# Oracle Enterprise Manager Plug-In for Pillar Axiom

## User's Guide

ORACLE

PILLAR AXIOM

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# Preface

## Related Documentation

Information resources for Pillar Axiom systems

- *Pillar Axiom Customer Release Notes*
- *Pillar Axiom Administrator's Guide*
- *Pillar Axiom Glossary*
- *Pillar Axiom System Architecture Overview*

## Typographical Conventions

**Table 1 Typography to mark certain content**

| Convention | Meaning |
|---|---|
| *italics* | Within normal text, words in italics indicate one of the following:<br>• A reference to a book title<br>• New terms and emphasized words<br>• Command variables |
| `monospace` | Indicates one of the following, depending on the context:<br>• The name of a file or the path to the file<br>• *Output* displayed by the system on the command line |
| **`monospace`** (bold) | *Input* provided by an administrator on the command line. |
| **>** | Indicates a menu item or a navigation path in a GUI. For example, "Click **Storage > Clone LUNs**" means to click the **Clone LUNs** link on the **Storage** page in the GUI. |

Table 1 Typography to mark certain content (continued)

| Convention | Meaning |
|---|---|
| ... | Used within an expression of a navigation path or within a cascading menu structure. The ellipsis indicates that one or more steps have been omitted from the path or menu structure. For example, in the **Groups > Volume Groups > Actions > ... > Data Protection > Create** menu structure, the ... implies that one or more menu items have been omitted. |

# Oracle Contacts

Table 2 Oracle resources

| For help with... | Contact... |
|---|---|
| Support | http://www.oracle.com/support<br>(www.oracle.com/support) |
| Training | https://education.oracle.com<br>(https://education.oracle.com) |
| Documentation | • Oracle Technology Network Documentation:<br>(http://docs.oracle.com)<br>• From the Pillar Axiom Storage Services Manager (GUI):<br>**Support > Documentation**<br>• From Pillar Axiom HTTP access:<br>(http://*system-name-ip*/documentation.php where *system-name-ip* is the name or the public IP address of your system.) |
| Documentation feedback | http://www.oracle.com/goto/docfeedback<br>(http://www.oracle.com/goto/docfeedback) |

Table 2 Oracle resources (continued)

| For help with... | Contact... |
| --- | --- |
| Contact Oracle | http://www.oracle.com/us/corporate/contact/index.html<br>(http://www.oracle.com/us/corporate/contact/index.html) |

CHAPTER 1

# Introduction to the Oracle Enterprise Manager Plug-In for Pillar Axiom

## About the Oracle Enterprise Manager Plug-In

Oracle Enterprise Manager Plug-In for Pillar Axiom version 12.1.0.1.0 enables you to monitor and manage Pillar Axiom systems from Oracle Enterprise Manager Cloud Control 12c.

When you deploy the plug-in to Oracle Enterprise Manager Cloud Control 12c, you can monitor the organization and components of your Pillar Axiom systems. You can also monitor statistical metrics, generate reports, and schedule data protection backups for your Pillar Axiom systems.

The plug-in also allows you to manage the components of your Pillar Axiom systems.

## System Requirements

Make sure your systems meet the requirements for Oracle Enterprise Manager Plug-In for Pillar Axiom and Oracle Enterprise Manager Cloud Control 12c.

Oracle Enterprise Manager Plug-In for Pillar Axiom and Oracle Enterprise Manager Cloud Control 12c have the following system requirements:

**Table 3 System requirements**

| Requirement | Version |
|---|---|
| Pillar Axiom system software | Release 5: version 5.4 or later |
| Operating systems | The OEM Axiom Plug-In works with any of the operating systems supported by Oracle Enterprise Manager Cloud Control 12c. |

**Table 3 System requirements (continued)**

| Requirement | Version |
|---|---|
| | For more details, refer to the Oracle Enterprise Manager Downloads page (http://www.oracle.com/technetwork/oem/grid-control/downloads/index.html). |

## About Monitoring Pillar Axiom Systems

The Oracle Enterprise Manager Plug-In for Pillar Axiom enables you to view the organizational features and system components on your Pillar Axiom systems. You can also view pre-defined reports and metrics to monitor system configuration and performance.

The plug-in allows you to monitor the host group, volume group, and Storage Domain organizational features of your Pillar Axiom systems.

The plug-in allows you to view Pillar Axiom LUN and Clone LUN details. You can also view regularly collected statistical metrics to monitor Pillar Axiom systems, Pilots, Slammers, Bricks, drives, and LUNs.

The plug-in also provides pre-defined hardware reports, I/O reports, and storage usage reports that you can generate to monitor Pillar Axiom system configuration and performance.

## About Pillar Axiom Reports

The Oracle Enterprise Manager Plug-In for Pillar Axiom provides hardware, I/O, and storage usage reports that you can generate for Pillar Axiom systems.

Hardware reports include a Pillar Axiom system summary report, a report of the disk drives in the Bricks associated with the Axiom, and a report of the status of the Axiom hardware. In addition, the hardware reports include a Platinum Health Check report that determines whether the Pillar Axiom system meets the requirements for Platinum Services support.

The I/O Access for LUNs report charts input and output statistics for the ten most active LUNs on the Pillar Axiom system.

The Storage Usage reports show how much storage is used by the LUNs associated with the Pillar Axiom system, and how much storage is used for the different priority, data access, and I/O bias Quality of Service categories.

**Related references**

- *Pillar Axiom Hardware Reports*
- *Pillar Axiom I/O Reports*
- *Pillar Axiom Storage Usage Reports*

**Related tasks**

- *Generate Pillar Axiom Reports*

## About Managing Pillar Axiom Systems

The Oracle Enterprise Manager Plug-In for Pillar Axiom allows you to manage the organizational features and components of your Pillar Axiom systems.

The plug-in allows you to create, modify, and delete host group, volume group, and Storage Domain Pillar Axiom organizational features. You can also modify the membership of these organizational features with the plug-in.

The plug-in allows you to create, modify, and delete Pillar Axiom LUNs and Clone LUNs, and to make copies and clones of these LUNs and Clone LUNs.

The plug-in also allows you to create, modify, and delete data protection schedules that replicate LUNs and Clone LUNs at regular intervals to protect them from data loss.

CHAPTER 2

# Install the Oracle Enterprise Manager Plug-In for Pillar Axiom

## About Installing the Plug-In

The Oracle Enterprise Manager Plug-In for Pillar Axiom is available in an archive package you can download from the Oracle Technical Network (OTN).

The plug-in is an Oracle Plug-In Archive (OPAR) package included in the Oracle Enterprise Manager Plug-In for Pillar Axiom archive file available on OTN. You need to import the archive to the OEM repository to make the plug-in visible in the OEM GUI. When the plug-in is available in the GUI, you can use the Plug-in Lifecycle Management tools to deploy it to the management server and management agent.

**Related references**

- *Port Assignments*

**Related tasks**

- *Download the Plug-In*
- *Install the Plug-In*
- *Verify Installation of the Plug-In*
- *Remove the Plug-In (Optional)*
- *Log In to Oracle Enterprise Manager*
- *Add Axiom Targets*

## Download the Plug-In

The Oracle Enterprise Manager Plug-In for Pillar Axiom software and documentation are distributed as a single zip archive that is available for download from the Oracle Technical Network.

**Prerequisite:** Join the Oracle Technology Network (http://www.oracle.com/technetwork/community/join/why-join/index.html) to gain access to software and documentation downloads.

1. On the Oracle Technology Network, open the Pillar Axiom Downloads page (http://www.oracle.com/technetwork/server-storage/san-storage/downloads/index.html) in your browser.
2. Under the Pillar Axiom Downloads title, select **Accept License Agreement** to be able to download the software package.
3. Click the name of the software package to download.
4. Open the software archive and extract the contents to your workstation.

   The software archive contains a readme text file listing the contents of the archive, the installation executable file, and any documentation for the software.

After you download the software, you can install it on your system.

**Related concepts**

- *About Installing the Plug-In*

**Related references**

- *Port Assignments*

**Related tasks**

- *Install the Plug-In*
- *Verify Installation of the Plug-In*
- *Remove the Plug-In (Optional)*
- *Log In to Oracle Enterprise Manager*
- *Add Axiom Targets*

## Install the Plug-In

To activate the Oracle Enterprise Manager Plug-In for Pillar Axiom on your Oracle Enterprise Manager Cloud Control 12c client, you need to add it to the Oracle Enterprise Manager repository and deploy it to your management server and management agent.

**Prerequisites:**

- My Oracle Support credentials have been set up. Refer to the Oracle Enterprise Manager online help for further information.
- Log-in credentials for the management server.
- Log-in credentials for the management agent running on the management server.

Add the plug-in to the Oracle Enterprise Manager repository from the Oracle Management Server command line. Then deploy the plug-in to the management server and the management agent from the Plug-Ins page.

1 Import the plug-in directly into Oracle Enterprise Manager.

   Run the following command from the Oracle Management Server command line:

   ```
   emcli import_update -file=<path to plug-in archive> -omslocal
   ```

   Where *path to plug-in archive* is the path to the `*.opar` file you downloaded from OTN.

2 In the Oracle Enterprise Manager client, select **Setup > Extensibility > Plug-ins**.

3 Expand the **Servers, Storage and Network** folder.

4 Select the **Oracle Axiom** plug-in.

5 From the tabs at the top of the Plug-Ins page, select **Deploy On > Management Servers**. Plug-ins must be deployed first on the Management Server, then on the Management Agent.

   Enter the credentials required to deploy the plug-in on the management server.

6 Follow the steps listed on the remaining dialog boxes to finish the deployment process.

   You can verify the status by selecting **Show Status** from the dialog box.

7 After the plug-in is successfully installed on the Management Server, select **Deploy On > Management Agent**.

   If necessary, enter the credentials required to deploy the plug-in on the management agent.

8 Select **Add** to choose the **Management Agent** for the plug-in.

9 Follow the steps listed on the remaining dialog boxes to finish the deployment process.

   You can verify the status by selecting **Show Status** from the dialog box.

### Related concepts

- *About Installing the Plug-In*

### Related references

- *Port Assignments*

### Related tasks

- *Download the Plug-In*
- *Verify Installation of the Plug-In*
- *Remove the Plug-In (Optional)*
- *Log In to Oracle Enterprise Manager*
- *Add Axiom Targets*

# Port Assignments

The Oracle Enterprise Manager Plug-In for Pillar Axiom communicates with the Pillar Axiom system through a specific port.

Ensure that the following port is available before you activate the plug-in:

**Table 4 Required port**

| Port type | Port number | Description |
|---|---|---|
| WebCLI HTTPS | 8083 | The port on which the plug-in listens for HTTPS traffic with the Pillar Axiom WebCLI service.<br>Use the following Axiom CLI command to verify that this service is enabled:<br>`$ axiomcli webcli -list`<br>If necessary, use the following Axiom CLI command to enable the service:<br>`$ axiomcli webcli -enable` |

**Related concepts**

- *About Installing the Plug-In*

**Related tasks**

- *Download the Plug-In*
- *Install the Plug-In*
- *Verify Installation of the Plug-In*
- *Remove the Plug-In (Optional)*
- *Log In to Oracle Enterprise Manager*
- *Add Axiom Targets*

# Verify Installation of the Plug-In

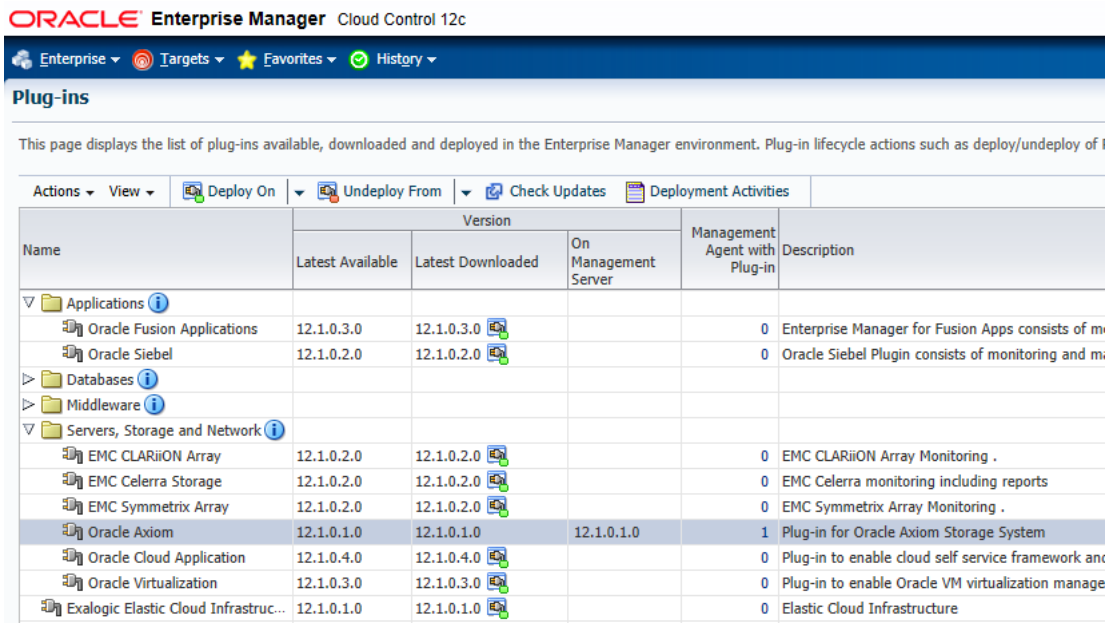
After you install the Oracle Enterprise Manager Plug-In for Pillar Axiom, verify that the plug-in was installed correctly.

You can verify the installation of the plug-in from the Setup menu at the top of the Oracle Enterprise Manager Cloud Control page.

1. Select **Setup** > **Extensibility** > **Plug-ins**.
2. Expand the **Servers, Storage and Network** folder.
3. Locate the **Oracle Axiom** plug-in.

The plug-in version appears in the On Management Server column, and the number one (1) appears in the Management Agent with Plug-in column.

**Figure 1 Plug-in page verifying installation of the plug-in**




| Name | Version | | | Management Agent with Plug-in | Description |
|---|---|---|---|---|---|
| | Latest Available | Latest Downloaded | On Management Server | | |
| Applications | | | | | |
| Oracle Fusion Applications | 12.1.0.3.0 | 12.1.0.3.0 | | 0 | Enterprise Manager for Fusion Apps consists of m |
| Oracle Siebel | 12.1.0.2.0 | 12.1.0.2.0 | | 0 | Oracle Siebel Plugin consists of monitoring and m |
| Databases | | | | | |
| Middleware | | | | | |
| Servers, Storage and Network | | | | | |
| EMC CLARiiON Array | 12.1.0.2.0 | 12.1.0.2.0 | | 0 | EMC CLARiiON Array Monitoring . |
| EMC Celerra Storage | 12.1.0.2.0 | 12.1.0.2.0 | | 0 | EMC Celerra monitoring including reports |
| EMC Symmetrix Array | 12.1.0.2.0 | 12.1.0.2.0 | | 0 | EMC Symmetrix Array Monitoring . |
| Oracle Axiom | 12.1.0.1.0 | 12.1.0.1.0 | 12.1.0.1.0 | 1 | Plug-in for Oracle Axiom Storage System |
| Oracle Cloud Application | 12.1.0.4.0 | 12.1.0.4.0 | | 0 | Plug-in to enable cloud self service framework an |
| Oracle Virtualization | 12.1.0.3.0 | 12.1.0.3.0 | | 0 | Plug-in to enable Oracle VM virtualization manage |
| Exalogic Elastic Cloud Infrastruc... | 12.1.0.1.0 | 12.1.0.1.0 | | 0 | Elastic Cloud Infrastructure |

### Related concepts

- *About Installing the Plug-In*

### Related references

- *Port Assignments*

### Related tasks

- *Download the Plug-In*
- *Install the Plug-In*
- *Remove the Plug-In (Optional)*
- *Log In to Oracle Enterprise Manager*
- *Add Axiom Targets*

# Update the Plug-In Manually

To update the plug-in manually, you follow the same procedures used to download and install the plug-in as described below.

**Prerequisites:**

- My Oracle Support credentials have been set up. Refer to the Oracle Enterprise Manager online help for further information.
- Log-in credentials for the management server.
- Log-in credentials for the management agent running on the management server.

You can download updates to the plug-in from the Oracle Technical Network (OTN).

1. Download the software archive containing the new version of the plug-in from the Pillar Axiom Downloads page on OTN.

   See the instructions for downloading the plug-in for details.

2. Import the software installation package to your Oracle Enterprise Manager repository.

   See the instructions for installing the plug-in for details.

3. In the Oracle Enterprise Manager client, select **Setup > Extensibility > Plug-ins** to access the Plug-ins page.

4. Expand the **Servers, Storage, and Network** folder.

5. Select the **Oracle Axiom** plug-in.

6. From the tabs at the top of the Plug-Ins page, select **Deploy On > Management Servers**. Plug-ins must be deployed first on the Management Server, then on the Management Agent.

   Enter the credentials required to deploy the plug-in on the management server.

7. Follow the steps listed on the remaining dialog boxes to finish the deployment process.

   You can verify the status by selecting **Show Status** from the dialog box.

8. After the plug-in is successfully installed on the Management Server, select **Deploy On > Management Agent**.

If necessary, enter the credentials required to deploy the plug-in on the management agent.

9 Select **Add** to choose the **Management Agent** for the plug-in.

10 Follow the steps listed on the remaining dialog boxes to finish the deployment process.

You can verify the status by selecting **Show Status** from the dialog box.

### Related tasks

- *Download the Plug-In*
- *Install the Plug-In*

# Update the Plug-in with Self Update

You can use the Oracle Enterprise Manager Self Update Console to manage updates. Below is a description of the Self Update Console procedure to update the plug-in.

**Prerequisites:**

- My Oracle Support credentials have been set up. This is required to enable plug-ins to be downloaded from the My Oracle Support site. Refer to the Oracle Enterprise Manager online help for further information.
- The Software Library (also known as the local store) has been configured. Updates are downloaded to this local store before being deployed. Refer to the Oracle Enterprise Manager online help for further information.
- Log-in credentials for the management server.
- Log-in credentials for the management agent running on the management server.

You can manage updates for the Oracle Enterprise Manager for Pillar Axiom Plug-in using the Self Update Console.

**Note:** The Oracle Enterprise Manager must have access to the Oracle Enterprise Manager Update Store through the Internet.

**Note:** For detailed information on this process, review the *Using Self Update* topic in the Oracle Enterprise Manager online help.

1. Log into Oracle Enterprise Manager Cloud Control C.
2. On the Oracle Enterprise Manager menu bar, right hand side, to access the **Self Update** feature, select **Setup > Extensibility > Self Update**.

   You can view all applicable updates for all products available form the console.
3. Select the Plug-in folder and select **Actions > Open** menu to expand the folder and display all plug-in updates.
4. Locate the Enterprise Manager for Pillar Axiom Plug-in, which is labeled **Oracle Axiom**.

   **Tip:** You can also use the search function to locate the Oracle Axiom plug-in.

5 (Optional) Select the **Oracle Axiom update**and select **Actions > Readme** from the menu to view the readme file for the update.

6 Select the Oracle Axiom update and select **Download** to begin downloading the update. .

After the download is completed, you will see a confirmation message under **Past Activities > Status > Succeeded**.

7 Select the Oracle Axiom update and select **Apply** from the **Actions** menu. This will start the process to install the software using the online mode.

You can apply the update in either online mode or offline mode. For information, refer to the Oracle Enterprise Manager online help.

8 Select **Plug-in** from the menu.

9 Expand the **Servers, Storage, and Network** folder.

10 Locate the Oracle Axiom plug-in.

11 Once the update has been applied, you need to deploy the update. From the tabs at the top of the Plug-Ins page, select **Deploy On > Management Servers**. Plug-ins must be deployed first on the Management Server, then on the Management Agent.

Enter the credentials required to deploy the plug-in on the management server.

12 Follow the steps listed on the remaining dialog boxes to finish the deployment process.

You can verify the status by selecting **Show Status** from the dialog box.

13 After the plug-in is successfully installed on the Management Server, select **Deploy On > Management Agent**.

If necessary, enter the credentials required to deploy the plug-in on the management agent.

14 Select **Add** to choose the **Management Agent** for the plug-in.

15 Follow the steps listed on the remaining dialog boxes to finish the deployment process.

You can verify the status by selecting **Show Status** from the dialog box.

### Related tasks

- *Download the Plug-In*
- *Install the Plug-In*

# Remove the Plug-In (Optional)

You can remove the Oracle Enterprise Manager Plug-In for Pillar Axiom from Oracle Enterprise Manager when it is no longer needed.

You remove the plug-in from the **Setup**menu at the top of the Oracle Enterprise Manager page.

1. Select **Setup** > **Extensibility** > **Plug-Ins**.
2. Select the **Oracle Axiom** plug-in.
3. Select **Undeploy From** > **Management Agent** to remove the plug-in from the management agent on which it is deployed.

   If you try to remove the plug-in from the management server first, this causes an error. You must remove the plug-in first from the management agent, then the management server.
4. Follow the steps listed on the remaining dialog boxes to finish the deployment process.

   You can verify the status by selecting **Show Status** from the dialog box.
5. Select the **Add** button to add (select) the management agent for the Axiom Plug-in to be undeployed from the **Undeploy From Management Agent** panel.
6. Select **Continue** to finish the undeploy process.
7. Select **Undeploy From** > **Management Servers** to remove the plug-in from the management server on which it is deployed.
8. Follow the steps listed on the remaining dialog boxes to finish the deployment process.

   You can verify the status by selecting **Show Status** from the dialog box.

### Related concepts

- *About Installing the Plug-In*

### Related references

- *Port Assignments*

### Related tasks

- *Download the Plug-In*
- *Install the Plug-In*
- *Verify Installation of the Plug-In*
- *Log In to Oracle Enterprise Manager*
- *Add Axiom Targets*

# Log In to Oracle Enterprise Manager

Oracle Enterprise Manager Cloud Control 12c is a web application that you launch from your browser. You must log in to Oracle Enterprise Manager to use the Oracle Enterprise Manager Plug-In for Pillar Axiom to access Pillar Axiom systems.

**Prerequisites:**

- Server name and port for your Oracle Enterprise Manager installation.
- Login credentials for Oracle Enterprise Manager.

Both can be obtained from your Oracle Enterprise Manager administrator.

1. Start your web browser.
2. In the URL field, enter the server name and port for your Oracle Enterprise Manager installation.
3. Enter your user name and password, and click **Login**.

**Related concepts**

- *About Installing the Plug-In*

**Related references**

- *Port Assignments*

**Related tasks**

- *Download the Plug-In*
- *Install the Plug-In*
- *Verify Installation of the Plug-In*
- *Remove the Plug-In (Optional)*
- *Add Axiom Targets*

# About Pillar Axiom Administrator Accounts

We recommend creating a unique Administrator 1 account as the operator account for the Oracle Enterprise Manager Plug-In for Pillar Axiom.

You can create multiple administrator accounts in a Pillar Axiom system. Additional accounts are not necessary, but they are useful as good practice.

Someone with Administrator 1 privileges needs to create the plug-in operator account. The administrator who creates the operator account provides the name and password for the account to the operator account holder.  We do not recommend using the Primary Administrator account as the plug-in operator account.

You can create additional accounts for other operators We recommend assigning Administrator 1 or Administrator 2 privileges to any additional operator accounts. You need to be logged into an Administrator 2 or higher account to create or modify storage resources or data protection schedules on the Pillar Axiom system.

Refer to the *Pillar Axiom Administrator's Guide* for details about administrator accounts.

# Add Axiom Targets

Before you can monitor or manage a Pillar Axiom system in Oracle Enterprise Manager, you need to add it as a target.

**Prerequisites:**

- Host name for the Pillar Axiom target.
- Login credentials for the Pillar Axiom target.

Your Pillar Axiom system administrator can provide this information.

You add targets from the Setup menu at the top of the Oracle Enterprise Manager page.

1. Select **Setup > Add Target > Add Target Manually**.
2. Under Add Targets Manually, select **Add Non-Host Targets by Specifying Target Monitoring Properties**.
3. From the Target Types drop-down list, select **Oracle Axiom**.
4. Click the magnifying glass beside the Monitoring Agent text box, select an agent from the list, and click **Select**.
5. Click **Add Manually**.
6. Enter a name for the target in the Target field.
7. Enter the name of the Pillar Axiom system in the Host field.
8. Provide login credentials for the Pillar Axiom host in the User Name and Password fields.
9. Click **OK**.

**Related concepts**

- *About Installing the Plug-In*

**Related references**

- *Port Assignments*

**Related tasks**

- *Download the Plug-In*
- *Install the Plug-In*
- *Verify Installation of the Plug-In*
- *Remove the Plug-In (Optional)*
- *Log In to Oracle Enterprise Manager*

CHAPTER 3

# Monitor Pillar Axiom Systems

## About Pillar Axiom Metrics

Oracle Enterprise Manger collects metric data for SAN hosts added as targets. A pre-defined set of metrics is collected for each Pillar Axiom target.

Oracle Enterprise Manager collects a variety of metric data for these components of Pillar Axiom systems:

- Axioms (overall system)
- Bricks
- Disks
- LUNs
- Pilots
- Slammers

You can view Pillar Axiom metrics in Oracle Enterprise Manager. You can also change the collection schedule, and you can edit thresholds and collection settings for the metrics.

**Related references**

- *Pillar Axiom Metrics*

**Related tasks**

- *View Pillar Axiom Metrics*

# View Pillar Axiom Metrics

**Prerequisite:** One or more Pillar Axiom systems added as an Oracle Enterprise Manager target.

The Pillar Axiom system for which you want to view metrics must be selected as the target.

1 Select **Oracle Axiom > All Metrics**.

Result:
A list of the categories of all metrics collected for the target Pillar Axiom system displays in the navigation pane.

2 Select a category of metrics.

Result:
A table of specific metrics available for that category displays in the content pane.

3 To change the collection schedule for this category of metrics, click **Modify**.

In the Modify Collection Schedule dialog, you can change the collection frequency, upload interval, and typical usage of the metric data for this category of metrics.

4 Expand a category and select a specific metric within that category.

Result:
A table of information available for that specific metric displays in the content pane.

5 To change the time period of the specific metric data, select an option from the View Data drop-down list.

| Option | Description |
|---|---|
| **Real time** | View the data in real time. |
| **Last 24 hours (default)** | View the data collected during the last 24 hours. |
| **Last 7 days** | View the data collected during the last week. |
| **Last 31 days** | View the data collected during the last month. |
| **Custom time period** | Specify a start and end time, or use sliders on a time line, to select a custom period of time from which to view collected data. |

6 (Real time only) Select an interval at which to refresh real time data, or select **Off**, from the Auto Refresh drop-down list.

### Related concepts

- *About Pillar Axiom Metrics*

### Related references

- *Pillar Axiom Metrics*

# About Viewing Pillar Axiom Storage

The Oracle Enterprise Manager Plug-In for Pillar Axiom enables you to monitor host groups, volume groups, Storage Domains, LUNs, and data protection schedules on Pillar Axiom systems from within Oracle Enterprise Manager.

When you select a Pillar Axiom target in Oracle Enterprise Manager, you have access to menus from which you can view the host and volume groups, Storage Domains, LUNs, and protection schedules defined on the target system.

**Related tasks**

- *View Host Groups*
- *View Volume Groups*
- *View Pillar Axiom LUNs*
- *View Storage Domains*
- *View Protection Schedules*

## View Host Groups

Host groups associate registered SAN hosts into logical organizational units so you can assign attributes to the entire group rather than to individual hosts. You can display a list of all host groups previously defined for a Pillar Axiom system with the Oracle Enterprise Manager Plug-In for Pillar Axiom.

**Prerequisite:** One or more Pillar Axiom systems added as an Oracle Enterprise Manager target.

The Pillar Axiom system for which you want to view host groups must be selected as the target.

1. Select **Oracle Axiom** > **Hosts**.
2. Select **Host Groups** from the View drop-down list.

All host groups defined for the current Pillar Axiom system are listed.

## View Volume Groups

Volume groups allow you to organize logical volumes (LUNs) into organizational units. You can display a list of all volume groups previously defined for a Pillar Axiom system with the Oracle Enterprise Manager Plug-In for Pillar Axiom.

**Prerequisite:** One or more Pillar Axiom systems added as an Oracle Enterprise Manager target.

The Pillar Axiom system for which you want to view volume groups must be selected as the target.

1 Select **Oracle Axiom > Volume Groups**.

2 Select **Volume Groups** from the View drop-down list.

All volume groups defined for the current Pillar Axiom system are listed.

## View Storage Domains

Storage Domains assign LUNs to a specific collection of Bricks in a Pillar Axiom system. You can display a list of all the Storage Domains previously defined for a Pillar Axiom system with the Oracle Enterprise Manager Plug-In for Pillar Axiom.

**Prerequisite:** One or more Pillar Axiom systems added as an Oracle Enterprise Manager target.

The Pillar Axiom system for which you want to view Storage Domains must be selected as the target.

1 Select **Oracle Axiom > Storage Domains**.

2 Select **Storage Domains** from the View drop-down list.

The following information is available:

| | |
|---|---|
| **Primary** | Indicates whether or not this is the primary Storage Domain for this Pillar Axiom system. |
| **Allocated Capacity** | Amount, in GB, of the capacity of this Storage Domain that has already been allocated for storage. |
| **Free Capacity** | Amount, in GB, of the capacity of this Storage Domain that has not yet been allocated for storage, and is available for use. |

| | |
|---|---|
| **Unavailable Capacity** | Amount, in GB, of the capacity of this Storage Domain that cannot be allocated for storage because it is in use. |
| **Total Capacity** | Total capacity of this Storage Domain in GB, including both available and unavailable capacity. |

## View Pillar Axiom LUNs

You can display a list of all the LUNs defined for a Pillar Axiom system with the Oracle Enterprise Manager Plug-In for Pillar Axiom.

**Prerequisite:** One or more Pillar Axiom systems added as an Oracle Enterprise Manager target.

The Pillar Axiom system for which you want to view LUNs must be selected as the target.

1. Select **Oracle Axiom > LUNs**.
2. Select **LUNs** from the View drop-down list.
3. Select a LUN to display information about that LUN.

   Available information includes:

| | |
|---|---|
| **Basic Information** | LUN name, LUID, status, and Storage Domain and volume group membership. |
| **Capacity Information** | Used, maximum, and available capacity of the selected LUN, in GB. |
| **LUN Statistics** | A summary graph of the read I/O, write I/O, and total I/O each second for the selected LUN over the last 24 hours. |

| | |
|---|---|
| **Quality of Service** | Redundancy, I/O bias, access bias, and priority Quality of Service (QoS) attributes assigned to the selected LUN. |
| **Clone Capacity Information** | Used, maximum, and available capacity for clones of the selected LUN (if any), in GB. |
| **Access Information** | Protocol (FC, iSCSI, or both) and type of mapping (to specific hosts or to all hosts) used to access the selected LUN. |
| **Clone LUNs** | Clone LUNs that are children of the select LUN, if any. |

## View Protection Schedules

You can display a list of all the protection schedules defined for a Pillar Axiom system with the Oracle Enterprise Manager Plug-In for Pillar Axiom.

**Prerequisite:** One or more Pillar Axiom systems added as an Oracle Enterprise Manager target.

The Pillar Axiom system for which you want to view protection schedules must be selected as the target, and you must select the source LUN or Clone LUN for which the schedule was created to display the schedule.

1. Select **Oracle Axiom > Protection Schedules**.
2. Select **LUNs** or **Clone LUNs** from the View drop-down list.
3. Select the name of a LUN or Clone LUN from the list.

   If a protection schedule is associated with the LUN or Clone LUN, the following information about the schedule displays:

| | |
|---|---|
| **Schedule Name** | Name given to the schedule when it was created. |

| | |
|---|---|
| **Start Time** | Scheduled time and date to start creating clones of the LUN. |
| **Frequency** | How often clones are scheduled to be created. |
| **Protected Volume** | Name of the source volume (LUN) from which clones are scheduled to be created. |
| **Enabled** | Identifies whether the data protection schedule is enabled.<br>○ Yes indicates that the schedule is actively cloning the protected volume.<br>○ No indicates that the schedule is not cloning the protected volume. |

CHAPTER 4

# Pillar Axiom System Reports

## About Pillar Axiom Reports

The Oracle Enterprise Manager Plug-In for Pillar Axiom provides hardware, I/O, and storage usage reports that you can generate for Pillar Axiom systems.

Hardware reports include a Pillar Axiom system summary report, a report of the disk drives in the Bricks associated with the Axiom, and a report of the status of the Axiom hardware. In addition, the hardware reports include a Platinum Health Check report that determines whether the Pillar Axiom system meets the requirements for Platinum Services support.

The I/O Access for LUNs report charts input and output statistics for the ten most active LUNs on the Pillar Axiom system.

The Storage Usage reports show how much storage is used by the LUNs associated with the Pillar Axiom system, and how much storage is used for the different priority, data access, and I/O bias Quality of Service categories.

**Related references**

- *Pillar Axiom Hardware Reports*
- *Pillar Axiom I/O Reports*
- *Pillar Axiom Storage Usage Reports*

**Related tasks**

- *Generate Pillar Axiom Reports*

# Generate Pillar Axiom Reports

You can generate pre-defined Axiom reports for any Pillar Axiom system previously added as a target.

**Prerequisite:** One or more Pillar Axiom systems added as an Oracle Enterprise Manager target.

If the Pillar Axiom system for which you want to generate the report is not already selected as the target, you can specify the Axiom to serve as the target for the report.

1. Select **Oracle Axiom > Information Publisher Reports**.
2. Expand Axiom Reports in the Information Publisher Reports list.
3. Click the name of a hardware report, I/O report, or storage usage report.

   Result:
   The Specify Target for Report dialog displays.
4. Verify the name of the target in the Oracle Axiom field.

   If no target is specified, you can click the magnifying glass icon to search for a target Axiom to include in the report.
5. Click **Continue**.

   Result:
   The selected report displays in a new window.
6. (Optional) To capture the output of the report, do either of the following:
   - Click **Printable Page** and use your browser's print function to print the report.
   - Click the comma icon in the top right corner of the report to open the report or save it as a comma-separated value (CSV) file.

**Related concepts**

- *About Pillar Axiom Reports*

**Related references**

- *Pillar Axiom Hardware Reports*
- *Pillar Axiom I/O Reports*
- *Pillar Axiom Storage Usage Reports*

CHAPTER 5

# Manage Pillar Axiom Systems

## About Managing Host Groups

You can create, modify, or delete Pillar Axiom host groups in Oracle Enterprise Manager with the Oracle Enterprise Manager Plug-In for Pillar Axiom. You can also assign a new host to a previously created host group.

You can organize SAN hosts into logical units by creating host groups. This enables you to more easily manage related hosts without specifying each individual host. As needs change, you can modify the names of your host groups, and you can delete host groups that you no longer need.

When you first create a host group, you specify only a host group name. Once you create the host group name, you can assign hosts to the group.

**Related tasks**

- *View Host Groups*
- *Create a Host Group*
- *Modify a Host Group*
- *Delete a Host Group*
- *Assign a Host to a Host Group*

## Create a Host Group

Creating a host group allows you to associate registered SAN hosts into logical organizational units.

**Prerequisite:** One or more Pillar Axiom systems added as an Oracle Enterprise Manager target.

The Pillar Axiom system for which you want to create a host group must be selected as the target.

1. Select **Oracle Axiom** > **Hosts**.
2. Select **Host Groups** from the View drop-down list.
3. Click **Create** at the bottom of the host groups page.

4 In the Create Host Group dialog, enter a name for your host group in the **Host Group Name** field and click **OK**.

5 Click **OK** in the Create Host Group Succeeded dialog.

Result:
The new host group displays in the host groups page.

**Related concepts**

- *About Managing Host Groups*

**Related tasks**

- *View Host Groups*
- *Modify a Host Group*
- *Delete a Host Group*
- *Assign a Host to a Host Group*

## Modify a Host Group

You can modify a host group only by changing its name.

**Prerequisite:** One or more Pillar Axiom systems added as an Oracle Enterprise Manager target.

The Pillar Axiom system for which you want to modify a host group must be selected as the target.

1 Select **Oracle Axiom > Hosts**.

2 Select **Host Groups** from the View drop-down list.

3 Select the host group you want to modify.

4 Click **Modify** at the bottom of the host groups page.

5 Enter a new name in the Modify Host Group dialog and click **OK**.

6 Click **OK** in the confirmation dialog.

Result:
The new host group name displays in the host groups page.

**Related concepts**

- *About Managing Host Groups*

**Related tasks**

- *View Host Groups*
- *Create a Host Group*
- *Delete a Host Group*
- *Assign a Host to a Host Group*

## Delete a Host Group

You can delete a host group when the group is no longer needed because of changes to the hosts that comprise the group.

**Prerequisite:** One or more Pillar Axiom systems added as an Oracle Enterprise Manager target.

The Pillar Axiom system from which you want to delete a host group must be selected as the target.

**Important!** When you delete a host group, you will need to replace any mappings to the host group with mappings to a different host group, or with mappings to individual hosts within the deleted host group.

1. Select **Oracle Axiom** > **Hosts**.
2. Select **Host Groups** from the View drop-down list.
3. Select the host group you want to delete.
4. Click **Delete** at the bottom of the host groups page.
5. Click **OK** to confirm that you want to delete the host group.
6. Click **OK** in the confirmation dialog.

   Result:
   The host group no longer displays in the list on the host groups page.

**Related concepts**

- *About Managing Host Groups*

**Related tasks**

- *View Host Groups*
- *Create a Host Group*
- *Modify a Host Group*
- *Assign a Host to a Host Group*

## Assign a Host to a Host Group

Once you have created a host group, you can assign hosts to it.

**Prerequisites:**

- One or more Pillar Axiom systems added as an Oracle Enterprise Manager target.
- The host group needs to be created before you can assign hosts to it.

The Pillar Axiom system for which you want to assign a host to a host group must be selected as the target.

1. Select **Oracle Axiom** > **Hosts**.
2. Select **SAN Hosts** from the View drop-down list.
3. Select the host you want to assign to the host group.
4. Click **Associate** at the bottom of the SAN Hosts page.
5. In the Associate SAN Host dialog, select the host group to which you want to assign this host from the **Host Group Name** drop-down list.
6. Click **OK** in the Associate SAN Host dialog.

   Result:
   A confirmation dialog informs you when you have successfully assigned the host to the host group.
7. Click OK in the confirmation dialog.

   Result:
   The host group name displays in the Host Group Name column beside the host name in the SAN Hosts page.

### Related concepts

- *About Managing Host Groups*

### Related tasks

- *View Host Groups*
- *Create a Host Group*
- *Modify a Host Group*
- *Delete a Host Group*

# About Managing Volume Groups

You can create, modify, or delete Pillar Axiom volume groups in Oracle Enterprise Manager with the Oracle Enterprise Manager Plug-In for Pillar Axiom.

Volume groups allow you to organize related logical volumes (LUNs) into groups so you can manage them together rather than individually. You can also specify parent-child relationships between volume groups to create group hierarchies.

When you create a volume group, you specify a name and a capacity for the group. Once you create a volume group, you can add LUNs to the group by specifying the volume group name in the Quality of Service (QoS) settings for each LUN.

As your needs change, you can change the name or capacity of an existing volume group, or you can change which LUNs belong to the group by modifying the LUN QoS settings. You can also delete a volume group that is no longer needed, but you need to reassign the LUNs to a different volume group before you delete it.

**Related tasks**

- *View Volume Groups*
- *Create a Volume Group*
- *Modify a Volume Group*
- *Delete a Volume Group*
- *Create LUN: Quality of Service*

# Create a Volume Group

Volume groups allow you to organize logical volumes (LUNs) into organizational units.

**Prerequisite:** One or more Pillar Axiom systems added as an Oracle Enterprise Manager target.

The Pillar Axiom system for which you want to create the volume group must be selected as the target.

1. Select **Oracle Axiom > Volume Groups**.
2. Click **Create** at the bottom of the volume groups page.
3. In the Create Volume Group dialog, specify the parameters for the volume group.

Required parameters:

- Name for the volume group.
- **Parent Volume Group**, or **No Parent**.
- **Maximum Logical Capacity** in GB, or **Unlimited**.

4 Click **OK**.

5 Click **OK** in the Create Volume Group Succeeded dialog.

Result:
The new volume group displays in the volume groups page.

Add LUNs to the volume group by specifying the volume group name in the Quality of Service (QoS) settings for each LUN.

**Related concepts**

- *About Managing Volume Groups*

**Related tasks**

- *View Volume Groups*
- *Modify a Volume Group*
- *Delete a Volume Group*
- *Create LUN: Quality of Service*

## Modify a Volume Group

You can modify the name, parent, or capacity of a volume group to meet changing needs for those attributes of the group.

**Prerequisite:** One or more Pillar Axiom systems added as an Oracle Enterprise Manager target.

The Pillar Axiom system for which you want to modify a volume group must be selected as the target.

1 Select **Oracle Axiom > Volume Groups**.

2 Select the volume group you want to modify.

3 Click **Modify** at the bottom of the volume groups page.

4 In the Modify Host Group dialog, modify parameters for the volume group.

Parameters you can change:

- Name of the volume group.

- **Parent Volume Group**, or **No Parent**.
- **Maximum Logical Capacity**, or **Unlimited**.

5 Click **OK**.

6 Click **OK** in the confirmation dialog.

Result:
Changes to the volume group display in the volume groups page.

Modify LUN membership in the volume group by changing the volume group name in the Quality of Service (QoS) settings for each LUN.

**Related concepts**

- *About Managing Volume Groups*

**Related tasks**

- *View Volume Groups*
- *Create a Volume Group*
- *Delete a Volume Group*
- *Create LUN: Quality of Service*

## Delete a Volume Group

You can delete a volume group after you have reassigned all its logical volumes (LUNs) to different volume groups.

**Prerequisites:**

- One or more Pillar Axiom systems added as an Oracle Enterprise Manager target.
- All LUNs in the volume group reassigned to other volume groups before you delete the volume group.

**Caution**

Before you delete a volume group, reassign its LUNs to other volume groups by changing the volume group name in the Quality of Service (QoS) settings for the LUNs. Deleting a volume group that still has LUNs assigned to it can disrupt operations on the target Pillar Axiom system.

The Pillar Axiom system from which you want to delete a volume group must be selected as the target.

1 Select **Oracle Axiom** > **Volume Group**.

2 Select the volume group you want to delete.

3 Click **Delete** at the bottom of the volume groups page.

4 Click **OK**.

5 Click **OK** in the confirmation dialog.

Result:
The volume group disappears from the list on the volume groups page.

**Related concepts**

- *About Managing Volume Groups*

**Related tasks**

- *View Volume Groups*
- *Create a Volume Group*
- *Modify a Volume Group*
- *Create LUN: Quality of Service*

# About Managing Storage Domains

You can create, modify, or delete Pillar Axiom Storage Domains in Oracle Enterprise Manager with the Oracle Enterprise Manager Plug-In for Pillar Axiom. You can also associate Bricks with an existing Storage Domain on the target Pillar Axiom system.

Storage Domains are logical units that allow you to assign LUNs to a specific collection of Bricks on a Pillar Axiom system. All LUNs belong to a Storage Domain. When you create a LUN, it is automatically assigned to the default Storage Domain, or you can specify a different Storage Domain in the Quality of Service (QoS) settings for the LUN.

When you create a Storage Domain, you specify a name for the Storage Domain. Once you create a Storage Domain, you can associate Bricks with the Storage Domain, and you can assign LUNs to the Storage Domain by specifying the Storage Domain name in the QoS settings for the LUN. You can also make the new Storage Domain the primary Storage Domain.

You can change the name of a Storage Domain or you can change the Bricks that are associated with the Storage Domain. You can also change whether the Storage Domain is the primary domain, and you can delete a Storage Domain that is no longer needed. To change which LUNs are assigned to the Storage Domain, you must change the specified Storage Domain name in the QoS settings for the LUNs.

**Related tasks**

- *View Storage Domains*
- *Create a Storage Domain*
- *Modify a Storage Domain*
- *Delete a Storage Domain*
- *Associate a Brick with a Storage Domain*
- *Create LUN: Quality of Service*

# Create a Storage Domain

Creating a Storage Domain allows you to assign LUNs to a specific collection of Bricks in a Pillar Axiom system.

**Prerequisite:** One or more Pillar Axiom systems added as an Oracle Enterprise Manager target.

The Pillar Axiom system for which you want to create the Storage Domain must be selected as the target.

1. Select **Oracle Axiom > Storage Domains**.
2. Select **Storage Domains** from the View drop-down list.
3. Click **Create** at the bottom of the Storage Domains page.
4. In the Create Storage Domain dialog, enter a name for the Storage Domain and click **OK**.
5. Click **OK** in the Create Storage Domain Succeeded dialog.

   Result:
   The new Storage Domain displays in the Storage Domains page.

**Related concepts**

- *About Managing Storage Domains*

**Related tasks**

- *View Storage Domains*
- *Modify a Storage Domain*
- *Delete a Storage Domain*
- *Associate a Brick with a Storage Domain*

## Modify a Storage Domain

You can change the name or the Primary Storage Domain attribute of a Storage Domain.

**Prerequisite:** One or more Pillar Axiom systems added as an Oracle Enterprise Manager target.

The Pillar Axiom system for which you want to modify a Storage Domain must be selected as the target.

1. Select **Oracle Axiom > Storage Domains**.
2. Select **Storage Domains** from the View drop-down list.
3. Select the Storage Domain you want to modify.
4. Click **Modify** at the bottom of the Storage Domain page.

   In the Modify Storage Domain dialog, do either of the following:

   - Enter a new name for the Storage Domain.
   - Select or clear the **Primary** check box.
5. Click **OK**.

6 Click **OK** in the confirmation dialog.

Result:
The new Storage Domain name displays in the Storage Domain page.

**Related concepts**

- *About Managing Storage Domains*

**Related tasks**

- *View Storage Domains*
- *Create a Storage Domain*
- *Delete a Storage Domain*
- *Associate a Brick with a Storage Domain*

## Delete a Storage Domain

You can delete a Storage Domain when it is no longer needed.

**Prerequisite:** One or more Pillar Axiom systems added as an Oracle Enterprise Manager target.

The Pillar Axiom system from which you want to delete the Storage Domain must be selected as the target.

1 Select **Oracle Axiom** > **Storage Domains** from the target drop-down list.

2 Select **Storage Domains** from the View drop-down list.

3 Select the Storage Domain you want to delete.

4 Click **Delete** at the bottom of the Storage Domain page.

5 Click **OK** to confirm that you want to delete the Storage Domain.

6 Click **OK** in the confirmation dialog.

Result:
The Storage Domain no longer displays in the list on the Storage Domain page.

**Related concepts**

- *About Managing Storage Domains*

**Related tasks**

- *View Storage Domains*
- *Create a Storage Domain*
- *Modify a Storage Domain*
- *Associate a Brick with a Storage Domain*

## Associate a Brick with a Storage Domain

Once you have created a Storage Domain, you can associate Bricks with it.

**Prerequisite:** One or more Pillar Axiom systems added as an Oracle Enterprise Manager target.

The Pillar Axiom system for which you want to associate a Brick with a Storage Domain must be selected as the target.

1. Select **Oracle Axiom** > **Storage Domains**.
2. Select **Bricks** from the View drop-down list.
3. Select the Brick you want to associate with the Storage Domain.
4. Click **Associate** at the bottom of the Bricks page.
5. In the Associate Brick with Storage Domain dialog, select the Storage Domain you want to associate with the Brick from the **Storage Domain Name** drop-down list.
6. Click **OK** in the Associate Brick with Storage Domain dialog.

   Result:
   A confirmation dialog informs you when you have successfully associated the Brick with the Storage Domain.
7. Click **OK** in the confirmation dialog.

### Related concepts

- *About Managing Storage Domains*

### Related tasks

- *View Storage Domains*
- *Create a Storage Domain*
- *Modify a Storage Domain*
- *Delete a Storage Domain*

# About Managing Pillar Axiom LUNs

You can create, modify, or delete Pillar Axiom LUNs or Clone LUNs in Oracle Enterprise Manager with the Oracle Enterprise Manager Plug-In for Pillar Axiom. You can also copy or clone LUNs on the target Pillar Axiom system.

The Oracle Enterprise Manager Plug-In for Pillar Axiom provides a wizard to guide you through the process of creating or modifying a Pillar Axiom LUN. It also provides a **Delete** button you can use to remove a LUN you no longer need, a **Copy** button you can use to copy a LUN for use as a template to create a new LUN, and a **Clone** button you can use to create a point-in-time back-up copy of a LUN.

**Related concepts**

- *About Creating LUNs*
- *About Modifying LUNs*

**Related tasks**

- *View Pillar Axiom LUNs*
- *Delete a Pillar Axiom LUN*
- *Copy a Pillar Axiom LUN*
- *Clone a Pillar Axiom LUN*

## About Creating LUNs

The Oracle Enterprise Manager Plug-In for Pillar Axiom provides a wizard to guide you through the process of creating a LUN.

The plug-in Create LUN wizard is nearly identical to the Create SAN LUN wizard in the Pillar Axiom Storage Services Manager (GUI).

The wizard starts when you click **Create** at the bottom of the LUNs or Clone LUNs page.

The wizard contains three tabs: quality of service, mapping, and data protection. Each tab contains fields for selecting LUN properties. These fields are automatically filled in with default values.

**Note:** Two of these fields, **LUN Name** and **Storage Class**, require that you replace the default values with new values.

Clicking **OK** at the bottom of any tab saves the LUN with the default values, or with any new values you have added, in each of the tabs.

**Related concepts**

- *About Managing Pillar Axiom LUNs*
- *About Modifying LUNs*

**Related tasks**

- *View Pillar Axiom LUNs*
- *Delete a Pillar Axiom LUN*
- *Copy a Pillar Axiom LUN*
- *Clone a Pillar Axiom LUN*
- *Create LUN: Data Protection*
- *Create LUN: Mapping to All Hosts*
- *Create LUN: Mapping to Selected Hosts*
- *Create LUN: Quality of Service*

## Create a LUN

Use the Create LUN wizard to create a LUN with the Oracle Enterprise Manager Plug-In for Pillar Axiom.

**Prerequisite:** One or more Pillar Axiom systems added as an Oracle Enterprise Manager target.

The Pillar Axiom system on which you want to create the LUN must be selected as the target.

1. Select **Oracle Axiom > LUNs**.
2. Select **LUNs** or **Clone LUNs** from the View drop-down menu.
3. Click **Create** at the bottom of the LUNs or Clone LUNs page.

   Result:
   The Create LUN wizard displays.

Add LUN properties in the quality of service, mapping, and data protection tabs in the Create LUN wizard, or use the default properties. Click **OK** when you are finished.

## Create LUN: Quality of Service

Specify Quality of Service (QoS) attributes to allocate the storage resources necessary to create the LUN.

You can specify a name, Storage Domain, volume group, Storage Profile, and Storage Class attributes for the LUN, as well as priority level, redundancy, capacity, and other QoS attributes, in the **Quality of Service** tab.

1 Click the **Quality of Service** tab.

2 Select a Storage Domain for the LUN from the drop-down list.

Click the ellipsis button [...] to review the physical capacity attributes and the Brick types that are associated with the available Storage Domains.

3 Enter the **LUN Name**.

4 (Optional) Select the volume group to which you want the new LUN to belong.

Volume groups allow you to group logical volumes into one administrative unit. Click the ellipsis button [...] to view the characteristics of existing volume groups or create a new one.

5 From the **Storage Profile** drop-down list, select an existing profile or select **Custom** to create a new Storage Profile.

- If you select an existing Storage Profile, the system updates the QoS attributes as defined by the selected profile.
- If you select **Custom**, complete the following fields:

**Storage Class** Specifies the type of storage media on which the volume resides.

Refer to the Capacity by Storage Class table on the **Quality of Service** tab for more information about Storage Classes.

**Typical Access** Identifies the type of access that is the most common or expected: sequential, random, or mixed.

**I/O Bias** Identifies the typical read-write ratio.

**Priority Level** Determines the placement of the data relative to the drive spindles, the number of drives over which the data is striped, and the processing queue priority: premium, high, medium, low, or archive.

6 Adjust the values in the following fields as necessary:

| | |
|---|---|
| **Redundancy** | Identifies how many mirror copies of the original data are stored online: standard or double. |
| **Background Copy Priority** | Identifies the order the system should use to process background tasks to copy or move data from one location in the storage pool to another. |
| **Allocated Logical Capacity** | Identifies the amount of capacity to be allocated to the logical volume. |
| **Addressable Logical Capacity** | Provides an estimate of the physical storage capacity requirements based on your QoS attribute selections.<br><br>This setting is useful when using thin provisioning on LUNs where the host OS and application are thin-friendly. The value is internal to the Pillar Axiom system; it will allocate more storage (up to the addressable limit) if needed. |

7 (Optional) Click **OK** to create the LUN now.

Clicking **OK** saves the LUN with the QoS settings and any attributes you set in the **Mapping** and **Data Protection** tabs.

After you have defined the QoS attributes for the LUN, you must define mappings to the LUN, to either specific hosts or all hosts, in the **Mapping** tab.

**Related concepts**

- *About Creating LUNs*

**Related tasks**

- *Create LUN: Data Protection*
- *Create LUN: Mapping to All Hosts*
- *Create LUN: Mapping to Selected Hosts*

## Create LUN: Mapping to Selected Hosts

Map the LUN to one or more SAN hosts to allow only those specific hosts to access the LUN.

When you need to restrict access to a LUN, such as when the LUN contains sensitive data, map access to the LUN to a specific host or group of hosts.

1. Click the **Mapping** tab.
2. Select the appropriate **Access Protocol**: Fibre Channel (FC), iSCSI, or both.

   This selection determines the protocols that will be permitted for accessing the LUN.

   **Important!** When you select both FC and iSCSI protocols, the system uses FC optimized and non-optimized paths as a preference over iSCSI paths. Also, the system does not mix load balancing between protocols.
3. Click the **Only selected hosts** option.
4. Select a control unit (CU) in the **LUN Slammer Control Unit Assignment** section.

   Two storage CU fields appear. For new LUNs, the **Current Slammer CU** field is not available. From the **Assigned Slammer CU** drop-down list, select a CU or select **auto-assign**.

   If you select **auto-assign**, the system determines the Slammer CU. You can modify the value or select a new value after the LUN has been created.
5. To create a new host mapping, click **Create** and select values for the LUN mapping fields:
   - **Host Name**: Select the host to associate to the LUN.
   - **LUN Number**: Select the number to assign to the LUN for the selected host and click **OK**. This number must be unique for that particular host. It does not need to be unique across all hosts.
6. (Optional) Click **OK and Continue** to select additional hosts to map to the LUN.
7. In the **Ports Masked for this LUN** table, indicate which ports you want masked by selecting **Yes** or **No** in the Masked column.

   Refer to the *Pillar Axiom Administrator's Guide* for information about Slammers and port masking recommendations.
8. (Optional) Click **OK** to create the LUN now.

Clicking **OK** saves the LUN with the LUN-to-host mapping and any attributes you set in the Quality of Service and Data Protection tabs.

After you have defined the host mappings for a LUN, you must next define Data Protection settings for the LUN.

**Related concepts**

- *About Creating LUNs*

**Related tasks**

- *Create LUN: Data Protection*
- *Create LUN: Mapping to All Hosts*
- *Create LUN: Quality of Service*

## Create LUN: Mapping to All Hosts

Map the LUN to a unique LUN number to allow all SAN hosts to access the LUN.

1. Click the **Mapping** tab.
2. Select the appropriate **Access Protocol**: Fibre Channel (FC), iSCSI, or both.

   This selection determines the protocols that will be permitted for accessing the LUN.

   **Important!** When you select both FC and iSCSI protocols, the system uses FC optimized and non-optimized paths as a preference over iSCSI paths. Also, the system does not mix load balancing between protocols.
3. Select **All hosts may access this LUN using LUN number**.
4. Select a number for the LUN from the drop-down list to the right of the previous option.
5. Select a control unit (CU) in the **LUN Slammer Control Unit Assignment** section.

   Two storage CU fields appear. For new LUNs, the **Current Slammer CU** field is not available. From the **Assigned Slammer CU** drop-down list, select a CU or select **auto-assign**.

   If you select **auto-assign**, the system determines the Slammer CU. You can modify the value or select a new value after the LUN has been created.
6. In the **Ports Masked for this LUN** table, indicate which ports you want masked by selecting **Yes** or **No** in the Masked column.

   Refer to the *Pillar Axiom Administrator's Guide* for information about Slammers and port masking recommendations.
7. (Optional) Click **OK** to create the LUN now.

Clicking **OK** saves the LUN with the LUN number mapping and any attributes you set in the Quality of Service and Data Protection tabs.

After you have defined the LUN number mapping for a LUN, you must next define Data Protection settings for the LUN.

**Related concepts**

- *About Creating LUNs*

**Related tasks**

- *Create LUN: Data Protection*
- *Create LUN: Mapping to Selected Hosts*
- *Create LUN: Quality of Service*

## Create LUN: Data Protection

Allocate capacity for clones of the LUN to ensure protection of the LUN data.

To make sure enough storage space exists for clones of a LUN, you need to allocate a repository for clones when you create the LUN.

To set sufficient capacity, use a value equal to the source LUN capacity times the number of Clone LUNs times the maximum rate of change.

1. Click the **Data Protection** tab.
2. Adjust the value in the **Maximum capacity (in GB) to allocate Clone LUNs** field by clicking the **Increment** or **Decrement** arrow or entering a new value in the field.

   Default value is the available capacity for Clone LUNs, which corresponds to the LUN capacity you set as the Addressable Logical Capacity for the LUN in the Quality of Service tab.
3. Click **OK** to save the LUN.

Clicking **OK** saves the LUN with the new capacity allocation and the attributes you set in the Quality of Service and Mapping tabs.

**Related concepts**

- *About Creating LUNs*

**Related tasks**

- *Create LUN: Mapping to All Hosts*
- *Create LUN: Mapping to Selected Hosts*
- *Create LUN: Quality of Service*

# About Modifying LUNs

The Oracle Enterprise Manager Plug-In for Pillar Axiom provides a wizard to guide you through the process of modifying a LUN.

The Modify LUN wizard is nearly identical to the wizard you use to create LUNs.

The wizard starts when you select a LUN and click **Modify** at the bottom of the LUNs or Clone LUNs page.

The wizard contains three tabs: quality of service, mapping, and data protection. Each tab contains fields for selecting LUN properties. These fields are automatically filled in with default values. Clicking the OK button at the bottom of a tab saves the LUN with any changes you make to the values in any of the tabs.

**Related concepts**

- *About Managing Pillar Axiom LUNs*
- *About Creating LUNs*

**Related tasks**

- *View Pillar Axiom LUNs*
- *Delete a Pillar Axiom LUN*
- *Copy a Pillar Axiom LUN*
- *Clone a Pillar Axiom LUN*
- *Modify LUN: Data Protection*
- *Modify LUN: Mapped to All Hosts*
- *Modify LUN: Mapped to Specific Hosts*
- *Modify LUN: Quality of Service*

## Modify a LUN

Use the Modify LUN wizard to change the properties of an existing LUN with the Oracle Enterprise Manager Plug-In for Pillar Axiom.

**Prerequisite:** One or more Pillar Axiom systems added as an Oracle Enterprise Manager target.

The Pillar Axiom system in which the LUN you want to modify resides must be selected as the target.

1. Select **Oracle Axiom > LUNs**.
2. Select **LUNs** or **Clone LUNs** from the View drop-down menu.
3. Click **Modify** at the bottom of the LUNs or Clone LUNs page.

   Result:
   The Modify LUN wizard displays.

Modify LUN properties in the quality of service, mapping, and data protection tabs in the Modify LUN wizard, or keep the existing properties. Click OK when you are finished.

## Modify LUN: Quality of Service

Modify the current Quality of Service (QoS) attributes to change the QoS settings for the LUN.

As requirements for a LUN change, you can modify the name, Storage Domain, volume group, Storage Profile, Storage Class, and other attributes of the LUN in the Quality of Service tab.

1. Click the **Quality of Service** tab.
2. Modify the necessary volume group, Storage Domain membership settings, and QoS attributes.

   Click the ellipsis button [...] beside the Storage Domain, Volume Group, or Storage Profile field for more information about choices for those fields.

   Refer to the Capacity by Storage Class table for more information about storage classes.
3. Click **OK** to save all of your updates, or continue on to the **Mapping** and **Data Protection** tabs to make additional updates to the LUN.

**Related concepts**

- *About Modifying LUNs*

**Related tasks**

- *Modify LUN: Data Protection*
- *Modify LUN: Mapped to All Hosts*
- *Modify LUN: Mapped to Specific Hosts*

## Modify LUN: Mapped to Specific Hosts

Remap the LUN to restrict access to one or more specific SAN hosts, or map additional hosts to the LUN.

To restrict access to a LUN, map it to one or more specific SAN hosts. Map additional hosts to extend access to more SAN hosts.

1. Click the **Mapping** tab.
2. Select the appropriate **Access Protocol**: Fibre Channel (FC), iSCSI, or both.

   This selection determines the protocols that will be permitted for accessing the LUN.

**Important!** When you select both FC and iSCSI protocols, the system uses FC optimized and non-optimized paths as a preference over iSCSI paths. Also, the system does not mix load balancing between protocols.

3 Click the **Only selected hosts** option.

4 In the **Ports Masked for this LUN** table, you can select **Yes** or **No** in the Masked column to determine whether a port should be masked or not.

5 In the **LUN Slammer Control Unit Assignment** section, two Slammer control unit (CU) settings appear. The **Current Slammer CU** field is informational only. From the **Assigned Slammer CU** drop-down list, select a CU or select **auto-assign**.

The system auto-assigns the LUN to an available Slammer CU.

6 Click **Create** to create a new host mapping.

Select values for the LUN mapping fields:

- **Host Name**: Select the host to associate with the LUN.
- **LUN Number**: Select the number to assign to the LUN for the selected host, and click **OK**. This number must be unique for that particular host. It need not be unique across all hosts.

7 (Optional) Click **Create** to create additional host mappings.

8 Click **OK** to save all of your updates, or continue on to the **Data Protection** tab to make additional updates to the LUN.

**Related concepts**

- *About Modifying LUNs*

**Related tasks**

- *Modify LUN: Data Protection*
- *Modify LUN: Mapped to All Hosts*
- *Modify LUN: Quality of Service*

## Modify LUN: Mapped to All Hosts

Remap the LUN to a LUN number to make it available to all SAN hosts, or you can change a previously assigned LUN number.

To provide unrestricted access to a LUN, remap the LUN to a unique LUN number that all SAN hosts can use.

1 Click the **Mapping** tab.

2 Select the appropriate **Access Protocol**: Fibre Channel (FC), iSCSI, or both.

This selection determines the protocols that will be permitted for accessing the LUN.

**Important!** When you select both FC and iSCSI protocols, the system uses FC optimized and non-optimized paths as a preference over iSCSI paths. Also, the system does not mix load balancing between protocols.

3 Click the **All hosts may access this LUN using LUN number** option.

4 Modify the number for the LUN from the drop-down list to the right of the previous option.

5 In the **LUN Slammer Control Unit Assignment** section, from the two Slammer control unit (CU) settings that appear: **Current Slammer CU** and **Assigned Slammer CU**, select a CU or select auto-assign.

6 Click **OK** to save all of your updates, or continue on to the Data Protection tab to make additional updates to the LUN.

**Related concepts**

- *About Modifying LUNs*

**Related tasks**

- *Modify LUN: Data Protection*
- *Modify LUN: Mapped to Specific Hosts*
- *Modify LUN: Quality of Service*

## Modify LUN: Data Protection

Reallocate capacity for clones of the LUN to ensure adequate protection of the LUN data.

1 Click the **Data Protection** tab.

2 Adjust the value in the **Maximum capacity (in GB) to allocate Clone LUNs** field by clicking the **Increment** or **Decrement** arrow.

3 Click **OK** to save all of your updates to the LUN.

**Related concepts**

- *About Modifying LUNs*

**Related tasks**

- *Modify LUN: Mapped to All Hosts*
- *Modify LUN: Mapped to Specific Hosts*
- *Modify LUN: Quality of Service*

## Delete a Pillar Axiom LUN

You can delete a LUN or a Clone LUN from a Pillar Axiom system when it is no longer needed.

**Prerequisite:** One or more Pillar Axiom systems added as an Oracle Enterprise Manager target.

The Pillar Axiom system for which you want to delete the LUN must be selected as the target.

1. Select **Oracle Axiom > LUNs**.
2. Select one of the following from the View drop-down list:
   - **LUNs** if you want to delete a LUN
   - **Clone LUNs** if you want to delete a Clone LUN.
3. Select the LUN or Clone LUN you want to delete.
4. Click **Delete** at the bottom of the LUNs or Clone LUNs page.

   Result:
   A confirmation dialog asks if you are sure you want to delete the LUN, and if you also want to delete any data protection schedules associated with the LUN or Clone LUN.
5. (Optional) Select **Also Delete Protection Schedules** if there are data protection schedules associated with the LUN that you want to delete when you delete the LUN.
6. Click **OK** in the confirmation dialog.

   Result:
   The LUN no longer appears in the list on the LUNs or Clone LUNs page. If you selected **Also Delete Protection Schedules**, any data protection schedules associated with the LUN are removed.

**Related concepts**

- *About Managing Pillar Axiom LUNs*
- *About Creating LUNs*
- *About Modifying LUNs*

**Related tasks**

- *View Pillar Axiom LUNs*
- *Copy a Pillar Axiom LUN*
- *Clone a Pillar Axiom LUN*

## Copy a Pillar Axiom LUN

You can copy a Pillar Axiom LUN when you want to create a new LUN with different Quality of Service (QoS), mapping, and data protection properties from those of the source LUN.

**Prerequisite:** One or more Pillar Axiom systems added as an Oracle Enterprise Manager target.

The Pillar Axiom system for which you want to copy the LUN must be selected as the target.

1. Select **Oracle Axiom > LUNs**.
2. Select **LUNs** from the View drop-down list.
3. Select the LUN that you want to copy.
4. Click **Copy** at the bottom of the LUNs page.
5. Make any necessary changes in the Quality of Service, Mapping, and Data Protection tabs of the Copy LUN page.
6. Click **OK** in the Copy LUN page.

   Result:
   A confirmation dialog informs you when the copy has been created successfully.
7. Click **OK** in the confirmation dialog.

   Result:
   The LUN copy appears in the list of LUNs on the LUNs page with “Copy of” prepended to the source LUN name.

**Related concepts**

- *About Managing Pillar Axiom LUNs*
- *About Creating LUNs*
- *About Modifying LUNs*

**Related tasks**

- *View Pillar Axiom LUNs*
- *Delete a Pillar Axiom LUN*
- *Clone a Pillar Axiom LUN*

## Clone a Pillar Axiom LUN

You can clone a Pillar Axiom LUN when you want to create a point-in-time copy of a LUN with the same Quality of Service (QoS) properties as the original.

**Prerequisite:** One or more Pillar Axiom systems added as an Oracle Enterprise Manager target.

The Pillar Axiom system for which you want to clone the LUN must be selected as the target.

1. Select **Oracle Axiom > LUNs**.
2. Select **LUNs** from the View drop-down list.
3. Select the LUN that you want to clone.
4. Click **Clone** at the bottom of the LUNs page.
5. Make any available changes in the Quality of Service and Mapping tabs of the Clone LUN page.
6. Click **OK** in the Clone LUN page.

   Result:
   A confirmation dialog informs you when the Clone Volume (LUN) has been successfully created.
7. Click **OK** in the confirmation dialog.

   Result:
   The Clone LUN appears in the list of clones on the Clone LUNs page with “Clone of” prepended to the source LUN name.

### Related concepts

- *About Managing Pillar Axiom LUNs*
- *About Creating LUNs*
- *About Modifying LUNs*

### Related tasks

- *View Pillar Axiom LUNs*
- *Delete a Pillar Axiom LUN*
- *Copy a Pillar Axiom LUN*

# About Managing Protection Schedules

You can create, modify, or delete schedules for protecting the data in a LUN or Clone LUN by making clones of the source LUN at regular intervals in Oracle Enterprise Manager with the Oracle Enterprise Manager Plug-In for Pillar Axiom.

Data protection schedules create clones of a source LUN or Clone LUN at regularly scheduled intervals. When you create a protection schedule, you can enable it to run at the scheduled time as soon as you save the schedule, or you can create a schedule and enable it at a later time. You can modify the schedule to better suit your needs, and you can delete a schedule when it is no longer needed.

**Related tasks**

- *View Protection Schedules*
- *Create a Protection Schedule*
- *Modify a Protection Schedule*
- *Delete a Protection Schedule*

## Create a Protection Schedule

You can create a replication schedule to create a clone of a protected LUN or Clone LUN at regular intervals

**Prerequisite:** One or more Pillar Axiom systems added as an Oracle Enterprise Manager target.

The Pillar Axiom system for which you want to create a protection schedule must be selected as the target.

1. Select **Oracle Axiom** > **Protection Schedules**.
2. Select **LUNs** or **Clone LUNs** from the View drop-down menu.

   Choose **LUNs** if you want to schedule protection for a LUN, or choose **Clone LUNs** if you want to schedule protection for a Clone LUN.
3. Select the LUN or Clone LUN for which you want to create a protection schedule.
4. Click **Create** at the bottom of the screen.
5. In the Create Data Protection Schedule dialog, enter a name for the schedule in the **Schedule Name** field.

**Tip:** Use a meaningful name that includes the type of protection and frequency to help you identify the schedule in case you need to modify it later.

6 Select **Clone** as the data protection type.

7 (Optional) From the **Volume Group** drop-down list, choose the name of the volume group to which the clone volume will be assigned.

8 Select **Enabled** if you would like your schedule to start as soon as it is created.

If you do not enable your schedule now, you can do so at a later time by modifying the schedule.

9 Verify that the **Protected Volume** is the LUN or Clone LUN that you selected.

10 Use the controls in the Schedule panel to select the date and time.

11 Choose a frequency for your schedule:

- Run Once
- Hourly
- Daily
- Weekly

12 In the Recurrence panel, choose a recurrence value for your schedule.

If you chose a frequency of **Weekly**, choose the day of the week you would like your report to be generated.

13 To save the schedule, click **OK**.

Result:
Your schedule is listed in the Selected LUN Protection Schedules panel.

**Related concepts**

- *About Managing Protection Schedules*

**Related tasks**

- *View Protection Schedules*
- *Modify a Protection Schedule*
- *Delete a Protection Schedule*

## Modify a Protection Schedule

You can modify a protection schedule to suit your needs.

**Prerequisite:** One or more Pillar Axiom systems added as an Oracle Enterprise Manager target.

The Pillar Axiom system for which you want to create a protection schedule must be selected as the target, and you must select the source LUN or Clone LUN that is the protected volume for the schedule in the LUNs or Clone LUNs list.

1. Select **Oracle Axiom** > **Protection Schedules**.
2. Select **LUNs** or **Clone LUNs** from the View drop-down menu.

   Choose **LUNs** if the schedule you want to modify protects a LUN, or choose **Clone LUNs** if the schedule protects a Clone LUN.
3. Select the LUN or Clone LUN for which you created the protection schedule.

   Result:
   The schedule you want to modify displays in the Selected LUN Protection Schedules panel.
4. Click **Modify** at the bottom of the screen.
5. In the Create Data Protection Schedule dialog, enter a name for the schedule in the **Schedule Name** field.

   **Tip:** Use a meaningful name that includes the type of protection and frequency to help you identify the schedule in case you need to modify it later.
6. Verify that **Clone** is selected as the data protection type.
7. (Optional) From the **Volume Group** drop-down list, choose the name of a different volume group to which the clone volume will be assigned.
8. Select **Enabled** if you would like your schedule to start as soon as you save your changes.
9. Verify that the **Protected Volume** is the LUN or Clone LUN that you selected.
10. Use the controls in the Schedule panel to select the date and time.
11. Choose a frequency for your schedule:
    - Run Once
    - Hourly
    - Daily
    - Weekly

12 In the Recurrence panel, choose a recurrence value for your schedule.

If you chose a frequency of **Weekly**, choose the day of the week you would like your report to be generated.

13 To save changes to the schedule, click **OK**.

Result:
Your modified schedule displays in the Selected LUN Protection Schedules panel.

**Related concepts**

- *About Managing Protection Schedules*

**Related tasks**

- *View Protection Schedules*
- *Create a Protection Schedule*
- *Delete a Protection Schedule*

## Delete a Protection Schedule

You can delete a protection schedule when you no longer need it.

**Prerequisite:** One or more Pillar Axiom systems added as an Oracle Enterprise Manager target.

The Pillar Axiom system from which you want to delete a protection schedule must be selected as the target.

1 Select **Oracle Axiom** > **Protection Schedules**.

2 Select **LUNs** or **Clone LUNs** from the View drop-down menu.

Choose **LUNs** if the schedule you want to delete protects a LUN, or choose **Clone LUNs** if the schedule protects a Clone LUN.

3 Select the LUN or Clone LUN for which you created the protection schedule.

Result:
The schedule you want to delete displays in the Selected LUN Protection Schedules panel.

4 Click **Delete** at the bottom of the screen.

5 Click **OK** to confirm that you want to delete the protection schedule.

6 Click **OK** to dismiss the confirmation dialog.

Result:
The schedule no longer appears in the Selected LUN Protection Schedules panel.

**Related concepts**

- *About Managing Protection Schedules*

**Related tasks**

- *View Protection Schedules*
- *Create a Protection Schedule*
- *Modify a Protection Schedule*

APPENDIX A

# Pillar Axiom Metrics

## Pillar Axiom Metrics

Oracle Enterprise Manager collects a pre-defined set of metrics for each Pillar Axiom system added as a target.

The following table identifies the categories of metrics collected.

**Table 5 Metrics collected for Pillar Axiom systems**

| Category | Collected metrics |
|---|---|
| Axiom Details | • Allocated Space (GB)<br>• Contact Name<br>• Contact Phone Number<br>• IP Address<br>• Model Name<br>• Operational Status<br>• Remaining Space (GB)<br>• System Name<br>• Total Space (GB) |
| Brick Details | • Name<br>• Operational Status<br>• Serial Number<br>• Temperature Status<br>• Type<br>• WWN |
| Brick Software | • Build Version<br>• Release Version |

**Table 5 Metrics collected for Pillar Axiom systems (continued)**

| Category | Collected metrics |
|---|---|
| | • Version String |
| Disk Drives | • Brick Name<br>• Capacity (GB)<br>• Drive Number<br>• Operational Status |
| Event Details | • Category<br>• Component Name<br>• Component WWN<br>• Contact Name<br>• Contact Phone Number<br>• Description<br>• Name<br>• PMI Type<br>• Severity<br>• Source Node FQN<br>• Source Node ID |
| LUN Details | • Access Bias<br>• Active<br>• Addressable Capacity (Bytes)<br>• Addressable Capacity (GB)<br>• Allocated Clone Capacity (Bytes)<br>• Allocated Clone Capacity (GB)<br>• Assigned Slammer FQN<br>• Clone<br>• Current Slammer FQN<br>• IO Bias<br>• ID<br>• Logical Maximum Clone Capacity (Bytes) |

**Table 5 Metrics collected for Pillar Axiom systems (continued)**

| Category | Collected metrics |
|---|---|
| | • Logical Maximum Clone Capacity (GB)<br>• Management State<br>• Name<br>• Priority<br>• Redundancy<br>• Remaining Clone Capacity (GB)<br>• Source LUN FQN<br>• Source LUN Name<br>• Status<br>• Storage Class<br>• Storage Domain Identity FQN<br>• Used Clone Capacity (Bytes)<br>• Used Clone Capacity (GB)<br>• Volume Group |
| LUN Statistics | • Average Combined Response Time in Milliseconds<br>• Average Read Operation Size in Bytes<br>• Average Read Response Time in Milliseconds<br>• Average Write Operation Size in Bytes<br>• Average Write Response Time in Milliseconds<br>• Cache Flushes each Second<br>• Cache Hit Ratio<br>• LUN FQN<br>• LUN ID<br>• LUN Name<br>• Non-Optimized I/O each Second<br>• Read Ahead Operations each Second<br>• Read Bandwidth in Bytes each Second<br>• Read Bytes each Second |

**Table 5 Metrics collected for Pillar Axiom systems (continued)**

| Category | Collected metrics |
|---|---|
| | • Read I/Os each Second<br>• Read MB each Second<br>• Read Throughput in I/O each Second<br>• Total Bandwidth in Bytes each Second<br>• Total Bytes each Second<br>• Total I/Os each Second<br>• Total MB each Second<br>• Total Throughput in I/O each Second<br>• Write Bandwidth in Bytes each Second<br>• Write Bytes each Second<br>• Write I/Os each Second<br>• Write MB each Second<br>• Write Throughput in I/O each Second |
| Pilot Details | • Mode<br>• Operational Status<br>• Serial Number |
| Pilot Software | • Build Version<br>• Control Unit Serial Number<br>• Release Version<br>• Version String |
| Response | Status |
| SAN Hosts | • Communicating<br>• FQN<br>• IP Address<br>• ID<br>• Operating System<br>• Operating System Version |

**Table 5 Metrics collected for Pillar Axiom systems (continued)**

| Category | Collected metrics |
|---|---|
| | • Version |
| Slammer Details | • Name<br>• Operational Status<br>• Type |
| Slammer Software | • Build Version<br>• Control Unit FQN<br>• Release Version<br>• Slammer Name<br>• Version String |
| Other Collected Items | • System Details_Config<br>• Brick Software_Config<br>• Pilot Software_Config<br>• Slammer Software_Config |

### Related concepts

- *About Pillar Axiom Metrics*

### Related tasks

- *View Pillar Axiom Metrics*

APPENDIX B

# Pillar Axiom Reports

## Pillar Axiom Hardware Reports

Hardware reports provide an overview of the system, details about the drives and hardware components, and an evaluation of the system with regard to meeting Platinum Services requirements.

### Axiom System Summary

The Axiom System Summary report provides an overview of the system properties, storage usage, and software installed on the components of the selected Pillar Axiom system.

### Disk Drives

The Axiom Disk Drives report lists the properties and status of all drives on each Brick associated with the selected Pillar Axiom system.

### Hardware Status

The Hardware Status report provides the status of each component of the selected Pillar Axiom system.

### Platinum Health Check

If you have a Platinum Services agreement, Oracle monitors your Pillar Axiom systems. The Platinum Health Check report indicates whether the selected system meets the Platinum Services minimum requirements.

**Table 6 Platinum health check report contents**

| Requirement | Description | |
|---|---|---|
| Axiom Model Name | **Baseline model name** | Minimum Pillar Axiom model required for Platinum Services |
| | **Model name** | Model of the selected Pillar Axiom system |

Table 6 Platinum health check report contents (continued)

| Requirement | Description | |
|---|---|---|
| | **Result** | Whether the selected Pillar Axiom system passes or fails the Platinum Services requirement |
| Axiom Software Revision | **Hardware type** | Type of hardware component: Pilot or Slammer Control Unit (CU) |
| | **Hardware identifier** | Name of the Pilot or Slammer CU |
| | **Baseline software version** | Minimum Pillar Axiom software version required for Platinum Services |
| | **Software version** | Pillar Axiom software version running on the Pilot or Slammer CU |
| | **Result** | Whether the Pillar Axiom software version of the hardware component passes or fails the Platinum Services requirement |
| Axiom Total Brick Count | **Slammers** | Number of Slammers on the selected Pillar Axiom system |
| | **Baseline Brick count** | Minimum and maximum number of Bricks for the number of Slammers on the selected Pillar Axiom system<br>Number of Bricks must fall within this range to qualify for Platinum Services |
| | **Brick count** | Number of Bricks on the selected Pillar Axiom system |
| | **Result** | Whether the selected Pillar Axiom system passes or fails the Platinum Services requirement |
| Axiom Fibre Channel Brick Count | **Baseline Max FC Bricks** | Maximum number of FC Bricks allowed to qualify for Platinum Services (32) |
| | **FC Brick Count** | Number of FC Bricks on the selected Pillar Axiom system |

**Table 6 Platinum health check report contents (continued)**

| Requirement | Description | |
|---|---|---|
| | **Result** | Whether the selected Pillar Axiom system passes or fails the Platinum Services requirement |
| Axiom Host Driver Version | **SAN host name** | Names of all SAN hosts defined on the selected Pillar Axiom system |
| | **Baseline version** | Minimum version of the Pillar Axiom Path Manager (APM) host driver required for Platinum Services |
| | **Version** | Version of the APM host driver running on the SAN host |
| | **Result** | Whether the APM host driver version running on the SAN host passes or fails the Platinum Services requirement |

**Related concepts**

- *About Pillar Axiom Reports*

**Related references**

- *Pillar Axiom I/O Reports*
- *Pillar Axiom Storage Usage Reports*

**Related tasks**

- *Generate Pillar Axiom Reports*

# Pillar Axiom I/O Reports

The Oracle Enterprise Manager Plug-In for Pillar Axiom provides one I/O report: the I/O Access for LUNs report.

The I/O Access for LUNs report charts input and output statistics for the ten most active LUNs on the Pillar Axiom system.

The top portion of the report is a pie chart that shows the percentage of I/O that has occurred on each LUN during the collection period.

The bottom portion of the report is a bar graph that shows the amount of I/O that has occurred on each of the ten most active LUNs on the selected Pillar Axiom system.

**Related concepts**

- *About Pillar Axiom Reports*

**Related references**

- *Pillar Axiom Hardware Reports*
- *Pillar Axiom Storage Usage Reports*

**Related tasks**

- *Generate Pillar Axiom Reports*

# Pillar Axiom Storage Usage Reports

The Oracle Enterprise Manager Plug-In for Pillar Axiom provides two storage usage reports: a Storage Usage by LUN report, and a Storage Usage for LUN by QoS report.

The top portion of the Storage Usage by LUN report is a pie chart that shows the percentage of storage usage for each LUN. The bottom portion of the report is a table that shows the serial numbers and sizes of the ten largest capacity LUNs on the selected Pillar Axiom system.

The Storage Usage for LUN by QoS report consists of three pie charts that show the percentage of storage usage by LUNs that have priority, data access, or I/O bias Quality of Service (QoS) attributes.

**Related concepts**

- *About Pillar Axiom Reports*

**Related references**

- *Pillar Axiom Hardware Reports*
- *Pillar Axiom I/O Reports*

**Related tasks**

- *Generate Pillar Axiom Reports*

# Index