



CHAPTER 3

Installing the Orchestrator Server Components

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Installing and Setting Server Components

Assumptions:

- You have followed the steps in the [“Preparing the Server Installation Environment”](#) section on [page 2-6](#), and you have the web site and database connection information.
- You have created any user accounts that you need to run the Orchestrator services.

Step 1 Log on to the server computer as the domain administrator and then go to the Orchestrator distribution folder.

Step 2 Run OrchestratorServerSetup.exe.

Step 3 Accept the license agreement and select the setup type you want.

The remaining steps are specific to the advanced option, through which you can customize settings that are not editable in the typical installation.

For more specific information about the typical installation settings, see [“Server Installation Options and Prerequisites”](#) section on [page 2-2](#).



Tip

See the Feature Description text for the selected components that need to be installed at the same time.

Step 4 On the Destination Folder page, confirm or customize the location of the files that will be installed on the computer.

Step 5 On the Web Services Configuration page, make any changes you need to the web site, application pool, and user to run the web services.

- If you specify a different web site from the default, you also need to specify an http port other than 80. IIS designates port 80 for its default web site.
- Network Service is the recommended user. By default it is the least privileged account that has enough permissions to run the services.

Step 6 On the Database Configuration page, review and confirm the database server and connection information.

Step 7 On the Service Logon page, specify the user you want to run the Orchestrator power management service.

Again, Network Service is the default user. If you select Logon User Account to enter a user and password you created for Orchestrator, the setup program grants that user “log on as a service” permission on that computer.

Step 8 When you are done configuring each component, finish the setup program.

Step 9 Open the Orchestrator Administrator console in a browser:
[http://\[your_site_name.com\]/Admin/default.aspx](http://[your_site_name.com]/Admin/default.aspx). Use administrator level credentials to log in.

After completing this procedure:

If you granted db_creator or equivalent permissions to the user running the Orchestrator installer, you can reduce those permissions. If the user is also the user that will run the service, minimum required permissions are db_datareader and db_datawriter.

In addition, if you install individual server components on separate computers, you need to do some additional manual configuration. For information, see any of these topics:

- Configure access to the queue service after installation
- Create and configure the Orchestrator database manually (if the database is not installed yet)



Note

If you install all of the components on one computer, you do not need to perform these extra configuration steps manually, because they are completed by the setup program.

Uninstalling or Changing the Server Configuration

Choose **Add or Remove Programs** in the Windows Control Panel to uninstall or change Orchestrator server components.

This starts the setup .msi file and gives you the appropriate options for the components installed. Run this process on each computer that hosts an Orchestrator server component that you want to uninstall or change.



Note

If you uninstall the Power Management queue service, you need to manually delete the ActiveMQ-3.5 folder and its Bin and Data subfolders.

Configuring Access to the Queue Service After Installation

When you install Orchestrator server components on separate computers, you might need to set up proper access between the server components and the queueing service (ActiveMQ). This topic describes when, where, and how to modify configuration settings.

- This information applies only if you used the Advanced installation option to install particular server components on separate computers.
- The components that this issue affects are listed in the table later in this topic.
- If you use either the Typical or Advanced option to install the components on the same computer at the same time, you do not need to complete this process (it is completed during installation).
- You copy information from the `activemq.xml` file that is installed with ActiveMQ. (The location is given in the procedure below.)
- You modify the `Verdiem.Enterprise.common.config` file that is installed with specific Orchestrator server components, only when that server component is not installed on the same computer as ActiveMQ.

Table 3-1 lists each server component for which a `Verdiem.Enterprise.common.config` file is installed and the file location.

Table 3-1 *Verdiem.common.config File Location*

Orchestrator component	Verdiem.common.config location
Enterprise Power Management processor	Program Files\Cisco Systems\Cisco EnergyWise Orchestrator\BackgroundProcessor
PMP service	Inetpub\wwwroot\Cisco Systems\PMPService\bin
Administrator	Inetpub\wwwroot\Cisco Systems\Administrator\bin

Modifying the Files

When you modify the files, you copy the user name and password that was set for ActiveMQ during installation from `activemq.xml` to the `Verdiem.Enterprise.common.config` file for each server component that is hosted on a separate computer. In the `.config` file, you also specify the name of the server on which ActiveMQ is installed.

Step 1 On the computer that hosts ActiveMQ, navigate to and open the `activemq.xml` file for editing.

The file is in this location: `Program Files\Cisco Systems\Cisco EnergyWise Orchestrator\activemq-5.3.0\conf`.

Step 2 Find the following code:

```
<simpleAuthenticationPlugin>
<users>
<authenticationUser username="PowerMgmtMQ" password="[randomly generated password]"
groups="PowerMgmtGroup" />
</users>
</simpleAuthenticationPlugin>
```



Note The password value is automatically generated during installation.

- Step 3** Open the `Verdiem.Enterprise.common.config` file for the server component you installed on a separate computer. (See the table preceding this procedure for file locations.)

Find this code:

```
<MessageQueueConfiguration>
<add key="BrokerUri"
value="activemq:failover:(tcp://localhost:61616?jms.useRetroactiveConsumer=true)"/>
<add key="BrokerUserName" value="PowerMgmtMQ" />
<add key="BrokerPassword" value="[randomly generated password]" />
</MessageQueueConfiguration>
```

- Step 4** Copy information from `activemq.xml` to `Verdiem.Enterprise.common.config`, so that the attributes match between files. The table shows the matching attributes:

Table 3-2 Attributes

<code>activemq.xml</code>	<code>Verdiem.Enterprise.common.config</code>
username value "PowerMgmtMQ"	"add key="BrokerUserName" value="PowerMgmtMQ"
password value "[generated_password]"	"add key="BrokerPassword" value="[generated_password]"

- Step 5** In addition, in the `Verdiem.Enterprise.common.config` file, in the node that contains the `BrokerUri` key, replace `localhost` with the name of the server on which ActiveMQ is installed.
- Step 6** Save and close the files.

Setting Database Permissions for Post-installation Administration

If you give the Orchestrator user owner or creator permissions during installation, you can reduce those permissions for ongoing administration.



Note

If a DBA at your organization set up the database independently of the installation, you might not need to complete these steps. Confirm with the DBA that the user running the Orchestrator Administrator service has write access to the Enterprise Power Management database.

- Step 1** Open the SQL Server Management Studio and go to **Databases / Enterprise Power Management Database / Security / Roles / Database Roles**.
- Step 2** Add the user that will run the Orchestrator Administrator service to a role that gives the user write access to the database.
- Step 3** Remove the Orchestrator user from `dbcreator` or other ownership roles.

Server Settings and Descriptions

Displaying the Server Settings

To access the settings, in the Orchestrator Administrator, on the Server menu, click **Configure Server Settings**, and select the **Settings** tab.

Table 3-3 *Server Settings List*

Setting	Description
Maximum items per search result	<p>Sets the number of devices to display in Manage Devices or View Events, that match the search parameters that you set in the left navigation panel.</p> <p>This is set to 2000 by default. If viewing or browsing devices is slow, reduce the number of devices in the list.</p>
Server mode	<p>Set this to Baseline to temporarily suspend policy enforcement and to only measure user activity and power state transitions. Use baseline mode when you want to determine the normal energy use over the network without power management. You would do this only under the direction of Cisco Technical Support. Set it to Operational to begin or resume policy enforcement.</p> <p>Baseline mode is enabled by default when you first deploy Orchestrator.</p>
Wake job processing interval	<p>The number of seconds to wait after sending a wake job before sending the next one. This parameter takes effect if you set the wake batch size to a number that is less than the total number of clients to wake.</p> <p>The default value is 10 seconds.</p>
Wake job batch size	<p>The number of clients to wake in one batch. This works with the Wake job processing interval. A subsequent wake batch is sent after the number of seconds set in Wake job processing interval.</p> <p>By default, Orchestrator wakes 100 clients at a time.</p>
Device check-in interval	<p>The number of minutes the client device waits before requesting power-state updates from the server.</p> <p>By default, this is set to 10 minutes.</p>
Proxies per broadcast domain	<p>The number of PC clients in each subnet to keep awake at all times to receive magic packet requests from the server and to relay them to the other clients in their broadcast segment. This setting takes effect only if you enable Wake on WAN.</p> <p>By default, this is set to 2 proxies.</p>
Exclude devices with licensing disabled in the device lists	<p>When enabled (default), displays only licensed devices in browse and search-result lists.</p>
Do not display interface devices in the device lists	<p>When selected (default), excludes empty ports (ports or switches with no end points) from the device list.</p>

Table 3-3 Server Settings List (continued)

Setting	Description
Use server default settings	Enabled by default. Clear the check box to change default settings, such as the maximum number of devices that appear in search results.
Maximum items per search result	<p>Sets the number of items that appear on the Administrator console when searching and browsing devices.</p> <p>By default, this is set to 2000.</p> <p>A status message shows the number of devices in the current tab. If more devices exist than are shown in the list, the status message also shows the total number of devices.</p>

Installing the EnergyWise Proxy Server

The EnergyWise proxy server is installed separately from the Orchestrator installation. You must run the installation on each computer that will act as an EnergyWise proxy server.

For configurations that include a primary and secondary proxy server, you need to ensure that the *proxyAuthorizedUser* and *proxyIdentifier* in the web.config file on the EnergyWise provisioning server match exactly the information provided for login credentials (Login User Account or Network Service Account) and the Proxy Identifier during installation. For details on a failover configuration, see the [“Failover Configuration for the EnergyWise Proxy Server”](#) section on page 4-12.

If two different user accounts are required for a primary and secondary proxy server, you will need to define a separate proxyDomains section under proxyConfigurations for each user account in web.config. Both proxyDomains sections should refer to the same list of domains and the same proxy identifier to retrieve the same configurations for failover.

For details about configuring Orchestrator for EnergyWise devices, see the [“Overview of EnergyWise Configuration in Orchestrator”](#) section on page 4-1, the [“Configuring the EnergyWise Proxy Server”](#) section on page 4-11, and the [“Configuring the EnergyWise Provisioning Server web.config file”](#) section on page 4-6.



Note

We recommend that you set the time on your switches to the system time of the machine running the EnergyWise proxy server. This ensures that events and reporting information coincide with policy-triggered actions on the switch. We recommend that you set up EnergyWise proxy servers to manage switches located in the same time zone.

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- Step 1** For each computer on which you plan to install the proxy server, log in as the user that you expect will run the EnergyWise Proxy Service.
 - Step 2** Run OrchestratorEWProxyServerSetup.exe on each computer that will act as proxy server.
For example, in a failover configuration, you need to run the installation for a primary proxy server and then again for a secondary proxy server.
 - Step 3** Enter or verify the URLs for the Orchestrator power management server and the EnergyWise provisioning server.
 - Step 4** Enter the Proxy Identifier. Using the same ID for both the primary and secondary proxy server enables the servers to retrieve the same configuration information.

The ID that you create must match the corresponding proxyIdentifier entry that you provide in the web.config file on the EnergyWise provisioning server.

Step 5 Enter the login credentials for the proxy service.

- Login User Account. If you select Login User Account, the user account name must be a fully qualified computer name that includes the machine or domain name and the account name. For example, MYDOMAIN\MyAccountName.
- Network Service Account. If you select Network Service Account, you need to specify NT AUTHORITY\NETWORK SERVICE as the value for proxyAuthorizedUser in the web.config file on the EnergyWise provisioning server.



Note A Network Service Account login is not currently supported for separate host configurations where the proxy server is installed on a different computer than the provisioning server.

The user account name that you enter must match the proxyAuthorizedUser entry under proxyDomains in the web.config file on the EnergyWise provisioning server.

If two different user accounts are required for a primary and secondary proxy server, you need to define a separate proxyDomains section under proxyConfigurations for each user account in web.config. Each proxyDomains section should refer to the same list of domains and the same proxy identifier to retrieve the same configurations for failover.

Step 6 Click Next, and then click Install.
