# Solution Guide

## Barracuda Backup Virtual Appliance (Vx) System Requirements

## VMware and Hyper-V System Requirements

Barracuda offers the following types of images for the Barracuda Backup Vx deployment. Follow the instructions for your hypervisor to deploy the Barracuda Backup Vx appliance.

| IMAGE TYPE | SUPPORTED HYPERVISORS |
| --- | --- |
| OVF | VMware ESX and ESXi (vSphere Hypervisor) versions 4.x, 5.x, and 6.x |
| VHD | Microsoft Hyper-V 2008, 2008 R2, 2012, 2012 R2, and 2016 |

## CPU and RAM System Requirements

The most common mistake when designing an environment for Barracuda Backup Vx is to size only for capacity as opposed to sizing for capacity and performance. Tasks such as backup, offsite replication, data restoration, and purging can use a significant amount of system resources. When considering a Barracuda Backup virtual deployment, it is best to consider the use cases of the Backup Vx in addition to needed storage.

**vCPU Recommendations**

| BACKUP VOLUME | MINIMUM RECOMMENDED vCPUs | HIGH PERFORMANCE RECOMMENDED vCPUs |
| --- | --- | --- |
| 0 to 2 TB | 1 vCPU | 2 vCPUs |
| 2 to 6 TB | 2 vCPUs | 4 vCPUs |
| 6 to 16 TB | 4 vCPUs | 8 vCPUs |
| 16 to 32 TB | 8 vCPUs | 16 vCPUs |
| 32 to 100 TB | 16 vCPUs | 32 + vCPUs |

**RAM Recommendations**

| BACKUP VOLUME | MINIMUM RECOMMENDED RAM | HIGH PERFORMANCE RECOMMENDED RAM |
| --- | --- | --- |
| 0 to 1 TB | 2 GB | 4 GB |
| 1 to 4 TB | 4 GB | 8 GB |
| 4 to 12 TB | 8 GB | 16 GB |
| 12 to 16 TB | 16 GB | 32 GB |
| 16 to 24 TB | 32 GB | 64 GB |
| 24 to 48 TB | 64 GB | 128 GB |
| 48 to 100 TB | 128 GB | 256+ GB |

## Storage System Requirements

1. Any storage infrastructure consisting of Local/Direct-Attached, SAN, and NAS

2. Storage with inadequate throughput, read, and write speeds will suffer

3. Servers with software RAID, slow NAS, and low-RPM drives will yield poor performance

# Technical Notes

1. Barracuda Backup utilizes memory (RAM) for database queries during backup, restore, and offsite replication. Barracuda highly recommends following the recommended minimum resources for memory in the RAM Recommendations table above.

2. Barracuda uses CPU resources for hashing blocks during deduplication, compression for offsite replication, and rehydration of data during restoration. Barracuda highly recommends following the recommended minimum resources for vCPUs in the vCPU Recommendations table above.

3. At minimum, memory resources should be dedicated (reserved). It is also recommended that the CPU be dedicated to Barracuda Backup Vx, and not shared with other virtual machines on the host. This aligns with VMware and Microsoft's recommendations for virtualized Microsoft Exchange Server and SQL Server implementations.

4. A separate data store is recommended for use with the virtual appliance due to disk I/O constraints or an entirely separate storage server/environment altogether from the production environment.

5. Other system components such as network and storage need to be sized accordingly to prevent them from becoming a bottleneck.

6. It is important that snapshots are not used on the Barracuda Backup Vx appliance. Even if data is not being replicated to the Barracuda Cloud, configuration data is still sent to Barracuda so that the unit can be managed. Reverting to a previous state using snapshots can potentially cause loss of data and unit corruption. Independent disks are the default selection and highly recommended to avoid snapshots.

7. All Backup Vx disk, vCPUs, and RAM can be adjusted later by shutting down the system properly and making the necessary changes through the hypervisor.