

# Commvault Software with Cisco Unified Computing System

## Benefits

- Deploy quickly and reduce risk. Cisco Reference Architectures take the guesswork out of sizing.
- Enjoy low total cost of ownership: less than US\$1000/TB. That's one dollar per gigabyte. The more you store, the bigger the savings.
- Restore virtual machines up to 67% faster with Commvault software.<sup>2</sup>
- Cut backup administration by half.<sup>3</sup>
- Simplify your journey to the cloud. Commvault supports more than 20 leading cloud storage platforms, including Microsoft Azure and Amazon S3.
- Scale easily, a few terabytes at a time. Add drives to your UCS storage server. When one server is full, add another. Manage all servers from one console.

Data just keeps on growing. How will you protect it to keep the business running smoothly and meet compliance requirements? Deploying multiple single-purpose appliances is costly. Now there's an all-in-one solution.

## Business Challenge

Storage requirements are rising 40 percent a year.<sup>1</sup> To efficiently manage your growing data you need to:

- Protect mission-critical applications and databases: What happens if your primary storage fails? If employees can't access data or services, productivity plummets. And data loss or slow recovery can erode sales and trust.
- Backup and restore data on virtual servers and physical servers: This becomes even more complicated if you use multiple hypervisors, such as VMware vSphere, Microsoft Hyper-V, and OpenStack.
- Accelerate your journey to the cloud: You might find it more economical to backup active files on local storage and use cloud storage for long-term retention. You need an efficient way to move data back and forth.
- Build a practical and efficient disaster recovery program: Meeting recovery-time objective and recovery-point objective (RTO/RPO) targets requires snapshots and replication in addition to traditional backups.

Buying and managing multiple single-purpose appliances for each of these goals is costly and inefficient.

1. ESG, "Clear Skies Ahead for Hybrid and Tape Solutions," March 2015

2. IDC White Paper, "Quantifying the Business Value of Commvault Software: 2015 Customer Survey Analysis," January 2016

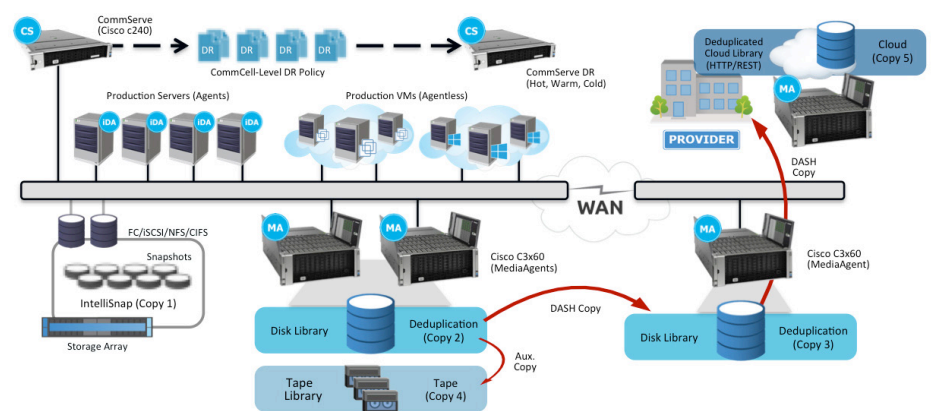
3. Commvault survey of 330 North American customers

## Protect Your Infrastructure with Cisco UCS and Commvault

Deployed on Cisco Unified Computing System (UCS) C-series servers, Commvault software combines backup, snapshots, array-based replication, archiving, eDiscovery, endpoint protection, and application- and cloud-based recovery (Figure 1).

Our all-in-one solution eliminates the need for multiple, expensive products that increase capital costs and management overhead (Figure 1). Manage all functions from a single console. If you use Cisco UCS blade servers for your applications, UCS storage servers with Commvault software are a natural extension. Simplify IT by managing UCS C-series rack servers together with your blade servers, using the same interface.

Figure 1 Typical high-level architecture



## Components

### UCS C240 Servers for Protection

Manage data using Commvault software deployed on one or more Cisco UCS C240 Rack Servers. Commvault software lets you see and manage data stored anywhere in the enterprise. It automates retention and tiering according to your policies. Commvault also provides hardware snapshots, indexing, deduplication, replication, search, and reporting. The C240 provides great performance for storage-intensive workloads such as enterprise backup, recovery, archive, and search.

### UCS C3000-Series Servers for Backup

Store backup data on one or more Cisco UCS C3000 Series Servers: the C3160 or C3260. Each storage server can house up to 60 data drives, storing up to 360 TB in a compact 4-rack-unit (4U) form factor.

Start at the right size for today's needs and scale in small increments. For geographic resiliency, deploy the servers in multiple locations and manage them from a single console. Hot-swappable hard drives and RAID help to make sure your data is available when users need it.





## Cisco Reference Architectures

Tables 1 and 2 show Cisco and Commvault tested reference architecture configurations using Cisco UCS, Commvault CommServe (command and control software), and Commvault Media Agent (manages data transmission between clients and Cisco storage) components.

**Table 1** Configuration for Commvault command and control (CommServe)

	Express (S)	Workgroup (M)	Data Center (L)	Enterprise (XL)
<b>Server</b>	Cisco UCS C220 M4	Cisco UCS C220 M4	Cisco UCS C220 M4	Cisco UCS C220 M4
<b>CPU</b>	12GHz Across 4 Cores	24GHz Across 8 Cores	28.8GHz Across 12 Cores	33.6GHz Across 16 Cores
<b>Memory</b>	16GB DDR4	32GB DDR4	32GB DDR4	64GB DDR4
<b>Storage</b>	600GB Usable Boot/Binaries/DB RAID 10 – 4 x 300GB 10k SAS	Boot – 300GB 10k SAS (RAID 1) Binaries/DB – 600GB 15k (RAID 10 – 4 x 300GB drives)	Boot – 300GB 10k SAS (RAID 1) Binaries/DB – 480GB SSD (RAID 5 – 3 x 240GB drives)	Boot – 300GB 10k SAS (RAID 1) Binaries/DB – 480GB SSD (RAID 5 – 3 x 240GB drives)
<b>RAID</b>	SAS 6G RAID 512MB Flash Backed Cache	SAS 6G RAID 1GB Flash Backed Cache	SAS 6G RAID 1GB Flash Backed Cache	SAS 6G RAID 1GB Flash Backed Cache
<b>Network</b>	2 x 1Gbps	2 x 1Gbps	2 x 1Gbps	4 x 1Gbps

**Table 2** Configuration for Commvault Media Agent (MA)

	Small 10-25 FET*	Medium 25-40 FET*	Large 60-100 FET*	Extra Large 90-120 FET*
<b>Server</b>	Cisco UCS C240 M4	Cisco UCS 3x60 M4	Cisco UCS 3x60 M4	Cisco UCS 3x60 M4
<b>CPU</b>	14.4GHz Across 6 Cores	25.2GHz Across 12 Cores	25.2GHz Across 12 Cores	44GHz Across 20 Cores
<b>Memory</b>	32GB DDR4 Boot – 120GB SSD	128GB DDR4 Boot – 480GB SSD	256GB DDR4 Boot – 480GB SSD	256GB DDR4 Boot – 480GB SSD
<b>Storage</b>	SSD Cache – 1TB Backend Size – 30 BET** (with 1 Hot Spare)	SSD Cache – 1.6TB Backend size – 64BET** (with 2 Hot Spares)	SSD Cache – 2.4TB Backend size – 144BET** (with 4 Hot Spares)	SSD Cache – 4TB Backend size – 216BET** (with 4 Hot Spares)
<b>RAID</b>	SAS 12Gbps RAID 1GB Flash Backed Cache	SAS 12Gbps RAID 1GB Flash Backed Cache	SAS 12Gbps RAID 4GB Flash Backed Cache	SAS 12Gbps RAID 4GB Flash Backed Cache
<b>Network</b>	6 x 1Gbps	2 x 10Gbps	4 x 10Gbps	4 x 10Gbps

\* FET = Front-end terabytes: volume of protected data.

\*\* BET = Back-end terabytes: volume of unique data written to disk.



## Use Cases

### Protection and recovery of virtualized environments

**Challenge:** Virtual environments complicate data protection and recovery. Traditionally, you could only recover a virtual machine on a host that has the same hypervisor. Most organizations use separate backup software for their physical and virtual hosts. And by some estimates, up to 60 percent of virtual machines are no longer used.<sup>4</sup>

**Solution:** Commvault software on UCS simplifies protection and recovery. Use it to:

- **Back up physical and virtual environments** from the same console. Manage all storage repositories from a single interface.
- **Recover virtual machines across hypervisors and cloud platforms**, whether they were created on-premises or in the cloud. For example, you can recover a VM created in VMware vSphere directly to Microsoft Hyper-V, Amazon Web Services (AWS), or Microsoft Azure with the click of a button.
- **Define and implement virtual machine archiving rules.** The rules identify, archive, and recycle sprawled resources automatically to keep your infrastructure lean and clean.
- **Orchestrate snapshot operations.** Commvault software manages snapshots according to your business policies. It indexes the content so that you can recover individual files. There's no need to restore the entire snapshot and then search for the file. Commvault can also push backup, archive, or DR copies to secondary storage, tape, and/or the cloud. Commvault deduplicates the copies before sending them over the network.

### Converged and hyperconverged infrastructure protection

**Challenge:** Converged infrastructure (e.g. FlashStack from Pure, FlexPod from NetApp) and hyperconverged infrastructure (e.g. HyperFlex) simplify the data center. Data protection for these modern architectures requires a level of integration that traditional data protection vendors struggle to solve, or requires multiple solutions and manual scripting.

**Solution:** Commvault's solution allows direct integration with the widest array of storage vendors and streaming capabilities that provide the most modern approach to data management for today's data centers. You can manage all of your data through a single common interface with no scripting required for traditional, converged, and hyperconverged architectures.

4. *Wall Street Journal*, "Hidden Waste of Cloud Computing," February 17, 2015





## Next Steps

For more information about Cisco UCS, visit [www.cisco.com/go/ucs](http://www.cisco.com/go/ucs).

For more information about Commvault software, visit [www.commvault.com](http://www.commvault.com).

## Accelerate journey to cloud with backup and disaster recovery

**Challenge:** Efficiently managing a hybrid cloud requires central management, efficient WAN utilization, ability to move data between locations, and disaster recovery.

**Solution:** Deploy Commvault Software on UCS servers in remote offices and branch offices. Use local backup for fast recovery and short-term retention. For long-term retention, copy data to public clouds. Commvault supports more than 20 leading cloud storage platforms and devices, including Microsoft Azure and Amazon S3. That's more than any other major backup and recovery software vendor. To conserve WAN bandwidth, Commvault deduplicates and encrypts data before transferring it to the cloud.

As part of your disaster recovery strategy, use snapshots and data replication to meet RTO and RPO targets. You can write policies that give priority to business-critical applications because Commvault is application-aware.

Other use cases include archiving, e-Discovery, compliance, and endpoint protection.

## Why Cisco and Commvault

### Scale as your data grows

Store over 200TB of backups in a 4U form factor. Scale easily by adding more drives to your existing storage servers. When one server is full, simply add another server so you can scale to PB of data all managed by a single console.

### Save money

Data protection costs less with Commvault software on UCS. Deploying one solution instead of many single-purpose appliances reduces total cost of ownership. A small footprint lowers data center space, power, and cooling costs. Cisco Reference Architectures are proven, mitigating implementation risks and accelerating time to value. And while this document focuses on three key use cases, the Commvault Data Platform spans use cases across the entire enterprise, no matter what the workload or where it resides—on premise, off premise, in the cloud, physical, or virtual.