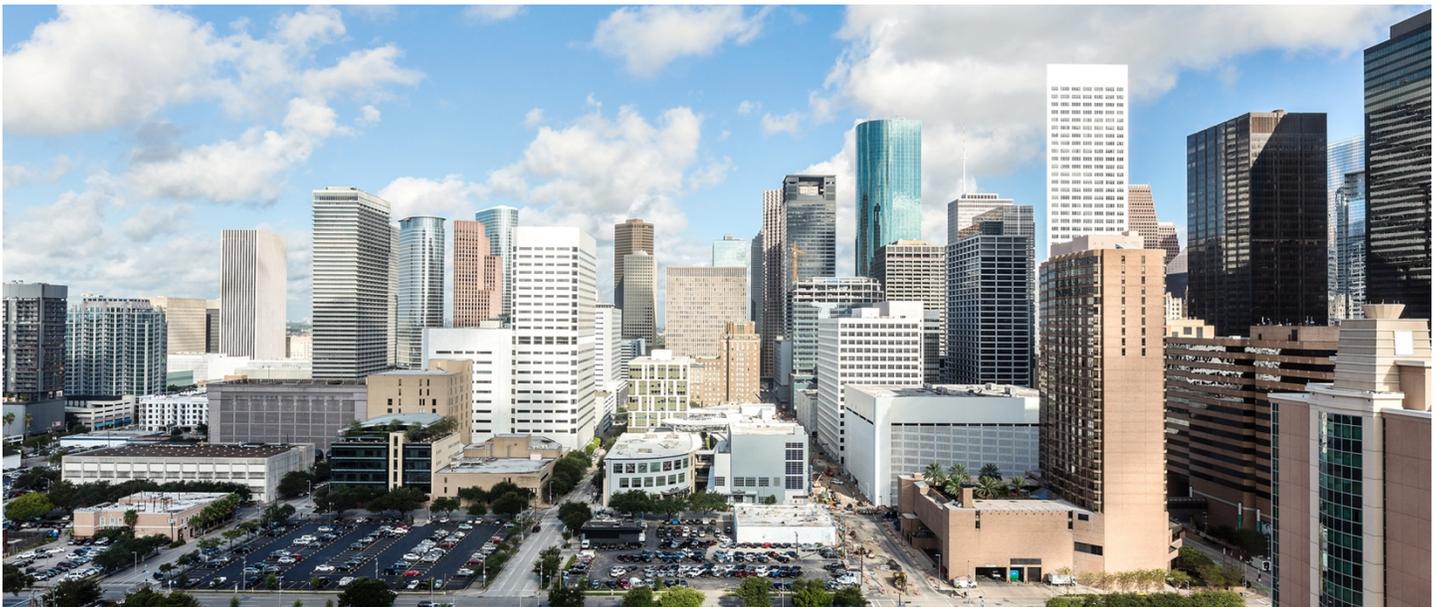


Commvault® MediaAgent on Cisco UCS S3260 Storage Server



This document provides an introduction to the process of deploying Commvault® Data Platform on the Cisco UCS® S3260 Storage Server for a traditional Commvault MediaAgent architecture.

January 2018

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Introduction

This document describes at a high level the installation and configuration steps for deploying the Commvault MediaAgent server on the Cisco UCS® S3260 Storage Server to build a data protection solution. This document does not provide a detailed step-by-step guide, and not every task is documented. The document focuses on the steps that are relevant to the specific use case under discussion. To complete the deployment, you should be familiar with the following:

- Cisco Unified Computing System™ (Cisco UCS) configuration
- Microsoft Windows installation and configuration
- Commvault® installation and configuration

Technology overview

This section introduces the technologies used in the solution described in this document.

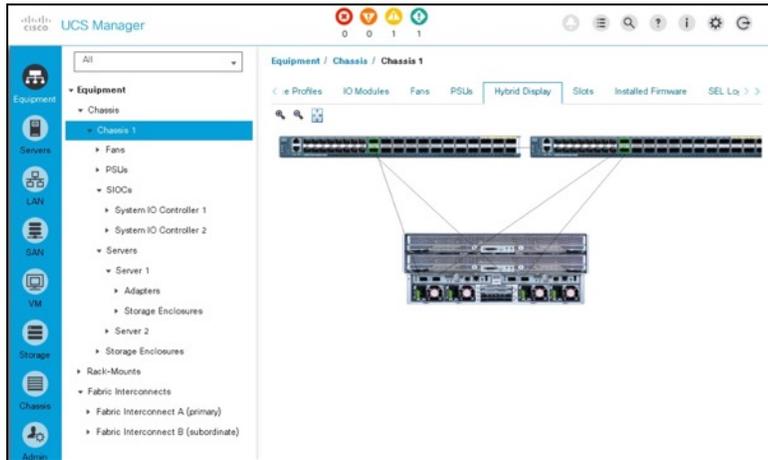
Cisco Unified Computing System

Cisco UCS is a state-of-the-art data center platform that unites computing, network, storage access, and virtualization resources into a single cohesive system.

The main components of Cisco UCS are described here:

- **Computing:** The system is based on an entirely new class of computing system that incorporates rack-mount and blade servers using Intel® Xeon® processor CPUs. The Cisco UCS servers offer the patented Cisco® Extended Memory Technology to support applications with large data sets and allow more virtual machines per server.
- **Network:** The system is integrated onto a low-latency, lossless, 10- or 40-Gbps unified network fabric. This network foundation consolidates LANs, SANs, and high-performance computing (HPC) networks, which are separate networks today. The unified fabric lowers costs by reducing the number of network adapters, switches, and cables, and by decreasing the power and cooling requirements.
- **Virtualization:** The system unleashes the full potential of virtualization by enhancing the scalability, performance, and operational control of virtual environments. Cisco security, policy enforcement, and diagnostic features are now extended into virtualized environments to better support changing business and IT requirements.
- **Storage access:** The system provides consolidated access to both SAN storage and network-attached storage (NAS) over the unified fabric. By unifying the storage access layer, Cisco UCS can access storage over Ethernet (with Network File System [NFS] or Small Computer System Interface over IP [iSCSI]), Fibre Channel, and Fibre Channel over Ethernet (FCoE). This approach provides customers with choice for storage access and investment protection. In addition, server administrators can pre-assign storage-access policies for system connectivity to storage resources, simplifying storage connectivity and management for increased productivity.

Figure 1. Cisco UCS Manager



Cisco UCS consists of the following components:

- [Cisco UCS Manager](#) provides unified, embedded management of all Cisco UCS software and hardware components (Figure 1).
- [Cisco UCS 6000 Series Fabric Interconnects](#) are line-rate, low-latency, lossless, 10-Gbps Ethernet and FCoE interconnect switches providing the management and communication backbone for Cisco UCS.
- [Cisco UCS 5100 Series Blade Server Chassis](#) supports up to eight blade servers and up to two fabric extenders in a six-rack unit (6RU) enclosure.
- [Cisco UCS B-Series Blade Servers](#) increase performance, efficiency, versatility, and productivity with Intel-based blade servers.
- [Cisco UCS C-Series Rack Servers](#) deliver unified computing in an industry-standard form factor to reduce total cost of ownership (TCO) and increase agility.
- [Cisco UCS S-Series Storage Servers](#) deliver unified computing in an industry-standard form factor to address data-intensive workloads with reduced TCO and increased agility.
- [Cisco UCS adapters](#), with wire-once architecture, offer a range of options to converge the fabric, optimize virtualization, and simplify management.

Cisco UCS is designed to deliver:

- Reduced TCO and increased business agility
- Increased IT staff productivity through just-in-time provisioning and mobility support
- A cohesive, integrated system that unifies the technology in the data center
- Industry standards supported by a partner ecosystem of industry leaders
- Unified, embedded management for easy-to-scale infrastructure

Cisco UCS S3260 Storage Server

The Cisco UCS S3260 Storage Server (Figure 2.) is a modular, high-density, high-availability dual-node rack server well suited for service providers, enterprises, and industry-specific environments. It addresses the need for dense, cost-effective storage for the ever-growing amounts of data. Designed for a new class of cloud-scale applications and data-intensive workloads, it is simple to deploy and excellent for big data, software-defined storage, and data protection environments such as Commvault, IBM Cloud Object Storage, and unstructured data repositories, media streaming, and content distribution.

Figure 2. Cisco UCS S3260 Storage Server



Extending the capabilities of the Cisco UCS C3000 platform, the S3260 helps you achieve the highest levels of data availability. With a dual-node capability that is based on the Intel Xeon processor E5-2600 v4 series, it offers up to 600 terabytes (TB) of local storage in a compact 4RU form factor. All hard-disk drives (HDDs) can be asymmetrically split between the dual nodes and are individually hot-swappable. The drives can be built in an enterprise-class Redundant Array of Independent Disks (RAID) redundant design or used in pass-through mode.

This high-density rack server easily fits in a standard 32-inch-depth rack, such as the Cisco R42610 Rack.

Cisco UCS S-Series Storage Servers can be deployed as standalone servers or as part of a Cisco UCS managed environment to take advantage of Cisco's standards-based unified computing innovations that help reduce customers' TCO and increase their business agility.

The S3260 uses a modular server architecture that, using Cisco's blade technology expertise, allows you to upgrade the computing or network nodes in the system without the need to migrate data from one system to another. It delivers:

- Dual server nodes
- Up to 36 computing cores per server node
- Up to 60 drives, mixing a large form factor (LFF) with up to 28 solid-state disk (SSD) drives plus 2 SSD SATA boot drives per server node
- Up to 512 GB of memory per server node (1 TB total)
- Support for 12-Gbps serial-attached SCSI (SAS) drives

- A system I/O controller (SIOC) with a Cisco UCS Virtual Interface Card (VIC) 1300 platform embedded chip supporting dual-port 40-Gbps connectivity

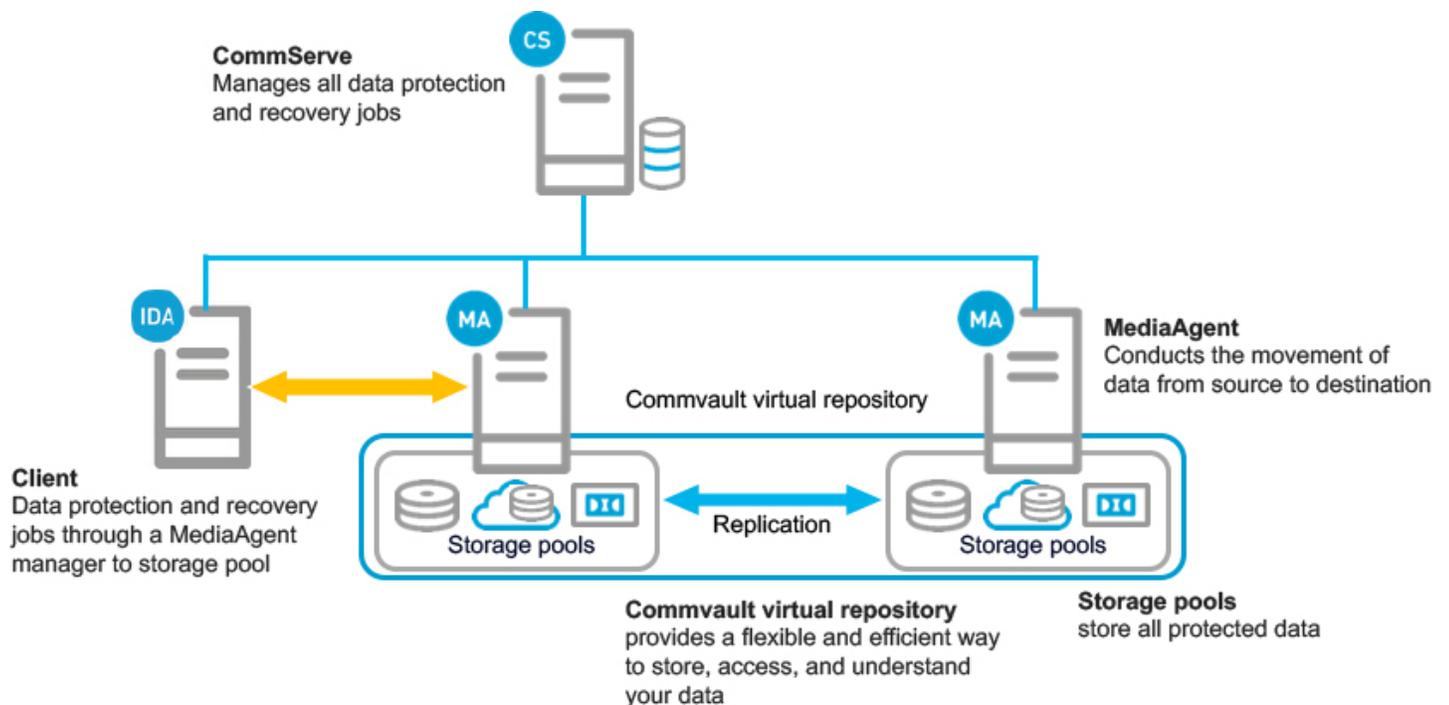
High reliability, availability, and serviceability (RAS) features with tool-free server nodes, system I/O controller, easy-to-use latching lid, and hot-swappable and hot-pluggable components.

Commvault® Data Platform

The Commvault® Data Platform is a single platform for automated global protection, retention, and recovery. Commvault enterprise data protection and recovery software automates global data protection, accelerates recovery, reduces costs, and simplifies operations. Commvault integrates application awareness with hardware snapshots, indexing, global deduplication, replication, search, and reporting. The Commvault Data Platform converges all the needs of a modern data management solution in one place to seamlessly integrate protection, management, and access in one solution.

A comprehensive data protection and management strategy offers seamless and efficient backup, archiving, storage, and recovery of data in your enterprise from any operating system, database, and application. To protect and manage data in your environment, the Commvault software must be distributed to systems that you want to protect. CommServe®, MediaAgent, and protected systems constitute a CommCell® environment, and each protected system is referred to as a client (Figure 3).

Figure 3. Commvault Data Platform overview



The CommServe server is the command and control center of the CommCell architecture. It coordinates and runs all CommCell operations, maintaining Microsoft SQL Server databases that contain all configuration, security, and operational history for the CommCell environment. A CommCell environment can contain only one CommServe host. The CommServe software can be installed in physical, virtual, and clustered environments.

MediaAgent is the data transmission manager. It provides high-performance data movement and manages the data storage pools. When installed on a client system, it also manages the Commvault IntelliSnap snapshot integration with the underlying storage.

A client is any system within a CommCell environment to be protected. iDataAgents are software modules that are installed on computers to access and protect data. The backup and recovery system uses agents to interface with file systems, applications, and databases to facilitate the protection of data on production systems. By default, a file system iDataAgent module is installed when the Commvault software is added to a system. If the client hosts specific applications or databases, additional iDataAgents are required.

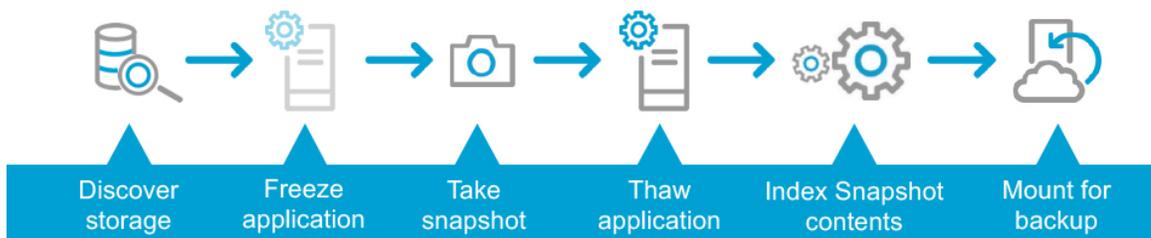
These three Commvault components combined offer the most comprehensive and flexible data protection solution on the market today.

Commvault® IntelliSnap® technology

IntelliSnap technology integrates with leading storage arrays, such as Pure Storage arrays, to provide consistent point-in-time recovery copies integrated into the data protection process. Unlike many other hardware-based copy management approaches, IntelliSnap extends beyond just creating or deleting snapshots. Snapshot contents are indexed to enable simple, specific object recovery, and snapshots can, for example, be mounted to allow the creation of a backup copy for a cloud library. Snapshots are integrated into virtual machine, database, and application protection schemes, enabling highly specific, partial, and point-in-time recovery operations from snapshot-based backup copies.

Figure 4 shows the snapshot creation process. Logically, it has six phases.

Figure 4. Six phases of the snapshot creation process



Solution design and reference architecture configurations

Commvault with Cisco UCS addresses the data protection needs of modern data centers. The increasing percentage of virtualized workloads, the dramatic increase in the size and amount of data, and the changes in the ways that companies do business and work with data have had an immense impact on data protection solutions. With the time requirement for backup operations reduced to minutes and the recovery point objective (RPO) and recovery time objective (RTO) requirements in the range of minutes to one hour, technologies such as compression, deduplication, replication, and backup to disk are essential in every design. The features and functions provided by Commvault, combined with the features and functions provided by Cisco UCS servers, create a powerful solution for fast backup and fast restore operations. For long retention periods and for less frequently accessed data, tape libraries or cloud storage can be used. With the combination of Cisco and Commvault technology, you can easily scale from tens of terabytes up to hundreds of petabytes (PB) of protected data.

Disks are now common backup media, and data backup on disk generally provides faster restore operations. Disk-based storage can be useful if you have many incremental backups and the percentage of data change is small. If the volume of data in incremental copies is insufficient to help ensure efficient writing to tape, consider disk storage. After writing the data to disk, you can use staging or storage lifecycle policies to copy batches of images to tape. This arrangement can produce faster backup operations and prevent wear and tear on your tape drives.

Consider the following factors when backing up a data set to disk or tape:

- Disks are well suited for short retention periods; tape is better suited for longer retention periods.
- Disks are well suited for staging; tape is good for long-term storage.
- Disks are better suited for low-volume incremental backups.
- Synthetic full backups are faster when incremental backup copies are stored on disk.
- Restoration from disk is usually faster than from tape.
- If client backup operations are too slow to keep the tape in motion, send the backups to disk.
- If the backups are small, send the backups to disk.
- Staging or lifecycle policies can later move the backup images to tape.

There is no “best” position in the infrastructure to install a Commvault with Cisco UCS solution. Many options are available regardless of how big a data center is. One option is to position the solution in a central place in the physical network so that it can be accessed from everywhere with the required bandwidth. Another option is to place the solution as close as possible to the data source.

With most data transferred from the backup client to the server and not directly from storage, and with the unique design of Cisco UCS, the use of a Cisco UCS domain will limit the network bandwidth required for data replication between the Commvault MediaAgent nodes. This option also allows Cisco UCS Manager to manage all Commvault MediaAgent servers in a central place.

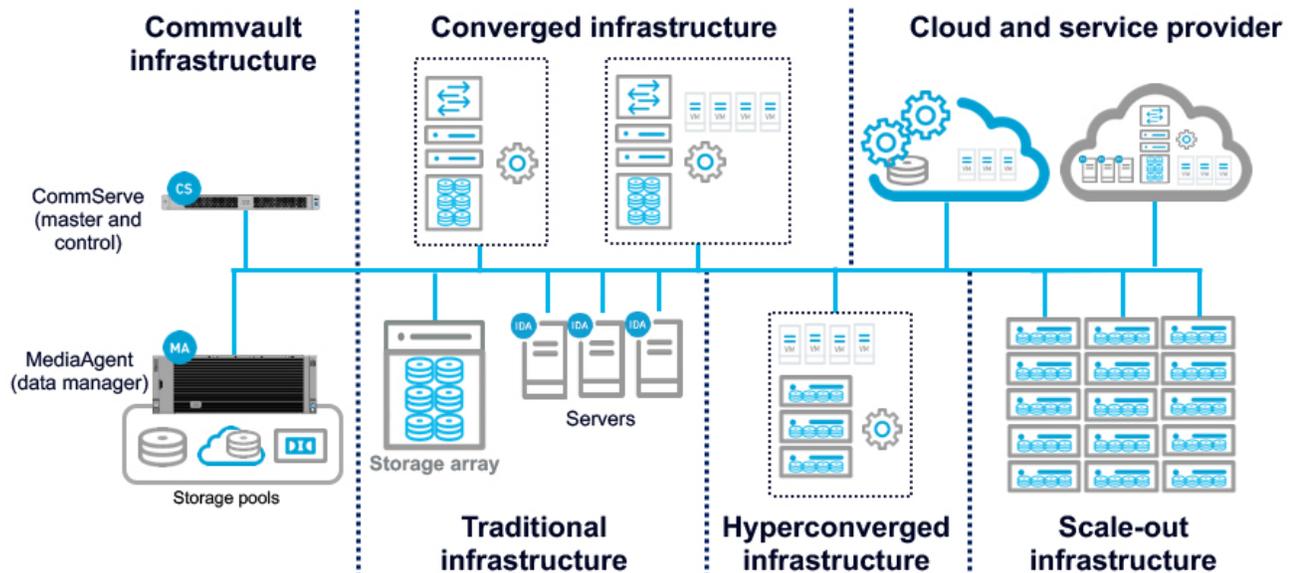
Reference architecture

This section introduces the reference architecture for the Commvault and Cisco solution.

Overview

Commvault and Cisco worked together to establish a simplified approach to sizing hardware to work within a Commvault environment. Building-block designs were aligned and tested with Commvault architecture deployments. This design is expandable from single-site to multisite, hybrid cloud, and public cloud environments, and any combination. Figure 5 shows the models and configuration needed for each size of Commvault MediaAgent. These models and configurations have been tested to provide the necessary requirements for each size. When ordering these approved and tested configurations, you can be assured of the proper performance.

Figure 5. Approved and tested configurations



Storage capacity explained

Customers sometimes ask why a freshly formatted hard disk or array is smaller than the advertised capacity. For example, a 1-TB drive has 931 GB after formatting.

The reason for this is that hardware and storage manufacturers count the capacity in different ways than the files system does. The prefixes kilo-, mega-, giga-, and tera- are used to state powers of ten. However, in computer software, the data being handled is typically organized based on powers of 2, so it became customary to call 2×10 a kilobyte, which is actually 1024 bytes, not exactly 1000 bytes.

There are prefixes to differentiate between base 10 and base 2; however, these are seldom used. In base 2 the proper terms are kibibyte, mebibyte, gibibyte, and tebibyte. The “bi” refers to binary, and the shortened terms are KiB, MiB, GiB, and TiB.

Here’s the underlying math:

- Hard disk manufacturers assume kilo = $10^3 = 1000$ (KB).
- File systems assume kilo = $2^{10} = 1024$ (KiB).

To convert KB, MB, and GB to KiB, MiB, and GiB, see the following list:

- KB to KiB: $1000/1024 = 0.9766$
- MB to MiB: $(1000 \times 1000) / (1024 \times 1024) = 0.9537$
- GB to GiB: $(1000 \times 1000 \times 1000) / (1024 \times 1024 \times 1024) = 0.9313$
- TB to TiB: $(1000 \times 1000 \times 1000 \times 1000) / (1024 \times 1024 \times 1024 \times 1024) = 0.9095$

Typically, software will display GB or TB as the storage unit, but the amount actually is Gib or TiB, so this confusion will remain unless this approach is changed.

Keep these values in mind as you review the Tables 1, 2, and 3 in the next section. Capacities are stated using the sizes provided by the hardware manufacturer (base 10). Notes reference the software-based sizes (base 2).

Individual MediaAgent server configurations

Tables 1, 2, and 3 summarize the individual MediaAgent server configurations available. You can choose a configuration based on your data protection requirements. This guide specifically focuses on Cisco UCS S3260 as the MediaAgent server and uses an Extra Large server in the example configuration. The storage configuration details depend on the specific customer environment and the size and number of drives available in the S3260.

Table 1. Medium Commvault MediaAgent configuration

Medium MediaAgent server configuration with Cisco UCS	
Cisco solution ID	Commvault MediaAgent Medium S3260
Cisco UCS server type	Cisco UCS S3260 M4
Rack units	4RU (7 in. [177.8 mm])
Chip set	Intel C610 series
CPU type	2 x Intel Xeon processor E5-2650v4 52.8 GHz across 24 cores
Memory	8 x 16 DDR4 2400-MHz RDIMM (128 GB total)
Storage controller	Cisco UCS C3000 12-Gbps SAS RAID controller with 4-GB cache
Storage: Boot	2 x 480-GB SSD at 6 Gbps with RAID 1 (480 GB total*) <ul style="list-style-type: none"> • Access policy: Read-Write; read policy: No Read Ahead • Cache policy: Direct I/O; write policy: Write Through • Disk cache policy: Unchanged; stripe size: 64 KB
Storage: Metadata	1 x 3200-GB PCIe and Non-Volatile Memory Express (NVMe) storage* <ul style="list-style-type: none"> • Index cache: 800 GB; deduplication database (DDB): 600 GB; and cloud copy DDB: 600 GB
Storage: Storage pool	18 x 6-TB N-SAS with RAID 60 (72 TB total with 2 hot spares*) <ul style="list-style-type: none"> • 2 x 8 drives with RAID 6: Nested • Access policy: Read-Write; read policy: Always Read Ahead • Cache policy: Direct I/O; write policy: Write Back Good Backup Battery Unit (BBU) • Disk cache policy: Unchanged; stripe size: 512 KB
Network options	2 x 40-Gbps connection
Additional connectivity	Single dual-port 16-Gbps Fibre Channel host bus adapter (HBA)
Power specifications	4 x 1050 watt (W) AC power supply**

*When these drives are formatted, the OS will show capacities in base 2, so 480 GB will be approximately 447 GB, 3.2 TB will be approximately 2.9 TB, and 72 TB will be approximately 65.4 TB.

**For these configurations, power supplies and power cables must be ordered separately to accommodate different power requirements in different regions.

Table 2. Large Commvault MediaAgent configuration

Large MediaAgent server configuration with Cisco UCS	
Cisco solution ID	Commvault MediaAgent Large S3260
Cisco UCS server type	Cisco UCS S3260 M4
Rack units	4RU (7 in. [177.8 mm])
Chip set	Intel C610 series
CPU type	2 x Intel Xeon processor E5-2650v4 <ul style="list-style-type: none"> • 52.8 GHz across 24 cores
Memory	8 x 16 DDR4 2400-MHz RDIMM (128 GB total)
Storage controller	Cisco UCS C3000 12-Gbps SAS RAID Controller with 4-GB cache
Storage: Boot	2 x 480-GB SSD at 6 Gbps with RAID 1 (480 GB total)* <ul style="list-style-type: none"> • Access policy: Read-Write; read policy: No Read Ahead • Cache policy: Direct I/O; write policy: Write Through • Disk cache policy: Unchanged; stripe size: 64 KB
Storage: Metadata	1 x 3200-GB PCIe and NVMe storage* <ul style="list-style-type: none"> • Index cache: 1 TB; DDB: 1.1 TB; and cloud copy DDB: 1.1 TB
Storage: Storage pool	30 x 6-TB NL-SAS with RAID 60 (144 TB total with 2 hot spares)* <ul style="list-style-type: none"> • 2 x 14 drives with RAID 6: Nested • Access policy: Read-Write; read policy: Always Read Ahead • Cache policy: Direct I/O; write policy: Write Back Good BBU • Disk cache policy: Unchanged; stripe size: 512 KB
Network options	2 x 40-Gbps connection
Additional connectivity	Single dual-port 16-Gbps Fibre Channel HBA
Power specifications	4 x 1050W AC power supply**

*When these drives are formatted, the OS will show capacities in base 2, so 480 GB will be approximately 447 GB, 3.2 TB will be approximately 2.9 TB, and 144 TB will be approximately 130 TB.

**For these configurations, power supplies and power cables must be ordered separately to accommodate different power requirements in different regions.

Table 3. Extra Large Commvault MediaAgent configuration

Extra Large MediaAgent server configuration with Cisco UCS	
Cisco solution ID	Commvault MediaAgent XL S3260
Cisco UCS server type	Cisco UCS S3260 M4
Rack units	4RU (7 in. [177.8 mm])
Chip set	Intel C610 series
CPU type	2 x Intel Xeon processor E5-2650v4 <ul style="list-style-type: none"> • 52.8 GHz across 24 cores
Memory	8 x 16 DDR4 2400-MHz RDIMM (128 GB total)
Storage controller	Cisco UCS C3000 12-Gbps SAS RAID controller with 4-GB cache
Storage: Boot	2 x 480-GB SSD at 6 Gbps with RAID 1 (480 GB total)* <ul style="list-style-type: none"> • Access policy: Read-Write; read policy: No Read Ahead • Cache policy: Direct I/O; write policy: Write Through • Disk cache policy: Unchanged; stripe size: 64 KB

Extra Large MediaAgent server configuration with Cisco UCS	
Storage: Metadata	2 x 3200-GB PCIe and NVMe storage* <ul style="list-style-type: none"> • Index cache: 2 TB; DDB: 2 TB; cloud copy DDB: 2 x 1 TB
Storage: Storage pool	51 x 6-TB NL-SAS with RAID 60 (252 TB total with 3 hot spares)* <ul style="list-style-type: none"> • 3 x 16 drives with RAID 6: Nested • Access policy: Read-Write; read policy: Always Read Ahead • Cache policy: Direct I/O; write policy: Write Back Good BBU • Disk cache policy: Unchanged; stripe size: 512 KB
Network options	2 x 40-Gbps connection
Additional connectivity	Single dual-port 16-Gbps Fibre Channel HBA
Power specifications	4 x 1050W AC power supply**

*When these drives are formatted, the OS will show capacities in base 2, so 480 GB will be approximately 447 GB, 6.4 TB will be approximately 5.8 TB, and 234 TB will be approximately 212 TB.

**For these configurations, power supplies and power cables must be ordered separately to accommodate different power requirements in different regions.

Cisco UCS S3260 configuration

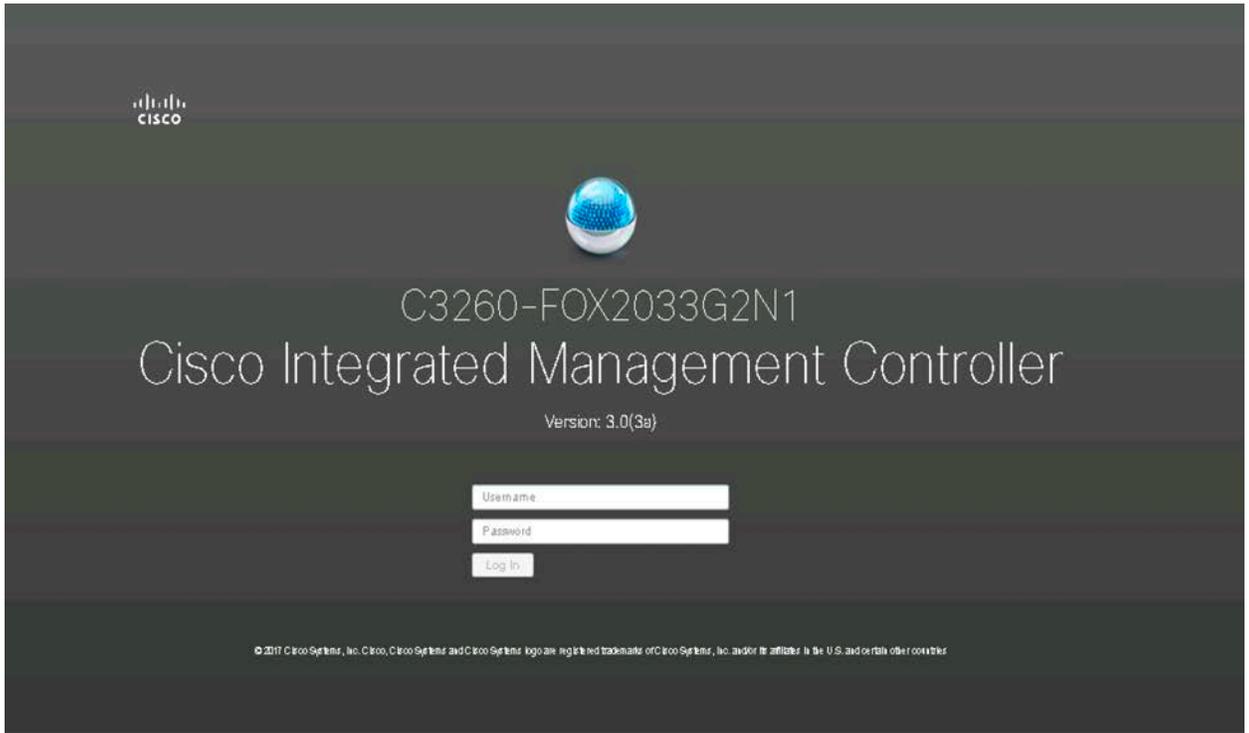
This document discusses the use of a standalone Cisco UCS S32600 Storage Server as well as the use of a Cisco UCS 3260 Storage Server managed by Cisco UCS to install Commvault MediaAgent server with a media management role.

Please use the Cisco UCS S3260 installation guide to complete the initial configuration (IP addresses, passwords, software versions, etc.). This document assumes that the S3260 is accessible through the Cisco Integrated Management Controller (IMC) or Cisco UCS Manager over the network.

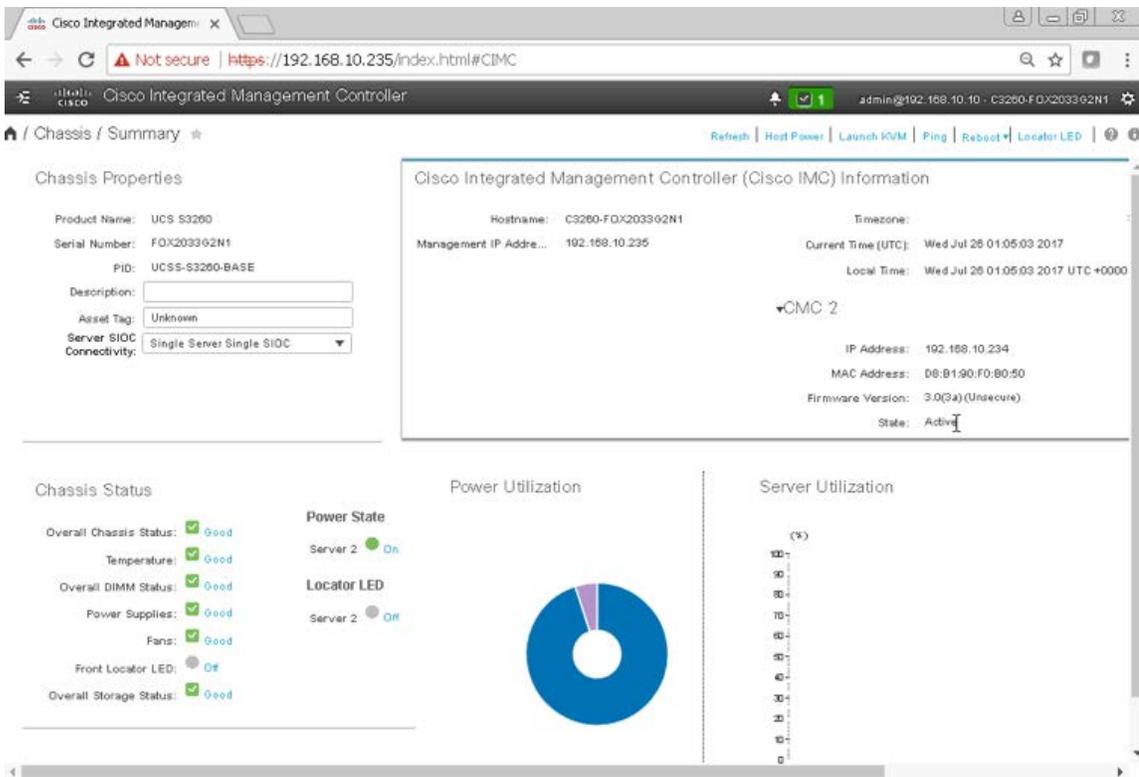
Standalone configuration with Cisco Integrated Management Controller

Follow these steps to configure a standalone solution using IMC.

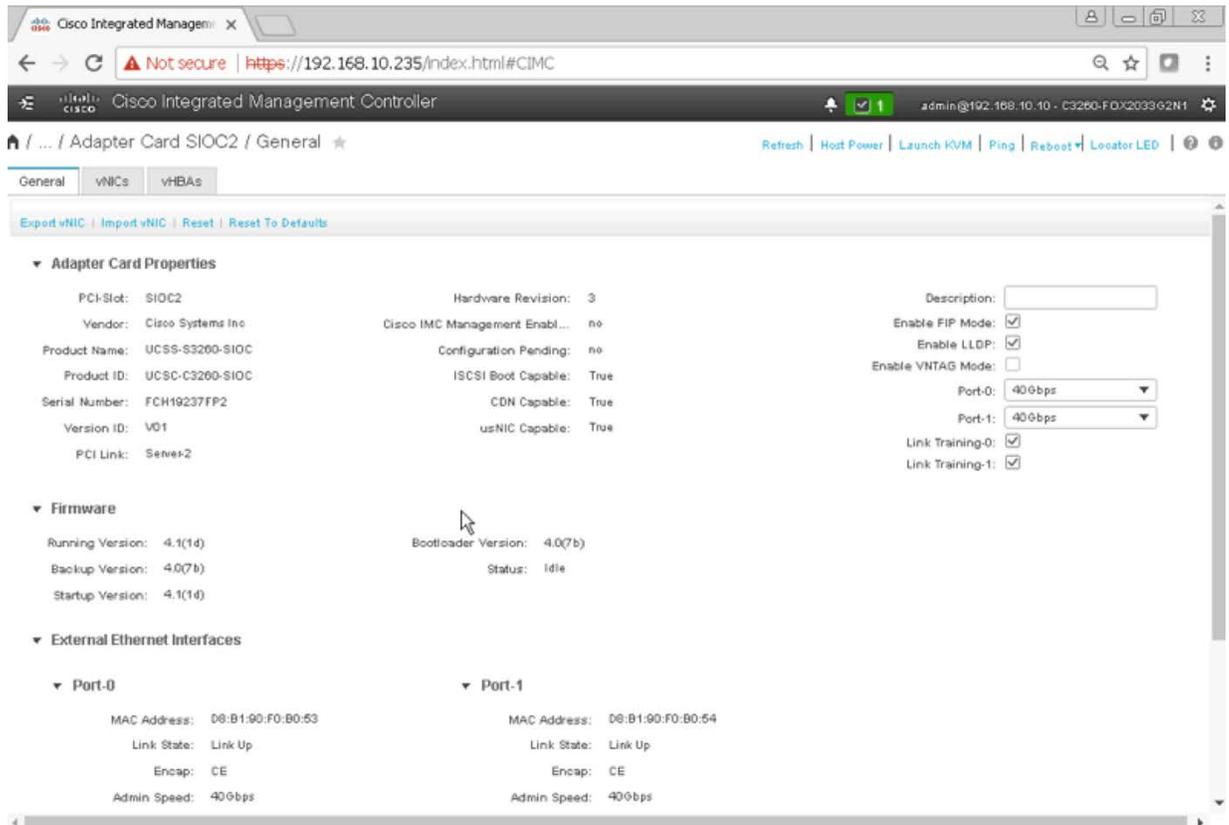
1. Log on to the IMC as the admin user.



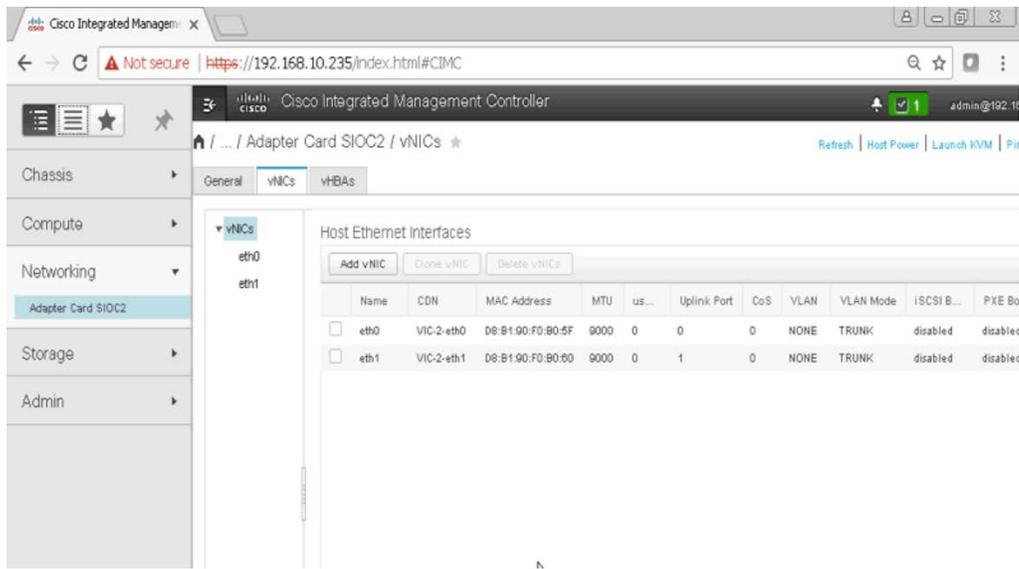
2. Check the condition of the system and the components required for the deployment on the Chassis > Summary page.



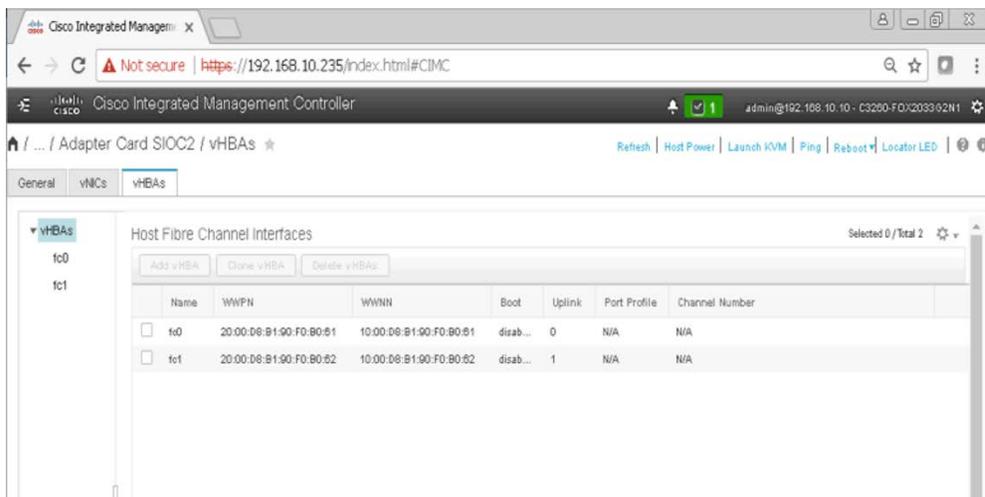
3. Choose Networking to see the Cisco VIC configuration.
4. Only one SIOC is required. The second SIOC is optional and is used to achieve better high availability or greater throughput.
5. The General tab provides an overview of the SIOC and Ethernet ports, including the uplink status and port speeds. The operating speed can be 10 Gbps, 4 x 10 Gbps, or 40 Gbps. You should use 40 Gbps whenever possible.



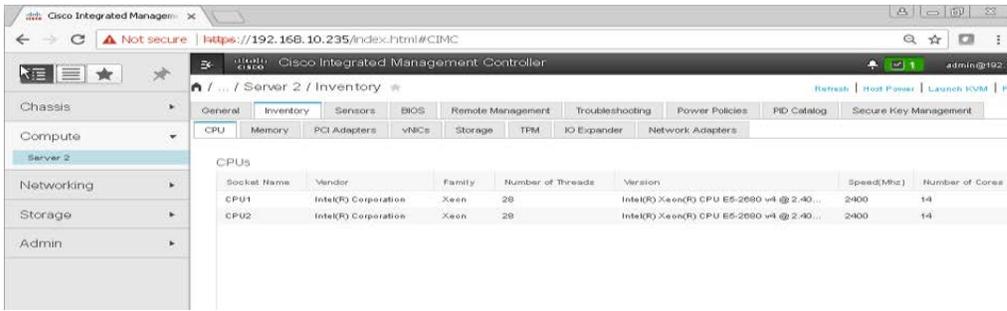
6. The virtual network interface card (vNIC) tab summarizes the existing host Ethernet interfaces, including the maximum transmission unit (MTU) size, the uplink port used, and VLAN information. As a best practice, you should create at least one vNIC per uplink port or one vNIC per VLAN ID.
7. You should use MTU 9000 for the backup network if possible and on all participating devices in the network (clients, switches, and servers).



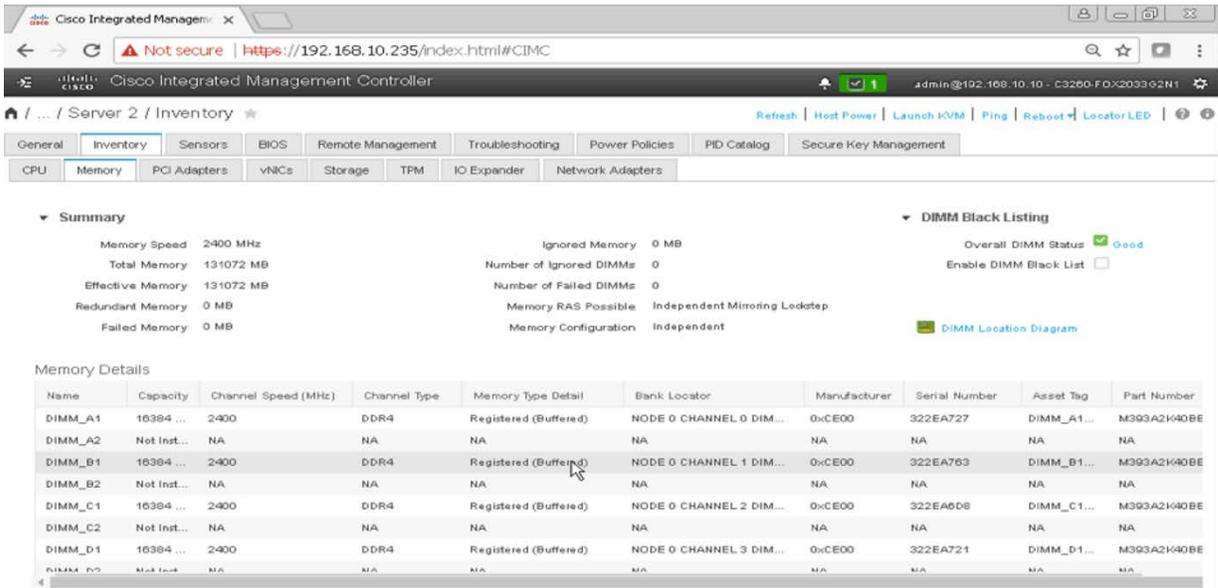
- The virtual host bus adapter (vHBA) tab summarizes the existing host Fibre Channel Interfaces, including the worldwide port name (WWPN) and worldwide node name (WWNN) and information about whether the vHBA is used to boot the system. As a best practice, you should create at least one vHBA per uplink port or one vHBA per VSAN ID. Fibre Channel connectivity is used mainly for backup to Fibre Channel tape or for LAN-free backup directly from SAN storage.



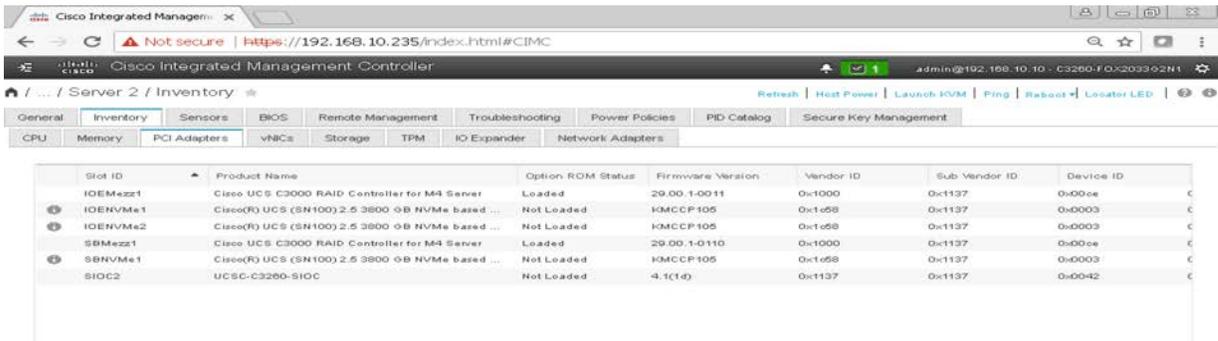
- The CPU tab of the Inventory pane shows the CPUs.



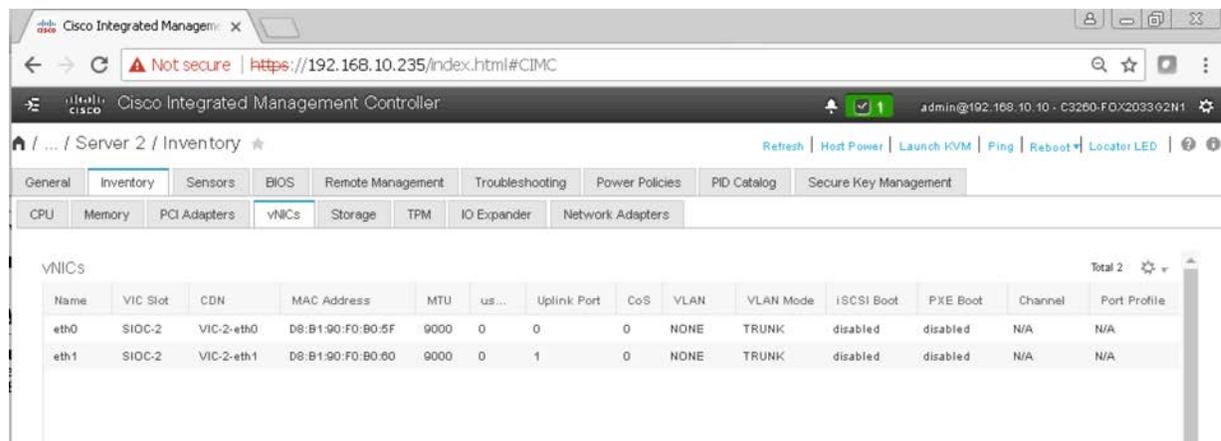
10. The Memory tab of the Inventory pane presents memory details.



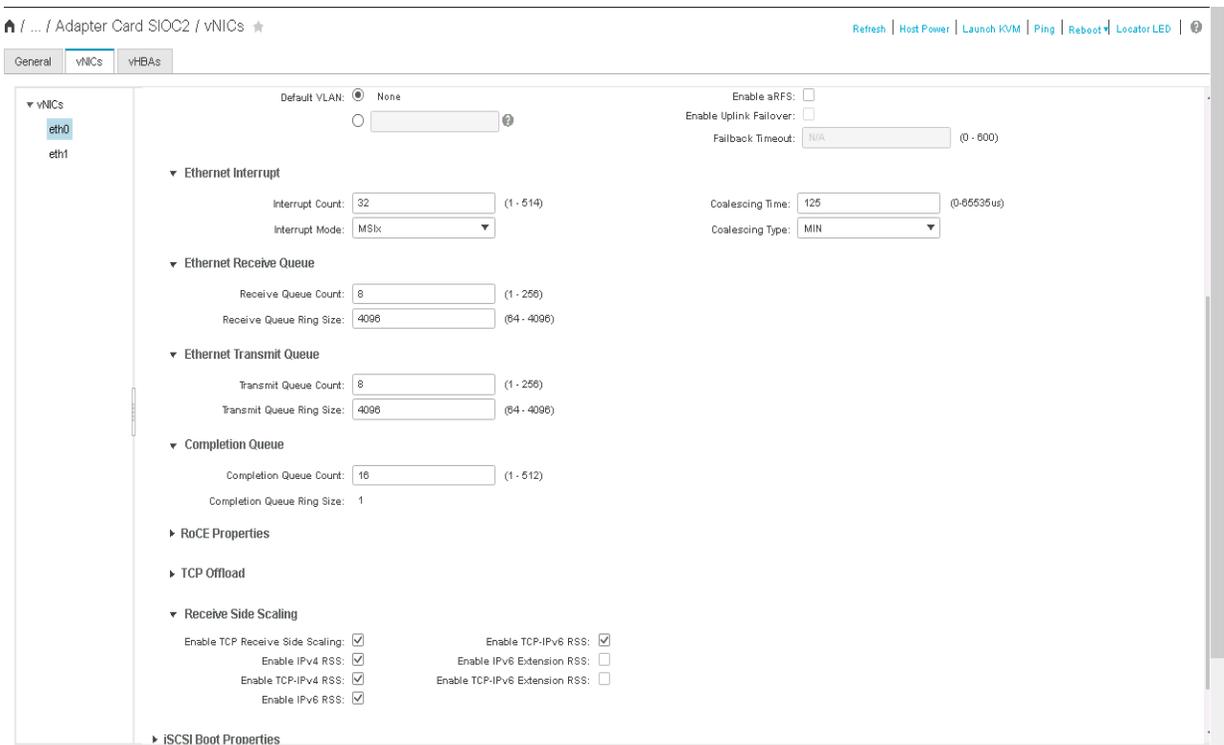
11. The S3260 SIOC is connected as the PCIe device and shown on the PCI Adapters tab along with the NVMe drives on the server node and the I/O expansion module.



12. The vNICs tab of the Server Inventory pane shows the vNICs.

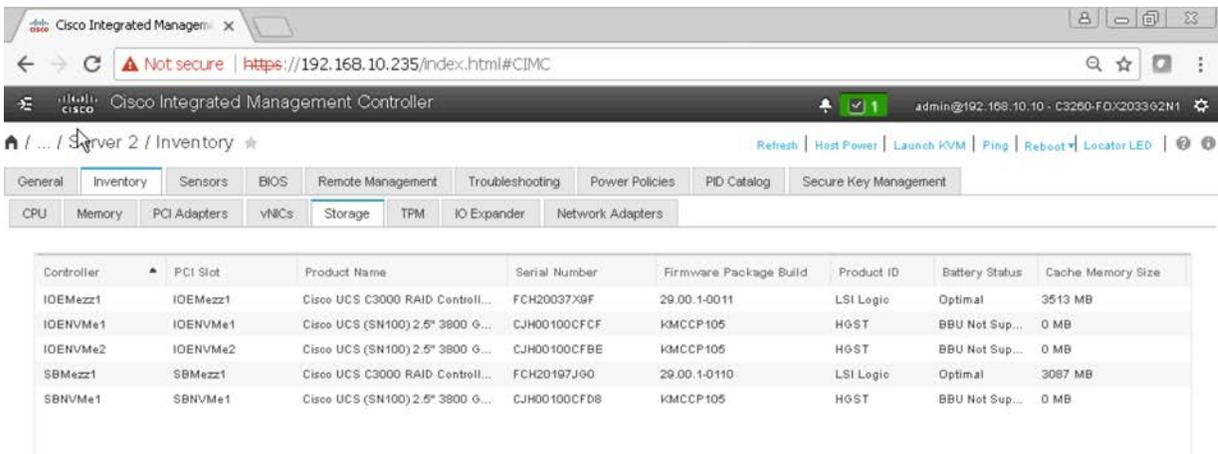


13. Click eth0 under vNICs in the left panel and set the following parameters to improve performance of Windows specific adapter with 40Gb NICs:
- Transmit Queues: 8
 - Ring Size: 4096
 - Receive Queues: 8
 - Ring Size: 4096
 - Completion Queues: 16
 - Interrupts: 32
 - Receive Side Scaling (RSS): Enabled



14. Click Save Changes.

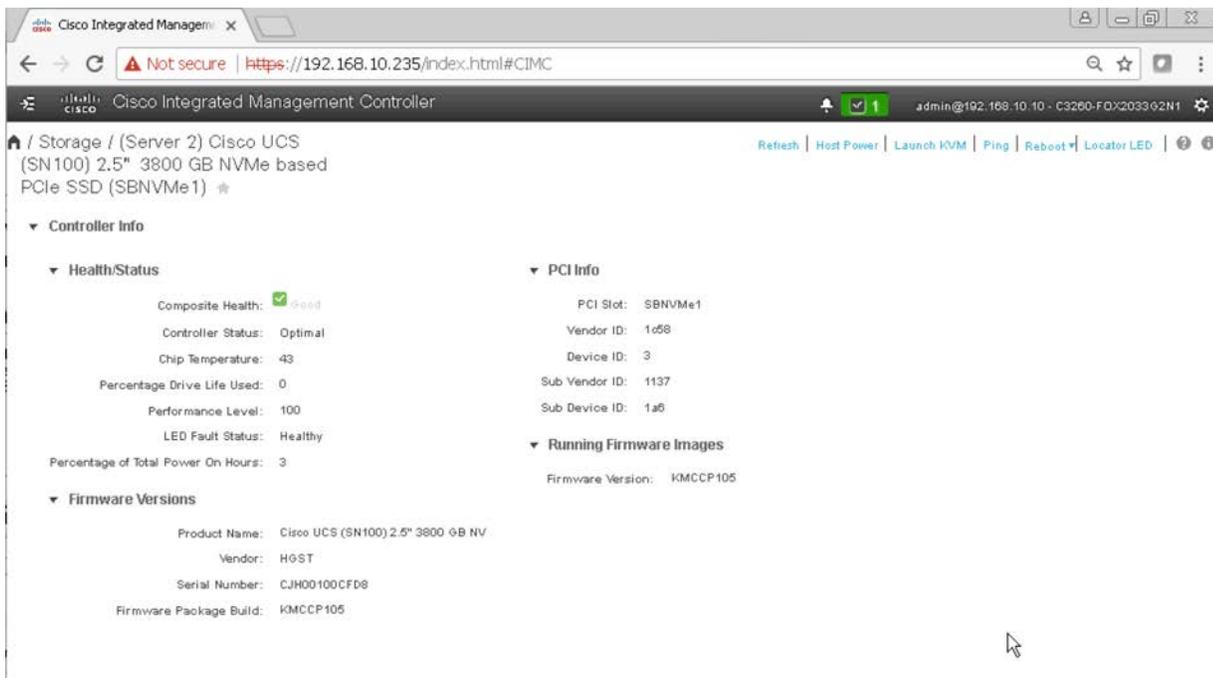
15. The Storage tab of the Inventory pane shows the storage controller information.

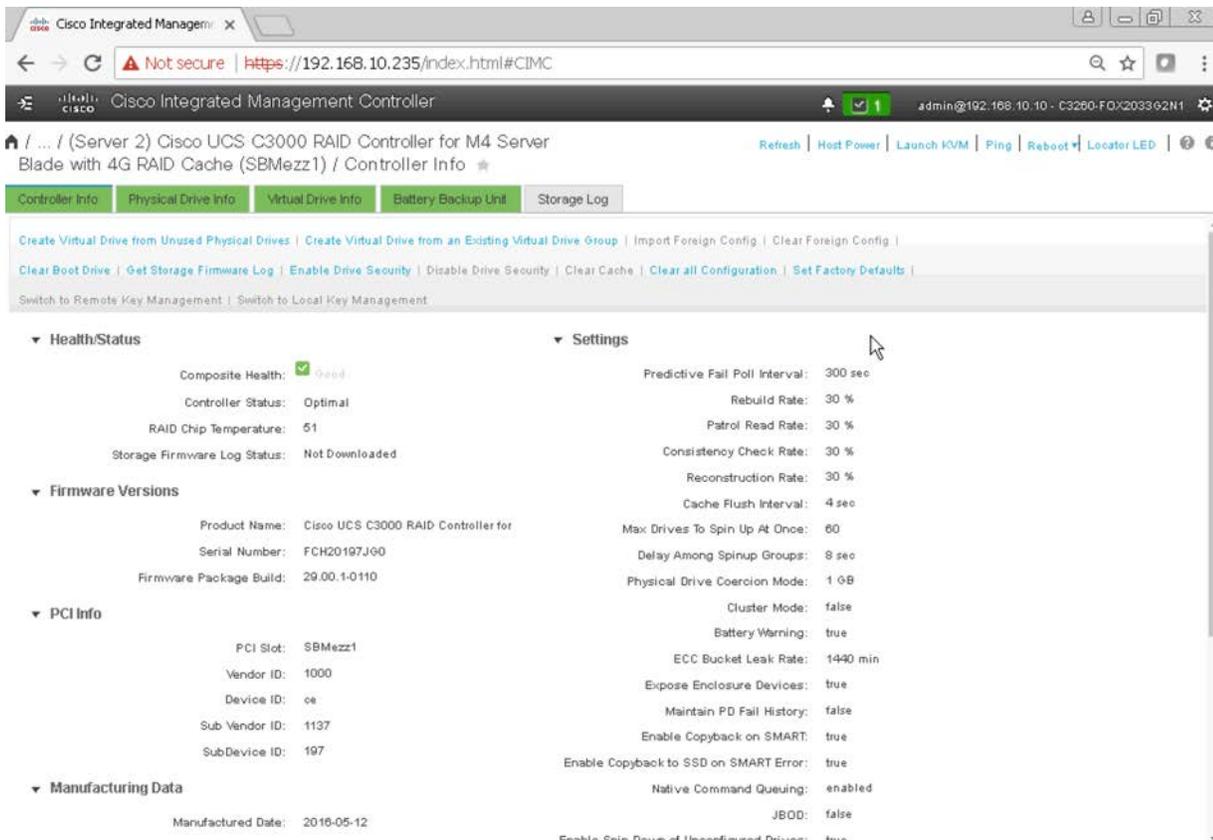


16. If the S3260 is equipped with an I/O expander board for installing PCIe cards or additional NVMe devices, the details are shown on the IO Expander tab.



17. Choose Storage. The storage configuration is the most important part of the Cisco UCS S3260 configuration for Commvault MediaAgent server.
18. The Storage pane shows the NVMe details, RAID controller information, physical drive and virtual drive information, and RAID settings.





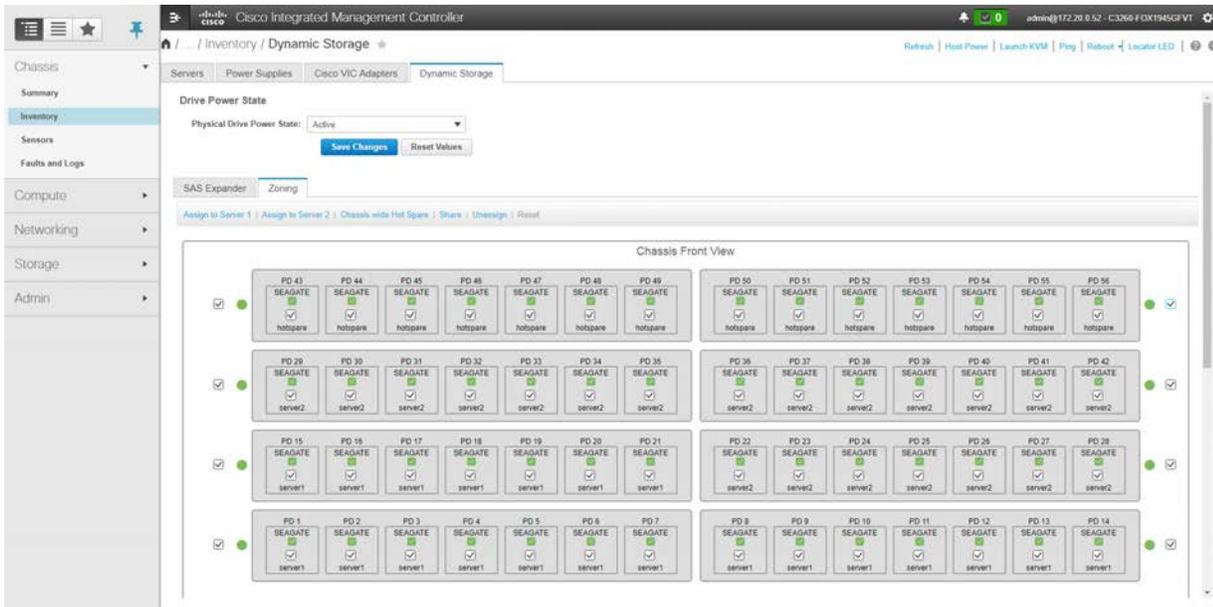
The screenshot shows the Cisco Integrated Management Controller (CIMC) web interface. The browser address bar shows the URL <https://192.168.10.235/index.html#CIMC>. The page title is "(Server 2) Cisco UCS C3000 RAID Controller for M4 Server Blade with 4G RAID Cache (SBMezz1) / Controller Info". The navigation tabs include "Controller Info", "Physical Drive Info", "Virtual Drive Info", "Battery Backup Unit", and "Storage Log". The "Settings" tab is selected, showing the following configuration parameters:

Section	Parameter	Value
Health/Status	Composite Health	Good
	Controller Status	Optimal
	RAID Chip Temperature	51
	Storage Firmware Log Status	Not Downloaded
Firmware Versions	Product Name	Cisco UCS C3000 RAID Controller for
	Serial Number	FCH20197J00
	Firmware Package Build	29.00.1-0110
PCI Info	PCI Slot	SBMezz1
	Vendor ID	1000
	Device ID	0e
	Sub Vendor ID	1137
	SubDevice ID	197
	Manufacturing Date	2016-05-12
Settings	Predictive Fail Poll Interval	300 sec
	Rebuild Rate	30 %
	Patrol Read Rate	30 %
	Consistency Check Rate	30 %
	Reconstruction Rate	30 %
	Cache Flush Interval	4 sec
	Max Drives To Spin Up At Once	60
	Delay Among Spinup Groups	8 sec
	Physical Drive Coercion Mode	1 0 8
	Cluster Mode	false
	Battery Warning	true
	ECC Bucket Leak Rate	1440 min

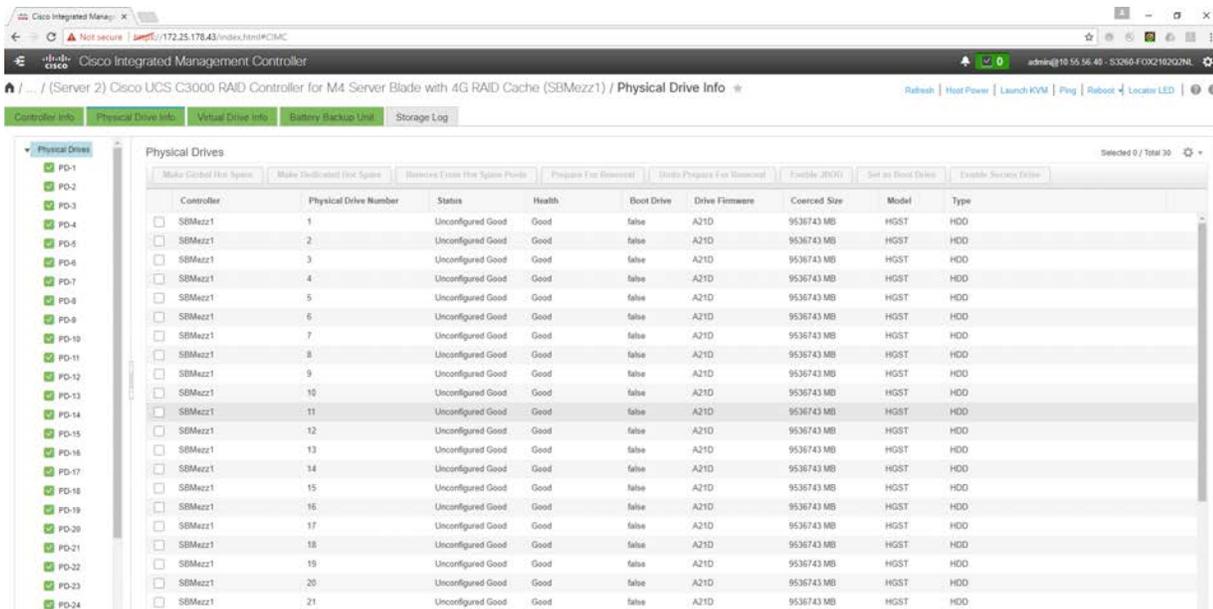
Configure disk zoning

Disk zoning allocates disk slots between server nodes in the chassis. To allocate disks to the server node, perform the following steps:

1. Choose Chassis. The RAID controller will see only the physical drives that are zoned for it in the Chassis area.
2. In the Chassis area, choose Inventory > Dynamic Storage. On this screen, click the Zoning tab.
3. Select all the drives and click Assign to Server 2.
4. Click Save Changes.



5. Give the system some time to complete the zoning process. Power on the server node so that the physical disk devices are discovered by the RAID controller before you start creating virtual drive groups and virtual drives in the Storage area.
6. In the status column, the drives should be listed as Unconfigured Good. if they aren't, select the drive and then click Set State as Unconfigured Good at the upper right.



PD-16	<input type="checkbox"/>	SBMezz1	22	Unconfigured	Good	false	A21D	9536743 MB	HGST	HDD
PD-17	<input type="checkbox"/>	SBMezz1	23	Unconfigured	Good	false	A21D	9536743 MB	HGST	HDD
PD-18	<input type="checkbox"/>	SBMezz1	24	Unconfigured	Good	false	A21D	9536743 MB	HGST	HDD
PD-19	<input type="checkbox"/>	SBMezz1	25	Unconfigured	Good	false	A21D	9536743 MB	HGST	HDD
PD-20	<input type="checkbox"/>	SBMezz1	26	Unconfigured	Good	false	A21D	9536743 MB	HGST	HDD
PD-21	<input type="checkbox"/>	SBMezz1	27	Unconfigured	Good	false	A21D	9536743 MB	HGST	HDD
PD-22	<input type="checkbox"/>	SBMezz1	28	Unconfigured	Good	false	A21D	9536743 MB	HGST	HDD
PD-23	<input type="checkbox"/>	SBMezz1	201	Unconfigured	Good	false	0370	456809 MB	ATA	SSD
PD-24	<input type="checkbox"/>	SBMezz1	202	Unconfigured	Good	false	0370	456809 MB	ATA	SSD
PD-25	<input type="checkbox"/>	SBMezz1								

- Now configure the hot spare drives. This configuration has three (based on the Extra Large configuration). Select Drive 1. Then click Make Global Hot Spare at the top. Do the same thing for Drive 2 and Drive 3.

Home / ... / (Server 1) RAID controller for UCS C3X60 Storage Servers (SLOT-MEZZ) / Physical Drive Info

Refresh | Host Power | Launch KVM | Ping | Reboot | Locator LED

Controller Info | **Physical Drive Info** | Virtual Drive Info | Battery Backup Unit | Storage Log

Physical Drives

- PD-1
- PD-2
- PD-3
- PD-4
- PD-5
- PD-6

Physical Drives Selected 1 / Total 60

Make Global Hot Spare | Make Dedicated Hot Spare | Remove from Hot Spare Pools | Prepare for Removal

	Controller	Physical Drive Number	Status	Health	Boot Drive	Drive Firmware
<input checked="" type="checkbox"/>	SLOT-MEZZ	1	Unconfigured Good	Good	false	0205
<input type="checkbox"/>	SLOT-MEZZ	2	Unconfigured Good	Good	false	0205
<input type="checkbox"/>	SLOT-MEZZ	3	Unconfigured Good	Good	false	0205

Note: Drive slots 1,2 and 3 or 46,47 and 48 can be used to create hot spares, the drives in other remaining slots should be used to create the Raid 60 Disk Group.

- In the Virtual Drive Info pane, no virtual drives should be listed. Remove any virtual drives that appear in this initial configuration.

Cisco Integrated Management Controller

Home / ... / (Server 2) Cisco UCS C3000 RAID Controller for M4 Server Blade with 4G RAID Cache (SBMezz1) / Virtual Drive Info

Refresh | Host Power | Launch KVM | Ping | Reboot | Locator LED

Controller Info | Physical Drive Info | **Virtual Drive Info** | Battery Backup Unit | Storage Log

Virtual Drives Selected 0 / Total 0

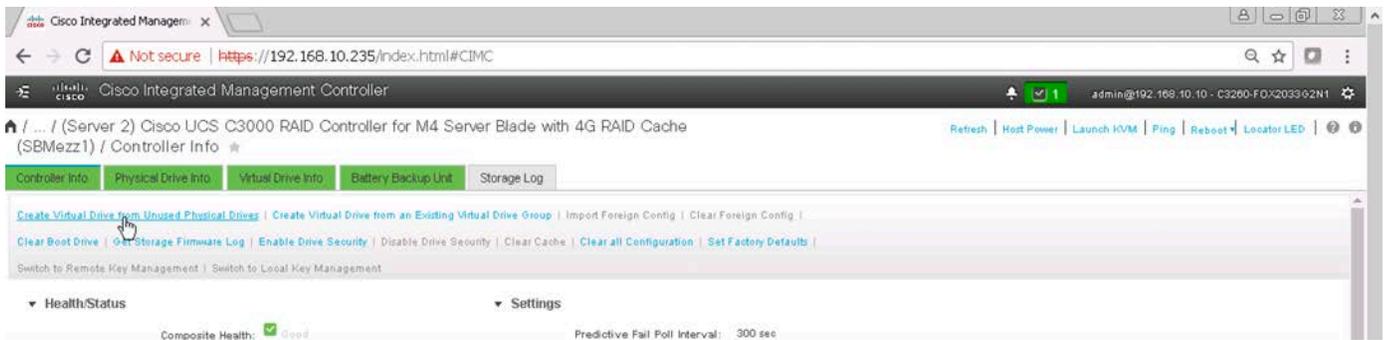
Virtual Drive Number	Name	Status	Health	Size	RAID Level	Boot Drive
----------------------	------	--------	--------	------	------------	------------

Create virtual disk groups

Zoning allocated drives to the server nodes, but you need to create virtual disk groups to use the drives for booting and for the disk library.

Create virtual disk groups 0 and 1.

- On the Controller Info page, click Create Virtual Drive from Unused Physical Drives.



2. For the operating system, you must create a RAID 1 configuration on the two SSDs on the back of the chassis.
 - a. Select 1 as the RAID level.
 - b. Select physical drives 201 and 202 and add them to the drive group (click >>).
 - c. For the name, enter **Raid1_Boot**. (Any other name you want can be used to identify the drive.)
 - d. Change Cache Policy from DirectIO to Cached IO.
 - e. Keep Cache Policy set to Direct IO.
 - f. Keep Write Policy set to Write Through.
 - g. Enter **456809** as the size and select MB as the unit.

Create Virtual Drive from Unused Physical Drives

Raid Lev... 1

Create Drive Groups

Physical Drives Selected 0 / Total 4

ID	Size (MB)	Model	Interface	Type
<input type="checkbox"/>	53	1524925 MB	TOSHIBA	SSD SAS
<input type="checkbox"/>	54	1524925 MB	TOSHIBA	SSD SAS
<input type="checkbox"/>	55	1524925 MB	TOSHIBA	SSD SAS
<input type="checkbox"/>	56	1524925 MB	TOSHIBA	SSD SAS

Drive Groups Selected 1 / Total 1

Name
<input checked="" type="checkbox"/> DG [201.202]

Virtual Drive Properties

Name: RAID1_Boot

Access Policy: Read Write

Read Policy: No Read Ahead

Cache Policy: Direct IO

Disk Cache Policy: Unchanged

Write Policy: Write Through

Strip Size (MB): 64k

Size: 456809 MB

Generate XMLAPI request Create Virtual Drive Close

3. Click Create Virtual Drive.
4. Go to the Virtual Drive Info tab and select the Boot virtual drive.
5. Click Set as Boot Drive.

Cisco Integrated Management Controller admin@192.168.159.95 - C3260-FOX2037G9MC

Server Blade with 4G RAID Cache (SBMezz1) / Virtual Drive

Info

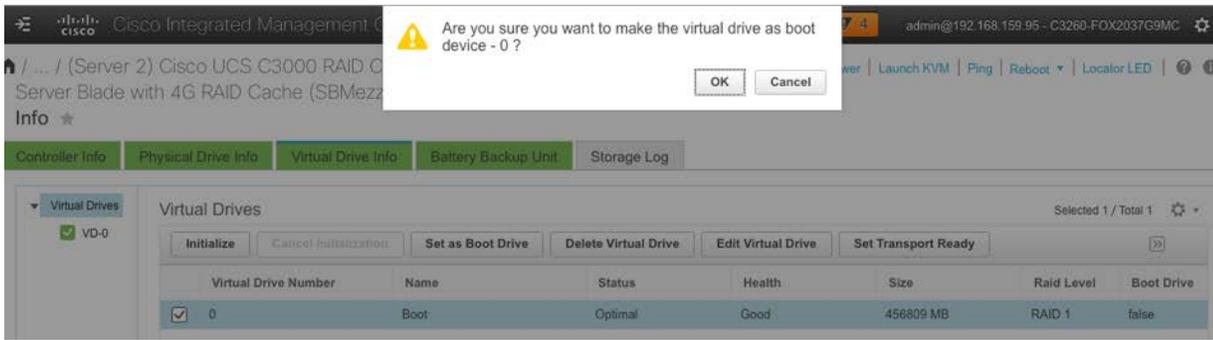
Controller Info Physical Drive Info **Virtual Drive Info** Battery Backup Unit Storage Log

Virtual Drives Selected 1 / Total 1

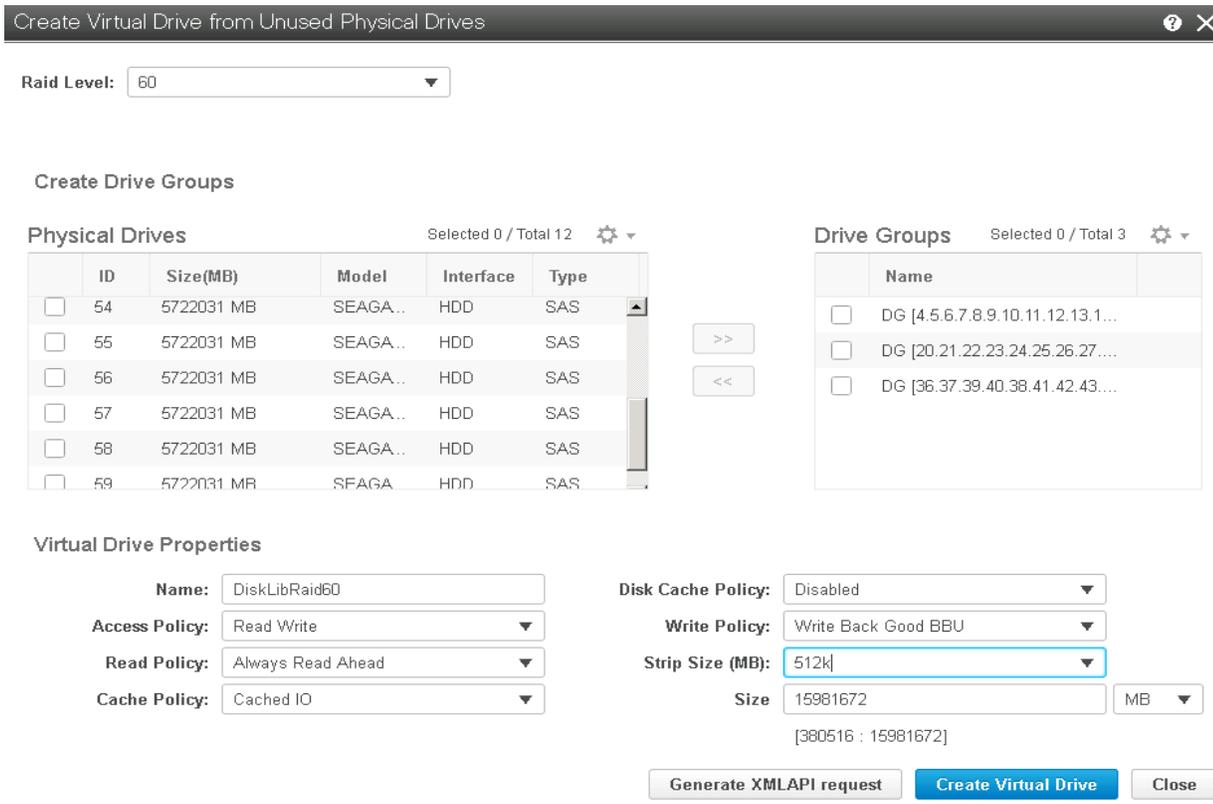
Initialize Cancel Initialization Set as Boot Drive Delete Virtual Drive Edit Virtual Drive Set Transport Ready

Virtual Drive Number	Name	Status	Health	Size	Raid Level	Boot Drive
<input checked="" type="checkbox"/> 0	Boot	Optimal	Good	456809 MB	RAID 1	false

6. Confirm that you want to make the Boot virtual drive the boot drive.

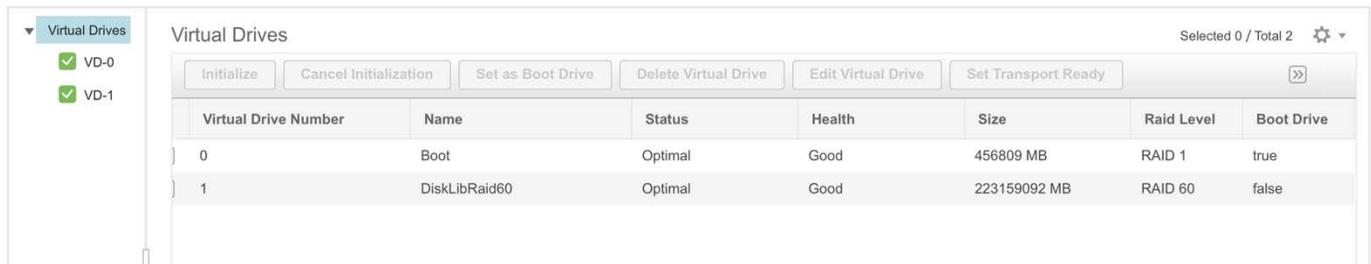


7. Return to the Controller Info tab to create the additional virtual drive groups and virtual drives. The following configuration for the disk library is for MediaAgent Extra Large configuration, which uses 48 SAS drives.
8. Click Create Virtual Drive from Unused Physical Drives.
9. Select 60 as the RAID level.
10. Select physical drives 4 through 19 and add them to the drive group (click >>).
11. Repeat the addition of physical drives by selecting 20 through 35 and then adding the drives to the drive group (click >>).
12. Repeat the addition of physical drives by selecting 36 through 51 and then adding the drives to the drive group (click >>).

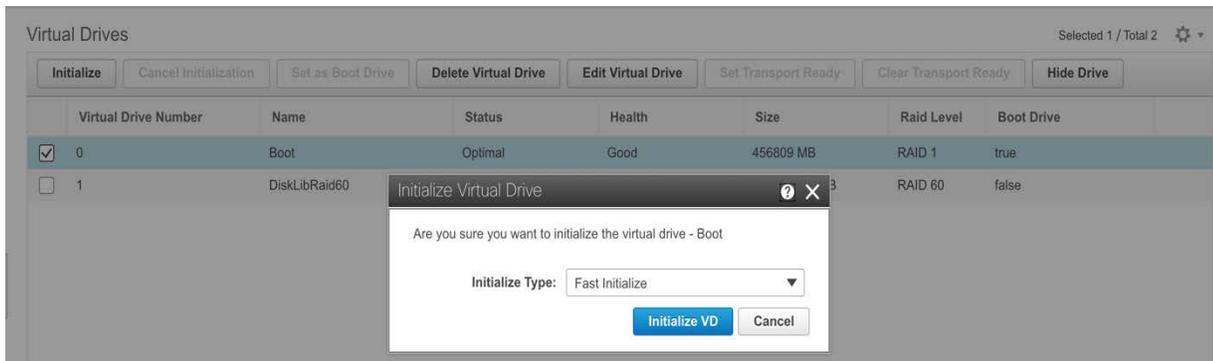


13. Provide the following values and complete the virtual drive creation.
 - a. Enter **DiskLibRaid60** as the name. (You can use any other name you want to identify the drive.)
 - b. Change Read Policy to Always Read Ahead.
 - c. Change Cache Policy to Cached IO.
 - d. Change Write Policy to Write Back Good BBU.
 - e. Change Strip Size to 512 KB.
 - f. Use the size populated automatically or change the size to the maximum available space.

14. Click Create Virtual Drive.



15. Be aware that the disk group initialization process is ongoing in the background for several hours, and full performance is available only after the initialization process finishes.
16. Now you need to initialize the drives. Select a drive and click Initialize in the menu at the top of the screen. Then select Fast Initialize in the next window. Do this for all drives.



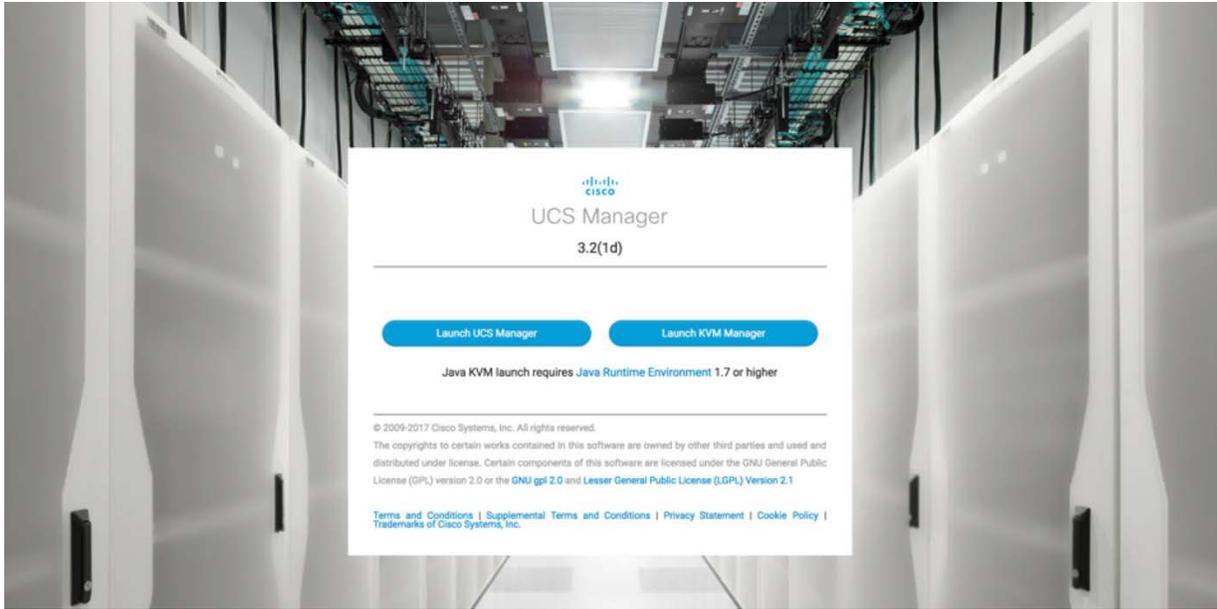
17. To see the initialization progress, click the virtual drive in the left column (for example, VD-0).
18. The server is now ready to load the OS.

Note: The number and sizes of drives dictates the virtual drive configuration. The values are based on the suggested MediaAgent configuration detailed earlier in this document.

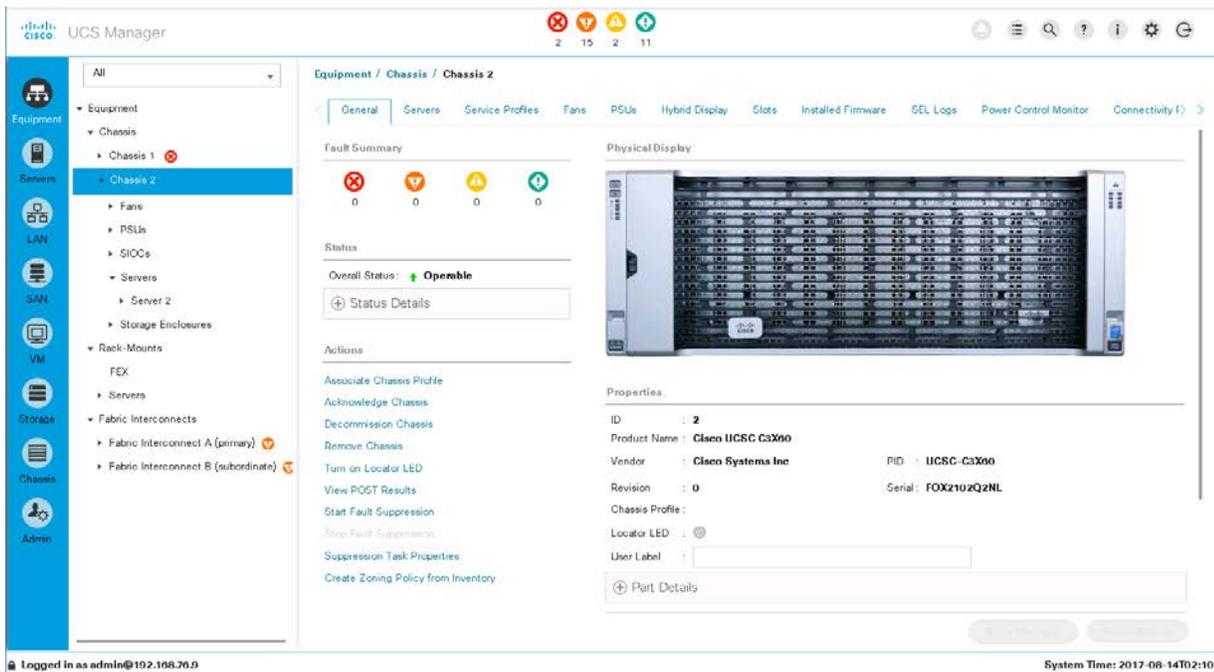
Cisco UCS managed configuration with Cisco UCS Manager

The following section covers the configuration of Cisco UCS managed Cisco S3260 chassis.

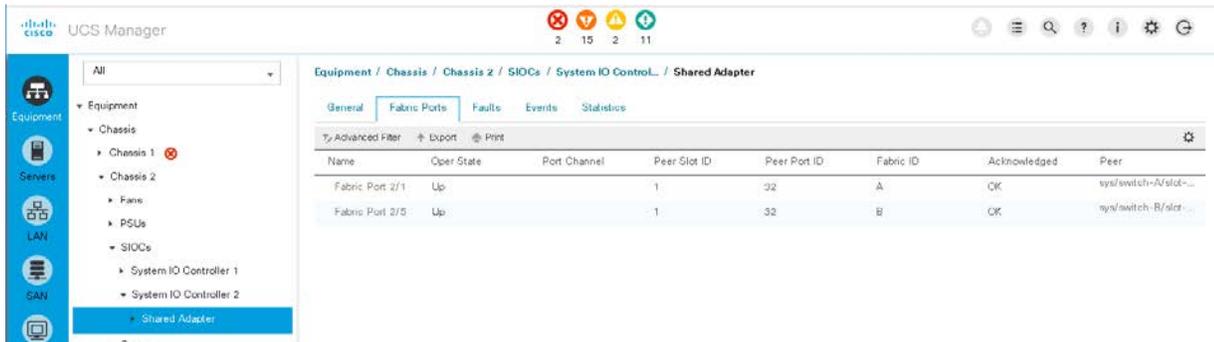
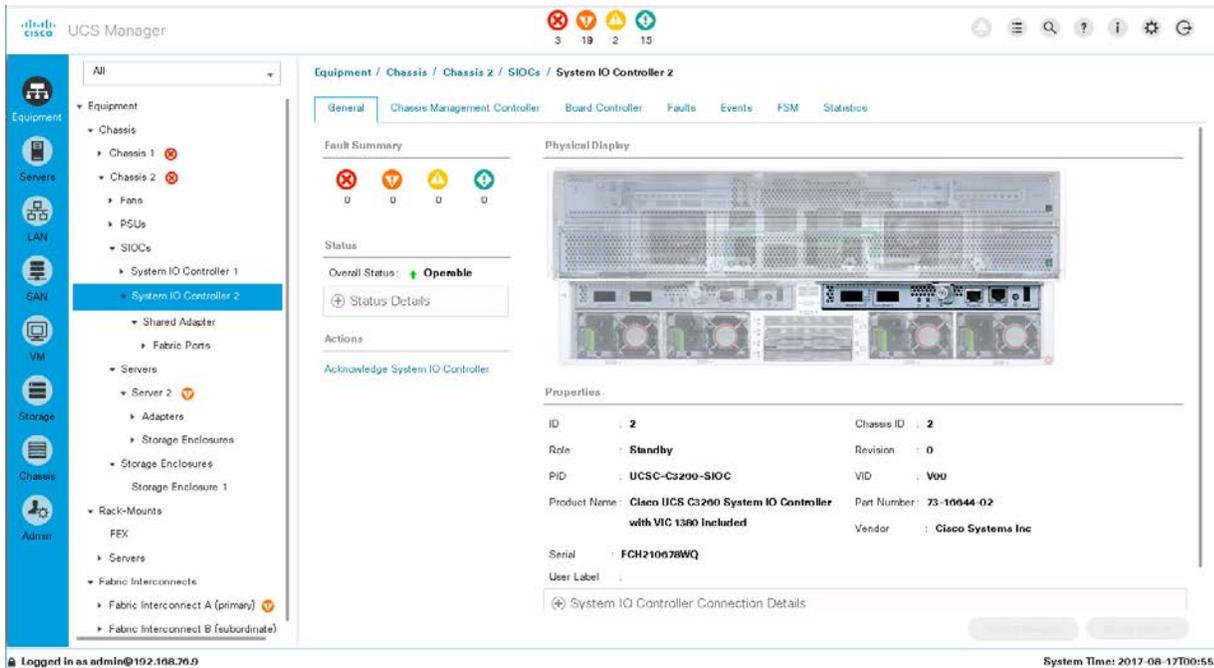
1. Log on to Cisco UCS Manager as the admin user or as another user with administrative rights.



2. On the Equipment tab, identify the Cisco UCS S3260 chassis and verify the condition of the system and the components required for the deployment.



3. Verify the SIOC Information. Only one SIOC is required. The second SIOC is optional and is used for better high availability or greater throughput.
4. The General tab provides an overview of the SIOC and Ethernet ports, including the uplink status and port speeds. The operating speed can be 10 Gbps, 4 x 10 Gbps, or 40 Gbps. You should use 40 Gbps whenever possible.



5. The Servers area shows the details of the server node, including information about the CPU, memory, PCIe cards, and local storage.

UCS Manager

Equipment / Chassis / Chassis 2 / Servers / Server 2

General Inventory Virtual Machines Installed Firmware CIMC Sessions SEL Logs VIF Paths Faults Events FSM Health Statistics

Fault Summary

Physical Display

Status

Overall Status: **Unassociated**

Actions

Properties

Slot ID	: 2	Chassis ID	: 2
Product Name	: Cisco UCS CSX00M4		
Vendor	: Cisco Systems Inc	PID	: UCSC-C3K-M4SRB
Revision	: 0	Serial	: FCH20197J0E
Manufacturing Date	: 2019-05-11		
Name	: <input type="text"/>		
User Label	: <input type="text"/>		
Unique Identifier	: 7b5a2ae4-1c79-40af-bd90-b0c2088bd51b		

Logged In as admin@192.168.20.9 System Time: 2017-08-14T02:10

UCS Manager

Equipment / Chassis / Chassis 2 / Servers / Server 2

General Inventory Virtual Machines Installed Firmware CIMC Sessions SEL Logs VIF Paths Faults Events FSM Health Statistics

Motherboard

Actions

Motherboard

ID	: 0		
Vendor	: Cisco Systems Inc	PID	: UCSC-C3K-M4SRB
Revision	: 0	Serial	: FCH20197J0E

States

Power : **Off** CMOS Battery Voltage : **OK**

Motherboard Power Usage Status : **OK**

BIOS

Vendor : Cisco Systems, Inc.

Running Version : CSX00M43.0.3b.0.0325171543

Package Version : CSX00M4.2.0.13v.B.D109171439

Backup Version : CSX00M43.0.3b.0.0325171543

Update Status : **Ready**

Startup Version : CSX00M43.0.3b.0.0325171543

Activate Status : **Ready**

Board Controller

Vendor : Cisco Systems Inc

PID : UCSC-C3K-M4SRB

Logged In as admin@192.168.20.9 System Time: 2017-08-14T02:11

UCS Manager

Equipment / Chassis / Chassis 2 / Servers / Server 2

General | Inventory | Virtual Machines | Installed Firmware | CIMC Sessions | SEL Logs | VIF Paths | Faults | Events | FSM | Health | Statistics

Motherboard | CIMC | **CPUs** | Memory | Adapters | HBAs | NICs | iSCSI vNICs | Storage | GPUs | Security

Processor 1

Product Name : **Intel(R) Xeon(R) E5-2695 v4** Vendor : **Intel(R) Corporation**
 PID : **UCS-CPU-E52695E** Revision : **0**

Part Details

Processor Architecture : **Xeon**
 CPU Stepping : **1** Speed (GHz) : **2.1**
 Socket Name : **CPU1** Number of Threads : **30**
 Number of Cores : **18** Number of Cores Enabled : **18**

States

Overall Status : **Operable** Power : **N/A**
 Operability : **Operable** Thermal : **OK** Presence : **Equipped**

Processor 2

Product Name : **Intel(R) Xeon(R) E5-2695 v4** Vendor : **Intel(R) Corporation**
 PID : **UCS-CPU-E52695E** Revision : **0**

Part Details

Logged in as admin@192.168.70.9 System Time: 2017-08-14T02:11

UCS Manager

Equipment / Chassis / Chassis 2 / Servers / Server 2

General | Inventory | Virtual Machines | Installed Firmware | CIMC Sessions | SEL Logs | VIF Paths | Faults | Events | FSM | Health | Statistics

Motherboard | CIMC | CPUs | **Memory** | Adapters | HBAs | NICs | iSCSI vNICs | Storage | GPUs | Security

Advanced Filter | Export | Print

Name	Location	Capacity(GB)	Clock(MHz)
Memory 1	DIMM_A1	16.00	2400
Memory 2	DIMM_A2	16.00	2400
Memory 3	DIMM_B1	16.00	2400
Memory 4	DIMM_B2	16.00	2400
Memory 5	DIMM_C1	16.00	2400
Memory 6	DIMM_C2	16.00	2400

Add | Delete | Info

View Chassis | Refresh Page

Logged in as admin@192.168.70.9 System Time: 2017-08-14T02:11

Equipment / Chassis / Chassis 2 / Servers / Server 2

General | Inventory | Virtual Machines | Installed Firmware | CIMC Sessions | SEL Logs | VIF Paths | Faults | Events | FSM | Health | Statistics

Motherboard | CIMC | CPUs | Memory | **Adapters** | HBAs | NICs | iSCSI vNICs | Storage | GPUs | Security

Advanced Filter | Export | Print

Name	Vendor	PID	Serial	Overall Status	Operability	Thermal
Adapter 2	Cisco Systems Inc	UCSC-CQ240-SIOC	FCH210078WQ	N/A	N/A	N/A

Add | Delete | Info

Logged in as admin@192.168.20.9 System Time: 2017-08-14T02:11

- In a standalone configuration, the SIOC includes predefined vNICs and vHBAs. In a configuration managed by Cisco UCS, however, nothing is defined. This definition is part of the service profile configuration. If PCIe cards for networking or Fibre Channel are installed, the information is listed on the NICs and HBAs tabs.

Equipment / Chassis / Chassis 2 / Servers / Server 2

General | Inventory | Virtual Machines | Installed Firmware | CIMC Sessions | SEL Logs | VIF Paths | Faults | Events | FSM | Health | Statistics

Motherboard | CIMC | CPUs | Memory | Adapters | HBAs | **NICs** | iSCSI vNICs | Storage | GPUs | Security

Advanced Filter | Export | Print

Name	vNIC	Vendor	PID	Model	Operability	MAC	Original MAC	ID
No data available								

Add | Delete | Info

Logged in as admin@192.168.20.9 System Time: 2017-08-14T02:12

- To complete the storage configuration discussed earlier in this document, you need to identify the physical disks available for the operating system installation. The Cisco UCS S3260 chassis comes with four disk slots on the rear side, with disk numbers 201 through 204. Identify and note the disks that are available. In the example here, the available disks are 201 and 202.

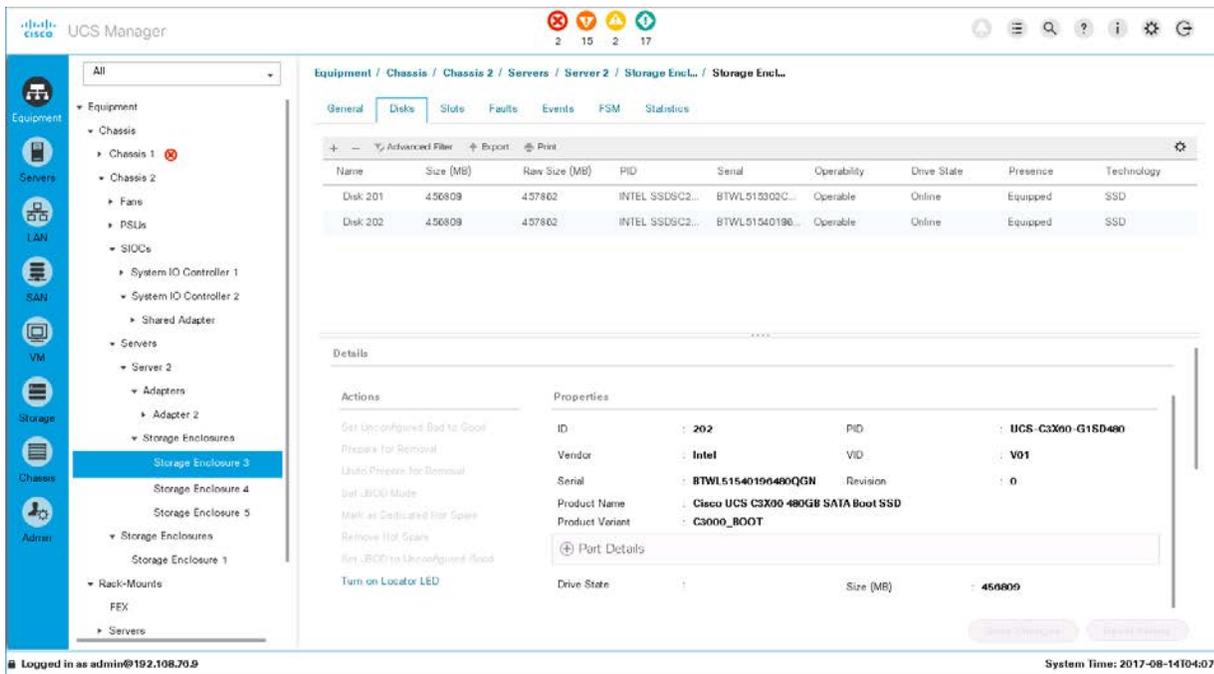
The screenshot shows the UCS Manager interface for Server 2. The 'Storage' tab is active, displaying a table of disks. The table includes columns for Name, Size (MB), Serial, Operability, Presence, Technology, Drive State, and Bootable. Below the table, there is a 'Details' section with 'Actions' and 'Properties'.

Name	Size (MB)	Serial	Operability	Presence	Technology	Drive State	Bootable
Storage Controller PCH 1							
Storage Controller SAS 1							
Disk 1	9536743	7PHV7X1NC	Operable	Equipped	HDD	Online	False
Disk 2	9536743	7PHV74PC	Operable	Equipped	HDD	Online	False
Disk 3	9536743	7PJUR6LC	Operable	Equipped	HDD	Online	False
Disk 4	9536743	7PH7P5RC	Operable	Equipped	HDD	Online	False
Disk 20	9536743	7PHV7X1NC	Operable	Equipped	HDD	Unconfigured Glo...	False
Disk 27	9536743	7PHLJLHC	Operable	Equipped	HDD	Unconfigured Glo...	False
Disk 28	9536743	7PHZ17DC	Operable	Equipped	HDD	Unconfigured Glo...	False
Disk 201	456609	RTWL518302C6	Operable	Equipped	SSD	Online	False
Disk 202	456609	RTWL515401964	Operable	Equipped	SSD	Online	False
Storage Controller SAS 2							

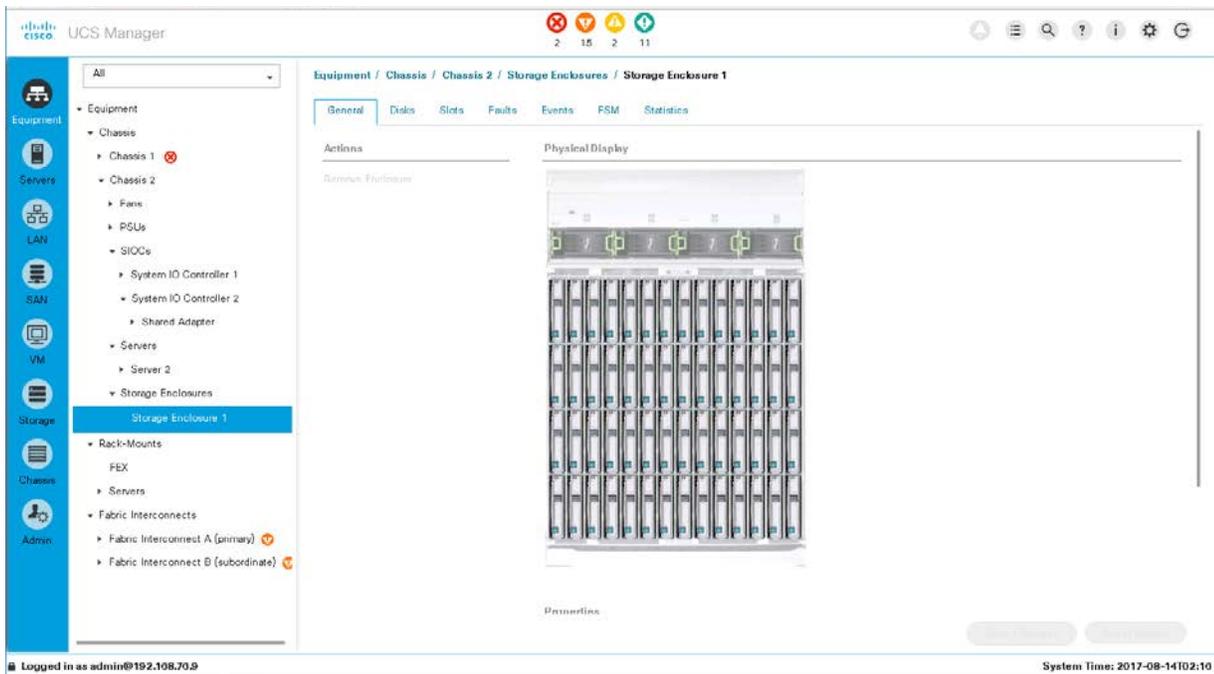
Details

Actions	Properties
Def Mount/Unmount Disk to Share	ID : PID
Prepare for Removal	Vendor : VID
Linux Prepare for Removal	Serial : Revision
Set BIOS Mode	Product Name
Mark as Dedicated Hot Spare	Product Variant
Remove Hot Spare	
Set BIOS to Unconfigured State	

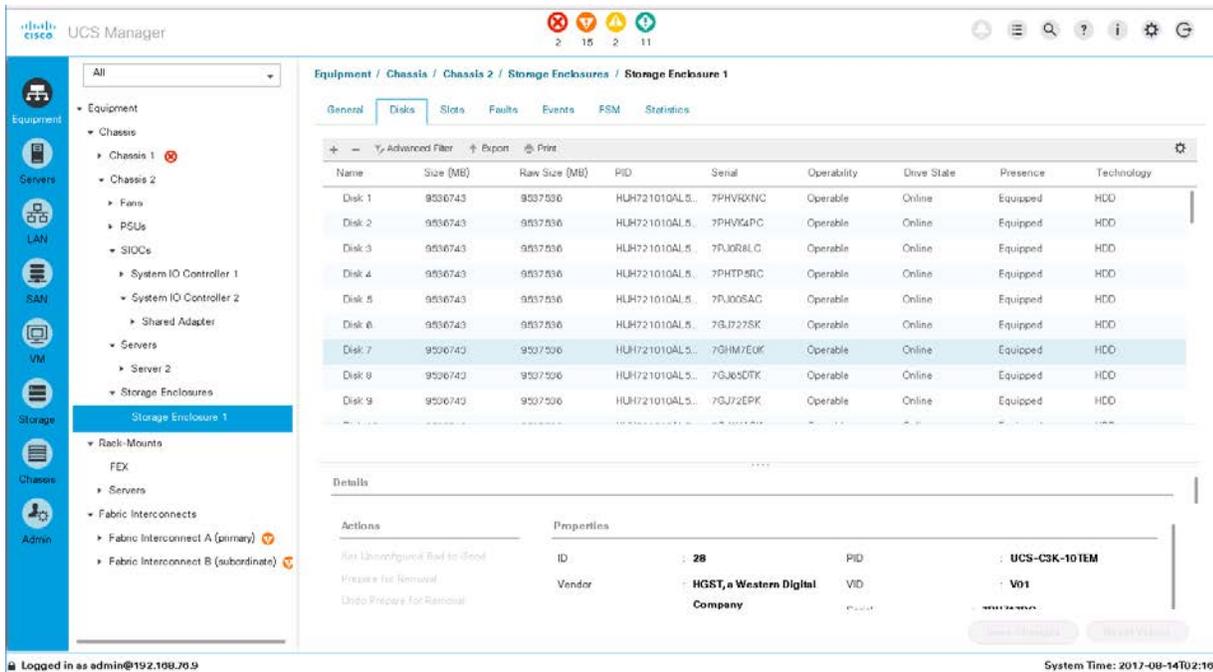
- On the server node, Storage Enclosure 3 represents the disk slots on the back of the chassis, used for the operating system disks. Storage Enclosure 4 represents the NVMe slot on the server node, and Storage Enclosure 5 represents the two NVMe slots on the I/O expander board (if one is connected). Those storage enclosures are dedicated to the specific server.



9. The Storage Enclosures area under Chassis, not under Servers, represents the top-loaded disk slots of the Cisco UCS S3260 chassis.



10. The Disks tab of Storage Enclosure 1 shows all the details about the top-loaded drives.



The screenshot displays the Cisco UCS Manager interface. The left sidebar shows a navigation tree with 'Storage Enclosures' selected. The main content area shows the configuration for 'Storage Enclosure 1' under 'Chassis 2'. A table lists the disks in the enclosure, and a 'Details' section shows properties for a selected disk.

Name	Size (MB)	Raw Size (MB)	PID	Serial	Operability	Drive State	Presence	Technology
Disk 1	9536743	9537536	HUH721010AL5...	7PHVXR9VC	Operable	Online	Equipped	HDD
Disk 2	9536743	9537536	HUH721010AL5...	7PHW4PC	Operable	Online	Equipped	HDD
Disk 3	9536743	9537536	HUH721010AL5...	7PJ0R8LC	Operable	Online	Equipped	HDD
Disk 4	9536743	9537536	HUH721010AL5...	7PHTP5RC	Operable	Online	Equipped	HDD
Disk 5	9536743	9537536	HUH721010AL5...	7PJ005AC	Operable	Online	Equipped	HDD
Disk 6	9536743	9537536	HUH721010AL5...	7GLJ27SK	Operable	Online	Equipped	HDD
Disk 7	9536743	9537536	HUH721010AL5...	7GHM7EUK	Operable	Online	Equipped	HDD
Disk 8	9536743	9537536	HUH721010AL5...	7GJ65DTK	Operable	Online	Equipped	HDD
Disk 9	9536743	9537536	HUH721010AL5...	7GJ2EPK	Operable	Online	Equipped	HDD

The 'Details' section for a selected disk shows the following properties:

Actions	Properties
<ul style="list-style-type: none"> Set Unconfigured Bad to Good Prepare for Removal Undo Prepare for Removal 	<ul style="list-style-type: none"> ID: 28 Vendor: HGST, a Western Digital Company PID: UCS-CSK-101EM VID: V01

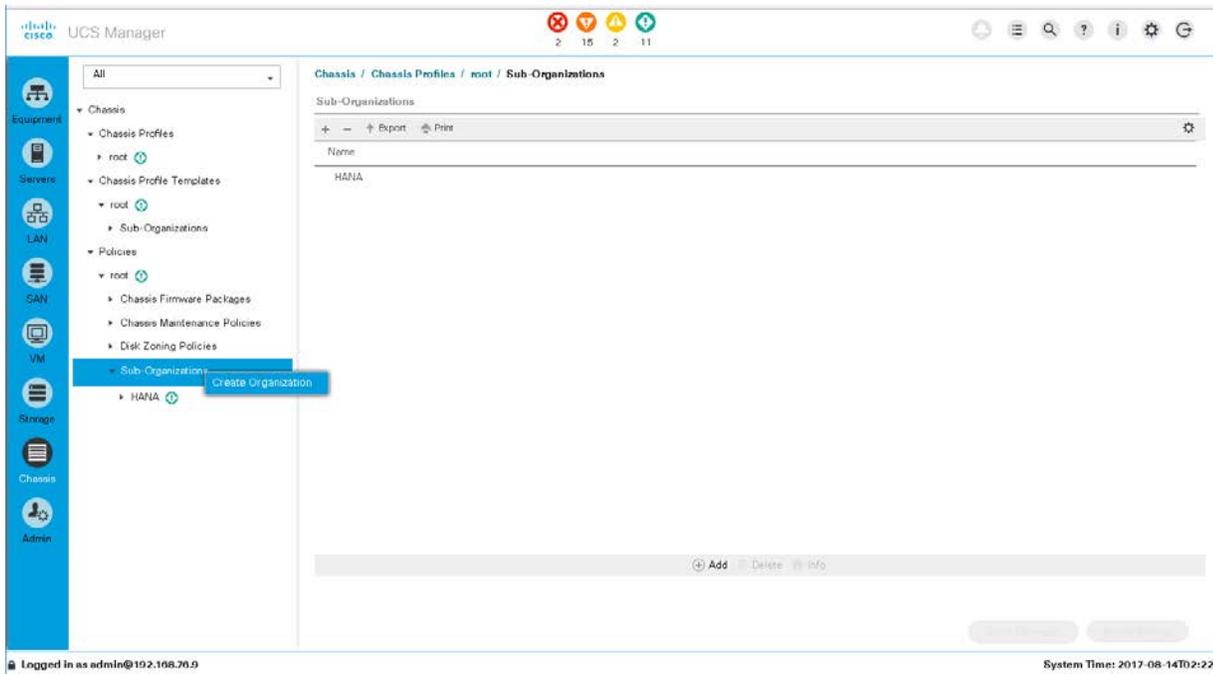
Create a profile

The next task is to specify a chassis profile for the Cisco UCS S3260 to define the disk zoning for the top-loaded drives (Storage Enclosure 1) within the chassis. Without a chassis profile, servers have no access to the top-loaded drives.

The Cisco UCS Manager configuration for the MediaAgent server is specific to the use case, so you can optionally define a new suborganization for Commvault to keep all configurations dedicated to this use case.

Note: If a suborganization is created, all the tasks described below which are usually performed under root organization have to be performed under the suborganization created.

1. In the Chassis area, choose one of the root options, and choose Sub-Organizations. Right-click and choose Create Organization.



2. Enter an obvious name, such as **Commvault**, enter a description, and click OK.

Create Organization



Name :

Description :

OK

Cancel

3. Create the chassis profile with in the suborganization you created.

The next steps depend on the available disk drives in Disk Enclosure 1 and the number of drives assigned to the MediaAgent server.

For a configuration with 48 disk drives for the disk library, use the following set of steps.

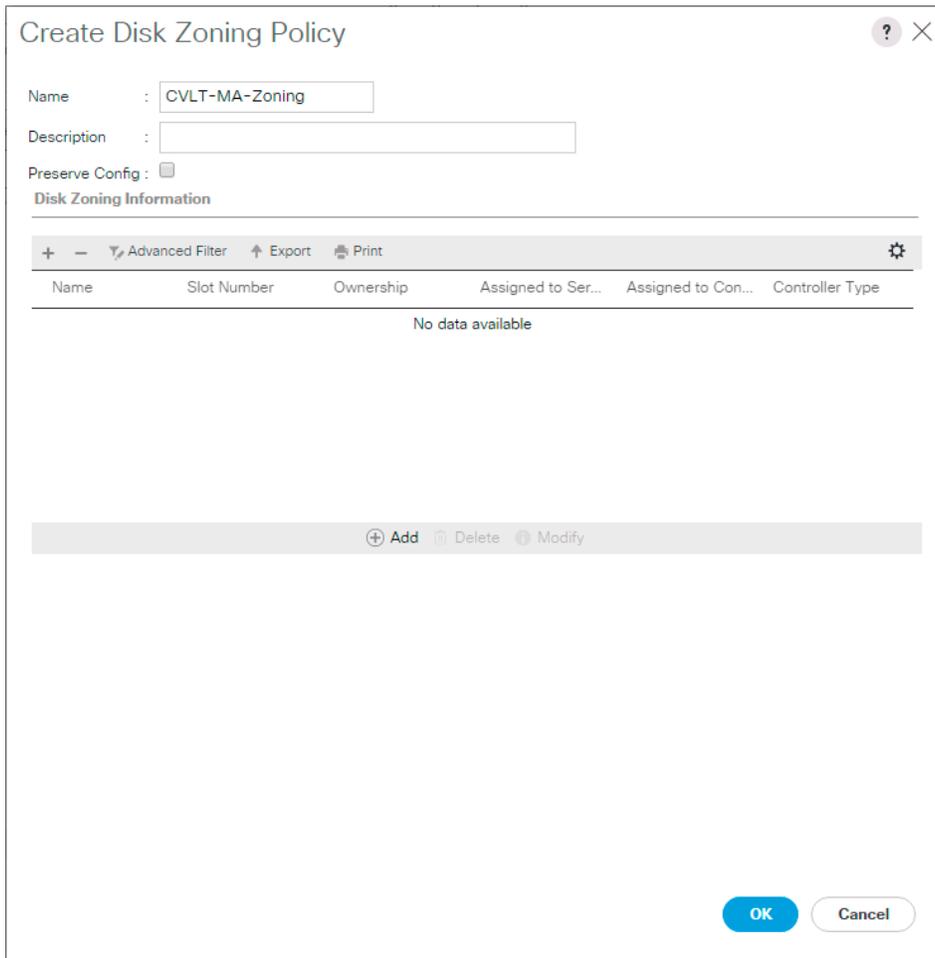
Create a chassis profile template

The chassis profile can be deployed independently, but to increase the consistency within Cisco UCS, you can generate chassis profiles from chassis profile templates. To create a chassis profile template, three policies are used:

- Disk zoning policy
- Chassis maintenance policy
- Chassis firmware policy

The disk zoning policy allocates disk slots between server nodes in the chassis. To create a disk zoning policy, perform the following steps:

1. In Cisco UCS Manager, click Chassis in the navigation pane and choose Policies from the Chassis pull-down options.
2. Right-click Disk Zoning Policies and choose Create Disk Zoning Policy.
3. Provide an appropriate name for the disk zoning policy and leave Preserve Config unselected.



Create Disk Zoning Policy ? X

Name : CVLT-MA-Zoning

Description :

Preserve Config :

Disk Zoning Information

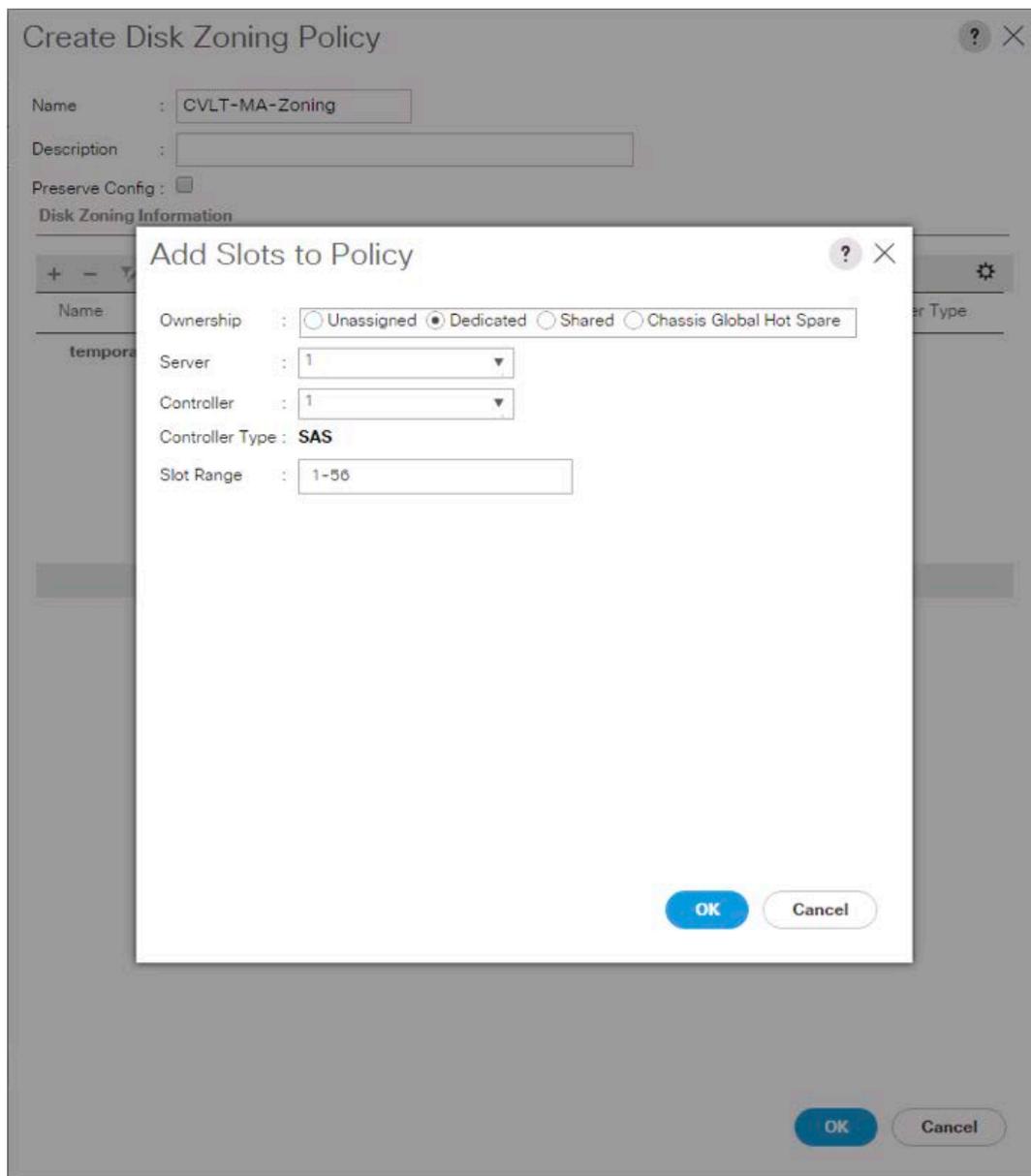
+ - Advanced Filter Export Print

Name	Slot Number	Ownership	Assigned to Ser...	Assigned to Con...	Controller Type
No data available					

+ Add Delete Modify

OK Cancel

4. Click Add in the Disk Zoning Information section to set the disk slot associations for the chassis.



The screenshot shows the 'Create Disk Zoning Policy' configuration page. The main form has the following fields:

- Name: CVLT-MA-Zoning
- Description: (empty)
- Preserve Config:
- Disk Zoning Information section with expand/collapse controls.

An 'Add Slots to Policy' dialog box is overlaid on the main form. It contains the following configuration options:

- Ownership: Unassigned Dedicated Shared Chassis Global Hot Spare
- Server: 1
- Controller: 1
- Controller Type: SAS
- Slot Range: 1-56

Both the main form and the dialog box have 'OK' and 'Cancel' buttons at the bottom.

5. For this deployment, the S3260 is using one node, so in the Add Slots to Policy dialog box, do the following:
 - a. Click the Dedicated option for Ownership.
 - b. Select 1 for the server
 - c. Select 1 for the controller.
 - d. Enter 1-56 as the slot range.
6. Click OK to confirm the Add Slots to Policy options.
7. Click OK to create the disk zoning policy.

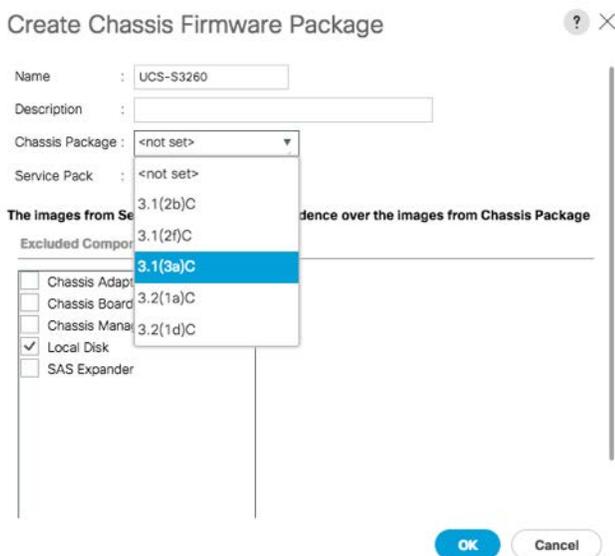
Create the chassis maintenance policy

The default chassis maintenance policy is set to User Ack for Reboot. You can use this policy.

Create the chassis firmware policy

The chassis firmware policy applies an appropriate firmware package to the chassis as it is associated. To create a chassis firmware policy, perform the following steps:

1. In Cisco UCS Manager, click Chassis in the navigation pane and choose Policies from the Chassis pull-down options.
2. Right-click Chassis Firmware Packages and choose Create Chassis Firmware Package.
3. Give the chassis firmware package an appropriate name (such as **UCS-3260**), select the 3.2(1d)C chassis package, and leave Local Disk as the only option selected under Excluded Components.



Create Chassis Firmware Package ? X

Name : UCS-S3260

Description :

Chassis Package : <not set>

Service Pack : <not set>

The images from Selected Chassis Package will be used to create the images from Chassis Package

Excluded Components

- Chassis Adapter
- Chassis Board
- Chassis Manager
- Local Disk
- SAS Expander

3.1(2b)C

3.1(2f)C

3.1(3a)C

3.2(1a)C

3.2(1d)C

OK Cancel

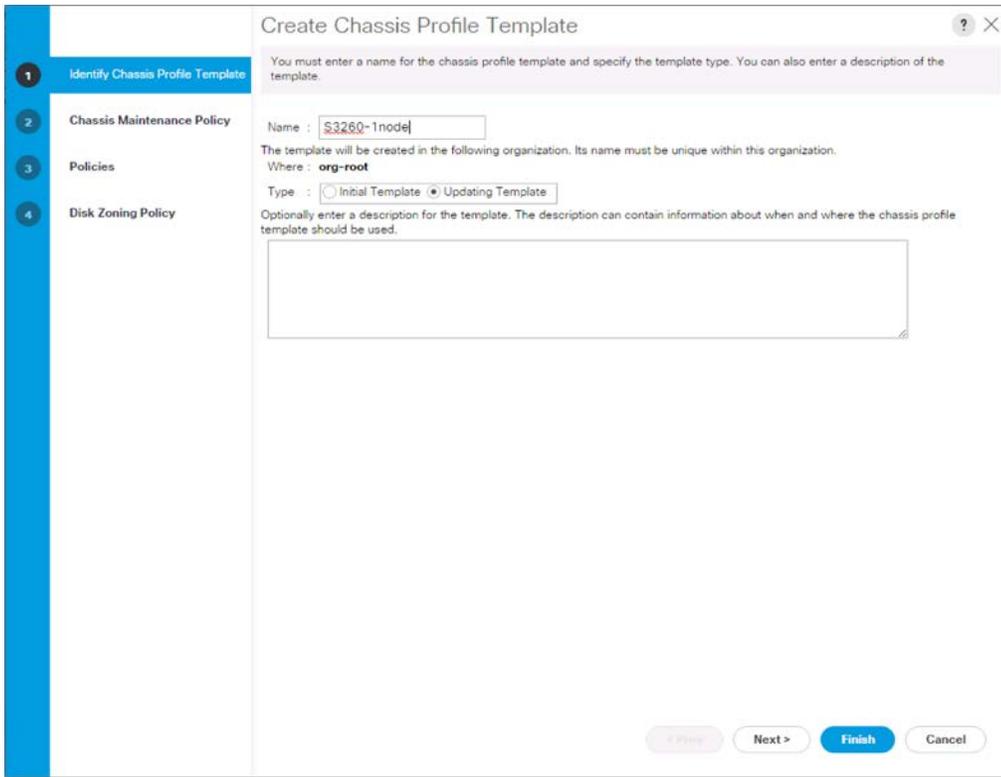
4. Click OK to create the chassis firmware package policy.

Note: Select the latest supported firmware package downloaded on the UCS manager.

Create the chassis profile template

With the policies used by the resulting chassis profile in place, create the chassis profile template with the following steps:

1. In Cisco UCS Manager, click Chassis in the navigation pane and choose Chassis Profile Templates from the Chassis pull-down options.
2. Right-click and choose Create Chassis Profile Template.
3. Provide a name for the chassis profile template and set it to the Updating Template type.



Create Chassis Profile Template [?] [X]

You must enter a name for the chassis profile template and specify the template type. You can also enter a description of the template.

1 Identify Chassis Profile Template

2 Chassis Maintenance Policy

3 Policies

4 Disk Zoning Policy

Name :

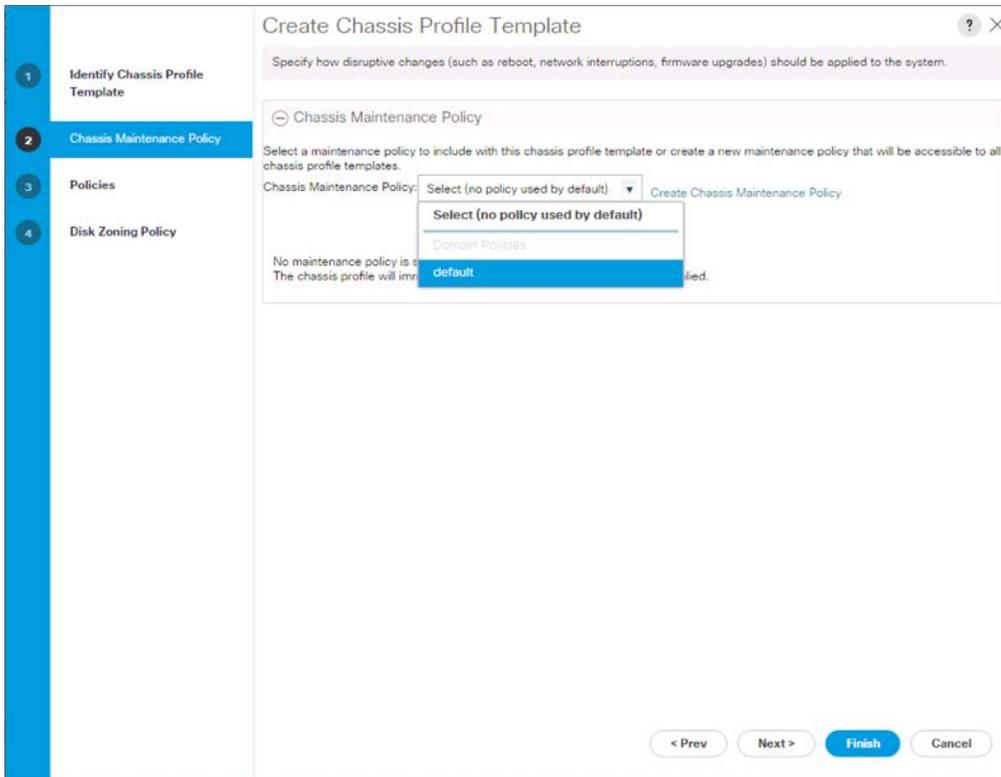
The template will be created in the following organization. Its name must be unique within this organization.
Where : **org-root**

Type : Initial Template Updating Template

Optionally enter a description for the template. The description can contain information about when and where the chassis profile template should be used.

< Prev Next > **Finish** Cancel

4. Select the default chassis maintenance policy.



Create Chassis Profile Template [?] [X]

Specify how disruptive changes (such as reboot, network interruptions, firmware upgrades) should be applied to the system.

1 Identify Chassis Profile Template

2 Chassis Maintenance Policy

3 Policies

4 Disk Zoning Policy

Chassis Maintenance Policy

Select a maintenance policy to include with this chassis profile template or create a new maintenance policy that will be accessible to all chassis profile templates.

Chassis Maintenance Policy: [Create Chassis Maintenance Policy](#)

Select (no policy used by default)

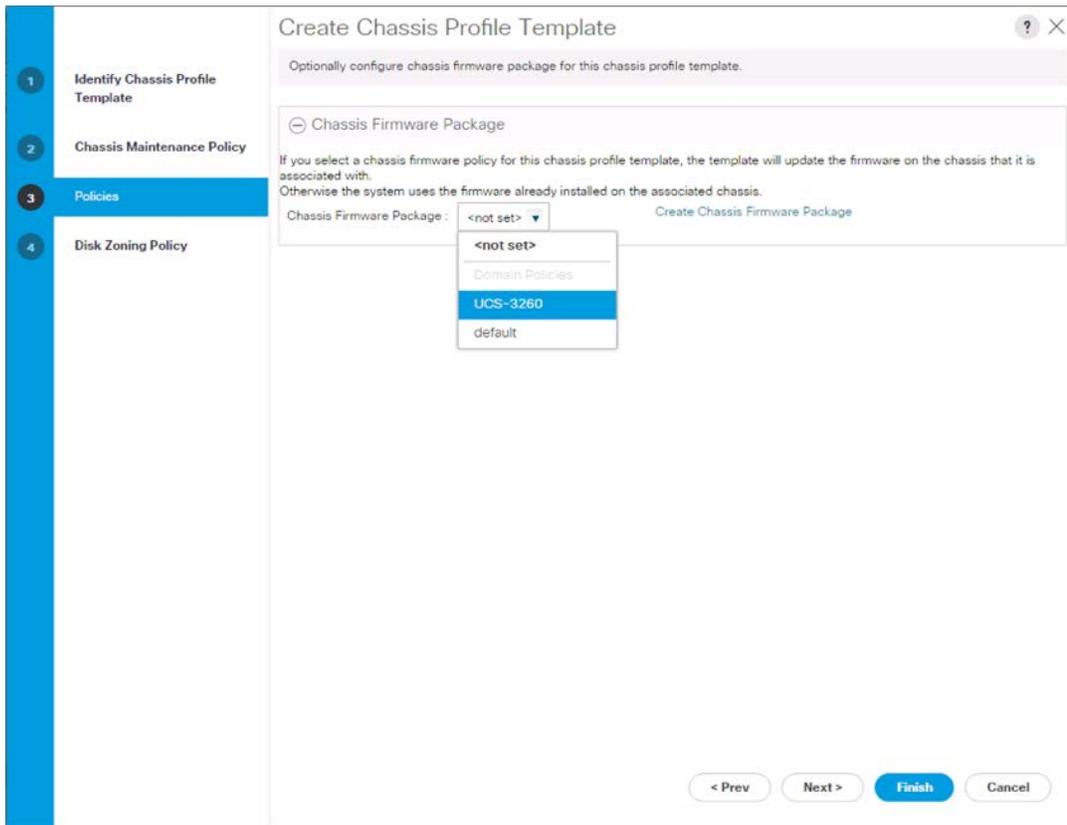
Domain Policies

default

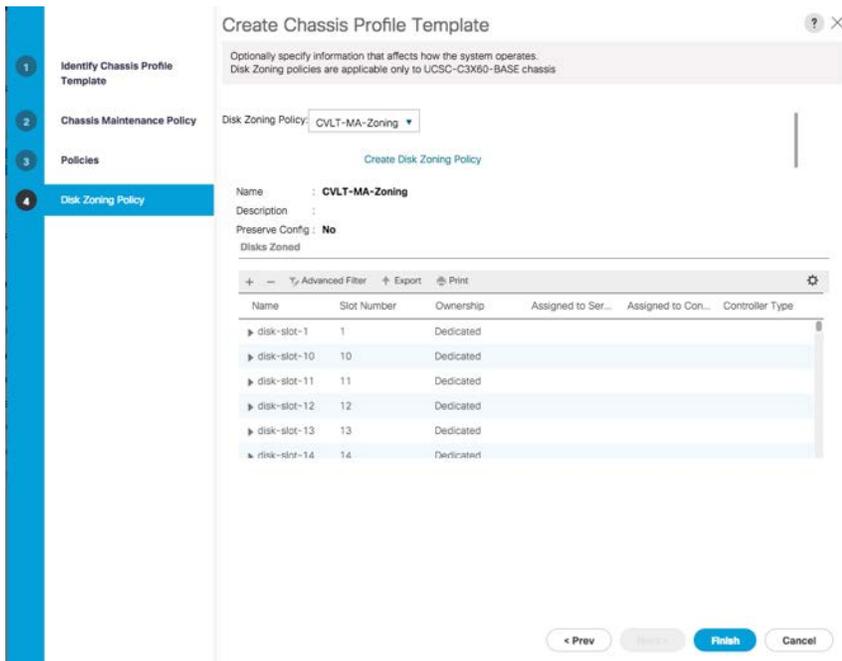
No maintenance policy is selected. The chassis profile will inherit the default policy.

< Prev Next > **Finish** Cancel

- Set the chassis firmware package to the UCS-3260 package created previously.



- Select the CVLT-MA-Zoning disk zoning policy that was previously created.



7. Click Finish to create the chassis profile template.

Create chassis profiles from the template

The chassis profile template has been created with policies appropriate for both Cisco UCS S3260 Storage Servers used in the environment, so you can create one or more chassis profiles using the template.

1. In Cisco UCS Manager, click Chassis in the navigation pane and choose Chassis Profile Templates from the Chassis pull-down options.
2. Right-click the newly created chassis profile template and choose the Create Chassis Profiles from Template option.
3. Specify a naming prefix, the name suffix starting number, and the number of instances of chassis profiles to be created from the template. Match the Number of Instances field value to the number of MediaAgent servers that need to be deployed.

Create Chassis Profiles From Template



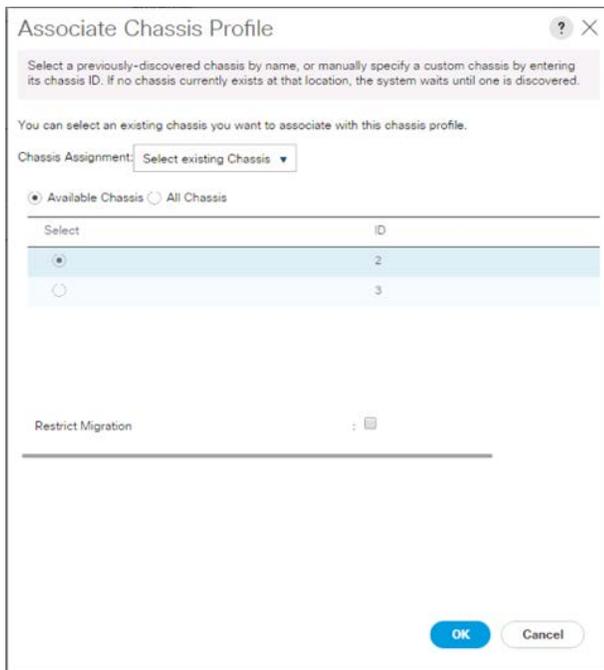
Naming Prefix	:	<input type="text" value="CVLT-S3260-0"/>
Name Suffix Starting Number	:	<input type="text" value="1"/>
Number of Instances	:	<input type="text" value="1"/>

1. Click OK to create the chassis profile.

Associate chassis profiles

Each chassis profile created can be associated with one of the connected S3260 servers.

1. In Cisco UCS Manager, click Chassis in the navigation pane and choose Chassis Profiles from the Chassis pull-down options.
2. Right-click one of the newly created chassis profiles and choose Change Chassis Profile Association.
3. Choose "Select existing Chassis" from the Chassis Assignment pull-down menu and select the appropriate chassis ID to use.



4. Click OK to associate the chassis.
5. Repeat these steps for the second S3260, if a second MediaAgent server needs to be deployed.

Set up the Cisco UCS S3260 server node

The server nodes will be configured using service profiles just like other Cisco UCS Manager managed server resources, but they require a storage profile to use disks made available to them by disk slots designated for the server in the disk zoning policy of the chassis profile associated with the chassis.

Create the Cisco UCS S3260 storage profile

The storage profile consists of storage polices used for creating local LUNs from allocated disks (disk group policies).

For S3260 M3 server nodes, a controller definition of the embedded RAID controller or platform controller hub (PCH) used by the rear panel SSD of the S3260 is created in the storage profile, instead of a local LUN disk group policy for those SSDs.

Create disk group policies

You need to create two disk group policies for the MediaAgent deployment on the S3260 based on the Extra Large MediaAgent configuration options:

- Boot_SSD_rear1: Boot LUN of the rear SSD slots in a RAID 1 configuration
- S3260-Disk_Lib: Disk library of the MediaAgent using 48 HDDs in RAID 60 with three hot spares

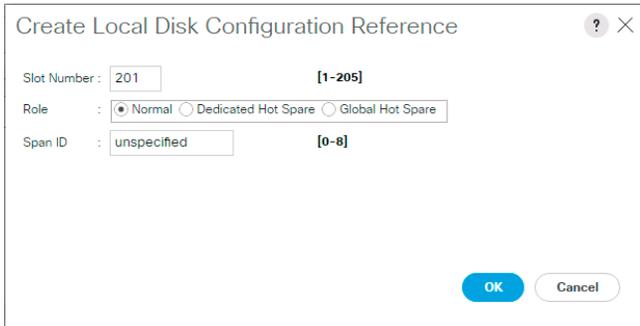
Note: Large and Extra Large MediaAgent configurations use an NVMe drive for hosting the DDB and index cache.

Each of these disk group policies will create local LUNs for the S3260 server nodes, using available disks of specific types or through manual slot specification.

Create Boot_SSD_rear1 disk group policy

To create the Boot_SSD_rear1 disk group policy, perform the following steps:

1. In Cisco UCS Manager, click Storage in the navigation pane and choose Storage Policies from the Storage pull-down options.
2. Right-click and choose Create Disk Group Policy.
3. Do the following:
 - a. Enter an appropriate name (**Boot_SSD_rear1**).
 - b. Select RAID 1 Mirrored.
 - c. Select Disk Group Configuration (Manual).
 - d. Click Add and enter **201** as the slot number.



Create Local Disk Configuration Reference

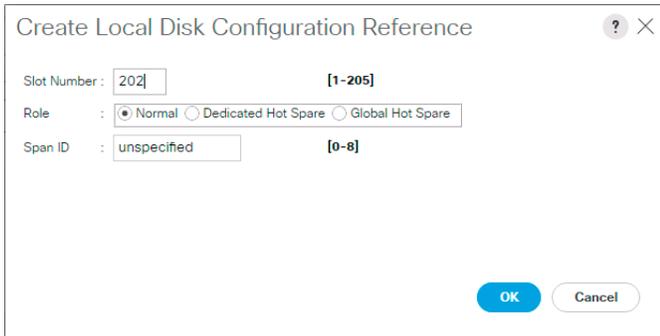
Slot Number : [1-205]

Role : Normal Dedicated Hot Spare Global Hot Spare

Span ID : [0-8]

OK Cancel

4. Click OK.
5. Click Add again and enter **202** as the slot number.



Create Local Disk Configuration Reference

Slot Number : [1-205]

Role : Normal Dedicated Hot Spare Global Hot Spare

Span ID : [0-8]

OK Cancel

6. Do the following:
 - e. Set Stripe Size to 64 KB.
 - f. Set Access Policy to Read Write.
 - g. Set Write Cache Policy to Write Through.
 - h. Set IO Policy to Direct.
 - i. Set Drive Cache to No Change.

Create Disk Group Policy



Name : RAID_1_Mirrored
 Description :
 RAID Level : RAID 1 Mirrored

Disk Group Configuration (Automatic) Disk Group Configuration (Manual)

Disk Group Configuration (Manual)

Slot Number	Role	Span ID
201	Normal	Unspecified
202	Normal	Unspecified

[+ Add](#) [Delete](#) [Info](#)

Virtual Drive Configuration

Strip Size (KB) : 64KB
 Access Policy : Read Write

[OK](#) [Cancel](#)

Virtual Drive Configuration

Strip Size (KB) : 64KB
 Access Policy : Read Write
 Read Policy : Platform Default Read Ahead Normal
 Write Cache Policy : Platform Default Write Through Write Back Good Bbu Always Write Back
 IO Policy : Platform Default Direct Cached
 Drive Cache : Platform Default No Change Enable Disable
 Security :

[OK](#) [Cancel](#)

7. Click OK to create the disk group policy.

Manual slot number specifications for the rear SSD can be found in Cisco UCS Manager under > Equipment > Chassis > Chassis [chassis #] > Servers > Server [server #] > Storage Enclosures > Storage Enclosure 3. The slots should be 201-202 for Server Node 1 and 203-204 for Server Node 2.

Create S3260-Disk-Lib disk group policy

To create the S3260-Disk-Lib disk group policy, perform the steps shown here.

You will create a RAID 60 group as part of this procedure with three RAID 6 spans of 16 drives each and three hot spares.

Note: The below procedure manually selects the drives to be part of the disk group, optionally the drives can be automatically selected by checking the Disk Group Configuration (Automatic) option with the following parameters: Number of drives as 48 and Number of Global Hot Spares as 3. All the other parameters are identical with either options.

1. In Cisco UCS Manager, click Storage in the navigation pane and choose Storage Policies from the Storage pull-down options.
2. Right-click and choose Create Disk Group Policy.
3. Provide an appropriate name (S3260-Disk-Lib).

4. Select RAID 60 Striped Dual Parity.
5. Select Disk Group Configuration (Manual).

Create Disk Group Policy ? ×

Name :

Description :

RAID Level :

Disk Group Configuration (Automatic)
 Disk Group Configuration (Manual)

Disk Group Configuration (Manual)

Advanced Filter Export Print ⚙️

Slot Number	Role	Span ID
No data available		

⊕ Add 🗑️ Delete ℹ️ Info

Virtual Drive Configuration

Strip Size (KB) :

Access Policy :

6. Click Add and leave the slot number set to 1. Set Role to Global Hot Spare.

Create Local Disk Configuration Reference ? ×

Slot Number : **[1-205]**

Role : Normal Dedicated Hot Spare Global Hot Spare

Span ID : **[0-8]**

7. Repeat the preceding procedure to add two more global hot spares, providing the slot numbers as 2 and 3 respectively.
8. Click Add again and enter the slot number as 4. Set Role to Normal and Span ID to 1.

Create Local Disk Configuration Reference



Slot Number : [1-205]

Role : Normal Dedicated Hot Spare Global Hot Spare

Span ID : [0-8]

OK Cancel

9. Repeat the preceding procedure to add 15 more drives to the first RAID 6 set or Span 1.

Create Disk Group Policy

Name :

Description :

RAID Level :

Disk Group Configuration (Automatic) Disk Group Configuration (Manual)

Disk Group Configuration (Manual)

Advanced Filter Export Print

Slot Number	Role	Span ID
4	Normal	1
5	Normal	1
6	Normal	1
7	Normal	1
8	Normal	1
9	Normal	1

+ Add - Delete Info

Virtual Drive Configuration

Strip Size (KB) :

Access Policy :

OK Cancel

10. Repeat the preceding procedure to add drives to two more spans that will be part of the RAID 60 set. Enter the span number as 2 for the next 16 drives and the span number as 3 for another 16 drives.

Slot Number	Role	Span ID
28	Normal	2
29	Normal	2
30	Normal	2
31	Normal	2
32	Normal	2
33	Normal	2

Slot Number	Role	Span ID
43	Normal	3
44	Normal	3
45	Normal	3
46	Normal	3
47	Normal	3
48	Normal	3

11. Set Stripe Size to 512 KB.
12. Set Read Policy to Read Ahead.
13. Set Write Cache Policy to Write Back Good Bbu.

Virtual Drive Configuration

Strip Size (KB) : **512KB**

Access Policy :

Read Policy : Platform Default Read Ahead Normal

Write Cache Policy : Platform Default Write Through Write Back Good Bbu Always Write Back

IO Policy : Platform Default Direct Cached

Drive Cache : Platform Default No Change Enable Disable

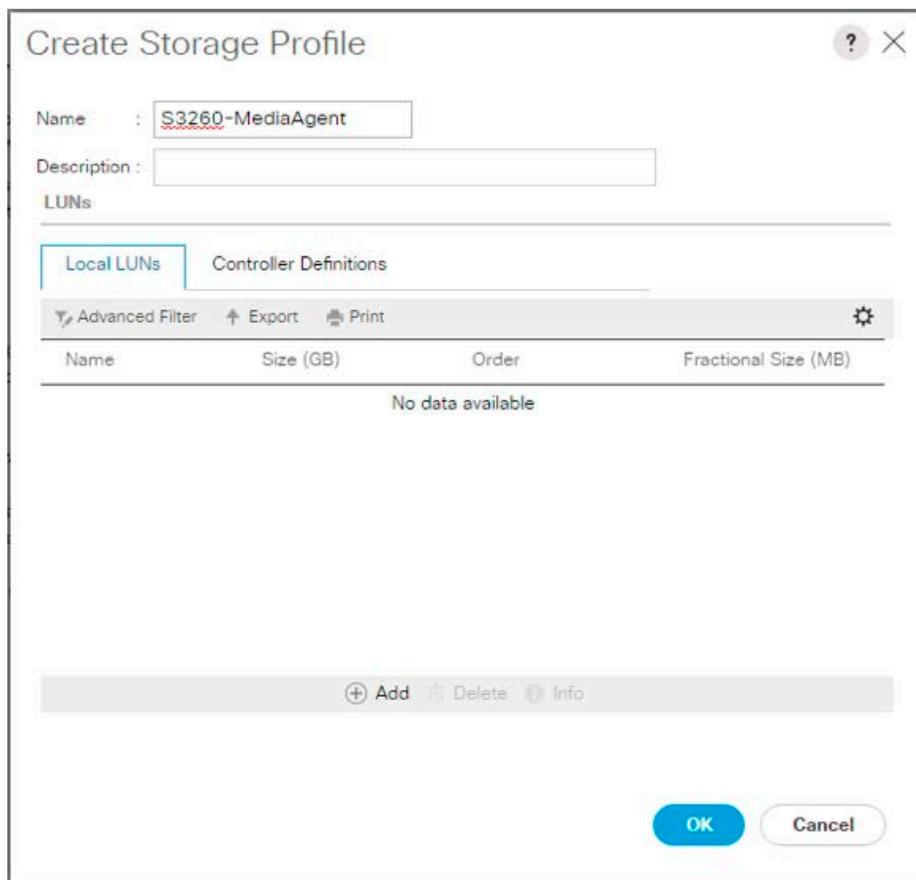
Security :

14. Click OK to create the disk group policy.

Create the MediaAgent storage profile

To create the MediaAgent storage profile, perform the following actions:

1. In Cisco UCS Manager, click Storage in the navigation pane and choose Storage Profiles from the Storage pull-down options.
2. Right-click and choose Create Storage Profile.
3. Provide a name for the storage profile (**S3260-MediaAgent**).



Create Storage Profile ? X

Name :

Description :

LUNs

Local LUNs Controller Definitions

Advanced Filter Export Print

Name	Size (GB)	Order	Fractional Size (MB)
No data available			

+ Add Delete Info

OK Cancel

4. Select Add on the Local LUNs tab to add a LUN that will be created from the Boot_SSD_rear1 disk group policy.
5. Provide the following in the Create Local LUN dialog box:
 - a. For Name, enter **Boot_SSD**.
 - b. Leave Size set to 1.
 - c. Leave Auto Deploy selected as Auto Deploy.
 - d. Select Expand To Available.
 - e. Choose the Boot_SSD_rear1 disk group policy from the Select Disk Group Configuration pull-down menu

Create Local LUN ? ×

Create Local LUN Prepare Claim Local LUN

Name :

Size (GB) : **[0-102400]**

Fractional Size (MB) :

Auto Deploy : Auto Deploy No Auto Deploy

Expand To Available :

Select Disk Group Configuration : [Create Disk Group Policy](#)

<not set>

Domain Policies

Boot_SSD

Boot_SSD_rear1

C240-Boot_SSD

C240-RAID6-LUN

S3260-Disk-Lib

S3260-SSD-Cache

6. Click OK to add the local LUN.
7. Select Add on the Local LUNs tab to add a LUN that will be created from the Disk-Lib disk group policy.
8. Provide the following in the Create Local LUN dialog box:
 - f. For Name, enter **Disk-Lib**.
 - g. Leave Size set to 1.
 - h. Leave Auto Deploy selected as Auto Deploy.
 - i. Select Expand To Available.
 - j. Choose the S3260-Disk-Lib disk group policy from the Select Disk Group Configuration pull-down menu.

Create Local LUN ? ×

Create Local LUN Prepare Claim Local LUN

Name :

Size (GB) : **[0-245760]**

Fractional Size (MB) :

Auto Deploy : Auto Deploy No Auto Deploy

Expand To Available :

Select Disk Group Configuration : [Create Disk Group Policy](#)

<not set>

Domain Policies

Boot_SSD_rear1

S3260-Disk-Lib

9. Click OK to add the local LUN.
10. Click OK to create the storage profile.

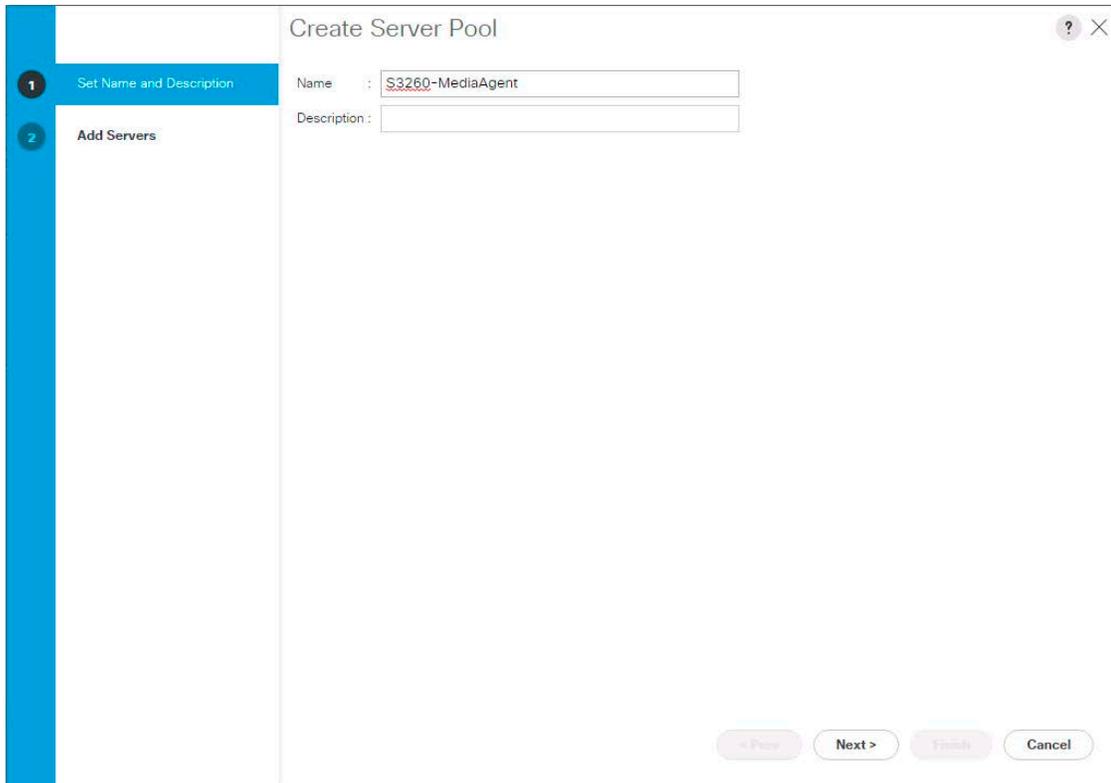
Create the Cisco UCS S3260 service profile

In addition to the storage profile, you need to create several new policies and pools before you can create a service profile for the S3260 server node.

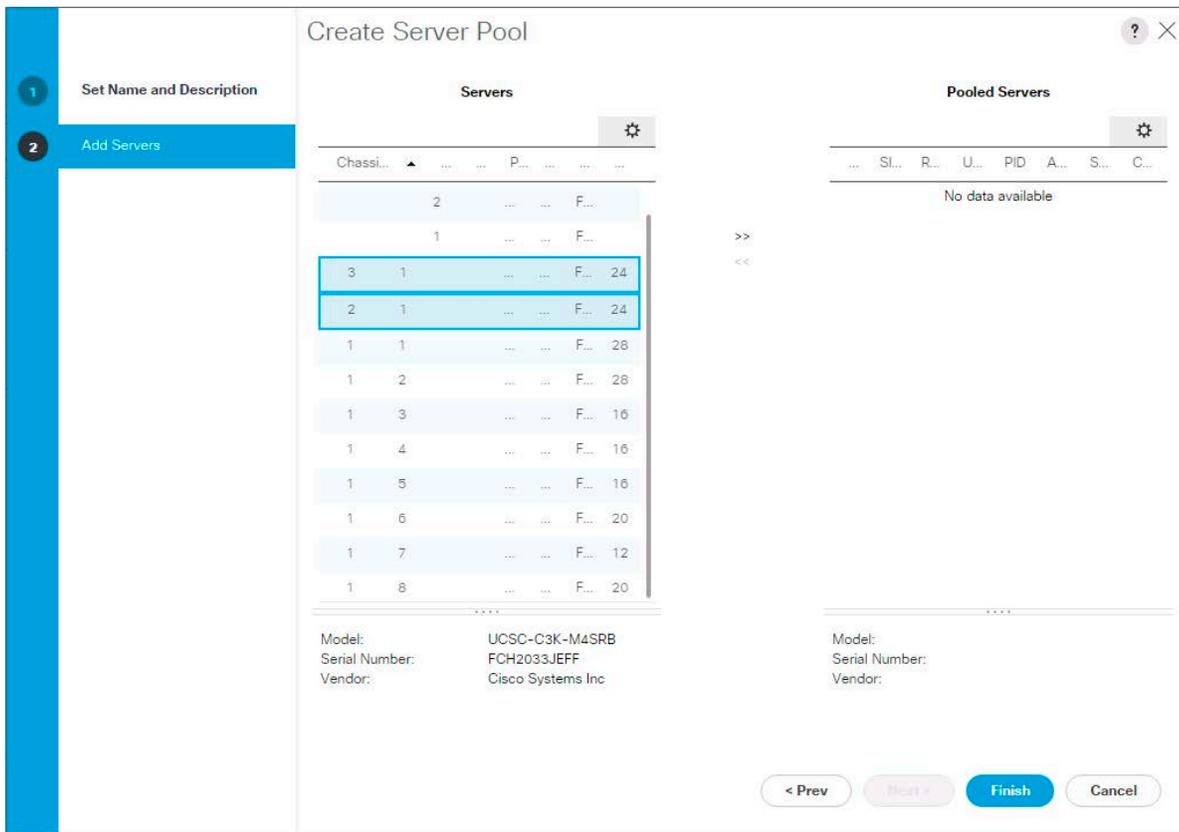
Create the Cisco UCS S3260 server pool

The S3260 server pool will contain S3260 server nodes to be used for the MediaAgent. To create the server pool to use, follow these steps:

1. In Cisco UCS Manager, click Server in the Servers pane and choose Pools from the Server pull-down options.
2. Right-click Server Pools and choose Create Server Pool.
3. Enter an appropriate name for the server pool (**S3260-MediaAgent**) and click Next.



4. The S3260 servers are acknowledged in this environment as Chassis 2 and Chassis 3, so select these numbers, or select the appropriate chassis numbers in your environment if they differ. Then click the >> button between the Servers list and the Pooled Servers list.

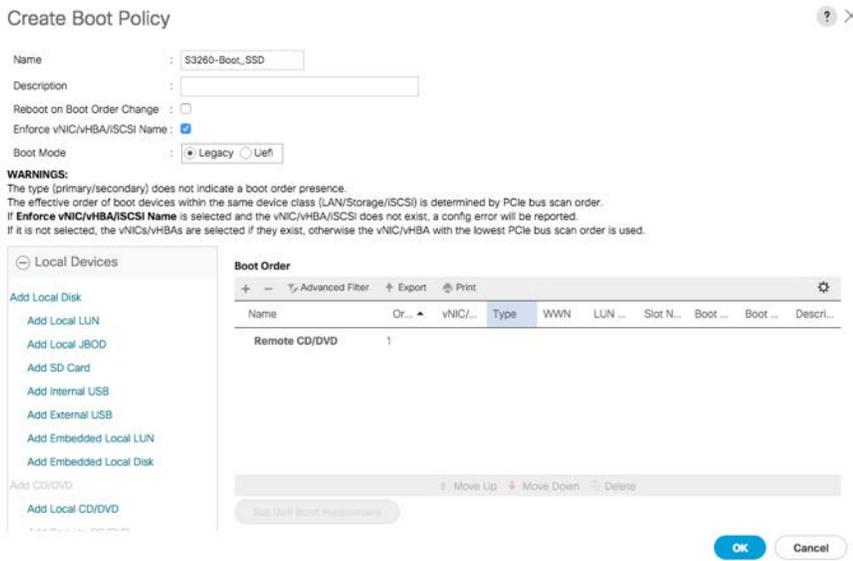


5. Click Finish to create the server pool.

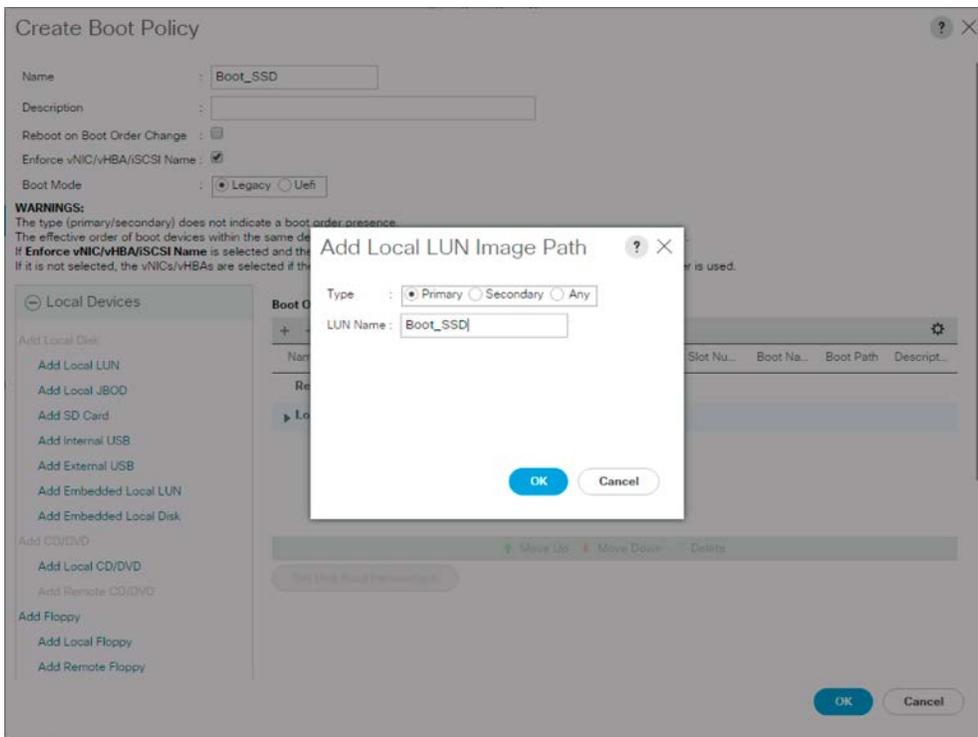
Create boot policy

You need a boot policy to boot from the Boot_SSD_rear1 local LUN created during the disk group policy part of the storage profile process. To create the boot policy, follow these steps:

1. In Cisco UCS Manager, click Server in the navigation pane and choose Policies from the Server pull-down options.
2. Right-click Boot Policies under root and choose Create Boot Policy.
3. Provide a name for the policy (**Boot_SSD**) and add a remote CD/DVD (used for KVM virtual media [vMedia] booting) under Local Devices.



4. Click Add Local LUN to reference the Boot_SSD LUN created by the Boot_SSD_rear1 disk group policy.



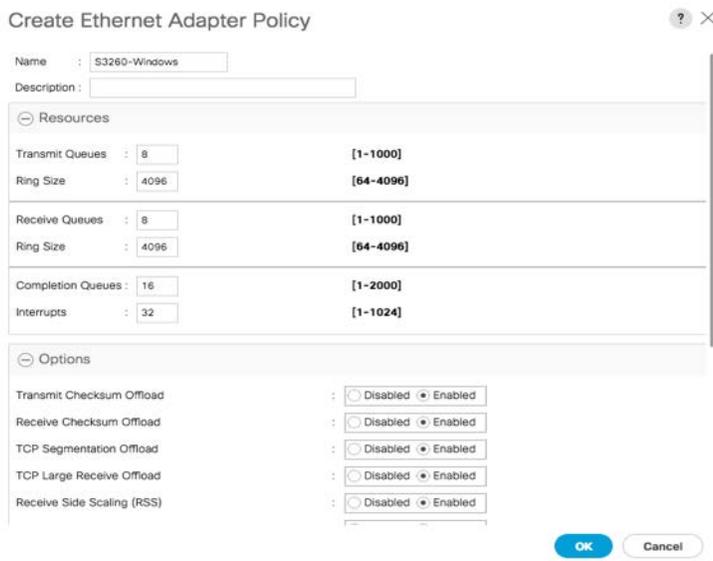
5. Click OK and then click OK again to create the boot policy.

Create Microsoft Windows 40-Gbps adapter policy

You need to make some ring size adjustments and enable receive-side scaling for a Microsoft Windows-specific adapter for increased performance using 40-Gbps NICs. To create the adapter, follow these steps:

1. In Cisco UCS Manager, click Server in the navigation pane and choose Policies from the Server pull-down options.

2. Right-click Adapter Policies and choose Create Ethernet Adapter Policy.
3. Provide a name (**S3260-Windows**) for the adapter policy and specify the following options:
 - h. Transmit Queues: 8
 - i. Ring Size: 4096
 - j. Receive Queues: 8
 - k. Ring Size: 4096
 - l. Completion Queues: 16
 - m. Interrupts: 32
 - n. Receive Side Scaling (RSS): Enabled



Create Ethernet Adapter Policy ? X

Name : S3260-Windows
Description :

Resources

Transmit Queues	: 8	[1-1000]
Ring Size	: 4096	[64-4096]
Receive Queues	: 8	[1-1000]
Ring Size	: 4096	[64-4096]
Completion Queues	: 16	[1-2000]
Interrupts	: 32	[1-1024]

Options

Transmit Checksum Offload	: <input type="radio"/> Disabled <input checked="" type="radio"/> Enabled
Receive Checksum Offload	: <input type="radio"/> Disabled <input checked="" type="radio"/> Enabled
TCP Segmentation Offload	: <input type="radio"/> Disabled <input checked="" type="radio"/> Enabled
TCP Large Receive Offload	: <input type="radio"/> Disabled <input checked="" type="radio"/> Enabled
Receive Side Scaling (RSS)	: <input type="radio"/> Disabled <input checked="" type="radio"/> Enabled

OK Cancel

4. Click OK to create the adapter policy.

Create a vNIC template

MediaAgent and CommServe can use the LAN connectivity policy and vNIC templates that the other existing hosts use in the Cisco UCS domain, but only the in-band management network is needed. Other vNICs would not be used by the Windows OS. You can also set up A-B fabric failover in a new vNIC template that will save you the steps of configuring NIC teaming in the Windows OS.

To create a vNIC template for use by MediaAgent, perform the following steps:

1. In Cisco UCS Manager, click LAN in the navigation pane and choose Policies from the Network pull-down options.
2. Right-click vNIC Templates under the root organization and choose Create vNIC Template.
3. Provide a name for the vNIC template and set the following options:
 - a. Fabric ID: Enable Failover
 - b. Template Type: Updating Template

- c. VLANs: IB-Mgmt with Native VLAN selected

Create vNIC Template



Name : vNIC_IB-M_CVT_AB

Description :

Fabric ID : Fabric A Fabric B Enable Failover

Redundancy

Redundancy Type : No Redundancy Primary Template Secondary Template

Target

Adapter

VM

Warning

If **VM** is selected, a port profile by the same name will be created.
If a port profile of the same name exists, and updating template is selected, it will be overwritten

Template Type : Initial Template Updating Template

VLANs | VLAN Groups

Advanced Filter | Export | Print

Select	Name	Native VLAN
<input type="checkbox"/>	default	<input type="radio"/>
<input checked="" type="checkbox"/>	IB_Mgmt	<input checked="" type="radio"/>

4. Scroll down to the second half of the window and select these additional options:
- d. MAC Pool: MAC_Pool_A
 - e. Network Control Policy: Enable_CDP

Note: An existing predefined MAC pool and Network Control Policy has been used in this set up. Create a MAC pool and Network Control Policy with CDP Enabled if you have a new installation of the Cisco UCS domain.



Create VLAN

Native-VLAN
VM-App-201

CDN Source : vNIC Name User Defined

MTU : 1500

MAC Pool : MAC_Pool_A(25/64)

QoS Policy : <not set>

Network Control Policy : Enable_CDP

Pin Group : <not set>

Stats Threshold Policy : default

Connection Policies

OK Cancel

5. Click OK to create the vNIC template.

Create a service profile template

With the storage profile ready and the vNIC template prepared, you can now create the service profile template.

1. In Cisco UCS Manager, click Servers in the navigation pane and choose Service Profile Templates from the Server pull-down options.
2. Right-click root and choose Create Service Profile Template to open the Create Service Profile Template wizard.
3. Enter an appropriate name (**S3260-MediaAgent**) for the service profile template.
4. Select the Updating Template option.
5. Under UUID, select UUID_Pool as the UUID pool.

Note: An existing predefined UUID pool has been used in this set up. Create a UUID pool if you have a new installation of the Cisco UCS domain.

Create Service Profile Template

You must enter a name for the service profile template and specify the template type. You can also specify how a UUID will be assigned to this template and enter a description.

Name :

The template will be created in the following organization. Its name must be unique within this organization.
Where : **org-root**

The template will be created in the following organization. Its name must be unique within this organization.
Type : Initial Template Updating Template

Specify how the UUID will be assigned to the server associated with the service generated by this template.
UUID

UUID Assignment:

The UUID will be assigned from the selected pool.
The available/total UUIDs are displayed after the pool name.

Optionally enter a description for the profile. The description can contain information about when and where the service profile should be used.

6. Click Next.
7. You move to the Storage Provisioning section. Click the Storage Profile Policy tab in the Storage Provisioning section and select the storage profile you previously created (**S3260-MediaAgent**).

- 1 Identify Service Profile Template
- 2 Storage Provisioning
- 3 Networking
- 4 SAN Connectivity
- 5 Zoning
- 6 vNIC/vHBA Placement
- 7 vMedia Policy
- 8 Server Boot Order
- 9 Maintenance Policy
- 10 Server Assignment
- 11 Operational Policies

Create Service Profile Template ? X

Optionally specify or create a Storage Profile, and select a local disk configuration policy.

Specific Storage Profile
Storage Profile Policy
Local Disk Configuration Policy

Storage Profile: S3260-MediaAgent Create Storage Profile

Name : **S3260-MediaAgent**

Description :

LUNs

Local LUNs
Controller Definitions
Security Policy

Advanced Filter
Export
Print
⚙️

Name	Size (GB)	Order	Fractional Size (MB)
Boot_SSD	1	Not Applicable	0
Disk-Lib	1	Not Applicable	0

< Prev
Next >
Finish
Cancel

8. Click Next.
9. You move to the Networking section, where you configure the network. Keep the default setting for Dynamic vNIC Connection Policy.
10. Select the Expert option to configure the LAN connectivity.
11. Click Add to add the vNIC.
12. Click Use vNIC Template in the Create vNIC window that appears.

Create vNIC

Name :

MAC Address : The Value is null, which is invalid for this field.

MAC Address Assignment:

[Create MAC Pool](#)

Select MAC address assignment option.
If nothing is selected, the MAC address will be assigned from the default pool.

WARNING: The selected pool does not contain any available entities.
You can select it, but it is recommended that you add entities to it.

Use vNIC Template :

Fabric ID : Fabric A Fabric B Enable Failover

VLAN in LAN cloud will take the precedence over the Appliance Cloud when there is a name clash.

VLANs | VLAN Groups

Advanced Filter | Export | Print

Select	Name	Native VLAN
<input type="checkbox"/>	default	<input type="radio"/>
<input type="checkbox"/>	IB_Mgmt	<input type="radio"/>
<input type="checkbox"/>	ISCSI-A-VLAN	<input type="radio"/>
<input type="checkbox"/>	ISCSI-B-VLAN	<input type="radio"/>

OK Cancel

13. Add an appropriate name for the vNIC to create (**vNIC-IB-Mgmt**), select vNIC_IB-Mgmt_AB for the vNIC template and choose the Windows-40G policy from the Adapter Policy pull-down menu.

Create vNIC

Name :

Use vNIC Template :

Redundancy Pair : Peer Name :

vNIC Template : [Create vNIC Template](#)

Adapter Performance Profile

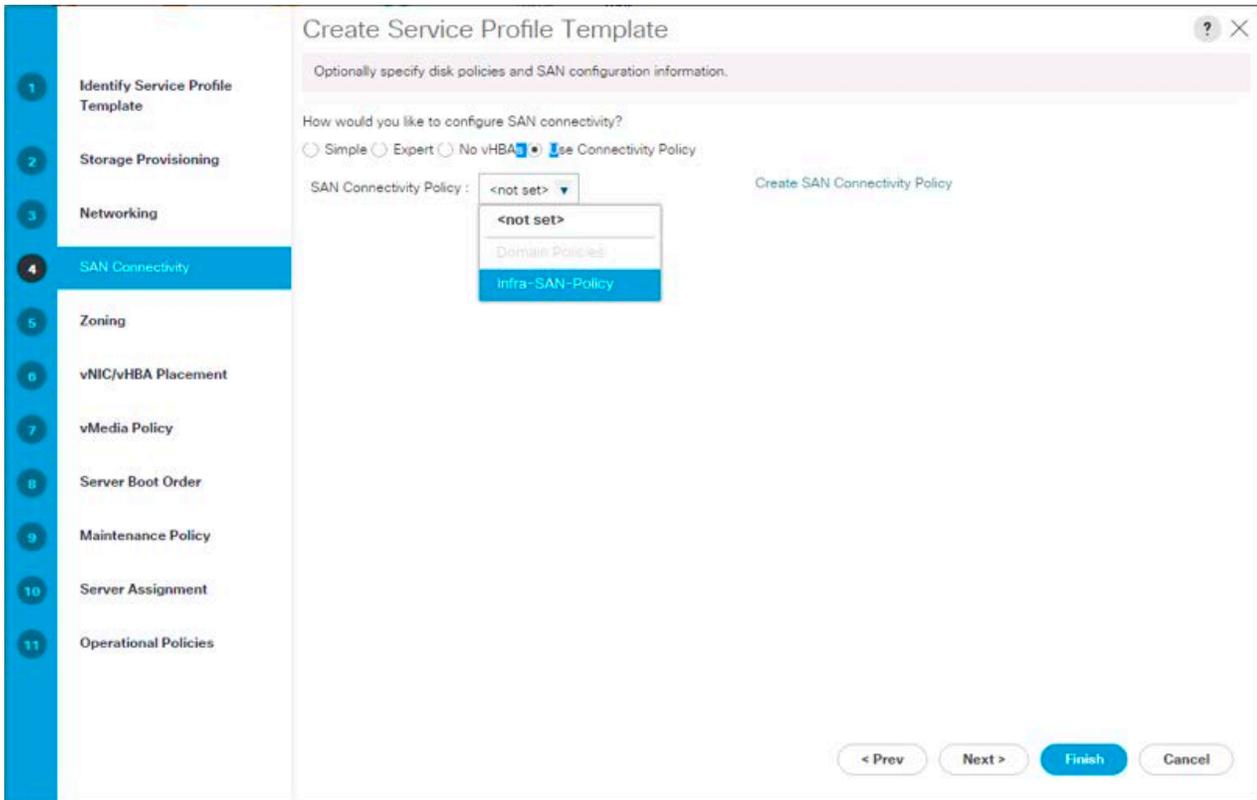
Adapter Policy : [Create Ethernet Adapter Policy](#)

- <not set>
- Domain Policies
- Linux
- S3260-Windows**
- SMBCClient
- SMBServer
- SRIOV
- Solaris
- VMWare
- VMWarePassThru
- VMware-alt
- VMware-alt-32
- Windows
- default

OK Cancel

14. Click OK to add the vNIC.

15. Click Next.
16. You move to the Storage Options section. Select the Use Connectivity Policy option for the “How would you like to configure SAN connectivity?” field.
17. Choose the Infra-SAN-Policy option from the SAN Connectivity Policy pull-down menu.



Create Service Profile Template

Optionally specify disk policies and SAN configuration information.

How would you like to configure SAN connectivity?

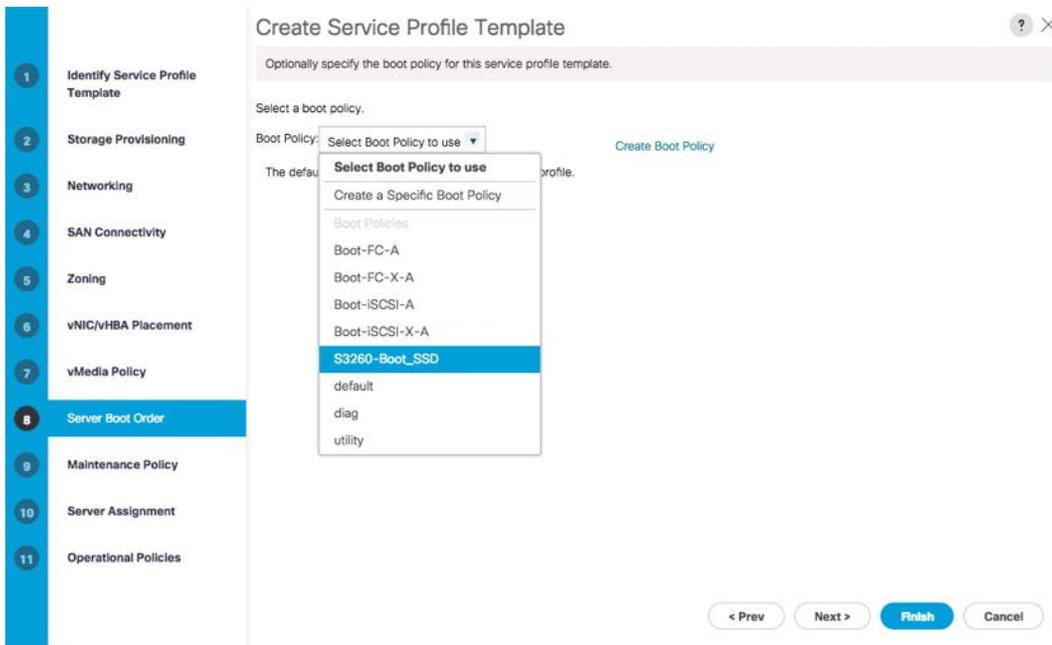
Simple
 Expert
 No vHBA
 Use Connectivity Policy

SAN Connectivity Policy : <not set> ▼ Create SAN Connectivity Policy

< Prev Next > **Finish** Cancel

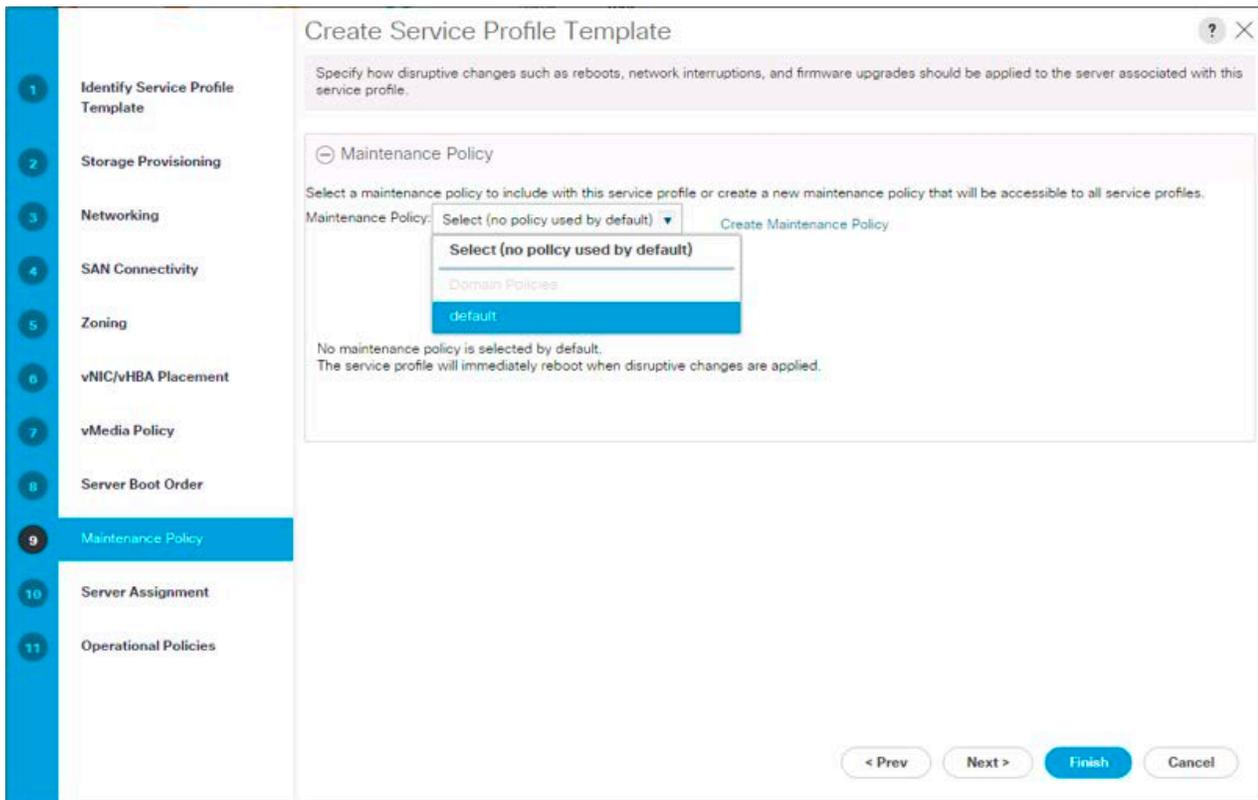
Note: Existing SAN policy has been used in this setup, create a new SAN connectivity policy or select no vHBAs if SAN connectivity is not required

18. Click Next.
19. You move to the Zoning section. Don't set any zoning options. Click Next.
20. You move to the vNIC/HBA Placement section. In the Select Placement list, leave the placement policy set to Let System Perform Placement.
21. Click Next.
22. You move to the vMedia Policy section. Leave vMedia Policy unselected.
23. Click Next.
24. You move to the Server Boot Order section. Select Boot_SSD for Boot Policy.



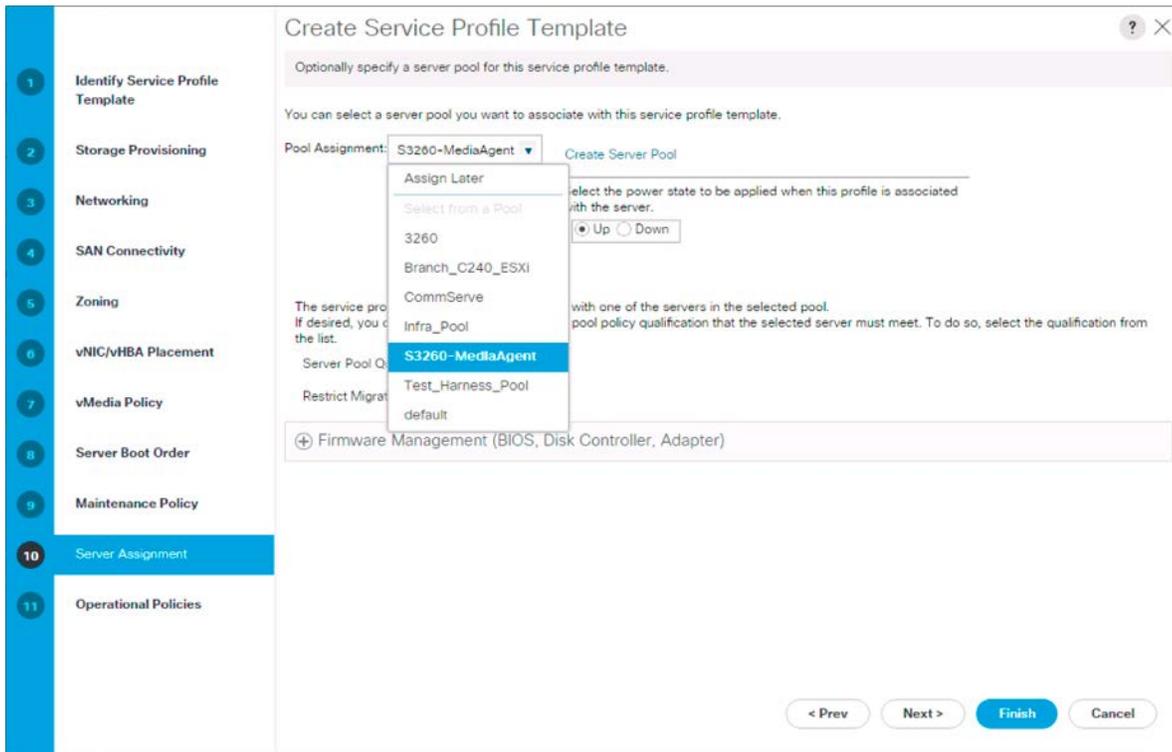
25. Click Next.

26. You move to the Maintenance Policy section. Change the maintenance policy to default.



27. Click Next.

28. You move to the Server Assignment section. In the Pool Assignment list, select S3260-MediaAgent.



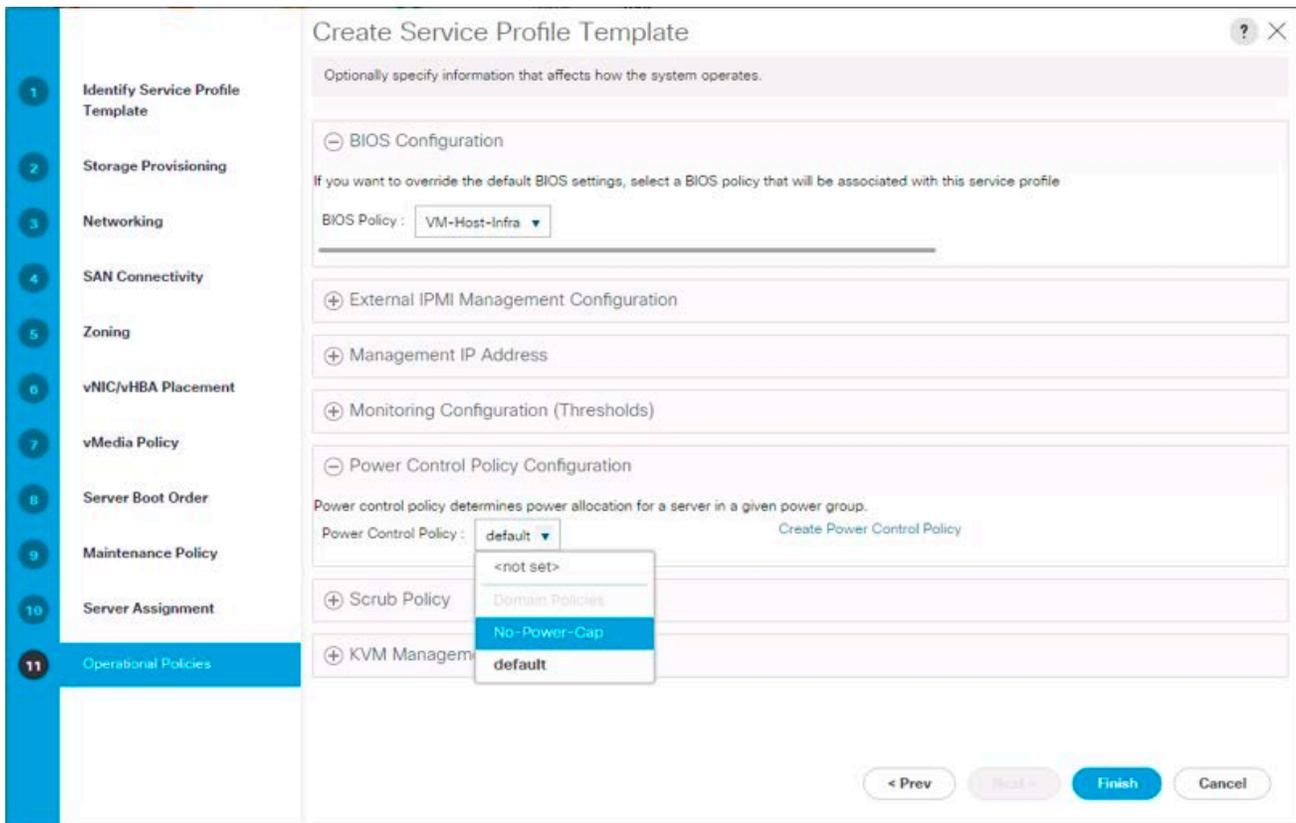
29. Leave Firmware Management at the bottom of the page as is because you will use the defaults from the Host Firmware list.

30. Click Next.

31. You move to the Operational Policies section. In the BIOS Policy list, select VM-Host-Infra.

32. Expand Power Control Policy Configuration and select No-Power-Cap in the Power Control Policy list.

Note: Existing BIOS and Power Control policies have been used in this setup. Create new BIOS and Power Control policies and select them if you are configuring a new Cisco UCS domain installation.



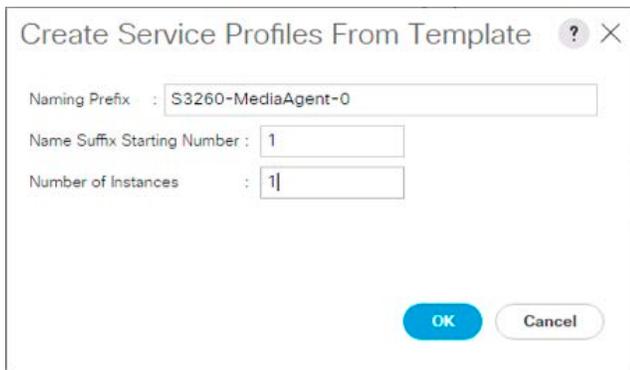
33. Click Finish to create the service profile template.

34. Click OK in the confirmation message.

Create service profiles

To create a service profile from the service profile template, complete the following steps:

1. Connect to the Cisco UCS 6332-16UP Fabric Interconnect in Cisco UCS Manager and click the Servers tab in the navigation pane.
2. Choose Service Profile Templates > root > Service Template S3260-MediaAgent.
3. Right-click S3260-MediaAgent and choose Create Service Profiles from Template.
4. Enter **S3260-MediaAgent-0** as the service profile prefix.
5. Leave 1 set as the name suffix starting number.
6. Set 1 as the number of instances.
7. Click OK to create the service profiles.



Create Service Profiles From Template ? ×
 Naming Prefix : S3260-MediaAgent-0
 Name Suffix Starting Number : 1
 Number of Instances : 1
 OK Cancel

- Click OK in the confirmation message to provision the MediaAgent service profile.

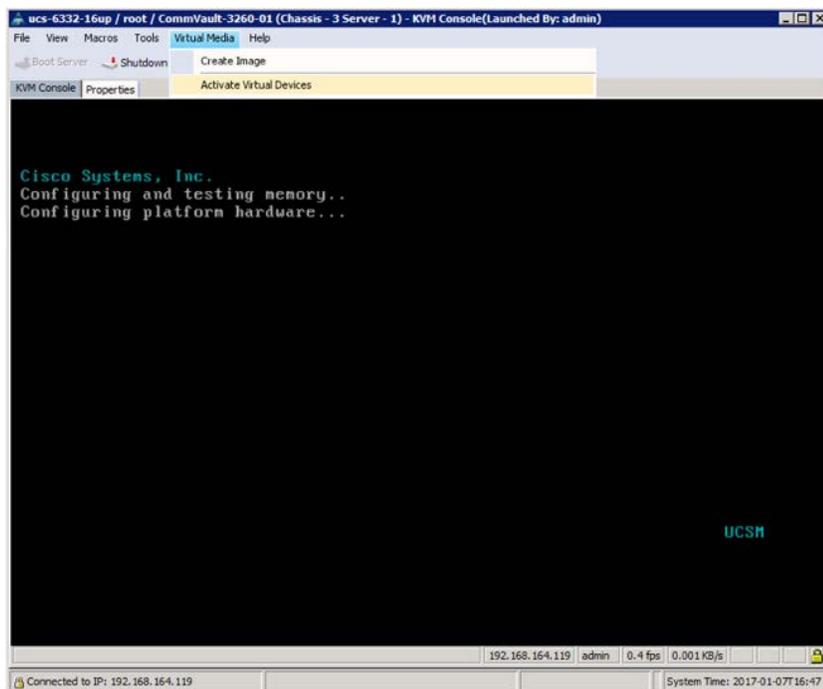
OS Installation for Commvault MediaAgent Server

The installation steps for the Cisco UCS S3260 server for MediaAgent include installing Microsoft Windows Server 2012 R2. The steps here use a Cisco UCS Manager KVM installation process from locally stored installation media on PC accessing UCS manager.

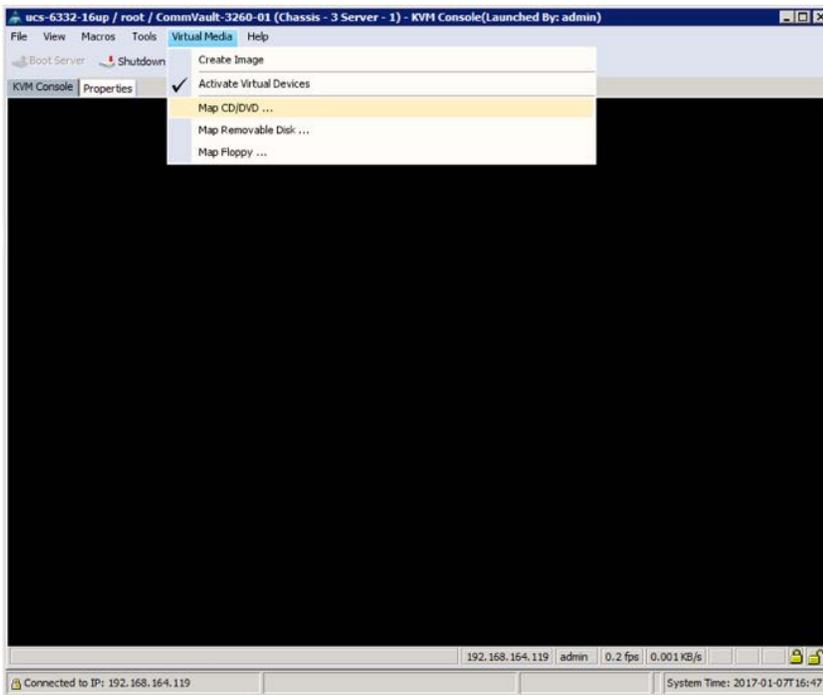
To begin the installation, open a Cisco UCS Manager KVM console from the General tab of the associated service profile of the first server to be installed. Then perform the following steps:

Note: For a standalone installation of the S3260, launch the KVM console from the IMC GUI.

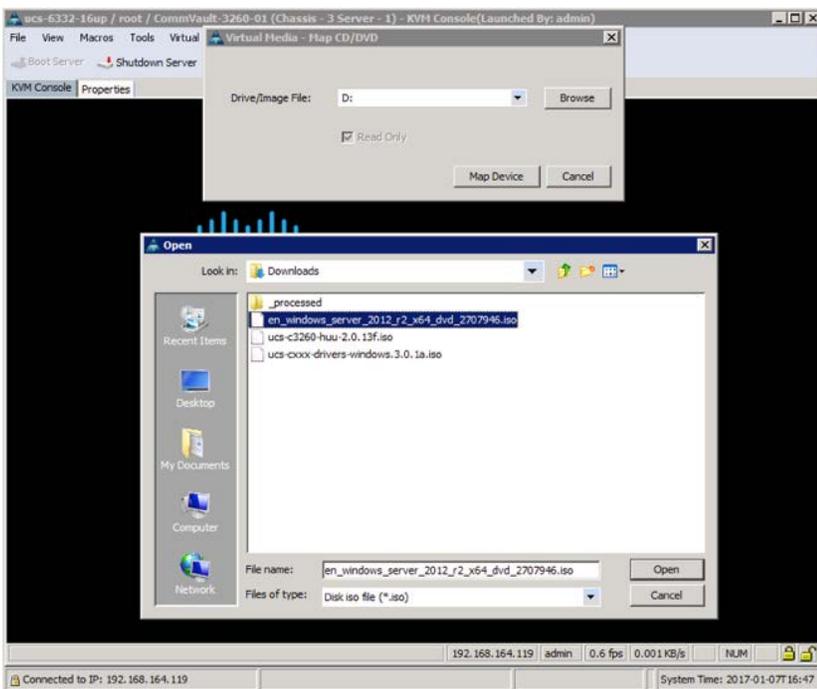
- Click Virtual Media and choose Activate Virtual Devices from the pull-down menu.



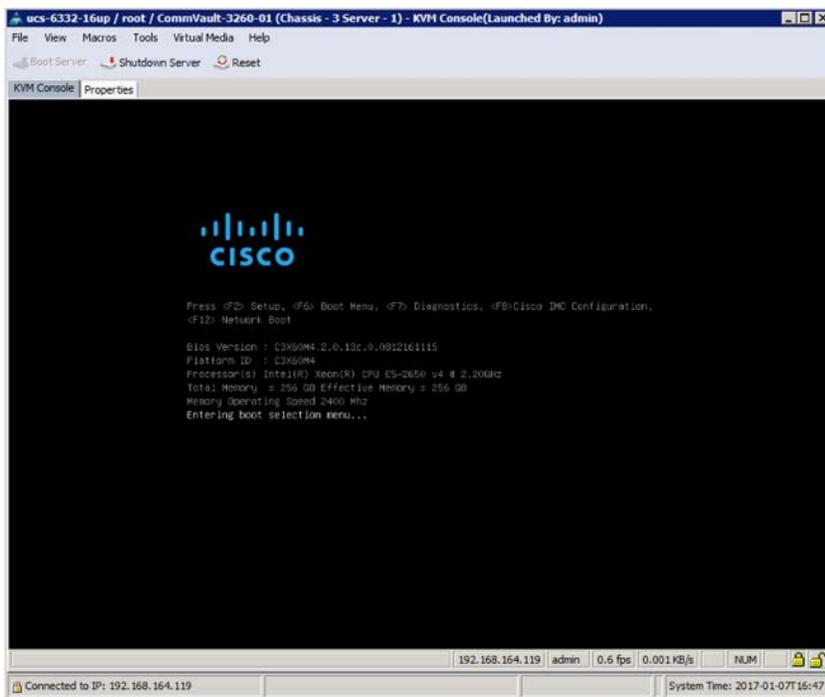
- Click Virtual Media again and choose Map CD/DVD from the pull-down menu.



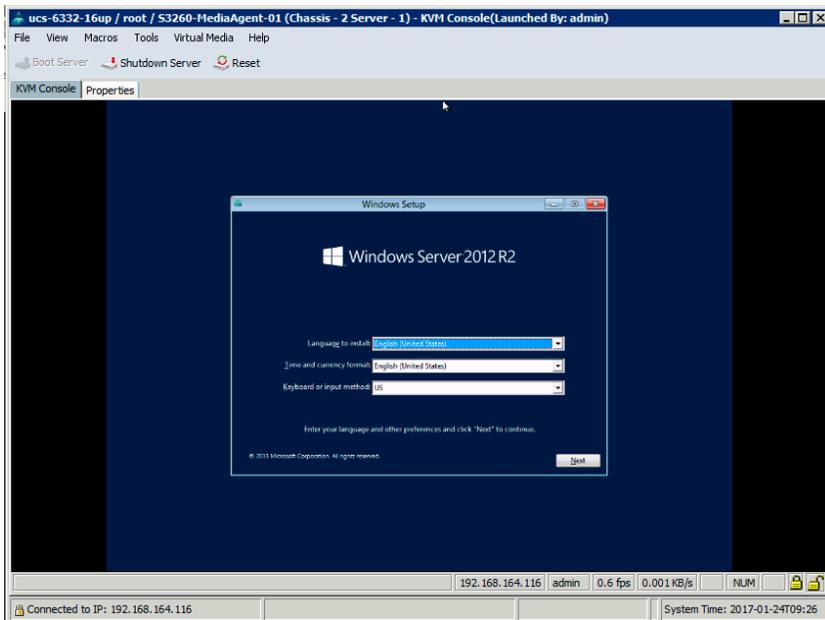
3. Click Browse in the Virtual Media pop-up window and locate and select the OS installation ISO image in the pop-up window that appears. Click Open.



4. Click Reset if the system has progressed past the boot selection menu before the Windows ISO image is mapped through KVM vMedia.

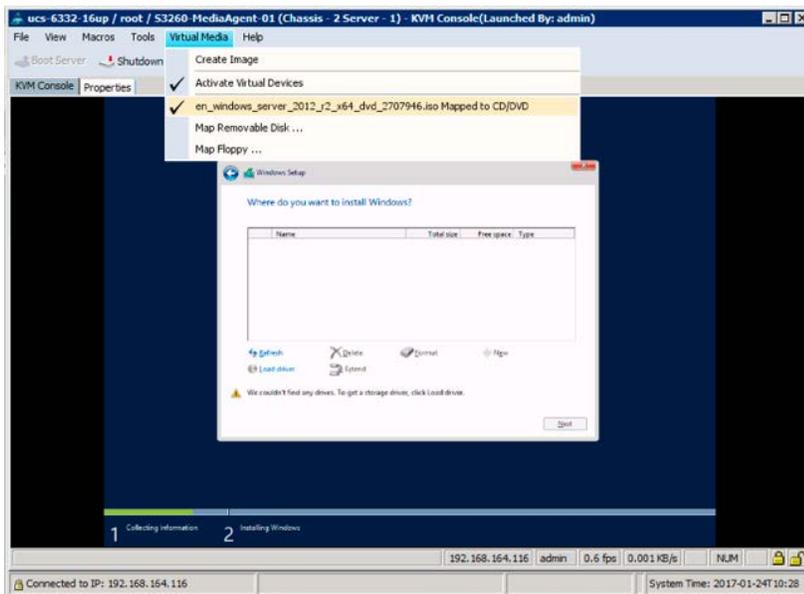


- The boot order will initiate the OS installation automatically. Click Next at the OS installation start screen.

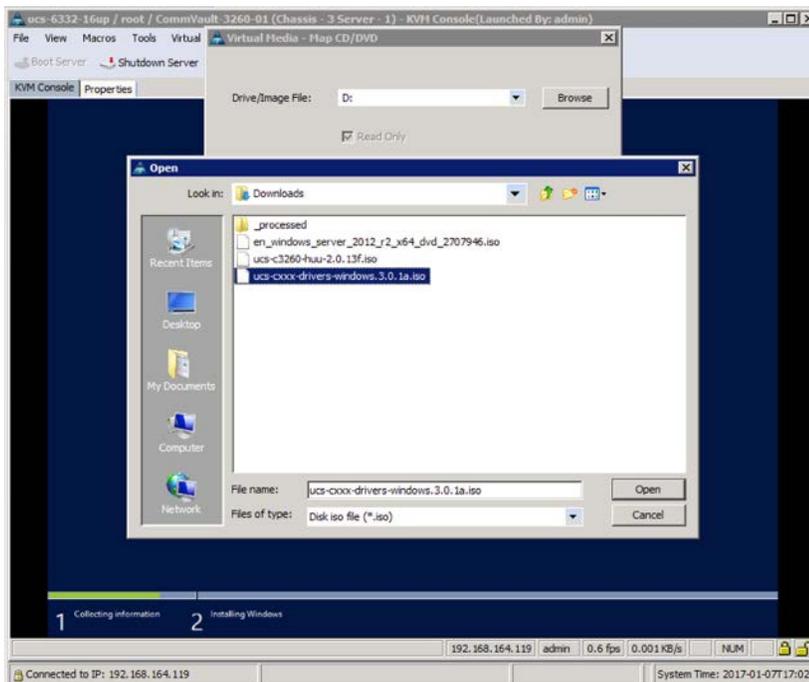


- Proceed with the installation, entering a valid Windows license key and selecting the mode (GUI mode is used in this example.)
- Accept the license and select “Custom: Install Windows only (advanced).”

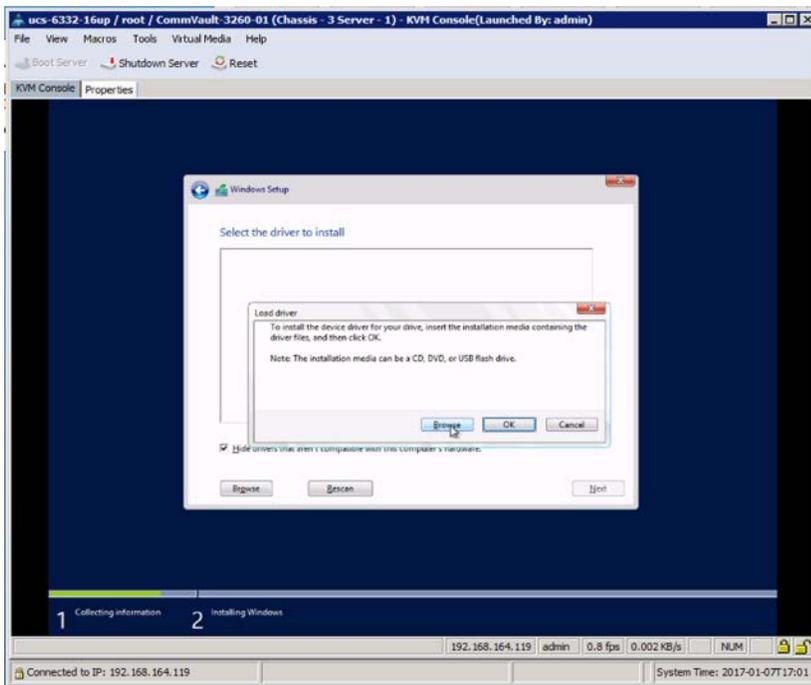
8. When the installation destination screen appears, no suitable drives for the S3260 will be displayed. Download the Windows driver ISO image from software.cisco.com at <https://software.cisco.com/portal/pub/download/portal/select.html?&mdfid=286281356&flowid=71443&softwareid=283853158>.
9. Unmap the Windows OS installation ISO image as vMedia.



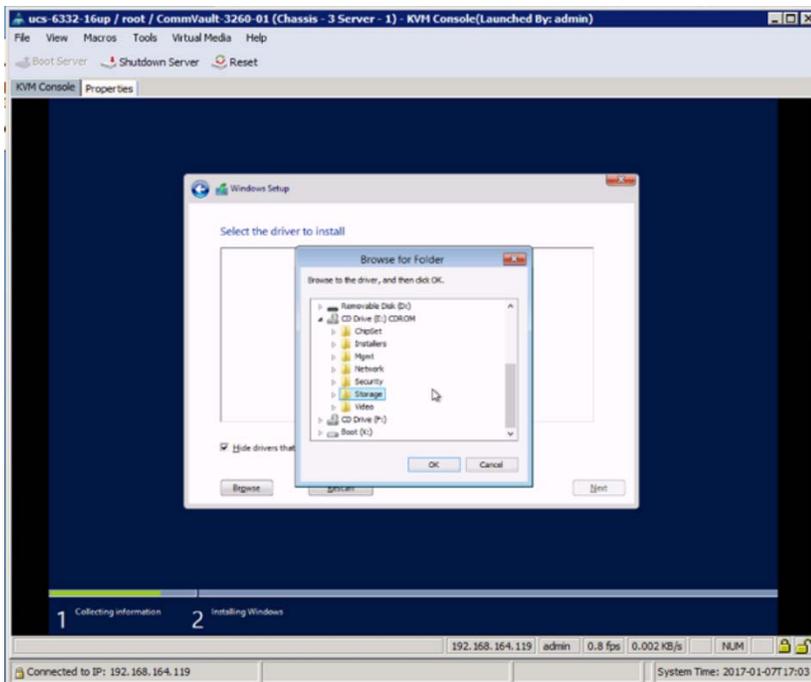
10. Click Yes to confirm the unmap drive request.
11. Reopen the Virtual Media pull-down menu, choose Map CD/DVD, and find the downloaded Cisco UCS driver ISO image using the Browse option.



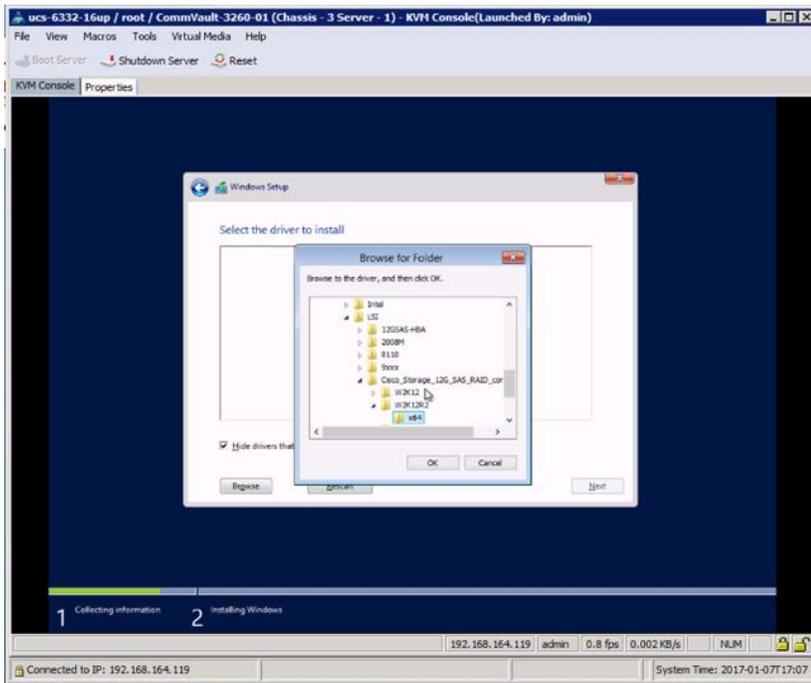
12. Click Open. Then choose Map Device.
13. Click Load Driver and select Browse from the pop-up window that appears.



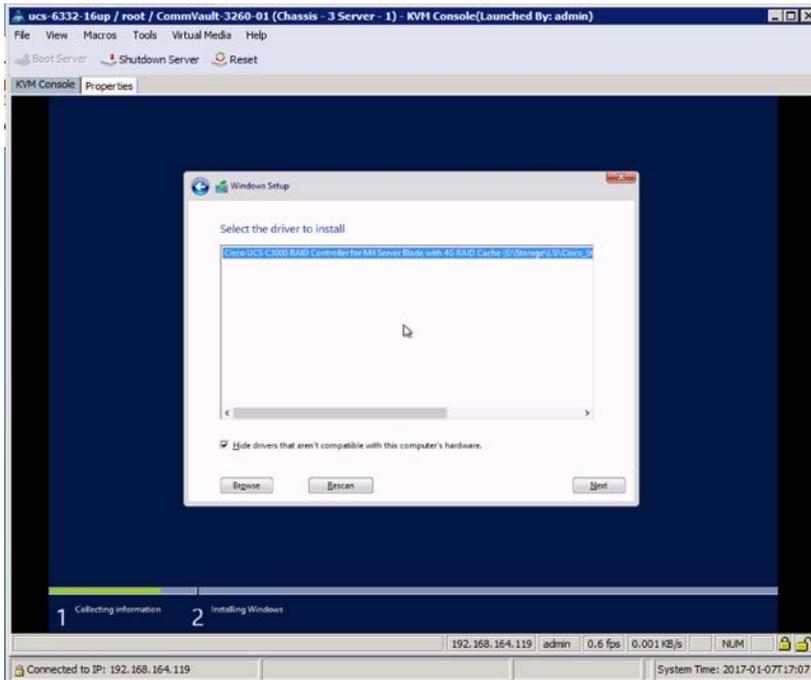
14. Select the storage directory in the mapped CD-ROM drive.



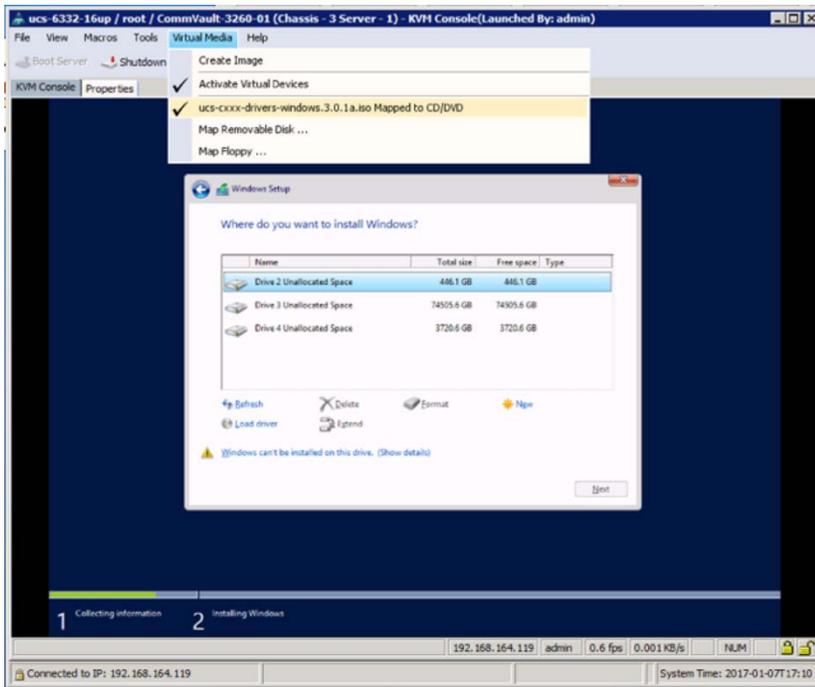
15. Drill further down within the storage directory to LSI > Cisco_Storage_12G_SAS_RAID_controller > W2K12R2 > x64 and click OK.



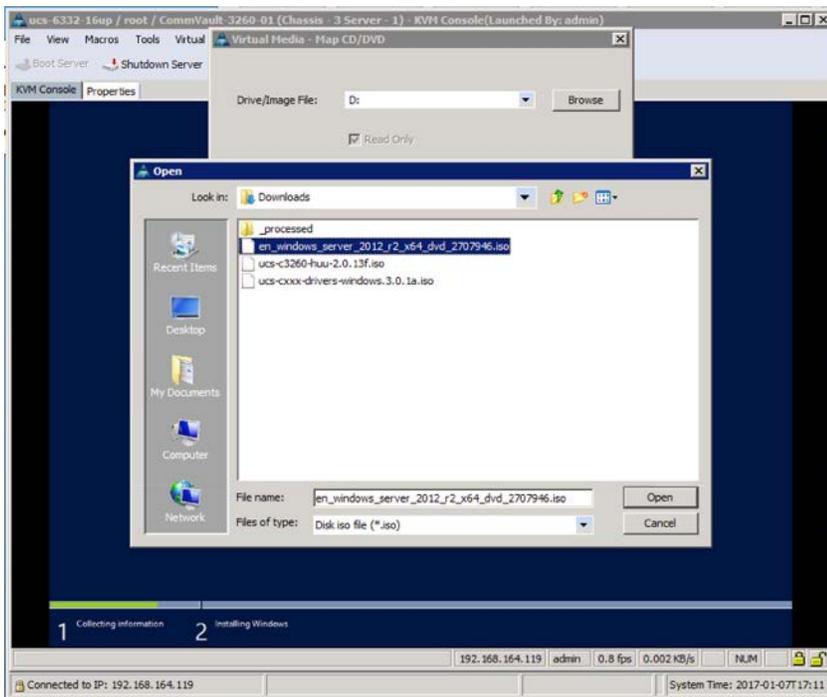
16. Select the driver that is found and click Next.



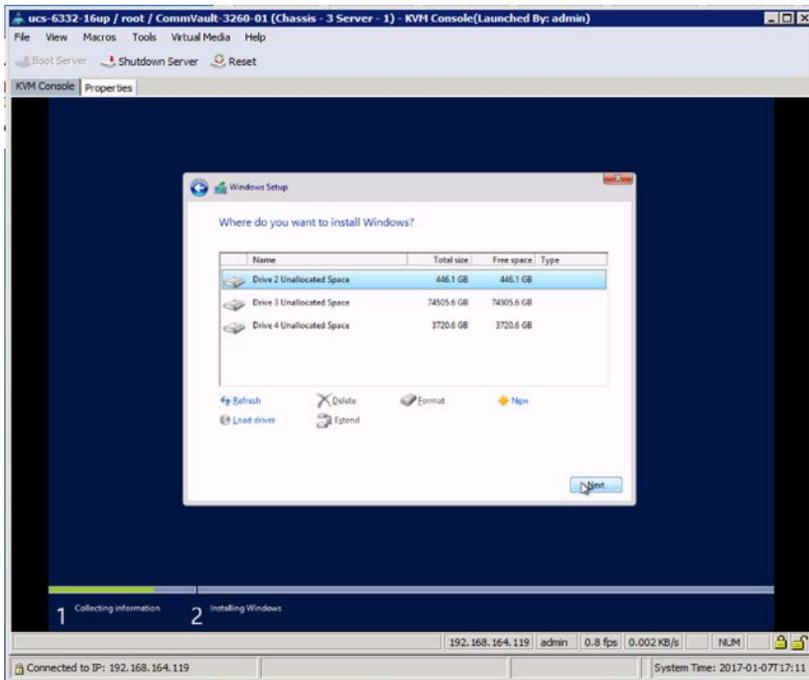
17. Select the drive on which you want to install the Windows OS and reopen the Virtual Media pull-down menu to unmap the Cisco Windows drivers ISO image.



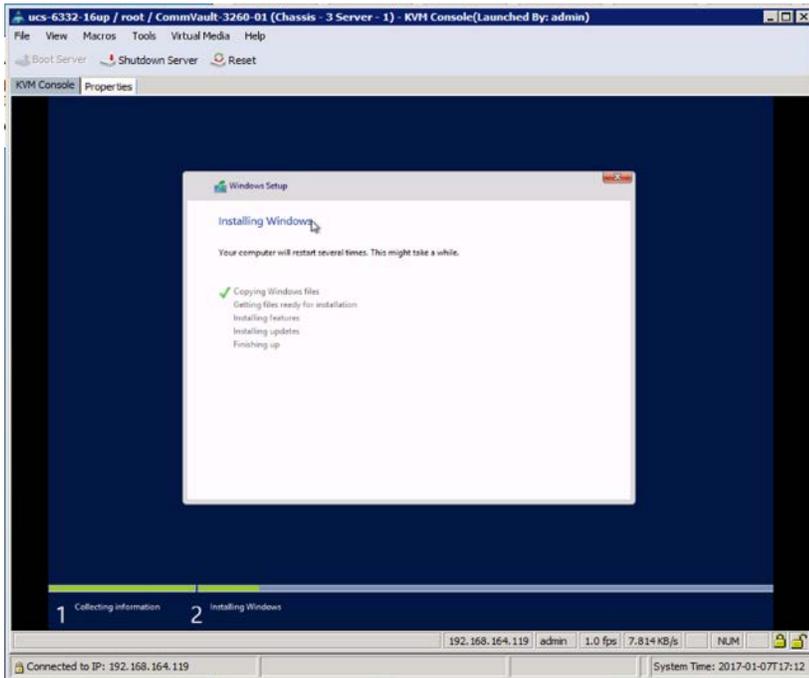
18. Click Yes to confirm the unmapping of the ISO image and reopen the Virtual Media pull-down menu to remap the Windows OS installation ISO image.



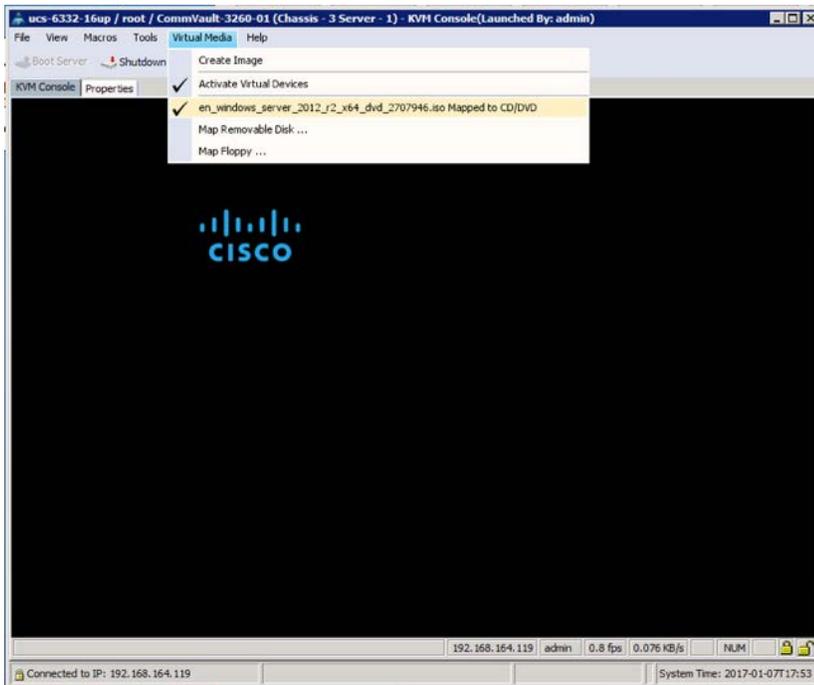
19. Click Next to begin the installation while the appropriate boot drive is being selected.



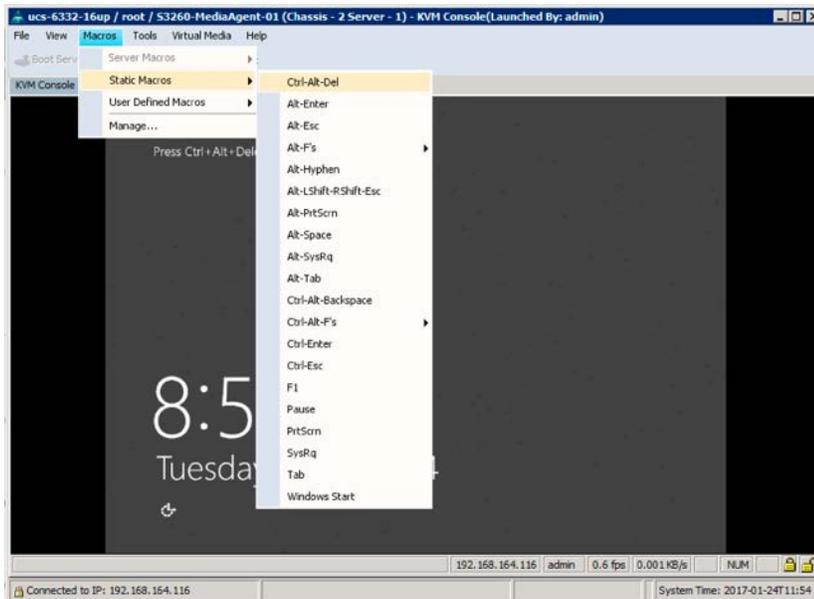
20. Wait for the Windows Setup to complete.



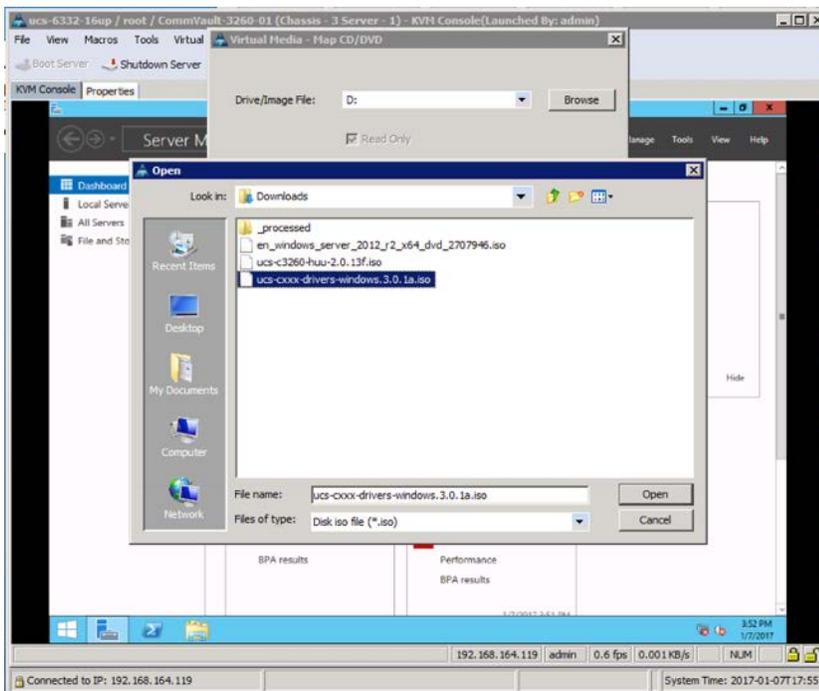
21. Unmap the Windows OS installation ISO image after the installation is complete.



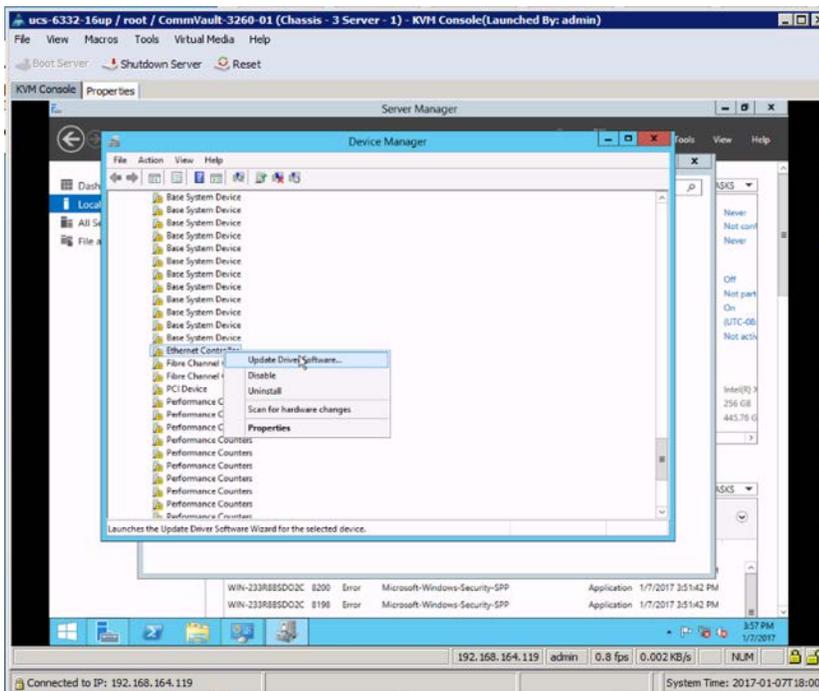
22. Provide an administrator password and click Finish.
23. Use the static macro for Ctrl-Alt-Del to log in to the system.



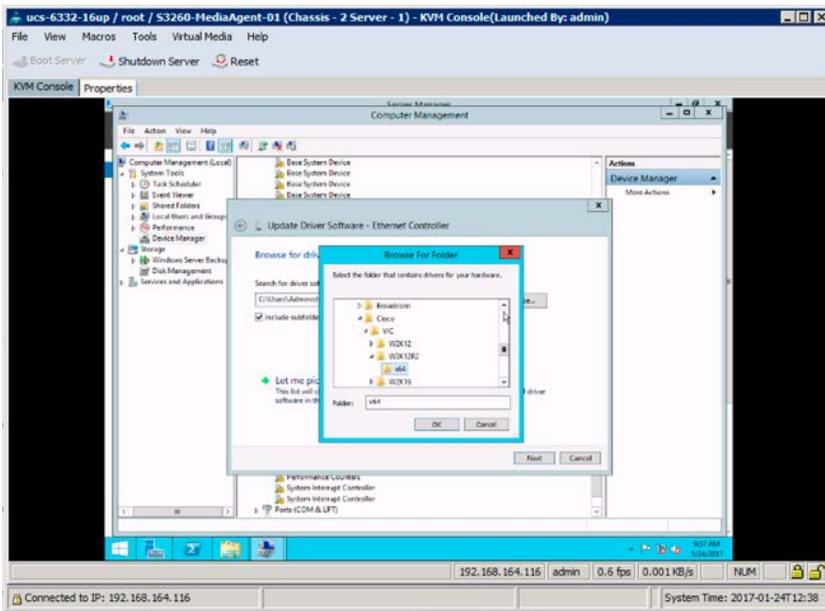
24. Reopen the Virtual Media pull-down menu and go through the steps to remap the Cisco UCS drivers for Windows ISO image.



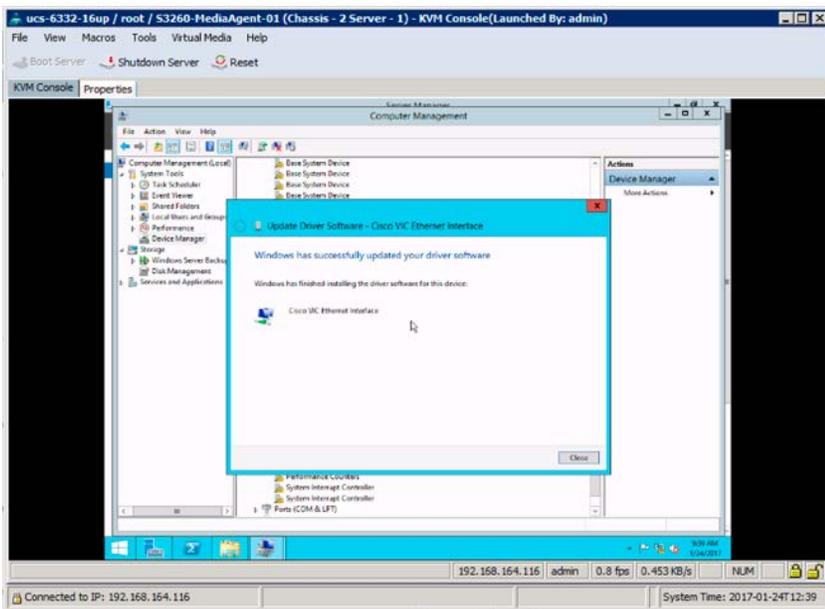
25. Open Device Manager and find the unidentified Ethernet controller device under Other Devices. Right-click and choose Update Driver Software.



26. Select “Browse my computer for driver software” in the pop-up window that appears.
27. Click Browse in the Update Driver Software – Ethernet Controller window and drill down from the mapped CD drive to > Network > Cisco > VIC > W2K12R2 > x64 and click OK.

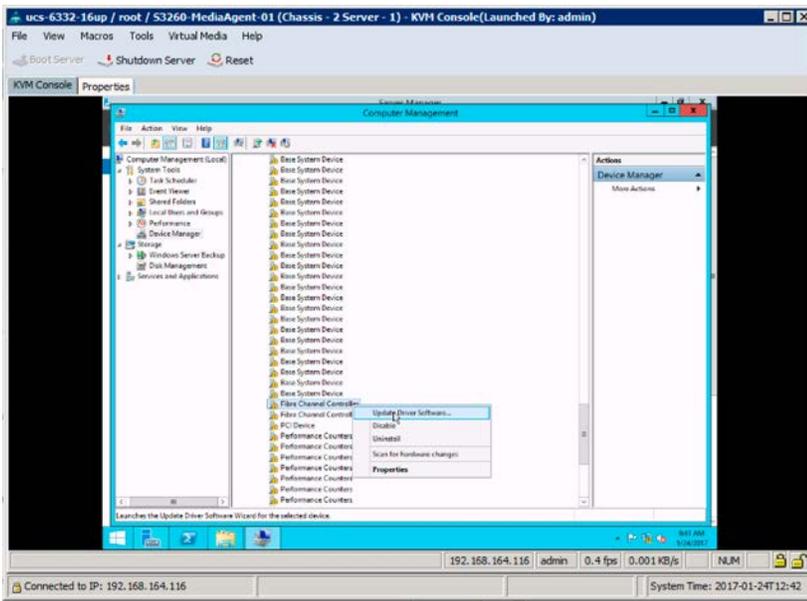


28. Click Next to update the driver.

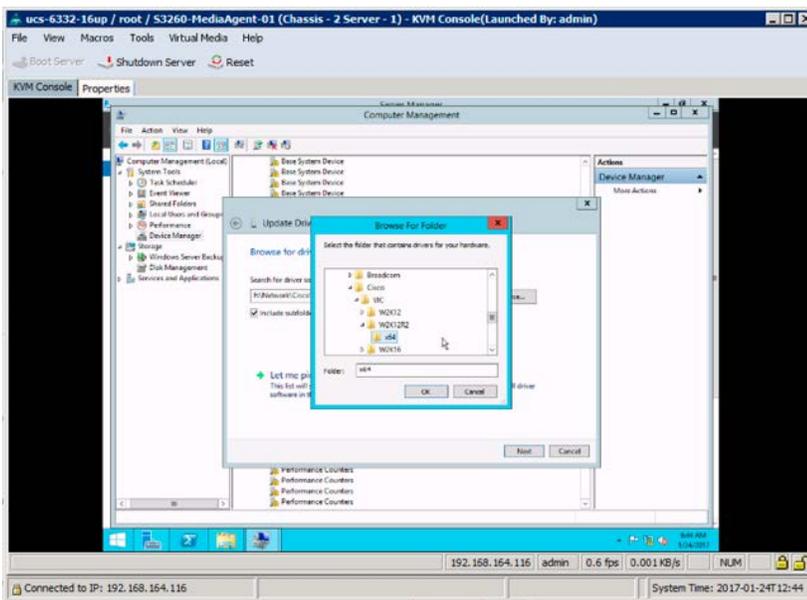


29. Update the Fibre Channel drivers if SAN connectivity is needed for the MediaAgent server.

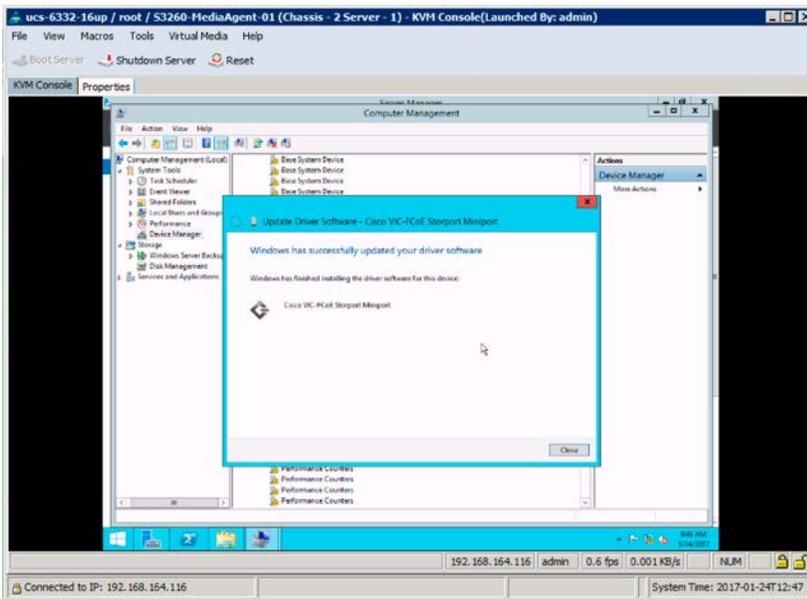
30. Click Close. With Device Manager still open, scroll down within Other Devices and find an entry for the first Fibre Channel controller. Right-click and choose Update Driver Software.



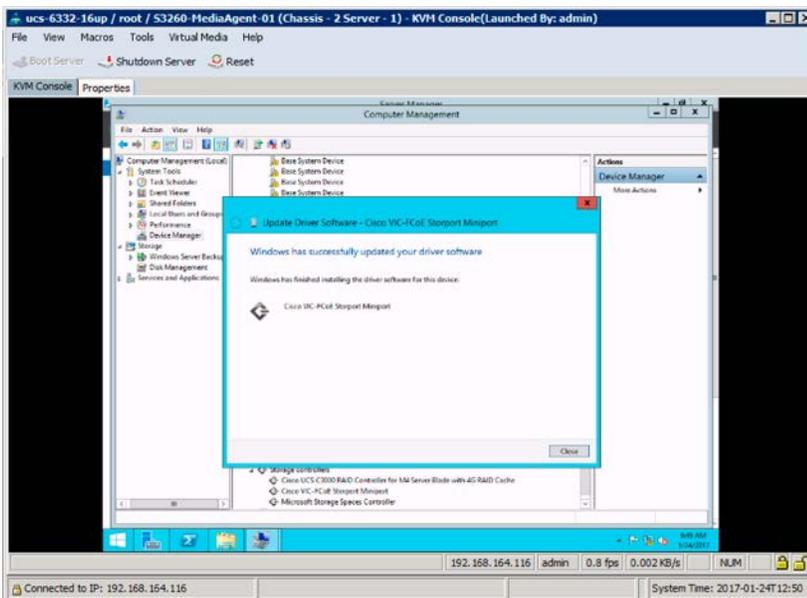
31. Repeating this process for the Ethernet controller. select “Browse my computer for driver software.”
32. Select Browse and drill down from the mapped CD drive to > Storage > Cisco > VIC > W2K12R2 > x64 and click OK.



33. Click Next to update the driver.
34. Click Close.

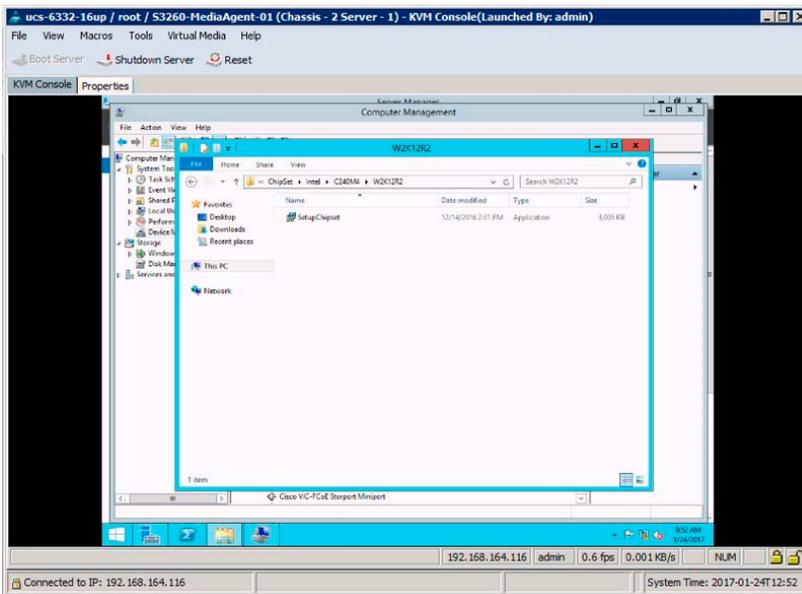


35. Repeat these steps for the second Fibre Channel controller.

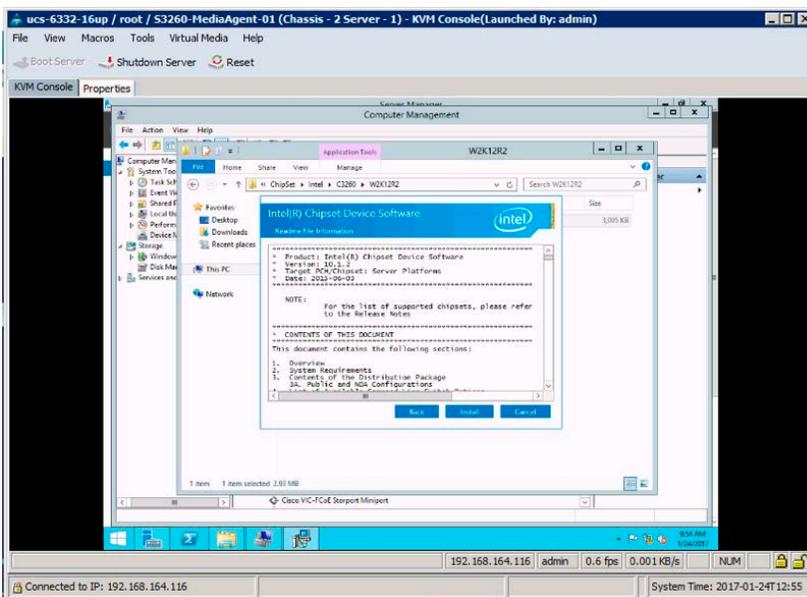


36. Click Close.

37. Open Windows File Explorer and drill down from the mapped CD drive to Chipset > Intel > [C3260] > W2K12R2 and open the SetupChipset application.



38. Click Next at the Welcome window, click accept to get past the End-User License Agreement (EULA), and click Install.



39. When you are finished, click Restart Later.

40. Configure the network interface with an IP address and enable Remote Desktop.

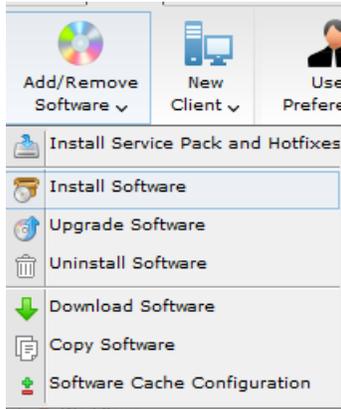
41. Complete the OS updates and join the OS to an appropriate domain.

42. Disconnect the vMedia as the system reboots.

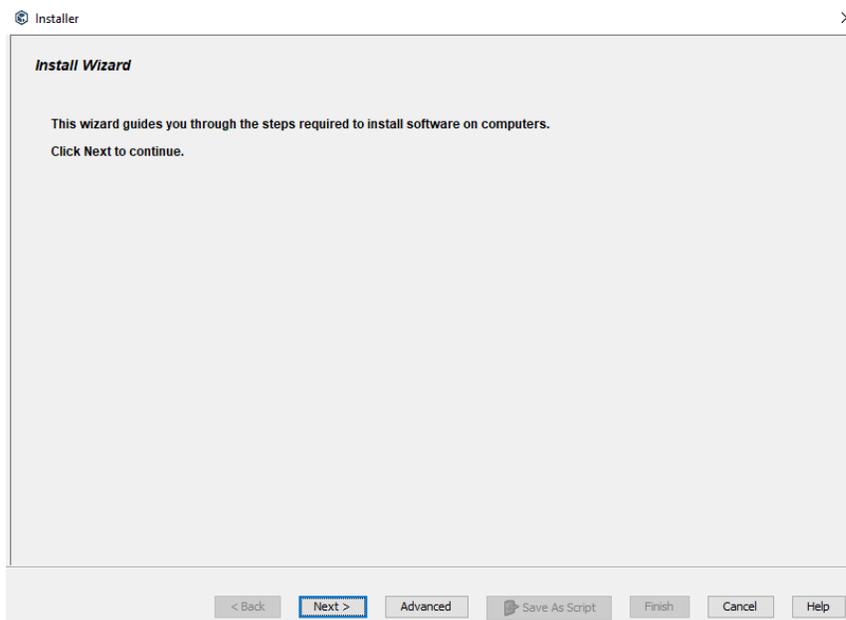
Commvault MediaAgent installation and configuration

To deploy the MediaAgent software on the Cisco servers, use the following steps for remote deployment of the software:

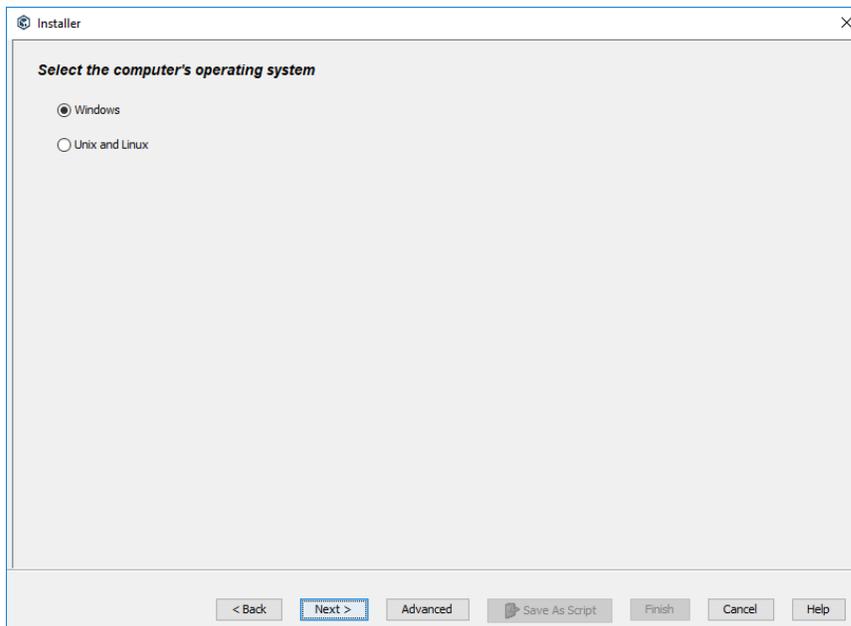
1. From the CommCell Console ribbon, on the Tools tab, click Add/Remove Software. Then choose Install Software from the drop-down menu.



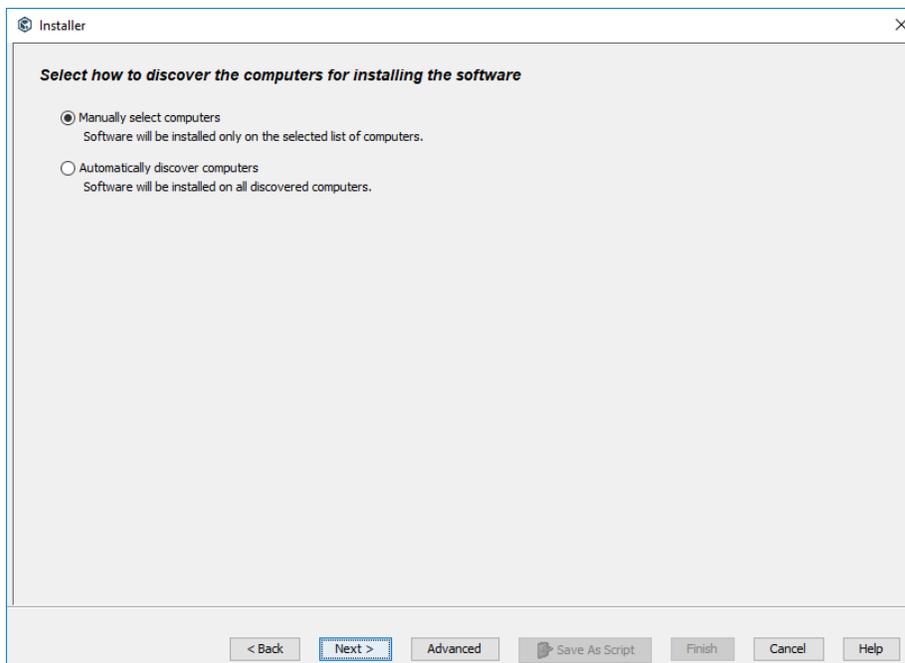
2. The Install Wizard will appear. Click Next.



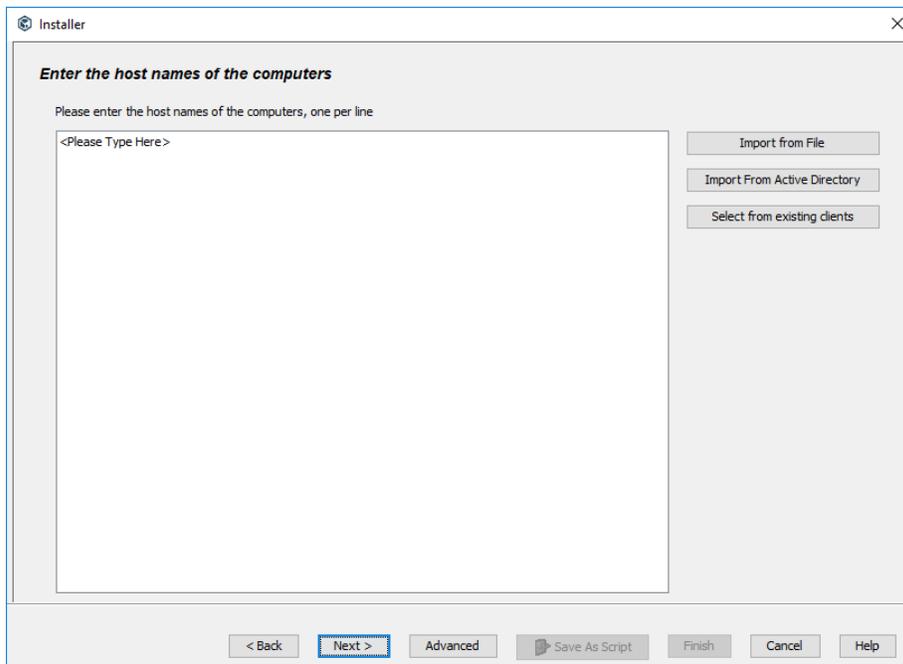
3. On the “Select the computer’s operating system” page, select the OS and click Next.



4. On the “Select how to discover the computers for installing the software” page, click Next.



5. On the “Enter the host names of the computers” page, enter the host names or IP addresses of any Cisco servers that will host the MediaAgent role. Then click Next.



Installer

Enter the host names of the computers

Please enter the host names of the computers, one per line

<Please Type Here>

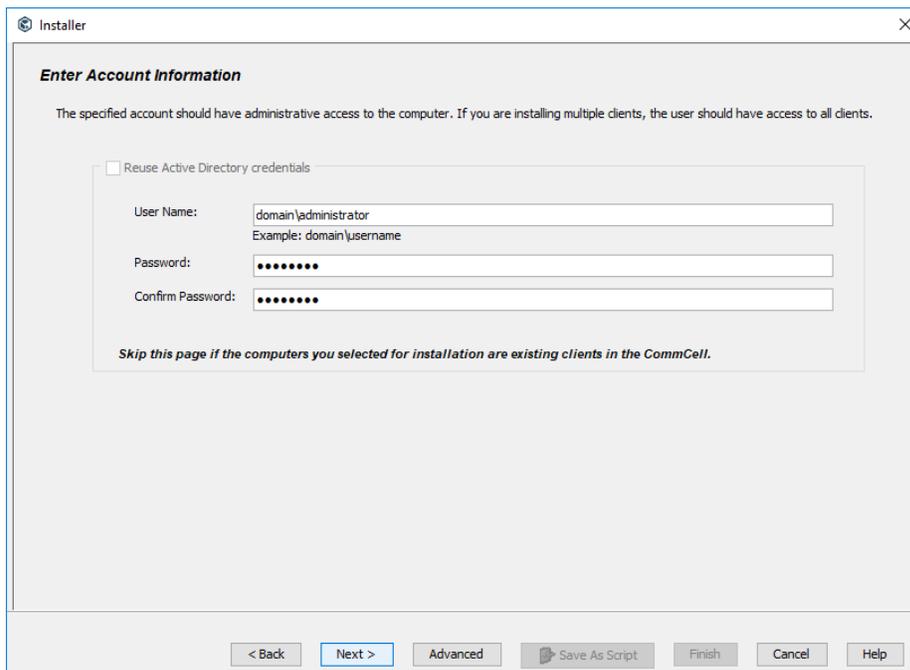
Import from File

Import From Active Directory

Select from existing clients

< Back Next > Advanced Save As Script Finish Cancel Help

- On the Enter Account Information page, enter credentials for a user with local administrator or root privileges on the server and click Next.



Installer

Enter Account Information

The specified account should have administrative access to the computer. If you are installing multiple clients, the user should have access to all clients.

Reuse Active Directory credentials

User Name: domain\administrator
Example: domain\username

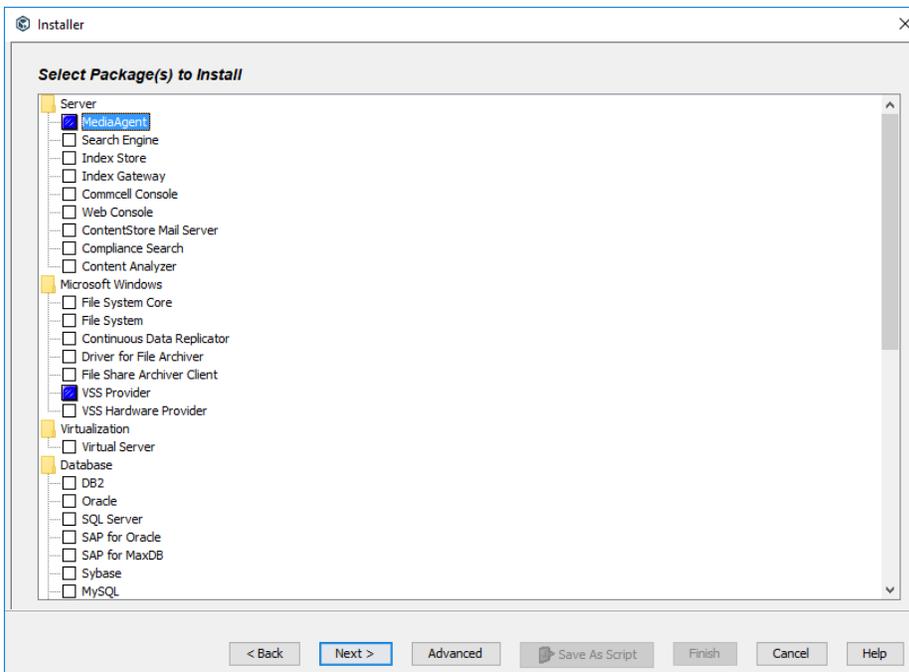
Password: ●●●●●●

Confirm Password: ●●●●●●

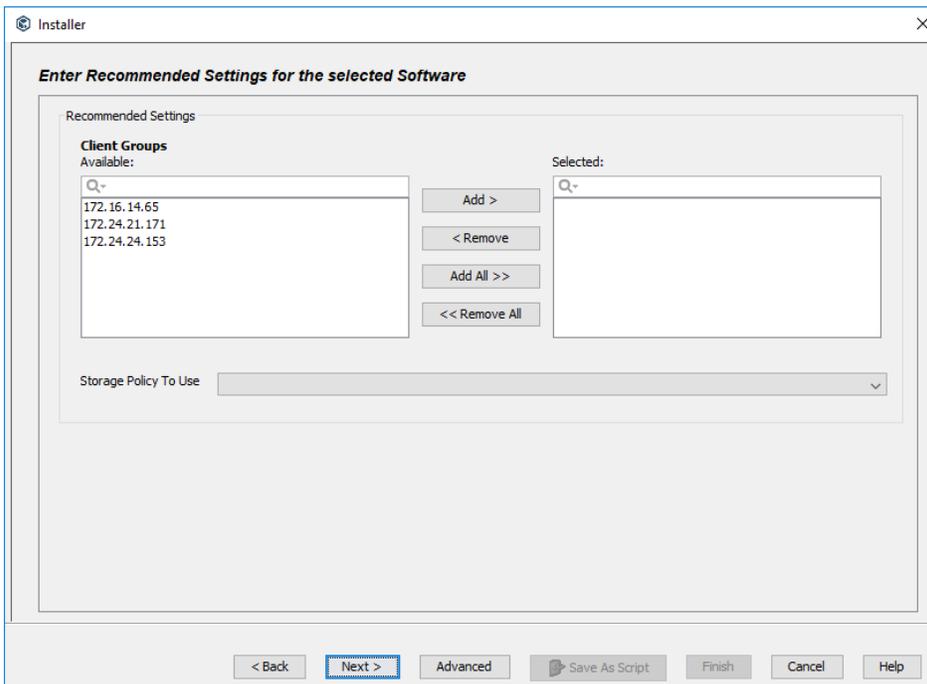
Skip this page if the computers you selected for installation are existing clients in the CommCell.

< Back Next > Advanced Save As Script Finish Cancel Help

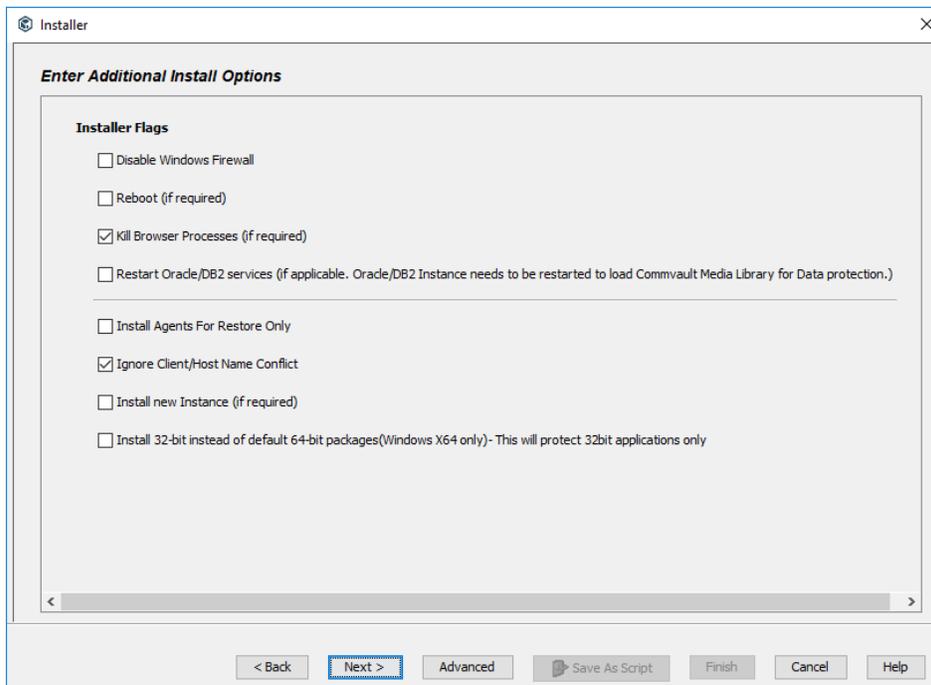
- On the Select Package(s) to Install page, select the MediaAgent package and click Next.



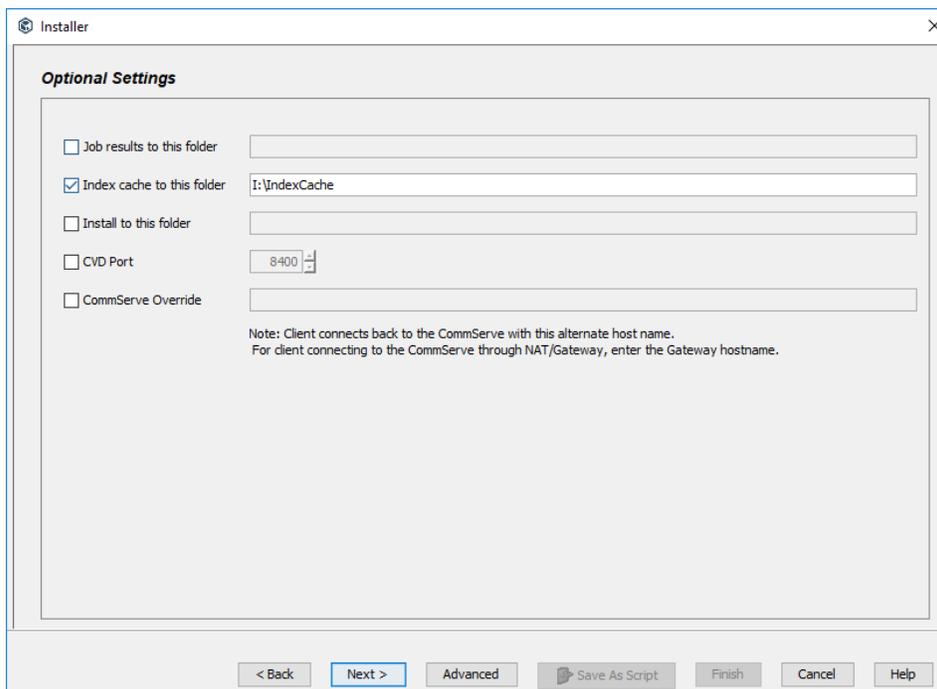
- On the “Enter Recommended Settings for the selected Software” page, select the appropriate client group and storage policy if applicable. Then click Next.



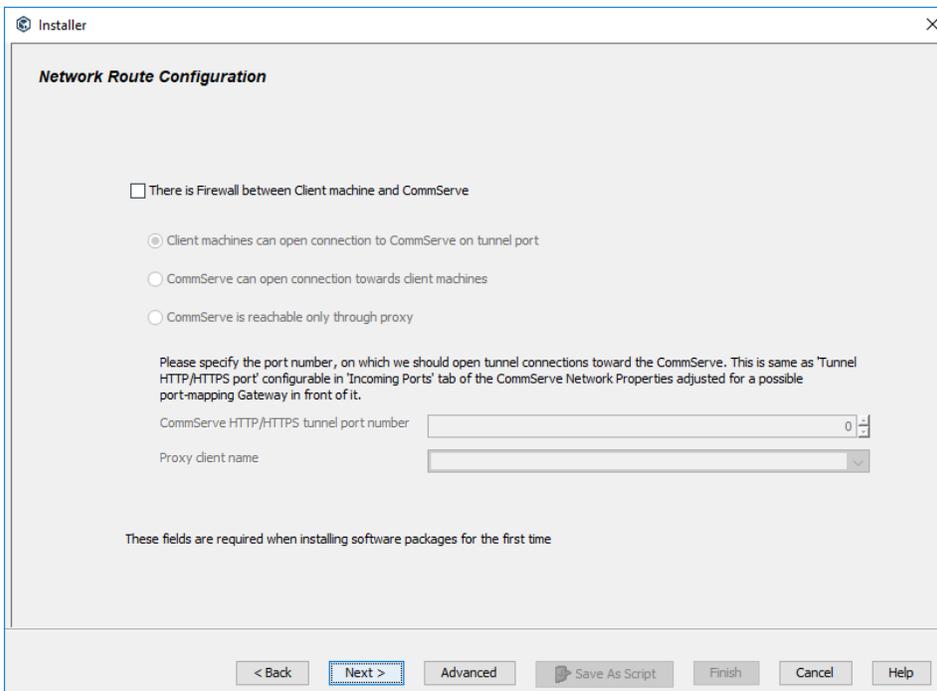
- On the Enter Additional Install Options page, click Next.



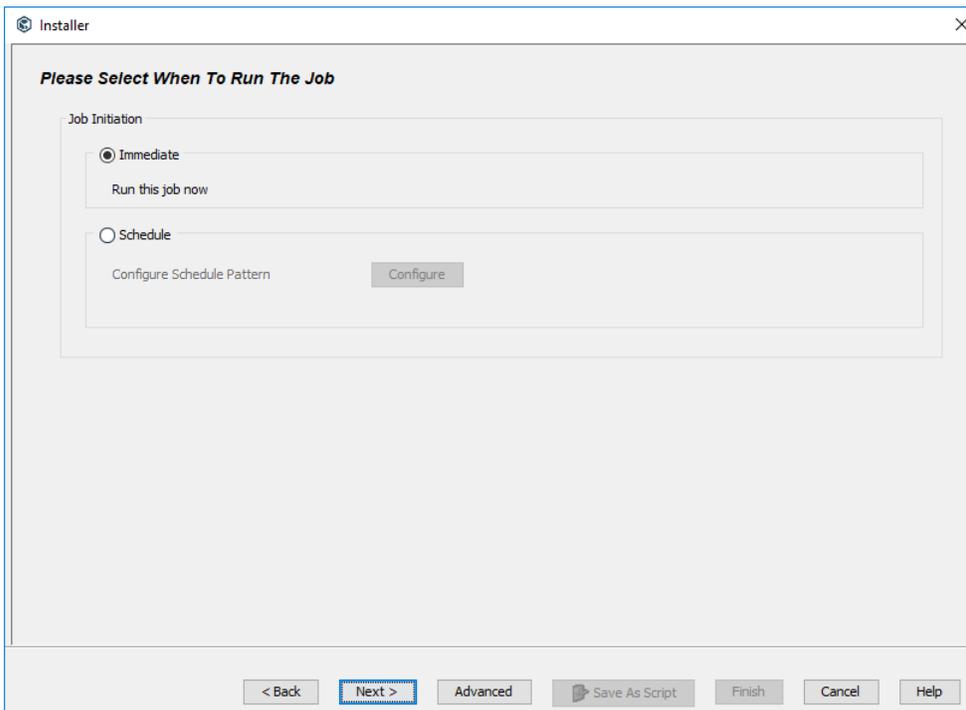
10. On the Optional Settings page, select the “Index cache to this folder” checkbox and enter I:\indexcache (or the appropriate drive letter or mount point) in the index cache path field. Then click Next.



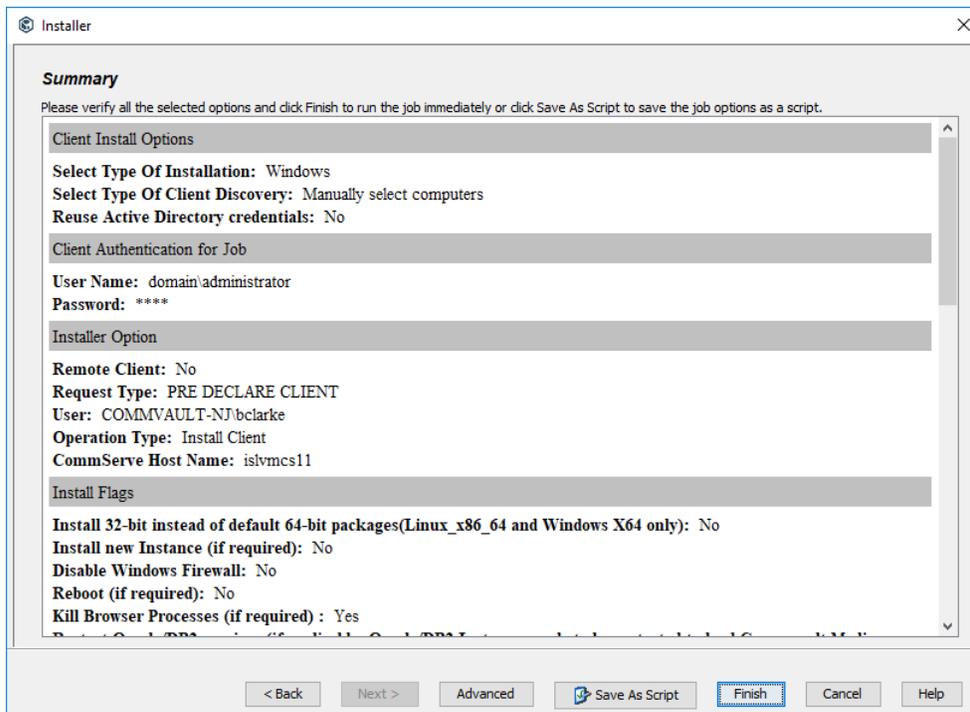
11. On the Network Route Configuration page, click Next (if no configuration is required).



12. On the Please Select When To Run The Job page, click Next.

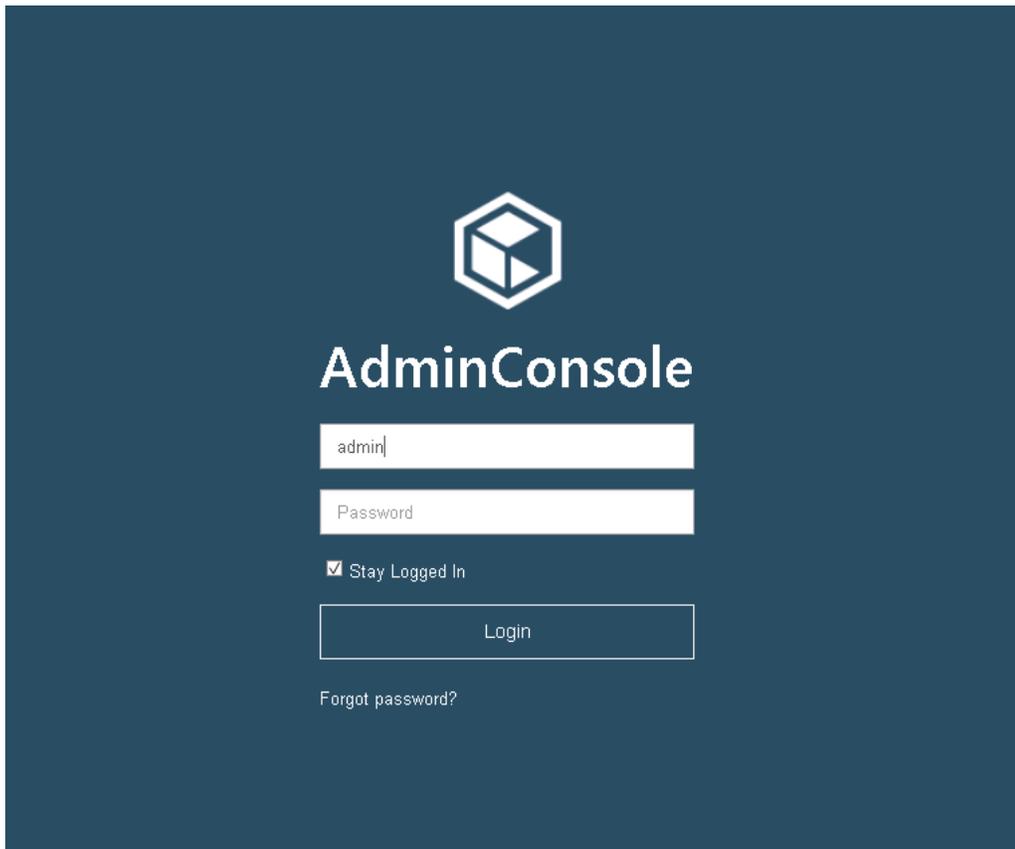


13. On the Summary page, click Finish. An install software job will be initiated. Monitor this job in the job controller window.

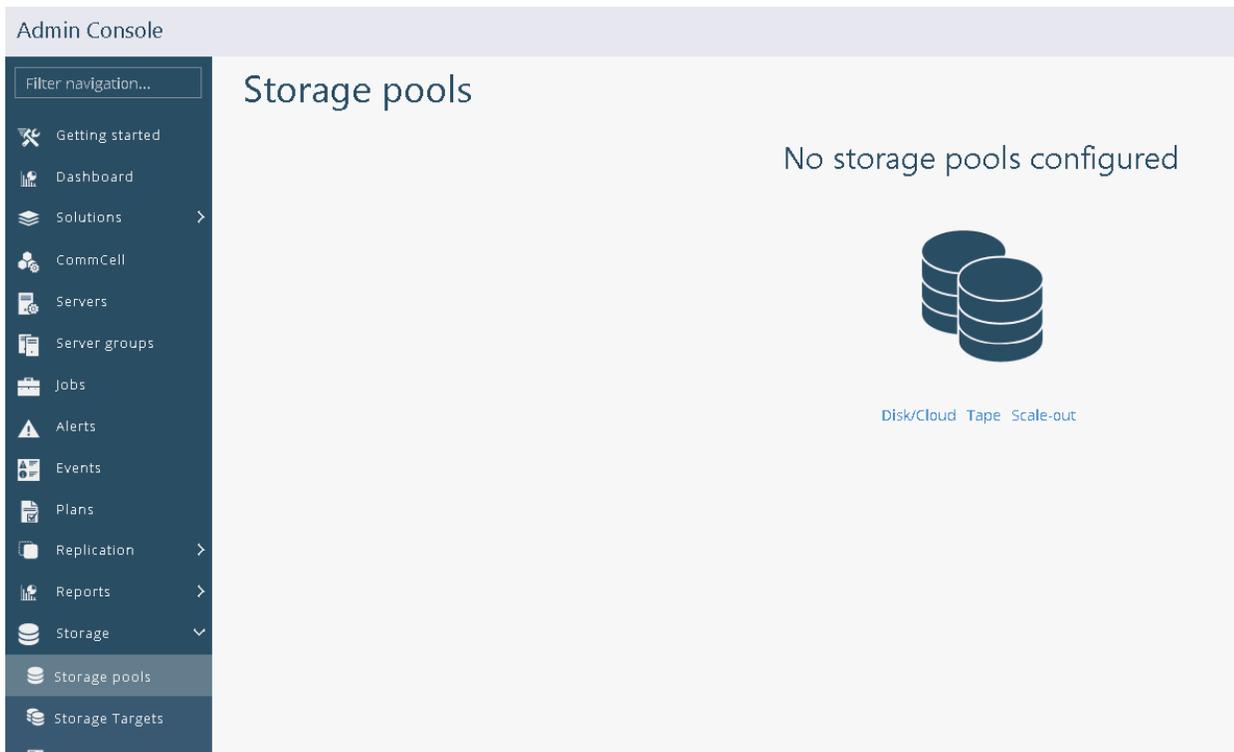


After the MediaAgent software is installed, you need to create the storage pool. This process will configure the disk library and create a storage policy so that clients can back up their data. More than one storage pool may be required depending on the design. For the drive dedicated for the disk library, format the drive with an OS block size of 64 KB.

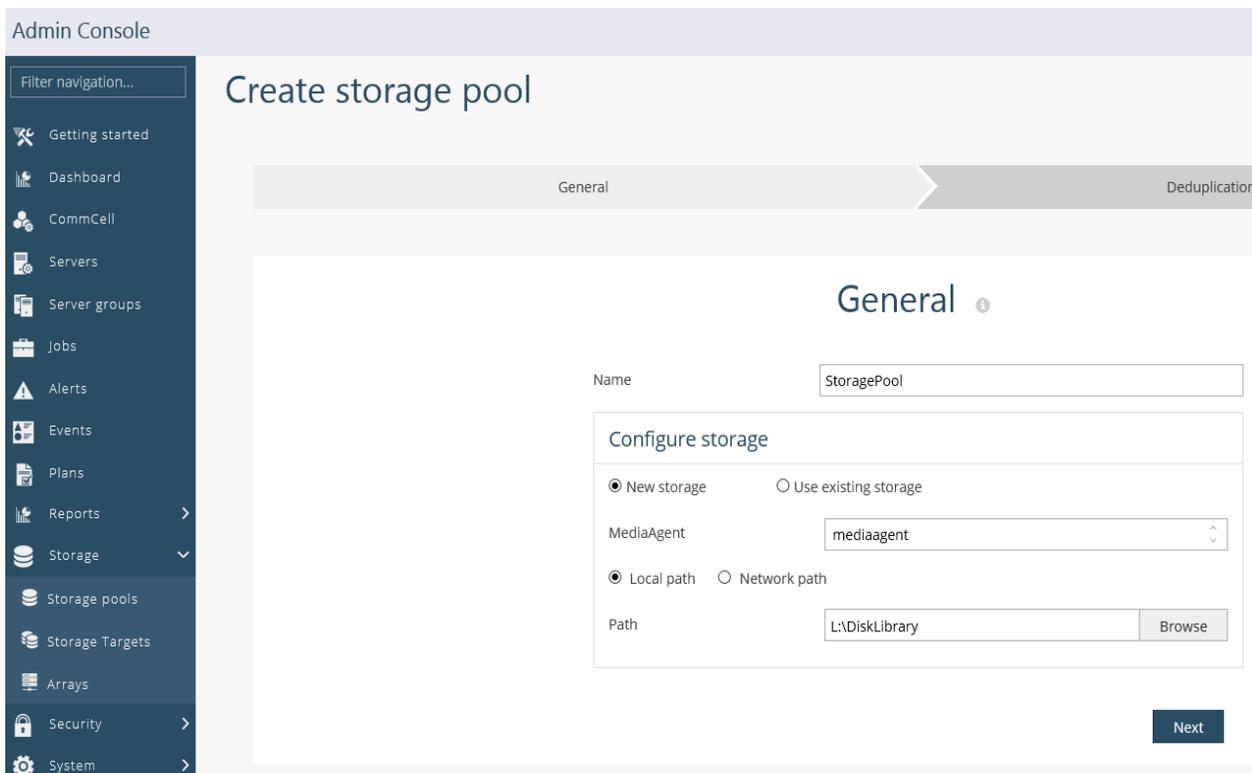
1. Log on to AdminConsole.



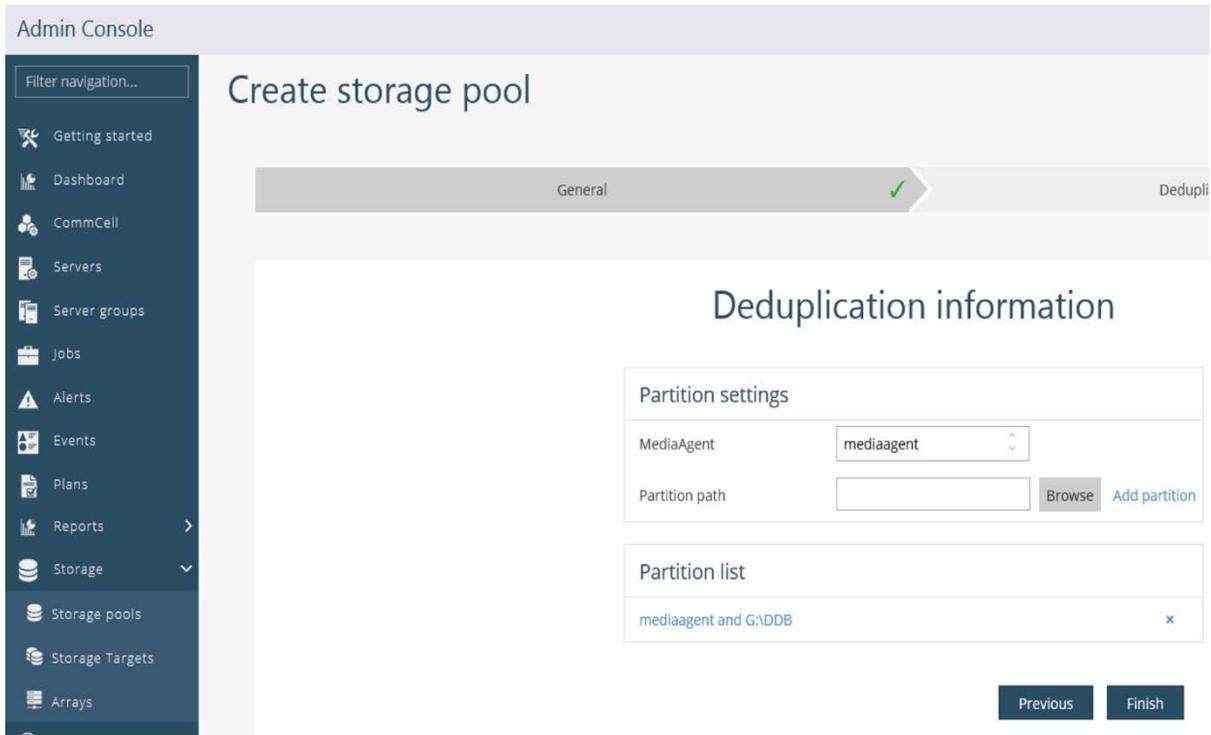
2. In the left pane, expand Storage, select Storage pools, and select Disk/Cloud.



3. Give the storage pool a name and select MediaAgent and the path for the disk library. Then click Next.



4. Select the same MediaAgent again and select the path for the DDB. Click Add Partition and then click Finish.



5. The disk library is now ready for use.

For more information

For additional information, see the following:

- Cisco UCS S3260 Storage Server:
<http://www.cisco.com/c/en/us/products/servers-unified-computing/ucs-s-series-storage-servers/index.html>
- Cisco UCS 6000 Series Fabric Interconnects:
<http://www.cisco.com/c/en/us/products/servers-unified-computing/fabric-interconnects.html>
- Cisco UCS Manager:
<http://www.cisco.com/c/en/us/products/servers-unified-computing/ucs-manager/index.html>
- Achieve Optimal Network Throughput on the Cisco UCS S3260 Storage Server (Cisco white paper):
http://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-s-series-storage-servers/Whitepaper_c11-738722.html
- Commvault:
<https://www.commvault.com/solutions/by-function/data-protection-backup-and-recovery>

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