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.

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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.
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

![Commvault Data Platform overview diagram](image)

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

![Figure 4: Six phases of the snapshot creation process](image)

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.
**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 x 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 = 103 = 1000 (KB).
- File systems assume kilo = 224 = 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 x 1000) / (1024 x 1024) = 0.9537
- GB to GiB: (1000 x 1000 x 1000) / (1024 x 1024 x 1024) = 0.9313
- TB to TiB: (1000 x 1000 x 1000 x 1000) / (1024 x 1024 x 1024 x 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**

<table>
<thead>
<tr>
<th>Medium MediaAgent server configuration with Cisco UCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cisco solution ID</td>
</tr>
<tr>
<td>Cisco UCS server type</td>
</tr>
<tr>
<td>Rack units</td>
</tr>
<tr>
<td>Chip set</td>
</tr>
<tr>
<td>CPU type</td>
</tr>
<tr>
<td>Memory</td>
</tr>
<tr>
<td>Storage controller</td>
</tr>
<tr>
<td>Storage: Boot</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Storage: Metadata</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Storage: Storage pool</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Network options</td>
</tr>
<tr>
<td>Additional connectivity</td>
</tr>
<tr>
<td>Power specifications</td>
</tr>
</tbody>
</table>

*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

<table>
<thead>
<tr>
<th>Large MediaAgent server configuration with Cisco UCS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cisco solution ID</td>
<td>Commvault MediaAgent Large S3260</td>
</tr>
<tr>
<td>Cisco UCS server type</td>
<td>Cisco UCS S3260 M4</td>
</tr>
<tr>
<td>Rack units</td>
<td>4RU (7 in. [177.8 mm])</td>
</tr>
<tr>
<td>Chip set</td>
<td>Intel C610 series</td>
</tr>
<tr>
<td>CPU type</td>
<td>2 x Intel Xeon processor E5-2650v4</td>
</tr>
<tr>
<td>Memory</td>
<td>8 x 16 DDR4 2400-MHz RDIMM (128 GB total)</td>
</tr>
<tr>
<td>Storage controller</td>
<td>Cisco UCS C3000 12-Gbps SAS RAID controller with 4-GB cache</td>
</tr>
<tr>
<td>Storage: Boot</td>
<td>2 x 480-GB SSD at 6 Gbps with RAID 1 (480 GB total)*</td>
</tr>
<tr>
<td></td>
<td>Access policy: Read–Write; read policy: No Read Ahead</td>
</tr>
<tr>
<td></td>
<td>Cache policy: Direct I/O; write policy: Write Through</td>
</tr>
<tr>
<td></td>
<td>Disk cache policy: Unchanged; stripe size: 64 KB</td>
</tr>
<tr>
<td>Storage: Metadata</td>
<td>1 x 3200-GB PCIe and NVMe storage*</td>
</tr>
<tr>
<td></td>
<td>Index cache: 1 TB; DDB: 1.1 TB; and cloud copy DDB: 1.1 TB</td>
</tr>
<tr>
<td>Storage: Storage pool</td>
<td>30 x 6-TB NL-SAS with RAID 60 (144 TB total with 2 hot spares)*</td>
</tr>
<tr>
<td></td>
<td>2 x 14 drives with RAID 6: Nested</td>
</tr>
<tr>
<td></td>
<td>Access policy: Read–Write; read policy: Always Read Ahead</td>
</tr>
<tr>
<td></td>
<td>Cache policy: Direct I/O; write policy: Write Back Good BBU</td>
</tr>
<tr>
<td></td>
<td>Disk cache policy: Unchanged; stripe size: 512 KB</td>
</tr>
<tr>
<td>Network options</td>
<td>2 x 40-Gbps connection</td>
</tr>
<tr>
<td>Additional connectivity</td>
<td>Single dual-port 16-Gbps Fibre Channel HBA</td>
</tr>
<tr>
<td>Power specifications</td>
<td>4 x 1050W AC power supply**</td>
</tr>
</tbody>
</table>

*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

<table>
<thead>
<tr>
<th>Extra Large MediaAgent server configuration with Cisco UCS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cisco solution ID</td>
<td>Commvault MediaAgent XL S3260</td>
</tr>
<tr>
<td>Cisco UCS server type</td>
<td>Cisco UCS S3260 M4</td>
</tr>
<tr>
<td>Rack units</td>
<td>4RU (7 in. [177.8 mm])</td>
</tr>
<tr>
<td>Chip set</td>
<td>Intel C610 series</td>
</tr>
<tr>
<td>CPU type</td>
<td>2 x Intel Xeon processor E5-2650v4</td>
</tr>
<tr>
<td>Memory</td>
<td>8 x 16 DDR4 2400-MHz RDIMM (128 GB total)</td>
</tr>
<tr>
<td>Storage controller</td>
<td>Cisco UCS C3000 12-Gbps SAS RAID controller with 4-GB cache</td>
</tr>
<tr>
<td>Storage: Boot</td>
<td>2 x 480-GB SSD at 6 Gbps with RAID 1 (480 GB total)*</td>
</tr>
<tr>
<td></td>
<td>Access policy: Read–Write; read policy: No Read Ahead</td>
</tr>
<tr>
<td></td>
<td>Cache policy: Direct I/O; write policy: Write Through</td>
</tr>
<tr>
<td></td>
<td>Disk cache policy: Unchanged; stripe size: 64 KB</td>
</tr>
</tbody>
</table>
### Extra Large MediaAgent server configuration with Cisco UCS

| Storage: Metadata | 2 x 3200-GB PCIe and NVMe storage*  
|                  | ● 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)*  
|                   | ● 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).
8. 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.

9. 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:

   a. Transmit Queues: 8
   b. Ring Size: 4096
   c. Receive Queues: 8
   d. Ring Size: 4096
   e. Completion Queues: 16
   f. Interrupts: 32
   g. 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 I/O 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.
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.
7. 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.

**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.

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

**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.

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.
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.

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.
6. 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.
7. 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.

8. 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.
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 : Commvault

Description : Commvault Data Protection

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.

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

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.
4. Select the default chassis maintenance policy.
5. Set the chassis firmware package to the UCS-3260 package created previously.

6. 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](image)

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 policies 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 polices 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](image)

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

![Create Local Disk Configuration Reference](image)

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.
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.

Create Disk Group Policy

Create Local Disk Configuration Reference

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

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

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

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).
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.
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.
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](image)

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
Redundancy: Enable Failover

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: Updating Template

VLANs

<table>
<thead>
<tr>
<th>Select</th>
<th>Name</th>
<th>Native VLAN</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>default</td>
<td></td>
</tr>
<tr>
<td>✔</td>
<td>IB_Mgmt</td>
<td></td>
</tr>
</tbody>
</table>

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.
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.
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**).
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.
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.

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](image)

**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.


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.

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.

**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.
8. 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.

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

2. 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.
5. The boot order will initiate the OS installation automatically. Click Next at the OS installation start screen.

6. Proceed with the installation, entering a valid Windows license key and selecting the mode (GUI mode is used in this example.)

7. Accept the license and select “Custom: Install Windows only (advanced).”

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.


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

7. On the Select Package(s) to Install page, select the MediaAgent package and click Next.
8. On the “Enter Recommended Settings for the selected Software” page, select the appropriate client group and storage policy if applicable. Then click Next.

9. 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:

- Cisco UCS 6000 Series Fabric Interconnects:

- Cisco UCS Manager:

- Achieve Optimal Network Throughput on the Cisco UCS S3260 Storage Server (Cisco white paper):

- Commvault: