Managing EMC XtremIO

XtremIO Accounts

Adding an XtremIO Account

Before You Begin

In order to manage XtremIO in Cisco UCS Director, the XMS Host IP is used when adding a physical account in Cisco UCS Director.

Step 1 Log in to Cisco UCS Director.

Step 2 Choose **Administration** > **Physical Accounts**.

Step 3 Click the **Physical Accounts** tab.

Step 4 In the **Physical Accounts** pane, click **Add**.

Step 5 In the **Add Account** dialog box, complete the following fields:

a) **Pod**—Choose a pod for the account from the drop-down list.

b) **Category**—Choose **Storage**.

c) **Account Type**—Choose **EMC XtremIO** from the drop-down list.

Step 6 Click **Submit**.

Step 7 In the second **Add Account** dialog box, complete the following fields:

a) **Account Name**

b) **Description**

c) **Management Server Address**

d) **Use Credential Policy**
If checked, the **Credential Policy** drop-down list is shown.

e) **User Name**

f) **Password**

g) **Protocol**
Both HTTP and HTTPS are supported.

h) **Port**
Must not be 7225. Port number varies depending on implementation.

i) **Discover XtremIO Clusters** check box
If checked, a drop-down list of all of the XMS clusters is shown. You can choose the cluster to be managed.

j) **Cluster Name**
If the **Discover XtremIO Clusters** check box is not checked, enter a valid name of the cluster managed by the XMS host.

k) **Contact**

l) **Location**

Step 8 Click **Submit**.

Step 9 In the **Physical Accounts** pane, choose the account.

Step 10 Click **Test Connection**.

Editing an XtremIO Account

Step 1 Log in to Cisco UCS Director.

Step 2 Choose **Administration** > **Physical Accounts**.

Step 3 Click the **Physical Accounts** tab.

Step 4 Click the XtremIO account you wish to edit.

Step 5 In the **Physical Accounts** pane, click **Edit**.

Step 6 In the **Edit Account** dialog box, you can edit the following fields:

a) **Description**

b) **Management Server Address**

c) **Use Credential Policy**
If checked, the **Credential Policy** drop-down list is shown.

d) **User Name**

e) **Password**

f) **Protocol**
Both HTTP and HTTPS are supported.

g) **Port**
Must not be 7225. Port number varies depending on implementation.

h) **Discover XtremIO Clusters** check box
If checked, a drop-down list of all of the XMS clusters is shown. You can choose the cluster to be managed.

i) **Cluster Name**
If the **Discover XtremIO Clusters** check box is not checked, enter a valid name of the cluster managed by the XMS host.

j) **Contact**

k) **Location**

Step 7   Click **Submit**.

Step 8   In the **Physical Accounts** pane, choose the account.

Step 9   Click **Test Connection**.

XtremIO Volumes

A Volume is a set of blocks, presented to the operating environment as a range of consecutive logical blocks with disk-like storage and I/O semantics. It is possible to define various percentages of disk space as Volumes in an active cluster.

Creating an XtremIO Volume

Step 1   Log in to Cisco UCS Director.

Step 2   Click the **Physical Accounts** tab.

Step 3   Click the XtremIO account in which you wish to create the new volume.

Step 4   Click the **Volumes** tab.

Step 5   Click the **Create** button.

Step 6   In the **Create EMC XtremIO Volume** dialog box complete the following:

a) **Volume Name**

b) **Volume Size**

c) **Logical Block Size**

d) **Capacity Type**

e) **Enable or Disable Small Input/Output Alerts**

f) **Enable or Disable Unaligned Input/Output Alerts**

g) **Enable or Disable VAAI TP Input/Output Alerts**

Step 7   Click **Submit.**

Modifying an XtremIO Volume

Step 1   Log in to Cisco UCS Director.

Step 2   Click the **Physical Accounts** tab.

Step 3   Click the XtremIO account that contains the volume you wish to modify.

Step 4   Click the **Volumes** tab.

Step 5   In the Volumes pane, click the volume you wish to modify.

Step 6   Click the **Modify** button.

Step 7   In the **Modify EMC XtremIO Volume** dialog you can modify any or all of the following:

a) **Volume Name**

b) **Volume Size**

c) **Logical Block Size**

d) **Capacity Type**

e) **Enable or Disable Small Input/Output Alerts**

f) **Enable or Disable Unaligned Input/Output Alerts**

g) **Enable or Disable VAAI TP Input/Output Alerts**

Step 8   Click **Submit.**

XtremIO Initiator Groups

The XtremIO Storage Array uses the term "Initiators" to refer to ports that can access a Volume. Initiators are managed in the XtremIO Storage Array by assigning them to an Initiator Group. The Initiators within an Initiator Group share access to one or more of the cluster's Volumes.

Creating an Initiator Group

Step 1	Log in to Cisco UCS Director.
Step 2	In the **Converged** view, click the pod that contains the XtremIO appliance.
Step 3	From the **Physical Accounts** drop-down list, choose **Storage**.
Step 4	In the **Storage** pane, choose the XtremIO account.
Step 5	Click the **Initiator Groups** tab. A list of Initiator Groups is displayed.
Step 6	In the Initiators Groups pane, click **Create**. The **Create EMC XtremIO Initiator Groups** dialog box is displayed.
Step 7	In the **Create EMC XtremIO Initiator Groups** dialog box, enter the following: a) Initiator Group Name b) Initiator Name c) Port address
Step 8	Click **Submit.**

Renaming an Initiator Group

Step 1	Log in to Cisco UCS Director.
Step 2	In the **Converged** view, click the pod that contains the XtremIO appliance.
Step 3	From the **Physical Accounts** pull-down, choose **Storage**.
Step 4	In the **Storage** pane, choose the XtremIO account.
Step 5	Click the **Initiators Groups** tab. A list of Initiator Groups is displayed.
Step 6	In the **Initiator Groups** pane, click the Initiator Group you wish to rename.
Step 7	Click **Rename**.
Step 8	In the **Rename EMC XtremIO Initiators Group** dialogue, type in a new name for the Initiator
Step 9	Click **Submit**

XtremIO Initiators

Initiators are added to the cluster by defining them in an Initiator Group. You can define Initiators when adding a group, or later define them by using the Edit Initiator Group option. To remove an Initiator, edit the group and delete the Initiator's properties.

Creating an Initiator

Step 1   Log in to Cisco UCS Director.

Step 2   In the **Converged** view, click the pod that contains the XtremIO appliance.

Step 3   From the **Physical Accounts** drop-down list, choose **Storage**.

Step 4   In the **Storage** pane, choose the XtremIO account.

Step 5   Click the **Initiators** tab.
A list of Initiators is displayed.

Step 6   In the Initiators pane, click **Create**.
The **Create EMC XtremIO Initiator** dialog box is displayed.

Step 7   In the **Create EMC XtremIO Initiator** dialog box, enter the following:

   a) Initiator Name
   b) Initiator Group
       This is a popup list from which you can choose the Initiator Group.

   c) Port Address
   d) in the OS drop-down list, choose one of the following:

       • Other

       • Windows

       • Linux

       • ESX

       • Solaris

       • AIX

       • HP-UX

Step 8   Click **Submit.**

Modifying an Initiator

Step 1   Log in to Cisco UCS Director.

Step 2   In the **Converged** view, click the pod that contains the XtremIO appliance.

Step 3   From the **Physical Accounts** drop-down list, choose **Storage**.

Step 4   In the **Storage** pane, choose the XtremIO account.

Step 5   Click the **Initiators** tab.

A list of Initiators is displayed.

Step 6   In the **Initiators** pane, click the Initiator you wish to modify.

Step 7   In the **Initiators** pane, click **Modify**.
The **Modify EMC XtremIO Initiator** dialog box is displayed.

Step 8   In the **Modify EMC XtremIO Initiator** dialog box, you can modify any or all of the following:

a) Initiator Name
b) Port address
c) in the OS drop-down list, choose one of the following:

- Other

- Windows

- Linux

- ESX

- Solaris

- AIX

- HP-UX

Step 9   Click **Submit.**

LUN Mapping

When mapping a Volume to an Initiator Group, a Logical Unit Number (LUN) is automatically assigned.

You can map an Initiator Group to multiple Volumes. The Initiator Group's first mapping receives a LUN of 1. Additional mappings receive LUNs in sequential order. These numbers cannot be changed later so any change must be specified during LUN creation.

Mapping a LUN

Step 1   Log in to Cisco UCS Director.

Step 2   In the **Converged** view, click the pod that contains the XtremIO appliance.

Step 3   From the **Physical Accounts** drop-down list, choose **Storage**.

Step 4   In the **Storage** pane, choose the XtremIO account.

Step 5   Click the **LUN Mapping** tab.
A list of mapped LUNs is displayed.

Step 6   In the LUN Mapping pane, click **Map LUN**.
The **Map EMC XtremIO LUN** dialog box is displayed.

Step 7   In the **Map EMC XtremIO LUN** dialog box:

a) Volume - Click **Select** and choose the volume to map from the list.

b) Initiator Group - Click **Select** and choose the initiator group from the list.

c) LUN ID - type in a unique ID for the LUN.

Step 8   Click **Submit.**

Unmapping a LUN

Step 1   Log in to Cisco UCS Director.

Step 2   In the **Converged** view, click the pod that contains the XtremIO appliance.

Step 3   From the **Physical Accounts** drop-down list, choose **Storage**.

Step 4   In the **Storage** pane, choose the XtremIO account.

Step 5   Click the **LUN Mapping** tab.
A list of mapped LUNs is displayed.

Step 6   In the LUN Mapping pane, click **UnMap LUN**.
The **UnMap EMC XtremIO LUN** dialog box is displayed.

Step 7   In the **UnMap EMC XtremIO LUN** dialog box:

Step 8   Click **Submit.**
The LUN is unmapped.

Consistency Groups

Consistency Groups (CG) are used to create a consistent image of a set of Volumes, usually used by a single application, such as a database. With XtremIO CGs, you can create a Snapshot of all Volumes in a group, using a single command. This ensures that all Volumes are created at the same time. Many operations that are applied on a single Volume can also be applied on a CG.

Adding a Consistency Group

Step 1   Log in to Cisco UCS Director.

Step 2   In the **Converged** view, click the pod that contains the XtremIO appliance.

Step 3   From the **Physical Accounts** drop-down list, choose **Storage**.

Step 4   In the **Storage** pane, choose the XtremIO account.

Step 5   Click the **Consistency Groups** tab.

A list of Consistency Groups is displayed.

Step 6   Click the **Create** button.

Step 7   In the **Create EMC XtremIO Consistency Group** dialog box complete the following:

    a) **Consistency Group Name**

    b) **Volume**
       click the **Select** button and choose a Volume for the Consistency Group from the popup window.

Step 8   Click **Submit**.

Renaming a Consistency Group

Step 1   Log in to Cisco UCS Director.

Step 2   In the **Converged** view, click the pod that contains the XtremIO appliance.

Step 3   From the **Physical Accounts** drop-down list, choose **Storage**.

Step 4   In the **Storage** pane, choose the XtremIO account.

Step 5   Click the **Consistency Groups** tab.
A list of Consistency Groups is displayed.

Step 6   Click the **Rename** button.

Step 7   In the **Rename EMC XtremIO Consistency Group** dialog box, complete the following:

    a) **Consistency Group Name**.

Step 8   Click **Submit**.

Viewing a Consistency Group Report

Step 1   Log in to Cisco UCS Director.

Step 2   In the **Converged** view, click the pod that contains the XtremIO appliance.

Step 3   From the **Physical Accounts** drop-down list, choose **Storage**.

Step 4   In the **Storage** pane, choose the XtremIO account.

Step 5   Click the **Consistency Groups** tab.
A list of Consistency Groups is displayed.

Adding a Volume to a Consistency Group

Step 1	Log in to Cisco UCS Director.
Step 2	In the **Converged** view, click the pod that contains the XtremIO appliance.
Step 3	From the **Physical Accounts** drop-down list, choose **Storage**.
Step 4	In the **Storage** pane, choose the XtremIO account.
Step 5	Click the **Consistency Group** tab. A list of Consistency Groups is displayed.
Step 6	Click the Consistency Group to which a volume is to be added.
Step 7	In the Consistency Group pane, click **Add Volume**. The **Add Volume to Consistency Group** dialog box is displayed.
Step 8	Click the **Select** button and select a volume from the popup list.
Step 9	Click **Submit.**

Removing a Volume from a Consistency Group

Step 1	Log in to Cisco UCS Director.
Step 2	In the **Converged** view, click the pod that contains the XtremIO appliance.
Step 3	From the **Physical Accounts** drop-down list, choose **Storage**.
Step 4	In the **Storage** pane, choose the XtremIO account.
Step 5	Click the **Consistency Group** tab. A list of Consistency Groups is displayed.
Step 6	In the Consistency Group pane, click **Remove Volume**. The **Remove EMC XtremIO Volume from Consistency Group** dialog box is displayed.
Step 7	In the **Remove EMC XtremIO Volume from Consistency Group** dialog box: a) **Volume**—Click the **Select** button and select a volume from the list.
Step 8	Click **Submit.**

iSCSI

To establish an iSCSI connection for transferring data, first define an iSCSI portal. An iSCSI portal is an IPv4 address and port associated with a Target port. Each iSCSI Target can be associated with multiple portals. If an IP connection requires routing to remote networks, you can define routing rules that apply to the iSCSI Target ports only.

Creating an iSCSI Portal

Step 1	Log in to Cisco UCS Director.
Step 2	In the **Converged** view, click the pod that contains the XtremIO appliance.
Step 3	From the **Physical Accounts** drop-down list, choose **Storage**.
Step 4	In the **Storage** pane, choose the XtremIO account.
Step 5	Click the **iSCSI Portals** tab. A list of iSCSI Portals is displayed.
Step 6	In the iSCSI Portals pane, click **Create**. The **EMC XtremIO Create iSCSI Portal** dialog box is displayed.
Step 7	In the **EMC XtremIO Create iSCSI Portal** dialog box, type the: a) IP Address (in CIDR format *X.X.X.X/X.* b) VLAN. c) iSCSI Target. The iSCSI Target **Select** button displays a popup list of targets. Choose a target and click Select.
Step 8	Click **Submit.**

Creating an iSCSI Route

Step 1	Log in to Cisco UCS Director.
Step 2	In the **Converged** view, click the pod that contains the XtremIO appliance.
Step 3	From the **Physical Accounts** drop-down list, choose **Storage**.
Step 4	In the **Storage** pane, choose the XtremIO account.
Step 5	Click the **iSCSI Routes** tab. A list of iSCSI Routes is displayed.
Step 6	In the iSCSI Routes pane, click **Create**. The **EMC XtremIO Create iSCSI Routes** dialogue is displayed.
Step 7	In the **EMC XtremIO Create iSCSI Routes** dialogue box, type the: a) Name b) Destination Network Mask. c) Gateway Address.
Step 8	Click **Submit.**

Snapshots

Snapshots are instantaneous copy images of Volume data. The state of the data captured is exactly as it appeared at the specific point in time that the Snapshot was created. This enables you to save the Volume data state and then access the specific Volume data whenever needed, including after the source Volume has changed.

A Snapshot can be taken either directly from a source Volume or from other Snapshots within a source Volume's group (Volume Snapshot Group). XtremIO Snapshots are by default read-write, but can be created as read-only to maintain immutability.

The source data remains available without interruption, while the Snapshot can be used to perform other functions on the data. Changes made to the Snapshot's source do not affect the Snapshot data.

XtremIO Snapshots are space-efficient both in terms of metadata consumed and physical capacity. Snapshots are implemented using redirect-on-write methodology. New writes to the source Volume (or Snapshot) are redirected to new locations, and only metadata is updated to point to the new data location. This method guarantees that there is no performance degradation while Snapshots are created.

Creating a Snapshot Scheduler

Step 1   Log in to Cisco UCS Director.

Step 2   In the **Converged** view, click the pod that contains the XtremIO appliance.

Step 3   From the **Physical Accounts** drop-down list, choose **Storage**.

Step 4   In the **Storage** pane, choose the XtremIO account.

Step 5   Click the **Schedulers** tab.
A list of Schedulers is displayed.

Step 6   In the Schedulers pane, click **Create**.
The **Create Snapshot Scheduler** dialog box is displayed.

Step 7   In the **Create Snapshot Scheduler** dialog box, do the following:

    a) In the **Scheduler to be created on** drop-down list, choose an option.

    b) Click the **Volume Select** button. In the Select window, choose a Volume and click Select.

    c) In the **Schedule** drop-down list, choose Fixed Interval or Explicit Time.

    d) If you chose Explicit Time, in the Snapshot Fixed Schedule field enter the desired time in the following format: hh:mm:ss.

    e) In the **Number of Snapshots to Keep** field, enter a number.

    f) If a suffix is required, enter it in the **Suffix** field.

    g) In the **Snapshot Type** drop-down, choose Read/Write or Read Only.

Step 8   Click **Submit.**

Creating a Snapshot Set

Note   The **Create Snapshot Set** feature is also available under the **Snapshots** tab. The steps used to create a Snapshot Set are identical.

Step 1	Log in to Cisco UCS Director.
Step 2	In the **Converged** view, click the pod that contains the XtremIO appliance.
Step 3	From the **Physical Accounts** drop-down list, choose **Storage**.
Step 4	In the **Storage** pane, choose the XtremIO account.
Step 5	Click the **Snapshot Sets** tab. A list of Snapshot Sets is displayed.
Step 6	In the Snapshot Sets pane, click **Create**. The **Create Snapshot Set** dialog box is displayed.
Step 7	In the **Create Snapshot Set** dialog box, do the following: a) Enter a name in the **Snapshot Set Name** field. b) Enter a suffix in the **Snapshot Suffix** field. (Optional) c) In the **Type** drop-down, choose Read/Write or Read Only. d) In the **Snapshot Origin Type** drop-down, choose Volumes, Consistency Group, or Snapshot Set. e) In the **Source Volume** Select list, choose a Source Volume.
Step 8	Click **Submit.**

Viewing Snapshot Sets

Step 1	Log in to Cisco UCS Director.
Step 2	In the **Converged** view, click the pod that contains the XtremIO appliance.
Step 3	From the **Physical Accounts** drop-down list, choose **Storage**.
Step 4	In the **Storage** pane, choose the XtremIO account.
Step 5	Click the **Snapshot Sets** tab. A list of Snapshot Sets is displayed. You can also click on the **Snapshots** tab and see more information about the Snapshot Sets.

System Reports

Cisco UCS Director XtremIO provides the following System Reports:

• Clusters Report

The following reports are displayed as child reports under the Clusters Report.

• Bricks Report

• Storage Controllers Report

• SSDs Report

• Data Protection Report

• X-Env Report

• Targets Report

Viewing System Reports

To view a System Report, do the following:

Step 1	Log in to Cisco UCS Director.
Step 2	In the **Converged** view, click the pod that contains the XtremIO appliance.
Step 3	From the **Physical Accounts** drop-down list, choose **Storage**.
Step 4	In the **Storage** pane, choose the XtremIO account.
Step 5	Click the **Clusters** tab. XtremIO clusters are displayed in the Clusters Pane.
Step 6	Select a Cluster from the list.
Step 7	Click **View Details**. The child reports are available as separate tabs. Clicking the desired tab displays the details of the report.

Other Configurations

Viewing the Email Notifier

Step 1   Log in to Cisco UCS Director.

Step 2   In the **Converged** view, click the pod that contains the XtremIO appliance.

Step 3   From the **Physical Accounts** drop-down list, choose **Storage**.

Step 4   In the **Storage** pane, choose the XtremIO account.

Step 5   Click the **Clusters** tab.

Step 6   Select a cluster from the list.

Step 7   Click the **View Details** button.

Step 8   Click the **Email Notifier** button.
        Details about the Email Notifier are displayed.

Viewing the SNMP Notifier

Step 1   Log in to Cisco UCS Director.

Step 2   In the **Converged** view, click the pod that contains the XtremIO appliance.

Step 3   From the **Physical Accounts** drop-down list, choose **Storage**.

Step 4   In the **Storage** pane, choose the XtremIO account.

Step 5   Click the **Clusters** tab.

Step 6   Select a cluster from the list.

Step 7   Click the **View Details** button.

Step 8   Click the **SMTP Notifier** button.
        Details about the SMTP Notifier are displayed.

Viewing the Syslog Notifier

Step 1   Log in to Cisco UCS Director.

Step 2   In the **Converged** view, click the pod that contains the XtremIO appliance.

Step 3   From the **Physical Accounts** drop-down list, choose **Storage**.

Step 4   In the **Storage** pane, choose the XtremIO account.

Step 5   Click the **Clusters** tab.

Step 6   Select a cluster from the list.

Step 7   Click the **View Details** button.

Step 8   Click the **Syslog Notifier** button.
Details about the Syslog Notifier are displayed.