



## CHAPTER 2

# Deploying Cisco Fabric Manager Server Federation

---

Fabric Manager Server federation provides scalability and easy manageability of data and programs running within the federation. A federation of Fabric Manager Servers include several functional units such as Fabric Manager Server, embedded web servers, database, and Fabric Manager Client accesses the servers. Three stages in the deployment cycle include planning for deployment, installing the federated servers and managing the federated servers.

This chapter contains the following sections:

- [Planning for Deployment, page 2-1](#)
- [Installing the Federated Servers, page 2-2](#)
- [Managing Federated Servers with Fabric Manager Client, page 2-10](#)
- [Managing Federated Servers with Fabric Manager Web Client, page 2-14](#)

## Planning for Deployment

To design a solution, including determining the structure, capabilities, and architecture for a site, you might want information that helps you to structure the server topology, plan authentication methods, determine which capabilities of Server Federation you want to take advantage of, and that helps you to plan for those capabilities and to tailor the solution to your organization's requirements.

When planning for a federated environment, consider the following factors:

- Geographic locations of the data centers that are participating in the federation.
- Total number of ports or end devices for all the existing and potential fabrics in each data center (to determine the workload).
- The Fabric Manager should be placed close to the fabrics it manages in order to reduce the latency in SNMP request and response.
- One Fabric Manager will be able to manage 150,000 ports.
- Dedicate one separate physical server for the database.
- Dedicate one separate physical server for each Fabric Manager Server in the federation.

***Send documentation comments to [fm-docfeedback@cisco.com](mailto:fm-docfeedback@cisco.com)***

## Installing the Federated Servers

During this stage, you configure your environment, install Federated Servers, and then start operating and managing sites. Depending on your environment and your solution, you may have several configuration steps to perform for your servers.

If you choose PostgreSQL as your database, you can set up the database using the install wizard when installing the first server in the federation. You should use the database URL and DBA user and password that was created when you installed the first server when adding new servers to the federation.

### Installing the Database

You need to install the database first. Although it supports both PostgreSQL and Oracle XE, you should install and use Oracle Enterprise version.

**Note**

---

All the servers in the federation must be using the database installed by the first server in the federation. The database information is available in the server properties file.

---

**Note**

---

For more information on configuring Oracle database for Fabric Manager Server in a federation, see *Installing Fabric Manager Server* section in *Cisco Fabric Manager Fundamentals Guide*.

---

### Installing the Fabric Manager Server

After you install the first Fabric Manager Server, you can configure all the subsequent installations to join the existing server federation. You can install only ten servers in a federation.

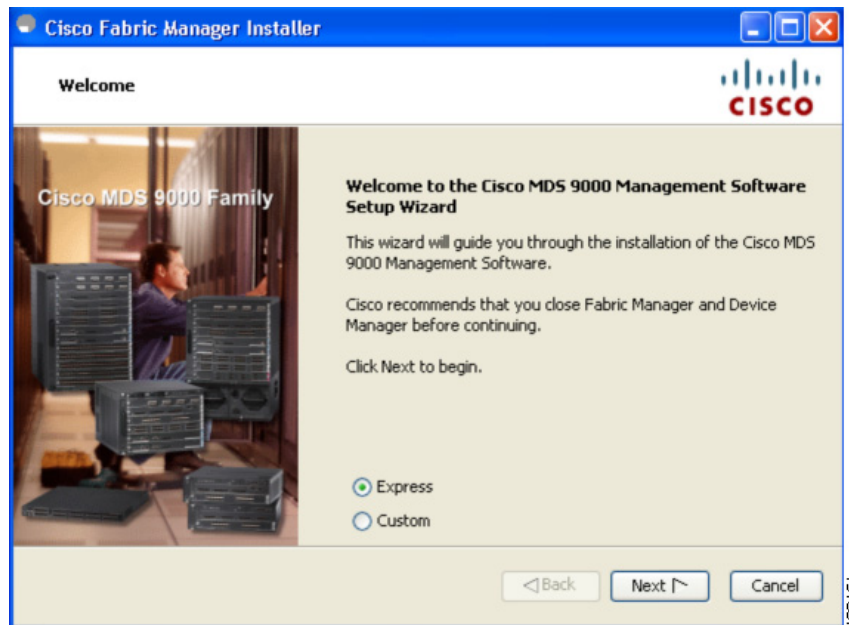
To install Fabric Manager Server on Windows, follow these steps:

- 
- Step 1** Click the **Install Management Software** link on your desktop.
  - Step 2** Choose **Management Software > Cisco Fabric Manager**.
  - Step 3** Click the **Installing Fabric Manager** link.
  - Step 4** Click the **FM Installer** link.

You see the welcome message in the Cisco Fabric Manager Installer window shown in [Figure 2-1](#).

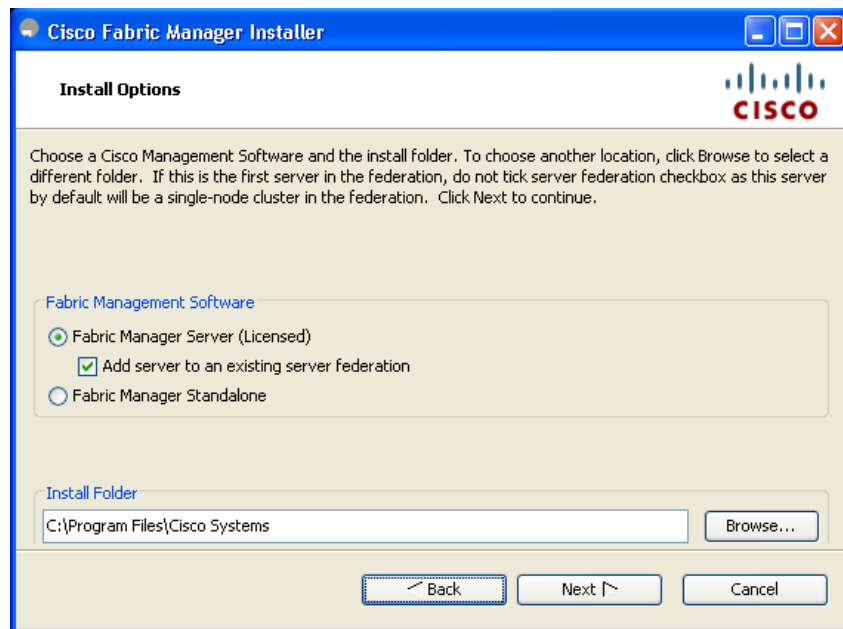
**Send documentation comments to [fm-docfeedback@cisco.com](mailto:fm-docfeedback@cisco.com)**

**Figure 2-1 Welcome to the Management Software Setup Wizard**



- Step 5** Click the **Custom** radio button, and then click **Next** to begin the installation.
- Step 6** Check the **I accept the terms of the License Agreement** check box, and then click **Next**. You see the Install Options dialog box shown in [Figure 2-2](#).

**Figure 2-2 Install Options Dialog Box**



**Send documentation comments to [fm-docfeedback@cisco.com](mailto:fm-docfeedback@cisco.com)**

**Step 7** Click **Fabric Manager Server (Licensed)** to install the server components for Fabric Manager Server.

- Check the **Add server to an existing federation** check box to add the server into an existing federation.

**Note**

Verify that the Fabric Manager Server hostname entry exists on the DNS server, unless the Fabric Manager Server is configured to bind to a specific interface during installation.

**Note**

You may need to add the following line in the pg-hba.conf file under **# IPv4 local connections** in order to allow remote hosts to connect to PostgreSQL database:

```
host all all 0.0.0.0/0 md5
```

After adding, save the configuration file, restart the PostgreSQL database before you install the second server node.

**Note**

If you are joining more than three Fabric Manager Servers in a federation, you need to use an Oracle database with the following settings.

```
C:\Documents and Settings\Administrator>sqlplus /nolog
SQL*Plus: Release 10.2.0.1.0 - Production on Wed Jan 6 17:19:32 2010
Copyright (c) 1982, 2005, Oracle. All rights reserved.
SQL> connect / as sysdba;
Connected.
```

```
SQL> alter system set processes=100 scope=spfile;
System altered.
SQL> alter system set open_cursors=500 scope=spfile;
System altered.
```

```
SQL> shutdown immediately;
SP2-0717: illegal SHUTDOWN option
SQL> shutdown immediate;
Database closed.
Database dismounted.
ORACLE instance shut down.
SQL> startup;
ORACLE instance started.
Total System Global Area 805306368 bytes
Fixed Size 1453836 bytes
Variable Size 218714356 bytes
Database Buffers 583008256 bytes
Redo Buffers 2129920 bytes
Database mounted.
Database opened.
SQL> show parameter processes;
```

```
Total System Global Area 805306368 bytes
Fixed Size 1453836 bytes
Variable Size 218714356 bytes
Database Buffers 583008256 bytes
Redo Buffers 2129920 bytes
Database mounted.
Database opened.
SQL> show parameter processes;
```

```
NAME                                TYPE                                VALUE
```

```
-----
```

## Send documentation comments to [fm-docfeedback@cisco.com](mailto:fm-docfeedback@cisco.com)

aq_tm_processes	integer	0
db_writer_processes	integer	4
gcs_server_processes	integer	0
job_queue_processes	integer	4
log_archive_max_processes	integer	2
processes	integer	100

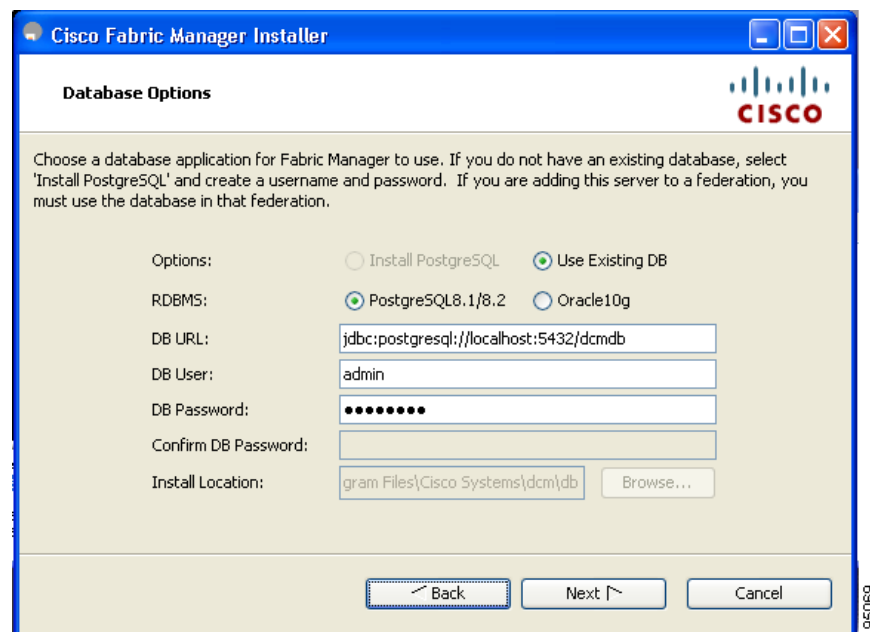
**Step 8** Select an installation folder on your workstation for Fabric Manager.

On Windows, the default location is C:\Program Files\Cisco Systems\MDS 9000. On a UNIX (Solaris or Linux) machine, the installation path name is /usr/local/cisco\_mds9000 or \$HOME/cisco\_mds9000, depending on the permissions of the user doing the installation.

**Step 9** Click Next.

You see the Database Options dialog box shown in [Figure 2-3](#).

**Figure 2-3 Database Options Dialog Box**



**Step 10** Click either the Install PostgreSQL radio button or the Use existing DB radio button to specify which database you want to use.



**Note**

If you choose to install PostgreSQL, you must disable any security software you are running because PostgreSQL may not install certain folders or users.



**Note**

If you had installed the database separately, click the **Use existing database** radio button and enter the credentials of the database that you installed in the previous step.

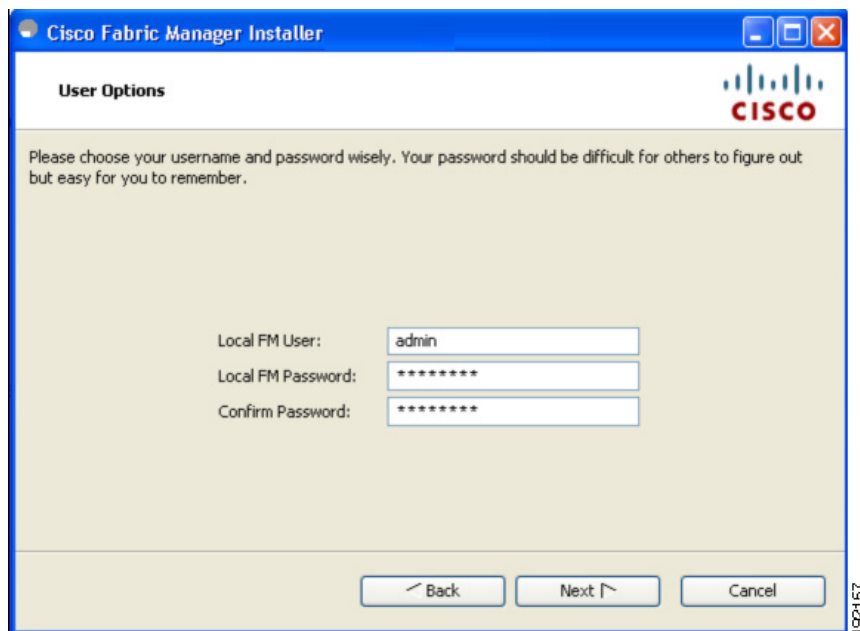
***Send documentation comments to [fm-docfeedback@cisco.com](mailto:fm-docfeedback@cisco.com)***

**Note**

Before you install PostgreSQL, remove the cygwin/bin from your environment variable path if Cygwin is running on your system.

- Step 11** If you select Use existing DB, click either the either Install PostgreSQL radio button or the Use existing DB radio button.
- Step 12** Click **Next** in the Database Options dialog box.  
You see the User Options dialog box shown in [Figure 2-4](#).

**Figure 2-4** User Options Dialog Box



- Step 13** Enter a user name and password and click **Next**.  
You see the Authentication Options dialog box shown in [Figure 2-5](#).

**Send documentation comments to [fm-docfeedback@cisco.com](mailto:fm-docfeedback@cisco.com)**

**Figure 2-5 Authentication Options Dialog Box**

Cisco Fabric Manager Installer

**Authentication Options**

Please choose an authentication mode. Select MDS to use the switch as an authentication proxy. Use Verify to test non-local logins.

Mode:  Local  RADIUS  TACACS  MDS

Primary Auth Address:

Primary Auth Secret:  Verify...

Secondary Auth Address:

Secondary Auth Secret:  Verify...

Tertiary Auth Address:

Tertiary Auth Secret:  Verify...

Back Next Cancel

**Step 14** Choose an authentication mode (Local, RADIUS, TACACS or MDS) and click **Next**.



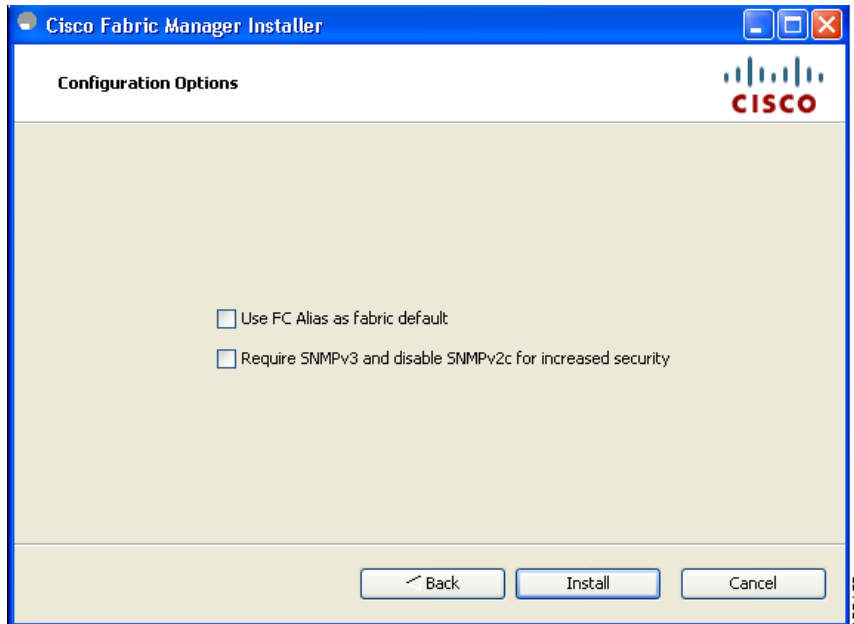
**Note** When the MDS radio button is selected, the FM authentication uses the user database in the switch for authentication.

**Step 15** Click **Verify** to test your login.

You see the Configuration Options dialog box for Fabric Manager as shown in [Figure 2-6](#).

**Send documentation comments to [fm-docfeedback@cisco.com](mailto:fm-docfeedback@cisco.com)**

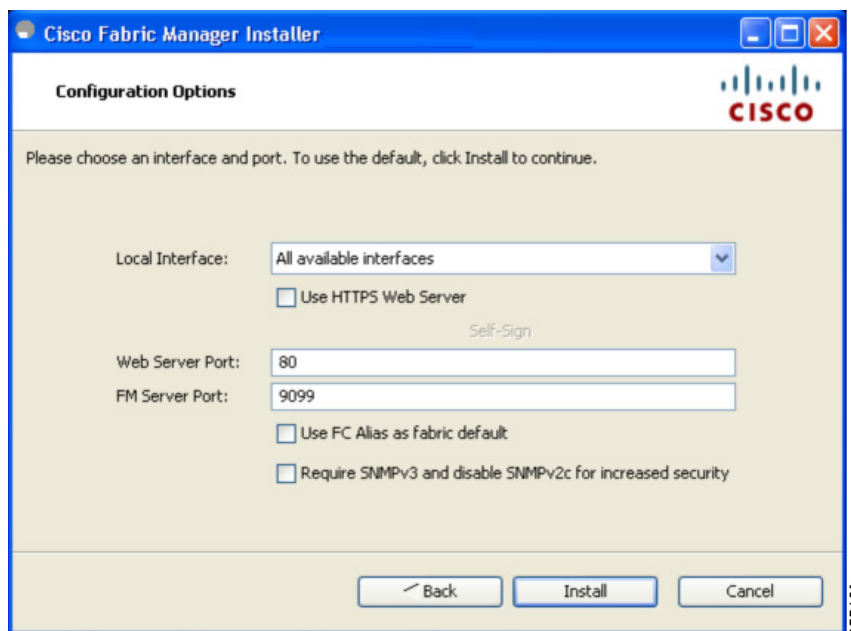
**Figure 2-6** Configuration Options Dialog Box for Fabric Manager



**Step 16** Check the FC Alias and SNMPv3 check boxes as desired and click **Install** if you are installing Fabric Manager.

You see the Configuration Options dialog box for Fabric Manager Server shown in [Figure 2-7](#).

**Figure 2-7** Configuration Options Dialog Box for Fabric Manager Server





## Send documentation comments to [fm-docfeedback@cisco.com](mailto:fm-docfeedback@cisco.com)

- Step 17** Select the local interface and web server port or Fabric Manager server port. You can change the Fabric Manager Server port number to a port that is not used by any other application. If you check the **Use HTTPS Web Server** check box, the Web Server Port field is grayed out and the default port is 443.
- Step 18** Check the FC Alias and SNMPv3 check boxes as desired.
- Step 19** Click **Install** if you are installing Fabric Manager Server. You see the installation progress in the Cisco Fabric Manager Installer window as shown in [Figure 2-8](#).

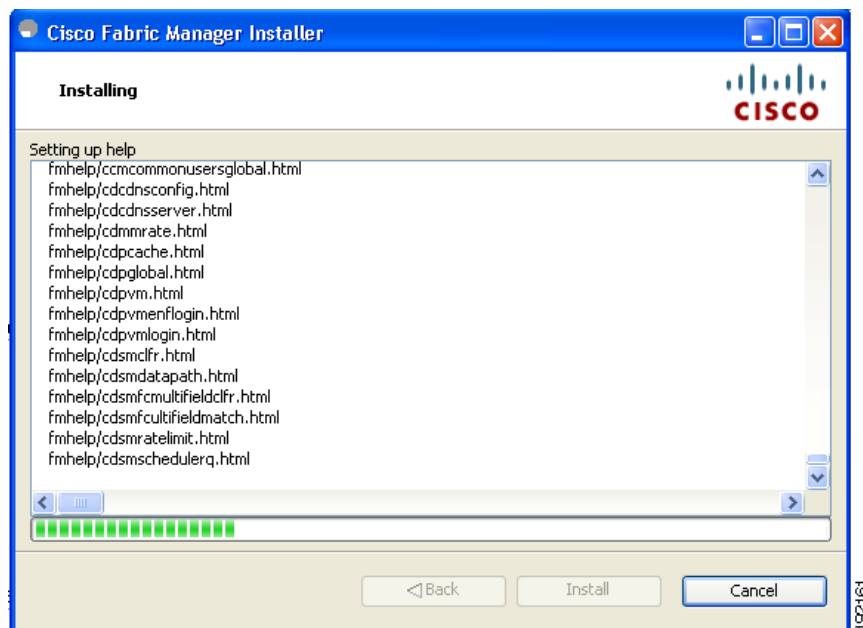


**Note** You should verify that the Fabric Manager Server hostname entry exists on the DNS server, unless the Fabric Manager Server is configured to bind to a specific interface during installation.



**Note** If you select a specific IP address during installation and change the server host IP address, you must modify the following two files that are all located in the \$INSTALL/conf directory. Change server.bindaddr to the new IP address in the server.properties file and change wrapper.app.parameter.4 to the new IP address in the FMServer.conf file.

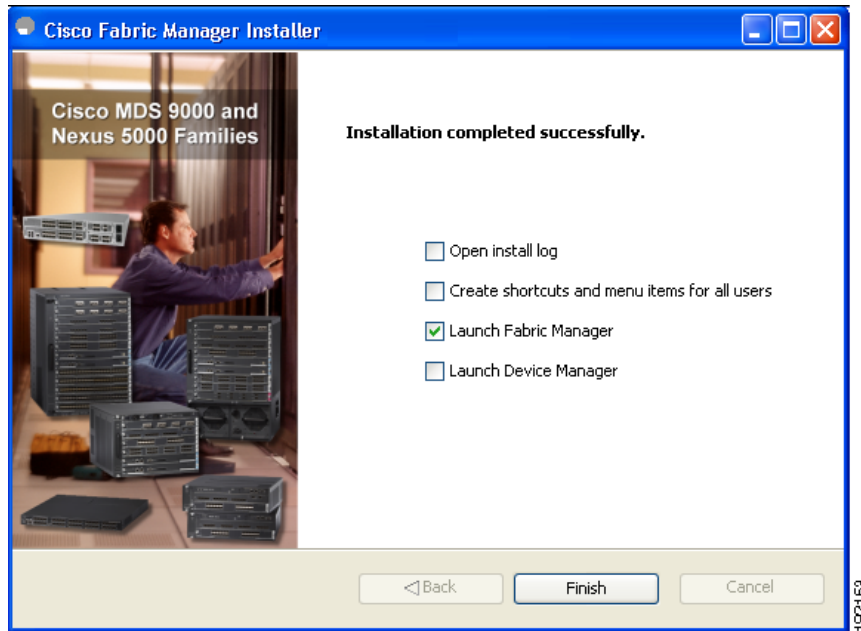
**Figure 2-8** Progress of Installation



Once the installation is finished, you see an installation completed message in the Cisco Fabric Manager Installer window shown in [Figure 2-9](#).

***Send documentation comments to [fm-docfeedback@cisco.com](mailto:fm-docfeedback@cisco.com)***

**Figure 2-9** *Install Complete*



**Note**

You can choose to launch Fabric Manager or Device Manager by checking the **Launch Fabric Manager** or **Launch Device Manager** check boxes. Icons for Fabric Manager and Device Manager are automatically created on the desktop.

**Step 20** Click **Finish** to close the Cisco Fabric Manager Installer window.

## Managing Federated Servers with Fabric Manager Client

### Discovering a Fabric

**Step 1** Double-click the Fabric Manager icon to launch Fabric Manager.  
You see the Fabric Manager Login dialog box shown in [Figure 2-10](#).

**Send documentation comments to [fm-docfeedback@cisco.com](mailto:fm-docfeedback@cisco.com)**

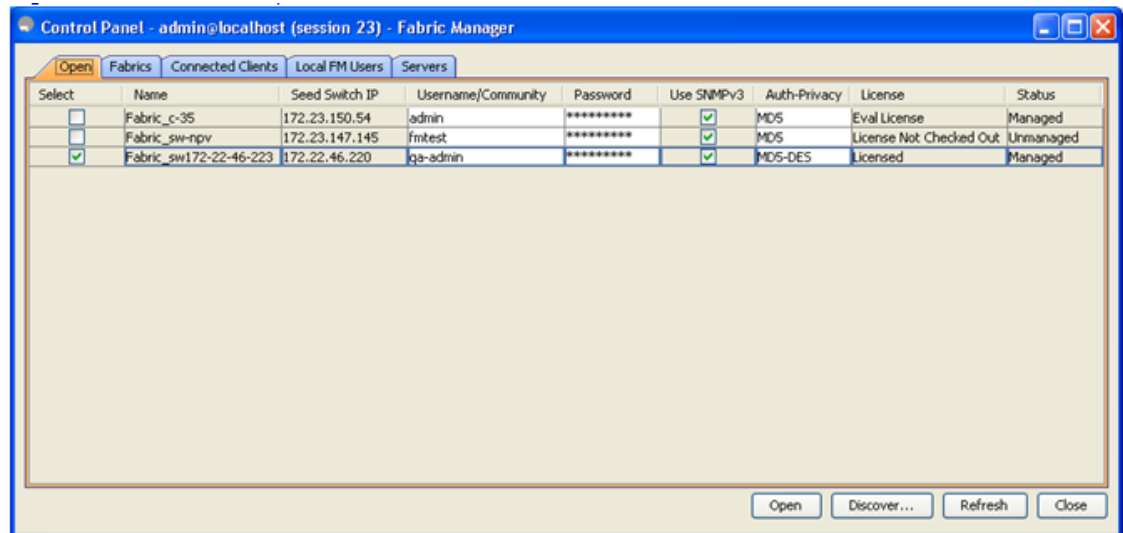
**Figure 2-10 Fabric Manager Server Login Dialog Box**



- Step 2** Enter the Fabric Manager Server user name and password.
- Step 3** Check the Use SNMP Proxy check box if you want Fabric Manager Client to communicate with Fabric Manager Server through a TCP-based proxy server.
- Step 4** Click **Login**. Once you successfully log in to Fabric Manager Server, you can set the seed switch and open the fabrics that you are entitled to access.

You see the control panel as shown in [Figure 2-11](#).

**Figure 2-11 Control Panel – Open Tab**



- Step 5** Click **Open** to open a selected fabric.

*Send documentation comments to [fm-docfeedback@cisco.com](mailto:fm-docfeedback@cisco.com)*

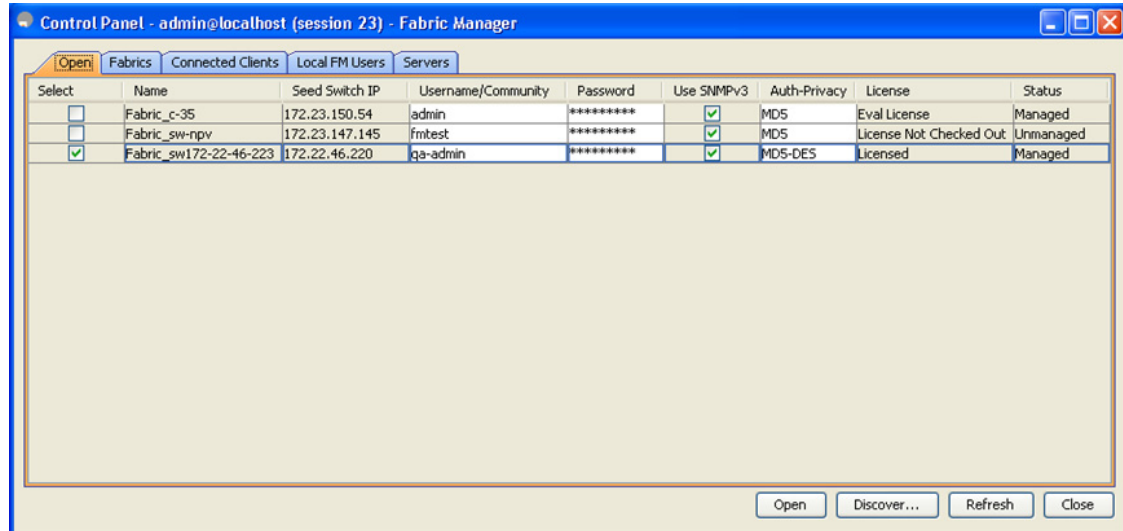
## Opening the Fabric on a Different Server

To open the fabric on a different server follow these steps:

**Step 1** Choose **Server > Admin**.

You see the Control Panel as shown in [Figure 2-12](#).

**Figure 2-12** Control Panel



**Step 2** Click **Discover**.

You see the Discover New Fabric dialog box as shown in [Figure 2-13](#).

**Figure 2-13** Discover new Fabric



**Step 3** In the Seed Switch list box, enter the IP Address of the seed switch.

## Send documentation comments to [fm-docfeedback@cisco.com](mailto:fm-docfeedback@cisco.com)

- Step 4** In the User Name field, enter the user name.
- Step 5** In the password field, enter the password.
- Step 6** From the Auth-Privacy drop-down list, choose the privacy protocol you want to apply.
- Step 7** To open the selected fabric in a different server, select the server ID from the Server drop-down list.
- Step 8** Click **Discover**.



**Note** You may receive an error message when you discover a fabric in a federation while another Fabric Manager Server is joining the federation. You can discover the fabric on after the installation or upgradation is complete.

## Viewing the Sessions in a Federation

To view all the sessions in a federation, follow these steps:

- Step 1** Choose **Server > Admin**.
- Step 2** Click the **Connected Clients** tab.

You see the Control Panel as shown in [Figure 2-14](#).

**Figure 2-14**      **Connected Clients**

SessionId	Client	User	Role	Login	Last Access
43	localhost	admin	network-admin	2009/02/06-14:32:06	2009/02/06-14:32:06
23	localhost	admin	network-admin	2009/02/05-11:39:10	2009/02/05-11:39:10
33	171.71.58.117	admin	network-admin	2009/02/05-11:47:06	2009/02/05-11:47:06

194360

*Send documentation comments to [fm-docfeedback@cisco.com](mailto:fm-docfeedback@cisco.com)*

## Viewing the Servers in a Federation

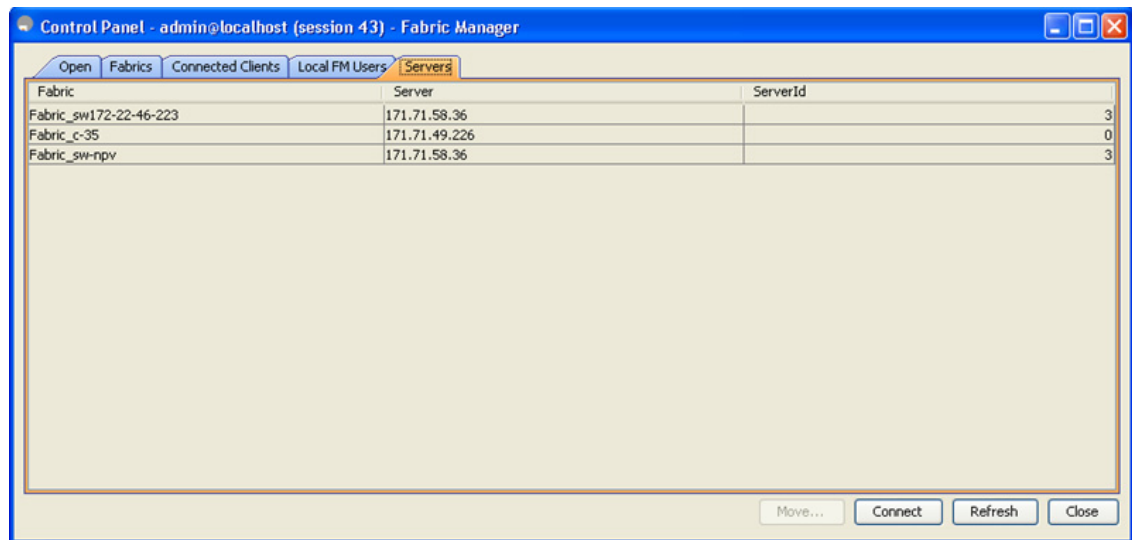
To view all the servers in a federation follow these steps:

**Step 1** Choose **Server > Admin**.

**Step 2** Click **Servers** tab.

You see the Control Panel as shown in [Figure 2-15](#)

**Figure 2-15 Servers**



## Managing Federated Servers with Fabric Manager Web Client

To start managing fabrics using Fabric Manager Web Client, follow these steps:

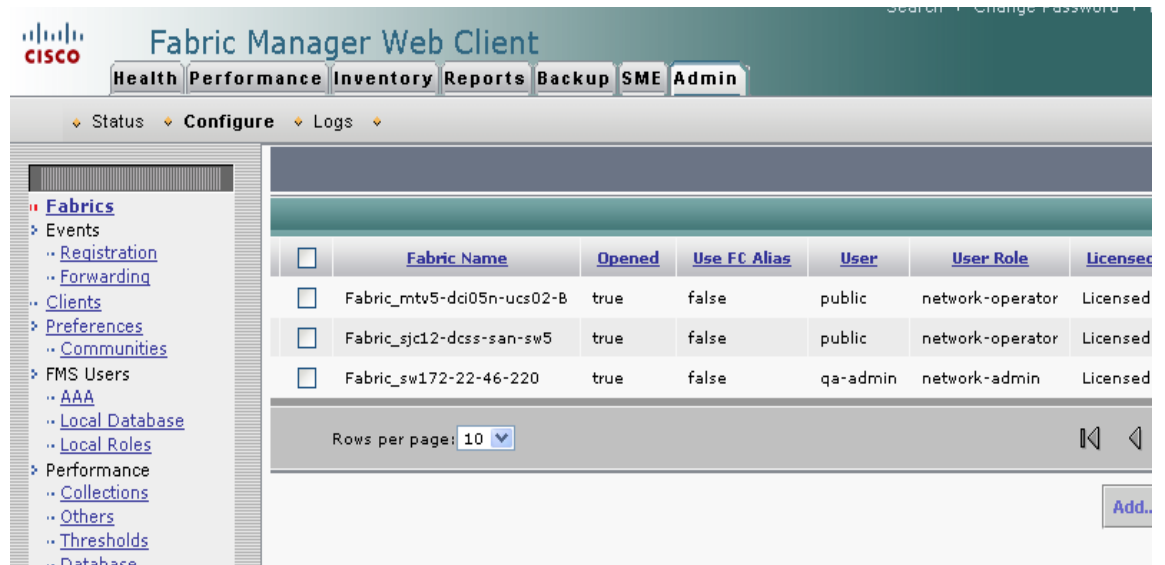
**Step 1** Click the **Admin** tab, and then click **Configure**.

**Step 2** Click **Fabrics** in the left navigation pane.

You see the list of fabrics (if any) managed by Fabric Manager Server in the Opened column as shown in [Figure 2-16](#).

**Send documentation comments to [fm-docfeedback@cisco.com](mailto:fm-docfeedback@cisco.com)**

**Figure 2-16 List of Fabrics**



**Step 3** Click **Add**.

You see the Add Fabric dialog box as shown in [Figure 2-17](#).

**Figure 2-17 Add Fabric**



**Step 4** Enter the fabric seed switch IP address for this fabric.

**Step 5** Enter the user name and password for this fabric.

**Step 6** (Optional) Check the SNMPV3 check box.

**Step 7** Select the privacy settings from the **Auth-Privacy** listbox.

***Send documentation comments to [fm-docfeedback@cisco.com](mailto:fm-docfeedback@cisco.com)***

**Step 8** Click **Add** to begin managing this fabric.

---