SUMMIT

vmware → Microsoft Hyper-V

VMware vSphere to Hyper-V Migration

OVERVIEW

This document outlines our proven, production-tested approach for migrating virtual machines from VMware vSphere to a Microsoft Hyper-V cluster managed by SCVMM using Veeam Backup & Replication. We have successfully executed this migration pattern for multiple customers and use it as our standard methodology to minimize risk, preserve rollback options, and ensure predictable outcomes. The process leverages a backup-based, non-destructive migration strategy.

Exact downtime varies by workload, but the goal is always a predictable, well-communicated cutover window. This allows workloads to be validated in the destination environment before cutover, provides a clear fallback path, and offers flexibility in how and where data is staged during the migration. What follows is a high-level technical overview of how we prepare the environment, seed data, and execute the migration in a controlled and repeatable manner.

Storage and Cluster Preparation

Prepare destination environment and Veeam repository to accept migrated VM backups.

1. **Ensure Hyper-V hosts are fully configured with appropriate storage and compute resources based on resources intended for migration**
2. **Deploy Veeam server with sufficient storage for backups**
3. **Add the Hyper-V cluster to the newly deployed Veeam instance and confirm connectivity**
4. **Establish connectivity between management network in current VMware environment for backup traffic**
   a. Depending on source and required throughput, this can be an IPSec tunnel, Megaport connection, or public network with whitelisted IP addresses and encryption handled via Veeam

Virtual Machine Pre-Backup Preparation

For each VM on the vSphere cluster that will be migrated, Veeam needs to be able to appropriately perform a full backup that functions as intended when restored.

1. **Verify the guest OS is in a healthy state:**
   a. No pending reboots
   b. Disk consistency confirmed
2. **Remove all VMware snapshots**
3. **Confirm VMware Tools is installed and up to date** (Veeam relies on this for clean backups)
4. **Document any custom hardware settings such as vGPU, SRIOV, or PCI passthrough**

Virtual Machine Backup Process and Data Seeding

IF VEEAM IS ALREADY IN USE IN PRODUCTION:

1. Ensure all VMs intending to migrate are part of backup jobs in Veeam Backup & Replication
2. Add the destination Veeam server as a repository for the existing Veeam Backup & Replication instance
3. Create a Veeam Backup Copy Job using the backup job as the source and the destination Veeam server as the target
4. Monitor process as initial backup seeds
5. Schedule recurring jobs on an interval to keep destination updated with at least one restore point
6. Monitor backup copy job runtime to obtain baseline for migration window

IF VEEAM IS NOT IN USE:

1. **Create backup jobs for all VMs to be migrated in a disabled state in Veeam Backup & Replication**
   a. VMs will be batched into jobs with Customer input on functionality and VM size
   b. Backup schedules will be configured at time and intervals that meet customer needs
2. **Perform initial backups in a phased approach, enabling the jobs in batches and monitoring for completion**
3. **When all backup jobs complete, monitor for job runtime to obtain baseline for migration window**

Virtual Machine Migration Process

For each virtual machine to be migrated:

- Uninstall VMware Tools from the VM
- Power off the VM in vCenter
- Initiate a manual execution of the relevant job backup in Veeam Backup & Replication and monitor for completion
- Initiate Restore to Microsoft Hyper-V from within Veeam Backup & Replication
- Confirm the VM boots and connects to the network
- Ensure Hyper-V integration is enabled and functions as intended
- Customer performs application-level validation

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