Veeam Availability Solution for Cisco UCS: Designed for Virtualized Environments
What You Will Learn

Do you want a fast, efficient data protection solution for the data center? Together, Cisco and Veeam provide an impressive, modern, disaster-recovery solution for any VMware vSphere or Microsoft Hyper-V environment. You can achieve recovery times of less than 15 minutes for all applications and data. You also get the performance, flexibility, and reliability of modular, cost-effective, high-density storage servers. The solution: Veeam Availability Solution for Cisco Unified Computing System™ (Cisco UCS®).

Challenges of Meeting the Demands of an Always-On World

Organizations are modernizing their data centers so that they can provision IT services faster, strengthen security and control, and lower operating costs. While building modern data centers, organizations invest in server virtualization, modern storage applications, and cloud-based services. However, businesses are facing new demands from end users, including demands for access to data and applications at all times with no downtime or data loss. In addition, they are facing exponential data growth annually.

For many organizations, there is a gap between the requirements of the always-on enterprise and IT’s ability to effectively deliver availability. Organizations bridge this gap with a new kind of solution—one that delivers a recovery-time objective (RTO) and a recovery-point objective (RPO) of less than 15 minutes for all applications and data.

High-growth businesses require data protection that is reliable, flexible, and easy to use (Figure 1). Cloud service providers also need reliable, fast, operationally efficient storage and protection to be successful in backup-as-a-service (BaaS) and disaster-recovery-as-a-service (DRaaS) markets.

Figure 1. Evaluating Availability Needs
Why Traditional Backup Tools Aren’t Sufficient

Traditional backup tools, which many IT managers struggle to use, were not originally designed for virtualized environments. That makes it difficult for organizations to take full advantage of the benefits of virtualization.

• Unreliable backup operations
• Recovery that takes too long
• High costs associated with management of backup data and secondary storage
• Inability to provide reliable and true backups for compliance purposes
• Low productivity caused by the complexity of system management
• The need to scale backup operations for growth

Now there’s a solution that can help IT managers meet the challenges of ever-shrinking RPO windows and the aggressive RTOs associated with virtualized environments.

The Solution: Veeam Backup & Replication Powered by Cisco UCS

Veeam Availability Solution for Cisco UCS bridges the gap by providing customers a differentiating solution that offers more than just backup. Using virtualization, storage, and cloud technologies, Cisco and Veeam deliver high-speed recovery, data-loss avoidance, and verified protection with complete visibility on the proven Cisco UCS platform for applications requiring high availability and scalability.

Choose preconfigured Cisco backup and replication appliances for Veeam, or develop your own configuration, for a solution that’s simple to manage and optimized for virtualization.

Meeting the Needs of Architectures of All Sizes

Veeam Availability Solution for Cisco UCS is designed to work for any size of architecture, from replication-only environments (Figure 2) to complex systems. With the Cisco UCS S3260 Storage Server’s combination of computing power, memory, and high-capacity storage, you can deploy the solution on a single Cisco UCS S3260 server, or you can deploy it on more complex architectures (Figures 3 and 4).
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Solution Overview

Business Benefits: Reliable Protection and Management

Veeam Availability Solution for Cisco UCS provides fast, flexible, and reliable recovery of virtualized applications and data. The solution helps businesses maintain availability 24 hours a day, every day, and it is cost effective and easy to operate for commercial IT managers and cloud service providers. The solution provides organizations with the following benefits from Cisco UCS and Veeam:

- **High-speed recovery**: Veeam Instant VM Recovery™ recovers a failed virtual machine in as little as two minutes. Instant file-level recovery recovers guest OS files and folders in real time. In addition, Veeam Explorer™ for Microsoft Exchange, Active Directory, SharePoint, and SQL Server and Oracle databases provides recovery of application-specific information and low RTOs.

- **Data-loss avoidance**: The solution provides these benefits:
  - Veeam Cloud Connect™ helps you avoid the risk of catastrophic data loss without having to invest in a second site.
  - End-to-end encryption secures your data during backup, in flight, and at rest.
  - Replication enhancement improves your offsite recovery with WAN accelerated replication, replication from backup, and one-click site failover with support for planned failover.
  - Two-in-one backup and replication provides near-continuous data protection (near-CDP) for any virtualized application.
  - Built-in WAN acceleration offers 50 times faster backup data transfer speeds across the WAN.
  - Native tape support lets you store entire virtual machine backup copies or individual files on tape. It also lets you restore from tape whenever you need to do so.

- **Verified protection**: Veeam SureBackup® and SureReplica automatically verify the recoverability of every backup copy and every replica, every time.

- **Leverage data**: Veeam On-Demand Sandbox™ quickly creates an isolated copy of your production environment for troubleshooting, testing, and training.

- **Reduced total cost of ownership (TCO)**: Cisco UCS S-Series Storage Servers deliver unique benefits in a familiar industry-standard form factor with reduced TCO compared to traditional backup and replication platforms.

- **Faster deployment**: Cisco UCS C240 Rack Servers and S3260 Storage Servers offer a balance of computing and high-density local storage that reduces deployment time and provides greater agility.

- **Cisco UCS S3260 M4 Storage Server**: Based on the Intel® Xeon® processor E5-2600 v4 series, this high-density server offers up to 360 TB of local storage in a compact 4-rack unit (4RU) and fits in a standard-depth rack. It includes built-in enterprise-class RAID technology and hot-pluggable mission-critical components.
• **Scalable and flexible:** The solution is easy to expand. You can start with 84 terabytes (TB) of raw capacity that can back up 120 virtual machines with 12 Veeam sockets, and you can expand to petabytes of storage that is capable of backing up thousands of virtual machines with hundreds of Veeam sockets.

• **Cisco UCS C240 M4 Rack Server:** This server is designed for performance and expandability for a wide range of storage-intensive workloads. It is well suited for small to midsized backup and replication deployments. The Cisco UCS C240 comes in a 2RU form factor, and with the Intel Xeon processor E5-2600 v4 series, it offers up to 72 TB of local storage.

Tables 1 and 2 show configuration options for Cisco UCS C-Series and S-Series servers with Veeam Availability Suite.

**Table 1.** Cisco UCS C-Series Configurations for Data Protection with Veeam Availability Suite

<table>
<thead>
<tr>
<th></th>
<th>8-TB Configuration</th>
<th>48-TB Configuration</th>
<th>72-TB Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Servers</strong></td>
<td>C240 M4 (LFF)</td>
<td>C240 M4 (LFF)</td>
<td>C240 M4 (LFF)</td>
</tr>
<tr>
<td><strong>CPU</strong></td>
<td>Intel Xeon processor E5-2650 v4 (2.2 GHz, 12 cores)</td>
<td>Intel Xeon processor E5-2650 v4 (2.2 GHz, 12 cores)</td>
<td>Intel Xeon processor E5-2650 v4 (2.2 GHz, 12 cores)</td>
</tr>
<tr>
<td><strong>Memory</strong></td>
<td>32 GB total</td>
<td>32 GB total</td>
<td>256 GB total</td>
</tr>
<tr>
<td><strong>Storage</strong></td>
<td>• 8 TB raw capacity&lt;br&gt;• 4 TB minimum usable capacity</td>
<td>• 48 TB raw capacity&lt;br&gt;• 36 TB minimum usable capacity</td>
<td>• 72 TB raw capacity&lt;br&gt;• 54 TB minimum usable capacity</td>
</tr>
<tr>
<td><strong>RAID</strong></td>
<td>• RAID 1&lt;br&gt;• 1-GB flash-backed cache</td>
<td>• RAID 6&lt;br&gt;• 1-GB flash-backed cache</td>
<td>• RAID 6&lt;br&gt;• 1-GB flash-backed cache</td>
</tr>
<tr>
<td><strong>Veeam sockets</strong></td>
<td>6</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td><strong>Average number of virtual machines</strong></td>
<td>–</td>
<td>70</td>
<td>100</td>
</tr>
</tbody>
</table>
### Table 2. Cisco UCS S-Series Configurations for Data Protection with Veeam Availability Suite

<table>
<thead>
<tr>
<th>Configuration</th>
<th>84-TB</th>
<th>140-TB</th>
<th>280-TB</th>
<th>560-TB</th>
<th>1680-TB</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Servers</strong></td>
<td>S3260 M4 x 1</td>
<td>S3260 M4 x 1</td>
<td>S3260 M4 x 1</td>
<td>S3260 M4 x 1</td>
<td>S3260 M4</td>
</tr>
<tr>
<td><strong>CPU</strong></td>
<td>Intel Xeon processor E5-2650 v4 (2.2 GHz, 12 cores)</td>
<td>Intel Xeon processor E5-2650 (2.1 GHz, 18 cores)</td>
<td>Intel Xeon processor E5-2660 (2.1 GHz, 18 cores)</td>
<td>Intel Xeon processor E5-2660 (2.1 GHz, 18 cores)</td>
<td>Intel Xeon processor E5-2660 (2.1 GHz, 18 cores)</td>
</tr>
<tr>
<td><strong>Memory</strong></td>
<td>128 GB total</td>
<td>128 GB total</td>
<td>128 GB total</td>
<td>256 GB total</td>
<td>768 GB total; 256 GB per server</td>
</tr>
</tbody>
</table>
| **Storage**   | • 84 TB raw capacity  
|               | • 66 TB minimum usable capacity | • 140 TB raw capacity  
|               | • 110 TB minimum usable capacity | • 280 TB raw capacity  
|               | • 220 TB minimum usable capacity | • 560 TB raw capacity  
|               | • 440 TB minimum usable capacity | • 1680 TB raw capacity  
|               | • 1320 TB minimum usable capacity | • SAS RAID 6 controller  
|               | • 1-GB flash-backed cache | • SAS RAID 6 controller  
|               | • 1-GB flash-backed cache | • SAS RAID 60 controller  
|               | • 1-GB flash-backed cache | • SAS RAID 60 controller  
|               | • 1-GB flash-backed cache | • SAS RAID 60 controller  
|               | • 1 GB flash-backed cache | • SAS RAID 60 controller  
|               | • 1 GB flash-backed cache | • SAS RAID 60 controller  
| **Veeam sockets** | 12 | 24 | 46 | 90 | 280 |
| **Average number of virtual machines** | 120 | 225 | 450 | 900 | 2800 |

Storage efficiencies through Veeam compression and deduplication technologies can result in 50 percent or greater reduction in space use. Backup repositories on ReFS 3.0 volumes also benefit from integration with the block clone API, reducing synthetic full-backup creation time and dramatically reducing space consumption for the synthetic full backup. Overall space savings varies depending on the environment.
Conclusion
Get a backup and replication solution that reduces downtime with fast, efficient data protection and almost instant virtual machine recovery. Cisco UCS and Veeam together provide a modular solution that you can easily expand over time as your needs increase. With Veeam Backup & Replication Enterprise Plus powered by Cisco UCS, you gain performance, flexibility, reliability, and industry-leading TCO. Build your business continuity plan on a simple, modern, disaster-recovery solution for your VMware vSphere or Microsoft Hyper-V workloads.

For More Information
Learn more about the Cisco® and Veeam® solution: