

IBM InfoSphere Optim  
Version 9 Release 1

*Installing and configuring IBM  
InfoSphere Optim solution components*





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**Note**

Before using this information and the product it supports, read the information in "Notices" on page 41.

**Version 9 Release 1**

This edition applies to version 9, release 1, modification 0 of IBM InfoSphere Optim solution components and to all subsequent releases and modifications until otherwise indicated in new editions.

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## About this publication

This document describes how to install and configure IBM® InfoSphere® Optim™ solution components.



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## Chapter 1. InfoSphere Optim solution components

Use IBM InfoSphere Optim solution components to develop, configure, and run InfoSphere Optim services.

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### InfoSphere Optim Designer

IBM InfoSphere Optim Designer is an Eclipse-based development environment that can be used to develop and test data management services. InfoSphere Optim Designer is also known as the *designer*.

The designer can be installed only on Microsoft Windows workstations.

The designer must be installed with IBM InfoSphere Optim Runtime Services to work. The designer can be installed with IBM InfoSphere Data Architect in a "shell sharing" configuration, but the designer does not require InfoSphere Data Architect.

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### InfoSphere Optim Manager

IBM InfoSphere Optim Manager is a web application that you can use to configure, manage, run, and monitor data management services. InfoSphere Optim Manager is also known as the *manager*.

You can access and use the manager to run services from the designer.

The manager can also be deployed to a Java™ EE-compliant application server so that users do not need to install the designer to test and run services. InfoSphere Optim components are delivered with a version of WebSphere® Application Server Community Edition that you can use for the connection manager and the manager. You do not need to deploy the manager to an application server to use the manager from the designer.

InfoSphere Optim Manager is installed by IBM Installation Manager as part of the IBM InfoSphere Optim Web Applications package.

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### InfoSphere Optim Runtime Services

IBM InfoSphere Optim Runtime Services is the component that contains the server and the **pr0cmd** command-line interface. When installed on a Microsoft Windows computer, InfoSphere Optim Runtime Services also contains an alternative interface that can be used to develop and run services. InfoSphere Optim Runtime Services is also known as *runtime services*.

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#### Server

The *server* is the component that processes service requests. The server receives service requests, reads data from data sources, and writes data to data sources according to the instructions found in each service request.

The server is part of IBM InfoSphere Optim Runtime Services. For fast performance, install InfoSphere Optim Runtime Services on a computer that is near to the data sources that you are processing.

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#### Optim Service Interface

Optim Service Interface is a web application that can be used by other applications to run, monitor, and manage services. Optim Service Interface is also known as the *service interface*.

The service interface accepts HTTP requests and XML request payloads where applicable. The service interface processes the request and returns an HTTP response code and output document where applicable.

Optim Service Interface is installed by IBM Installation Manager as part of the IBM InfoSphere Optim Web Applications package.

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## InfoSphere Optim Connection Manager

IBM InfoSphere Optim Connection Manager is a web application that stores Optim directory connection information for InfoSphere Optim components. InfoSphere Optim Connection Manager is also known as the *connection manager*.

The connection manager can be deployed to a Java EE-compliant application server. InfoSphere Optim components are delivered with a version of WebSphere Application Server Community Edition that you can use for the connection manager and the manager.

InfoSphere Optim Connection Manager is installed by IBM Installation Manager as part of the IBM InfoSphere Optim Web Applications package.

## How services are run by using the manager and other components

Components must work together to complete a service request successfully.

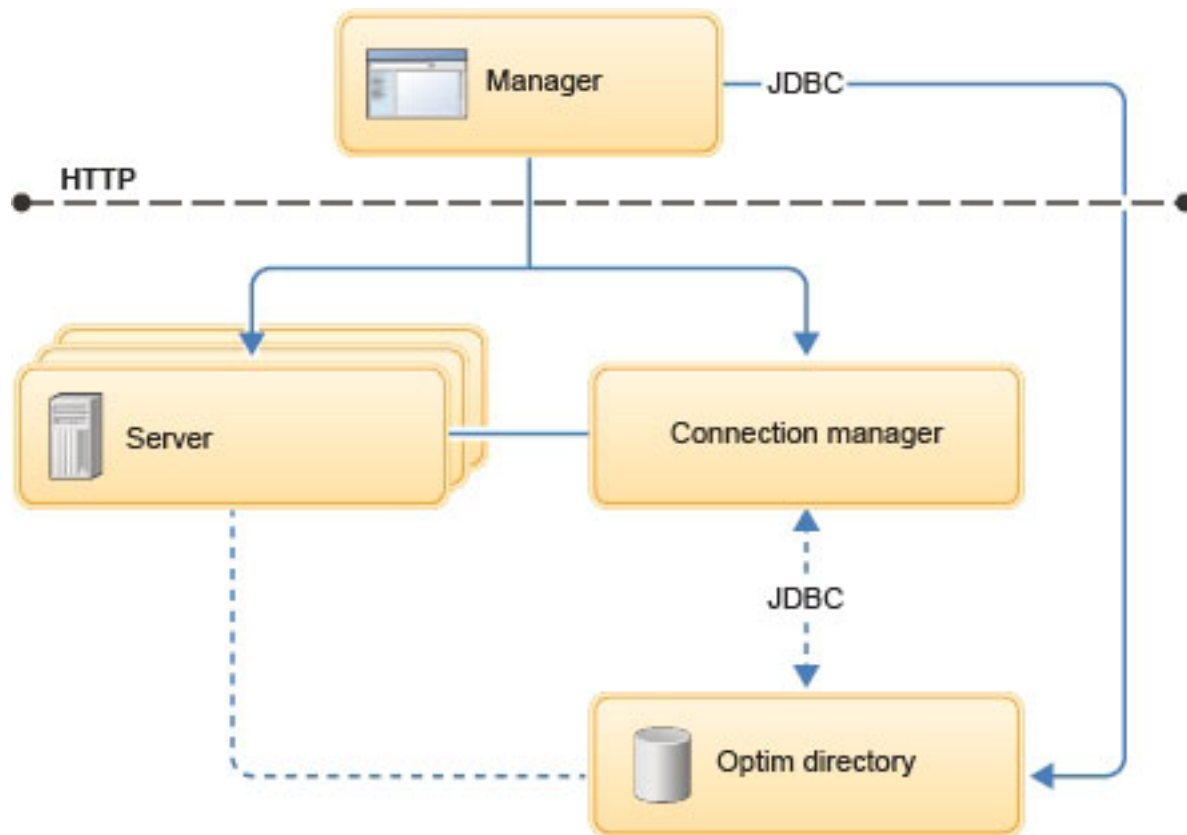


Figure 1. Components running a service

The diagram shows how components work together to run a service:

1. A user accesses the manager by using a browser.
2. The manager verifies the user credentials and connects the user to the latest Optim directory that the user accessed or to the default Optim directory.
3. The user accesses service management in the manager to view a list of services.
4. The manager connects to the Optim directory and retrieves the list of services.
5. The user selects a service to run from the list of services in service management.
6. The manager forwards the service request to the server to which the service is assigned.
7. The server processes the service request. Depending on the type of service, the server might request and receive additional service information from the Optim directory, access data from a data source, read and change files that are stored on the server computer, and write data to a data source.
8. The manager reads the service status from the server computer and updates the Optim directory.
9. A user accesses the manager to determine whether a service completed successfully.
10. The manager reads the service status from the Optim directory and displays the service status to the user.



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## Chapter 2. Installing InfoSphere Optim solution components

IBM InfoSphere Optim solution components are installed by using IBM Installation Manager. For detailed information about how to use Installation Manager, see the Installation Manager Information Center.

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### Concepts for InfoSphere Optim solution component installation

Before you install IBM InfoSphere Optim solution components, plan how the components are to be installed and learn how the components are packaged in IBM Installation Manager. Also, review the system requirements for InfoSphere Optim solution components.

#### Installation scenarios

There are two main scenarios for installing InfoSphere Optim solutions: installing for test or evaluation purposes and installing for production use.

#### Evaluation or proof-of-concept installation

Install all components on a single Microsoft Windows computer to evaluate the software or to test the suitability of the software for a specific purpose.

An evaluation or proof-of-concept installation also requires a database on which you can create an Optim directory. The database can be on a different computer from the Optim components. However, you must install driver software for the database on the computer and configure the driver to access the database. You must also install database drivers for any other databases that you want to access or manage.

#### Production environment installation

For a production environment installation, the components are installed on multiple computers to increase performance and enable collaboration.

The following types of installations are used in a production environment:

- Workstations are Windows computers that are used by service designers to develop services and to test services on a small scale. Install one workstation for each service designer.
- Web application servers are computers that run the web-based interfaces to the environment. Install web application servers so that the web applications are available to all users and so that the web applications can connect to all Optim directories.
- Servers are computers that you use to run services for large-scale testing and production purposes. An operator uses a web-based interface such as the manager to send a service request to a server, and the server processes the service request. For optimal performance, install servers so that each database has a close network connection to a server.

A production environment installation also requires one or more databases on which you can create Optim directories. The databases can be on different computer from the other components. However, you must install driver software for the database on each workstation and server computer and configure the driver to access the database. You must also load a JDBC driver for the database onto the web application server and configure the connection manager to use the driver.

The following installation types typically contain the indicated components and database drivers:

- Workstations
  - Designer
  - Designer online help

- Runtime services
- Database driver software for the Optim directory database (including JDBC drivers)
- Database driver software for any other databases that you want to access and manage (including JDBC drivers)
- Web application servers
  - Web applications (the connection manager, the manager, and the service interface)
  - WebSphere Application Server Community Edition (or some other Java EE-compliant application server)
  - JDBC driver for the Optim directory database
- Servers
  - Runtime services
  - Database driver software for the Optim directory database
  - Database driver software for any other databases that you want to access and manage

## Installation packages

IBM Installation Manager uses installation packages to install InfoSphere Optim solution components. A *package* is an installable unit of a software product.

Installation packages can be installed in any order. In an evaluation or proof-of-concept installation, where all components are installed on a single Microsoft Windows computer, install all packages at the same time. However, you must run the Optim Configuration program to configure the first workstation before you configure or use any other component. The Optim Configuration program is launched by default after installation is complete. After you configure the first workstation, deploy and configure the connection manager.

The following Installation Manager installation packages are delivered with InfoSphere Optim solutions:

- IBM InfoSphere Optim Designer
- IBM InfoSphere Optim Designer Online Help
- IBM InfoSphere Optim Web Applications
- IBM InfoSphere Optim Runtime Services
- IBM WebSphere Application Server Community Edition

InfoSphere Optim Designer Online Help can be installed only with InfoSphere Optim Designer or on computers that already have InfoSphere Optim Designer. All other packages can be installed individually.

IBM InfoSphere Data Architect installation media is also included with InfoSphere Optim solutions. InfoSphere Optim Designer can be installed with InfoSphere Data Architect in a shell-sharing configuration, where InfoSphere Optim Designer and InfoSphere Data Architect share an Eclipse platform. For information about installing InfoSphere Data Architect, see the InfoSphere Data Architect information center.

## Package groups

A *package group* is a group of one or more packages that are designed to work together and that can be installed to one directory. When you install a package with Installation Manager, you can create a new package group or install the packages into an existing package group. (Some packages cannot share a package group, in which case the option to use an existing package group is disabled.)

The following package groups are used for InfoSphere Optim solution components.

- IBM InfoSphere
  - IBM InfoSphere Optim Designer



- IBM InfoSphere Optim Designer Online Help
- IBM InfoSphere Data Architect
- IBM InfoSphere Blueprint Director (if used)
- IBM Optim Runtime
  - IBM InfoSphere Optim Runtime Services
- IBM Optim Shared
  - IBM InfoSphere Optim Web Applications
  - IBM WebSphere Application Server Community Edition

## System requirements

Before installation, review the system requirements for each InfoSphere Optim solution component. Careful review

### Hardware and software requirements for InfoSphere Optim solution components

Before you install the product, verify that your hardware and software meet or exceed the minimum requirements. If your hardware and software do not meet the minimum requirements, you might be unable to install or run the product.

For the most up to date IBM InfoSphere Optim system requirements, see the technote on the Web: <http://www.ibm.com/support/docview.wss?uid=swg27024294>.

**Important:** Do not attempt to install the product on operating systems other than those that are listed in the system requirements. Installation Manager might run on other operating systems, but the product package installation can fail. If installation fails, uninstallation sometimes also fails.

### User privilege requirements

You must have a user ID that meets specific requirements before you can install your product.

Your user ID must not contain double-byte characters.

There are two methods of installation: administrative and non-administrative.

The following table describes what happens when user IDs with different access privileges are used when installing.

*Table 1. Implications of using an administrative or non-administrative user ID when installing*

| User ID authority                 | Case where you install as Non-administrative  | Case where you install as Administrative   |
|-----------------------------------|---|--|
| Non-administrative (current user) | <ul style="list-style-type: none"> <li>• If Installation Manager is not already installed, it is installed for the current user only.</li> <li>• After Installation Manager is installed, products can only be installed for the current user.</li> </ul> | <ul style="list-style-type: none"> <li>• For operating systems other than Microsoft Windows Vista or later: An error message occurs.</li> <li>• For Microsoft Windows Vista or later: You are prompted to log on with an Admin user ID.</li> </ul> |
| Administrative                    | An error message occurs.  | <ul style="list-style-type: none"> <li>• If not already installed, Installation Manager is installed for All Users.</li> <li>• Any products installed with this Installation Manager are for All Users.</li> </ul>                                 |

## Installation terminology

Understanding these terms and conventions can help you take full advantage of the installation information and your product.

These terms are used in the installation topics.

### **Admin user**

A user who has write administrative privileges. In the context of installing, having write administrative privileges means that the user can write to the default common installation location. On Linux or Unix operating systems, this is the "root" or any user who is using "sudo" to start Installation Manager. On a Microsoft Windows XP operating system, a user with write administrative privileges is any user who is a member of the "Administrators" group. On a Microsoft Windows Vista or later operating system, this is the user who is using "Run As Administrator" to start Installation Manager or launch pad.

### **Extension**

A type of product package that provides additional function to another product package. You cannot install the extension without also installing the package that it extends.

### **Installation directory**

The location of product artifacts after the package is installed.

### **Non-admin user**

A user who does not have write administrative privileges. In the context of installing on Linux or UNIX operating systems, this means that this user can only install into their home directory.

### **Package**

An installable unit of a software product. Software product packages are separately installable units that can operate independently from other packages of that software product.

### **Package group**

A package group represents a directory in which different product packages share resources with other packages in the same group. When you install a package using Installation Manager, you can create a new package group or install the packages into an existing package group. (Some packages cannot share a package group, in which case the option to use an existing package group is disabled.) Sharing a package group is sometimes also referred to as "shell sharing."

### **Shared resources directory**

In some instances, product packages can share resources. These resources are located in a directory that the packages share.

---

## Installing InfoSphere Optim Solution components from the launchpad

If you are installing InfoSphere Optim Solution components for the first time, the easiest way to install the components is to use the launchpad.

The launchpad requires a graphical user interface and a web browser. If the computer does not have a graphical user interface and a web browser, install IBM Installation Manager and the components in console mode.

Before you install any components on a computer, ensure that the computer can access the databases that you are to use (such as for Optim directories).

- You must obtain the connection string for each database and a user account that the computer can use to access each database.
- The computer must have the appropriate driver to access each database:
  - If you are installing the components for a workstation or a server, install the driver software for each database (including the JDBC drivers).
  - If you are installing the components for web applications, obtain the JDBC driver for each database.

You might need to obtain the driver software or JDBC drivers from the database vendors.

If you are installing the components for a workstation or a server, obtain the license information for your solution:

- Company name
- Company ID
- Password for the Optim exit

You must also have a license key to install the components for a workstation. If you do not yet have this information, you can use a trial license for a limited time before you are required to enter the license information.

If you are installing the components for a web application server, choose the Java EE-compliant application server that is to be used for the web applications. The web applications are delivered with a partially configured version of IBM WebSphere Application Server Community Edition. If you do not use this version of WebSphere Application Server Community Edition, you must install a different application server.

To install InfoSphere Optim Solution components from the launchpad:

1. To install as administrator, log in as an administrator or root, or enter the `su` command in Linux or UNIX to obtain root privileges.
2. Run the launchpad program from the root folder of the launchpad disc or image.
  - If you are installing components on a Windows computer, run `launchpad.exe`. If you install components as administrator on Microsoft Windows Vista or later, you must run `launchpad.exe` as administrator. To run `launchpad.exe` as administrator, use the **Run as administrator** option in the Windows context menu.
  - If you are installing components on a Linux or UNIX computer, run `launchpad.sh`.
3. Select the language to use for the launchpad and click **OK**.
4. Select the installation types to install on the computer. An *installation type* is a set of components that are used together for a specific purpose. The installation type determines which components can be installed. You can change the components that are installed later in the installation process. If you are installing all components on a Windows computer for evaluation or proof-of-concept purposes, select all installation types.
  - Select **Workstation** to install the components for a workstation (the designer, the designer online help, and the runtime services). You can select **Workstation** only for Windows computers.
  - Select **Server** to install the components for a server (the runtime services).
  - Select **Web Applications** to install the components for web applications and WebSphere Application Server Community Edition. You cannot select **Web Applications** for Red Hat Enterprise Linux V3 or HP-UX.
5. Select the installation mode to use. The installation mode determines where the components are installed on a Linux or UNIX computer and what permissions are assigned to the component files. If you install as current user, you might need to set the permissions on the component files so that other users can use the components. To install as administrator, you must be signed onto the computer as an administrator.
6. Click **Install Now**. If needed, the launchpad installs Installation Manager on the computer or upgrades Installation Manager to the latest version. The launchpad then runs the Installation Manager installation wizard, which is set to install the components that are associated with the selected installation types.
7. Complete the Installation Manager installation wizard.

If you install the components for a workstation or a server, Installation Manager starts a separate installation process when runtime services is installed. You must complete this separate installation process before Installation Manager can complete installation.

At the end of the runtime services installation on Windows, the Optim Configuration program runs unless you choose not to run the program. You must complete the Optim Configuration program on at least one workstation before you can configure or use any other component.

---

## Installing InfoSphere Optim solution components in console mode

Install InfoSphere Optim solution components in console mode if the computer does not have both a graphical user interface and a web browser. Use the launchpad to install InfoSphere Optim solution components on a computer that has a graphical user interface and a web browser, such as a Microsoft Windows computer.

Before you install any components on a computer, ensure that the computer can access the database that you are to use for the Optim directory.

- You must obtain the connection string for the database and a user account that the computer can use to access the database.
- The computer must have the appropriate driver to access the database
  - If you are installing the components for a server, install the driver software for the database.
  - If you are installing the components for web applications, you might need to obtain the JDBC driver for the database.

You might need to obtain the driver software or JDBC driver from the database vendor.

If you are installing the components for a web application server, choose the Java EE-compliant application server that is to be used for the web applications. The web applications are delivered with a partially configured version of IBM WebSphere Application Server Community Edition. If you do not use this version of WebSphere Application Server Community Edition, you must install a different application server.

To install InfoSphere Optim Solution components in console mode:

1. To install as administrator, log in as root or use the su command to obtain root privileges.
2. Open a terminal window, navigate to the root directory of the launchpad image, enter `./consoleinstall.sh`, and complete the steps in the console mode wizard. You must first install IBM Installation Manager if it is not already installed. You can then install packages one at a time in any order. You must re-enter `./consoleinstall.sh` to run the console mode wizard for each package.

---

## Installing InfoSphere Optim solution components silently

If you plan to install a similar configuration on multiple computers, you can automate the installation process by configuring IBM Installation Manager response files. The response files can be used to install components in silent mode.

Copy the launchpad image to a location that you can edit and that all users can access.

You must install Installation Manager before you install InfoSphere Optim solution components silently. The location of the Installation Manager installation files for each operating system is indicated in the following table.

| Operating system  | Launchpad location of Installation Manager installation files |
|-------------------|---|
| Microsoft Windows | \win32  |
| Linux             | /linux86  |
| IBM AIX®          | /aixppc   |
| Oracle Solaris    | /solarissparc   |

| Operating system | Launchpad location of Installation Manager installation files |
|------------------|---|
| HP-UX            | /hpuxia64   |

For information on how to install Installation Manager, see the Installation Manager information center.

Before you install any components on a computer, ensure that the computer can access the databases that you are to use (such as for Optim directories).

- You must obtain the connection string for each database and a user account that the computer can use to access each database.
- The computer must have the appropriate driver to access each database:
  - If you are installing the components for a workstation or a server, install the driver software for each database (including the JDBC drivers).
  - If you are installing the components for web applications, obtain the JDBC driver for each database.

You might need to obtain the driver software or JDBC drivers from the database vendors.

If you are installing the components for a workstation or a server, obtain the license information for your solution:

- Company name
- Company ID
- Password for the Optim exit

You must also have a license key to install the components for a workstation. If you do not yet have this information, you can use a trial license for a limited time before you are required to enter the license information.

If you are installing the components for a web application server, choose the Java EE-compliant application server that is to be used for the web applications. The web applications are delivered with a partially configured version of IBM WebSphere Application Server Community Edition. If you do not use this version of WebSphere Application Server Community Edition, you must install a different application server.

To install InfoSphere Optim solution components silently:

1. Edit the sample response files in the /scripts folder on the launchpad image to specify how the components are to be installed. Use the comments in the sample response files for guidance on how to edit the files. To install the packages in the following table, edit the response files that correspond to the packages.

| Packages   | Sample response file      |
|--|---------------------------|
| <ul style="list-style-type: none"> <li>• IBM InfoSphere Optim Designer</li> <li>• IBM InfoSphere Optim Designer Online Help</li> </ul> | installDesignerOLHelp.xml |
| IBM InfoSphere Optim Runtime Services  | installRuntime.xml        |
| IBM WebSphere Application Server Community Edition   | installWASCE.xml          |
| IBM InfoSphere Optim Web Applications  | installWeb.xml            |

2. If you are installing IBM InfoSphere Optim Runtime Services, edit the sample properties file for your operating system in the /scripts folder on the launchpad image. Use the comments in the sample properties file for guidance on how to edit the file.

| Operating system  | Sample response file           |
|-------------------|--------------------------------|
| Microsoft Windows | optim_installer_win.properties |

| Operating system | Sample response file            |
|------------------|---------------------------------|
| Linux or UNIX    | optim_installer_unix.properties |

- Open the silent install batch file or script for your operating system in a text editor and remove the commenting marks for the line that references the package that you want to install. You can install only one package at a time silently. To install multiple packages, create a copy of the silent install batch file for each package and remove the commenting marks for a different package in each copy.

| Operating system  | Sample response file |
|-------------------|----------------------|
| Microsoft Windows | SilentInstall.bat    |
| Linux or UNIX     | SilentInstall.sh     |

- Run the silent install batch file or script.

---

## Chapter 3. Configuring the connection manager, the manager, and the service interface

The connection manager, the manager, and the service interface are web applications that must be deployed to a Java EE-compliant application server.

---

### Security for the manager

Security for the manager depends upon the environment from which you launch the manager. When you deploy the manager to an application server, security for the manager depends upon the security settings of the application server. When you launch the manager from the designer, you can run, publish, or export any service within the designer workspace to any available registry.

When you deploy the manager to an application server, use the application server to set up user authentication for the manager. The manager can use any authentication method that is supported by the application server. Regardless of the authentication method that you use on the application server, you must use the roles that are supported by the manager.

### User roles in the manager

When you deploy the manager to an application server, the manager uses a predefined set of user roles. User roles define the tasks that each user can perform. Although user credentials are set up in the application server, the user credentials must use the roles that are supported by the manager.

### Supported user roles

The manager supports the user roles that are listed in the following table. The administrator of the application server must map roles to user credentials so that users can sign onto the manager.

*Table 2. User roles supported by the manager*

| Role ID | Role name | Description of role   |
|---------|-----------|---|
| 0       | admin     | The administrator of the manager, who configures and maintains services. Administrators are also the only users that can access the connection manager. |
| 1       | requester | The test analyst, who makes requests that are to be fulfilled by others.  |
| 2       | reviewer  | The business analyst, who reviews service requests to ensure that the requests are made for valid business reasons.                                     |
| 3       | designer  | The service designer, who creates and tests services.   |
| 4       | operator  | The operator, who runs and schedules services.  |

### Assigning multiple user roles to a user

You can assign more than one user role to a single user. Each user role that you assign to a user gives the user access to the functions that are associated with the user role. For example, you assign the reviewer

user role and the designer user role to a single user. For such a user, the user has access to the functions that are associated with both user roles.

## User roles and users of external systems

For some product solutions, the manager might support the creation of user accounts that are based on user accounts on an external system. These product solutions might require you to create user accounts in this way to use the integration between the manager and the external system. When you use the manager to create such a user, you can assign any combination of user roles to the user.

## Other elements of security

User roles are only one element of security that is provided by the manager. If a service is added to a service group, a user must be granted access to the service group before the user can run the service. Also, an administrator can configure tabs so that the tabs cannot be accessed by users who do not have a user role of admin. In these cases, a user might not be able to perform tasks that would otherwise be allowed by the user role.

## Tasks

Each user role gives users permission to perform a set of tasks that are appropriate to users with that user role. The following tables indicate which tasks can be performed by users that have each user role.

*Table 3. Configuration and preferences tasks that can be performed by users with each security role*

| Tasks   | Roles  |
|---|--|
| View <b>Servers</b> on the <b>Configuration</b> tab   | admin, designer, operator                      |
| View <b>Users and Groups</b> , <b>Tabs</b> , and <b>Work Orders</b> on the <b>Configuration</b> tab | admin  |
| Set global preferences  | admin  |
| Set user and display preferences  | admin, designer, operator, requester, reviewer |
| Manage groups of services   | admin  |
| Grant and remove user access to groups of services  | admin  |
| Enable email notifications for work order changes   | admin  |
| Assign email addresses to users   | admin  |
| Manage user-defined tabs  | admin  |
| Change access to tabs in the manager  | admin  |
| Change the workflow for work orders   | admin  |

*Table 4. Service management tasks that can be performed by users with each security role*

| Tasks                                      | Roles                     |
|--|---------------------------|
| View the <b>Service Management</b> tab     | admin, designer, operator |
| Run services and service sets              | admin, designer, operator |
| Schedule services and service sets         | admin, designer, operator |
| Change service input values                | admin, designer, operator |
| Manage service sets (create, edit, delete) | admin, designer, operator |
| Assign services to a server                | admin, operator           |



Table 5. Service monitoring tasks that can be performed by users with each security role

| Tasks  | Roles                     |
|--|---------------------------|
| View the <b>Dashboard</b> and <b>Service Monitoring</b> tabs | admin, designer, operator |
| Stop services  | admin, designer, operator |
| Restart services   | admin, designer, operator |
| Purge service instance information                           | admin                     |
| Manage service instance filters                              | admin                     |

Table 6. Work order tasks that can be performed by users with each security role

| Tasks  | Roles  |
|--|--|
| View <b>Work Order Management</b> and <b>Work Order Monitoring</b> on the <b>Work Orders</b> tab | admin, designer, operator, requester, reviewer |
| Create a work order  | admin, reviewer                                |
| Add a comment to a work order  | admin, designer, operator, requester, reviewer |
| Approve a work order for development   | admin, reviewer                                |
| Deny a work order and return the work order to a requester                                       | admin, reviewer                                |
| Resubmit a work order to a reviewer or designer  | admin, requester                               |
| Associate a work order with a service or service set   | admin, designer                                |
| Change the service or service set that is associated with a work order                           | admin, designer                                |
| Reject a work order and return the work order to a requester                                     | admin, designer                                |
| Run a service or service set that is associated with a work order                                | admin, designer, operator, requester, reviewer |
| Return a work order to a designer  | admin, requester                               |
| Terminate or close a work order  | admin, requester                               |

## Configuring the connection manager, the manager, and the service interface on WebSphere Application Server Community Edition

The tasks that you must perform to configure InfoSphere Optim web applications depend upon the application server that you use. InfoSphere Optim web applications are delivered with a preconfigured version of WebSphere Application Server Community Edition. Use this version of WebSphere Application Server Community Edition to install and configure InfoSphere Optim web applications more quickly and easily for evaluation purposes.

The version of WebSphere Application Server Community Edition that is delivered with InfoSphere Optim web applications is available only in English. You must configure this version of WebSphere Application Server Community Edition by using an English user interface. However, when you use the connection manager or the manager, the language setting of the browser determines the language of the user interface.

## Configuration roadmap for the connection manager, the manager, and the service interface

The configuration roadmap lists the high-level steps for configuring the connection manager, the manager, and the service interface.

## Roadmap for configuring the connection manager, the manager, and the service interface on WebSphere Application Server Community Edition

Perform these tasks to configure the connection manager, the manager, and the service interface on the version of WebSphere Application Server Community Edition that is delivered with the web applications.

1. Start the application server.
2. Install the JDBC driver for the Optim directory database.
3. Configure the database pool and security realm for the connection manager and the manager .
4. Deploy the connection manager WAR file to the application server.
5. Deploy the manager WAR file to the application server or deploy the service interface WAR file to the application server, depending on which component you plan to use. You can deploy both the manager WAR file and the service interface WAR file if you choose.
6. Configure and start a server so that the server registers with the connection manager.
7. Create or edit the Optim directory connection information in the connection manager.
8. . Access the manager with an account that has admin privileges. The admin user is automatically prompted to set the connection manager and default Optim directory that is used by the manager.

## Starting WebSphere Application Server Community Edition

If you use WebSphere Application Server Community Edition for your web applications, you must start WebSphere Application Server Community Edition before you configure or use the web applications.

To start WebSphere Application Server Community Edition, complete the step that is appropriate for your operating system:

- On a Microsoft Windows computer, click **Start > All Programs > IBM InfoSphere > Optim > Start WAS-CE**, or run the script `shared_installation_directory\WebSphere\AppServerCommunityEdition\bin\startup.bat`. If WebSphere Application Server Community Edition is installed as administrator on Microsoft Windows Vista or later, you must run WebSphere Application Server Community Edition as administrator. To run WebSphere Application Server Community Edition as administrator, use the **Run as administrator** option in the Windows context menu. You can set the **Run as administrator** property on the shortcut to run WebSphere Application Server Community Edition as administrator by default.
- On a Linux or UNIX computer, run the script `shared_installation_directory/WebSphere/AppServerCommunityEdition/bin/startup.sh`.

## Installing a JDBC driver on WebSphere Application Server Community Edition

InfoSphere Optim web applications can connect to an Optim directory only if the application server has a Java Database Connectivity (JDBC) driver for the Optim directory database. Use this task to install JDBC drivers for other vendors on the English version of WebSphere Application Server Community Edition.

Start WebSphere Application Server Community Edition before you install a JDBC driver on WebSphere Application Server Community Edition.

Use the Administrative Console of WebSphere Application Server Community Edition to install a JDBC driver. The default location of the Administrative Console is `http://hostname:8080/console`, where *hostname* is the host name of the computer on which WebSphere Application Server Community Edition is installed.

When you install a JDBC driver, you must identify the driver to the application server by specifying the following information:

- **Group:** the vendor identifier (oracle, sql, or com.ibm.db2)
- **Artifact:** the name of the JDBC driver file without the .jar extension

- **Version:** the version number of the driver
- **Type:** jar

To install a JDBC driver on WebSphere Application Server Community Edition:

1. Under **Services**, click **Repository**.
2. Review the current repository entries to ensure that the JDBC driver is not already installed. The entry for a JDBC driver is of the form *group/artifact/version/jar*. For example, the JDBC driver for DB2 v9.5 is **com.ibm.db2/db2jcc/9.5/jar**.
3. Click **Browse** and browse to select the JDBC driver.
4. Enter the group, artifact, version, and type for the JDBC driver and click **Install**.
5. Review the current repository entries again to ensure that the JDBC driver was installed.

## Configuring the database pool and security realm for the connection manager and the manager on WebSphere Application Server Community Edition

When you deploy the connection manager and the manager to WebSphere Application Server Community Edition, configuration information is typically stored in a database pool. You must also configure a security realm to specify how user information is configured for the connection manager and the manager.

Start WebSphere Application Server Community Edition before you configure the database pool and security realm for the connection manager and the manager.

The database pool for the connection manager and the manager must be created in a supported database. The database pool must be in a different schema than the schema used by any Optim directory.

Use the Administrative Console of WebSphere Application Server Community Edition to configure the database pool. The default location of the Administrative Console is <http://hostname:8080/console>, where *hostname* is the host name of the computer on which WebSphere Application Server Community Edition is installed.

To configure the database pool and security realm for the connection manager and the manager on WebSphere Application Server Community Edition:

1. Open the file *shared\_installation\_directory/ocm/app/nex.configure.ocm.build.properties* in a text editor, where *shared\_installation\_directory* is the installation directory that you specified for the IBM Optim Shared package group. For example, the default location for the file on Microsoft Windows is `C:\IBM\InfoSphere\Optim\shared\ocm\app\nex.configure.ocm.build.properties`.
2. Edit the *nex.configure.ocm.build.properties* file as indicated by the comments in the file.
3. Create the configuration files by running the appropriate batch file or shell script:
  - On Microsoft Windows computers, run *shared\_installation\_directory/ocm/app/createOCMFiles.bat*.
  - On Linux or UNIX computers, run *shared\_installation\_directory/ocm/app/createOCMFiles.sh*.

The batch file or shell script creates the following configuration files in the *shared\_installation\_directory/ocm/app/* folder, where *group* is the group that was specified in the properties file.

- *group-ocm-database-pool.xml*
  - *group-ocm-security-realm.xml*
4. In the Administrative Console, under **Applications**, click **Deployer**.
  5. Enter the location of the appropriate tranql connector into **Archive**, or use **Browse** to browse to the tranql connector. Tranql connectors are located in folders under the *shared\_installation\_directory/WebSphere/AppServerCommunityEdition/repository/org/tranql* folder.

- For Oracle databases or Microsoft SQL Server databases, specify `/tranql-connector-ra/1.7/tranql-connector-ra-1.7.rar`.
  - For DB2® databases, specify `/tranql-connector-db2-xa/1.7/tranql-connector-db2-xa-1.7.rar`.
6. Enter the location of the `group-ocm-database-pool.xml` file into **Plan**, or use **Browse** to browse to the configuration file, and then click **Install**.
  7. Enter the location of the `group-ocm-security-realm.xml` file into **Plan**, or use **Browse** to browse to the configuration file, and then click **Install**.

## Deploying the connection manager WAR file on WebSphere Application Server Community Edition

You must deploy the connection manager Web archive (WAR) file to the application server before you can use the connection manager. Use this task to deploy the WAR file on the English version of WebSphere Application Server Community Edition.

Start WebSphere Application Server Community Edition before you deploy the WAR file.

Use the Administrative Console of WebSphere Application Server Community Edition to deploy the WAR file. The default location of the Administrative Console is `http://hostname:8080/console`, where *hostname* is the host name of the computer on which WebSphere Application Server Community Edition is installed.

To deploy the connection manager WAR file with the Administrative Console of WebSphere Application Server Community Edition:

1. If you are upgrading a connection manager WAR file, uninstall the previous version of the WAR file before you deploy the new WAR file. To uninstall the WAR file, click **Web App WARs** under **Console Navigation**, and then click **Uninstall** on the line that contains an URL of `/ocm`.
2. Under **Console Navigation**, click **Deployer**.
3. Enter the location of the WAR file into **Archive**, and click **Install**. The WAR file is `shared_installation_directory/ocm/app/optim.connection.manager.war`, where *shared\_installation\_directory* is the installation directory that you specified for the IBM Optim Shared package group. For example, the default location for the WAR file on Microsoft Windows is `C:\IBM\InfoSphere\Optim\shared\ocm\app\optim.connection.manager.war`. You can click **Browse** to browse for the WAR file. The WAR file can take several minutes to deploy.

If the WAR file fails to deploy because of `java.lang.OutOfMemoryError: PermGen space` errors, increase the amount of permanent generation memory available for objects in the Java Virtual Machine (VM) on the application server. To increase the available amount of permanent generation memory, open the application server startup script in a text editor and adjust the `PermSize` and `MaxPermSize` arguments in the `JAVA_OPTS` parameter. The `PermSize` argument specifies the initial amount of permanent generation memory, and the `MaxPermSize` argument specifies the maximum amount of permanent generation memory. By default, the manager uses 64 MB of permanent generation memory. Setting memory sizes to a value larger than the amount of available physical memory on your computer severely degrades performance. For example, the following `JAVA_OPTS` parameter from a Windows batch script specifies 128 MB as the initial amount of permanent generation memory and 256 MB as the maximum amount of permanent generation memory.

```
@set JAVA_OPTS=%ADDITIONAL_JAVA_OPTS% %JAVA_OPTS% ^
-XX:PermSize=128m -XX:MaxPermSize=256m
```

The following `JAVA_OPTS` parameter from a Linux or UNIX script specifies 128 MB as the initial amount of permanent generation memory and 256 MB as the maximum amount of permanent generation memory.

```
JAVA_OPTS=-XX:PermSize=128m -XX:MaxPermSize=256m \
$JAVA_OPTS
```

If the `JAVA_OPTS` parameter or the `PermSize` and `MaxPermSize` arguments are not in the application server startup script, add the parameter and arguments to the end of the script. Ensure that the `JAVA_OPTS` parameter is on a single line or on consecutive lines that are connected with line-continuation characters. The line-continuation character is the caret (^) for Windows batch scripts or the backslash (\) for Linux or UNIX scripts. Also, include the `%JAVA_OPTS%` or `$JAVA_OPTS` argument in the `JAVA_OPTS` parameter so that the arguments that exist for the parameter are preserved.

If the application server computer is set to a language that requires the use of double-byte characters, configure the application server to use UTF-8 encoding in its log files. To configure the application server to use UTF-8 encoding, add the following argument to the end of the `JAVA_OPTS` parameter in the application server startup script. The entire `JAVA_OPTS` parameter must be either on a single line or on consecutive lines that are connected with line-continuation characters. The line-continuation character is the caret (^) for Windows batch scripts or the backslash (\) for Linux or UNIX scripts.

```
-Dfile.encoding=UTF-8
```

If the WAR file fails to deploy to a Linux computer because of `IOException: too many open files` errors, increase the maximum number of open files on the computer. To increase the maximum number of open files, sign on as superuser and complete the following steps.

1. Enter the following command:

```
/sbin/sysctl -w fs.file-max=100000
```

2. Add the following line to the `/etc/sysctl.conf` file so that the setting remains as it is after system reboot.

```
fs.file-max = 100000
```

3. Enter the following command so that the change to the `/etc/sysctl.conf` file takes effect.

```
/sbin/sysctl -p
```

4. Enter the following command to verify the settings.

```
/sbin/sysctl fs.file-max
```

5. Enter the following command to increase the maximum number of processes to 20,048.

```
ulimit -n 20048
```

6. Add the following line to the beginning of the `shared_installation_directory/WebSphere/AppServerCommunityEdition/bin/startup.sh` script so that the setting is set every time that you start the application server.

```
ulimit -n 20048
```

After you change the application server startup script, you must restart the application server for changes to take effect.

## Deploying the manager WAR file on WebSphere Application Server Community Edition

You must deploy the manager Web archive (WAR) file to the application server before you can use the manager. Use this task to deploy the WAR file on the English version of WebSphere Application Server Community Edition.

Start WebSphere Application Server Community Edition before you deploy the WAR file.

Deploy the connection manager WAR file before you deploy the manager WAR file.

Use the Administrative Console of WebSphere Application Server Community Edition to deploy the WAR file. The default location of the Administrative Console is `http://hostname:8080/console`, where *hostname* is the host name of the computer on which WebSphere Application Server Community Edition is installed.



To deploy the manager WAR file with the Administrative Console of WebSphere Application Server Community Edition:

1. If you are upgrading a manager WAR file, uninstall the previous version of the WAR file before you deploy the new WAR file. To uninstall the WAR file, click **Web App WARs** under **Console Navigation**, and then click **Uninstall** on the line that contains an URL of /*optim*.
2. Under **Console Navigation**, click **Deployer**.
3. Enter the location of the WAR file into **Archive**, and click **Install**. The WAR file is *shared\_installation\_directory*/manager/app/manager.war, where *shared\_installation\_directory* is the installation directory that you specified for the IBM Optim Shared package group. For example, the default location for the WAR file on Microsoft Windows is C:\IBM\InfoSphere\Optim\shared\manager\app\manager.war. You can click **Browse** to browse for the WAR file. The WAR file can take several minutes to deploy.
4. If you are upgrading a manager WAR file, notify all users that you deployed an upgraded version of the manager. A user might need to refresh the browser or clear the browser cache to get the upgraded version of the manager. A user can see whether the browser has the upgraded version of the manager by clicking **Help > About IBM InfoSphere Optim Manager** in the manager interface.

If the WAR file fails to deploy because of java.lang.OutOfMemoryError: PermGen space errors, increase the amount of permanent generation memory available for objects in the Java Virtual Machine (VM) on the application server. To increase the available amount of permanent generation memory, open the application server startup script in a text editor and adjust the PermSize and MaxPermSize arguments in the JAVA\_OPTS parameter. The PermSize argument specifies the initial amount of permanent generation memory, and the MaxPermSize argument specifies the maximum amount of permanent generation memory. By default, the manager uses 64 MB of permanent generation memory. Setting memory sizes to a value larger than the amount of available physical memory on your computer severely degrades performance. For example, the following JAVA\_OPTS parameter from a Windows batch script specifies 128 MB as the initial amount of permanent generation memory and 256 MB as the maximum amount of permanent generation memory.

```
@set JAVA_OPTS=%ADDITIONAL_JAVA_OPTS% %JAVA_OPTS% ^  
-XX:PermSize=128m -XX:MaxPermSize=256m
```

The following JAVA\_OPTS parameter from a Linux or UNIX script specifies 128 MB as the initial amount of permanent generation memory and 256 MB as the maximum amount of permanent generation memory.

```
JAVA_OPTS=-XX:PermSize=128m -XX:MaxPermSize=256m \  
$JAVA_OPTS
```

If the JAVA\_OPTS parameter or the PermSize and MaxPermSize arguments are not in the application server startup script, add the parameter and arguments to the end of the script. Ensure that the JAVA\_OPTS parameter is on a single line or on consecutive lines that are connected with line-continuation characters. The line-continuation character is the caret (^) for Windows batch scripts or the backslash (\) for Linux or UNIX scripts. Also, include the %JAVA\_OPTS% or \$JAVA\_OPTS argument in the JAVA\_OPTS parameter so that the arguments that exist for the parameter are preserved.

If the application server computer is set to a language that requires the use of double-byte characters, configure the application server to use UTF-8 encoding in its log files. To configure the application server to use UTF-8 encoding, add the following argument to the end of the JAVA\_OPTS parameter in the application server startup script. The entire JAVA\_OPTS parameter must be either on a single line or on consecutive lines that are connected with line-continuation characters. The line-continuation character is the caret (^) for Windows batch scripts or the backslash (\) for Linux or UNIX scripts.

```
-Dfile.encoding=UTF-8
```

If the WAR file fails to deploy to a Linux computer because of IOException: too many open files errors, increase the maximum number of open files on the computer. To increase the maximum number of open files, sign on as superuser and complete the following steps.

1. Enter the following command:

- ```
/sbin/sysctl -w fs.file-max=100000
```
2. Add the following line to the `/etc/sysctl.conf` file so that the setting remains as it is after system reboot.  

```
fs.file-max = 100000
```
  3. Enter the following command so that the change to the `/etc/sysctl.conf` file takes effect.  

```
/sbin/sysctl -p
```
  4. Enter the following command to verify the settings.  

```
/sbin/sysctl fs.file-max
```
  5. Enter the following command to increase the maximum number of processes to 20,048.  

```
ulimit -n 20048
```
  6. Add the following line to the beginning of the `shared_installation_directory/WebSphere/AppServerCommunityEdition/bin/startup.sh` script so that the setting is set every time that you start the application server.  

```
ulimit -n 20048
```

After you change the application server startup script, you must restart the application server for changes to take effect.

## Deploying the service interface WAR file on WebSphere Application Server Community Edition

You must deploy the service interface Web archive (WAR) file to the application server before you can use the interface. Use this task to deploy the WAR file on the English version of WebSphere Application Server Community Edition.

Start WebSphere Application Server Community Edition before you deploy the WAR file.

Deploy the connection manager WAR file before you deploy the service interface WAR file.

Use the Administrative Console of WebSphere Application Server Community Edition to deploy the WAR file. The default location of the Administrative Console is `http://hostname:8080/console`, where *hostname* is the host name of the computer on which WebSphere Application Server Community Edition is installed.

To deploy the service interface WAR file with the Administrative Console of WebSphere Application Server Community Edition:

1. If you are upgrading a service interface WAR file, uninstall the previous version of the WAR file before you deploy the new WAR file. To uninstall the WAR file, click **Web App WARs** under **Console Navigation**, and then click **Uninstall** on the line that contains an URL of `/server`.
2. Under **Console Navigation**, click **Deployer**.
3. Enter the location of the WAR file into **Archive**, and click **Install**. The WAR file is `shared_installation_directory/osi/app/optim.service.interface.war`, where `shared_installation_directory` is the installation directory that you specified for the IBM Optim Shared package group. For example, the default location for the WAR file on Microsoft Windows is `C:\IBM\InfoSphere\Optim\shared\osi\app\optim.service.interface.war`. You can click **Browse** to browse for the WAR file. The WAR file can take several minutes to deploy.

If the WAR file fails to deploy because of `java.lang.OutOfMemoryError: PermGen space` errors, increase the amount of permanent generation memory available for objects in the Java Virtual Machine (VM) on the application server. To increase the available amount of permanent generation memory, open the application server startup script in a text editor and adjust the `PermSize` and `MaxPermSize` arguments in the `JAVA_OPTS` parameter. The `PermSize` argument specifies the initial amount of permanent generation memory, and the `MaxPermSize` argument specifies the maximum amount of permanent generation

memory. By default, the manager uses 64 MB of permanent generation memory. Setting memory sizes to a value larger than the amount of available physical memory on your computer severely degrades performance. For example, the following JAVA\_OPTS parameter from a Windows batch script specifies 128 MB as the initial amount of permanent generation memory and 256 MB as the maximum amount of permanent generation memory.

```
@set JAVA_OPTS=%ADDITIONAL_JAVA_OPTS% %JAVA_OPTS% ^
-XX:PermSize=128m -XX:MaxPermSize=256m
```

The following JAVA\_OPTS parameter from a Linux or UNIX script specifies 128 MB as the initial amount of permanent generation memory and 256 MB as the maximum amount of permanent generation memory.

```
JAVA_OPTS=-XX:PermSize=128m -XX:MaxPermSize=256m \
$JAVA_OPTS
```

If the JAVA\_OPTS parameter or the PermSize and MaxPermSize arguments are not in the application server startup script, add the parameter and arguments to the end of the script. Ensure that the JAVA\_OPTS parameter is on a single line or on consecutive lines that are connected with line-continuation characters. The line-continuation character is the caret (^) for Windows batch scripts or the backslash (\) for Linux or UNIX scripts. Also, include the %JAVA\_OPTS% or \$JAVA\_OPTS argument in the JAVA\_OPTS parameter so that the arguments that exist for the parameter are preserved.

If the application server computer is set to a language that requires the use of double-byte characters, configure the application server to use UTF-8 encoding in its log files. To configure the application server to use UTF-8 encoding, add the following argument to the end of the JAVA\_OPTS parameter in the application server startup script. The entire JAVA\_OPTS parameter must be either on a single line or on consecutive lines that are connected with line-continuation characters. The line-continuation character is the caret (^) for Windows batch scripts or the backslash (\) for Linux or UNIX scripts.

```
-Dfile.encoding=UTF-8
```

If the WAR file fails to deploy to a Linux computer because of IOException: too many open files errors, increase the maximum number of open files on the computer. To increase the maximum number of open files, sign on as superuser and complete the following steps.

1. Enter the following command:

```
/sbin/sysctl -w fs.file-max=100000
```

2. Add the following line to the /etc/sysctl.conf file so that the setting remains as it is after system reboot.

```
fs.file-max = 100000
```

3. Enter the following command so that the change to the /etc/sysctl.conf file takes effect.

```
/sbin/sysctl -p
```

4. Enter the following command to verify the settings.

```
/sbin/sysctl fs.file-max
```

5. Enter the following command to increase the maximum number of processes to 20,048.

```
ulimit -n 20048
```

6. Add the following line to the beginning of the *shared\_installation\_directory*/WebSphere/AppServerCommunityEdition/bin/startup.sh script so that the setting is set every time that you start the application server.

```
ulimit -n 20048
```

After you change the application server startup script, you must restart the application server for changes to take effect.



## Configuring WebSphere Application Server Community Edition as a service or daemon

You can configure the version of WebSphere Application Server Community Edition that is delivered with the web applications as a service or daemon. The service or daemon (and any web applications that are deployed to WebSphere Application Server Community Edition) can then be set to start automatically on system startup.

WebSphere Application Server Community Edition is not available on HP-UX.

## Configuring WebSphere Application Server Community Edition as a Windows service

You can configure the version of WebSphere Application Server Community Edition that is delivered with the manager and the service interface as a Windows service. The Windows service can then be set to start automatically on system startup. If the manager and the service interface are deployed to WebSphere Application Server Community Edition, the manager and the service interface also start automatically on system startup.

Before you begin, install and deploy the manager to WebSphere Application Server Community Edition. You can also optionally deploy the service interface to WebSphere Application Server Community Edition.

The computer must have Microsoft .NET Framework 2.0 or higher installed.

To configure WebSphere Application Server Community Edition as a Windows service:

1. If WebSphere Application Server Community Edition is not installed to the default location at `C:\IBM\InfoSphere\Optim\shared\WebSphere\AppServerCommunityEdition`, complete the following steps:
  - a. Open the folder in which you installed WebSphere Application Server Community Edition.
  - b. Open the `bin` folder, and then open the `appServerService.xml` file in that folder by using a text editor such as Notepad.
  - c. Change the value of the `wasceLocation` entity to the folder in which you installed WebSphere Application Server Community Edition, and save the changed `appServerService.xml` file.
  - d. Open the `optimService.bat` file in that folder by using a text editor such as Notepad.
  - e. Change the `WASCE_BIN` value to `server_location\bin`, where *server\_location* is the folder in which you installed WebSphere Application Server Community Edition, and save the changed `optimService.bat` file.

For example, you install WebSphere Application Server Community Edition to `D:\Applications\Optim\WASCE`. In this case, use Notepad to open `D:\Applications\Optim\WASCE\appServerService.xml` and change the `wasceLocation` value to `D:\Applications\Optim\WASCE`. Next, open `D:\Applications\Optim\WASCE\optimService.bat` and change the `WASCE_BIN` value to `D:\Applications\Optim\WASCE\bin`.

2. If you configure WebSphere Application Server Community Edition to use a non-default user name, password, and port number, configure the service to use these values. By default, WebSphere Application Server Community Edition is configured to use system as the user name, manager as the password, and 1099 as the port number. Complete the following steps:
  - a. Open the folder in which you installed WebSphere Application Server Community Edition.
  - b. Open the `bin` folder, and then open the `optimService.bat` file in that folder by using a text editor such as Notepad.
  - c. Change the `USER`, `PASSWORD`, and `PORT` values to the values that you configured for WebSphere Application Server Community Edition.
3. Open the command prompt by clicking **Start > Run** and entering the command `cmd`.

4. Enter the following commands at the command prompt, where *server\_location* is the location in which WebSphere Application Server Community Edition is installed:

```
cd server_location/bin
appServerService.exe install
appServerService.exe start
```

You can check on the progress of WebSphere Application Server Community Edition by looking at the contents of log files. There are 3 log files:

- *server\_location*/var/log/appServerService.err.log
- *server\_location*/var/log/appServerService.out.log
- *server\_location*/var/log/appServerService.wrapper.log

To stop and uninstall the service, enter the following commands at the command prompt.

```
cd server_location/bin
appServerService.exe stop
appServerService.exe uninstall
```

## Configuring WebSphere Application Server Community Edition as a daemon on an AIX computer

You can configure the version of WebSphere Application Server Community Edition that is delivered with the manager and the service interface as an AIX daemon process. The daemon process can then be set to start automatically on system startup. If the manager and the service interface are deployed to WebSphere Application Server Community Edition, the manager and the service interface also start automatically on system startup.

You must have access to a superuser or root account to complete this task.

To configure WebSphere Application Server Community Edition as a daemon on an AIX computer:

1. Open the command prompt.
2. Enter the following commands at the command prompt, where *server\_location* is the directory in which WebSphere Application Server Community Edition is installed:

```
cd server_location/bin
./setup-wasce-as-daemon.sh
```

The script generates a script called *optimappserver*, which is saved to the *server\_location/bin* directory.

3. Log in as superuser, if you are not already logged in as superuser.
4. Copy the script *optimappserver* to the */etc/rc.d/init.d* directory.
5. Enter the following commands at the command prompt.

```
cd /etc/rc.d/init.d
chmod 755 optimappserver
ln -s optimappserver /etc/rc.d/rc2.d/S99optimappserver
ln -s optimappserver /etc/rc.d/rc2.d/K01optimappserver
```

To start the daemon, log in as superuser and enter the following command at the command prompt.

```
/etc/rc.d/init.d/optimappserver start
```

To stop the daemon, log in as superuser and enter the following command at the command prompt.

```
/etc/rc.d/init.d/optimappserver stop
```

To remove the daemon, log in as superuser and enter the following commands at the command prompt. Remove the daemon before you uninstall WebSphere Application Server Community Edition.

```
/etc/rc.d/init.d/optimappserver stop
rm /etc/rc.d/rc2.d/S99optimappserver
rm /etc/rc.d/rc2.d/K01optimappserver
rm /etc/rc.d/init.d/optimappserver
```

## Configuring WebSphere Application Server Community Edition as a daemon on a Linux computer

You can configure the version of WebSphere Application Server Community Edition that is delivered with the manager and the service interface as a Linux daemon process. The daemon process can then be set to start automatically on system startup. If the manager and the service interface are deployed to WebSphere Application Server Community Edition, the manager and the service interface also start automatically on system startup.

You must have access to a superuser or root account to complete this task.

To configure WebSphere Application Server Community Edition as a daemon on a Linux computer:

1. Open the command prompt.
2. Enter the following commands at the command prompt, where *server\_location* is the directory in which WebSphere Application Server Community Edition is installed:

```
cd server_location/bin
./setup-wasce-as-daemon.sh
```

The script generates a script called *optimappserver*, which is saved to the *server\_location/bin* directory.

3. Log in as superuser, if you are not already logged in as superuser.
4. Copy the script *optimappserver* to the */etc/rc.d/init.d* directory.
5. Enter the following commands at the command prompt.

```
cd /etc/rc.d/init.d
chmod 755 optimappserver
/sbin/chkconfig --add optimappserver
```

To start the daemon, log in as superuser and enter the following command at the command prompt.

```
/sbin/service optimappserver start
```

To view the init levels at which the daemon is started or stopped, log in as superuser and enter the following command at the command prompt.

```
/sbin/chkconfig --list optimappserver
```

To stop the daemon, log in as superuser and enter the following command at the command prompt.

```
/sbin/service optimappserver stop
```

To remove the daemon, log in as superuser and enter the following commands at the command prompt. Remove the daemon before you uninstall WebSphere Application Server Community Edition.

```
/sbin/service optimappserver stop
/sbin/chkconfig --del optimappserver
rm /etc/rc.d/init.d/optimappserver
```

## Configuring WebSphere Application Server Community Edition as a daemon on a Solaris computer

You can configure the version of WebSphere Application Server Community Edition that is delivered with the manager and the service interface as a Solaris daemon process. The daemon process can then be set to start automatically on system startup. If the manager and the service interface are deployed to WebSphere Application Server Community Edition, the manager and the service interface also start automatically on system startup.

You must have access to a superuser or root account to complete this task.

To configure WebSphere Application Server Community Edition as a daemon on a Solaris computer:

1. Open the command prompt.
2. Enter the following commands at the command prompt, where *server\_location* is the directory in which WebSphere Application Server Community Edition is installed:

```
cd server_location/bin
./setup-wasce-as-daemon.sh
```

The script generates a script called *optimappserver*, which is saved to the *server\_location/bin* directory.

3. Log in as superuser, if you are not already logged in as superuser.
4. Copy the script *optimappserver* to the */etc/init.d* directory.
5. Enter the following commands at the command prompt.

```
cd /etc/init.d
chmod 755 optimappserver
ln -s optimappserver /etc/rc3.d/S99optimappserver
ln -s optimappserver /etc/rc3.d/K01optimappserver
```

To start the daemon, log in as superuser and enter the following command at the command prompt.

```
/etc/init.d/optimappserver start
```

To stop the daemon, log in as superuser and enter the following command at the command prompt.

```
/etc/init.d/optimappserver stop
```

To remove the daemon, log in as superuser and enter the following commands at the command prompt. Remove the daemon before you uninstall WebSphere Application Server Community Edition.

```
/etc/init.d/optimappserver stop
rm /etc/rc3.d/S99optimappserver
rm /etc/rc3.d/K01optimappserver
rm /etc/init.d/optimappserver
```

## Adding a user account for the manager on WebSphere Application Server Community Edition

If you use the default user security configuration for the manager on WebSphere Application Server Community Edition, user security information is stored in a database. You can use SQL commands to maintain user accounts in this database. Use this task to create a user account on this database.

Start WebSphere Application Server Community Edition before you add a user account for the manager.

Add user accounts for the manager only if you are using the default user security configuration for the manager. The default user security configuration might not be secure enough for production use.

For some product solutions, the manager might support the creation of user accounts that are based on user accounts on an external system. For these product solutions, create user accounts through the manager user interface so that you can fully use the integration with the external system. If you do not use such a product solution, create new user accounts by following the established security environment for the application server.

Before you can add a user account, deploy the manager web archive (WAR) file to WebSphere Application Server Community Edition.

Use the Administrative Console of WebSphere Application Server Community Edition to add a user account for the manager. The default location of the Administrative Console is `http://hostname:8080/console`, where *hostname* is the host name of the computer on which WebSphere Application Server Community Edition is installed.

To add a user account for the manager by using the Administrative Console of WebSphere Application Server Community Edition:

1. Click **Database Pools**.
2. In **Use DataSource**, select **OptimManagerIDS**.
3. Enter the following SQL commands into **SQL Command/s**.

```
INSERT INTO MGR_OOB_USER values(userid,username,password);
INSERT INTO MGR_OOB_USER_ROLE values(userid,roleid,rolename);
```

  - The integer value *userid* uniquely identifies the user.
  - The varchar value *username* specifies the user name. The user name is typically a string value.
  - The varchar value *password* specifies the user password. The user password is typically a string value.
  - The integer value *roleid* and the varchar value *rolename* are values that correspond with each user role ID and user role name:
    - The user role ID 0 and user role name admin correspond with the admin (manager administrator) user role.
    - The user role ID 1 and user role name requester correspond with the requester (test analyst) user role.
    - The user role ID 2 and user role name reviewer correspond with the reviewer (business analyst) user role.
    - The user role ID 3 and user role name designer correspond with the designer user role.
    - The user role ID 4 and user role name operator correspond with the operator user role.
4. Click **Run SQL**.

For example, the following SQL code creates a user ID with the admin user role and a user ID with the operator user role. Both user IDs use `passwd` as the password.

```
INSERT INTO MGR_OOB_USER values(10,'administrator','passwd');
INSERT INTO MGR_OOB_USER_ROLE values(10,0,'admin');
INSERT INTO MGR_OOB_USER values(11,'user14','passwd');
INSERT INTO MGR_OOB_USER_ROLE values(11,4,'operator');
```

## Configuring the application server for email notification for work order changes

The manager can notify users of work order status changes by sending emails to users. To use this feature, you must configure the application server to use an email server before you deploy the manager to the application server.

You can use either of the following methods to configure the application server for work order notification by email:

- Set the email server settings in the manager WAR file before you deploy the file to the application server. Set the email server settings in the manager WAR file to have the settings apply to the manager only (and not to any other application on the application server).
- Set the application server to use Java Naming and Directory Interface (JNDI) lookup to discover the email server settings. Use JNDI lookup if all applications on the application server are to use the same email server.

To configure the application server for work order notification by email:

1. Use a file compression utility to extract the \WEB-INF\web.xml configuration file that is packaged in the manager WAR file. The WAR file is *shared\_installation\_directory*/manager/app/manager.war, where *shared\_installation\_directory* is the installation directory that you specified for the IBM Optim Shared package group. For example, the default location for the WAR file on Microsoft Windows is C:\IBM\InfoSphere\Optim\shared\manager\app\manager.war.
2. Use a text editor to open the extracted \WEB-INF\web.xml configuration file and search for the following code:

```
<init-param>
  <param-name>mailSMTPHost</param-name>
  <param-value>@smtphost@</param-value>
</init-param>
<init-param>
  <param-name>mailSMTPPort</param-name>
  <param-value>@smtpport@</param-value>
</init-param>
<init-param>
  <param-name>mailSMTPAuth</param-name>
  <param-value>@smtpauth@</param-value>
</init-param>
<init-param>
  <param-name>mailSMTPUser</param-name>
  <param-value>@smtpuser@</param-value>
</init-param>
<init-param>
  <param-name>mailSMTPPwd</param-name>
  <param-value>@smtppwd@</param-value>
</init-param>
<init-param>
  <param-name>mailSMTPDebug</param-name>
  <param-value>@smtpdebug@</param-value>
</init-param>
```

3. Edit the \WEB-INF\web.xml configuration file and configure the application server according to the configuration method that you choose.
  - If you choose to configure the email server settings in the \WEB-INF\web.xml configuration file, set the <param-value> values for your email server:
    - mailSMTPHost: the host name or IP address of the mail server.
    - mailSMTPPort: the port number that is used by the mail server.
    - mailSMTPAuth: whether to enable SMTP authentication (true or false).
    - mailSMTPUser: the user name to use to access the mail server.
    - mailSMTPPwd: the password to use to access the mail server.
    - mailSMTPDebug: whether to enable SMTP debug information for testing (1 for errors and messages or 2 for messages only).
  - If you choose to set the application server to use JNDI lookup:
    - a. Remove all values from the <param-value> elements (that is, <param-value></param-value>).
    - b. Add the following code immediately before the </web-app> tag at the end of the file and save the file:
 

```
<resource-ref>
  <res-ref-name>mail/MailSession</res-ref-name>
  <res-type>javax.mail.Session</res-type>
  <res-auth>Container</res-auth>
  <res-sharing-scope>Shareable</res-sharing-scope>
</resource-ref>
```
    - c. Enable JNDI lookup in the application server. For the version of WebSphere Application Server Community Edition that is delivered with the manager, open var\config\config-substitutions.properties and add the mail server information to the SMTPHost property. For example: SMTPHost=mailserver.example.com.
    - d. Restart the application server to apply the change to the SMTPHost property.



4. Use the file compression utility to add the changed version of the \WEB-INF\web.xml configuration file back to the manager WAR file.
5. Deploy the manager WAR file to the application server.

You can now use the manager to enable email notification for work order changes.

---

## Configuring the connection manager

The connection manager is a web application that stores Optim directory connection information for InfoSphere Optim components. To connect InfoSphere Optim components with an Optim directory, access the connection manager and configure the connection information. You might also need to upload Java Database Connectivity (JDBC) drivers to the connection manager so that the connection manager can access the Optim directory.

### Accessing the connection manager

Use a web browser to access the connection manager.

You must use a manager user account with admin access to access the connection manager.

To access the connection manager, go to `http://hostname:port/ocm/admin`, where *hostname* and *port* are the host name and port of the application server on which the connection manager is deployed. If you deploy the connection manager to the version of WebSphere Application Server Community Edition that is delivered with the connection manager, then the default port is 8443. Your browser might warn you of a problem with the website's security certificate. This is expected if you use SSL to access a web application that uses a self-signed certificate. Choose to continue to the website.

If you cannot access the connection manager, ensure that the following statements are true.

- The connection manager is started on the application server on which the connection manager is deployed.
- You can access the application server on which the connection manager is deployed from your computer.
- Your web browser is supported by the connection manager.

Bookmark the location of the connection manager for future access.

### Creating an Optim directory connection in the connection manager

You can create an Optim directory connection manually in the connection manager before the Optim directory is created with the Optim Configuration program. The Optim directory connection contains the connection information for the Optim directory and the Java Database Connectivity (JDBC) driver for the Optim directory database.

You must use a manager user account with admin access to access the connection manager.

The connection manager must have a JDBC driver for the Optim directory database. If the connection manager does not have the correct JDBC driver, you must have the JDBC driver to upload to the connection manager. Upload the JDBC driver when you create the Optim directory connection.

You must also have the JDBC connection properties that the connection manager can use to connect to the Optim directory database. The connection properties can include the following database properties:

- Vendor and version
- Host name or IP address
- Port number
- Schema

- User ID and password

To create an Optim directory connection in the connection manager:

1. Access the connection manager in a browser and sign in.
2. Click **New**.
3. Complete the steps in the wizard.

## Editing an Optim directory connection in the connection manager

When you create an Optim directory with the Optim Configuration program, an Optim directory connection is created in the connection manager. After you create an Optim directory, associate the Optim directory connection with the Java Database Connectivity (JDBC) driver for the Optim directory. You can use the Optim directory connection only after the Optim directory connection is associated with a JDBC driver.

You must use a manager user account with admin access to access the connection manager.

The connection manager must have a JDBC driver for the Optim directory database. If the connection manager does not have the correct JDBC driver, you must have the JDBC driver to upload to the connection manager. Upload the JDBC driver when you edit the Optim directory connection.

You must also have the JDBC connection properties that the connection manager can use to connect to the Optim directory database. The connection properties can include the following database properties:

- Vendor and version
- Host name or IP address
- Port number
- Schema
- User ID and password

To edit an Optim directory connection in the connection manager:

1. Access the connection manager in a browser and sign in.
2. Click **Edit**.
3. Complete the steps in the wizard.



---

## Chapter 4. Configuring the server

The *server* is the component that processes service requests made from other components. Before the server can accept service requests, you must configure the server for your environment. The process through which you configure the server depends on the operating system on which the server is installed.

---

### Configuring the server on a Microsoft Windows computer

The *server* is the component that processes service requests that are made from other components. After the server is installed, configure the server to accept service requests from the manager or the service interface.

Before you configure the server:

1. Configure the first workstation with the configuration program PR0CNFG.EXE on a Microsoft Windows computer.
2. Deploy and configure the connection manager.

To configure the server on a Microsoft Windows computer:

1. Run the server settings program PR0ASAP.EXE. The program is in *install\_folder*\rt\BIN, where *install\_folder* is the installation folder for InfoSphere Optim components. For example, the server settings program is located by default in C:\IBM\InfoSphere\Optim\rt\BIN.
2. Click **Configuration** to run the configuration program PR0CNFG.EXE.
3. In the configuration program, click **Tasks > Access Existing Optim Directory** and complete the wizard.
4. Edit the server settings as appropriate and click **Apply**. In particular, review and edit the following information.
  - **General** tab
    - Review **Temporary Work Directory** and edit as appropriate.
    - Review **Data Directory** and edit as appropriate.
  - **Connection** tab
    - Click **Merge Current User** to merge the connection settings from the current user account with the connection settings on the server.
    - Verify that passwords are set for all the entries in the list.
  - **Startup** tab
    - Set **Start How** to start as a service.
    - Set **Service Logon** to use a local system account.
    - Set **Start When** to manual, click **Start Service**, and set **Start When** to automatic.
  - **Endpoints** tab
    - Set the port number on which the server is to listen for Remote Procedure Call (RPC) connections from clients.
    - Click **Update Product Configuration Files**, select **Update** for each product configuration file that you want to update with the endpoint settings on the **Endpoints** tab, and click the **Update** button.
  - **HTTP Connection** tab

- Set the port number on which the server is to communicate with the manager and the connection manager. To communicate with other components over an HTTPS connection, select **Enable SSL communication** and set the HTTPS port, keystore, and truststore to use.
  - Set the location of the connection manager and the user ID and password of a manager account with a user role of admin in **Connection Manager**
5. Click **Configuration** to run the configuration program PROCNFG.EXE.
  6. Click **Tasks > Enable/Disable this Machine as an Optim Server** and complete the wizard.

## Updating data store alias information for a server on a Microsoft Windows computer

After you add or edit a data store alias to an Optim directory, you must update the data store alias information on each server. To update data store alias information, merge the connection settings from the current user account with the connection settings on the server.

To update data store alias information for a server on a Microsoft Windows computer:

1. Run the server settings program PROASAP.EXE. The program is in *install\_folder\rt\BIN*, where *install\_folder* is the installation folder for InfoSphere Optim components. For example, the server settings program is located by default in C:\IBM\InfoSphere\Optim\rt\BIN.
2. Click **Connection**, click **Merge Current User**, and click **OK** to confirm.
3. Click **OK**.

---

## Configuring the server on Linux and UNIX

Configuration files and shell scripts are installed with the executable files when you install the server in a supported Linux or UNIX environment. These objects establish defaults for the server and must be customized to reflect your network environment. Modify these files with a text editor such as **vi** or **emacs**.

### Configuration Files

Configuration files are ASCII text files and are installed in the /etc directory that is subordinate to the PSTHOME directory. PSTHOME is an environment variable, set during installation, that points to the directory in which the server is installed.

The configuration file names for the server are:

#### **pstserv.cfg**

Configures prosvce, the server daemon.

#### **pstlocal.cfg**

Configures local command line.

The appropriate Configuration file is loaded and validated when pr0svce or the command line utility starts up. You can also use pr0svce -v to validate pstserv.cfg or pr0cmd -v to validate pstlocal.cfg.

To reload the configuration file for prosvce while it is running, use pr0svce -u from a console under the user account for the daemon (or use pr0svce -u *userid* from root). After all clients have logged off, the file is read, reloaded, and validated. A console message and system log verify the file has been loaded.

**Note:** Use pr0svce -L (or use pr0svce -L *userid* from the root account) to determine whether the system is waiting to reload.

### Shell Scripts

The installed shell scripts are:

## **RTSETENV**

Defines the operating environment for the server. Installed in the PSTHOME directory and designed to be included in a user .profile or .login script to set up the environment for the server or command line on login.

## **RTSERVER**

Provides commands to control the server process. Installed in /sbin, subordinate to the PSTHOME directory.

**RT4S** Used to start or stop the server from init processing. Installed in /sbin, subordinate to the PSTHOME directory, Run RT4S only as part of the system boot procedure.

## **pstserv configuration file**

The pstserv configuration file is used to configure the system for running pr0svce, the server daemon. An example of pstserv.cfg is in the /etc subdirectory to the PSTHOME directory.

The pstserv.cfg file contains the parameters that are used for running pr0svce. Each parameter in the file is accompanied by comments that explain how to set the parameter. Use the comments to set the parameters to the correct values.

## **pstlocal.cfg configuration file**

Unless a command line process is directed to a server, the process is executed locally and the settings in pstserv.cfg do not apply. Use the pstlocal.cfg configuration file to provide settings for these local processes. An example of pstlocal.cfg is in the /etc subdirectory to the PSTHOME directory.

The pstlocal.cfg file contains the parameters that are used for running local processes. Each parameter in the file is accompanied by comments that explain how to set the parameter. Use the comments to set the parameters to the correct values.

## **rtsetenv shell script**

This file is a script to include in a user .profile or .login script to define the operating environment for the server. The rtsetenv script sets up the server daemon or command-line environment on login. A sample is in the PSTHOME directory.

The following parameters are required:

### **PSTHOME**

The server installation location.

PSTHOME=/opt/IBM/InfoSphere/Optim

## **rtserver shell script**

The rtserver script contains commands that control the server process. You must change the script if the server is installed in a directory other than the default directory, /opt/IBM/InfoSphere/Optim. You must also change the script if the server is run under a user account other than root.

The rtserver shell script is in the /sbin directory that is subordinate to the Optim installation directory. To modify the environment variables that specify the server directory and the user account, edit the following places in the script:

- PSTHOME=\${PSTHOME:directory/rt} to define the directory that contains the server.
- PSTUSER=\${PSTUSER:user} to identify a user other than root.

## **Arguments**

rtserver arguments define the operation to be performed, as follows.

**rtserver start**

Start the server in the background. The stdout and stderr output information is written to a file named `pr0svce.out`, which can be found in the temp directory that is subordinate to the installation directory.

**rtserver stop**

Stop a running server instance. The server stops after processes are complete.

**rtserver kill**

Kill a running server instance. The server stops abruptly, without regard to running processes.

**rtserver update**

Reread the `pstserv` configuration file after processes complete. Use this command to change the configuration file without restarting the server.

**rtserver list**

List all processes that are running on the server. The list includes the following information:

- PID of the process
- name of the computer that delegates the process
- type of process (archive, extract, and so on)
- name of the process request
- time that the process started
- elapsed running time for the process

**rtserver verify server**

Verify settings in the `pstserv` configuration file, used to configure the system for running the server.

**rtserver verify local**

Verify the settings in the `pstlocal` configuration file, which provides settings for local operation, by using the command line.

**rt4s shell script**

The `rt4s` shell script is used to start or stop the server from `init(1)` processing, and must be run as part of the system boot procedure. You must change the `rt4s` shell script if the server is installed in a directory other than the default directory, `/opt/IBM/InfoSphere/Optim/rt`. You must also change the `rt4s` shell script if the server is run under a user account other than `root`.

To modify the environment variables that specify the server directory and the user account, edit the following places in the script:

- `PSTHOME=${PSTHOME: directory/rt}` to define the directory that contains the server.
- `PSTUSER=${PSTUSER: user}` to identify a user other than `root`.

**Symbolic links**

A symbolic link allows a file name in one directory to point to a file in another directory.

To start and shut down the server as part of `init` processing, you must create symbolic links to the `rt4s` script in the following directories:

- `rc2.d`, where 2 is the run level for startup
- `rc1.d`, where 1 is the run level for shutdown

The location of the `rc2.d` and `rc1.d` directories is platform-specific:

- Under Solaris and Linux, the location is `/etc`.
- Under HP-UX, the location is `/sbin`.
- Under AIX, the location is `/etc/rc.d`.

Use the **ln** command to create symbolic links, as follows: `ln -s actualfile linkname`.

*actualfile*

File to which a symbolic link points.

In this case, specify `rt4s`.

*linkname*

Name of a symbolic link that is used to point to a file.

In this case, point links named `S99RT4S` and `K07RT4S` to `rt4s`.

## Solaris or Linux

To start and shut down the server during Solaris or Linux init processing, create symbolic links to the `rt4s` script in directories `/etc/rc2.d` and `/etc/rc1.d`.

1. Log in as the root user.
2. From the console, enter the following commands:

```
ln -s /opt/IBM/InfoSphere/Optim/rt/sbin/rt4s /etc/rc2.d/S99rt4s
ln -s /opt/IBM/InfoSphere/Optim/rt/sbin/rt4s /etc/rc1.d/K07rt4s
```

## HP-UX

To start and shut down the server during HP-UX init processing, create symbolic links to the `rt4s` script in directories `/sbin/rc2.d` and `/sbin/rc1.d`.

1. Log in as the root user.
2. From the console, enter the following commands:

```
ln -s /opt/IBM/InfoSphere/Optim/rt/sbin/rt4s /sbin/rc2.d/S99rt4s
ln -s /opt/IBM/InfoSphere/Optim/rt/sbin/rt4s /sbin/rc1.d/K07rt4s
```

## AIX

To start and shut down the server during AIX init processing, create symbolic links to the `rt4s` script in directories `/etc/rc.d/rc2.d` and `/etc/rc.d/rc1.d`.

1. Log in as the root user.
2. From the console, enter the following commands:

```
ln -s /opt/IBM/InfoSphere/Optim/rt/sbin/rt4s /etc/rc.d/rc2.d/S99rt4s
ln -s /opt/IBM/InfoSphere/Optim/rt/sbin/rt4s /etc/rc.d/rc1.d/K07rt4s
```



---

## Chapter 5. Configuring the designer

The first time that you run the designer, you must connect to an Optim directory, and you must set the location of a connection manager in **Preferences**. If runtime services are installed in a location other than the default location, you must also set the local server location in **Preferences**.

For more detailed information about how to configure the designer, see the designer information.





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## Chapter 6. Component log file locations

If a test- or production-level service fails, or if there are issues with a component, review the log information to troubleshoot the problem.

### Server

If a service fails, review the server log first. The server log is available from the manager under **Service Monitoring**. Select the service instance that failed and click **Outputs** to view the log.

### Manager, connection manager, and service interface

Because the manager, the connection manager, and the service interface are Java EE applications that run on an application server, all log messages are in the application server log. For example, for WebSphere Application Server Community Edition, the application server log is in *wascefolder*/var/log/server.log, where *wascefolder* is the folder in which WebSphere Application Server Community Edition is installed. For example, the default location of the log on a Microsoft Windows computer is C:\IBM\InfoSphere\Optim\shared\WebSphere\AppServerCommunityEdition\var\log\server.log.



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