Cisco UCS Director EMC RecoverPoint Management Guide, Release 6.0

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Audience

This guide is intended primarily for data center administrators who use Cisco UCS Director and who have responsibilities and expertise in one or more of the following:

- Server administration
- Storage administration
- Network administration
- Network security
- Virtualization and virtual machines

Conventions

Text Type	Indication
GUI elements	GUI elements such as tab titles, area names, and field labels appear in **this font**. Main titles such as window, dialog box, and wizard titles appear in **this font**.
Document titles	Document titles appear in *this font*.
TUI elements	In a Text-based User Interface, text the system displays appears in `this font`.

Text Type	Indication
System output	Terminal sessions and information that the system displays appear in `this font`.
CLI commands	CLI command keywords appear in **this font**. Variables in a CLI command appear in *this font*.
[ ]	Elements in square brackets are optional.
{x | y | z}	Required alternative keywords are grouped in braces and separated by vertical bars.
[x | y | z]	Optional alternative keywords are grouped in brackets and separated by vertical bars.
string	A nonquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.
< >	Nonprinting characters such as passwords are in angle brackets.
[ ]	Default responses to system prompts are in square brackets.
!, #	An exclamation point (!) or a pound sign (#) at the beginning of a line of code indicates a comment line.

Note   Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the document.

Caution   Means *reader be careful*. In this situation, you might perform an action that could result in equipment damage or loss of data.

Tip   Means *the following information will help you solve a problem*. The tips information might not be troubleshooting or even an action, but could be useful information, similar to a Timesaver.

Timesaver   Means *the described action saves time*. You can save time by performing the action described in the paragraph.

Warning   IMPORTANT SAFETY INSTRUCTIONS

This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. Use the statement number provided at the end of each warning to locate its translation in the translated safety warnings that accompanied this device.

SAVE THESE INSTRUCTIONS

Related Documentation

Cisco UCS Director Documentation Roadmap

For a complete list of Cisco UCS Director documentation, see the *Cisco UCS Director Documentation Roadmap* available at the following URL: http://www.cisco.com/en/US/docs/unified_computing/ucs/ucs-director/doc-roadmap/b_UCSDirectorDocRoadmap.html.

Cisco UCS Documentation Roadmaps

For a complete list of all B-Series documentation, see the *Cisco UCS B-Series Servers Documentation Roadmap* available at the following URL: http://www.cisco.com/go/unifiedcomputing/b-series-doc.

For a complete list of all C-Series documentation, see the *Cisco UCS C-Series Servers Documentation Roadmap* available at the following URL: http://www.cisco.com/go/unifiedcomputing/c-series-doc.

Note   The *Cisco UCS B-Series Servers Documentation Roadmap* includes links to documentation for Cisco UCS Manager and Cisco UCS Central. The *Cisco UCS C-Series Servers Documentation Roadmap* includes links to documentation for Cisco Integrated Management Controller.

Documentation Feedback

To provide technical feedback on this document, or to report an error or omission, please send your comments to ucs-director-docfeedback@cisco.com. We appreciate your feedback.

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, using the Cisco Bug Search Tool (BST), submitting a service request, and gathering additional information, see What's New in Cisco Product Documentation.

To receive new and revised Cisco technical content directly to your desktop, you can subscribe to the What's New in Cisco Product Documentation RSS feed. RSS feeds are a free service.

Preface

Obtaining Documentation and Submitting a Service Request

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New and Changed Information for this Release

New and Changed Information for this Release

No significant changes were made to this guide for the current release.

Overview

This chapter contains the following sections:

About EMC RecoverPoint

EMC RecoverPoint protects storage array logical unit numbers (LUNs) and provides concurrent local and remote data replication. RecoverPoint also provides continuous data protection for operational and disaster recovery by enabling any point-in-time recovery (PITR) for diversified storage environments both within and across pods.

RecoverPoint secures data by providing synchronous and asynchronous replication across heterogeneous arrays for block-based storage protocols. Replication improves reliability, fault-tolerance, and accessibility to data. If data becomes compromised or lost, you can look at data back in time and recover it by extending the vCenter VMware Site Recovery Manager (SRM) functionality with any PITR capabilities.

RecoveryPoint provides the ability to do the following:

- Enable continuous data protection for any PITR to optimize the recovery point objective (RPO) and recovery time objective (RTO).

- Ensure recovery consistency for inter-dependent applications.

- Provide synchronous or asynchronous replication policies.

- Reduce WAN bandwidth consumption and utilize available bandwidth optimally.

In Cisco UCS Director, you can access the following EMC RecoverPoint reports for Vblock clusters:

- Consistency groups that ensure that there is application-dependent write consistency of application data on VPLEX distributed virtual volumes within the VPLEX system in the event of a disaster.

- Consistency group copies of the initial consistency groups.

- Replication sets that consist of a production source volume and its local or local and remote replica volumes. One or more replication sets makes up a consistency group.

RecoverPoint Account Management

This chapter contains the following sections:

Adding an EMC RecoverPoint Account

Procedure

Step 1 Choose **Administration** > **Physical Accounts**.

Step 2 On the **Physical Accounts** page, click **Multi-Domain Managers**.

Step 3 Click **Add**.

Step 4 On the **Add Account** screen, choose **EMC RecoverPoint** from the **Account Type** drop-down list and click **Submit**.

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

Name	Description
Account Name field	A unique name for this RecoverPoint account.
Description field	A description of this account.
Server IP field	The IP address of the RecoverPoint system.
Use Credential Policy checkbox	Check this check box if you want to use a credential policy for this account rather than enter the username and password information manually.
Credential Policy drop-down list	If you checked the **Use Credential Policy** check box, choose the credential policy that you want to use from this drop-down list. This field is only displayed if you choose to use a credential policy.

Name	Description
Username field	The username that this account uses to access the RecoverPoint system. This username must be a valid account in the RecoverPoint system. This field is not displayed if you chose to use a credential policy.
Password field	The password associated with the username. This field is not displayed if you chose to use a credential policy.
Protocol drop-down list	Choose one of the following transport types that you want to use for this account: • **http** • **https** The default transport type protocol for this account is HTTPS.
Port field	The port used to access the RecoverPoint system. Port 7225 is the default secure HTTPS port through which Cisco UCS Director connects to the RecoverPoint system to obtain data.
API Version drop-down list	Choose the API verson that is supported on the RecoverPoint server. The default is API version 4_0.
Connection Timeout (Seconds) field	The length of time in seconds that Cisco UCS Director will wait to establish a connection to the RecoverPoint server before timing out. The default value is 60 seconds. The valid values are from 0 to 1800. An empty field or a value of 0 is interpreted as an infinite timeout.
Socket Read Timeout (Seconds) field	The length of time in seconds that Cisco UCS Director will wait for data from the RecoverPoint server before timing out. The default value is 60 seconds. The valid values are from 0 to 1800. An empty field or a value of 0 is interpreted as an infinite timeout.
Contact field	The email address that you use to contact the administrator or other person responsible for this account.
Location field	The location of the contact.

Step 6 Click **Submit**.

Cisco UCS Director tests the connection to the EMC RecoverPoint server. If that test is successful, it adds the RecoverPoint account and discovers all infrastructure elements in the storage system that are associated with that account. This discovery process and inventory collection cycle takes few minutes to complete.

The polling interval configured on the **System Tasks** tab on the **Administration** > **System** window specifies the frequency of inventory collection. For more information about configuring the polling interval, see the *Cisco UCS Director Network Devices Management Guide*.

RecoverPoint Operations

This chapter contains the following sections:

RecoverPoint Appliance Clusters

RecoverPoint Appliance (RPA) clusters can be a group of two to eight physical (or virtual) RPAs at the same geographic location, that work together to replicate and protect data. A RecoverPoint system can have up to five RPA clusters.

Assigning a Pod to a Cluster

You must also assign a pod to each RecoverPoint cluster.

Procedure

Step 1 On the menu bar, choose **Physical** > **Storage**.

Step 2 On the **Storage** pane, click the **Multi-Domain Managers** icon to expand the list of connected multi-domain managers.

Step 3 Choose **EMC RecoverPoint** to expand the connected RecoverPoint device(s) and click the RecoverPoint device that you want.

Step 4 Click the **Clusters** tab and click the cluster that you want to assign to the pod.

Step 5 Click **Assign to Pod**.

Step 6 In the **Assign Pod to Cluster** dialog box, complete the following field:

Name	Description
Select Pod drop-down list	Choose a pod type. This can be one of the following: • **Default Pod** • **VSPEX** • **Generic** • **Vblock**

Step 7 Click **Submit.**

Step 8 Repeat the previous steps if you need to assign a pod to another cluster.

Note Up to five clusters in a system can be assigned to a RecoverPoint cluster. After you finish configuring the clusters, you can double-click the RecoverPoint cluster to view the cluster summary, cluster gateway, splitters, RPAs, vCenter servers and filters, the repository volume, and other cluster volume information.

Unassigning a Pod from a Cluster

Procedure

Step 1 On the menu bar, choose **Physical** > **Storage**.

Step 2 On the **Storage** pane, click the **Multi-Domain Managers** icon to expand the list of connected multi-domain managers.

Step 3 Choose **EMC RecoverPoint** to expand the connected RecoverPoint device(s) and click the device you want.

Step 4 Click the **Clusters** tab and click the cluster that you want.

Step 5 Click **Unassign Pod**.

Step 6 In the **Unassign Pod from Cluster** dialog box, click **Submit** to unassign the pod from the cluster.

Consistency Groups

In RecoverPoint, volumes are protected by consistency groups. If two data sets are dependent on one another (such as a database and a database log), they should be part of the same consistency group. The consistency group ensures that updates to the production volumes are also written to the copies in a consistent and correct write-order so that the copy can always be used to continue working from, or to restore the production source. The volumes must be replicated together in one consistency group to guarantee that at any point in time, the saved data is in true form.

RecoverPoint also supports simultaneous bidirectional replication, where the same RecoverPoint appliance (RPA) can serve as the source RPA for one consistency group and the target RPA for another consistency group.

For more detailed guidelines about using RecoverPoint consistency groups, see the *EMC RecoverPoint Administrator's Guide*, which can be obtained from EMC.

Creating a Consistency Group

Consistency groups allow you to group volumes together and apply a set of properties to the entire group.

Note   A maximum of 128 consistency groups can be defined per RecoverPoint system. We recommend that you do not configure more than 64 consistency groups per RPA.

Procedure

Step 1	On the menu bar, choose **Physical** > **Storage**.
Step 2	On the **Storage** pane, click the **Multi-Domain Managers** icon to expand the list of connected multi-domain managers.
Step 3	Choose **EMC RecoverPoint** to expand the connected RecoverPoint device(s) and click the device that you want.
Step 4	Click the **Consistency Groups** tab.
Step 5	Click **Create**.
Step 6	In the **Create Consistency Group** dialog box, complete the following fields:

Name	Description
Consistency Group Name	The group name that is unique among all clusters.
Production Name	The name of the production copy.
Cluster	Choose the RecoverPoint production cluster.
Modify Group Policy check box	Check this check box if you want to modify the group policy options.
Group Policy	

Name	Description
Primary RPA	If you checked the **Modify Group Policy** check box, choose the primary RecoverPoint appliance.
Priority drop-down list	If you checked the **Modify Group Policy** check box, choose the priority for the consistency group.
Distribute Group check box	If you checked the **Modify Group Policy** check box, check this check box if you want to write across multiple RPAs. Each RecoverPoint system allows a maximum of eight distributed consistency groups.
Secondary RPAs	If you checked the **Distribute Group** check box, choose the secondary RPA that you want to distribute writes to.
Modify Copy Policy check box	Check this check box if you want to modify the production copy policy options.
Copy Policy	
Host OS drop-down list	If you checked the **Modify Copy Policy** check box, choose the host operating system.
Journal Policy	
Journal Compression drop-down list	If you checked the **Modify Copy Policy** check box, choose the journal compression level.
Maximum Journal Lag drop-down list	If you checked the **Modify Copy Policy** check box, choose the maximum journal lag.
Required Protection Window check box	If you checked the **Modify Copy Policy** check box, check this check box if you want to enable a protection window.
Protection Window	If you checked the **Required Protection Window** check box, enter the value of time for the protection window.
Window unit drop-down list	If you checked the **Required Protection Window** check box, choose the window time unit.
Enable Snapshot Consolidation check box	If you checked the **Modify Copy Policy** check box, check this check box if you want to enable snapshot consolidation.

Name	Description
Do not consolidate snapshots for at least below period	If you checked the **Enable Snapshot Consolidation** check box, enter the value of time for which snapshot consolidation should not be performed.
Unit (Consolidation Period) drop-down list	If you checked the **Enable Snapshot Consolidation** check box, choose the consolidation period unit.
consolidate to one snapshot per day	If you checked the **Enable Snapshot Consolidation** check box, enter the number of days to consolidate snapshots that are older than the consolidation period.
Indefinitely check box	If you checked the **Enable Snapshot Consolidation** check box, check this check box if you want to consolidate snapshots for an indefinite number of days.
consolidate to one snapshot per week	If you checked the **Enable Snapshot Consolidation** check box, enter the number of weeks to consolidate snapshots that are older than the consolidation period.
Indefinitely check box	If you checked the **Enable Snapshot Consolidation** check box, check this check box if you want to consolidate snapshots for an indefinite number of weeks.

Step 7   Click **Submit**.

Deleting an Existing Consistency Group

Procedure

Step 1   On the menu bar, choose **Physical** > **Storage**.

Step 2   On the **Storage** pane, click the **Multi-Domain Managers** icon to expand the list of connected multi-domain managers.

Step 3   Choose **EMC RecoverPoint** to expand the connected RecoverPoint device(s) and click the device that you want.

Step 4   Click the **Consistency Groups** tab.

Step 5   Choose the consistency group that you want to delete.

Step 6   Click **Delete**.

Step 7   In the **Delete Consistency Groups** confirmation dialog box, click **Submit**.

Getting the Transfer Status for a Consistency Group

Procedure

Step 1 On the menu bar, choose **Physical** > **Storage**.

Step 2 On the **Storage** pane, click the **Multi-Domain Managers** icon to expand the list of connected multi-domain managers.

Step 3 Choose **EMC RecoverPoint** to expand the connected RecoverPoint device(s) and click the device that you want.

Step 4 Click the **Consistency Groups** tab.

Step 5 Choose the consistency group for which you need the transfer status.

Step 6 Click **Get Transfer Status**.

Step 7 In the **Get Transfer Status** dialog box, click **Submit**.
The **Submit Result** dialog box displays telling you whether or not the transfer status for the RecoverPoint (RP) account updated successfully.

Starting Transfer for a Consistency Group

You can start the transfer of data from a production copy to all other replication copies in a consistency group within a RecoverPoint appliance (RPA) cluster.

Procedure

Step 1 On the menu bar, choose **Physical** > **Storage**.

Step 2 On the **Storage** pane, click the **Multi-Domain Managers** icon to expand the list of connected multi-domain managers.

Step 3 Choose **EMC RecoverPoint** to expand the connected RecoverPoint device(s) and click the device that you want.

Step 4 Click the **Consistency Groups** tab.

Step 5 Choose the consistency group for which you need to transfer data.

Step 6 Click **Start Transfer**.

Step 7 In the **Consistency Group Start Transfer** dialog box, click **Submit**.
The **Submit Result** dialog box displays telling you whether or not the consistency group was transferred successfully.
Note Use the **Pause Transfer** parameter to temporarily pause the transfer of writes from the production host to all copies of the lower-priority selected consistency group(s) when WAN bandwidth is very limited and you need to provide the largest bandwidth possible to higher-priority consistency group(s).

Enabling or Disabling a Consistency Group

Procedure

Step 1   On the menu bar, choose **Physical** > **Storage**.

Step 2   On the **Storage** pane, click the **Multi-Domain Managers** icon to expand the list of connected multi-domain managers.

Step 3   Choose **EMC RecoverPoint** to expand the connected RecoverPoint device(s) and click the device that you want.

Step 4   Click the **Consistency Groups** tab.

Step 5   Click **Enable** or **Disable**.

Step 6   In the **Enable Consistency Group** or **Disable Consistency Group** dialog box, click **Submit**.

Applying a Bookmark to a Consistency Group

A bookmark is a text label that is applied to a snapshot in order to uniquely identify it. Bookmarks can be created manually or automatically at regular intervals. You can bookmark a snapshot at any time. Bookmarks are useful to mark particular points in time, such as an event in an application, or a point in time to fail over.

Procedure

Step 1   On the menu bar, choose **Physical** > **Storage**.

Step 2   On the **Storage** pane, click the **Multi-Domain Managers** icon to expand the list of connected multi-domain managers.

Step 3   Choose **EMC RecoverPoint** to expand the connected RecoverPoint device(s) and click the device you want.

Step 4   Click the **Consistency Groups** tab.

Step 5   Choose the consistency group for which you want to apply a bookmark.

Step 6   Click **Apply Boomark**.

Step 7   In the **Apply Bookmark** dialog box, complete the following fields:

Name	Description
Bookmark Name field	The bookmark name for the current snapshot.

Name	Description
Consistency Type drop-down list	Choose from the following consistency types: • (Default) **Crash-Consistent**— Creates snapshots (points in time) that are crash-consistent for data files, control files, and logs that are in the same RecoverPoint consistency group. • **Application-Consistent**—Used to bookmark Microsoft Volume Shadow Copy Service (VSS)-aware applications in many consistency groups. VSS guarantees that the applications are in a consistent state at the point-in-time when each bookmark is applied to an image. As a result, recovery using an image with a KVSS bookmark is faster than recovering from normal RecoverPoint images. **Note** The RecoverPoint KVSS utility is a command-line utility that enables applying bookmarks to Windows 2003 and 2008-based applications that support Microsoft Volume Shadow Copy Service (VSS).
Consistency Policy drop-down list	Choose from the following consistency policies applied to this snapshot: • **Never Consolidate**—The snapshot is never consolidated. • **Daily**—The snapshot policy is applied daily. • **Weekly**— The snapshot policy is applied weekly. • **Monthly**— The snapshot policy is applied monthly. • (Default) **Always Consolidate**—The snapshot is consolidated the next time that the consolidation process runs.

Step 8   Click **Submit.**

Updating a Snapshot for a Consistency Group

You can collect the latest snapshot image for a consistency group.

A snapshot is a point in time marked by the system for recovery purposes. A snapshot includes only the data that has changed from the previous snapshot. Once the system distributes the snapshot to the remote storage system, the snapshot creates a new current image on the remote storage system. A snapshot is the difference between one consistent image of stored data and the next consistent image of stored data.

Procedure

Step 1	On the menu bar, choose **Physical** > **Storage**.
Step 2	On the **Storage** pane, click the **Multi-Domain Managers** icon to expand the list of connected multi-domain managers.
Step 3	Choose **EMC RecoverPoint** to expand the connected RecoverPoint device(s) and click the device that you want.
Step 4	Click the **Consistency Groups** tab.
Step 5	Choose the consistency group that you need to update.
Step 6	Click **Update Snapshots**.
Step 7	In the **Update Snapshots** dialog box, click **Submit**.
	The **Submit Result** dialog box displays telling you whether or not the snapshot image for the consistency group updated successfully.

Creating a Consistency Group Copy

Procedure

Step 1	On the menu bar, choose **Physical** > **Storage**.
Step 2	On the **Storage** pane, click the **Multi-Domain Managers** icon to expand the list of connected multi-domain managers.
Step 3	Choose **EMC RecoverPoint** to expand the connected RecoverPoint device(s) and click the device that you want.
Step 4	Click the **Consistency Groups Copies** tab.
Step 5	Click **Create**.
Step 6	In the **Create Consistency Group Copy** dialog box, complete the following fields:

Name	Description
Consistency Group Name field	Click **Select**. In the **Select** dialog box, choose the consistency group to copy and click **Select**.
Copy Name field	The name of the consistency group copy.
Cluster field	Click **Select**. In the **Select** dialog box, choose the RecoverPoint cluster on which the consistency group copy will be and click **Select**.
Copy Policy	
Host OS drop-down list	Choose the host operating system.
Journal Policy	

Name	Description
Journal Compression drop-down list	Choose the journal compression level.
Maximum Journal Lag drop-down list	Choose the maximum journal lag.
Required Protection Window check box	Check this check box if you want to enable a protection window.
Protection Window	If you checked the **Required Protection Window** check box, enter the value of time for the protection window.
Window unit drop-down list	If you checked the **Required Protection Window** check box, choose the window time unit.
Enable Snapshot Consolidation check box	Check this check box if you want to enable snapshot consolidation.
Do not consolidate snapshots for at least below period	If you checked the **Enable Snapshot Consolidation** check box, enter the value of time for which snapshot consolidation should not be performed.
Unit (Consolidation Period) drop-down list	If you checked the **Enable Snapshot Consolidation** check box, choose the consolidation period unit.
consolidate to one snapshot per day	If you checked the **Enable Snapshot Consolidation** check box, enter the number of days to consolidate snapshots that are older than the consolidation period.
Indefinitely check box	If you checked the **Enable Snapshot Consolidation** check box, check this check box if you want to consolidate snapshots for an indefinite number of days.
consolidate to one snapshot per week	If you checked the **Enable Snapshot Consolidation** check box, enter the number of weeks to consolidate snapshots that are older than the consolidation period.
Indefinitely check box	If you checked the **Enable Snapshot Consolidation** check box, check this check box if you want to consolidate snapshots for an indefinite number of weeks.

Step 7   Click **Submit.**

Editing a Consistency Group Copy Policy

Procedure

Step 1 On the menu bar, choose **Physical** > **Storage**.

Step 2 On the **Storage** pane, click the **Multi-Domain Managers** icon to expand the list of connected multi-domain managers.

Step 3 Choose **EMC RecoverPoint** to expand the connected RecoverPoint device(s) and click the device that you want.

Step 4 Click the **Consistency Groups Copies** tab.

Step 5 Double-click the consistency group copy that you want to edit.

Step 6 Click the **Copy Policy** tab.

Step 7 In the **Edit Consistency Group Copy Policy** dialog box, edit the **Copy Policy** and **Journal Policy** fields as needed.

Step 8 Click **Submit**.

Adding a Link Between Consistency Group Copies

Procedure

Step 1 On the menu bar, choose **Physical** > **Storage**.

Step 2 On the **Storage** pane, click the **Multi-Domain Managers** icon to expand the list of connected multi-domain managers.

Step 3 Choose **EMC RecoverPoint** to expand the connected RecoverPoint device(s) and click the device you want.

Step 4 Click the **Consistency Groups Copies** tab.

Step 5 Click **Add Link**.

Step 6 In the **Add Link Between Consistency Group Copies** dialog box, complete the following fields:

Name	Description
First Copy field	Click **Select**. In the **Select** dialog box, choose the first consistency group copy to be linked and click **Select**.
Second Copy field	Click **Select**. In the **Select** dialog box, choose the second consistency group copy to be linked to the previously selected first copy and click **Select**.
Protection Settings	

Name	Description
Replication Mode drop-down list	Choose the replication mode by selecting one of the following options: • **Asynchronous** • **Synchronous**
RPO	The recovery point objective, which defines the required lag of each link in a consistency group. The default value is 25 seconds.
RPO Unit drop-down list	Choose the RPO unit by selecting one of the following options: • **Bytes** • **KB** • **MB** • **GB** • **TB** • **Writes** • **Seconds** • **Minutes** • **Hours**
Snapshot Granularity drop-down list	Choose the following snapshot granularity for the link: • **Fixed (per write)** - Creates a snapshot for every write operation, over a specific (local or remote) link. • **Fixed (per second)** - Creates one snapshot per second, over a specific (local or remote) link. • **Dynamic** - The system determines the snapshot granularity of a specific (local or remote) link, according to available resources.

Step 7 Click **Submit.**

Note Click **Remove Link** to remove links between a consistency groups and their respective copies.

Getting the Transfer Status for a Consistency Group Copy

Procedure

Step 1   On the menu bar, choose **Physical** > **Storage**.

Step 2   On the **Storage** pane, click the **Multi-Domain Managers** icon to expand the list of connected multi-domain managers.

Step 3   Choose **EMC RecoverPoint** to expand the connected RecoverPoint device(s) and click the device that you want.

Step 4   Click the **Consistency Groups** tab.

Step 5   Choose the consistency group copy for which you need the transfer status.

Step 6   Click **Get Transfer/Copy Status**.

Step 7   In the **Get Transfer/Copy Status** dialog box, click **Submit**.
The Submit Result dialog box displays telling you whether or not the transfer status for the RecoverPoint (RP) account updated successfully.

Starting Transfer for a Consistency Group Copy

You can start the transfer of data from a production copy to a consistency group copy within a RecoverPoint appliance (RPA) cluster after it is added.

Note   Consistency group copy data can be transferred only if it is a replication copy and not production copy. The production copy consists of a single consistency group.

Procedure

Step 1   On the menu bar, choose **Physical** > **Storage**.

Step 2   On the **Storage** pane, click the **Multi-Domain Managers** icon to expand the list of connected multi-domain managers.

Step 3   Choose **EMC RecoverPoint** to expand the connected RecoverPoint device(s) and click the device that you want.

Step 4   Click the **Consistency Groups Copies** tab.

Step 5   Choose the consistency group copy for which you need to transfer data.

Step 6   Click **Start Transfer**.

Step 7   In the **Consistency Group Start Transfer Copy** dialog box, click **Submit**.
The Submit Result dialog box displays telling you whether or not the consistency group was transferred successfully.

Note	Use the **Pause Transfer** parameter to temporarily pause the transfer of writes from the production host to all copies of the lower-priority selected consistency group(s) when WAN bandwidth is very limited and you need to provide the largest bandwidth possible to higher-priority consistency group(s) copy.

Enabling or Disabling a Consistency Group Copy

Consistency groups are comprised of one or more replication sets. Each replication set consists of a production volume and any local or remote copy volumes to which it is replicating. The number of replication sets in your system is equal to the number of production volumes being replicated.

You can disable an enabled consistency group, or enable or disable a replica consistency group copy.

Procedure

Step 1	On the menu bar, choose **Physical** > **Storage**.
Step 2	On the **Storage** pane, click the **Multi-Domain Managers** icon to expand the list of connected multi-domain managers.
Step 3	Choose **EMC RecoverPoint** to expand the connected RecoverPoint device(s) and click the device you want.
Step 4	Click the **Consistency Groups Copies** tab.
Step 5	Click **Enable** or **Disable**.
Step 6	In the **Enable Consistency Group Copy** or **Disable Consistency Group Copy** dialog box, click **Submit**.

Adding or Removing a Journal Volume

Each copy of a consistency group must contain one or more volumes that are dedicated to holding system information or point in time history. The type of information contained in the journal differs according to the journal type. There are two types of journals:

- Copy journal - Copy journals are dedicated to holding point-in-time information for each image on the production storage, as well as bookmarks that mark significant points in time. The copy journals hold all changes to data, so that the copy storage can be rolled back to a previous point in time (PIT).

- Production journal - Production journals are dedicated to store information about the replication process (called marking information) that is used to make synchronization between the production and copy volumes more efficient. Although the production journal does not contain snapshots, journal protection policies should also be set for the production journal, as they are used in the case of failover.

Procedure

Step 1   On the menu bar, choose **Physical** > **Storage**.

Step 2   On the **Storage** pane, click the **Multi-Domain Managers** icon to expand the list of connected multi-domain managers.

Step 3   Choose **EMC RecoverPoint** to expand the connected RecoverPoint device(s) and click the device that you want.

Step 4   Click the **Consistency Groups Copies** tab.

Step 5   Choose the consistency group to or from which you want to add or remove a journal volume.

Step 6   Click **Add Journal Volume** or click the purple down arrow icon from the top right corner, and choose **Remove Journal Volume**.

Step 7   In the **Add Journal Volume to Group Copy** or **Remove Journal Volume from Group Copy** dialog box, choose the journal that you want to add to or remove from a group copy.

Step 8   Click **Submit.**

Enabling Image Access

You can enabling image access to briefly verify, backup, clone, or analyze copy data, before failover or production recovery.

Procedure

Step 1   On the menu bar, choose **Physical** > **Storage**.

Step 2   On the **Storage** pane, click the **Multi-Domain Managers** icon to expand the list of connected multi-domain managers.

Step 3   Choose **EMC RecoverPoint** to expand the connected RecoverPoint device(s) and click the device you want.

Step 4   Click the **Consistency Groups Copies** tab.

Step 5   In the **Consistency Group Copies** pane, click the purple down arrow icon from the top right corner.

Step 6   Choose **Enable Image Access**.
    Note   You can not enable image access on production copies.

Step 7   In the **Enable Image Access** dialog box, complete the following fields:

Name	Description
Select an Image to access drop-down list	Choose an image to access: • **The latest image** - The last snapshot that was created at the production, and transferred to the copy journal. This is the image at the top of the image list and the most current snapshot sent from production. • **An image from the image list** - Choose from a list of images in the copy journal. You can choose ain image by point in time, snapshot size (or the delta between the selected snapshot and the snapshot before it), bookmark, consistency, and consolidation policy. • **A specific point in time or bookmark** - This option displays advanced search criteria and lets you perform a customized search based on **Point in Time**, **Bookmark** with the option of **Exact** text, **Image Type**, or **Max Range**.
Select Image Access Mode drop-down list	Choose the image access mode by selecting one of the following options: • **Logged Access** - After disabling image access, any writes made to the copy while image access is enabled are undone. The distribution of images from the copy journal to the copy storage continues from the accessed image forward. The state of the copy storage is restored to **No access**. • **Virtual Access** - After disabling image access, the virtual volume and any writes made to it are undone faster than in logged access mode. The distribution of images from the copy journal to the copy storage continues from the last image that was distributed before image access was enabled. The state of the copy storage is restored to **No access**. • **Virtual Access With Roll** - After disabling image access, the virtual volume and any changes to it and any writes made directly to the copy are discarded. The distribution of images from the copy journal to the copy storage continues from the image which the system has rolled to. The state of the copy storage is restored to **No access**.

Step 8   Click **Submit.**

Note   Click the **Disable Image Access** to disable image access on the selected consistency group copy.

Replication Sets

Consistency groups are comprised of one or more replication sets. Each replication set consists of a production volume and any local or remote copy volumes to which it is replicating. The number of replication sets in your system is equal to the number of production volumes being replicated.

Creating a Replication Set

Procedure

Step 1 On the menu bar, choose **Physical** > **Storage**.

Step 2 On the **Storage** pane, click the **Multi-Domain Managers** icon to expand the list of connected multi-domain managers.

Step 3 Choose **EMC RecoverPoint** to expand the connected RecoverPoint device(s) and click the device that you want.

Step 4 Click the **Replication Sets** tab.

Step 5 Click **Create**.

Step 6 In the **Create Replication Set** dialog box, complete the following fields:

Name	Description
Consistency Group Name field	Click **Select**. In the **Select** dialog box, choose the consistency group that you want and click **Select**.
Replication Set Name field	The replication set name.

Step 7 Click **Submit**.

Deleting an Existing Replication Set

Before You Begin

You must first disable the consistency group before you can delete its replication set.

Procedure

Step 1	On the menu bar, choose **Physical** > **Storage**.
Step 2	On the **Storage** pane, click the **Multi-Domain Managers** icon to expand the list of connected multi-domain managers.
Step 3	Choose **EMC RecoverPoint** to expand the connected RecoverPoint device(s) and click the device that you want.
Step 4	Click the **Replication Sets** tab.
Step 5	Click **Delete**.
Step 6	In the **Delete Replication Set** dialog box, click **Submit**.

Renaming a Replication Set

Procedure

Step 1	On the menu bar, choose **Physical** > **Storage**.
Step 2	On the **Storage** pane, click the **Multi-Domain Managers** icon to expand the list of connected multi-domain managers.
Step 3	Choose **EMC RecoverPoint** to expand the connected RecoverPoint device(s) and click the device that you want.
Step 4	Click the **Replication Sets** tab and choose the replication set that you want to change.
Step 5	Click **Edit**.
Step 6	In the **Edit Replication Set** dialog box, enter the new name for the replication set.
Step 7	Click **Submit**.

Adding a User Volume to a Consistency Group Copy

You can add a user volume, which consists of either a production logical unit number (LUN) or a replication LUN, to a consistency group copy that is in a replication set.

Procedure

Step 1	On the menu bar, choose **Physical** > **Storage**.
Step 2	On the **Storage** pane, click the **Multi-Domain Managers** icon to expand the list of connected multi-domain managers.
Step 3	Choose **EMC RecoverPoint** to expand the connected RecoverPoint device(s) and click the device that you want.
Step 4	Click the **Replication Sets** tab.
Step 5	Click **Add User Volume**.
Step 6	In the **Add User Volume to Group Copy** dialog box, complete the following fields:

Name	Description
Consistency Group Copy field	Click **Select**. In the **Select** dialog box, choose the consistency group copy and click **Select**.
User Volume field	Click **Select**. In the **Select** dialog box, chose the user volume and click **Select**.

Step 7	Click **Submit.**

Removing a User Volume from a Consistency Group Copy

You can remove a user volume, which consists of either a production logical unit number (LUN) or a replication LUN, from a consistency group copy that is in a replication set.

Procedure

Step 1	On the menu bar, choose **Physical** > **Storage**.
Step 2	On the **Storage** pane, click the **Multi-Domain Managers** icon to expand the list of connected multi-domain managers.
Step 3	Choose **EMC RecoverPoint** to expand the connected RecoverPoint device(s) and click the device that you want.
Step 4	Click the **Replication Sets** tab.
Step 5	Click **Remove User Volume**.
Step 6	In the **Remove User Volume from Group Copy** dialog box, complete the following fields:

Name	Description
Replication Set Volume field	Click **Select**. In the **Select** dialog box, chose the replication set volume and click **Select**.

Step 7   Click **Submit.**

Viewing Details for a Replication Set

Procedure

Step 1   On the menu bar, choose **Physical** > **Storage**.

Step 2   On the **Storage** pane, click the **Multi-Domain Managers** icon to expand the list of connected multi-domain managers.

Step 3   Choose **EMC RecoverPoint** to expand the connected RecoverPoint device(s) and click the device you want.

Step 4   Click the **Replication Sets** tab and choose the replication set that you want to view.

Step 5   Click **View Details**.

Step 6   Click **Replication Set Volumes** and **Service Request Details** tab to view information for each replication set and service requests by ID.

Group Sets

In RecoverPoint, group sets let you automatically bookmark a set of consistency groups at pre-defined intervals to manage consistency. The bookmark represents the same recovery point in each consistency group in the group set, allowing you to define consistent recovery points for consistency groups that are distributed across different RecoverPoint appliances. Group sets are useful for the automatic management of consistent points in time across consistency groups that are dependent on one another, or that must work together as a single unit.

For more detailed guidelines about using RecoverPoint group sets, see the *EMC RecoverPoint Administrator's Guide*, which can be obtained from EMC.

Creating a Group Set

Before You Begin

Before you create a group set, note the following:

- All consistency groups in the group set must be replicating in the same direction, from the same source.

- All consistency groups in the group set must be enabled.

- The interval between automatic bookmarks should not be less than 30 seconds.

Procedure

Step 1   On the menu bar, choose **Physical** > **Storage**.

Step 2   On the **Storage** pane, click the **Multi-Domain Managers** icon to expand the list of connected multi-domain managers.

Step 3   Choose **EMC RecoverPoint** to expand the connected RecoverPoint device(s) and click the device that you want.

Step 4   Click the **Group Sets** tab.

Step 5   Click **Create**.

Step 6   In the **Create RecoverPoint Group Set** dialog box, complete the following fields:

Name	Description
Group Set Name field	The name for the group set.
Consistency Group Name	Choose one or more consistency groups to add to the group set.
Frequency field	The bookmark frequency.
Unit drop-down list	Choose the bookmark frequency time unit.

Step 7   Click **Submit**.

Deleting an Existing Group Set

Procedure

Step 1   On the menu bar, choose **Physical** > **Storage**.

Step 2   On the **Storage** pane, click the **Multi-Domain Managers** icon to expand the list of connected multi-domain managers.

Step 3   Choose **EMC RecoverPoint** to expand the connected RecoverPoint device(s) and click the device that you want.

Step 4   Click the **Group Sets** tab.

Step 5   Choose the group set that you want to delete.

Step 6   Click **Delete**.

Step 7   In the **Delete RecoverPoint Group Set** confirmation dialog box, click **Submit**.

Assigning a Policy to a RecoverPoint Task

Procedure

Step 1   On the menu bar, choose **Physical** > **Storage**.

Step 2   On the **Storage** pane, click the **Multi-Domain Managers** icon to expand the list of connected multi-domain managers.

Step 3   Choose **EMC RecoverPoint** to expand the connected RecoverPoint device(s) and click the device that you want.

Step 4   Click the **System Tasks** tab.

Step 5   In the **System Tasks** panel, click the **EMC RecoverPoint Tasks** folder icon to expand the folder.

Step 6   Click the **System EMC RecoverPoint Task** (EMCRecoverPointCollector) task icon.

Step 7   Click **Manage Task**.

Step 8   In the **Manage Task** dialog box, complete the following fields:

Name	Description
Task Execution drop-down list	Choose **Enable** or **Disable** to enable or disable this RecoverPoint task.
System Task Policy drop-down list	Choose either the **default-system-task-policy** or the **local-run-policy** assigned to this RecoverPoint task.
Minutes drop-down list	Choose the frequency in minutes for how often the RecoverPoint task is executed.

Step 9   Click **Submit.**

Step 10   If you want to run this RecoverPoint task, click **Run Now**.

Step 11   If you want to view this RecoverPoint task, click **View Details**.

Viewing RecoverPoint Task History and Reports

Procedure

Step 1   On the menu bar, choose **Physical** > **Storage**.

Step 2   On the **Storage** pane, click the **Multi-Domain Managers** icon to expand the list of connected multi-domain managers.

Step 3   Choose **EMC RecoverPoint** to expand the connected RecoverPoint device(s) and click the device that you want.

Step 4   Click the **System Tasks** tab.

Step 5   In the System Tasks panel, click the **EMC RecoverPoint Tasks** folder icon to expand the folder.

Step 6   Double-click the System EMC RP Task (EMCRecoverPointCollector) task icon.

Step 7   Choose either the **System Task History** or **More Reports** tabs for RecoverPoint reporting information.

C H A P T E R 5

Orchestration Workflow Operations

This chapter contains the following sections:

Cisco UCS Manager Orchestration Tasks

Cisco UCS Director includes orchestration features that allow you to automate the configuration and management of tasks performed by Cisco UCS Manager in one or more workflows. The same workflow can include Cisco UCS Manager, network, and storage tasks.

For more information about orchestration in Cisco UCS Director, see the Cisco UCS Director Orchestration Guide.

Location of Orchestration Tasks

A complete list of the Cisco UCS Manager orchestration tasks is available in Workflow Designer, in the Task Library, and the **Cisco UCS Tasks** folder. The Task Library, which includes a description of the orchestration tasks, can be accessed from the following locations in Cisco UCS Director:

- **Policies** > **Orchestration** > **Workflows**

- `http://`*IP_address*`/app/cloudmgr/onlinedocs/cloupiaTaskLib.html` where *IP_address* is the IP address of Cisco UCS Director.

Types of Orchestration Tasks

The Cisco UCS Manager orchestration tasks include tasks to configure and manage the following:

- Servers
- Server boot
- Pools
- Policies
- VLANs
- VSANs

- vNICs

- Service profiles

- Service profile templates

- Organizations

Importing a Workflow

This task is used to import a workflow that you previously downloaded.

Procedure

Step 1   On the menu bar, choose **Policies** > **Orchestration**.

Step 2   In the **Orchestration** pane, click the **Workflows** tab.

Step 3   On the **Workflows** tab, click **Import**.

Step 4   In the **Import** dialog box, click **Browse** to go to the directory on which the workflow was downloaded.

Step 5   Click on the workflow and click **Open**.

Step 6   Click **Upload**.

Step 7   Once the zipped file has uploaded successfully, click **Next**.

Step 8   (Optional) In the **Import** dialog box, complete the following fields to specify how assets of the zipped file are handled if these assets already exist in the workflow folder:

Name	Description
Workflows drop-down list	Choose from the following options to specify how this asset is handled: • **Replace** • **Keep Both** • **Skip**
Custom Tasks drop-down list	Choose from the following options to specify how this asset is handled: • **Replace** • **Keep Both** • **Skip**
Script Modules drop-down list	Choose from the following options to specify how this asset is handled: • **Replace** • **Keep Both** • **Skip**

Name	Description
Activities drop-down list	Choose from the following options to specify how this asset is handled: • **Replace** • **Keep Both** • **Skip**
Import Workflows to Folder checkbox	Check the checkbox to import the workflow to a folder of your choice.
Select Folder drop-down list	Choose a folder to import the workflow. If you chose **[New Folder..]** in the drop-down list, complete the **New Folder** field.
New Folder field	Enter the name for the new folder that you want to create as your import folder.

Step 9   Click **Import**.

Accessing or Modifying a RecoverPoint Orchestration Workflow Task

Procedure

Step 1   On the menu bar, choose **Policies** > **Orchestration**.

Step 2   In the **Orchestration** pane, click the **Workflows** tab.

Step 3   On the **Workflows** tab, click to expand the **VCE** folder and double-click the **VCE** task.

Step 4   In the **Available Tasks** panel of the **Workflow Designer** dialog box, click **Physical Storage Tasks** > **EMC Tasks** > **EMC RecoverPoint Tasks**, and double-click the RecoverPoint workflow task that you want.

Step 5   If you want to edit this workflow, click on the workflow task and click **Edit Workflow Properties** in the **Workflow Designer** tab, or click **Edit Workflow** in the **Workflows** tab on the **Orchestration** pane.
In the **Edit Workflow** dialog box, workflow details, user inputs and outputs can be viewed, configured, or modified.

What to Do Next

Validate and execute the RecoverPoint workflow task that you modified.

Accessing Task Documentation

Procedure

Step 1   On the menu bar, choose **Policies** > **Orchestration**.

Step 2   Click the **Task Library** icon.

Step 3   Check the **Regenerate document** check box to view a list of all new tasks and those by open automation.

Step 4   Click **Submit**.
The orchestration task library appears. Click an entry to see more information about specific inputs and outputs that are available.

Validating and Executing an Orchestration Workflow

After you validate all the tasks in a workflow and bind them to the local environment, the entire workflow must be validated.

Procedure

Step 1   At the top right corner of Workflow Designer, click the **Validate** button. Workflow Designer confirms if the workflow is valid with a "Completed (Success)" message.

Step 2   Click **Execute Now** to activate the orchestration workflow.