White paper
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HyperFlex Hyper-V to ESXi Conversion Guide

Version 1.2

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Contents

Prerequisites

This document is intended to assist in the conversion of Cisco HyperFlex® clusters from Microsoft Hyper-V to VMware ESXi. A prior operational understanding of Microsoft Hyper-V, VMware ESXi, and the Cisco HyperFlex HX Data Platform (HXDP) are required. Please contact Cisco support or your Cisco representative if you need assistance.

Introduction

The Cisco HyperFlex Hyper-V to ESXi Conversion Guide provides a basic outline of the steps and considerations necessary to convert an existing HyperFlex Hyper-V cluster to a HyperFlex ESXi cluster. This guide is intended to be used in conjunction with existing product documentation including but not limited to the Cisco HyperFlex Software Requirements and Recommendations, the Preinstallation Checklist for Cisco HyperFlex HX Data Platform, the Cisco HyperFlex Systems Installation Guide for VMware ESXi, and the Cisco HyperFlex Data Platform Administration Guide.

HyperFlex support statements

Ongoing support for HyperFlex Microsoft Hyper-V deployments

Microsoft Hyper-V support on HyperFlex clusters is in a maintenance state, and there are no planned new features or enhancements beyond HXDP Release 5.0(2x).

HyperFlex Clusters supporting conversion from Microsoft Hyper-V to VMware ESXi

All supported HyperFlex Hyper-V clusters can be converted to a supported HyperFlex ESXi cluster.

The HyperFlex Hyper-V ordering process included a few noteworthy data points that are covered here for informational purposes:

- Self-Encrypting Drives (SEDs) were not orderable for Hyper-V on HyperFlex. HyperFlex clusters being converted from Hyper-V to ESXi should not include these components.
- ESXi licenses were not included with HyperFlex clusters ordered for Hyper-V. Customers performing the Hyper-V to ESXi conversion process will need to acquire new or supply existing ESXi licenses as required by VMware.

HyperFlex support entitlement

Contact Cisco sales for assistance with changing the support entitlement from Hyper-V to ESXi.

When a HyperFlex Hyper-V cluster was initially ordered, it included a Hyper-V "opt-out" Product ID (PID). The specific PID was HX-MSWS-Opt-Out. At the point where the HyperFlex cluster is running ESXi, the Hyper-V opt-out PID should be removed from the support entitlement and the appropriate vSphere PID should be added. These actions are performed within the Cisco Commerce renewals system. A Cisco account representative can assist in this process.

Once this process has been completed, the Cisco® Technical Assistance Center (TAC) will be able to correctly determine the support entitlement for any cases that may be opened for a converted HyperFlex cluster.

Conversion process overview

The actions necessary to convert a HyperFlex cluster from Hyper-V to ESXi are simple and straightforward. The process is presented in this section at a high level to provide an understanding of what the objective and expected outcome of each step consists of.

- Migrating, saving, or deleting any existing VM workload. The objective of this step is to safely relocate or save any VM workload considered to be valuable to the business. The expected outcome is to prepare for datastore or Server Message Block (SMB) share deletion.
- Re-image HyperFlex nodes with the Cisco ESXi custom image. The objective of this step is to clean up the disk subsystem on each node and to install the Cisco ESXi custom image. The expected outcome is that the Microsoft Windows OS is removed and that VMware ESXi has been deployed on each node.
- Clean up Hyper-V objects in Active Directory, Microsoft Group Policies, DNS, and Cisco UCS® Manager. The objective of this step is to delete any Hyper-V-related objects that are no longer required. The expected outcome is that orphaned or unused objects have been removed from the environment.
- Perform the HyperFlex deployment process. The objective of this step is to properly deploy the HyperFlex cluster with VMware ESXi. The expected outcome is an operational HyperFlex ESXi cluster.
- Recover or deploy any required VM workload. The objective of this step is to recover any pre-existing VM workload onto the HyperFlex ESXi cluster, and if necessary to deploy any new VM workloads onto the HyperFlex ESXi cluster. The expected outcome is VM workloads able to execute on the HyperFlex ESXi cluster.

Workload transition strategies

There are two common strategies that assist in transitioning VM workloads off of an existing cluster and onto a new cluster. The first strategy involves a direct transfer.

The second strategy is to perform a staged VM backup, followed by VM recovery.

Technical support for assistance with VM workload transition is not provided by Cisco.

Direct transfer of VM workloads

The destination cluster could, in theory, be running Hyper-V, VMware ESXi, or another hypervisor.

One example consists of using the VMware vCenter Converter solution to create VMware VMs from existing VMs in the Hyper-V format. In this use case, the process consists of importing VMs hosted on a HyperFlex Hyper-V cluster into the conversion application, converting the VM format to VMware, and transferring the VM to an ESXi host managed by VMware vCenter. There may be other tools or utilities available to transfer VM workloads from a HyperFlex Hyper-V cluster.

Requirements of the direct transfer method generally include network connectivity between the source HyperFlex Hyper-V cluster and the targeted destination hypervisor. For additional information about the VMware vCenter Converter, please reference the VMware documentation available at https://docs.vmware.com/en/vCenter-Converter-Standalone/index.html.

The following network issues and settings may require updates dependent on the destination ESXi cluster:

- Network connectivity between the source HyperFlex Hyper-V cluster and the destination ESXi cluster may need to be established.
- One or more firewalls may block the transfer of VMs from the source HyperFlex Hyper-V cluster to the destination ESXi cluster.
- VLANs and network names may have changed from the original Hyper-V deployment.
- IP addresses within a guest VM may need to be changed.
- Netmask settings within a guest VM may need to be changed.
- Gateway or route settings with a guest VM may need to be changed.
- DNS settings within a guest VM may need to be changed.

Staged VM backup and recovery

The staged VM backup and recovery transition strategy involves the use of a data protection application that supports the backup of Hyper-V VMs while also supporting the ability to recover or restore the Hyper-V VMs onto a HyperFlex ESXi cluster target. In this process, recovery of the VMs occurs such that the format of the VMs is altered to the VMware format. The ability to perform backups from one hypervisor type and to restore to a different hypervisor or platform type may be referred to as "data mobility."

Examples of data protection applications supporting data mobility include Commvault and Veeam. Please note that while these data-protection applications all support some form of data mobility, the exact combination of source hypervisor and destination hypervisor or platform support should be confirmed prior to use. Additionally, there may be other data protection application vendors supporting data mobility. Again, users should consult vendor product documentation for source hypervisor and destination hypervisor or platform support prior to use.

The following vendor links are provided to introduce the data mobility capabilities of Commvault and Veeam:

- Commvault "Converting to VMware" is located within the product documentation suite at https://documentation.commvault.com/v11/essential/114427_converting_to_vmware.html.
- Veeam "Instant Recovery to VMware vSphere" is located in the Veeam Help Center at https://helpcenter.veeam.com/archive/backup/110/hyperv/instant_recovery.html.

ESXi factory install

The HyperFlex installation workflow includes a prerequisite that a supported version of the Cisco HX custom image for ESXi is already installed and ready to be configured. Prior to performing the ESXi factory install process, each HyperFlex node has a Microsoft Windows OS installed. The ESXi factory install process will prepare each cluster node for the HyperFlex installation workflow.

The Cisco Community website includes links to access to the HyperFlex Customer Cleanup Guides here https://community.cisco.com/t5/unified-computing-system-knowledge-base/hyperflex-customer-cleanup-guides-for-fi-and-edge/ta-p/3896668. Select the HyperFlex Customer Cleanup Guide FI v2 link to open and download the document.

In order to execute the Reimage Cleanup Procedure beginning on page 6 of the HyperFlex Customer Cleanup Guide FI document, the user will need to have a supported versions of the Cisco HX Data Platform Installer for VMware ESXi and the Cisco HX Custom Image Install CD. This software can be downloaded from Cisco Software Central at https://software.cisco.com. Access requires an existing account, and the option to create a new account is provided. At the point where the login process has been completed, searching for HyperFlex in the "Select a Product" field will return a number of possible selections. Selecting "HyperFlex HX Data Platform" will navigate to a listing of suggested HyperFlex Data Platform releases.

After selecting the desired HyperFlex Data Platform release, proceed to download the Cisco HX Data Platform Installer for VMware ESXi and the desired version of CISCO HX Custom Image for Install CD.

At this point the Cisco HX Data Platform Installer for VMware ESXi should be deployed. See the Configure Cisco HyperFlex Systems chapter of the Cisco HyperFlex Systems Installation Guide for VMware ESXi document for detailed information about deploying the installer OVA. The version of the Cisco HyperFlex System Installation Guide for VMware ESXi being referenced should correspond to the version of HyperFlex Data Platform release being deployed.

Proceed to execute steps 1 through 6 of the Reimage Cleanup Procedure in the HyperFlex Customer Cleanup Guide FI document. These steps need to be executed on each node of the HyperFlex cluster.

Note that HyperFlex nodes associated with a Hyper-V service profile will not show up as being available within the installer workflow. In this case, the nodes need to be disassociated with the Hyper-V service profile before executing steps 1 through 6. In the “Server Selection” portion of the workflow, select the “Associated” field and proceed to disassociate the nodes before proceeding. The disassociation process will take a number of minutes to complete.

Removal of Hyper-V objects

The prior Hyper-V deployment has now been removed from the HyperFlex cluster and replaced with VMware ESXi images on each HyperFlex node. At this point there may be objects within Active Directory, Microsoft Group Policies, DNS, and Cisco UCS Manager that are no longer required. These items should be inspected and removed if they are no longer required.

Active Directory examples

- Users created specifically for use with Hyper-V may include the “hxadmin” user. If this user is no longer required, consider deleting it.
- Computer names specific to the prior Hyper-V deployment may include host names, HyperFlex controller VM names, the HyperFlex management IP name, an SMB name, and failover cluster name. If these computers are no longer required, consider deleting them.
- Group policies created as the result of configuring constrained delegation may exist. If a group policy is no longer required, consider deleting it.

DNS examples

- Host names associated with the prior Hyper-V deployment may include host names, HyperFlex controller VM names, the HyperFlex management IP name, an SMB name, and failover cluster name. If the ESXi deployment will use a different naming convention, consider deleting the records associated with the Hyper-V naming convention. The SMB name and failover cluster name should be considered for deletion if they are no longer required.

Cisco UCS Manager examples

- Locate and delete the Hyper-V sub-org that was created for the Hyper-V deployment.
- Any VLANs associated with the prior Hyper-V deployment should be located and considered for deletion.

HyperFlex deployment

The HyperFlex installation process is executed using Cisco Intersight® or the Cisco HX Data Platform Installer.

- To deploy the HyperFlex cluster using Cisco Intersight, please reference the Intersight Help Center document available here: https://intersight.com/help/saas/features/hyperflex/configure#cisco_hyperflex_cluster_deployment.
- To deploy the HyperFlex cluster using the Cisco HX Data Platform Installer, please reference the Cisco HyperFlex Systems Installation Guide for VMware ESXi. Select the appropriate guide based on the HyperFlex release from the Cisco HyperFlex Systems Documentation Roadmap available here: https://www.cisco.com/c/en/us/td/docs/hyperconverged_systems/HyperFlex_HX_DataPlatformSoftware/HX_Documentation_Roadmap/HX_Series_Doc_Roadmap.html

Workload recovery

HyperFlex conversions from Hyper-V to ESXi that used the staged VM backup and recovery transition strategy can now proceed to recover any VM workload that may be required. Users should consult the product documentation provided by the data protection application being used to perform recovery.

The following network settings may require updates dependent on the newly deployed HyperFlex ESXi cluster:

- VLANs and network names may have changed from the original Hyper-V deployment.
- IP addresses within a guest VM may need to be changed.
- Netmask settings within a guest VM may need to be changed.
- Gateway or route settings with a guest VM may need to be changed.
- DNS settings within a guest VM may need to be changed.

Document information

Document summary	Prepared for	Prepared by
Cisco HyperFlex Hyper-V to ESXi Conversion v1.2	Cisco Field	Bill Roth

Documentation references

Access to the following documents is recommended because they contain content referenced within this paper:

- Cisco HyperFlex Software Requirements and Recommendations
- Preinstallation Checklist for Cisco HX Data Platform
- Cisco HyperFlex Systems Installation Guide for VMware ESXi – select the appropriate guide based on the HyperFlex Release from the Cisco HyperFlex Systems Documentation Roadmap
- Cisco HyperFlex Data Platform Administration Guide – select the appropriate guide based on the HyperFlex Release from the Cisco HyperFlex Systems Documentation Roadmap
- HyperFlex Customer Cleanup Guide FI v2
- Cisco HyperFlex Systems Installation Guide for VMware EXSi – select the appropriate guide based on the HyperFlex Release from the Documentation Roadmap
- The Cisco Intersight Help Center

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