

IBM InfoSphere Optim  
Version 2 Release 2 Modification 2

*Using IBM Optim Manager*





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Version 2 Release 2 Modification 2

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**Note**

Before using this information and the product it supports, read the information in “Notices” on page 29.

**Version 2 Release 2 Modification 2 (May 2011)**

This edition applies to version 2, release 2, modification 2 of IBM 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 and use IBM Optim Manager to run and manage services that are located in a registry.





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## Chapter 1. InfoSphere Optim solution components

Use IBM® InfoSphere™ Optim™ solution components to run InfoSphere Optim services that are published to a registry. Use IBM Optim Designer to develop and test InfoSphere Optim services. When you are done developing a service, you can publish the service to a registry for further testing or for production use.

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### Optim Manager

IBM Optim Manager is a web application that you can use to configure, run, monitor, and manage services. You also use Optim Manager to configure the components that are used to run these services. Optim Manager is also known as the *manager*.

To run services that you are developing by using IBM Optim Designer, access the manager through Optim Designer. (Optim Designer is also known as the *designer*.) When you are done developing the service, you can use the manager to publish the service to a registry. Alternatively, you can use the manager to export the service to the file system.

To run and manage services that have been published to a registry, access the manager through an application server. The manager is delivered as a web archive (WAR) file that you can deploy to any supported application server. For example, you can deploy the manager to WebSphere® Application Server Community Edition. You can then access the manager on the application server and use the manager to run and manage services in the registry of your choice.

You can deploy the management server WAR file and the manager WAR file either to the same application server or to separate application servers.

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### Optim Management Server

IBM Optim Management Server is a web application that manages and monitors service requests for services in a registry and repository. Optim Management Server can also host a registry and repository. Optim Management Server is also known as the *management server*.

The management server is delivered as a web archive (WAR) file that you can deploy to any supported application server. For example, you can deploy the management server to WebSphere Application Server Community Edition. You can deploy the management server and the manager either to the same application server or to separate application servers.

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### Registry and repository

The *registry* is a subsystem where services and other resources are enrolled. The registry is used to locate the services and resources. The *repository* is a persistent storage area for data and other application resources.

The registry and repository are installed with the management server and reside on the same computer as the management server.

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### Optim Proxy

IBM Optim Proxy is a constantly running process that receives service requests from the management server and forwards the service requests for processing. Optim Proxy monitors the running service requests until the service requests are complete. Optim Proxy is also known as the *proxy*.

The component to which the proxy forwards a service request depends upon the type of service. For some types of services, the proxy might start an instance of the component on the proxy computer. (For example, when the proxy receives an executor service request, the proxy starts an executor instance on the proxy computer.) For other types of services, the proxy forwards the service request to a service execution component on another computer. When the service request is complete, the proxy returns the status of the service request to the manager and the management server.

For fast performance, install the proxy on a computer that has fast connections to the data sources that you are processing. The potential increase in performance is greater when the service execution component runs on the proxy computer.

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## Optim Executor

IBM Optim Executor is a process that is launched to process services that specify the executor as their service execution component (service type of **Executor**). Optim Executor provides the framework needed by the service to communicate with a database or with any other type of resource needed by the service. Optim Executor is also known as the *executor*.

Services that specify the executor as their service execution component are also known as *data management services*.

When you run or execute a service, an instance of the executor is launched, and the executor processes the service. When the executor completes a service, the executor reports to the component that launched the executor that the service is complete. The executor then ends.

The executor is installed on the same computer as the designer or the proxy.

To run a service that uses lookup data, ensure that the executor has access to the lookup data. Load the lookup data into a database on the executor computer or on a computer that has a fast connection to the executor computer.

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## Other service execution components

Some types of services might require a service execution component other than the executor. For example, a service might be developed to run on Optim for z/OS® or Optim on distributed platforms.

You might need to configure the designer or the proxy to run services that use these other service execution components. For information about how to configure the designer to run services that use a specific service execution component, see the designer user information. For information about how to configure the proxy to run services that use a specific service execution component, see the proxy configuration information.

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## How services in a registry are run using the manager and other components

Components must work together to complete a service request successfully.

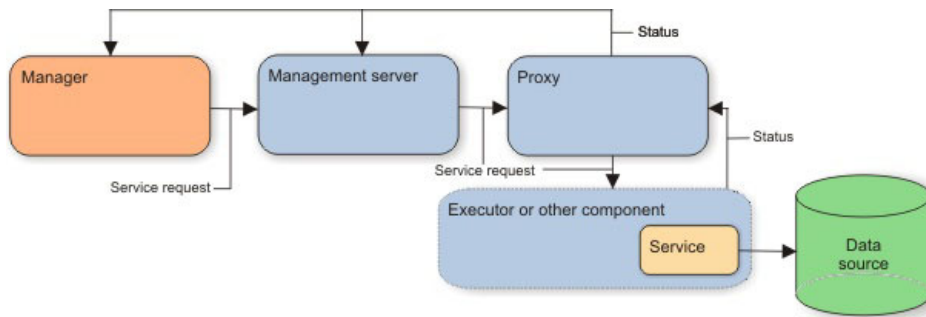


Figure 1. Components running a service

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

1. The application server administrator starts the management server and the manager, and the administrator of the proxy computer starts the proxy. The management server, the proxy, and the manager are designed to run continuously.
2. An operator uses the manager to run or schedule a service.
3. The manager sends the service request to one of the management servers to which the service is assigned.
4. The management server forwards the service request to one of the proxies to which the service is assigned.
5. The proxy starts the service using the component specified in the service. For services that are run by the executor, the proxy starts an instance of the executor to process the service request. For services that are run by another component, the proxy passes the service request to that component.
6. The executor or the other service execution component runs the service.
7. The service performs the tasks in its service plan.
8. For services that are run by the executor, the proxy continuously monitors the executor while the executor runs the service.
9. When the service is complete, the executor or the component that ran the service returns the service request status to the proxy. The executor instance also closes itself.
10. The proxy returns the service request status to the management server and the manager.



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## Chapter 2. Starting the manager on an application server

To run and manage services that are located in a registry, you must first start the manager on its application server. After the manager is started on the application server, you can access the manager at any time.

Before you can start the manager, you must install the manager. You must also perform initial configuration of the manager and the components that the manager uses to run services. For example, you must deploy the manager WAR file to the application server.

To start the manager on an application server:

1. Start the application server. If the application server is set to start the manager web application automatically, then the manager is started immediately after the application server. If you deployed the manager to the version of WebSphere Application Server Community Edition that is delivered with the manager, then complete the following step, where *shared\_installation\_directory* is the installation directory that you specified for the manager.
  - Microsoft Windows computers: Click **Start > All Programs > IBM Optim > Start WAS-CE**, or run the script *shared\_installation\_directory\WebSphere\AppServerCommunityEdition\bin\startup.bat*.
  - AIX®, Linux, or Solaris computers: Run the script *shared\_installation\_directory/WebSphere/AppServerCommunityEdition/bin/startserver.sh*.
2. If necessary, start the manager web application using the application server console. If you deployed the manager to the version of WebSphere Application Server Community Edition that is delivered with the manager, then complete the following steps to start the manager web application:
  - a. Use a web browser to access and sign into the Administrative Console. The default location is at <http://hostname:port/console/>, where *hostname* is the host name or IP address of the WebSphere Application Server Community Edition computer and *port* is the port number. The default port number is 8080. Use user ID system and password manager to access the Administrative Console.
  - b. Click **Web App WARs**.
  - c. Click **Start** for the component with an URL of /optim.

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### Accessing the manager on an application server

To run and manage services that are located in a registry, you must use an instance of the manager that is deployed to an application server.

To access the manager on an application server:

To access the manager, use a web browser to access and sign into the manager. The location is as follows, where *hostname* and *port* are the host name and port of the application server on which the manager is deployed.

- For the default color scheme, use <http://hostname:port/optim/console>.
- For a high-contrast color scheme with black text on a white background, use <http://hostname:port/optim/console#contrast=bw>.
- For a high-contrast color scheme with white text on a black background, use <http://hostname:port/optim/console#contrast=wb>.

If you installed the manager and WebSphere Application Server Community Edition together, and you deployed the manager to that copy of WebSphere Application Server Community Edition, then the default port is 8080.

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

- The manager is started on the application server on which the manager is deployed.
- You can access the application server on which the manager is deployed from your computer.
- Your web browser is supported by the manager and uses a supported version of the Adobe Flash Player plug-in.

You can use the browser to bookmark the location for future access.

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## Accessibility features for the manager

The manager contains features to make the user interface easier to see, read, and use.

### Using assistive technologies

The manager allows you to use assistive technologies to hear the information that is displayed in the user interface. Assistive technologies include screen readers and digital voice synthesizers. See the product documentation for the assistive technologies that you use for more information on how to use these assistive technologies with the manager.

### Changing font size

You can use Preferences to specify the font size to use in the interface. The changes that you make to the font size are saved to the local computer. The manager uses the saved font size the next time that any user accesses the manager on the local computer.

### High-contrast color scheme

Instead of using the default color scheme, you can use high-contrast color schemes that make the manager easier to read. You can use Preferences to specify the color scheme to use in the interface. The changes that you make to the color scheme are saved to the local computer. The manager uses the saved color scheme the next time that any user accesses the manager on the local computer.

You can override the color scheme set in Preferences by changing the URL that you use to access the manager. To use black text on a white background, ensure that the URL ends with `#contrast=bw`. To use white text on a black background, ensure that the URL ends with `#contrast=wb`.

### Keyboard navigation

Press Tab or Shift-Tab to move focus in the interface from object to object, and press Space to select the object that has focus.

If there are many parts to an object (such as a set of tabs), you can select a part by completing the following steps:

1. Press Tab or Shift-Tab to move focus to the object.
2. Press the arrow keys to change the focus to the part.
3. Press Space to select the part.

Within a navigation tree, press Right Arrow to expand nodes of the tree, and press Left Arrow to collapse nodes of the tree.

The manager contains lists that are organized using folders.

- To collapse a folder within a list:
  1. Press Tab to select the list.
  2. Press the arrow keys to select the folder.
  3. Press - on the numeric keypad.

- To expand a folder within a list:
  1. Press Tab to select the list.
  2. Press the arrow keys to select the folder.
  3. Press + on the numeric keypad.
- To collapse or expand a folder within a list:
  1. Press Tab to select the list.
  2. Press the arrow keys to select the folder.
  3. Press \* on the numeric keypad.
- To move an object from one folder to another folder within a list in **Service Management**:
  1. Press the arrow keys to select the object that you want to move.
  2. Press Ctrl+M. A dialog with a list of folders is displayed.
  3. Press Tab to select the list of folders.
  4. Press the arrow keys to select the folder to which you want to move the object.
  5. Press Tab to select **OK**.
  6. Press Space.

To sort items in a list alphabetically by column:

1. Press Tab or Shift-Tab to move focus to the list.
2. Press Down Arrow to move the focus to a row in the list.
3. Press Up Arrow until the focus moves to the headers of the list.
4. Press Left Arrow or Right Arrow to move the focus to the column by which you want to sort first.
5. Press Space to sort the list by the column with focus. Press Ctrl-Space to switch between ascending and descending sort.
6. To add a secondary sort to the list, press Left Arrow or Right Arrow to move the focus to the secondary sort column, and press Ctrl-Space.
7. To sort the list by a different column, press Left Arrow or Right Arrow to move the focus to the column, and press Space.

Within a date box, press Ctrl+Down Arrow to display the calendar. Press Page Down and Page Up to change the month on the calendar, and press the arrow keys to select a day in the calendar. When the focus is on a date, press Enter to select the date. To dismiss the calendar without selecting a date, press Esc.

## Tabular view of pie chart information

In the Service Management pane on the Dashboard page, to change the pie chart to a table that can be read using a screen reader, press Tab to select **Tabular View** and press Space. To change the table back to a pie chart, press Tab to select **Chart View** and press Space.

## More information

The manager uses Adobe Flex technology, which has specific keyboard navigation shortcuts. More information about the accessibility features of Flex is available from Adobe at the following website:

[http://livedocs.adobe.com/flex/3/html/help.html?content=accessible\\_5.html](http://livedocs.adobe.com/flex/3/html/help.html?content=accessible_5.html)





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## Chapter 3. Configuring the manager

To run services that are published to a registry, an administrator must first install and start the components that you use to run these services. The administrator can then connect the manager with the other components and assign services to management servers and proxies.

Before you begin, you must use a web browser to access and sign into the manager. The default location is at `http://hostname:port/optim/console/`, where *hostname* and *port* are the host name and port of the application server on which the manager is deployed. If you install the version of WebSphere Application Server Community Edition that is delivered with the management server and the manager, and you deploy the manager to that copy of WebSphere Application Server Community Edition, then the default port is 8080. If you cannot access the manager, ensure that the manager is started by the administrator of the application server on which the manager is deployed, that you can access the application server from your computer, and that your web browser is supported by the manager and uses a supported version of the Adobe Flash Player plug-in.

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### Setting the registry location

Before you run services that are located in a registry, the manager must be set to access the registry. The registry contains location and configuration information for services and for the other components.

Only users with a user role of admin can set the registry location.

By default, the manager is set to look for the registry at `http://localhost:8080/server/registry`. This location is valid if the manager and the management server are deployed to the same application server, and the application server uses port 8080. To avoid potential issues with using `localhost` as the host name, or to use a registry on a different management server, replace `localhost` with the management server host name or IP address and replace 8080 with the port used by the application server. If you do not have this information, ask the administrator of the application server to which the management server is deployed.

To set the registry location in the manager:

1. Access the manager on the application server.
2. Click **Preferences**.
3. Click **Global Preferences**.
4. Enter the registry location into **Registry location** and click **Validate**.
5. If the registry location is valid, click **Save**.

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### Adding a management server to the manager

Before you can run any services that are located in a registry, you must assign the services to a management server. Before you can assign services to a management server, you must add the management server to the manager.

Only users with a user role of admin can add a management server to the manager.

Before you can add a management server to the manager, the management server must register itself in the registry. If you use multiple management servers, complete the following steps to ensure that all management servers register themselves in the registry.

1. Ensure that there is an unobstructed network connection between the computer that hosts the registry and the other management servers.

2. Run the management server on the computer that hosts the registry.
3. Run the other management servers.

To add a management server to the manager:

1. Access the manager on the application server.
2. Click **Configuration**.
3. Click **Management Servers**.
4. Click **Add**.
5. Click the Uniform Resource Identifier (URI) of the management server that you want to add to the manager, enter the logical name that you want to use for the management server within the manager, and click **OK**. If the dialog does not list the URI of the management server that you want to add, complete the following steps.
  - a. Ensure that there is an unobstructed network connection between the management server that you want to add and the management server that hosts the registry.
  - b. Shut down and restart the management server that you want to add.

If the dialog still does not list the URI of the management server that you want to add, complete the following steps.

- a. Shut down and restart the management server that hosts the registry.
- b. Shut down and restart the management server that you want to add.

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## Adding a license to a management server

Use the manager to add a license to a management server. A license allows the executor to run the types of service that are specified in the license. For example, if you add a data privacy license to a management server, the management server allows the executor to run services that mask data in databases.

Only users with a user role of admin or dba can add a license to the management server.

Before you can add a license to a management server, you must add the management server to the manager.

This task applies only to licenses for services that are run using the executor (service type of **Executor**). For service execution components other than the executor, you must manage licenses using the procedures that are specified for that service execution component. For information on how to manage licenses for service execution components other than the executor, see the documentation for the service execution component.

To add a license to the management server using the manager:

1. Access the manager on the application server.
2. Click **Configuration**.
3. Click **Management Servers**.
4. Click **Add License**.
5. Select the management server for which you want to add a license, enter the license key and license file name for the management server license, and click **Upload License**.

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## Adding a proxy to the manager

You must add a proxy to the manager before you can use the proxy to run services that are located in a registry.

Only users with a user role of admin can add a proxy to the manager.

Before you can add a proxy to the manager, the proxy must register itself in the registry. To ensure that the proxy registers itself in the registry, complete the following steps.

1. Ensure that there is an unobstructed network connection between the proxy computer and the management server that hosts the registry.
2. Run the management server that hosts the registry.
3. Run the proxy.

To add a proxy to the manager:

1. Access the manager on the application server.
2. Click **Configuration**.
3. Click **Proxies**.
4. Click **Add**.
5. Click the Uniform Resource Identifier (URI) of the proxy that you want to add, enter the logical name that you want to use for the proxy, and click **OK**. If the dialog does not list the URI of the proxy that you want to add, complete the following steps.
  - a. Ensure that there is an unobstructed network connection between the proxy computer and the management server that hosts the registry.
  - b. Shut down and restart the proxy.

If the dialog still does not list the URI of the proxy that you want to add, complete the following steps.

- a. Shut down and restart the management server that hosts the registry.
- b. Shut down and restart the proxy.

---

## Adding a database driver to the repository

Use the manager to add a database driver to the repository. Services that are run using the executor and that are located in a registry can make changes to a database only if there is a driver for the database in the repository.

Only users with a user role of admin or dba can add a database driver to the repository.

This task applies only to database drivers for services that are run using the executor (service type of **Executor**). For service execution components other than the executor, you must install database drivers using the procedures that are specified for that service execution component. For information on how to manage database drivers for service execution components other than the executor, see the documentation for the service execution component.

To add a database driver to the repository using the manager:

1. Access the manager on the application server.
2. Click **Configuration**.
3. Click **Database Drivers**.
4. Click **Add Database Driver**.
5. Complete the dialog and click **Upload Driver File**.

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## Assigning a service to management servers and proxies

Use the manager to assign a service in the registry to one or more management servers and proxies. A service must be assigned to at least one management server and proxy before the service can be run.

Before you can assign a service to management servers and proxies, the service must be added to the registry. There are many ways in which you can add a service to a registry.

- You can publish a service to the registry from the designer.
- You can promote the service from one registry to another using the manager.
- You can import the service from a file to the registry using the manager.

For more information on how to publish services to the repository, see the designer documentation.

Also, the management servers and proxies must be added to the manager.

To assign a service to management servers and proxies using the manager:

1. Access the manager on the application server.
2. Click **Service Management**.
3. Click **Unassigned Services**.
4. Open the **Unassigned Services** folder, click the service, and click **Assign**.
5. Complete the wizard.

---

## Changing the service plan of a service

A service plan contains default values that a service uses to transform the data in a data source (such as the user name and password to access the data source). After a service is added to a registry, you can use the manager to change the values in a service plan. You can also restore the service plan to its default values.

You can change the service plan of a service only if the service is assigned to at least one management server and one proxy. You can view the service plan of services that are not assigned to management servers and proxies, but you cannot change the service plan properties of an unassigned service plan.

To change the service plan of a service using the manager:

1. Access the manager on the application server.
2. Click **Service Management**.
3. Click **Assigned Services**.
4. Open the **Assigned Services** folder, open any additional folders under **Assigned Services** that you must open to view the service, and click the service.
5. Click **Service Plan**, change the service plan as desired, and click **Save**. Any changes that you make to the service plan are saved until you change the service plan again or until you restore the service plan to its default values.

---

## Promote service from one registry to another

You can promote a service from one registry to another registry. For example, you have separate registries for services that are to be tested by Quality Assurance (QA) and services that are ready for production. When a service is through the QA process, you can promote the service from the QA registry to the production registry.

To promote a service from one registry to another using the manager:

1. Access the manager on the application server.
2. Click **Service Management**.
3. If the service is assigned to a management server and proxy, click **Assigned Services**.
4. Open any folders that you must open to view the service, click the service, and click **Promote**.
5. Enter the location of the registry to which you want to promote the service and click **Validate**. The manager displays the version number that is to be used to publish the service on the registry.
6. Click **OK** to finish.

---

## Exporting a service to a file

You can export a service from the registry to a .jar file that is saved to the local file system for your computer. The .jar file contains an XML Metadata Interchange (XMI) file with a definition of the service and all related objects.

To export a service from the registry to a file using the manager:

1. Access the manager on the application server.
2. Click **Service Management**.
3. If the service is assigned to a management server and proxy, click **Assigned Services**.
4. Open any folders that you must open to view the service, click the service, and click **Export As File**.
5. Use the dialog to select the location to which you want to save the service and click **Save**.

---

## Importing a service from a file

You can import a service from a .jar file into the registry. If the service already exists in the registry, the service is added to the registry as a new version of the same service.

The service is imported into the registry set in **Preferences** in the manager.

To import a service from a file into the registry using the manager:

1. Access the manager on the application server.
2. Click **Service Management**.
3. Click the **Unassigned Services** folder.
4. Click **Import Service from File**.
5. Use the dialog to select the file from the file system and click **Open**.



---

## Chapter 4. Using the manager

After the manager is configured, users can run services, schedule services, and monitor the progress of services using the manager.

Before you begin, you must use a web browser to access and sign into the manager. The default location is at `http://hostname:port/optim/console/`, where *hostname* and *port* are the host name and port of the application server on which the manager is deployed. If you install the version of WebSphere Application Server Community Edition that is delivered with the management server and the manager, and you deploy the manager to that copy of WebSphere Application Server Community Edition, then the default port is 8080. If you cannot access the manager, ensure that the manager is started by the administrator of the application server on which the manager is deployed, that you can access the application server from your computer, and that your web browser is supported by the manager and uses a supported version of the Adobe Flash Player plug-in.

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### Running a service

Use the manager to run a service that has been published to the registry.

You can run a service that has been published to the registry only if the service is ready to run. A service that is ready to run meets the following criteria:

- The service is assigned to at least one management server that is active and connected to the manager. If a license is required to run a service, the management server must also contain a valid license for the service.
- The service is assigned to at least one proxy that is active and connected to the manager and the management server. The proxy must also be able to run the service type associated with the service. For service types **Executor** and **Distributed**, the service execution component must be installed and configured, and the proxy must be configured to run the service execution component.
- The database driver that is specified in the service is loaded into the repository.

To run a service using the manager:

1. Access the manager on the application server.
2. Click **Service Management**.
3. Click **Assigned Services**.
4. Open the **Assigned Services** folder, open any additional folders under **Assigned Services** that you must open to view the service, and click the service.
5. Click **Service Plan** and review the service plan properties. If desired, you can change the service plan properties and click **Save** to save the changes. Any changes that you make to the service plan are saved until you change the service plan again or until you restore the service plan to its default values.
6. Click **Run** and complete the wizard.

---

### Scheduling a service

Use the manager to schedule a service that has been published to the registry to be run on a specific management server. You can schedule the service to be run at a specific time or at a specific interval. If the service already has an active schedule for a management server, you can use the manager to change that schedule.

You can schedule a service that has been published to the registry only if the service is ready to run. A service that is ready to run meets the following criteria:

- The service is assigned to at least one management server that is active and connected to the manager. If a license is required to run a service, the management server must also contain a valid license for the service.
- The service is assigned to at least one proxy that is active and connected to the manager and the management server. The proxy must also be able to run the service type associated with the service. For service types **Executor** and **Distributed**, the service execution component must be installed and configured, and the proxy must be configured to run the service execution component.
- The database driver that is specified in the service is loaded into the repository.

You can schedule only services that have been published to the registry. You cannot schedule services that are being developed in the designer.

A service can have a schedule for each management server to which the service is assigned.

To schedule a service using the manager:

1. Access the manager on the application server.
2. Click **Service Management**.
3. Click **Assigned Services**.
4. Open the **Assigned Services** folder, open any additional folders under **Assigned Services** that you must open to view the service, and click the service.
5. Click **Service Plan** and review the service plan properties. If desired, you can change the service plan properties and click **Save** to save the changes. Any changes that you make to the service plan are saved until you change the service plan again or until you restore the service plan to its default values.
6. Click **Service Schedule** and select a management server. You can select only management servers to which the service is assigned. If the service already has an active schedule for the selected management server, the wizard shows you the active schedule.
7. If the service does not have an active schedule for the selected management server, click **Create Schedule**.
8. Enter or change the schedule details and click **Save**.

---

## Stopping a service

If you use the manager to run a service that is published to a registry, you can use the manager to stop the service before it completes. You might want to stop a service that is running longer than you had planned for it to run.

You can stop only services with service type **Executor**. You can stop a service only if the service is in a **Start** state.

You cannot stop services that are executed from the designer.

Any user can stop services that were run or scheduled by any other user.

Stopping a service does not undo any changes that the service made to the database.

To stop a running service using the manager:

1. Access the manager on the application server.
2. Click **Service Monitoring**.



3. In the table on the top of the **Service Monitoring** page, click the instance that corresponds with the service that you want to stop. You might need to use a different service monitoring filter to see the instance that corresponds with the service that you want to stop.
4. Click **Stop**, and click **OK** to confirm.

---

## Monitoring the status of service instances using the manager

The manager allows you to monitor the status of the services that you run.

### Dashboard

When you access the manager on an application server, you can use the **Dashboard** interface. Use **Dashboard** to monitor the status of the manager, its associated management servers and proxies, and any services that are run using the manager.

#### Service Monitoring

Under **Service Monitoring**, you can review the service instance records that are generated when you run a service. The service instance records contain status information for each service instance.

#### Service Management

Under **Service Management**, you can review graphs that indicate the ratio of assigned services to unassigned services and the ratio of not ready services to ready services.

- Unassigned services are services that have been published to the repository but have not yet been assigned to management servers and proxies.
- Assigned services are services that have been assigned to management servers and proxies.
- Not ready services are services that have been assigned to management servers and proxies but are not yet ready to run.
- Ready services are services that have been assigned to management servers and proxies and are ready to run. Services that are ready to run meet all of the following criteria:
  - The service is assigned to at least one management server that is active and connected to the manager. If a license is required to run a service, the management server must also contain a valid license for the service.
  - The service is assigned to at least one proxy that is active and connected to the manager and the management server. The proxy must also be able to run the service type associated with the service. For service types **Executor** and **Distributed**, the service execution component must be installed and configured, and the proxy must be configured to run the service execution component.
  - The database driver that is specified in the service is loaded into the repository.

You can double-click the assigned/unassigned graph to jump to the location where you can assign services to management servers and proxies. You can double-click the ready/not ready graph to jump to the location where you can run services that are ready. To view the information in the graphs in tables, click **Tabular View**.

#### Configuration

Under **Configuration**, you can review the status of the management servers and proxies that have been added to the manager. You can also see whether there are any connection issues between the manager and the management servers and proxies. Connection issues can indicate that there is a network issue or that the management servers or proxies are not running.

### Service Monitoring

Use **Service Monitoring** to view a list of service instance records on the manager. A service instance record is created whenever a service is run. Service instance records show the status of each service request and indicate whether the service request completed successfully.

You can click a service instance in the list to view more detailed information on how the service was processed at the bottom of this page. You can use this information to diagnose problems if the service does not complete successfully.

- **Service Results** shows statistics for services that were run using the executor (service type of **Executor**).
- **Service Output** shows the trace log output for services that were run using the executor and that failed, and the result output for services that were run using service execution components other than the executor.

If you access the manager on an application server, you can create filters to limit the types of service instance records that are displayed at the top of this page. You can filter the list by status, service type, service request type, management server, and service start time. Filters are saved with your user record and are available until you delete the filter.

---

## Chapter 5. Using command line processing

You can run one or more services by submitting service requests to the management server from the command line.

Before running a service, you must assign the service to a proxy and a management server using the manager. The proxy and management server must be running to process the service request. You must also install InfoSphere Data Architect and IBM Optim Designer to obtain the files that you need to run command line processing.

There are two options for using the command line:

- The `runservice` script allows you to enter run services using fewer arguments, and you can customize this script to fit your needs.
- The `java -jar com-ibm-nex-client-tool.jar` command can be used in a script that you prepare yourself.

### runservice script

The `runservice` script is located in the `ida_folder\optim\designer\runservice` folder, where *ida\_folder* is the folder in which InfoSphere Data Architect is installed. You must open the command line in the `ida_folder\optim\designer\runservice` folder. The folder contains two script files, one for Microsoft Windows (`runservice.bat`) and one for AIX, Linux, and Solaris (`runservice.sh`).

The `runservice` script requires that you add the root folder of a Java 6.0 JRE or JDK installation to the `PATH` environment variable.

The `runservice` script uses the following syntax when you run services that are assigned to a management server and proxy:

```
runservice [--service | -s] servicename:version  
[--url | -u] serverURL [--continueOnError | -c]
```

The `runservice` script uses the URL of a local management server, `http://localhost:8080`. To use a remote management server, you must use the `--url` parameter.

The `--continueOnError` or `-c` parameter sets the script to continue through multiple service executions, even if one fails.

The `runservice` script uses the following syntax when you run an exported service request:

```
runservice {-r|--serviceRequest} requestfilepath  
{-u|--url} serverURL {-j|--jarMap} mapfilepath  
{-v|--overrideValues} overridefilepath {-l|--logLevel} loglevel  
{-t|--timeout} seconds|never {-p|--serviceResponse} responsefilepath
```

The `--serviceRequest` or `-r` parameter specifies the complete file path for the exported service request.

The `--url` or `-u` parameter specifies the location of the proxy that you want to use to run the service. The location `http://localhost:12000` is used by default.

The `--jarMap` or `-j` parameter specifies the complete file path for the map file.

The `--overrideValues` or `-v` parameter specifies the complete file path for the override file.

The `--logLevel` or `-l` parameter specifies the desired log level. Possible values are, from low to high, OFF, SEVERE, WARNING, INFO, CONFIG, FINE, FINER, FINEST, ALL).

The `-timeout` or `-t` parameter specifies the number of seconds to wait for a response before ending (or never wait). The `runservice` script waits 600 seconds by default.

The `-serviceResponse` or `-p` parameter specifies the complete file path of the file to which the service response will be written.

## java -jar com-ibm-nex-client-tool.jar command

The `com-ibm-nex-client-tool.jar` file is located in the `ida_folder\optim\designer\runservice` folder, where *ida\_folder* is the folder in which InfoSphere Data Architect is installed. You must open the command line in the `ida_folder\optim\designer\runservice` folder.

The `java -jar com-ibm-nex-client-tool.jar` command uses the following syntax, where *java\_folder* is the root folder of a Java 6.0 JRE or JDK installation. To avoid entering the root folder of the Java 6.0 JRE or JDK installation every time that you enter this command, add the root folder to the `PATH` environment variable.

```
java_folder/java -jar com-ibm-nex-client-tool.jar  
{--service | -s} servicename:version  
{--url | -u} serverURL {--continueOnError | -c}
```

The `--continueOnError` or `-c` parameter sets the command to continue through multiple service executions, even if one fails.

## Running multiple services

You can use the command line to run multiple services deployed to the same management server.

Specify each service and version pair separated by a comma. Do not leave a space before or after a comma.

For example:

```
runservice -s service1:1.0.0,service2:1.0.0 -u http://mygmtserver:8080
```

## Spaces in service names

If a service name contains a space or contains multibyte character set (MBCS) characters, the name must be enclosed in double quotes (" "). For example:

```
runservice -s "service name":1.0.0 -u http://mygmtserver:8080
```

## Running exported service request

You can use the command line to run a service request that has been exported to a file.

For example:

```
runservice -r C:\services\service1.jar -u http://mygmtserver:12000
```

## Override file

An *override file* is an XML file that contains service request parameters. If you specify an override file when you run an exported service request, the `runservice` tool uses the parameters in the override file when it runs the exported service request.

You can use the `runservice` tool to generate an override file that contains the parameters that are in a service request.

```
runservice {-g|--generateOverrideTemplate} requestfilepath  
{-v|--overrideValues} overridefilepath {-i|--includeComments} {true|false}
```

The `-generateOverrideTemplate` or `-g` parameter specifies the complete file path for the exported service request.

The `-overrideValues` or `-v` parameter specifies the complete file path for the new override file.

The `-includeComments` or `-i` parameter specifies whether you want to include comments in the override file. By default, no comments are included in the override file.

After you generate the override file, you can change the parameters in the override file as desired. If you run a service request, you can specify the changed override file, and the `runservice` tool uses the changed parameters to run the service request.

The override files use the same XML namespace as the service requests (<http://www.ibm.com/nex/ecore/2.2.0/svc>). The root element of the override file is always `Overrides`. The general format is a nested hierarchy of override groups and attributes derived from the override group and attribute descriptors found within the service request. When the `runservice` tool generates an override template, the group and attribute elements are named using the override group and attribute descriptor names.

```
<?xml version="1.0" encoding="UTF-8"?>
<svc:Overrides xmlns:svc="http://www.ibm.com/nex/ecore/2.2.0/svc">
  <svc:ParentGroup uuid="...">
    <svc:ChildGroup uuid="...">
      <svc:Attribute1 value="..." uuid="..." />
      <svc:Attribute2 value="..." uuid="..." />
      <svc:Attribute3 value="..." uuid="..." />
      ...
    </svc:ChildGroup>
    ...
  </svc:ParentGroup>
  ...
</svc:Overrides>
```

The override file must be encoded using UTF-8.

## Map file

A *map file* is a file that the proxy uses to match the JDBC driver in a service request to a JDBC driver on the proxy. If the JDBC driver in a service request matches one of the lines in the map file, the proxy uses the JDBC driver that is specified on that line of the map file. If the JDBC driver in a service request does not match any lines in the map file, the proxy uses the exact JDBC driver that is specified on the service request. (The proxy can be configured to use a more recent version of the JDBC driver if one exists on the proxy.)

The map file that is used by the `runservice` tool is largely similar to a standard Java `.properties` file. Empty lines are ignored. Lines starting with the pound (`#`) character are treated as comments. All other lines must adhere to the following format:

```
<regex>=<path>
```

`<regex>` is a valid regular expression pattern that will be used to match the name of a Designer-provided `.jar` name. `<path>` is a fully qualified path to an actual `.jar` file on a proxy.

For example, a map file contains the following lines:

```
db2jcc4.*.jar=/opt/IBM/sql1lib/java/db2jcc4.jar
db2jcc4_license_cu.*.jar=/opt/IBM/sql1lib/java/db2jcc4_license_cu.jar
```

If a service request is set to use the JDBC driver `db2jcc4-9.1.jar`, the proxy runs the service request using the JDBC driver `/opt/IBM/sql1lib/java/db2jcc4.jar`. If a service request is set to use the JDBC driver `db2jcc4_license_cu-9.1.jar`, the proxy runs the service request using the JDBC driver `/opt/IBM/sql1lib/java/db2jcc4_license_cu.jar`.

## Encrypting a password

You can use the `runservice` tool to encrypt a clear-text password in a service request.

```
runservice {-e|--encryptPassword} password
```

The `--encryptPassword` or `-e` parameter specifies the complete file path for the exported service request.

## Looking up the start table

You can use the `runservice` tool to display the start table (and other tables) in a service request.

```
runservice {-a|--startTable} requestfilepath  
{-o|--otherTables } {true|false}
```

The `--startTable` or `-a` parameter specifies the complete file path for the exported service request.

The `--otherTables` or `-o` parameter specifies whether the other tables in the service request are to be included in the output. By default, all tables are included.

## Displaying a service request

You can use the `runservice` tool to display the information in a service request.

```
runservice {-d|--displayService} requestfilepath  
{-x|--xsltStylesheet} stylesheetpath
```

The `--displayService` or `-e` parameter specifies the complete file path for the exported service request.

The `--xsltStylesheet` or `-v` parameter specifies the complete file path for the XSLT style sheet that is to be used to format the service request.

---

## Command line parameters

Each parameter in a management server command has both a long and an abbreviated version. The long version is preceded by two dashes (for example, `--service`), and the abbreviated version includes a single character preceded by one dash (for example, `-s`).

**--service | -s**

*servicename:version*

The data management service name and version number (in *n.n.n* format). (Required)

Service names are case-sensitive. If a service name contains a space or contains multibyte character set (MBCS) characters, you must enclose the name in double quotes.

For example, `-s demosvc:1.0.0`

**--url | -u**

**URL**

The URL of the management server. This parameter is required if the `com-ibm-nex-client-tool.jar` file is entered in the command line. The `runservice` script uses the following URL as a default: `http://localhost:8080/server/job`. Use the URL parameter with the `runservice` script if the default URL is not used.

A management server uses the following URL, where *hostname* is the management server machine name and *port* is the port number used by the management server (8080 is the default).

`http://hostname:port/server/job`

For example, `-u http://server1:8080/server/job`

**--continueOnError | -c**

This parameter sets the command to continue through multiple service executions, even if one fails.

---

## Command line examples

This section includes examples of service requests that are submitted using management server commands.

The following syntax uses the `java -jar com-ibm-nex-client-tool.jar` command to run a service, where `..\..\..\..\Java60\jre\bin\` is a relative path from the folder that contains the `com-ibm-nex-client-tool.jar` file to the folder that contains a Java 6.0 JRE installation.

```
..\..\..\..\Java60\jre\bin\java -jar com-ibm-nex-client-tool.jar -s service1:1.0.0 -u http://localhost:8080/server/job
```

The following syntax uses the `runservice` script to run a service where the management server does not use the default URL.

```
runservice -s service1:1.0.0 -u http://server1:8080/server/job
```

The following syntax uses the `runservice` script to run multiple services.

```
runservice -s service1:1.0.0,service2:1.2.0
```

The following syntax uses the `runservice` script to run a service with a space in the service name.

```
runservice -s "service one":1.0.0
```





---

## Appendix. Optim Manager user interface reference

IBM Optim Manager contains the following elements.

- **Dashboard**
- **Configuration**
- **Service Management**
- **Service Monitoring**
- **Preferences**

---

### Dashboard

When you access the manager on an application server, you can use the **Dashboard** interface. Use **Dashboard** to monitor the status of the manager, its associated management servers and proxies, and any services that are run using the manager.

#### Service Monitoring

Under **Service Monitoring**, you can review the service instance records that are generated when you run a service. The service instance records contain status information for each service instance.

#### Service Management

Under **Service Management**, you can review graphs that indicate the ratio of assigned services to unassigned services and the ratio of not ready services to ready services.

- Unassigned services are services that have been published to the repository but have not yet been assigned to management servers and proxies.
- Assigned services are services that have been assigned to management servers and proxies.
- Not ready services are services that have been assigned to management servers and proxies but are not yet ready to run.
- Ready services are services that have been assigned to management servers and proxies and are ready to run. Services that are ready to run meet all of the following criteria:
  - The service is assigned to at least one management server that is active and connected to the manager. If a license is required to run a service, the management server must also contain a valid license for the service.
  - The service is assigned to at least one proxy that is active and connected to the manager and the management server. The proxy must also be able to run the service type associated with the service. For service types **Executor** and **Distributed**, the service execution component must be installed and configured, and the proxy must be configured to run the service execution component.
  - The database driver that is specified in the service is loaded into the repository.

You can double-click the assigned/unassigned graph to jump to the location where you can assign services to management servers and proxies. You can double-click the ready/not ready graph to jump to the location where you can run services that are ready. To view the information in the graphs in tables, click **Tabular View**.

#### Configuration

Under **Configuration**, you can review the status of the management servers and proxies that have been added to the manager. You can also see whether there are any connection issues between the manager and the management servers and proxies. Connection issues can indicate that there is a network issue or that the management servers or proxies are not running.

---

## Configuration

When you access the manager on an application server, you can use the **Configuration** interface. Use **Configuration** to view and configure the connections between the manager, management servers, and proxies.

Users with administrator access to the manager can use **Configuration** to perform the following tasks.

- Adding management servers and proxies.
- Adding licenses for your management servers.

Administrators can add management servers, proxies, and licenses immediately after setting the location of the registry to be used by the manager. An administrator must add at least one management server and proxy before any user can run any services using the manager.

Users with the following roles can use **Configuration** to upload database drivers to the repository.

- Users with administrator access to the manager (user role admin)
- Users with database administrator access to the manager (user role dba)

All manager users can view the configuration information on the **Configuration** tab.

---

## Service Management

Use **Service Management** to configure, run, and manage services.

### Accessed from the designer

If you access the manager from the designer, **Service Management** lists the services that exist currently in the designer. You can use **Service Management** to run a service, publish the service to the registry set in **Preferences**, or export the service to a file.

### Accessed on an application server

If you access the manager on an application server, **Service Management** contains two sections:

- a section that displays lists of services in the registry (which includes the **Unassigned Services** tab and the **Assigned Services** tab)
- a section that displays detailed information about the service selected in the first section

The services that are not yet assigned to management servers and proxies are displayed on the **Unassigned Services** tab. The services that are assigned to management servers and proxies are displayed on the **Assigned Services** tab.

Select a service to display additional information about the service:

- **Assignment Details** shows the management servers and proxies to which the selected service is assigned. You can select a management server or proxy to view additional details about the selected management server or proxy. You can use these details to diagnose issues that prevent you from running the service.
- **Service Plan** shows the service plan for the selected service. The service plan contains the parameters that the service uses to run the service. If the service is assigned to management servers and proxies, you can change the parameters that are used to run the service. You can also reset the parameters to their default values. (The service plan parameters cannot be changed for services that are not yet assigned to management servers and proxies.)
- **Service Schedule** shows all existing schedules for the selected service. You can schedule the selected service once on each management server to which the service is assigned.

---

## Service Monitoring

Use **Service Monitoring** to view a list of service instance records on the manager. A service instance record is created whenever a service is run. Service instance records show the status of each service request and indicate whether the service request completed successfully.

You can click a service instance in the list to view more detailed information on how the service was processed at the bottom of this page. You can use this information to diagnose problems if the service does not complete successfully.

- **Service Results** shows statistics for services that were run using the executor (service type of **Executor**).
- **Service Output** shows the trace log output for services that were run using the executor and that failed, and the result output for services that were run using service execution components other than the executor.

If you access the manager on an application server, you can create filters to limit the types of service instance records that are displayed at the top of this page. You can filter the list by status, service type, service request type, management server, and service start time. Filters are saved with your user record and are available until you delete the filter.

---

## Preferences

Use **Preferences** to set the preferred operation settings for the manager.

### Global Preferences

**Global Preferences** are available if you access the manager from the designer or if an administrator accesses the manager on an application server.

- Designer users can use **Global Preferences** to set the location of the registry to which they can publish services. Designer users can also set the time intervals at which the manager refreshes its display.
- Administrators can use **Global Preferences** to set the location of the registry whose services can be run from the manager. Administrators can also set the default time intervals for all manager users and the security settings for the manager (such as timeout).

### User Preferences

**User Preferences** are available if you access the manager on an application server. Each user can set **User Preferences** for the time intervals at which the manager refreshes its display.

### Display Preferences

Each user can use **Display Preferences** to set the color scheme and font size that is used on the local computer. Each user can also select the confirmation dialogs that the user wants to see.



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