` SIBus. This steps shows you how to create the messaging engine for that cluster member. Repeat this step as necessary to create $(n-1)$ messaging engines for n cluster members.

 - a. Navigate to **Service integration** → **Buses** → **ibmsensorevent** → **Bus members** → **PremisesCluster**.
 - b. Click **Add messaging engine** and select **File store**.

Note: You can use **Data store** instead of **File store**.
 - c. Click **Next**.
 - d. For **Log directory path**, enter `${LOG_ROOT}/sibus-se`.
 - e. For **Permanent store directory path**, enter `${LOG_ROOT}/sibus-se`.
 - f. Click **Next**.
 - g. Click **Finish**.
15. Synchronize all cluster members and server configurations by navigating to **System administrator** → **Nodes** and clicking **Full Resynchronize**.
16. Restart the `PremisesCluster` cluster and the central server.
 - a. Navigate to **Server** → **Clusters**.
 - b. Select **PremisesCluster** and click **Stop**.
 - c. Once it all cluster members are stopped, click **Start**.
 - d. Navigate to **Server** → **Application servers**.
 - e. Select the central server (such as `PremisesNode, server1`).
 - f. Click **Stop**.
 - g. Once the central server has stopped, click **Start**.
17. Repeat all of the previous steps for the AMIT SIBus. To do this, replace every instance of "ibmsensorevent" with "AMIT" in the instructions, specifically in the console paths, SIBus name, and messaging engine names.

Installing additional cluster members

If you have already run the installer for high availability for WebSphere Premises Server, and you need to add more cluster members, use these instructions to add cluster members manually.

Before you begin

Before adding a new node, make sure to complete the prerequisite steps for the new node. Refer to steps 3 on page 7 and 4 on page 7 in “Prerequisite steps for a high availability system” on page 6.

1. Open the WebSphere Application Server Network Deployment administrative console.
2. Navigate to **Servers** → **Clusters** → **PremisesCluster** → **Cluster members**.
3. Click **New** to a new cluster member.
4. In the **Step 2: Create additional cluster members** panel, complete the following steps.
 - a. Type a new member name.
 - b. Select the node you wish to add as a new cluster member.
 - c. Click **Add Member**.
 - d. Click **Next**.
5. Click **Finish** to complete creating the new cluster member.
6. Save your master configuration, synchronize all nodes, and restart the cluster for your changes to take effect.

Installing silently

This topic describes how to perform a silent installation of the product.

About this task

Note: Silent uninstallation is not supported.

You must customize the sample response file for your environment before installing silently. Instructions on how to customize the file are also included in the sample file. After customizing the file, you can issue the command to silently install. Silent installation is particularly useful if you install the product often or if you are installing from a remote command prompt.

To run the installer in silent mode, follow these directions.

1. Choose the sample response file for your desired installation. The sample response files are located in the `sat_installer\tasks` directory of the WebSphere Premises Server CD appropriate for your operating system.

Windows There are three sample response files for Windows operating systems:

- `PremisesSolutionForWindowsDB2_LAS_Task.xml` for WebSphere Premises Server and Location Awareness Services for WebSphere Premises Server using DB2
- `PremisesSolutionForWindowsDB2_Task.xml` for WebSphere Premises Server only using DB2
- `PremisesSolutionForWindowsOracle_Task.xml` for WebSphere Premises Server only using Oracle

Linux There are two sample response file for Linux operating systems:

- PremisesSolutionForLinuxDB2_Task.xml for WebSphere Premises Server only using DB2
 - PremisesSolutionForLinuxOracle_Task.xml for WebSphere Premises Server only using Oracle
2. Accept the WebSphere Premises Server license.
 - a. Open the IRU_install.iss file located in the sat_installer directory of the WebSphere Premises Server CD appropriate for your operating system.
 - b. Replace -G licenseAccepted=false with -G licenseAccepted=true.
 3. Open and update the sample response file.
 - a. Specify the target computer for the deployment tasks.
 - Search for the <targetHostname> tag and specify the target computer name within that element for each deployment task.
 - If the target computer is not localhost, search for and uncomment the <credentialsSat> element. Then, update this line with the target computer's host name, user ID, and password.

```
<addCredentials hostname="localhost" userId="Administrator" password="*****"/>
```

Note: If you have more than one target computer for different deployment tasks, add this line for each of the target computers.

- b. Modify the required variable element ID attributes for the different applications to the correct values for your desired installation.

Tip: Search for <variable id= to find all of the variable element ID attributes in the response file.

4. Clean the log files. If you ran the installer previously, be sure to remove any old log files.

```
Windows C:\Program Files\SolutionFiles\logs
Linux \opt\SolutionFiles\logs
```

5. Launch the installer in silent mode.

Windows For Windows operating systems:

- a. Open a command line prompt.
- b. Change directory to the location of the sat_installer directory.
- c. Run this command.

```
WindowsSetup.exe -silent -W solutionLauncher.taskFileName="silent_response_filename"
-options IRU_install.iss
```

Linux For Linux operating systems:

- a. Open a shell window.
- b. Change directory to the location of the sat_installer directory.
- c. Run this command.

```
LinuxSetup -silent -W solutionLauncher.taskFileName="silent_response_filename"
-options IRU_install.iss
```

Note: The variable, *silent_response_filename*, means the name of the sample response file. Do not include the path of the file.

6. Verify the success of the installation by checking the logs. If there are log files in these directories, then the silent installation completed.

```
Windows C:\Program Files\SolutionFiles\logs
Linux \opt\SolutionFiles\logs
```

If you see errors in the log files, refer to Troubleshooting tips for possible resolutions to the problem.

Installing using Tivoli Provisioning Manager for Software

This topic describes how to install WebSphere Premises Server and its prerequisite software using Tivoli Provisioning Manager for Software.

Before you begin

Important: These instructions apply only if you are using Tivoli Provisioning Manager for Software to install the WebSphere Premises Server software on Windows operating systems.

Tivoli Provisioning Manager for Software is recommended for deploying multiple premises servers. It helps to automate the installation of the prerequisite software across multiple servers. Some steps must be performed manually on each server.

1. Check your hardware and operating system and make sure that they meet the necessary requirements.
2. Install Tivoli Provisioning Manager for Software using the instructions in the Tivoli Provisioning Manager for Software documentation.
3. Discover your endpoints (one for each WebSphere Premises Server) for Tivoli Provisioning Manager for Software.
4. Install the common agent on each endpoint server. If you are installing DB2, make sure to set the common agent as LOCAL_SYSTEM on the client server.
5. Set up Tivoli Provisioning Manager for Software to install the prerequisite software for WebSphere Premises Server.
 - a. Copy the contents of WebSphere Premises Server for Windows operating systems (disk 2) to the Tivoli Provisioning Manager for Software server's C: drive.
 - b. Copy WASEC61 directory on WebSphere Premises Server disk 2 to C:\IBM\SIF\isp\windows\cdimages\WASEC61.
 - c. Extract *disk_root*\sat_installer\bin\com\ibm\jsdt\webserver\tree\ihswin.xx.jar to C:\IBM\SIF\isp\windows\cdimages\WASND61.
 - d. Extract *disk_root*\sat_installer\bin\com\ibm\jsdt\webserver\tree\waswin.xx.jar to C:\IBM\SIF\isp\windows\cdimages\WASND61.
 - e. Extract *disk_root*\sat_installer\bin\com\ibm\jsdt\webserver\tree\db2win.xx.jar to C:\IBM\SIF\isp\windows\cdimages\DB2ESE91FP4.

Note: If you are installing DB2, the provided response file uses the DB2 user name, db2admin, and the password, Passw8rd. The response file is located at *disk_root*\TPM\IBM\SIF\isp\windows\bin\DB2ESE91FP4\SifInstall_DB2ESE91FP4.rsp

- f. Extract *disk_root*\sat_installer\bin\com\ibm\jsdt\webserver\tree\mqwin.xx.jar to C:\IBM\SIF\isp\windows\cdimages\MQ6.
 - g. Extract *disk_root*\sat_installer\bin\com\ibm\jsdt\webserver\tree\mq6rp2fp3win.xx.jar to C:\IBM\SIF\isp\windows\cdimages\MQ602FP3.
6. Open the software packages in the Software Package Editor. You can launch Software Package Editor through Java Web Start or in an Eclipse environment.
 7. Create the software package block by selecting **File** → **Save** → **Save to repository** and choosing **LocalFileRepository**.

If you navigate to **Software Management** → **Manage Software Catalog** or if you open a software package block using the Software Package Editor, you should see the list of packages in the repository (LocalFileRepository).

Table 3. Data packages for Windows

| Package name | Package description |
|-----------------|---|
| Base61WinD | This package contains the directory structure and utilities that must be installed before the following packages. |
| Mq6WinD | Contains the installable image of WebSphere MQ 6.0 |
| Mq602Fp3WinD | Contains WebSphere MQ 6.0.2 Fix Pack 3, which brings the product level to 6.0.2.3 |
| Db2Ese91Fp4WinD | Contains the installable image of DB2 for Linux, UNIX, and Windows 9.1 Fix Pack 4 Enterprise Server Edition |
| WasNd61WinD | Contains the installable image of WebSphere Application Server 6.1.0.17 (includes IBM HTTP Server 6.1 and the Web Services plug-in for 6.1) |
| WasEc61WinD | Contains the installable image of WebSphere Application Server 6.1 Edge Components |

Table 4. Installation packages for Windows

| Package name | Package description |
|-----------------|--|
| Mq6WinI | Installs WebSphere MQ 6.0 |
| Mq602Fp3WinI | Installs WebSphere MQ 6.0.2 Fix Pack 3, which brings the product level to 6.0.2.3 |
| Db2Ese91Fp4WinI | Installs DB2 for Linux, UNIX, and Windows 9.1 Fix Pack 4 Enterprise Server Edition |
| WasNd61WinI | Installs WebSphere Application Server 6.1.0.17 (includes IBM HTTP Server 6.1 and the Web Services plug-in for 6.1) |
| WasEc61WinI | Installs WebSphere Application Server 6.1 Edge Components |

8. Select the target servers for the software package blocks, and install the "D" packages first. Distribute all "D" packages to the endpoints before distributing the "I" packages.

For example, if you want to install DB2 for Linux, UNIX, and Windows 9.1 Fix Pack 4 remotely, distribute and install the packages in the following sequence.

- a. Base61WinD
- b. Db2Ese91Fp4WinD
- c. Db2Ese91Fp4WinI

To install WebSphere MQ 6.0.2.3 remotely, distribute and install the packages in the following sequence.

- a. Base61WinD
- b. Mq6WinD
- c. Mq602Fp3WinD
- d. Mq6WinI
- e. Mq602Fp3WinI

To install WebSphere Application Server 6.1.0.17, IBM HTTP Server 6.1, and the Web Services plug-in for 6.1 remotely, distribute and install the packages in the following sequence:

- a. Base61WinD
 - b. WasNd61WinD
 - c. WasNd61WinI
9. If you would like to change your DB2 password from the defaults used in the DB2 installation, follow these steps:
 - a. Navigate to **Start** → **Administrative Tools** → **Computer Management** → **Local Users and Groups** → **Users** on your Windows server.
 - b. Right-click **db2admin** and choose **Set Password**.
 10. Follow the steps provided in “Installing WebSphere Premises Server” on page 12.

What to do next

If you need to uninstall the WebSphere Premises Server software, refer to “Uninstalling WebSphere Premises Server” on page 81.

Installing the Sensor Data Services for WebSphere Premises Server

Follow the steps in this topic to install the Sensor Data Services for WebSphere Premises Server.

About this task

The Sensor Data Services for WebSphere Premises Server installs WebSphere Premises Server on top of an existing WebSphere Remote Server 6.1 installation.

Note: The installer panels refer to Sensor Data Services for WebSphere Premises Server as WebSphere Premises Server.

1. Check your hardware and operating system and make sure that they meet the necessary requirements.
2. Make sure that you have completed all the prerequisite steps necessary for your environment and that you have already have an existing installation of WebSphere Remote Server.
3. Install the prerequisite software fix packs for WebSphere MQ, DB2 for Linux, UNIX, and Windows, and WebSphere Application Server.
 - WebSphere MQ 6.0.2.3 - available for download at: <http://www.ibm.com/support/docview.wss?rs=171&uid=swg27007069>
 - DB2 for Linux, UNIX, and Windows 9.1.4 - available for download at: <http://www.ibm.com/support/docview.wss?rs=71&uid=swg21255572>
 - WebSphere Application Server 6.1.0.17 - available for download at: <http://www.ibm.com/support/docview.wss?rs=180&uid=swg27007951>
4. Verify that you have properly installed WebSphere Application Server before installing the Sensor Data Services for WebSphere Premises Server.
5. Create the database.
6. Run the installation program located in the root directory of the Sensor Data Services for WebSphere Premises Server CD appropriate for your operating system.

 setupwin32.exe

Note: Make sure you run setupLinux.bin from a shell window.

7. Choose the language for your installation.
8. In the installation wizard Welcome panel, click **Next** to continue.
9. Click the radio button beside the **I accept both the IBM and the non-IBM terms** statement if you agree to the license agreement and click **Next** to continue. After you accept the licensing terms, the installation wizard checks for the product prerequisites.
10. Select the installation directory for WebSphere Premises Server.
11. The installation wizard prompts you to select either a **Typical** or **Custom** installation.
 - Select the **Typical** radio button if you are installing both WebSphere Premises Server and the Bundle Repository Server. Click **Next** to continue.

Important: If you are installing both WebSphere Premises Server and Bundle Repository Server on the same server, choose to install both (**Typical**) when prompted. If you choose to install one and later want to install the other, then you will need to uninstall and reinstall the product.
 - Select the **Custom** radio button if you are installing either WebSphere Premises Server or the Bundle Repository Server. Click **Next** to continue.

Important: If you want to install Bundle Repository Server on a server separate from WebSphere Premises Server, install Bundle Repository Server before installing WebSphere Premises Server.
12. Choose a database type, either DB2 or Oracle, and click **Next**.
13. Enter your database information. If you would like the installation program to run database scripts to create tables and populate data on the database you have provided, check **Create and populate tables**. This option is especially useful for remote databases, reinstallation on the same server, and clustered environments. Click **Next**.
14. Choose your WebSphere Application Server installation location and profile and click **Next**.
 - Choose to install on an existing WebSphere Application Server profile by selecting one of the profiles available on the screen.
 - Choose to create a new profile for installation by selecting the box beside **Create new WebSphere profile**. This action brings up a WebSphere Application Server profile creation wizard.

Note: If you are going to use any WebSphere Premises Server APIs or the Print, Verify, and Ship application, set the **HTTP transport port** to 9080 when you create the profile.
15. Enter your WebSphere Application Server profile information and click **Next**.
 - If you have WebSphere Application Server security enabled, you are prompted for the administrator ID and password, which will be validated in order to continue with the WebSphere Premises Server installation.
 - If you do not have WebSphere Application Server security enabled, then you may proceed without filling in an administrator ID and password.
16. Enter your Web server information or accept the defaults provided and click **Next**.

Note: You are prompted for this information only if you chose to install the Bundle Repository Server.

17. Browse to your WebSphere MQ installation directory and click **Next**.
18. If you did not choose to install the Bundle Repository Server with WebSphere Premises Server, a panel prompts you to enter your Bundle Repository Server information.
19. A summary panel displays your installation selections. Click **Install** to continue the installation process.
20. When the installation is complete, another summary panel displays the installation status and prompts you to check the log files for any errors.

install.log

 `IBM_RFID_HOME\logs\install.log`
 `IBM_RFID_HOME/logs/install.log`

If you do see errors or exceptions in the installation log files, try reinstalling the product after changing the installer's input values by according to the install.log file. If you are still seeing errors after reinstalling WebSphere Premises Server, contact IBM Support.

Results

When you have successfully completed the installation, your server should have the following products installed:

- WebSphere Premises Server in this default location:

 `C:\Program Files\IBM\RFID`
 `/opt/IBM/RFID`

- a Bundle Repository Server (installed either locally or remotely, if you chose to install it)

The installation also creates a bundle repository in your IBM HTTP Server document root path, `IHS_HOME\htdocs\system_locale\bundles`. For example, the path for a Windows operating system may be `C:\Program Files\IBM HTTP Server\htdocs\en_US\bundles`. This repository stores all the device application bundles for OSGi Equinox for management by the Bundle Repository Server.

Post-installation steps

Before you begin

If you see errors with the installation, refer to Troubleshooting tips for possible resolutions to the problem.

1. Make sure that the `WAS_HOME` environment variable is set to point to the WebSphere Application Server installation directory. The default installation directories for WebSphere Application Server are:

 `C:\Program Files\IBM\WebSphere\AppServer`
 `/opt/IBM/WebSphere/AppServer`

Important: If you have deployed WebSphere Premises Server remotely, you should log out from the target server and then log in again before continuing with the remaining post-installation steps in order to make sure that the `WAS_HOME` environment variable is applied correctly.

2. Make sure that the correct file paths are specified for the edge alerts and heartbeat log files in the SystemAgent.

See Log file locations and settings for the default installation locations of the edge alerts and heartbeat log files.

3. Make sure that the delete filter for Data Capture and Delivery is set correctly in the SystemAgent. See Setting the delete filter for Data Capture and Delivery.
4. Make sure that the IBM RFID and DC Queue Managers are running.
 -  Open the WebSphere MQ explorer and look for IBM.RFID.QM and IBM.DC.QM in the Queue Managers folder. If there are green arrows next to each queue manager, then they are running.
 -  Run the command `dspmqr` in `/opt/mqm/bin`. This command tells you the current status of a queue manager.

If the queue managers are not running, refer to the WebSphere MQ information center for troubleshooting topics.

5. Make sure all WebSphere Application Server applications are running. Open the WebSphere Application Server administrative console, expand **Applications**, and click **Enterprise Applications**.

The following applications should appear with green status arrows next to them:

- AMITJ2EE
- IBM_ALE_Application
- IBM_Bundles_Management

Note: If you installed Bundle Repository Server remotely, you will not see this application.

- IBM_EPCIS_Adapter
 - IBM_Premises_Admin_Console
 - IBM_Premises_Diagnostics
 - IBM_Premises_Event_Monitor
 - IBM_Premises_DockDoorApp
 - IBM_Premises_PVSConsole
 - IBM_Premises_Server
 - IBM_Premises_Server_BIRT
 - IBM_SensorEvent_Engine
 - IBM_SensorEvent_Gateway
6. Open the WebSphere Premises Server Administrative Console to verify that it is accessible.
 7. Check for errors in the WebSphere Application Server and WebSphere Premises Server log files. Refer to Log file locations and settings for information about where to find the log files.
 8. Open the `config.ini` file in the `IBM_RFID_HOME\dts\configuration` directory and update the server IP address, port number, bundle list file, and Data Capture and Delivery controller, as necessary.

```
com.ibm.rfid.bundle.list.url=http://IP_address:port_number/bundleadmin/GetBundle?name=http://IBM_HTTP_Server_IP_address/bundles/bundlelists/dc_core4dts.txt
```

This code specifies the URL used by the bundle loader to retrieve the list of bundles to load. If the Bundle Repository Server is on a separate server from WebSphere Premises Server, then replace the `IP_address` and `IBM_HTTP_Server_IP_address` values in this property with the IP address of the server hosting the Bundle Repository Server.

The default port number is 9080. This port number is defined when you create your WebSphere Application Server profile.

The bundle list should be set to the dc_core4dts.txt file.

com.ibm.rfid.edge.config.url=http://IP_address:port_number/ibmrfidadmin/premises.s1?action=getconfig&edge=E2&version=6.1

This code specifies the Data Capture and Delivery controller to use. For testing purposes, the configuration uses the default E2 controller, which is shipped as a sample Data Capture and Delivery controller with WebSphere Premises Server. The E2 controller loads the Simulated Reader to help verify your configuration before testing with a real reader. For a production environment, use the E0 controller.

Note: This step and the next one help you associate WebSphere Premises Server to a local Data Capture and Delivery device that you can use to verify your installation. In a production environment you should use remote Data Capture and Delivery controllers. See “Installing a remote Data Capture and Delivery controller” on page 58 for details on how to install them.

9. Edit the dc_core4dts.txt file and provide the correct IP address of your Bundle Repository Server.

The default is the localhost address, 127.0.0.1.

PREFIX `http://IP_address/bundles/`

10. If Data Transformation service is started as a service, stop it and complete the following steps as they apply to your topology and desired configuration.

- a. Stop the Data Transformation service.

-  For Windows operating systems, stop the service by going to **Start → Control Panel → Administrative tools → Services**. Select **IBM WebSphere Premises Server DT Service** and click **Stop**.
-  For Linux operating systems, run the `ibm_dts_service stop` command in the `IBM_RFID_HOME/dts` directory.

- b. Modify the startup sequence for WebSphere Application Server, IBM HTTP Server, WebSphere MQ, and Data Transformation service.

 For Windows operating systems, if you are running WebSphere Application Server, IBM HTTP Server, WebSphere MQ, and Data Transformation service on the same server, you need to ensure that the Data Transformation service starts after WebSphere Application Server and WebSphere MQ when the computer is rebooted. By default, there can be a situation where Data Transformation service starts before the other applications, resulting in errors.

- 1) Run this command.

Important: The Sc.exe command-line utility syntax requires a space after the = (equal symbol). For more information on this tool, see the Microsoft Web site.

```
sc config IBMWebSpherePremisesServerDTService depend=
"MQSeriesServices/IBMHTTPServer6.1/IBMWAS61Service - PremisesNode"
```

- 2) Go to **Start → Control Panel → Administrative tools → Services**.

- 3) Select **IBM WebSphere Premises Server DT Service**, right-click and select **Properties → Dependencies**.

Data Transformation service should show a dependency on the starting of the WebSphere Application Server, IBM HTTP Server, and WebSphere MQ services.

Note: Setting this dependency also means that the Data Transformation service will stop if you stop any one of the WebSphere Application

Server, IBM HTTP Server, or WebSphere MQ services. This dependency also assumes that all of these products are on the same server.

Linux In a Linux environment, WebSphere Application Server and IBM HTTP Server are not automatically started when the computer reboots, but Data Transformation service and WebSphere MQ are automatically started. If all of the products are installed on the same server, the startup sequence can result in errors.

To reduce the possibility of errors occurring, remove the `ibm_dts_service` from the automatic startup by issuing this command:

```
chkconfig --level 35 ibm_dts_service off
```

11. Restart the Data Transformation service manually.

- **Windows** For Windows operating systems, run the `dts.bat` file in the `IBM_RFID_HOME/dts` directory.
- **Linux** For Linux, run the `dts.sh` file in the `IBM_RFID_HOME/dts` directory.

These commands start the Data Transformation service and display a Data Transformation prompt.

12. Check the log files for any failures in loading the bundles.

13. Tune your database to improve performance.

14. If you are using the Print, Verify, and Ship example usage scenario, edit the contents of the `pvsapp.properties` file to point to the correct directory and host name for your IBM HTTP Server. Specifically, modify the following properties: `premises.hostname`, `report.location.csv`, and `report.location.csv.url`. The `pvsapp.properties` file is located in the `\installedApps\profile_cell_name\IBM_Premises_PVSConsole.ear\ibmrfid_premises_pvsapp.war\config\` directory.

15. If you are using the Print, Verify, and Ship example usage scenario, enable ALE.

- a. Open the WebSphere Application Server administrative console.
- b. Navigate to **Resources** → **JMS** → **Activation specifications** → **ALEWrapperAS**.
- c. Change the text in the **Message selector** field to `ibmse='RfidInventory/TagReport'` OR `ibmse='RfidInventory/TagAggregationReport'` OR `ibmse LIKE '%/report/TagReport'` OR `ibmse LIKE '%/report/TagAggregationReport'`.

16. Verify the WebSphere Premises Server installation. Choose **R2** as your simulated test reader.

What to do next

If you need to uninstall the WebSphere Premises Server software, refer to “Uninstalling WebSphere Premises Server” on page 81.

Installing and enabling IBM Tivoli License Compliance Manager

Tivoli License Compliance Manager monitors license compliance. Basically, it recognizes and monitors what product offerings and their versions, releases, and fix packs are installed and used on the system.

WebSphere Premises Server supports the use of Tivoli License Compliance Manager server to collect and monitor usage information.

To install and enable Tivoli License Compliance Manager, you must download the Tivoli License Compliance Manager agent and install it on each WebSphere Premises Server. Instructions for downloading the Tivoli License Compliance Manager are documented in the Tivoli License Compliance Manager information center.

The required WebSphere Premises Server signature file for the Tivoli License Compliance Manager agent is deployed to WebSphere Application Server during the WebSphere Premises Server installation. A backup version of the file is located at:

 `IBM_RFID_HOME\premises\itlm\WRPSRV_6_1_0_00601.SYS2`

 `IBM_RFID_HOME/premises/itlm/WRPSRV_6_1_0_00601.SYS2`

Installing the toolkits

Use the topics below to install the toolkits shipped with WebSphere Premises Server.

Installing WebSphere Premises Server Toolkit

Use these steps to install the WebSphere Premises Server Toolkit.

1. Check your hardware and operating system and make sure that they meet the necessary requirements.
2. Start Rational Application Developer for WebSphere Software using a new workspace directory.
3. From the menu select **Help** → **Software Updates** → **Find and Install**.
4. Select **Search for new features to install** and click **Next**.
5. Click **New Local Site** and navigate to your local directory or network location containing the toolkit update site for WebSphere Premises Server Toolkit. The update site is located on disk 4 of the WebSphere Premises Server media package in the PremisesServerToolkit directory.
6. Expand the PremisesServerToolkit directory and select **ibmrfid_toolkit_update_site** and click **OK**.
7. Click **OK** to close the Edit Local Site window.
8. In the sites list, select only **PremisesServerToolkit/ibmrfid_toolkit_update_site** and click **Finish**.
9. In the Search Results window, expand **PremisesServerToolkit/ibmrfid_toolkit_update_site** → **IBM WebSphere Premises Server Toolkit** and select **IBM WebSphere Premises Server Toolkit Feature *version***, where *version* is the number of the toolkit release you wish to install.
10. Click **Next**.
11. Accept the license agreement and click **Next**.
12. In the Installation window, click **Finish** to install the plug-in into the default location.

Note: If you choose to create a new WebSphere Application Server profile and you are going to use any WebSphere Premises Server APIs or the Print, Verify, and Ship application, make sure to set the **HTTP transport port** to 9080 when you create the profile.

13. In the Feature Verification window, click **Install All**.
14. When the installation completes, click **Yes** when prompted to restart the workbench.
15. If you see any errors after installation, refer to the troubleshooting tips in the WebSphere Premises Server Toolkit help.

What to do next

From within Rational Application Developer for WebSphere Software, click **Help** → **Help Contents** → **IBM WebSphere Premises Server Toolkit** and follow the steps to configure the toolkit.

If you need to uninstall the WebSphere Premises Server Toolkit software, refer to “Uninstalling the WebSphere Premises Server Toolkit” on page 83.

Installing IBM Data Capture and Delivery Toolkit for WebSphere Premises Server

Use these steps to install the IBM Data Capture and Delivery Toolkit for WebSphere Premises Server.

1. Check your hardware and operating system and make sure that they meet the necessary requirements.
2. Start Eclipse.
3. From the menu select **Help** → **Software Updates** → **Find and Install**.
4. Select **Search for new features to install** and click **Next**.
5. Click **New Local Site** and navigate to your local directory containing the toolkit update site for IBM Data Capture and Delivery Toolkit for WebSphere Premises Server. Then click **OK**. The update site is located on the CD containing the toolkits in the update directory.
6. If desired, enter a more descriptive name for the local site and click **OK**.
7. Click **Finish**.
8. Expand the new local site and select **IBM Data Capture and Delivery Toolkit version**.
9. Click **Next**.
10. Accept the license agreement and click **Next**.
11. Select an installation location and click **Finish**.
12. On the Feature Verification panel, review your choices and click **Install All**.
13. Click **Yes** when prompted to restart the Eclipse SDK.
14. When Eclipse has restarted, you can import the sample agents and launch configurations for IBM Data Capture and Delivery Toolkit for WebSphere Premises Server by selecting **File** → **New** → **Project** → **IBM WebSphere Premises Server Toolkits** → **Data Capture and Delivery Toolkit** and click **Next**.
15. Select **Data Capture**.
16. Click **Finish** to install the toolkit project in the current workspace.

What to do next

If you need to uninstall the IBM Data Capture and Delivery Toolkit for WebSphere Premises Server software, refer to “Uninstalling the IBM Data Capture and Delivery Toolkit for WebSphere Premises Server” on page 83.

Configuring the IBM Data Capture and Delivery Toolkit for WebSphere Premises Server

This task describes how to configure the IBM Data Capture and Delivery Toolkit for WebSphere Premises Server.

When using the IBM Data Capture and Delivery Toolkit for WebSphere Premises Server, make sure the Java compiler is set to compliance level 1.4. To verify and set the compliance level, start Eclipse and click **Window** → **Preferences** → **Java** → **Compiler**.

The following launch configurations are included in the toolkit:

DataCapture-FullSim

Launches both the Simulated Reader and the simulated WebSphere Premises Server on one machine. This configuration launches the I/O Simulator, the Premises Simulator, and the Premises Simulator Status Window interfaces.

The *I/O Simulator interface* allows you to simulate input and output pins.

The *Premises Simulator interface* allows you to set the portal ID and the Data Capture and Delivery device ID, to start and stop the reader simulator on the Data Capture and Delivery device, to restart the OSGi framework for the Data Capture and Delivery device, and to reload the XML configuration for the Data Capture and Delivery device.

The *Premises Simulator Status Window interface* allows you to set the Data Capture and Delivery device ID. It also displays the last heartbeat, the last alert, and the total batch processing time that was received from the Data Capture and Delivery device.

This launch configuration works immediately after installation and no other machine or WebSphere Premises Server is required. You can use this launch configuration to verify the installation.

DataCapture-RdrSim

Launches a remote Data Capture and Delivery device, the Simulated Reader, and the I/O Simulator interface. This configuration simulates a remote Data Capture and Delivery device that has a Simulated Reader and is connected to a WebSphere Premises Server (real or simulated) that is running on a separate machine. The I/O Simulator interface is also launched.

This launch configuration requires another machine and also requires additional configuration.

DataCapture-LLRP

Launches the LLRP reader agent and the I/O Simulator interface.

Low Level Reader Protocol (LLRP) is a standard specification for the network interface between an RFID reader and its controlling software or hardware. For more information on LLRP, see <http://www.epcglobalinc.org/standards/llrp/>.

This launch configuration requires that WebSphere Premises Server (real or simulated) is running on another machine.

DataCapture-PremSim

Launches a simulated WebSphere Premises Server. The Premises Simulator interface and Premises Simulator Status Window interface are also launched.

The simulated server must be run on a separate machine from the Simulated Reader.

Launching the Simulated Reader and simulated WebSphere Premises Server on the local system

This section describes how to configure the Simulated Reader and WebSphere Premises Server simulator on a local system. This launch configuration allows you to run the simulators on one machine.

1. From within Eclipse, click **Run** → **Open Run Dialog...**
2. Browse to and select **DataCapture-FullSim**. It is located under **OSGi Framework**.
3. Click **Run**.

Launching the Simulated Reader and I/O Simulator interface while connecting to a remote WebSphere Premises Server or Premises Simulator

This section describes how to configure the Simulated Reader and I/O Simulator interface when you are connecting it to a WebSphere Premises Server (real or simulated), which is located on another machine.

1. Ensure the configuration file that is sent to the Data Capture and Delivery controller contains the correct value for the `server.ip` property in the MicroBroker configuration agent. To do this, add the following line to the HOSTS file on the machine that hosts the Simulated Reader:

```
premises_server_ip_address put_premises_hostname_here
```

For `premises_server_ip_address`, enter the WebSphere Premises Server IP address. All instances of "`put_premises_hostname_here`" in the configuration file will be replaced with this IP address.

2. In the `edge-rdrsimsim-llrp.xml` file, which is located in the `com.ibm.rfid.resource.toolkit` project in the Configurations folder, modify the `matrix.properties` property of the `PortalControllerAgent` as follows:
 - a. Make sure the following properties are commented as follows:

```
<property key="matrix.properties" value="file:BDDR.properties"/>
<!--<property key="matrix.properties"
value="http://put_premises_hostname_here/bundles/BDDR.properties"/>-->
```
 - b. Copy `com.ibm.rfid.resource.toolkit/Matrices/BDDR.properties` from the workspace to the root runtime directory. By default the root runtime directory is the Eclipse installation root, which is the directory location for the `eclipse.exe` file.
3. From within Eclipse, click **Run** → **Open Run Dialog...**
4. Browse to and select **DataCapture-RdrSim**. It is located under **OSGi Framework**.
5. Click **Run**.

What to do next

The MicroBroker console view can be used to interact with the publish and subscribe engine and trigger events. Do not start the application ping bundle, which is stopped by default.

Note: On a remote system, Data Capture and Delivery cannot log messages unless you install the console log manually. For example, run the following command from the remote Data Capture and Delivery console:

```
install http://fully_qualified_host_name/bundles/com.ibm.rfid.console.log_version.jar start
```

The log level of the remote Data Capture and Delivery console is determined by the Alert Agent `edge.log.threshold` property in the Data Capture and Delivery XML configuration file. The default value of this property is `error`. If you change the value of this property, restart the remote Data Capture and Delivery environment or reload the configuration.

Launching the LLRP Reader while connecting to a remote WebSphere Premises Server or Premises Simulator

This section describes how to configure the LLRP Reader when you are connecting it to a WebSphere Premises Server (real or simulated), which is located on another machine.

1. Ensure the configuration file that is sent to the Data Capture and Delivery controller contains the correct value for the `server.ip` property in the MicroBroker configuration agent. To do this, add the following line to the HOSTS file on the machine that hosts the Simulated Reader:

```
premises_server_ip_address put_premises_hostname_here
```

For `premises_server_ip_address`, enter the WebSphere Premises Server IP address. All instances of `"put_premises_hostname_here"` in the configuration file will be replaced with this IP address.

2. In the `edge-rdrsimsim-llrp.xml` file, which is located in the `com.ibm.rfid.resource.toolkit` project in the Configurations folder, modify the `matrix.properties` property of the `PortalControllerAgent` as follows:

- a. Make sure the following properties are commented as follows:

```
<property key="matrix.properties" value="file:BDDR.properties"/>
<!--<property key="matrix.properties"
value="http://put_premises_hostname_here/bundles/BDDR.properties"/>-->
```

- b. Copy `com.ibm.rfid.resource.toolkit/Matrices/BDDR.properties` from the workspace to the root runtime directory. By default the root runtime directory is the Eclipse installation root, which is the directory location for the `eclipse.exe` file.

3. From within Eclipse, click **Run** → **Open Run Dialog...**
4. Browse to and select **DataCapture-LLRP**. It is located under **OSGi Framework**.
5. Click **Run**.

What to do next

The MicroBroker console view can be used to interact with the publish and subscribe engine and trigger events. Do not start the application ping bundle, which is stopped by default.

Note: On a remote system, Data Capture and Delivery cannot log messages unless you install the console log manually. For example, run the following command from the remote Data Capture and Delivery console:

```
install http://fully_qualified_host_name/bundles/com.ibm.rfid.console.log_version.jar start
```

The log level of the remote Data Capture and Delivery console is determined by the Alert Agent `edge.log.threshold` property in the Data Capture and Delivery XML configuration file. The default value of this property is `error`. If you change the value of this property, restart the remote Data Capture and Delivery environment or reload the configuration.

Launching the Premises Simulator

This section describes how to configure the Premises Simulator for use with the IBM Data Capture and Delivery Toolkit for WebSphere Premises Server.

1. From within Eclipse, click **Run** → **Open Run Dialog...**
2. Browse to and select **DataCapture-PremSim**. It is located under **OSGi Framework**.
3. Click **Run**.

Adding additional XML configuration files to the Premises Simulator

This section describes how to add additional configuration files to the Premises Simulator for use with the IBM Data Capture and Delivery Toolkit for WebSphere Premises Server.

1. Copy the new configuration file to the Configurations directory within the `com.ibm.rfid.resource.toolkit` project. For example, `com.ibm.rfid.resource.toolkit/Configurations/edge-samsys.xml`.
2. Add a new, unique property to the `com.ibm.rfid.premises.simulator.servlet.properties` file within the `com.ibm.rfid.premises.simulator.servlet.bundle` package of the `com.ibm.rfid.premises.simulator.servlet` project, which maps the new configuration file to a Data Capture and Delivery controller ID. For example, `E2=edge-samsys.xml`.
3. Restart the Premises Simulator.

Migrating the product

Use these topics to migrate from WebSphere Premises Server 6.1 to WebSphere Premises Server 6.1.0.1.

Migrating WebSphere Premises Server

Use these instructions to migrate from WebSphere Premises Server 6.1 to WebSphere Premises Server 6.1.0.1.

Before you begin

1. Close the Data Transformation service console.
2. Stop all WebSphere Application Server processes.
3. If you are using a remote Bundle Repository Server, update WebSphere Application Server and IBM HTTP Server on the Bundle Repository Server to the level required by the fix pack. See “Hardware and software requirements” on page 3 for details.
4. If you are using Oracle, update to the level required by the fix pack. See “Hardware and software requirements” on page 3 for details.
5. Back up your database.
 1. Run the installation program located in the `sat_installer` directory of the WebSphere Premises Server disk appropriate for your operating system.
If you have a Linux operating system, make sure you run `LinuxSetup` from a new shell window.

 `WindowsSetup.exe`

 `LinuxSetup`

When you run the installation program, the deployment wizard is temporarily installed on your hard drive. It will uninstall itself when the installation is

complete. When the deployment wizard installation completes, it automatically launches and guides you through the installation of the product and its prerequisite software. It may take a few minutes to begin.

You can also run the installation program in silent mode. Refer to “Installing silently” on page 37 for further instructions.

2. Select the radio button beside the **I accept both the IBM and the non-IBM terms** statement if you agree to the license agreement and click **Next** to continue.
3. When the Welcome panel appears you can either:
 - Click **Next** to continue installing the product.
 - Or, if you would like to change the default path used for the deployment package, follow the instructions in “Changing the deployment package path” on page 9 before continuing with the next steps.
4. On the Select Tasks panel, click **Next** to install the product and to choose the database type.
5. Choose to use either DB2 or Oracle as your local or remote database.
6. Choose to install WebSphere Premises Server only and click **Next**.

Important: Migration of Location Awareness Services for WebSphere Premises Server is not supported. You can update your Location Awareness Services for WebSphere Premises Server version from 6.1 to 6.1.0.1 using the installer, but any customization, such as defined areas and classes, will not be retained.

7. Click **Next** to install the required Bundle Repository Server.

Note: If you do not install Bundle Repository Server on your local server, then you need to install the prerequisite middleware on the remote server before installing Bundle Repository Server. Make sure that you have purchased a separate license for the required middleware that you install on a remote server. Also, you will need to modify the WebSphere Premises Server SystemAgent to reflect the correct location of your Bundle Repository Server.

8. On the Specify Target Computers panel for your database server, specify the target computer for DB2 or your existing Oracle database and click **Next**.
 - For a local server installation for DB2 or an existing installation of Oracle, the default value is localhost. You can either keep this value or change it.
 - If you are installing the product and DB2 on separate servers, specify the fully qualified host name, operating system, user ID, and password of the server where DB2 should be installed.
 - If you are installing the product on one server and using an existing Oracle installation on another server, specify the fully qualified host name, operating system, user ID, and password of the server where Oracle is installed.
 - Optionally, use the **Test connections** button to test access to the remote target computer. Firewalls can have an adverse effect on the installation even though the connection test result is successful.
9. On the Specify Target Computers panel for WebSphere Premises Server, specify the target computer for WebSphere Premises Server and click **Next**.
 - For a local server installation, the default value is localhost. You can either keep this value or change it.

- If you are installing WebSphere Premises Server and its required middleware on a remote server, specify the fully qualified host name, operating system, user ID, and password of the server where it should be installed.
 - Optionally, use the **Test connections** button to test access to the remote target computer. Firewalls can have an adverse effect on the installation even though the connection test result is successful.
10. On the Specify Target Computers panel for Bundle Repository Server, specify the target computer for Bundle Repository Server and click **Next**.
- For a local server installation, the default value is localhost. You can either keep this value or change it.
 - If you are installing Bundle Repository Server on a remote server, specify the fully qualified host name, operating system, user ID, and password of the server where it should be installed.

Remember: You must install the required middleware on the remote server before installing Bundle Repository Server.

- Optionally, use the **Test connections** button to test access to the remote target computer. Firewalls can have an adverse effect on the installation even though the connection test result is successful.
11. Enter your database configuration information.
- If you would like the installation program to run database scripts to migrate your existing tables and data on the database, check **Migrate existing 6.1 tables** and click **Next**.
 - If you would like the installation program to run database scripts to create new tables and populate new data on the database, check **Create and populate 6.1.0.1 tables** and click **Next**.
 - If you have already migrated your database manually with the scripts provided, select **Do not change the database**.
12. Enter the necessary information for WebSphere MQ and click **Next**.
-  **Windows** If you are installing on a Windows operating system, you are prompted to enter the installation directory for WebSphere MQ or accept the default installation directory.
 -  **Linux** If you are installing on a Linux operating system, you are prompted for a password.
13. Enter your WebSphere Application Server configuration information and click **Next**.

Important:

- If you have an existing version of WebSphere Application Server that is 6.1.0.0 or later (but not the required version 6.1.0.17), and you want the installer to update your WebSphere Application Server version, then you must have WebSphere Application Server stopped before deploying the WebSphere Premises Server installation.
- WebSphere Application Server security is not enabled by the installer. You must set up and configure security separately.
- If you are going to use any WebSphere Premises Server APIs or the Print, Verify, and Ship application, make sure that the profile you choose to use has the **HTTP transport port** set to 9080.
- If you do not plan to install WebSphere Premises Server and WebSphere Application Server on the default drive (such as the

C drive on Windows operating systems), click the **Advanced** tab for the configuration parameters and make sure your WebSphere Application Server profile path reflects the correct drive location for your installation.

14. Enter your IBM HTTP Server configuration information and click **Next**.
15. Enter the installation directory for WebSphere Premises Server.
16. Enter the configuration information for Bundle Repository Server.
17. On the Summary Panel, confirm your choices. The summary provides a list of tasks that you selected and an estimated time for their completion.
 - To start all installation and configuration tasks, click **Deploy all**.
 - If you only want to start a specific task, click **Deploy task**, but make sure that the tasks you choose are in the correct sequence on the panel. For example, you cannot deploy WebSphere Premises Server before deploying DB2 if you do not already have a database installed.

Click **Back** to make any changes. After you start the deployment, you have the option to click **Stop Deployment** if you need to stop the installation before it is finished. Once all deployment tasks are complete, the Deployment Status screen indicates if the deployment was successful.

18. When the installation is complete, check the log files for any errors. From the Deployment wizard, you can view detailed messages or the master log. Click **Master log** and select **Save as...** to save the log file. The logs can be found in `deployment_wizard_installation_dir/logs`, where `deployment_wizard_installation_dir` is the installation location of the Deployment wizard.

The image shows two file explorer windows. The top window is for Windows, showing the path C:\Program Files\SolutionFiles\logs. The bottom window is for Linux, showing the path opt/SolutionFiles/logs.

19. Click the X at the top, right-hand side of the panel to exit the wizard. The wizard displays some messages:
 - A prompt for whether you want to save changes. If you plan to run the wizard again, click **Yes**. Otherwise, click **No**.
 - A prompt for whether you wish to exit. Click **Yes** to exit the wizard.
20. If you want to use the simulated reader to verify your migration, run these SQL scripts for your database, either from a DB2 command line or from the Oracle sqlplus tool.

```
INSERT INTO SAGE.DCDEVICELOCATIONAGENT VALUES ('IBMSimulatedReaderAgent',
'com.ibm.rfid.reader.simulator.bundle.ReaderSimulatorManagedServiceFactoryActivator',
'TagReadingExpression', '(b1=true)', 'String', 'Tag Reading Expression',
'IBM Simulated Reader', '0','true', 'true' );
```

```
INSERT INTO SAGE.DCDEVICELOCATIONAGENT VALUES ('IBMSimulatedReaderAgent',
'com.ibm.rfid.reader.simulator.bundle.ReaderSimulatorManagedServiceFactoryActivator',
'log.level', '', 'String', 'log level','IBM Simulated Reader', '0','true', 'true' );
```

Results

When you have successfully completed the migration, the following software has been updated:

- WebSphere Premises Server version 6.1 to version 6.1.0.1
- WebSphere Application Server version 6.1.0.11 to version 6.1.0.17
- WebSphere MQ version 6.0.2.1 to version 6.0.2.3
- IBM HTTP Server version 6.1.0.0 to version 6.1.0.17
- DB2 for Linux, UNIX, and Windows version 9.1.2 Enterprise Standard Edition to version 9.1.4 Enterprise Standard Edition (if you are using this database)

What to do next

Follow the post-installation steps to verify your installation.

Migrating Sensor Data Services for WebSphere Premises Server

Follow these steps to migrate Sensor Data Services for WebSphere Premises Server from version 6.1 to version 6.1.0.1.

1. Upgrade the prerequisite software.
Refer to “Hardware and software requirements” on page 3 for details. The prerequisite software fix packs for WebSphere MQ, DB2 for Linux, UNIX, and Windows, and WebSphere Application Server are available online:
 - WebSphere MQ 6.0.2.3 - available for download at: <http://www.ibm.com/support/docview.wss?rs=171&uid=swg27007069>
 - DB2 for Linux, UNIX, and Windows 9.1.4 - available for download at: <http://www.ibm.com/support/docview.wss?rs=71&uid=swg21255572>
 - WebSphere Application Server 6.1.0.17 - available for download at: <http://www.ibm.com/support/docview.wss?rs=180&uid=swg27007951>
2. Uninstall Sensor Data Services for WebSphere Premises Server.
3. Run the database migration scripts.
4. Install Sensor Data Services for WebSphere Premises Server 6.1.0.1.
5. If you want to use the simulated reader to verify your migration, run these SQL scripts for your database, either from a DB2 command line or from the Oracle sqlplus tool.

```
INSERT INTO SAGE.DCDEVICELOCATIONAGENT VALUES ('IBMSimulatedReaderAgent',
'com.ibm.rfid.reader.simulator.bundle.ReaderSimulatorManagedServiceFactoryActivator',
'TagReadingExpression', '(bl=true)', 'String', 'Tag Reading Expression',
'IBM Simulated Reader', '0','true', 'true' );

INSERT INTO SAGE.DCDEVICELOCATIONAGENT VALUES ('IBMSimulatedReaderAgent',
'com.ibm.rfid.reader.simulator.bundle.ReaderSimulatorManagedServiceFactoryActivator',
'log.level', '', 'String', 'log level', 'IBM Simulated Reader', '0','true', 'true' );
```

6. Verify your installation.

Migrating the database, tablespace, tables, and data

Use this topic to manually migrate the database, tablespace, tables, and populate the data required for WebSphere Premises Server. If you are using the WebSphere Premises Server installer to migrate the database, you do not need to follow these steps.

Migrating the databases using scripts

Run the scripts provided in the db_script directory on the WebSphere Premises Server disk to migrate the database, tablespace, tables and populate data.

Before you begin

Before running the scripts be aware of the following restrictions and take the appropriate action:

- You must be a database user (such as db2inst1 or oracle) to run the scripts on Linux.
- For Oracle, the sqlplus executable must be added in the PATH on Linux.
- The specified tablespace directory must exist.
- You must have the authorization to access the specified tablespace directory if you are using Linux only.
- The specified tablespace file cannot be used by another database.

Example

For DB2: 

```
migrateFrom6.1GA_db2.bat dbName longTablespaceFile longTempTablespaceFile
```



```
migrateFrom6.1GA_db2.sh dbName longTablespaceFile longTempTablespaceFile
```

For Oracle: 

```
migrateFrom6.1GA_oracle.bat dbUser dbPassword dbSpec longTablespaceFile
```



```
migrateFrom6.1GA_oracle.sh dbUser dbPassword dbSpec longTablespaceFile
```

The database, tablespace, table and data are created under dbSpec.

Verifying the installation

This topic provides instructions for how to verify that WebSphere Premises Server was installed successfully.

About this task

You can verify that WebSphere Premises Server has been correctly installed using a simulator instead installing of configuring additional hardware and software, such as readers and edge controllers.

The Simulated Reader is accessible through the WebSphere Premises Server Administrative Console. It uses an edge bundle, `com.ibm.rfid.reader.simulator`, to simulate tag reads at approximately 1 second intervals, which are shown on the console page in real time.

System administrators can also set the format of the output displayed in the Simulated Reader console page by modifying the `com.ibm.rfid.simulated.reader.display.complete.message` property in the SystemAgent. If the property is set to `false`, the Simulated Reader displays tag IDs. If the property is set to `true`, the Simulated Reader displays the complete XML tag read. The default value is `false`.

Note: The Simulated Reader is only intended to work with the default installation, using the BDDR.properties file (the Basic Dock Door configuration). The Simulated Reader is a very simple approximation of a real reader, and therefore does not behave completely like a real reader. It will stop and start like a real reader, send tags, and will *always* send an aggregation of tag data when turned off.

To verify your installation with the Simulated Reader, complete the following steps:

1. Complete the “Post-installation steps” on page 17.
2. Restart WebSphere Application Server.
3. Open the WebSphere Premises Server Administrative Console. The Welcome page displays.
4. Select **Simulated Reader** from the left navigation pane.
5. On the Simulated Reader console page, select a reader from the menu.

Note: The choices are limited to readers that are classified as `IBMSimulatedReaderType`.

6. Click **Start Reader** to begin simulating tag reads.

The following icons represent the status of the reader:

-  - The reader is off, but available.
-  - The reader status is unavailable.
-  - The reader is on and ready to read tags.

You should see tag information appear in the output box.

7. Click **Stop Reader** to end simulating tag reads.
8. (Optional) Click **Reset Reader** to cancel the current start or stop request and reset the reader to its original state.
9. Click **Clear Output** to clear the displayed tag data.

Installing a remote Data Capture and Delivery controller

The bundle loader is an HTTP servlet that can be used to deploy Data Capture and Delivery on a remote server. To install bundles on your Data Capture and Delivery environment, the bundle loader uses a URL to receive a text file with a set of instructions for installing the bundle list. The bundle list is a file containing a list of bundles appropriate for your reader topology.

Use these topics to install a remote Data Capture and Delivery controller:

Installing the bundle loader and a bundle list

The bundle loader is an OSGi bundle that, when started, locates a list of bundles and performs the action specified on each bundle in the list.

The bundle list file format

The bundle list is a script in which each line is a command to the bundle loader to perform an action on a specified bundle. The actions that can be performed include `START` and `INSTALL`. The `START` action installs and starts a bundle, while the `INSTALL` action only installs a bundle. After the action command is the path to the bundle on which to perform the action.

The bundle list can contain the `PREFIX` command as well. When this is used, the string that follows `PREFIX` will be prepended to the name of each bundle in the bundle list.

The bundle list also supports the `INCLUDE` command. The `INCLUDE` command points to another bundle list that will also be read by the bundle loader.

This is an example of the file format:

```
// The line below will look for this exact file name
START org.eclipse.osgi.services_3.1.200.v20070605.jar
// The line below will look for a file beginning with this
// (assuming wildcarding is enabled on WebSphere Premises Server)
START org.eclipse.osgi.services_
```

The bundle list location

When the bundle loader starts, it looks in three locations for the bundle list URL:

- At startup it checks for the Configuration Admin (ConfigAdmin) service, which is an OSGi Managed Service. If the ConfigAdmin service is available and the bundle loader receives a configuration object it will look for the URL there.
- If either the ConfigAdmin is not available or the configuration object is empty, the bundle loader looks for a system property which is either set in the config.ini file or through a Java command line argument.
- If the bundle loader cannot find the list in the system property, then it looks at a default location in the file system for the ibm-rfid-bundle-list.txt bundle list.

After successfully receiving the bundle list, the bundle loader runs the commands in the list to install the bundles. This process is stored in the ConfigAdmin object as a result property (for example, value="working"). After this task is completed, the bundle loader saves the final result (as a success or a failure) in the result property. Then, when the bundle loader is restarted or when the configuration changes, the bundle loader looks in the result value to determine if it should download additional bundles.

Installing the bundle loader and bundle list

About this task

Use these steps to install the bundle loader and a bundle list. For reference, see the tools/remoteDC.zip sample packaged with the IBM Data Capture and Delivery Toolkit for WebSphere Premises Server.

Note: The sample config.ini uses 127.0.0.1 for the IP address of the WebSphere Premises Server. Change the value to the actual IP address if using the sample config.ini for a remote Data Capture and Delivery install.

1. Install Equinox on the server that will run the bundle loader.

Equinox is packaged in the equinox folder of the IBM Data Capture and Delivery Toolkit for WebSphere Premises Server disk.

Note: Other OSGi implementations are also supported, but this document only covers the Equinox implementation.

2. Create a configuration directory in the eclipse path in Equinox. For example, C:\equinox\eclipse\configuration.
3. Create a config.ini file in the configuration directory and add these lines to it:

```
com.ibm.rfid.bundle.list.url=http://IP_address:port_number/bundleadmin/GetBundle?name=http://IBM_HTTP_Server_name/bundles/bundlelists/dc_core.txt  
com.ibm.rfid.edge.config.url=http://IP_address:port_number/bmrfidadmin/premises.s1?action=getconfig&edge=E3&version=6.1
```

The values for *IP_address* and *IBM_HTTP_Server_IP_address* are the name of the server that is hosting the Bundle Repository Server.

The second line of code configures Data Capture and Delivery to use the E3 controller, which is shipped as a sample remote controller with WebSphere Premises Server. The E3 controller loads the Simulated Reader to help verify your configuration before testing with a real reader.

4. Start the Equinox runtime.

Note:

- Be sure the Data Transformation service is running on the server (dts.bat).

- In the case of Data Transformation, the bundle loader bundle is loaded, but not started. It must be started manually.
 - The bundle lists are slightly different for Data Transformation (for example, `dc_core.txt` and `dc_core4dts.txt`). Be sure that you reference the correct bundle list version based on whether you are loading the list into a remote Data Capture and Delivery controller (`dc_core.txt`, `dc_rdrsim.txt`) or into Data Transformation (`dc_core4dts.txt`, `dc_rdrsim4dts.txt`).
5. Start the bundle loader.
 - a. Find the ID of the bundle loader bundle by running the OSGi `ss` command.
 - b. Start the bundle loader bundle by entering `start bundle_ID` at the OSGi prompt.

Once the core Data Capture and Delivery bundles are loaded, Data Capture and Delivery pulls its configuration from WebSphere Premises Server (using the `com.ibm.rfid.edge.config.url=` property). If this configuration includes an update to the bundle list URL, then the bundle loader attempts to load that additional list of bundles.

This is one method of installing multiple bundle lists into a Data Capture and Delivery controller. Data Transformation is set up with E2 to run the reader simulator. The Data Transformation `config.ini` file points to `dc_core4dts.txt` file to load the core bundles, and the Data Capture and Delivery configuration then points to the `dc_rdrsim4dts.txt` file to then load the reader simulator. For additional methods for installing bundle lists, refer to “Installing additional bundle lists.”
 6. Test the configuration using the Simulated Reader in the WebSphere Premises Server Administrative Console. Choose **R3** as your simulated test reader.
 7. Create a new remote Data Capture and Delivery controller based on the E3 sample and use it with your real reader.

Installing additional bundle lists

Once the bundle loader is running, you can use it to load additional bundles. There are several methods you can use to load the bundles.

One way to load additional bundles is to change the bundle list URL in the `config.ini` file of Equinox, and then restart Equinox. When the bundle loader is restarted, it reads the updated configuration and loads the bundles in the new bundle list specified in the `config.ini` file.

To do this in a production system with a remote Data Capture and Delivery controller, use the WebSphere Premises Server Administrative Console to update the `com.ibm.rfid.bundle.list.url` property in the bundle loader agent. Then navigate to **Controllers** in the left navigation pane of the console and click the controller you are using. Click the **Reload Configuration** button to reload your controller’s configuration. This triggers the Data Capture and Delivery controller to reload its configuration, including the new bundle list URL, which causes the Bundle Loader to download the new bundle list.

To install additional bundle lists within the IBM Data Capture and Delivery Toolkit for WebSphere Premises Server, modify the edge XML used to configure the Data Capture and Delivery bundles by adding a block to the XML that configures the bundle loader. Then you can force a reload of the edge configuration (possibly by

restarting the edge configuration bundle) so that the bundle loader picks up the new configuration. The following is an example of the XML used to modify the bundle loader URL property:

```
<configuration pid="com.ibm.rfid.bundle.loader">
<properties>
  <property key="bundleListURL" value="file:///bundlelist2.txt"/>
  <property key="clearCache" value="false"/>
</properties>
</configuration>
```

For more information on configuring Data Capture and Delivery, see *Managing your configuration*.

Using wildcards with the bundle loader

If the bundle loader uses the Bundle Repository Server on WebSphere Premises Server to read the bundle list, then you can use a form of wildcarding for the bundle names in the bundle list.

By default, wildcarding is turned off, so the bundle names in the bundle list must be an exact match to the bundles you want to load. To turn on wildcarding, follow these steps:

1. Set the `com.ibm.rfid.bundle.server.fullname` property in the `bundleserver.properties` file to `true`.
The `bundleserver.properties` file is located in the `IBM_RFID_HOME/dms/properties` directory.
2. Restart WebSphere Application Server, if it has already been started, in order for the change to take effect.

If wildcarding is turned on, then the Bundle Repository Server matches the name of each bundle in the bundle list to the bundles in its bundles directory. If it finds an exact match, then it uses the bundle that matches. If there is no match, then the Bundle Repository Server places a wildcard character on the end of the bundle name and returns the first bundle in alphabetic order that matches that pattern.

Defining the network topology

After the required software is installed on WebSphere Premises Server, the next step in installing your solution is to define the RFID network topology.

Before you begin

Before beginning this process, ensure that you:

- Obtain the IP addresses and port numbers of the tag readers and tag printers in the network.
- Obtain the MAC addresses of the Data Capture and Delivery controllers in the network.

About this task

The RFID network topology contains important information about the devices in your network. This information is stored in a configuration database on WebSphere Premises Server. The Data Capture and Delivery controller retrieves the configuration and uses it to set all of the bundle parameters including the Controller Manager and Digital I/O Manager. The following information is stored in the network topology:

- Agents and configuration properties
- Device IDs and configuration information for devices, such as tag readers and tag printers
- Location IDs for each store location, including dock door IDs
- Data Capture and Delivery controller IDs and configuration information

Use the WebSphere Premises Server Administrative Console to create and edit the topology definition.

1. Open the WebSphere Premises Server Administrative Console.. The Welcome page displays.
2. Create or download agents and configure their properties.
3. Define each device in the network.
4. Define location information (stores and dock doors) in this network.
5. Enter the Data Capture and Delivery controller IDs for the Data Capture and Delivery devices in the network.

Results

The network topology is created.

Using Data Capture and Delivery with Device Manager server

Use the instructions in these topics if you have an existing installation of Device Manager server, such as the one provided with WebSphere RFID Premises Server 6.0.x, and you would like to use it with Data Capture and Delivery.

Note: WebSphere Premises Server 6.1.x does not package or use Device Manager server with Data Capture and Delivery. This information is only for existing infrastructure with Device Manager server.

Preparing for remote deployment of the Device Manager client on a remote Data Capture and Delivery controller

Before you begin

Note: WebSphere Premises Server 6.1.x does not package or use Device Manager server with Data Capture and Delivery. This information is only for existing infrastructure with Device Manager server.

About this task

As described in “Installing the Device Manager client on a remote Data Capture and Delivery controller” on page 63, the deployment of a remote Data Capture and Delivery controller may include installing the Device Manager client code remotely from the Device Manager server. To allow remote deployment of the Device Manager client on a remote Data Capture and Delivery controller, perform the following steps:

1. Ensure the latest version of the `rfid_dms_osgiclient.zip` file is located in the `http_root/htdocs/locale/bundles/DMS` directory.
2. Extract the files directly into the Device Manager server directory.
3. Edit the file `bundlefiles\dms18load.txt`:
 - Comment out the “PREFIX” stanza pointing to the file system.

- Uncomment the stanza that points by means of HTTP to the bundlefiles directory.
- Fill in the correct host name.

For example:

```
// Typically the bundles are in a local directory
//PREFIX file:./bundlefiles/
```

```
// In case the bundles are on an HTTP server - here is an example
PREFIX http://host_name/bundles/DMS/bundlefiles/
```

Installing the Device Manager client on a remote Data Capture and Delivery controller

If you have an existing installation of Device Manager server, you can install the Device Manager client on the Data Capture and Delivery controller.

Note: WebSphere Premises Server 6.1.x does not package or use Device Manager server with Data Capture and Delivery. This information is only for existing infrastructure with Device Manager server.

In order for a remote Data Capture and Delivery controller to be deployed by the Device Manager server, it needs to run an OSGi runtime with the Device Manager client on it. The following steps install the Device Manager client on the OSGi runtime on the remote Data Capture and Delivery controller.

The files you need are contained in the `rfid_dms_oscliclient.zip` file. This file contains JAR files and a sample bundle loader configuration file for the Device Manager client in a directory named `bundlefiles`. In the root directory, the file contains a sample configuration file (`sample_config.ini`), a template for the Device Manager client configuration (`OSGiAgent.properties.template`), and two empty files (`empty.txt` and `empty.xml`) that the bundle loader and Data Capture and Delivery configuration bundle point to in their configuration settings.

You can install the Device Manager client by copying the necessary files to the Data Capture and Delivery controller or by connecting to the Device Manager server.

Installing the Device Manager client from the local machine

In this scenario, you copy necessary files to the Data Capture and Delivery controller. When the OSGi framework starts, the bundle loader installs the Device Manager client bundles with their necessary prerequisites and the Data Capture and Delivery bundles from the `bundlefiles` directory. The bundle loader is referenced by the `osgi.bundles` property in the configuration file.

About this task

Note: WebSphere Premises Server 6.1.x does not package or use Device Manager server with Data Capture and Delivery. This information is only for existing infrastructure with Device Manager server.

1. Copy the `rfid_dms_oscliclient.zip` file to the Data Capture and Delivery controller and extract the contents to the OSGi framework root directory.
2. Copy the applicable contents from the `sample_config.ini` file into your existing `config.ini` file.

For example, copy the initial bundle list and the basic settings. The initial bundle list looks like:

osgi.bundles=bundlefiles/com.ibm.rfid.bundle.loader_version.jar@start

Also, the device manufacturer might provide additional settings in the config.ini file. If this is the case, these settings need to be merged with the contents of the sample_config.ini file.

The following settings are important for a Device Manager server deployment:

Note: Optionally, you can adapt the property `com.ibm.rfid.dms.agenttext.config.manufacturer` to a meaningful value. The device manufacturer field on the Device Manager server contains the correct value.

```
com.ibm.rfid.bundle.list.url= file:./bundlefiles/dms18load.txt
com.ibm.rfid.edge.config.url=file:./empty.xml
com.ibm.rfid.edge.config.autostart=false
com.ibm.rfid.edge.config.interval= 30000
com.ibm.rfid.edge.config.bootstrap=true
com.ibm.rfid.edge.config.bootstrap.overrides=false
#
com.ibm.rfid.dms.agenttext.config.manufacturer=Unknown
com.ibm.rfid.dms.agenttext.config.modelextension=Edge
#the following line should remain commented out unless
#you want to define the DMS device name here
#com.ibm.rfid.dms.agenttext.config.deviceidextension="staticExtension"
#For DMS notification you need to set the OSGi HTTP server port
#If you change this value you need to adapt the notification port
#on the DMS server
org.osgi.service.http.port=8777
```

3. Modify the `OSGiAgent.properties.template` based on your configuration and save the file as `OSGiAgent.properties.bak`. Set the Device Manager server address and device owner (`dmsuser`) user ID and password correctly.

Note: `DevId` and `Mod` parameters are currently not supported.

4. Make sure that all `OSGiAgentTree.bin` files are deleted, including any backup files, such as `OSGiAgentTree.bin.bak`.
5. Make a copy and then rename the `OSGiAgent.properties.bak` to `OSGiAgent.properties`.
6. Start the OSGi framework.
7. Start the `com.ibm.rfid.console.log` bundle in order to see debug log messages.
8. Verify that the Data Capture and Delivery controller can connect to the Device Manager server. Check the HTTP server access log on the Device Manager server.

Results

The Device Manager client should now connect to the Device Manager server.

Installing the Device Manager client from the Device Manager server

In this scenario, you open an HTTP connection to the Device Manager server from the Data Capture and Delivery controller. When the OSGi framework starts, the bundle loader is retrieved from the Device Manager server and installs the Device Manager client bundles with their necessary prerequisites and the Data Capture and Delivery bundles to the Data Capture and Delivery controller using the HTTP connection. The bundle loader is referenced by the `osgi.bundles` property in the configuration file.

About this task

Note: WebSphere Premises Server 6.1.x does not package or use Device Manager server with Data Capture and Delivery. This information is only for existing infrastructure with Device Manager server.

1. Optional: Copy the applicable contents from the `sample_config.ini` file into your existing `config.ini` file.

Tip: This task facilitates a large scale deployment. If you just want to do a quick test on one controller, you can skip this step and use the instructions in step 6 for loading your configuration.

For example, copy the initial bundle list and the basic settings. The initial bundle list looks like:

```
osgi.bundles=bundlefiles/com.ibm.rfid.bundle.loader_version.jar@start
```

Also, the device manufacturer might provide additional settings in the `config.ini` file. If this is the case, these settings need to be merged with the contents of the `sample_config.ini` file.

The following settings are important for a Device Manager server deployment:

```
com.ibm.rfid.bundle.list.url= http://host_name/http_path/dms18load.txt
com.ibm.rfid.edge.config.url=file:./empty.xml
com.ibm.rfid.edge.config.autostart=false
com.ibm.rfid.edge.config.interval= 30000
com.ibm.rfid.edge.config.bootstrap=true
com.ibm.rfid.edge.config.bootstrap.overrides=false
#
com.ibm.rfid.dms.agentext.config.manufacturer=Unknown
com.ibm.rfid.dms.agentext.config.modelextension=Edge
#the following line should remain commented out unless you want
#to define the DMS device name here
#com.ibm.rfid.dms.agentext.config.deviceidextension="staticExtension"
#For DMS notification need to set the OSGi HTTP server port
#If you change this value you need to adapt the notification port
#on the DMSserver
org.osgi.service.http.port=8777
```

2. Modify the `OSGiAgent.properties.template` based on your configuration and save the file as `OSGiAgent.properties.bak`. Set the Device Manager server address and device owner user ID (`dmsuser`) and password correctly.

Note: `DevId` and `Mod` parameters are currently not supported.

3. Make sure that all `OSGiAgentTree.bin` files are deleted, including any backup files, such as `OSGiAgentTree.bin.bak`.
4. Make a copy and then rename the `OSGiAgent.properties.bak` to `OSGiAgent.properties`.
5. Start the OSGi framework.
6. From an `osgi` prompt, install the bundle loader.

Tip: This task facilitates testing on one controller. If you followed the instructions for a large scale deployment in step 1, then you can skip this step.

For example:

```
osgi> install http://host_name/bundles/com.ibm.rfid.bundle.loader_6.0.0.v200703221650.jar
```

7. Start the bundle loader bundle and verify that the Device Manager client bundles are loaded and started correctly.
8. Start the `com.ibm.rfid.console.log` bundle in order to see debug log messages.

Results

The Device Manager client should now connect to the Device Manager server.

Using Device Manager server to change the bundle list URL

Note: WebSphere Premises Server 6.1.x does not package or use Device Manager server with Data Capture and Delivery. This information is only for existing infrastructure with Device Manager server.

If you are using Device Manager server to change the bundle list URL, make sure the following is in your config.ini file:

```
com.ibm.rfid.bundle.loader.bootstrap=true
```

When this property is set to true, the bundle loader copies its relevant system properties into ConfigAdmin so that a Device Manager server job can be submitted later to update the values, including the value for the bundle list URL. When this property is set to false, there is no configuration in ConfigAdmin and Device Manager server is unable to update or create properties. By default the property is set to true.

Creating Data Capture and Delivery configuration jobs

Use the XMLConfig tool to create Data Capture and Delivery configuration jobs.

Note: WebSphere Premises Server 6.1.x does not package or use Device Manager server with Data Capture and Delivery. This information is only for existing infrastructure with Device Manager server.

The XMLConfig tool was installed with WebSphere RFID Premises Server 6.0.x and can be found in the *IBM_RFID_HOME*\premises\tools\dms path. There is an XML directory that contains samples. Replace the values in these samples, as well as in the samples included in this document, with your Device Manager server host name, user ID (for example, dmsuser), and password in order to access the Device Manager server Web Service. Also, specify the device name under which the Data Capture and Delivery controller registers on the Device Manager server.

Use Device Manager commands to interact with the Device Manager server to check job status or create jobs to retrieve the Edge Configuration Node Tree. You can also perform these actions with the Device Manager Application. Run the commands from the following directory:

```
IBM_RFID_HOME\DeviceManager\dmadmccli\bin
```

Refer to the following sample commands (see the Device Manager Help for more details):

- Check jobs and their status for the OSGi device type:

```
dm\lsjob -dc OSGi
```
- Check job progress for an individual device:

```
dm\lsprogress -n device_ID -out PAIR
```
- Retrieve the Edge Configuration (Node Discovery):

```
dmaddjob -dc OSGi -n device_ID -no T -jt SYNCMLDM_WTREE -jp  
TREE_WALKER_TARGET_URI=./OSGi/BundleConfiguration STORE_NODES=yes SEARCH_DEPTH=2
```

After running this command, you can access the Edge Config Admin settings on the Device Manager server using the Device Management Console. Right click on the device and select **View Inventory...** → **Management Tree**.

The initial deployment works with a Data Capture and Delivery controller that has been set up correctly using Device Manager server. After the initial OSGi framework startup, the device registers at the Device Manager server and waits for a Device Manager job to run.

To start the initial deployment of the Data Capture and Delivery software, verify that the Data Capture and Delivery controller registered successfully by listing all devices in the Device Management Console. Then create a Node Discovery job using the command described above and verify the Inventory Management Tree.

Use the XMLConfig tool to create a multistep configuration job. You can use the following XML as a template. Replace *device_ID* with the ID that the Data Capture and Delivery controller enrolls at the Device Manager server.

```
<?xml version="1.0" encoding="UTF-8"?>

<dms-task>
  <server uid="user_ID" passwd="password">
    <url value="http://dms_host_name/dmsserver/servlet/rpcrouter"/>
  </server>

  <job action="replace" type="SYNCMLDM_CMD" deviceClass="OSGi" notification="True"
    deviceName="device_name"> <!--MUST BE EXISTING DEVICE-->
    <param name="1#REPLACE_ITEM_1_TARGET_URI"
value="./OSGi/BundleConfiguration/com.ibm.rfid.bundle.loader/bundleListURL"/>
    <param name="1#REPLACE_ITEM_1_DATA"
value="http://dms_host_name/bundleadmin/GetBundle?name=
http://host_name/bundles/bundlelists/file_name.txt"/>
    <param name="1#REPLACE_CMD_NUMBER" value="1"/>
    <param name="2#REPLACE_ITEM_1_TARGET_URI" value=
".OSGi/BundleConfiguration/com.ibm.rfid.edge.config/com.ibm.rfid.edge.config.url"/>
    <param name="2#REPLACE_ITEM_1_DATA" value=
"http://rfid_host_name:port/ibmrfidadmin/premises.sl?action=
getConfig&edge=device_ID"/>
    <param name="2#REPLACE_CMD_NUMBER" value="2"/>
    <param name="3#REPLACE_ITEM_1_TARGET_URI"
value="./OSGi/BundleConfiguration/com.ibm.rfid.edge.config/
com.ibm.rfid.edge.config.autostart"/>
    <param name="3#REPLACE_ITEM_1_DATA" value="true"/>
    <param name="3#REPLACE_CMD_NUMBER" value="3"/>
  </job>
</dms-task>
```

This sample job configures the bundle loader to retrieve a bundle list file from the Device Manager server using the bundleadmin servlet. It also configures the EdgeConfig bundle to retrieve the EdgeConfig XML file from WebSphere Premises Server. After this job runs successfully, start another node discovery job to verify the deployment results.

Note: If you copy and paste this sample XML into a file, the line breaks are replaced by blanks. Make sure you remove these blanks from your XML file.

Installing the WebSphere Application Server log file adapters

Follow the instructions below to install the WebSphere Application Server log file adapters on WebSphere Premises Server using the Tivoli Enterprise Console.

About this task

The WebSphere Application Server log file adapters enable you to view exceptions that occur on WebSphere Premises Server from the Tivoli Enterprise Console. You must first load the adapters into the Tivoli Enterprise Console, and then distribute them to your premises servers. The adapters then run as services on WebSphere Premises Server, allowing you to view the exceptions from the console.

Note: You must have Tivoli Enterprise Console installed on your Tivoli server and Tivoli endpoints installed on each premises server. For instructions on how to install these products, refer to the product documentation for Tivoli Enterprise Console. Refer to the online help in the Tivoli Enterprise Console for additional information about performing the tasks below.

1. Ensure that the following files exist in the *IBM_RFID_HOME*\monitoring directory:
 - wasjava.cds
 - wasjava.conf
 - wasjava.fmt
 - wasjava.baroc
2. Edit the following properties in wasjava.conf:
 - a. Set the path to the WebSphere Application Server log file that you want to monitor.
 - b. Set the Event Server name.
 - c. Modify the value of the BufEvtPath attribute if the file named is already in use by another adapter.
 - d. Adjust the PollInterval attribute to a suitable value.
3. Open the Tivoli Desktop.
4. Select an existing policy region or create a policy region to contain the profile manager for log file monitoring.
5. Add **ACP** to the selected policy region as a managed resource type.
6. Add **Profile Manager** to the selected region as a managed resource type.
7. Open the policy region and create a new Profile Manager.
8. Open the new Profile Manager and create a new ACP profile
9. Open the new profile for editing and add a **tecad_win** entry.
10. Click the **General** tab of the new entry and select **Identifier**. Then enter a descriptive name in the **Identifier Name** field.
11. Click the **Distribution** tab of the entry and double-click the **C/tecad_win.fmt** entry. You can now edit the entry.
12. Edit the value to reflect the location of the supplied wasjava.fmt file. Click the check mark button to save the changes.
13. Enter tecad_win.cds as the property name, and enter the path to the supplied wasjava.cds file as the property.
14. Click the check mark button to add the property.
15. Add the tecad_win.conf file using the supplied wasjava.conf file.
16. Click **Save & Close** to save the entry.
17. Set the subscribers for the profile manager to include the WebSphere Premises Server from which you want to monitor the WebSphere Application Server.
18. Import the supplied wasjava.baroc file.

19. After importing the new classes, compile the Rule Base and load it into the Event Server.
20. Distribute the profile to WebSphere Premises Server. After distribution, a new service should be listed in the Windows Services Manager, with an ID equal to the Identifier Name given to the ACP entry.

What to do next

Now, the log file adapter should be monitoring the log file entered into the wasjava.conf file. Exceptions logged to the WebSphere Application Server log file are changed to an instance of the Was_Java_Exception class and sent to the Tivoli Enterprise Console Event Server.

Installing the edge controller heartbeat log file adapters

Follow these instructions to install the edge controller heartbeat log file adapters on one or more WebSphere Premises Server using the Tivoli Enterprise Console.

About this task

The edge controller heartbeat log file adapters enable you to view the status of edge controllers and tag readers from the Tivoli Enterprise Console. You must first load the adapters into the Tivoli Enterprise Console, and then distribute them to your Premises servers. The adapters then run as services on WebSphere Premises Server, allowing you to view the exceptions from the console.

Note: You must have Tivoli Enterprise Console installed on your Tivoli server and Tivoli endpoints installed on each premises machine. For instructions on how to install these products, refer to the product documentation for Tivoli Enterprise Console. Refer to the online help in the Tivoli Enterprise Console for additional information about performing the tasks below.

1. Ensure that the following files exist in the *IBM_RFID_HOME*\monitoring directory:
 - tecad_win.cds
 - tecad_win.conf
 - tecad_win.fmt
 - premises.baroc
2. Edit the following properties in tecad_win.conf:
 - a. Set the path to the edge-heartbeats.log file that you want to monitor.
 - b. Set the Event Server name.
 - c. Modify the value of the BufEvtPath attribute if the file named is already in use by another adapter.
 - d. Adjust the PollInterval attribute to a suitable value.
3. Open the Tivoli Desktop.
4. Select an existing policy region or create a policy region to contain the profile manager for log file monitoring.
5. Add **ACP** to the selected policy region as a managed resource type.
6. Add **Profile Manager** to the selected region as a managed resource type.
7. Open the policy region and create a new Profile Manager.
8. Open the new Profile Manager and create a new ACP profile
9. Open the new profile for editing and add a **tecad_win** entry.

10. Click the **General** tab of the new entry and select **Identifier**. Then enter a descriptive name in the **Identifier Name** field.
11. Click the **Distribution** tab of the entry and double-click the **C/tecad_win.fmt** entry. You can now edit the entry.
12. Edit the value to reflect the location of the supplied tecad_win.fmt file. Click the check mark button to save the changes.
13. Enter tecad_win.cds as the property name, and enter the path to the supplied tecad_win.cds file as the property.
14. Click the check mark button to add the property.
15. Add the tecad_win.conf file using the supplied tecad_win.conf file.
16. Click **Save & Close** to save the entry.
17. Set the subscribers for the profile manager to include the WebSphere Premises Server from which you want to monitor the edge-heartbeats.log file.
18. Import the supplied premises.baroc file to load the necessary classes into the Tivoli Enterprise Console Event Server.
19. After importing the new classes, compile the Rule Base and load it into the Event Server.
20. Distribute the profile to WebSphere Premises Server. After distribution, a new service should be listed in the Windows Services Manager, with an ID equal to the Identifier Name given to the ACP entry.

What to do next

At this point, the log file adapter should be monitoring the log file entered into the tecad_win.conf file. Exceptions logged to the WebSphere Application Server log file will change to an instance of the Was_Java_Exception class and be sent to the Tivoli Enterprise Console Event Server.

Configuring security for WebSphere Application Server

Use scripts provided to enable or disable security for WebSphere Application Server with WebSphere Premises Server or Location Awareness Services for WebSphere Premises Server.

Enabling security

Scripts are provided to enable WebSphere Application Server security for WebSphere Premises Server and for Location Awareness Services for WebSphere Premises Server. You can also use these scripts to disable security at a later time.

The following are a few key concepts that you should understand about WebSphere Application Server security for WebSphere Premises Server and for Location Awareness Services for WebSphere Premises Server:

- A WebSphere Application Server administrative user has administrative access to the WebSphere Application Server administrative console. There can be more than one user who is a WebSphere Application Server administrative user. See *Authorizing access to administrative roles in the WebSphere Application Server Information Center* for more information.
- You must create an administrative operating system user for WebSphere Premises Server. The WebSphere Premises Server administrative user either has the user name, `ibmrfidadmin`, or is another user name in the `ibmrfid` group. The WebSphere Premises Server administrative user has administrative rights to the

WebSphere Premises Server Administrative Console. This user can also be a WebSphere Application Server administrative user, if you decide to set up your users and authorization in that way.

- Location Awareness Services for WebSphere Premises Server needs a WebSphere Application Server administrative user when you enable security, but this user does not have to be the same WebSphere Application Server administrative user that WebSphere Premises Server uses.
- “Enabling security for WebSphere Premises Server”
- “Enabling security for Location Awareness Services for WebSphere Premises Server” on page 72

Enabling security for WebSphere Premises Server Before you begin

The `ws_security` script enables WebSphere Application Server security. Before running the `ws_security` script, ensure the following:

- A local user exists
- Or a local user group exists and has users in it

You will set a local user as the WebSphere Application Server administrative user so that after WebSphere Application Server security is enabled, you can sign on to the WebSphere Application Server administrative console as an administrator. If you want your WebSphere Application Server administrative user to have administrator access to the WebSphere Premises Server Administrative Console as well, then that user must be in the `ibmrfid` group.

1. Navigate to the security directory:

```
Windows IBM_RFID_HOME\premises\install\security\  
Linux IBM_RFID_HOME/premises/install/security/
```

2. Run the following command:

```
ws_security enable userid password
```

- *userid* = Local OS user ID

This is the user ID of the WebSphere Application Server administrator. This user must be `ibmrfidadmin` or must belong to the group called `ibmrfid` if you want the user to have administrative access to the WebSphere Premises Server Administrative Console. The WebSphere Application Server administrator ID cannot be the same as the name of your server because the repository sometimes returns server-specific information when querying a user of the same name. For more information, refer to the Local operating system settings topic in the WebSphere Application Server Information Center.

If you have installed Location Awareness Services for WebSphere Premises Server, a WebSphere Application Server administrative user ID also has to be set in `atlas.config.bat` file under `WASADMIN`.

- *password* = Local OS password.

This is the password of the WebSphere Application Server administrator.

If you have installed Location Awareness Services for WebSphere Premises Server, a WebSphere Application Server administrative password also has to be set in `atlas.config.bat` file under `WASPSWD`.

Enabling security for Location Awareness Services for WebSphere Premises Server

Complete the following steps to configure security for WebSphere Application Server when you have Location Awareness Services for WebSphere Premises Server installed. Enabling security in WebSphere Application Server provides security for the Spatial Management Client and portlets.

About this task

Note: You should not perform the steps if Location Awareness Services for WebSphere Premises Server is not installed.

1. If you have not already done so, follow the steps to run the `ws_security` script and enable security for WebSphere Application Server.
2. Navigate to the root installation directory of Location Awareness Services for WebSphere Premises Server (such as, `C:\LAS`).
3. Edit the `atlas.config.bat` file and define the values for `WASADMIN` and `WASPSWD`.

The script expects that WebSphere Application Server security is already enabled. The values for `WASADMIN` and `WASPSWD` should reflect the WebSphere Application Server administrative user ID and password, respectively. These values can match the user ID and password that you used previously with the `ws_security` script, or they can match the ID and password for another WebSphere Application Server administrative user that you have set.

4. Open a command prompt and change to the `LAS_HOME\WAS\scripts` directory.
5. Run the `ATLASWAS_SecurityConfig.bat` file by typing `ATLASWAS_SecurityConfig` at the command-line prompt.

The script completes the following actions:

- Creates the following groups on the operating system: `lassmadminstergpr`, `lasmonitorgrp`, `lasoperategrp`, `lasadminstergpr`, `laslocategrp`, `lasregistrategrp`, `lasconfiguregrp`, and `lascustomizegrp`.
 - Creates the user `lasoveradmin` with password `lasoveradmin`. This superuser can run Location Awareness Services for WebSphere Premises Server functions in the WebSphere Application Server administrative console. Use the `lasoveradmin` superuser for testing or proof-of-concept environments only. The `lasoveradmin` user should not be used in production environments.
 - Applies security settings.
6. Configure security for AtlasBus. Complete these steps to ensure that you can import data into Location Awareness Services for WebSphere Premises Server.
 - a. Open the WebSphere Application Server administrative console and log in with your WebSphere Application Server administrative user ID and password.
 - b. Select **Security** → **Secure administration, applications and infrastructure** → **Java Authentication and Authorization Service** → **J2C Authentication Data**.
 - c. From the list select **AtlasMEAuthentication** and specify your WebSphere Application Server administrative user ID and password.
 - d. Click **OK** and save your change.
 - e. Navigate to **Security** → **Bus Security** → **AtlasBus**.
 - f. Select **Security** under **Additional Properties**.

- g. Check **Enable bus security** and select **AtlasMEAuthentication** as the inter-engine authentication alias.
 - h. For **Permitted transports**, choose the radio button to **Restrict the use of defined transport channel chains to those protected by SSL**.
 - i. Click **Apply**.
 - j. Under **Additional Properties**, click **Users and groups in the bus connector role**.
 - k. If there is no entry for the user, click **New** → **User name**, enter your WebSphere Application Server administrative user ID for AtlasMEAuthentication in the text field and click **OK**.
 - l. Navigate to **Resources** → **JMS** → **Queue connection factories** → **AtlasImportQueueConnectionFactory**.
 - m. Under **Advanced Administrative**, select **AtlasMEAuthentication** as the **Component-managed authentication alias**.
 - n. Save your changes.
 - o. Navigate to **Applications** → **Enterprise Applications** → **AtlasImportEAR**.
 - p. Under **References**, click **Resource References** and perform the following steps:
 - Under **Specify authentication method**, select **Use default method (many-to-one mapping)** and then select **AtlasMEAuthentication** as the authentication data entry.
 - In the table at the bottom of the page, select **jms/AtlasImportConnectionFactory** as the **Target Resource JNDI Name**.
 - Also in the table, check **AtlasImportEJB** and then click **Apply**.

In the right hand column of the table for AtlasImportEJB, AtlasMEAuthentication should be listed as the authentication method.
 - q. Click **OK**.
 - r. Navigate to **Resources** → **JMS** → **Activation specifications** → **AtlasCeisubscribeAS** and select **AtlasMEAuthentication** as the authentication alias.
 - s. Click **OK**.
 - t. Save the configuration.
7. Navigate to **Users and Groups** → **Administrative Group Roles**.
 8. Assign the following roles to the following groups:

| Role | Group |
|---------------|------------------|
| lasadminister | lasadministergrp |
| laslocate | laslocategrp |
| lasregistrate | lasregistrategrp |
| lasmonitor | lasmonitorgrp |
| lasoperate | lasoperategrp |
| lasconfigure | lasconfiguregrp |
| lascustomize | lascustomizegrp |

For each group, complete the following steps:

- a. If the group is listed on the Administrative Group Roles page, click the group name and then assign one or multiple roles.
- b. Click **Apply** to save your changes.

- c. If the group is not listed on the Administrative Group Roles page, click **Add** to add the group. Then assign one or multiple roles to the group.
 - d. Click **Apply** to save your changes.
 - e. Verify the correct roles are now assigned on the Administrative Group Roles page.
9. Navigate to **Security** → **Secure administration, applications, and infrastructure**.
 10. Make sure that the following parameters are set:
 - **Enable administrative security** is selected.
 - **Enable application security** is selected.
 - **Use Java 2 security to restrict application access to local resources** is *not* selected.
 - **Current realm definition** is set to **Local operating system**.
 - **Available realm definitions** is set to **Local operating system**. Then click **Configure** and set **Primary administrative user name** to the WebSphere Application Server administrative user name and click **Automatically generated server identity**.
 11. Save your settings and restart WebSphere Application Server. You might need to enter the WebSphere Application Server user ID and password.
 12. Edit the `LAS_HOME\AtlasIntegrator\Data_Export.properties` file to specify the real host name of your server instead of localhost.
 13. Verify that security is running by logging into the WebSphere Application Server administrative console. If security is enabled, you are prompted for your WebSphere Application Server user ID and password. A random user ID is no longer accepted.

What to do next

Follow the steps in “Configuring security for the Control Processing portlet” on page 78.

Disabling security

Use the instructions in this topic if you have enabled WebSphere Application Server security for WebSphere Premises Server or for Location Awareness Services for WebSphere Premises Server and would like to disable it.

Since WebSphere Premises Server and Location Awareness Services for WebSphere Premises Server share the same WebSphere Application Server administrative console, if you disable security for WebSphere Premises Server, then security is also disabled for Location Awareness Services for WebSphere Premises Server. Be sure to follow the instructions in “Disabling security for WebSphere Premises Server and Location Awareness Services for WebSphere Premises Server” on page 75 to properly disable security when you have both software packages installed.

- “Disabling security when only WebSphere Premises Server is installed” on page 75
- “Disabling security for WebSphere Premises Server and Location Awareness Services for WebSphere Premises Server” on page 75

Disabling security when only WebSphere Premises Server is installed

Before you begin

These instructions are for disabling WebSphere Application Server security when you have only WebSphere Premises Server installed. If you have both WebSphere Premises Server and Location Awareness Services for WebSphere Premises Server installed, follow the instructions in “Disabling security for WebSphere Premises Server and Location Awareness Services for WebSphere Premises Server.”

1. Navigate to the security directory for WebSphere Premises Server:

```
Windows IBM_RFID_HOME\premises\install\security\  
Linux IBM_RFID_HOME/premises/install/security/
```

2. Run the following command:

```
ws_security disable userid password
```

- *userid* = Local OS user ID. This is the user ID of the WebSphere Application Server administrator.
- *password* = Local OS password. This is the password of the WebSphere Application Server administrator.

Disabling security for WebSphere Premises Server and Location Awareness Services for WebSphere Premises Server

If you have installed Location Awareness Services for WebSphere Premises Server, complete the following steps to disable security for AtlasBus. Completing these steps ensures that you can import data into Location Awareness Services for WebSphere Premises Server after turning off security.

1. Open the WebSphere Application Server administrative console and log in with your WebSphere Application Server administrative user ID and password.
2. Select **Security** → **Bus Security** → **AtlasBus**.
3. Under **Additional Properties** select **Security**.
4. Clear the check box beside **Enable bus security**.
5. Choose to enable all transport chains. This step enables AtlasIntegrator to connect to the AtlasBus on a non-secure port.
6. Click **OK**.
7. Save the configuration.
8. Navigate to the security directory for WebSphere Premises Server:

```
Windows IBM_RFID_HOME\premises\install\security\  
Linux IBM_RFID_HOME/premises/install/security/
```

9. Run the following command:

```
ws_security disable userid password
```

- *userid* = Local OS user ID. This is the user ID of the WebSphere Application Server administrator.
- *password* = Local OS password. This is the password of the WebSphere Application Server administrator.

Configuring Location Awareness Services for WebSphere Premises Server

These topics describe how to configure Location Awareness Services for WebSphere Premises Server.

Configuring the database

Use this topic to modify the database for Location Awareness Services for WebSphere Premises Server.

Manually importing the sample data

This topic describes how to manually import the sample data if you did not choose to import it during installation.

Importing sample data for S-1 group languages:

About this task

If your language is in the S-1 group, complete the following steps to predefine sample values.

1. Change directory to the `LAS_HOME\DB2\sampleData` directory.

If your DB2 server is remote, copy the DB2 directory to the database server and complete these instructions on that server.

2. Run this command, where `%DB2ADMIN%` is your DB2 administrative user ID and `%DB2PSWD%` is the corresponding password:

```
db2cmd /c /w /i ATLASDB_SampleDataImport.bat %DB2ADMIN% %DB2PSWD%
```

Importing sample data for languages not in the S-1 group:

About this task

If your language is not in the S-1 group, complete the following steps to predefine sample values.

1. Navigate to the `LAS_HOME\DB2` directory.
2. Verify that your DB2 user ID and password settings are correct in the `SetUser.bat` file.

3. Change directory to the `LAS_HOME\DB2\sampleData` directory.

If your DB2 server is remote, copy the DB2 directory to the database server and complete these instructions on that server.

4. Run this command:

```
db2cmd /c /w /i ATLASDB_IMPORT_S2D.bat
```

Installing the Spatial Management Client

This topic contains the steps for installing the Spatial Management Client.

Before you begin

Make sure that you installed the prerequisites for the Spatial Management Client. See "Hardware and software requirements" on page 3.

1. Make sure you installed Adobe SVG viewer on the system where you will run the user interface. You can download the Adobe SVG viewer from <http://www.adobe.com/svg/viewer/install/main.html>.
2. Make sure your browser is configured to run Active X plug-ins:
 - a. Open your browser.
 - b. Select **Tools** → **Internet Options**.
 - c. On the **Security** tab, select **Internet** and click **Custom Level**.
 - d. Select the zone where WebSphere Application Server and IBM HTTP Server are running. Make sure that both domains match the same zone.
 - e. Make sure the following settings are correct and click **OK**:

- **ActiveX controls and plug-ins:**
 - Click **Enable** for **Automatic prompting for ActiveX controls**.
 - Click **Enable** for **Binary and script behaviors**.
 - Click **Prompt** for **Download signed ActiveX controls**.
 - Click **Disable** for **Download unsigned ActiveX controls**.
 - Click **Disable** for **Initialize and script ActiveX controls not marked as safe**.
 - Click **Enable** for **Run ActiveX controls and plug-ins**.
 - Click **Enable** for **Script ActiveX controls marked safe for scripting**.
 - **Downloads:**
 - Click **Enable** for **Automatic prompting for file downloads**.
 - Click **Enable** for **File download**.
 - Click **Enable** for **Font download**.
 - **Miscellaneous:**
 - Click **Enable** for **Access data sources across domains**.
 - Click **Enable** for **Allow META REFRESH**.
 - Click **Disable** for **Allow scripting of Internet Explorer Web browser control**.
 - Click **Disable** for **Allow script-initiated windows without size or position constraints**.
 - Click **Prompt** for **Allow Web pages to use restricted protocols for active**.
 - Click **Prompt** for **Display mixed content**.
 - Click **Disable** for **Don't prompt for client certificate selection when no certificates or only one certificate exists**.
 - Click **Enable** for **Drag and drop or copy and paste files**.
 - Click **Prompt** for **Installation of desktop items**.
 - Click **Prompt** for **Launching applications and unsafe files**.
 - Click **Prompt** for **Launching programs and files in an IFRAME**.
 - Click **Enable** for **Navigate sub-frames across different domains**.
 - Click **Enable** for **Open files based on content, not file extension**.
 - Click **Medium safety** for **Software channel permissions**.
 - Click **Enable** for **Submit nonencrypted form data**.
 - Click **Disable** for **Use Pop-up Blocker**.
 - Click **Enable** for **Userdata persistence**.
 - Click **Enable** for **Web sites in less privileged web content zone can navigate into this zone**.
 - **Scripting:**
 - Click **Enable** for **Active scripting**.
 - Click **Enable** for **Allow past operations via script**.
 - Click **Enable** for **Scripting of Java applets**.
 - **User Authentication:**
 - Click **Automatic logon only in Intranet zone** for **Logon**.
3. Open the *IHS_HOME*\htdocs\en_us\Tracking GUI\xml\prefsV3.xml file and make sure that you have replaced localhost with the IP address or fully qualified host name of your server in the <host> element.

Remember: The value you specify for the <host> element and the value you use to browse to the Spatial Management Client must be identical.

4. Open `http://host_name_or_IP_address/Tracking GUI/AtlasPrefsAdmin.html` and verify that your preferences are set correctly:

- **Host** - Enter the IP address or fully qualified host name of your Location Awareness Services for WebSphere Premises Server server.
- **Port** - Enter the port number that WebSphere Application Server listens on.
- **remoteLogPath** - The full path name to the logs directory on the IBM HTTP Server. The Spatial Management Client logs to this directory. For example, `C:\IBMHTTPServer\htdocs\en_US\Tracking GUI`.
- **Poll interval:** Enter a value to indicate the rate in milliseconds that tag data is requested from the server.

Note: Changing this value does not affect the frequency at which a tracked item's position is reported to the system. It only affects the frequency with which the GUI is updated.

- Click **Save Installation Changes** to save your changes to the preferences. These preference settings will apply each time the user logs in to the Spatial Management Client.

5. Open the Spatial Management Client using one of the following URLs:

- `http://host_name_or_IP_address/Tracking GUI/AtlasAdmin.html` (administration version)
- `http://host_name_or_IP_address/Tracking GUI/AtlasMonitor.html`

Note: The variable `host_name_or_IP_address` indicates the fully qualified host name or IP address of the machine on which IBM HTTP Server is installed, which is also the Location Awareness Services for WebSphere Premises Server server. The default port number is 80; however, if a different port number is used, you must specify the new port number (`host_name_or_IP_address:port_number`).

For more information about the Spatial Management Client, see the topics on starting the Spatial Management Client.

6. Ensure that application `db2AssetMgmtEAR` has been installed and is started in your WebSphere Application Server.

Configuring security for the Control Processing portlet

Complete these steps to enable security for the Control Processing portlet.

Before you begin

Important: You must enable security for WebSphere Application Server before completing these steps.

About this task

Each time a new user logs into the WebSphere Application Server administrative console to use Location Awareness Services for WebSphere Premises Server, they must perform the following step in the Control Processing portlet.

The user must be a member of the `lasoperategrp` or an equivalent group for these steps to work.

1. Open the WebSphere Application Server administrative console and navigate to **Topology** → **Event Provider**.
2. Select your event provider and click **Edit**.
3. Set the **Related App Server ID** to your IP address.
4. Navigate to **Control Processing**.
5. Click **Refresh List**.
6. Click **Edit** (the wrench icon) in the upper right corner.
7. Enter the user name and password of the current user.
8. Click **Save**.

Using the sample subscriber and notification programs

This topic describes how to use the two sample subscriber programs that are shipped with Location Awareness Services for WebSphere Premises Server: sample mail service program and sample alert events subscriber program.

About this task

The sample subscriber and notification programs are referenced in the sample data and can be used to verify your installation. If you do not want to use them, you can deactivate them.

1. In the `http_root\htdocs\en_us\wsdl\EmailHandler.wsdl` file, make sure that the `host_name: portnumber` key value pair reflects the real WC_defaulthost port. The sample includes 9080 as the port number.
2. In the Mail Server portlet, configure your mail server:
 - a. Open the WebSphere Application Server administrative console and click **Rules/Alerts** → **Mail Server**.
 - b. On the Mail Host Configuration page, click **Add**.
 - c. In **Host Address**, enter the IP address or fully qualified host name of your mail server.
 - d. In **Port**, enter the port number.
 - e. In **Default Sender**, enter your e-mail address.
 - f. In **Default Subject**, enter a default subject line to send with the notification.
 - g. Click **Save** to save your settings.
3. In the Mail Receiver portlet, specify receiver information for users who should receive notification of specific events:

Note: Times are relative to times on the database server. The machines that host the database server and WebSphere Application Server must be set to the same time zone.

- a. Open the WebSphere Application Server administrative console and click **Rules/Alerts** → **Mail Receiver**.
- b. Click **Add New Mail Receiver**.
- c. In **Receiver Name**, enter the name of a receiver.
- d. In **Receiver Address**, enter the e-mail address of a receiver.
- e. In **Week Days**, select the days of the week when the receiver should be notified of events.
- f. In **Start Time**, enter the time when the receiver should start receiving notification each day.

- g. In **End Time**, enter the time when the receiver should stop receiving notification each day.
- h. In **Alert Types**, select the type of alerts that the receiver should be notified about.
- i. In **Mail Host**, select the mail server to associate with the receiver.
- j. Click **Save** to save your settings.

Deactivate the sample programs

About this task

If you do not want to use the sample programs, perform the following steps:

1. In the Notification Channels portlet, remove the channels related to the programs that you want to deactivate:
 - a. Open the WebSphere Application Server administrative console and click **Rules/Alerts** → **Notification Channels**.
 - b. Select the check box next to the sample programs to remove and then click **Delete Selected**.
2. In the Notification Program Manager portlet, remove the entries for the programs that you want to deactivate:
 - a. Open the WebSphere Application Server administrative console and click **Rules/Alerts** → **Notification Programs**.
 - b. Select the check box next to the sample programs to remove and then click **Delete Selected**.

Verifying your installation

This topic explains how to verify your installation by verifying the Spatial Management Client and the subscriber programs.

Verifying the Spatial Management Client

This topic provides steps for verifying the Spatial Management Client installation.

Before you begin

Before verifying the Spatial Management Client installation, make sure you have performed the following tasks:

- Installed the Spatial Management Client and set your preferences in the Preferences Administration GUI. See step 3 on page 77 in “Installing the Spatial Management Client” on page 76.
 - Adapted the hub data to the needs of the application and pointed to the correct server IP address and event provider hubs or controllers.
1. Follow the steps in “Configuring security for the Control Processing portlet” on page 78.
 2. In the Control Processing portlet, start the tag processing servlet:
 - a. Open the WebSphere Application Server administrative console and click **Control Processing**.
 - b. Select the WebSphere Application Server that is related to your installation and click **Start Selected**.
 3. Start the Spatial Management Client by opening the following URL: [http://fully_qualified_host_name/Tracking GUI/AtlasMonitor.html](http://fully_qualified_host_name/Tracking%20GUI/AtlasMonitor.html), where *fully_qualified_host_name* is the fully qualified host name of the system where you installed IBM HTTP Server and the Spatial Management Client.

4. Define your preferences in the Location Awareness Services for WebSphere Premises Server Preferences Administration GUI. Start the GUI by opening the following URL: `http://fully_qualified_host_name/Tracking GUI/AtlasPrefsAdmin.html`. See Preferences Administration GUI for more information.

Note: It is only necessary to define your preferences once per installation and user.

5. Under **ZONES**, select **All** from the **Visible** drop-down menu to see all defined zones. The location entitled **Matrix** has been predefined in the database and you should see three sample zones for this location.
6. Under **ALERTS**, select **Yes** from the **Hide** drop-down menu to hide all alerts or select **No** to view all alerts.
7. Start the hub simulator:
`location_of_hub_simulator\HubSim.bat`
The variable `location_of_hub_simulator` indicates the directory where the hub simulator is located. It must be a subdirectory of the directory in which `atlas.config.bat` file is located. For example, `C:\LAS\HubSimulator`.
8. View the simulated resources and events.

Tip: If a tag icon is red, click the icon to see tag and alert details. Click **Acknowledge** to acknowledge the alert and the icon is no longer red. If you click the tag a second time to see details, the alert information for the tag is no longer visible.

Verifying the subscriber programs

This topic describes how to verify the subscriber programs.

Before you begin

Before verifying the subscriber programs, make sure you have performed the following tasks:

- Verified the Spatial Management Client successfully. See “Verifying the Spatial Management Client” on page 80.
- Installed the subscriber and sample notification programs and configured the mail server and receivers. See “Using the sample subscriber and notification programs” on page 79.
- When tag 00000007 enters the myAlarm zone in the Matrix area, an alarm is generated.

About this task

Verify the following:

- An e-mail is sent to the receiver you defined.
- A line is written in the `sampleArchive.txt` and `sampleProtocol.txt` files.

Uninstalling the product

Use the following topics to uninstall the product.

Uninstalling WebSphere Premises Server

This task describes how to uninstall WebSphere Premises Server and its related products and components.

About this task

The uninstaller file for WebSphere Premises Server removes the WebSphere Application Server code relative to WebSphere Premises Server, such as Enterprise Java Beans (EJBs), servlets, and Java Server Pages (JSPs). It also removes the WebSphere MQ code relative to WebSphere Premises Server, including queues and queue managers. It does not remove the WebSphere Premises Server database, but it does change the WebSphere Application Server configuration and settings for the WebSphere Premises Server applications.

Remember: To perform this task using a Linux operating system, log in as a root user.

You need to uninstall the products in the reverse order of their installation:

1. WebSphere Premises Server
2. IBM HTTP Server
3. WebSphere Application Server Network Deployment
4. WebSphere MQ
5. DB2 for Linux, UNIX, and Windows systems, if you chose to install the database
6. Location Awareness Services for WebSphere Premises Server, if you chose to install this component

If you are uninstalling Sensor Data Services for WebSphere Premises Server, follow the steps to uninstall WebSphere Premises Server (steps 1 through 4).

1. Ensure that WebSphere Application Server and WebSphere MQ are running, and that the Data Transformation service is not running.
2. Start the uninstallation wizard, and follow the instructions on the panels.
 -  `IBM_RFID_HOME_uninst\uninstaller.exe`
You can also use one of the following options:
 - Click **Start** → **All Programs** → **IBM WebSphere Premises Server** → **Premises Server *version*** and click the **Uninstall** icon.
 - Use the **Add or Remove Programs** application on Windows by clicking **Start** → **Control Panel** → **Add or Remove Programs**.
 -  `IBM_RFID_HOME/_uninst/uninstaller.bin`
3. A summary panel displays your uninstallation selections. Click **Uninstall** to continue the uninstallation process.
4. When the uninstallation is complete, another summary panel displays the uninstallation status. Click **Finish** to exit the uninstaller wizard.
5. Uninstall IBM HTTP Server.
6. Uninstall WebSphere Application Server Network Deployment.
7. Uninstall WebSphere MQ for Windows or Linux systems.
8. Uninstall DB2 for Linux, UNIX, and Windows for Windows or Linux systems.
9. If you installed Location Awareness Services for WebSphere Premises Server, remove its installation directory and the IBM HTTP Server `htdocs\en_us\Tracking GUI` directory.

Uninstalling a high availability system

This task describes how to uninstall your high availability WebSphere Premises Server system.

About this task

The high availability uninstaller restores your topology to a single WebSphere Premises Server.

Note: The information in this topic only applies to the version of WebSphere Premises Server that is available with a Central Site Server license.

1. If you have WebSphere Application Server security enabled, disable it. The uninstaller cannot run properly with security enabled.
2. Restart the deployment manager, all node agents, and all servers.
3. Start the uninstallation wizard, and follow the instructions on the panels.
 -  `IBM_RFID_HOME\HA_uninst\uninstaller.exe`
 -  `IBM_RFID_HOME/HA/_uninst/uninstaller.bin`
4. A summary panel displays your uninstallation selections. Click **Uninstall** to continue the uninstallation process.
5. When the uninstallation is complete, another summary panel displays the uninstallation status. Click **Finish** to exit the uninstaller wizard.
6. To remove your single WebSphere Premises Server, following the instructions in “Uninstalling WebSphere Premises Server” on page 81.

Uninstalling the toolkits

Use the topics below to uninstall the toolkits.

Uninstalling the WebSphere Premises Server Toolkit

This task describes how to uninstall the WebSphere Premises Server Toolkit.

1. Start Rational Application Developer for WebSphere Software.
2. Navigate to **Help** → **Software Updates** → **Manage Configuration**.
3. Expand **Rational Application Developer** in the left navigation pane.
4. Select **IBM WebSphere Premises Server Toolkit Feature** and then click **Uninstall** from the menu.
5. When prompted, click **OK** to restart Rational Application Developer for WebSphere Software.

What to do next

To uninstall any of the Rational Application Developer for WebSphere Software features, follow the instructions in the product documentation:

- Rational Application Developer for WebSphere Software v7.0.0.3 Information Center

Uninstalling the IBM Data Capture and Delivery Toolkit for WebSphere Premises Server

This task describes how to uninstall IBM Data Capture and Delivery Toolkit for WebSphere Premises Server.

1. Start Eclipse.
2. Navigate to **Help** → **Software Updates** → **Manage Configuration**.
3. Expand the tree in the left navigation pane. Right click **IBM Data Capture and Delivery Toolkit *version*** and click **Uninstall**.
4. Restart Eclipse.

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Premises Server
WebSphere Premises Server Installation Guide
Version 6.1.0

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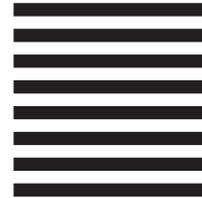
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