IBM InfoSphere Optim
Version 9 Release 1

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 33.

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 configure a repository for your IBM® InfoSphere® Optim™ solution. This document also describes how to configure IBM InfoSphere Optim Manager and its related components so that you can run test- and production-level services.

Chapter 1. InfoSphere Optim solution components

Use IBM InfoSphere Optim solution components to run and manage test- and production-level services in a repository.

InfoSphere Optim Manager

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

To run services that you develop with IBM InfoSphere Optim Designer, access the manager through InfoSphere Optim Designer. (InfoSphere Optim Designer is also known as the *designer*.)

To run and manage services that are in test or production, access the manager through an application server. For example, the manager is delivered with a version of WebSphere® Application Server Community Edition, to which you can deploy the manager with minimal configuration. You can then access the manager on the application server and use the manager to run and manage services in the repository.

Repository

The *repository* is a persistent storage area for data and other application resources.

For InfoSphere Optim solutions, the repository is the central location that contains all service information for services that are in development, test, or production. The repository contains a registry that contains the locations of all components that use the repository. The repository also contains configuration information for the manager and the service interface.

You can install and use multiple repositories, but each component instance can use only one repository at a time.

Each repository consists of a repository server and a repository manager. The repository server is an Informix® database that is specifically configured to hold the service information for IBM InfoSphere Optim data management solutions. The repository manager is the repository management application that administers the repository server. You can obtain a repository by installing the repository manager and the repository server together on a single Linux or UNIX computer. Alternatively, you can obtain a repository by installing IBM InfoSphere Optim Repository. InfoSphere Optim Repository is a VMware image of a Linux environment that includes preconfigured instances of the repository manager and the repository server. Use VMware Player or similar software to play the VMware image.

InfoSphere Optim Proxy

IBM InfoSphere Optim Proxy is a constantly running process that receives service requests from the manager and forwards the service requests to the server for processing. InfoSphere Optim Proxy is also known as the *proxy*.

For fast performance, install the proxy and server on a computer that has fast connections to the data sources that you are processing.

Server

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

For fast performance, install the proxy and server on a computer that has fast connections to the data sources that you are processing. To install the server, install IBM InfoSphere Optim from the server launchpad.

InfoSphere Optim Repository Services

IBM InfoSphere Optim Repository Services is the Informix client software for the repository database. The server can connect to a repository only if InfoSphere Optim Repository Services is also installed on the computer. InfoSphere Optim Repository Services is also known as *repository services*.

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.

How services in a repository are run by using the manager and other components

Components must work together to complete a service request successfully.

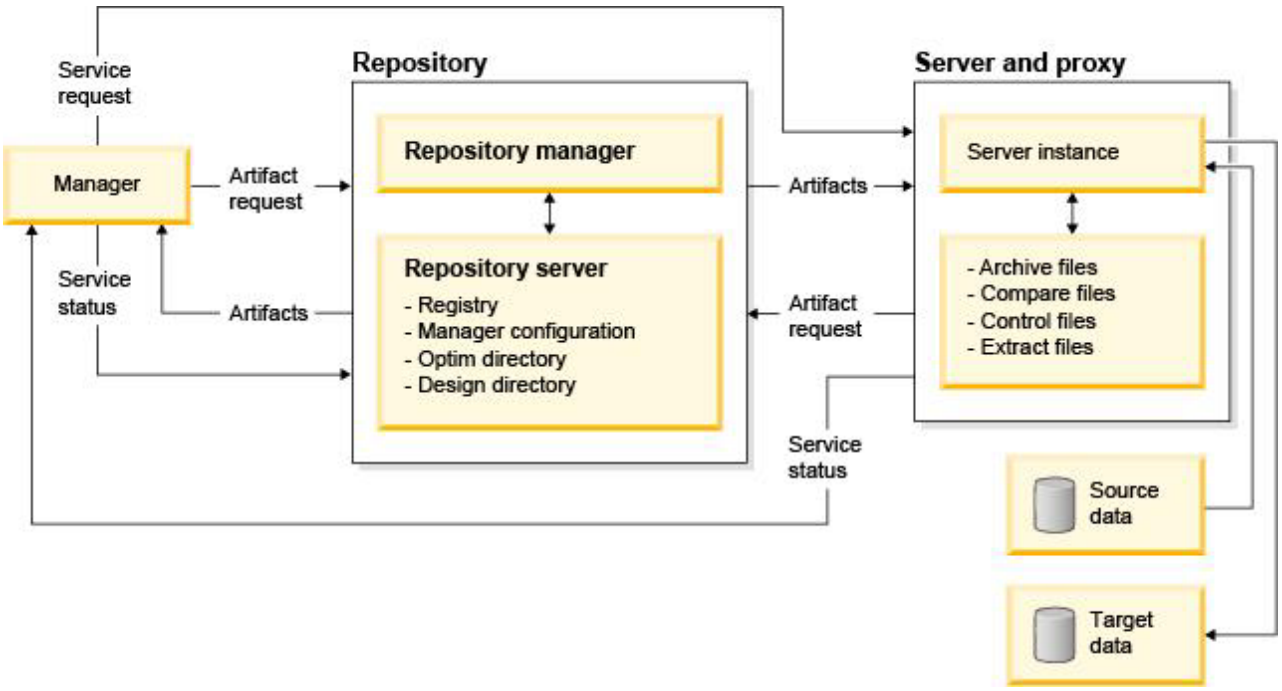

Figure 1. Components running a service

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

1. A user accesses the manager to view a list of available services.
2. The manager sends a request to the repository for a list of available services, and the repository sends the list of available services to the manager.
3. The user selects a service to run.
4. The manager forwards the service request to the proxy to which the service is assigned.
5. The proxy launches an instance of the server to process the service request.
6. The server processes the service request. Depending on the type of service, the server might request and receive additional service information from the repository, access data from a data source, read and write to files that are stored on the server computer, and write data to a data source.
7. When the service is complete, the server instance closes itself.
8. The manager reads the service status from the server computer and updates the repository.
9. A user accesses the manager to determine whether a service completed successfully.
10. The manager reads the service status from the repository and displays the service status to the user.

Chapter 2. Configuring the manager and other components

In a production environment, the manager and other components in your Optim solution can be installed on different computers for greater performance and reliability. Configuring the components to work together might require the cooperation of many different people.

The following job roles might need to collaborate to configure the manager with other components:

- Repository administrator
- Application server administrator
- System administrator of server and proxy computer
- Service developer

Repository administrator

The repository administrator is responsible for the initial setup of the repository. The repository administrator can choose to install and start the repository server and the repository manager on a Linux or UNIX computer. Alternatively, the repository administrator can choose to install and run the repository virtual machine that is installed with IBM InfoSphere Optim Repository.

To complete the initial setup of the repository server and the repository manager, the system administrator must complete the following tasks:

1. Install IBM InfoSphere Optim Repository Server and IBM InfoSphere Optim Repository Manager by using IBM Installation Manager. The repository server must be installed as root, and the repository server must be installed before or at the same time as the repository manager.
2. Start the repository manager manually. After the repository manager starts, the repository manager starts the repository server.

To complete the initial setup of the repository virtual machine in InfoSphere Optim Repository, the system administrator must complete the following tasks:

1. Install IBM InfoSphere Optim Repository by using IBM Installation Manager.
2. Install VMware Player or similar software.
3. Run VMware Player and run the repository virtual machine.

Application server administrator

The application server administrator is responsible for the initial setup of the manager. To complete the initial setup of the manager, the application server administrator must complete the following tasks:

1. Install the manager by using IBM Installation Manager. By default, the service interface is installed at the same time that you install the manager.

   You can use Installation Manager to install a version of IBM WebSphere Application Server Community Edition that is delivered with the manager. You can deploy the manager to WebSphere Application Server Community Edition for test and evaluation purposes. When you install this version of WebSphere Application Server Community Edition, you specify the information that WebSphere Application Server Community Edition uses to connect to the repository. Installation Manager uses this information to configure a database pool named `OptimManagerIDS`.
2. Start the application server to which you plan to deploy the manager or the service interface, if the application server is not already started.
3. Deploy the manager web archive (WAR) file to the application server.

If you are upgrading, remove any previous versions of the manager WAR files before deploying the new versions of the WAR files.

The WAR file for the manager 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 manager WAR file on Microsoft Windows is C:\IBM\InfoSphere\Optim\shared\manager\app\manager.war.

If you are upgrading, you must notify users that the manager is upgraded. A user might need to refresh the browser or clear the browser cache to get the upgraded version of the manager.

4. If you use the service interface, deploy the service interface WAR file to the application server.

   If you are upgrading, remove any previous versions of the service interface WAR files before deploying the new versions of the WAR files.

   The WAR file for the service interface is *shared_installation_directory*/osi/app/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 service interface WAR file on Microsoft Windows is C:\IBM\InfoSphere\Optim\shared\osi\app\service_interface.war.

5. If you do not use the application server that is delivered with the manager, configure a database pool or data source named OptimManagerIDS. The manager and the service interface use this database pool or data source to store configuration information in the repository. The database pool or data source must be configured with the following properties:
   - **Pool or source name**: OptimManagerIDS
   - **Database type**: Informix XA
   - **Database name**: optimpod
   - **User name**: informix
   - **Password**: opt1234X (default)
   - **Ifx IFXHOST**: Host name of repository computer
   - **Port number**: 9088
   - **Server name**: optimrepo

Depending on your needs, the application server administrator might choose to deploy additional instances of the manager on other application servers. For example, if you use multiple repositories, deploy an instance of the manager for each repository that you use. Multiple instances of the manager might require the use of multiple computers. For example, the version of WebSphere Application Server Community Edition that is delivered with the manager can be installed only once on each computer.

System administrator of server and proxy computer

The system administrator is responsible for the initial setup of the server and proxy. To complete the initial setup of the components, the system administrator must complete the following tasks:

1. Install the server from the launchpad.
2. Install the proxy and the repository services by using Installation Manager.
3. Set the repository connection profile for the repository services.

   If the server and proxy are installed on a Microsoft Windows computer, complete the following steps:

   a. Click **Start** > **All Programs** > **IBM Informix Connect** > **setnet32**.
   b. On the **Environment** tab, click **Load from File**.
   c. Select the file *install_folder*\repo\services\setnet32\optimrepository.nfx, where *install_folder* is the folder in which the InfoSphere Optim components are installed. The default location for this file is C:\IBM\InfoSphere\Optim\repo\services\setnet32\opptimrepository.nfx
   d. On the **Environment** tab, verify that the **DB_LOCALE** environment variable is set to **en_US.utf8**, and click **Apply**.

e. Click **Server Information** and verify that **HostName** is set to the host name or IP address of the repository computer.
f. Click **OK**.

If the server and proxy are installed on a Linux or UNIX computer, complete the following steps:

a. Set the following environment variables on the computer, where *install_folder* is the folder in which the InfoSphere Optim components are installed.
   - INFORMIXDIR=*install_folder*/repo/services/ids11750
   - INFORMIXSERVER=optimrepo
   - INFORMIXSQLHOSTS=*install_folder*/repo/services/ids11750/etc/sqlhosts

   For example, the default value of INFORMIXDIR is /opt/IBM/InfoSphere/Optim/repo/services/ids11750.
b. Add the paths $INFORMIXDIR/lib, $INFORMIXDIR/lib/esql, and $INFORMIXDIR/lib/cli to the library path environment variable on your computer (LD_LIBRARY_PATH on Linux).
c. Add the paths $INFORMIXDIR/lib and $INFORMIXDIR/bin to the path environment variable on your computer (PATH on Linux).
d. Add your server to the sqlhosts file, which is in the directory indicated by the INFORMIXSQLHOSTS environment variable. Open the file sqlhosts in a text editor and add the following line, where *hostname* is the host name or IP address of the repository computer.

   ```
   optimrepo olsoctcp hostname 9088
   ```
e. Open the /etc/services file and add the following line to the file. If the file already contains a 9088/tcp line, replace that line with the following line.

   ```
   optimrepo 9088/tcp
   ```

4. Configure the proxy to use the server.
5. Install database clients on the server and proxy computer as necessary.

Depending on your needs, the system administrator might choose to install additional instances of the proxy and server on other computers.

Service developer

A service developer is responsible for adding services to the repository and testing services by using the manager. Service developers use IBM InfoSphere Optim Designer to design and test services. The service developer can use the manager (user role designer) to verify that the service is on the repository and to test the service further. When the service developer is done testing, the service developer can promote the service to another repository.

For example, an enterprise uses a test repository and a production repository. A service developer at that enterprise uses InfoSphere Optim Designer to design services and publish the services to the test repository. The service developer then tests the services in the test repository. When the service is ready for production use, the service developer promotes the services to the production repository.

For more information about how to design, test, and publish services by using InfoSphere Optim Designer, see the InfoSphere Optim Designer documentation.

Related tasks:

"Configuring the manager and the service interface on WebSphere Application Server Community Edition" on page 18
The tasks that you must perform to configure the manager and the service interface depend upon the application server that you use. The manager and the service interface 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 the manager and the service interface more quickly and easily for evaluation purposes.

Related reference:

"User roles in the manager" on page 16
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.

"Configuring the proxy" on page 25
Basic proxy configuration is completed during proxy installation. To change the configuration of the proxy after installation, you must change the proxy configuration properties in the proxy product options file.

Configuring a repository

IBM InfoSphere Optim solution components require a repository to store service and configuration information. You can obtain a repository by installing and running the repository server and the repository manager together on a Linux or UNIX computer. You can also obtain a repository by installing InfoSphere Optim Repository on a Linux or Microsoft Windows computer and running the repository virtual machine.

Configuring the repository manager and repository server as a repository

You can obtain a repository for your InfoSphere Optim solution by installing the repository manager and the repository server on a Linux or UNIX computer. Ensure that the ports that these components use are free, and install these components simultaneously, and these components work without additional configuration.

Before you install the repository manager and repository server on a computer, verify that the following ports are not already being used by other applications. If these ports are not in use on the computer, remove the ports from the list of reserved ports in the `/etc/services` file.

- 8088
- 9088

Plan to install the repository server at the same time that you install the repository manager or before you install the repository manager. You cannot install the repository manager before you install the repository server.

When the repository server is installed, an `informix` user account is created if such a user account did not exist. Use the `informix` user account to administer the repository when necessary.

Starting the repository manager and the repository server

Use this task to start the repository manager and the repository server on a Linux or UNIX computer. If you use the repository virtual machine, the repository manager and the repository server are set to start automatically when you run the virtual machine. If you do not use the repository virtual machine, you must start the repository manager and the repository server manually.

To start the repository manager and the repository server on a Linux or UNIX computer:

1. Log on to the computer with the `informix` user account. If an `informix` user account does not exist when the repository server is installed, an `informix` user account is automatically created with the default password `opt1234X`.
2. At the command prompt, enter the command `repomanager.ksh` to start the repository manager. If the repository manager starts successfully, the repository manager automatically starts the repository server.

To stop the repository manager, enter the command `stoprepomanager.ksh`. You must be root or the `informix` user to run this command.

Before you shut down the repository computer, stop the repository manager. Stopping the repository manager also stops the repository server.

Related reference:

"Repository user accounts" on page 13
Each component accesses the repository through a user account on the repository computer or the repository virtual machine.

"Repository backup strategies" on page 14
The repository contains all service and configuration information for your InfoSphere Optim data management solution environment. Back up the information in your repository regularly to avoid catastrophic data loss in the event of hardware failure or accidental deletion. Backups are critical before you uninstall or update your repository, because an update or reinstall deletes all data in the repository.

Configuring the repository virtual machine

You can obtain a repository for your InfoSphere Optim solution by installing InfoSphere Optim Repository on a Linux or Microsoft Windows computer. When you run the repository virtual machine on a virtual machine player, the preconfigured repository server and repository manager within the virtual machine are started automatically.

Running the virtual machine in InfoSphere Optim Repository

To use IBM InfoSphere Optim Repository as the repository for your InfoSphere Optim solution, run the repository virtual machine on a virtual machine player. The repository manager and repository server are set to start automatically when you run the repository virtual machine.

Before you begin, install InfoSphereOptim Repository on your computer. Also, download and install VMware Player or other software that you can use to run VMware virtual machines. To download VMware Player, go to the VMware website at http://www.vmware.com/products/player/.

To run the repository virtual machine by using the VMware player, run VMware Player and complete the following steps from VMware Player.

1. Open the virtual machine for the repository. The virtual machine is `OptimRepository.vmdk`, and the default location is at `C:\IBM\InfoSphere\Optim\repo\vm\image` on Microsoft Windows or `/opt/IBM/InfoSphere/Optim/repo/vm/image` on Linux.
2. Click **Edit virtual machine settings**, then click **Network Adapter** on the **Hardware** tab. Verify that the network adapter is bridged and set to connect at power on. When you are finished, click **OK**.
3. Click **Play virtual machine**. If you are prompted to specify whether you moved or copied the virtual machine, click **I copied it**. If the virtual machine software prompts you to change any values, choose to leave the values unchanged. If the virtual machine prompts you to download additional software, choose not to download the software. If you see the following message, open the file `OptimRepository.vmx` in a text editor and add the line `vmx.allowNested = "TRUE"` to the file. The file `OptimRepository.vmx` is in the same directory as the virtual machine `OptimRepository.vmdk`.

   ```
   You are running VMware Player through an incompatible hypervisor.
   You cannot power on a virtual machine until this hypervisor is disabled.
   ```

4. When the login prompt is displayed, note the IP address and host name that are displayed in the line before the login prompt. If you must see the IP address of the repository virtual machine after login, enter the command `echoip`.
5. Log in with the `informix` user account. The default password is `opt1234X`. If the UI does not start automatically, start the UI by entering `startx` at the user prompt.
6. When the desktop is displayed in the repository virtual machine, right-click the virtual machine desktop and click **xterm**.
7. Enter the command `repomanagerstate` to determine whether the repository manager is running. The repository manager and repository server are set to start automatically when you run the repository virtual machine. If the repository manager is not running, then enter the command `repomanager` to start the repository manager. If the repository manager starts successfully, the repository manager automatically starts the repository server.

After you start the repository virtual machine for the first time, use a text editor to change the following files on the repository computer.

- Add the IP address and host name of the repository virtual machine to the `hosts` file of the repository computer.
- Add `optimrepo 9088/tcp` to the `services` file of the repository computer.

The location of the `hosts` and `services` files depends on the operating system of the computer on which you installed InfoSphere Optim Repository.

- Linux: `/etc/`
- Microsoft Windows: *`%SystemRoot%`*`\system32\drivers\etc`, where *`%SystemRoot%`* is the location of the system folder. For example, the `hosts` and `services` files are commonly in the directory `C:\WINDOWS\system32\drivers\etc`.

If your DNS name server does not reference the repository virtual machine, you must also add these lines to the `hosts` and `services` files of each computer that uses the repository.

After you change the `hosts` and `services` files, enter the following URL into a browser, where *`repository`* is the host name or IP address of the repository virtual machine: `http://`*`repository`*`:9088/status/init`. If you are prompted to authenticate, the repository is functioning properly and can be accessed by other applications on the repository computer.

Before you shut down the repository computer, shut down the repository virtual machine.

Related tasks:

"Shutting down the virtual machine in InfoSphere Optim Repository"
When you use IBM InfoSphere Optim Repository as the repository for your solution, shut down the virtual machine before shutting down the repository computer.

Related reference:

"Repository user accounts" on page 13
Each component accesses the repository through a user account on the repository computer or the repository virtual machine.

"Repository backup strategies" on page 14
The repository contains all service and configuration information for your InfoSphere Optim data management solution environment. Back up the information in your repository regularly to avoid catastrophic data loss in the event of hardware failure or accidental deletion. Backups are critical before you uninstall or update your repository, because an update or reinstall deletes all data in the repository.

Shutting down the virtual machine in InfoSphere Optim Repository

When you use IBM InfoSphere Optim Repository as the repository for your solution, shut down the virtual machine before shutting down the repository computer.

You must be signed in as the admin user to shut down or restart the repository virtual machine. If you are not signed in as the admin user, complete the following steps:

1. Right-click the virtual machine desktop, click **Logoff**, and click **Yes** when prompted.
2. After the desktop shuts down, enter exit at the command prompt.
3. Sign on as admin

To shut down the repository virtual machine:

1. Right-click the virtual machine desktop and click **xterm**.
2. Enter one of the following commands:
   - To shut down and close the repository virtual machine, enter the command sudo shutdown -h now.
   - To restart the repository virtual machine, enter the command sudo shutdown -r now.

Maintaining the size of the repository virtual machine

When you use the IBM InfoSphere Optim Repository as the repository for your InfoSphere Optim solution, the repository virtual machine might grow over time. For best performance, you must regularly maintain the size of the repository virtual machine.

Before you begin, shut down the repository virtual machine.

To maintain the size of the repository virtual machine:

- Defragment the virtual machine. From the VMware player, open the virtual machine for the repository, click **Edit virtual machine settings**, then **Hard Disk (IDE)** on the **Hardware** tab, and click **Utilities** > **Defragment**.
- Compact the virtual machine. From the VMware player, open the virtual machine for the repository, click **Edit virtual machine settings**, then **Hard Disk (IDE)** on the **Hardware** tab, and click **Utilities** > **Compact**.
- Expand the virtual disk if you cannot shrink the virtual machine sufficiently by defragmenting and compacting the virtual machine. From the VMware player, click **Edit virtual machine settings**, then **Hard Disk (IDE)** on the **Hardware** tab, click **Utilities** > **Expand**, and enter the new size of the virtual disk.

Related tasks:

"Shutting down the virtual machine in InfoSphere Optim Repository" on page 10
When you use IBM InfoSphere Optim Repository as the repository for your solution, shut down the virtual machine before shutting down the repository computer.

Repository virtual machine scripts and commands

The repository virtual machine administers itself with minimal user involvement. The repository virtual machine is supplied with scripts and commands that you can use to start, stop, and manage the repository.

All scripts are in the /usr/local/sbin directory of the repository virtual machine.

Change to Repository Server (Informix database server) Directory (cdids or cdrepo)
The commands . cdids and . cdrepo change the current directory to /opt/IBM/Informix/Optim/repo/server/ids1170. A dot and space must precede the command.

Change to Repository Manager Directory (cdmanager or cdrepomanager)
The commands . cdmanager or . cdrepomanager change the current directory to /opt/IBM/Informix/Optim/repo/manager. A dot and space must precede the command.

Run the Informix DB–Access utility (dbacess)
The command dbaccess starts the Informix DB–Access utility, which you can use to access, modify, and retrieve information from the repository server.

Delete Repository Database locks (deleterepolock ##)
The command `deleterepolock` *`lock_id`* deletes the repository database lock with the specified lock ID See `listerepolocks` to display a list of repository database locks

Display the repository server environment variables (echoenv)
The command `echoenv` displays the repository server environment variables.

Display the IP Address (echoip)
The command `echoip` displays the optimrepository IP address.

Display Network Information (echorules)
The command `echorules` displays network information for the optimrepository, including the MAC address and number of Ethernet connections. There must be only one Ethernet connection (eth0).

Reset the IP address (hostipaddr_reset)
The command `hostipaddr_resets` updates the `/etc/hosts` file with the optimrepository IP address. Useful if the virtual machine is hibernated and when resumed, has a new IP address. This script is automatically called at virtual machine startup.

List Repository Database Locks (listrepolocks)
The command `listrepolocks` displays the repository database locks. See `deleterepolock` to delete a specific repository database lock.

List Running Processes (pids)
The command `pids` displays information about all running processes for the current user.

List Running Processes for Repository Server (pidsids)
The command `pidsids` displays information about all running repository server processes.

Prepare the Image for Moving (rmrules)
The command `rmrules` removes the file `/etc/udev/rules.d/70-persistent-net.rules` If you plan on making a copy of the virtual machine, you must first remove this file by using the `rmrules` script.

Remove SNAP and TRACE files (rmsnap)
The command `rmsnap` removes all snap and trace files that are produced when the repository manager stops abnormally.

Start the Repository Manager (repomanager or startrepomanager)
The commands `repomanager` and `startrepomanager` call the `optimrepomanager.ksh` script to start the repository manager. If the repository manager starts successfully, the repository manager automatically starts the repository server. The `repomanager` and `startrepomanager` scripts are functionally identical. The output goes to two files:

`repomanager.log`
Normal output

`repomanager.err`
Error output

Stop the Repository Manager (stoprepomanager)
The command `stoprepomanager` calls the `stoprepomanager.ksh` script to stop the repository manager. You must be the informix user to run this command.

Verify Repository Server Is Running (repostate)
The command `repostate` displays the repository server state. The repository server is functioning properly if the repository server is listening on port 9088 of the IP address of the virtual machine. If the repository server uses IP address 127.0.0.1, you cannot access the repository from outside the virtual machine. If the repository server uses IP address 127.0.0.1, then open the file `/opt/IBM/InfoSphere/Optim/repo/server/ids11750/etc/sqlhosts.optimrepo` and ensure that the host name is the virtual machine name `optimrepository` and not `*localhost`.

Verify Repository Manager Is Running (repomanagerstate)
The command `repomanagerstate` shows whether the repository manager is running.

Shut Down or Restart the Virtual Machine (shutdown)
The command `shutdown` shuts down or restarts the repository virtual machine. You must be the admin user to use the `shutdown` command.

- Enter `sudo shutdown -h now` to shut down the repository virtual machine.
- Enter `sudo shutdown -r now` to restart the repository virtual machine.

Start the Repository Server (startrepo)
The command `startrepo` starts the repository server by calling the `startrepo.ksh` file that was installed by the repository server installer. You must be the informix user to run this script.

Stop the Repository Server (stoprepo)
The command `stoprepo` stops the repository server by calling the `stoprepo.ksh` script that was installed by the repository server installer.

Repository user accounts

Each component accesses the repository through a user account on the repository computer or the repository virtual machine.

Repository computer user accounts

When you install the repository server on a computer, IBM Installation Manager creates an `informix` user account on the computer if the `informix` user account does not exist. By default, the `informix` user account is created with the password `opt1234X`. The `informix` user account is used for repository manager and server administration (start the repository manager and repository server) and for repository access for most components

When you install the repository manager on a computer, Installation Manager creates a user account on the computer with a user name of your choice. Use this account for tasks other than administration and for repository access for the proxy. You can use any user name and password for this user account. By default, Installation Manager creates user account `optim` with the password `opt1234X`.

Virtual machine user accounts

There are three predefined user accounts on the repository virtual machine.

ID	Default password	Use the account for:
`admin`	`opt1234X`	Virtual machine administration (shutdown or restart)
`informix`	`opt1234X`	Repository manager and server administration (start the repository manager and repository server), repository access for most components
`optim`	`opt1234X`	Tasks other than administration, repository access for the proxy

Changing passwords

The `informix` user account is used by the repository manager, the designer, the manager, the service interface, and the server to access the repository databases. If you change this password, you must also change the password that is used by these other components to access the repository databases. The password must be changed in the following locations:

- Repository manager: change the -Dcom.ibm.nex.informix.password property of the /opt/IBM/InfoSphere/Optim/repo/manager/eclipse.ini file.
- Designer: right-click on the repository in **Repository Explorer**, click **Open**, and change the password.
- Manager and service interface: change the password that the application server uses for the database pool or data source named OptimManagerIDS.
- Server: change the password in the **Connect to Database** properties of the Optim directory (which can be set through the Configuration program).

If you change the password that the proxies use to access the repository databases, you must configure the proxies to use the new password. The password can be changed in the -Dcom.ibm.nex.informix.password property of the *install_folder*/proxy/eclipse.ini file, where *install_folder* is the base installation folder for InfoSphere Optim components. The default base installation folder on Linux and UNIX is /opt/IBM/InfoSphere/Optim, and the default base installation folder on Microsoft Windows is C:\IBM\InfoSphere\Optim\.

If you must change the password in a configuration file, encrypt the password before you change the password in the file. Use the optimcmd -encrypt *password* or optimcmd -c *password* command to encrypt the password. The **optimcmd** tool is installed with the manager, the repository server, and IBM InfoSphere Optim Repository, and is in the /tools/optimcmd folder for each component. For example, if you install the manager on a Windows computer, the default location of the **optimcmd** tool is C:\IBM\InfoSphere\Optim\shared\tools\optimcmd\optimcmd.bat.

Repository backup strategies

The repository contains all service and configuration information for your InfoSphere Optim data management solution environment. Back up the information in your repository regularly to avoid catastrophic data loss in the event of hardware failure or accidental deletion. Backups are critical before you uninstall or update your repository, because an update or reinstall deletes all data in the repository.

Scheduled backups with ontape

For maximum automation, back up your repository is by scheduling daily backups with the Informix **ontape** utility.

The repository virtual machine that is installed with IBMInfoSphereOptim Repository includes a /home/informix/daily_ids_backup.sh script that is scheduled to run daily at 3 a.m. local time. The script uses the **ontape** utility to save 14 days of backups. The script writes a log of its activity to /home/informix/daily_ids_backup.log. Edit the crontab of the informix user to change the schedule which backups are run. Set the IDS_DAYSTOKEEP variable in the script to the number of backups that you want to keep.

By default, the **ontape** utility stores backups in /home/informix/backups/system on the repository virtual machine. To ensure that backups are available in the case of hardware failure, set the **ontape** utility to store backups to an external drive.

To set the **ontape** utility to store backups to an external drive:

1. Log on as optim.
2. At the command prompt, enter mkdir /mnt/*mymount*, where *mymount* is the name to use for the mount point.
3. Use the mount command to mount the external file system to the mount point. For example, to mount a Windows file system to the mount point, you might enter a command that is similar to the following command:

```
mount -t cifs //mywincp/path /mnt/mymount -o username=mywinuid,password=mywinpass,
domain=mywindomain,uid=informix,gid=informix,dir_mode=0775,file_mode=0775
```

4. Set the path in the /opt/IBM/InfoSphere/Optim/repo/server/ids11750/onconfig.optrepo file to the external drive directory to which backups are to be saved.

You can restore the repository databases by using the normal **ontape** restore procedures.

Back up by using the manager

You can use the manager to run a backup on demand. The manager uses the **UNLOAD** command of the Informix DB-Access utility to run the backup. You can run full backups and incremental backups by using the manager. You cannot schedule backups by using the manager. However, if you must run an off-schedule backup, manager-based backups are a convenient option.

You must have a user account with an admin user role to back up your repository with the manager.

By default, backups are stored in /opt/IBM/InfoSphere/Optim/repo/server/ids11750/backups on the repository computer or the repository virtual machine. To ensure that backups are available in the case of hardware failure, copy the backup files from the backup folder to an external drive. You can mount an external drive to the repository computer or the repository virtual machine, or you can use FTP to copy backups to another computer.

To restore the repository databases, first copy the backup files back to the backup folder on the repository computer or the repository virtual machine if necessary. You can then use the manager to select a backup file and restore the repository databases based on the selected backup file. After the restore is complete, you must access the application server and restart the manager web application.

For specific information about how to back up and restore a repository with the manager, see the manager user information.

Copy the repository virtual machine

If you use the repository virtual machine, you can shut down the virtual machine and copy the virtual machine to another computer. Copying the virtual machine is a simple way to back up your repository, but each backup is the size of your repository virtual machine.

Copy the contents of the *installation_folder*/repo/vm/image folder to another drive, where *installation_folder* is the base installation folder for InfoSphere Optim solutions. For example, the default folder to copy on Microsoft Windows is C:\IBM\InfoSphere\Optim\repo\vm\image.

Export the repository databases

To make an exact copy of a repository, use the manager to export the repository databases to your computer. The resulting export files can then be imported into another repository. Repository databases can be exported by using the manager at any time. If you use IBM Installation Manager to uninstall a repository, Installation Manager can export the repository databases before uninstalling the repository.

You must have a user account with an admin user role to export the repository databases with the manager.

To restore the repository databases, first copy the export files to the repository computer or virtual machine. Then, use the **optimcmd** command to import the contents of the export files into the repository server. The contents of the repository server are overwritten with the contents of the export files.

For specific information about how to export the repository databases with the manager, see the manager user information.

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 1. User roles supported by the manager

Role ID	Role name	Description of role
0	admin	The administrator of the manager, who is responsible for configuring services.
1	requestor	The service requestor, who makes requests that are to be fulfilled by others.
2	reviewer	The reviewer, who is responsible for ensuring that each service is performing its intended function.
3	designer	The service designer, who is responsible for creating and testing services and for publishing services to the repository.
4	operator	The operator, who is responsible for scheduling and running services that are in the repository.

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 2. Configuration and preferences tasks that can be performed by users with each security role

Tasks	Roles
View Proxies on the Configuration tab	admin, designer, operator, requestor, reviewer
View Users and Groups, Tabs, and Repository on the Configuration tab	admin
Set global preferences	admin
Set user and display preferences	admin, designer, operator, requestor, reviewer
Manage service groups	admin
Grant and remove user access to service groups	admin
Manage user-defined tabs	admin
Change access to tabs in the manager	admin
Administer the repository (export, back up, restore, grant and revoke access)	admin

Table 3. Service management tasks that can be performed by users with each security role

Tasks	Roles
View the Service Management tab	admin, designer, operator, requestor, reviewer
Run services and service sets	admin, designer, operator, requestor, reviewer
Schedule services and service sets	admin, designer, operator, requestor
Change input values	admin, designer, operator, requestor
Manage service sets (create, edit, delete)	admin, designer, operator, requestor, reviewer
Assign services to a server	admin, operator, requestor

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

Tasks	Roles
View the Dashboard and Service Monitoring tabs	admin, designer, operator, requestor, reviewer
Stop services	admin, designer, operator, requestor, reviewer
Restart services	admin, designer, operator, requestor, reviewer
Purge service instance information	admin, requestor
Manage service instance filters	admin, requestor

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

The tasks that you must perform to configure the manager and the service interface depend upon the application server that you use. The manager and the service interface 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 the manager and the service interface more quickly and easily for evaluation purposes.

The version of WebSphere Application Server Community Edition that is delivered with the manager and the service interface 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 manager, the language setting of the browser determines the language of the manager user interface.

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.

The version of WebSphere Application Server Community Edition that is delivered with the manager and the service interface 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 manager, the language setting of the browser determines the language of the manager user interface.

The version of WebSphere Application Server Community Edition that is delivered with the manager is preconfigured to store configuration information in the repository that you specify during installation.

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. Click **Deployer**.
2. 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`. If you prefer, you can click **Browse** to browse for the WAR file. The WAR file can take several minutes to deploy.
3. 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
   ```

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.

The version of WebSphere Application Server Community Edition that is delivered with the manager and the service interface 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 manager, the language setting of the browser determines the language of the manager user interface.

The version of WebSphere Application Server Community Edition that is delivered with the service interface is preconfigured to store configuration information in the repository that you specify during installation.

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. Click **Deployer**.
2. Enter the location of the WAR file into **Archive**, and click **Install**. The WAR file is *shared_installation_directory*`/osi/app/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\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
   ```

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 manager and the service interface as a service or daemon. The service or daemon 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.

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
```

Configuring the proxy

Basic proxy configuration is completed during proxy installation. To change the configuration of the proxy after installation, you must change the proxy configuration properties in the proxy product options file.

Location of proxy product options file

The proxy product options file is at *proxy_folder*/eclipse.ini, where *proxy_folder* is the folder to which the proxy was installed. The default proxy folder depends on the operating system and on the user who installed the proxy.

- Default proxy folder on Microsoft Windows computers: C:\IBM\InfoSphere\Optim\proxy\
- Default proxy folder on Linux or UNIX computers:
  - Proxy installed by superuser: /opt/IBM/InfoSphere/Optim/proxy/
  - Proxy installed by user other than superuser: /home/*username*/IBM/InfoSphere/Optim/proxy/, where *username* is the name of the user who installed the proxy

Configuring the proxy to use the server (InfoSphere Optim)

To use the proxy, you must first install and configure the server (IBM InfoSphere Optim) on the same computer as the proxy. For more information about how to install and configure the server, see the installation and configuration information for the InfoSphere Optim component.

After the server is installed and configured on the proxy computer, the proxy must be configured to find and run the pr0cmnd program in the server. You must also install on the proxy computer the database client libraries for any relational database management systems that the services use. The proxy computer must be able to access the repository. Use the server to run at least one service by itself to verify that the server is configured properly and ready to run services.

When you run a service, the proxy uses the pr0cmnd program that is in the folder that you specify during installation. The default program folder depends on the platform on which you install the proxy:

- Default program folder on Windows computers: C:\IBM\InfoSphere\Optim\RT\BIN\
- Default program folder on Linux or UNIX computers: /opt/IBM/Optim/rt/bin/

If the pr0cmnd program is in a folder other than the folder that was specified during installation, change the following argument in the *proxy_folder*/eclipse.ini file.

-Dcom.ibm.nex.pr0cmnd.location=*pr0cmnd_folder*

- *pr0cmnd_folder* is the program folder for the pr0cmnd program.

For example, the following line specifies /opt/IBM/Optim/dist/rt/bin as the name of the program folder for the pr0cmnd program.

-Dcom.ibm.nex.pr0cmnd.location=/opt/IBM/Optim/dist/rt/bin

Setting the proxy work directory

During installation, you set the directory that the proxy is to use to store work files. The default proxy work directory depends on the operating system and on the user who installed the proxy.

- Default work directory on Windows computers: C:\IBM\InfoSphere\Optim\proxywork\
- Default work directory on Linux or UNIX computers:
  - Proxy installed by superuser: /opt/IBM/InfoSphere/Optim/proxywork/
  - Proxy installed by user other than superuser: /home/*username*/IBM/InfoSphere/Optim/proxywork/, where *username* is the name of the user who installed the proxy

To change the work directory, open the *proxy_folder*/eclipse.ini file and look for the following line, where *work_directory* is the current work directory:

```
-Dcom.ibm.optim.proxy.workdir.root=work_directory
```

For example, the following line specifies D:\Optim\proxywork as the proxy work directory:

```
-Dcom.ibm.optim.proxy.workdir.root=D:\Optim\proxywork
```

Setting the registry and repository locations

By default, the proxy is set to use the registry and repository at http://*repository*:8088/server/registry and http://*repository*:8088/server/repository.

Open the *proxy_folder*/eclipse.ini file and look for the following lines, where *registry_URL* is the location of the registry and *repository_URL* is the location of the repository. If these lines exist, set the lines to the correct registry and repository locations. If these lines do not exist, add the lines to the file with the correct registry and repository locations.

```
-Dcom.ibm.optim.registry.url=registry_URL
-Dcom.ibm.optim.repository.url=repository_URL
```

For example, the following lines specify http://repository1:8080/server/registry as the registry location and http://repository1:8080/server/repository as the repository location.

```
-Dcom.ibm.optim.registry.url=http://repository1:8080/server/registry
-Dcom.ibm.optim.repository.url=http://repository1:8080/server/repository
```

Setting the host name and port for a proxy

If the proxy computer is assigned IP addresses dynamically, set the host name and port that are to be used by the proxy. To set the host name and port for the proxy, add the following arguments to the end of the *proxy_folder*/eclipse.ini file.

```
-Dcom.ibm.optim.host.name=host_name
-Dcom.ibm.optim.host.port=host_port
```

- *host_name* is the host name or IP address of the proxy.
- *host_port* is the port used by the proxy.

For example, the following lines specify proxy_computer as the host name of the proxy and 12000 as the port number used by the proxy.

```
-Dcom.ibm.optim.host.name=proxy_computer
-Dcom.ibm.optim.host.port=12000
```

Setting the shared library environment variable

When you install the proxy on Linux or UNIX, set the shared library environment variable to include the directory that contains the proxy libraries (*proxy_folder*/shared/bin). Set the shared environment variable for each account that is used to run the proxy. To set the shared library environment variable for an account, add the following lines to the account login profile.

- AIX:

  ```
  LIBPATH=$LIBPATH:proxy_folder/shared/bin
  export LIBPATH
  ```

- Linux or Solaris:

  ```
  LD_LIBRARY_PATH=$LD_LIBRARY_PATH:proxy_folder/shared/bin
  export LD_LIBRARY_PATH
  ```

Configuring the proxy to use the exact driver version specified on all service requests

By default, the proxy uses the JDBC driver that is specified on the service request or any newer version of the same driver. The proxy uses the first such driver that it finds in the repository. You can configure the proxy so that the proxy uses only the version of the JDBC driver that is specified on the service request. If the repository does not contain the version that is specified on the service request, the proxy returns an error. To configure the proxy so that the proxy uses only the exact driver version that is specified, add the following line to the end of the *proxy_folder*/eclipse.ini file:

```
-Dcom.ibm.nex.capability.driver.compatility.level=enforceExactVersionMatch
```

Configuring the proxy to use UTF-8 encoding in logs

If you install the proxy on a computer that is set to a language that requires the use of double-byte characters, configure the proxy to use UTF-8 encoding in its log files. To configure the proxy to use UTF-8 encoding, add the following line to the end of the *proxy_folder*/eclipse.ini file.

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

On Windows computers, you must also add the following line, where *encoding* is the character encoding that is used by the Windows computer. For example, use MS932 for Shift JIS encoding.

```
-Dconsole.encoding=encoding
```

Setting file permissions

If you install the proxy on a Linux or UNIX computer as a user other than the superuser, file permissions on your home directory might restrict other users from starting or restarting the proxy. To correct this issue, complete either of the following tasks.

- Ask the administrator to install the proxy to /opt/IBM/Optim/proxy.
- Set the file permissions to the folder to which the proxy is installed so that users can run the proxy.

Configuring the proxy as a Windows service

If you install the proxy to a Microsoft Windows computer, you can configure the proxy to run as a Windows service. You can set the proxy service to restart automatically whenever the computer is restarted.

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

To configure the proxy as a Windows service:

1. If the proxy is not installed to the default location at C:\IBM\InfoSphere\Optim\proxy, complete the following steps:
   a. Open the folder in which you installed the proxy.
   b. Open the proxyService.xml file in that folder by using a text editor such as Notepad.
   c. Change the value of the proxyLocation entity to the folder in which you installed the proxy.

   For example, if you install the proxy to D:\Applications\Optim\proxy, use Notepad to open D:\Applications\Optim\proxy\proxyService.xml and change the proxyLocation value to D:\Applications\Optim\proxy.
2. Open the command prompt by clicking **Start** > **Run** and entering the command **cmd**.
3. Enter the following commands at the command prompt, where *proxy_folder* is the folder in which the proxy is installed:

   ```
   cd proxy_folder
   proxyService.exe install
   proxyService.exe start
   ```

You can check on the progress of the proxy by looking at the contents of log files. There are 3 log files:

- *proxy_folder*/log/proxyService.err.log
- *proxy_folder*/log/proxyService.out.log
- *proxy_folder*/log/proxyService.wrapper.log

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

```
cd proxy_folder
proxyService.exe stop
proxyService.exe uninstall
```

Configuring the proxy as a daemon on an AIX computer

If you install the proxy to a AIX computer, you can configure the proxy to run as a daemon process. You can set the proxy daemon to restart automatically whenever the computer is restarted.

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

To configure the proxy as a daemon on an AIX computer:

1. Open the command prompt.
2. Enter the following commands at the command prompt, where *proxy_folder* is the directory in which the proxy is installed:

   ```
   cd proxy_folder
   ./setup-proxy-as-daemon.sh
   ```

   The script generates a script called optimproxy, which is saved to the *proxy_folder* directory.
3. Log in as superuser, if you are not already logged in as superuser.
4. Copy the script optimproxy 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 optimproxy
   ln -s optimproxy /etc/rc.d/rc2.d/S99optimproxy
   ln -s optimproxy /etc/rc.d/rc2.d/K01optimproxy
   ```

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

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

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

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

To remove the proxy daemon, log in as superuser and enter the following commands at the command prompt. Remove the proxy daemon before you uninstall the proxy.

```
/etc/rc.d/init.d/optimproxy stop
rm /etc/rc.d/rc2.d/S99optimproxy
rm /etc/rc.d/rc2.d/K01optimproxy
rm /etc/rc.d/init.d/optimproxy
```

Configuring the proxy as a daemon on an HP-UX computer

If you install the proxy to an HP-UX computer, you can configure the proxy to run as a daemon process. You can set the proxy daemon to restart automatically whenever the computer is restarted.

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

To configure the proxy as a daemon on an HP-UX computer:

1. Open the command prompt.

2. Enter the following commands at the command prompt, where *proxy_folder* is the directory in which the proxy is installed:

   ```
   cd proxy_folder
   ./setup-proxy-as-daemon.sh
   ```

   The script generates a script called `optimproxy`, which is saved to the *proxy_folder* directory.
3. Log in as superuser, if you are not already logged in as superuser.
4. Copy the script `optimproxy` to the `/sbin/init.d` directory.
5. Enter the following commands at the command prompt.

   ```
   cd /sbin/init.d
   chmod 755 optimproxy
   ln -s optimproxy /sbin/rc3.d/S900optimproxy
   ln -s optimproxy /sbin/rc2.d/K100optimproxy
   ```

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

```
/sbin/init.d/optimproxy start
```

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

```
/sbin/init.d/optimproxy stop
```

To remove the proxy daemon, log in as superuser and enter the following commands at the command prompt. Remove the proxy daemon before you uninstall the proxy.

```
/sbin/init.d/optimproxy stop
rm /sbin/rc3.d/S900optimproxy
rm /sbin/rc2.d/K100optimproxy
rm /sbin/init.d/optimproxy
```

Configuring the proxy as a daemon on a Linux computer

If you install the proxy to a Linux computer, you can configure the proxy to run as a daemon process. You can set the proxy daemon to restart automatically whenever the computer is restarted.

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

To configure the proxy as a daemon on a Linux computer:

1. Open the command prompt.
2. Enter the following commands at the command prompt, where *proxy_folder* is the directory in which the proxy is installed:

   ```
   cd proxy_folder
   ./setup-proxy-as-daemon.sh
   ```

   The script generates a script called `optimproxy`, which is saved to the *proxy_folder* directory.
3. Log in as superuser, if you are not already logged in as superuser.
4. Copy the script `optimproxy` 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 optimproxy
   /sbin/chkconfig --add optimproxy
   ```

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

```
/sbin/service optimproxy 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 optimproxy
```

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

```
/sbin/service optimproxy stop
```

To remove the proxy daemon, log in as superuser and enter the following commands at the command prompt. Remove the proxy daemon before you uninstall the proxy.

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

Configuring the proxy as a daemon on a Solaris computer

If you install the proxy to a Solaris computer, you can configure the proxy to run as a daemon process. You can set the proxy daemon to restart automatically whenever the computer is restarted.

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

To configure the proxy as a daemon on a Solaris computer:

1. Open the command prompt.
2. Enter the following commands at the command prompt, where *proxy_folder* is the directory in which the proxy is installed:

   ```
   cd proxy_folder
   ./setup-proxy-as-daemon.sh
   ```

   The script generates a script called `optimproxy`, which is saved to the *proxy_folder* directory.
3. Log in as superuser, if you are not already logged in as superuser.
4. Copy the script `optimproxy` to the `/etc/init.d` directory.
5. Enter the following commands at the command prompt.

   ```
   cd /etc/init.d
   chmod 755 optimproxy
   ln -s optimproxy /etc/rc3.d/S99optimproxy
   ln -s optimproxy /etc/rc3.d/K01optimproxy
   ```

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

```
/etc/init.d/optimproxy start
```

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

```
/etc/init.d/optimproxy stop
```

To remove the proxy daemon, log in as superuser and enter the following commands at the command prompt. Remove the proxy daemon before you uninstall the proxy.

```
/etc/init.d/optimproxy stop
rm /etc/rc3.d/S99optimproxy
rm /etc/rc3.d/K01optimproxy
rm /etc/init.d/optimproxy
```

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 and service interface

Because the manager and the service interface are J2EE 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:\Program Files\IBM Optim\shared\WebSphere\AppServerCommunityEdition\var\log\server.log.

Repository

The repository manager log output goes to two files on the repository computer or the repository virtual machine:

- repomanager.log contains normal output
- repomanager.err contains error output

The logs are found in the /opt/IBM/InfoSphere/Optim/repo/manager directory.

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