Veeam Backup & Replication Enterprise Plus Powered by Cisco UCS: Reliable Data Protection 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. You also get the performance, flexibility, and reliability of modular, cost-effective, high-density storage servers. The solution: Veeam Backup & Replication Enterprise Plus Powered by 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 access to data and applications at all times and systems with no downtime or data loss. In addition, they are facing exponential data growth annually.

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

High-growth businesses have to evaluate availability needs to implement 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 the backup-as-a-service (BaaS) and disaster-recovery-as-a-service (DRaaS) markets.

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Why Traditional Backup Tools Fall Short

Traditional backup tools were not created for virtualized environments. That makes it difficult for organizations to take full advantage of virtualized environments, and many IT managers struggle with:

- Unreliable backups
- 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 Enterprise Plus Powered by Cisco UCS

Veeam Backup & Replication Enterprise Plus Powered by Cisco UCS bridges the availability gap by providing customers a differentiating solution that offers more than just backup. Using virtualization, storage, and cloud technologies, the combined solution offers high-speed recovery, data-loss avoidance, and verified protection with complete visibility. Cisco UCS provides the deep foundation for running applications that require high availability and scalability. The combined Cisco® and Veeam solution incorporates a platform with simplified, embedded management. In addition, all solution resources are optimized for virtualization throughout, including the server, storage, and networking resources.

Meeting the Needs of Architectures of All Sizes

Veeam Backup & Replication Enterprise Plus Powered by Cisco UCS is designed to work for any size of architecture (basic architecture is shown in Figure 2), from starter environments to complex systems. With the Cisco UCS C3160 Rack Server’s combination of computing power, memory, and high-capacity storage, deployment can be accomplished on a single Cisco UCS C3160 server, as shown in Figure 2, or it can accommodate a more complex architectures (Figures 3 and 4).
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**Business Benefits: Reliable Protection and Management**

Veeam Backup & Replication Enterprise Plus Powered by 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:** Instant VM Recovery recovers a failed virtual machine in as short a time as two minutes, and Instant File-Level Recovery recovers guest OS files and folders in real time. In addition, Veeam Explorer™ for Microsoft Exchange™, SharePoint, SQL Server, and Active Directory provides recovery of specific information and low RTOs.
- **Data-loss avoidance:** Multiple features help prevent data loss:
  - 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 across the WAN.
- Native tape support lets you store entire virtual machine backups or individual files on tape, and lets you restore from tape whenever you need to do so.

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**Figure 2.** Example of a Starter Deployment of Veeam Backup & Replication Enterprise Plus Powered by Cisco UCS

**Figure 3.** Example of a Medium Deployment of Veeam Backup & Replication Enterprise Plus Powered by Cisco UCS

**Figure 4.** Example of a Large Deployment of Veeam Backup & Replication Enterprise Plus Powered by Cisco UCS
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- **Verified protection**: SureBackup® and SureReplica® automatically verify the recoverability of every backup and every replica, every time.
- **Verified data**: Virtual Lab helps you avoid deployment problems by testing and troubleshooting your applications in an isolated, production-like environment without creating any impact on your production infrastructure.
- **Reduced total cost of ownership (TCO)**: Cisco UCS C-Series Rack 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 M4 and C3160 Rack Servers offer a balance of computing and high-density local storage that reduces deployments times and provides greater agility.
- **Cisco UCS C3160 Rack Server**: Based on the Intel Xeon processor E5-2600 v2 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 168 TB of raw capacity that can back up 50 virtual machines with 10 Veeam sockets, and you can expand to petabytes of storage that is capable of backing up thousands of virtual machines and hundreds of Veeam sockets.
- **The 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 M4 comes in a 2RU form factor, and with the Intel Xeon processor E5-2600 v3 series, it offers up to 72 TB of local storage.

Table 1 shows the suggested configuration for starter, small, medium-sized, and large architectures with the Cisco UCS C3160 server.

<table>
<thead>
<tr>
<th></th>
<th>Starter</th>
<th>Medium</th>
<th>Large</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Raw capacity</strong></td>
<td>48 terabytes (TB)</td>
<td>360 TB</td>
<td>1080 TB</td>
</tr>
<tr>
<td><strong>Minimum usable capacity</strong></td>
<td>40 TB</td>
<td>288 TB</td>
<td>864 TB</td>
</tr>
<tr>
<td><strong>Cisco UCS C-Series Rack Servers</strong></td>
<td>Cisco UCS C240 M4 L</td>
<td>Cisco UCS C3160 x1</td>
<td>Cisco UCS C3160 x3</td>
</tr>
<tr>
<td><strong>CPU</strong></td>
<td>Intel® Xeon® processor E5-2650 v3 (10 cores, 2.3 GHz, 25 MB, and 105W)</td>
<td>Intel Xeon processor E5-2660 v2 (10 cores, 2.2 GHz, 25 MB, and 95W)</td>
<td>Intel Xeon processor E5-2660 v2 (10 cores, 2.2 GHz, 25 MB, and 95W)</td>
</tr>
<tr>
<td><strong>Total memory</strong></td>
<td>32 GB</td>
<td>256 GB</td>
<td>256 GB per Cisco UCS C3160 Total: 784 GB</td>
</tr>
<tr>
<td><strong>RAID cache</strong></td>
<td>1 GB</td>
<td>4 GB</td>
<td>4 GB</td>
</tr>
<tr>
<td><strong>RAID</strong></td>
<td>RAID 6</td>
<td>RAID 60</td>
<td>RAID 60</td>
</tr>
<tr>
<td><strong>Veeam sockets</strong></td>
<td>10</td>
<td>100</td>
<td>300</td>
</tr>
<tr>
<td><strong>Maximum bandwidth</strong></td>
<td>20 Gbps</td>
<td>40 Gbps</td>
<td>40 Gbps</td>
</tr>
<tr>
<td><strong>Average number of virtual machines</strong></td>
<td>100</td>
<td>1000</td>
<td>3000</td>
</tr>
<tr>
<td><strong>OS</strong></td>
<td>Microsoft Windows 2012 Standard Edition 64-bit</td>
<td></td>
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</tbody>
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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 get performance, flexibility, reliability, and industry-leading TCO. You get a simple, modern, disaster recovery solution for your VMware vSphere or Microsoft Hyper-V environment.

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