**Pure Storage Connector for Cisco UCS Director**

**User Guide**

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**Table of Contents**

[Preface 2](#_Toc465084993)

[Intended Audience 2](#_Toc465084994)

[Software Version 2](#_Toc465084995)

[Document Conventions 2](#_Toc465084996)

[Workflow Documents 2](#_Toc465084997)

[1 Introduction 4](#_Toc465084998)

[1.1 Supported Storage Version 4](#_Toc465084999)

[1.1.1 Pure Storage Reports 4](#_Toc465085000)

[1.2 Supported Tasks 5](#_Toc465085001)

[1.3 Supported Workflows 6](#_Toc465085002)

[2 System Requirements and Installation 7](#_Toc465085003)

[2.1 Summary of Steps 7](#_Toc465085004)

[2.2 Architecture 7](#_Toc465085005)

[2.3 Required Hardware and Software 8](#_Toc465085006)

[2.4 Add Pure Storage Connector 8](#_Toc465085007)

[2.4.1 Prerequisites 8](#_Toc465085008)

[2.4.2 Install and Deploy the Connector 8](#_Toc465085009)

[2.4.3 Create a FlashStack Pod in Cisco UCS Director 8](#_Toc465085010)

[2.4.4 Add Pure FlashArray Accounts to the Pod 9](#_Toc465085011)

[2.4.5 Test Connection to the Pure Storage Account 9](#_Toc465085012)

[3 Workflows and Tasks 10](#_Toc465085013)

[3.1 Workflows 10](#_Toc465085014)

[3.1.1 Import and Validate Pure Storage Workflows 10](#_Toc465085015)

[3.1.2 Run Pure Storage Workflows 10](#_Toc465085016)

[3.2 Tasks 11](#_Toc465085017)

[4 Logging and Troubleshooting 12](#_Toc465085018)

[4.1 Logging 12](#_Toc465085019)

[4.1.1 View Logs 12](#_Toc465085020)

[4.2 Troubleshooting 12](#_Toc465085021)

[4.2.1 Storage Connector for Cisco UCS Director 12](#_Toc465085022)

# Preface

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

This preface includes the following information:

**Intended Audience**

**Software Version**

**Document Conventions**

**Workflow Documents**

## 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 **v01.2.0** and Cisco UCS Director version **5.5**.**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 |
|  | This document gives detailed description on how to deploy ESXi ISCSi Boot on UCS Blade with Pure Storage FlashArray. |
|  | This document gives detailed description on how to deploy ESXi SAN Boot on UCS Blade with Pure Storage FlashArray. |

# 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 v4.6
* Pure Storage v4.7
* Pure Storage v4.8

### 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). |

# 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

PLACE HOLDER FOR ARCHITECTURE DIAGRAM

## Required Hardware and Software

* Supported Pure Storage and licenses
* Software: UCS Director 5.5.0.0 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 |

1. 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**

# 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 that 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.

1. 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.

1. 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. |

# 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. |