**Enabling Next-Generation
Virtualized Data Center**

Pure Storage Connector for Cisco UCS Director
User Guide

Document Version: 0.2

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Preface

This document describes how to use the Pure Storage Connector for Cisco UCS® Director.

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Intended Audience

This user guide addresses users of the Pure Storage Connector for Cisco UCS® Director. This user guide assumes that the reader is an experienced user of Cisco UCS Director.

It is assumed the Administrator installing the Connector is well versed in administration of Pure Storage FlashArray, including: creating accounts, licensing of hardware and software & storage configuration. Content related to the administration of Pure Storage is not duplicated in this document.

Software Version

This document revision applies to Pure Storage Connector for Cisco UCS Director software version **v01.0.0** and Cisco UCS Director version **5.4.0.0**.

Document Conventions

This document uses the following typographic conventions:

Convention	Description
Bold	Indicates text on a window, other than the window title, including menus, menu options, buttons, fields, and labels. Example: Click **OK**.
Italic	Indicates the file name. Example: **copy *source-file target-file***
[Hyperlink](#)	A reference to data that the reader can directly follow by clicking on the hyperlinked text

Workflow Documents

Document	Description
Deploy ESXi ISCSi Boot on UCS Blade	This document gives detailed description on how to deploy ESXi ISCSi Boot on UCS Blade with Pure Storage FlashArray.
Deploy ESXi SAN Boot on UCS Blade	This document gives detailed description on how to deploy ESXi SAN Boot on UCS Blade with Pure Storage FlashArray.

1 Introduction

The Pure Storage Connector for Cisco UCS Director supports tasks that you can use for inventory, orchestration, and in workflows. To aid in storage management and troubleshooting, the Storage Connector for Cisco UCS Director provides system logging options and troubleshooting support.

Supported Storage Version

The Storage Connector for Cisco UCS Director supports the following Pure storage version.

- Pure Storage v4.1
- Pure Storage v4.5
- Pure Storage v4.6

Pure Storage Reports

The Pure Storage Connector for Cisco UCS Director collects the following storage information that is displayed by the Cisco UCS Director:

- Inventory Report
- Storage capacity Report
- Volume Report
- Host Report
- Host Group Report
- CloudSense Report

Supported Tasks

The Storage Connector for Cisco UCS Director supports the following tasks for the supported Pure storage systems.

Grouping	Task Name	Description
Volume	Create Volume	Create single or multiple volume in Pure Storage FlashArray.
	Destroy Volume(s)-suffix range	Delete the existing volume(s) from Pure Storage FlashArray.
	Resize Volume	Resize the existing volume in Pure Storage FlashArray.
	Rollback Resize Volume	Rollback the volume which is resized from UCS Director.
	Schedule Volume Snapshot	Schedule the snapshot for existing volume.
	Restore Volume from Snapshot	Restore the volume from existing snapshot.
	Disable Scheduled Volume Snapshot	Disable the scheduled volume snapshot.
Host and Host Group	Create Host	Create a new Host.
	Delete Host	Delete an existing Host.
	Connect Volume(s) to Host	Connect existing volumes to Host
	Disconnect Volume(s) with Host	Disconnect the existing volumes from Host
	Connect WWN(s)/IQN(s) to Host	Provide the WWN/IQN to add in Host
	Create Host Group	Create a new host group.
	Delete Host Group	Delete an existing host group.
	Connect Host to Host Group	Connect existing Host to Host Group.
	Connect Volume(s) to Host Group	Connect existing Volumes to the Host Group.
	Disconnect Volume(s) with Host Group	Disconnect existing Volumes from Host Group

Supported Workflows

Pure Storage provides workflows for use with the Storage Connector for Cisco UCS Director. Use of provided workflows is optional.

Workflow	Description
Deploy ESXi Host on UCS Blade FC SAN Boot with Pure Storage FlashArray	This workflow deploys ESXi host on UCS Blade server using FC SAN Boot with Pure FlashArray.
Deploy ESXi Host on UCS Blade ISCSi SAN Boot with Pure Storage FlashArray	This workflow deploys ESXi host on UCS Blade server using FC SAN Boot with Pure FlashArray.
Deploy ESXi Host on UCS Blade FC SAN Boot with Pure Storage FlashArray and Service Profile Template	This workflow deploys ESXi host on UCS Blade server using FC SAN Boot with Pure FlashArray.And It will use Service Profile Template for creating Service Profile.
Deploy ESXi Host on UCS Blade ISCSi SAN Boot with Pure Storage FlashArray and Service Profile Template	This workflow deploys ESXi host on UCS Blade server using ISCSi SAN Boot with Pure FlashArray.And It will use Service Profile Template for creating Service Profile.
Provision VMware VM on Pure Storage Datastore	Provision a VMware VM in Pure Storage Datastore (Pure Storage Datastore must be selected in VMware Storage Policy in UCS Director).

2 System Requirements and Installation

This chapter gives an overview of installation process, required hardware and software, and installation of the Connector for Cisco UCS Director.

Summary of Steps

1. Assemble the required hardware and software.

2. Add the Pure Storage Open Automation Connector to Cisco UCS Director.

3. In Cisco UCS Director, create a FlashStack pod.

4. Add Pure FlashArray storage accounts to the pod.

5. Test connections to the Pure storage account.

6. (Optional) Import, validate, and run Pure storage workflows.

Architecture
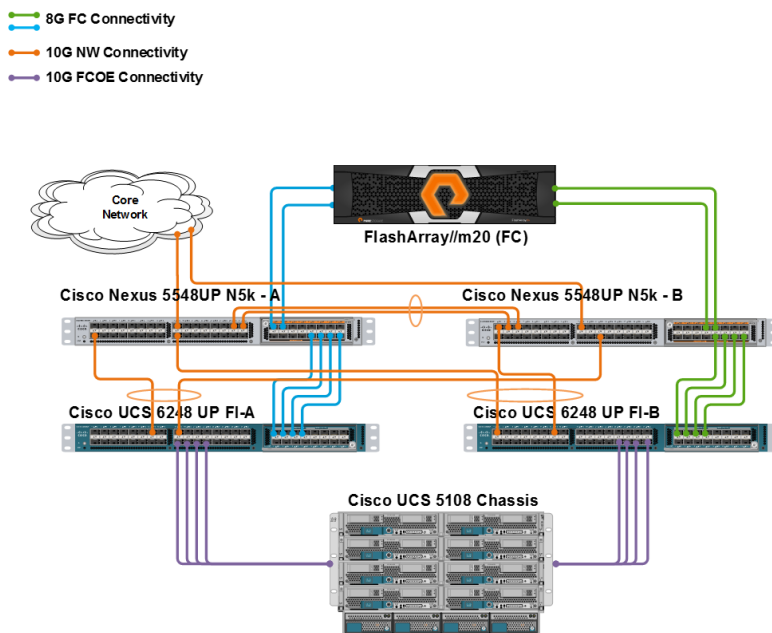
Required Hardware and Software

- Supported Pure Storage and licenses
- Software: UCS Director 5.4.0.0 with appropriate license

Add Pure Storage Connector

Prerequisites

Locate the ***PureStorageUCSDirectorAdaptor*** file you downloaded from the Cisco Solution Partners site or other sources.

Install and Deploy the Connector

1. Log in to Cisco UCS Director by using the Admin role credential.

2. In Cisco UCS Director, from the **Administration** menu, select **Open Automation**.

3. On the **Connectors** tab, click **Add**.

4. Extract the files from ***PureStorageUCSDirectorAdaptor***. Click **Open**.

5. Click **Upload,** and then click **Submit**.

6. Select the newly added **psucs** module. Click **Enable**.

7. Use SSH to connect to the Cisco UCS Director instance and log in as **shelladmin** (Default password is **changeme**).

8. To enable the Pure Storage Connector, stop all services (option 3), and then restart all services (option 4).

> After the Cisco USC Director becomes available, be sure to check that the Connector is Enabled/Active in the same location where it was added.

Create a FlashStack Pod in Cisco UCS Director

In Cisco UCS Director, create a Pure pod to contain all your Pure storage accounts. Alternatively, locate an existing pod already in use for a Pure product such as Unified Computing System (UCP) Select.

> A pod may contain more than one storage account, but a single storage account may not be added to multiple pods.

1. In Cisco UCS Director, click on **Converged** in the menu. Click **Add**.

2. Complete the required fields.

3. Select **FlashStack** from the menu. Click **Add**.

Add Pure FlashArray Accounts to the Pod

For each storage system to be used, add a Pure storage account to your pod. Accounts are available for generic pods or UCP Select pods.

Do the following to add a Pure storage account:

1. In Cisco UCS Director, from the **Administration** menu, select the **Physical Accounts** tab. Click **Add**.

2. Select the pod you created.

3. Under **Category**, select **Storage**.

4. Select the **FlashArray**. Click **Submit**.

5. Complete the form as required. See the following table for a description of the fields.

Label	Description	Optional/Required
Account Name	Choose a name by which this for this account. We suggest a portion of the serial number to make identification easier.	Required
Description	Description of the physical hardware.	Optional
Storage IP Address	IPv4 address of the Pure Storage FlashArray.	Required
User	Authorized user with storage administrator rights.	Required
Password	User password (administrator privileges).	Required
Contact	Contact information for storage administrator.	Optional
Location	Physical location of storage.	Optional

6. Click **Submit**.

The time required to add the account depends on the size of the storage system and network speed.

Test Connection to the Pure Storage Account

Find out about connection problems in a few ways:

- After the Storage Connector for Cisco UCS Director is added to Cisco UCS Director, the connector warns about connection problems.

- Use the Test Connection action within Cisco UCS Director:

    - From the Administration menu, click **Physical Accounts**.

    - In the **Physical Accounts** tab, highlight the account to be tested.

    - Click Test Connection.

3 Workflows and Tasks

Pure provides storage workflows and tasks for use with the Storage Connector for Cisco UCS Connector.

This chapter gives an overview about Import workflows, set task inputs, and validate workflows.

Workflows

Import and Validate Pure Storage Workflows

For each workflow you import, you must set inputs for all tasks and validate each workflow.

1. Download the ***Pure Storage FlashArray End to End Workflows.wfdx*** file from the Cisco Solution Partners site or Other Sources.

2. In Cisco UCS Director, under the **Policies** menu, select **Orchestration.**

3. Under the **Workflows** tab, click the **Import** button, and then browse to where you have download ***Pure Storage FlashArray End to End Workflows.wfdx***.

4. On the Workflows tab, open the folder Pure Storage FlashArray to view the imported workflows.

5. Double-click on a workflow to open it in the Workflow Designer. The Workflow Designer displays all tasks contained in the workflow, which you can be use as is or modify to fit the environment.

Run Pure Storage Workflows

1. In Cisco UCS Director, open the **Workflows** tab.

2. Do one of the following:
    - In the **Workflows** tab, click **Execute Now**.
    - Open the Workflow Designer for the desired workflow. Click **Execute Now**.
    - A dialog box appears and requests workflow inputs.

3. Enter workflow inputs as appropriate, and click **Submit**.

    All fields marked with * are required.

The workflow service request is executed. A message indicates whether the service request was successful.

4. Click **Show Detail Status** for more information about the service request.

Tasks

Listed below are the tasks added to Cisco UCS Director after installing the Pure Storage Connector.

Task	Description
Create Volume	Creates a new Volume or multiple volumes by provide start number and end number and size of the volume.
Destroy Volume(s) -suffix range	This tasks will delete the existing volumes.
Create Host	Creates a new Host. Optionally, specify the HBA WWN/IQN manually.
Delete Host	This task deletes a Host and It will disconnect it will all the Volumes and Host Group automatically.
Connect Volume(s) to Host	Connect the existing Volume(s) to the Host.
Disconnect Volume(s) with Host	Disconnect the existing Volume(s) from the Host.
Connect WWN(s)/IQN(s) to Host	Connect the WWN(s)/IQN(s) to the Host.
Create Host Group(s)-suffix range	Creates a new Host Group. Optionally, a start number and end number can be provided to create multiple Host Group.
Delete Host Group(s)-suffix range	This task deletes a Host Group.
Connect Host to Host Group	This task adds an existing or new host to a Host Group.
Connect Volume(s) to Host Group	Connect the existing Volume(s) to the Host Group.
Disconnect Volume(s) with Host Group	Disconnect the existing Volume(s) from the Host Group.

Resize Volume	Resize the existing Volume. Truncate option is also available in the task.
Schedule Volume Snapshot	Create and schedule the snapshot of selected Volume for specified duration.
Restore Volume from Snapshot	This task will restore the Volume from existing Snapshot.
Disable Scheduled Volume Snapshot	This task will disable the scheduled Volume Snapshot.
Rollback Resize Volume	This task will be used to reverse or rollback the resize of the Volume.

4 Logging and Troubleshooting

This chapter gives an overview on how to view the logs and troubleshooting information for Storage Connector for Cisco UCS Director

Logging

The Cisco UCS Director handles logging for the Connector.

View Logs

1. Within Cisco UCS Director, select **Administration** from the menu, and select **Support Information**.

2. Within the Support Information drop down, select **Show Log > Infra Manager> Show Logs**.

    A browser page displays all recent activity. The page can be saved and shared with the Pure Data Systems Support Center is desired.

Troubleshooting

Storage Connector for Cisco UCS Director

Symptom	Possible Cause	Resolution
The **psucs** module has been added, but no Pure Storage tasks are available.	Cisco UCS Director services have not been restarted after adding the module.	Connect via SSH to the Cisco UCS Director instance. Stop all Director-related services, and then restart.
	The module is not enabled.	Highlight the module and click **Enable**. Restart Cisco UCS Director.
Unable to add the Pure Storage FlashArray physical account.	FlashArray accounts are only available for FlashStack Pod.	Ensure that the pod type is FlashStack.
	The user does not have sufficient rights.	Ensure that the user has Administrator rights.
	The IP address of Pure Storage FlashArray is unreachable.	Ensure that IP address is reachable from Cisco UCS Director network.