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## XenServer 6.5: Configuration Limits

Citrix recommends using the following configuration limits as a guideline when selecting and configuring your virtual and physical environment for XenServer. The following information represents tested and recommended configuration limits that are fully supported by Citrix for XenServer.

- Virtual Machine Limits
- Citrix XenServer Host Limits
- Resource Pool Limits

Factors such as hardware and environment can affect the limitations listed below. More information about supported hardware can be found on the XenServer Hardware Compatibility List. Consult your hardware manufacturers' documented limits to ensure you do not exceed the supported configuration limits for your environment. Refer to the XenServer Technical Specifications and XenServer White Papers for the latest technical specifications, platform requirements and white papers on capacity planning and performance testing completed for XenServer.

## Virtual Machine (VM) Limits

| Item | Limit |
|------|-------|
| **Compute** | |
| Virtual CPUs per VM (Linux) | 32 [1] |
| Virtual CPUs per VM (Windows) | 16 |
| | |
| **Memory** | |
| RAM per VM | 192GB [2] |
| | |
| **Storage** | |
| Virtual Disk Images (VDI) (including CD-ROM) per VM | 16 [3] |
| Virtual CD-ROM drives per VM | 1 |
| Virtual Disk Size (NFS) | 2TB minus 4GB |
| Virtual Disk Size (LVM) | 2TB minus 4GB |
| | |
| **Networking** | |
| Virtual NICs per VM | 7 [4] |

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[1] A maximum of 16 vCPUs are supported by XenCenter. For HVM Linux guests (that is, Ubuntu 14.04, RHEL 7, CentOS 7, and Oracle Linux 7) a maximum of 16 vCPUs are supported. For all variants of 32-bit Ubuntu, the maximum number of vCPUs is 8. Consult your guest OS documentation to ensure you do not exceed the supported limits. Refer to *XenServer 6.5 Virtual Machine User's Guide* for detailed information about PV and HVM Linux guests.

[2] The maximum amount of physical memory addressable by your operating system varies. Setting the memory to a level greater than the operating system supported limit may lead to performance issues within your guest. Some 32-bit Windows operating systems can support more than 4GB of RAM through use of the physical address extension (PAE) mode. The limit for 32-bit PV Virtual Machines is 64GB. Please consult your guest operating system Administrators Guide and the *Citrix XenServer Virtual Machine User's Guide* for more details.

[3] The maximum number of VDIs supported is dependent on the guest operating system. Consult your guest OS documentation to ensure you do not exceed the supported limits.

[4] Several guest OS have a lower limits, other guests require installation of the Citrix XenServer Tools in order to achieve this limit.

# Citrix XenServer Host Limits

| Item | Limit |
|---|---|
| **Compute** | |
| Logical processors per host | 160 [5] |
| Concurrent VMs per host (Linux VMs) | 650 [6] |
| Concurrent VMs per host (Windows VMs) | 500 [6] |
| Concurrent protected VMs per host with HA enabled | 500 |
| vGPU VMs per host | 96 [7] |
| | |
| **Memory** | |
| RAM per host | 1 TB [8] |
| | |
| **Storage** | |
| Concurrent active virtual disks per host | 2048 |
| | |
| **Networking** | |
| Physical NICs per host | 16 |
| Physical NICs per network bond | 4 |
| Virtual NICs per host | 512 |
| VLANs per host | 800 |
| Network Bonds per host | 4 |
| | |
| **Graphics Capability** | |
| GPUs per host | 12 [9] |
| | |

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[5] The maximum amount of logical physical processors supported differs by CPU. Please consult the *Citrix XenServer Hardware Compatibility List* for more details on the maximum amount of logical cores supported per vendor and CPU.

[6] For HVM Linux VMs (that is, Ubuntu 14.04, RHEL 7, CentOS 7, and Oracle Linux 7) a maximum of 500 VMs are supported. The maximum number of VMs/host supported is dependent on VM workload, system load, and certain environmental factors. Citrix reserves the right to determine what specific environmental factors affect the maximum limit at which a system can function. For systems running 500 HVM VMs, Citrix recommends allocating 8GB RAM. For information about configuring Dom0 memory, see CTX134951.

[7] 96 vGPU accelerated VMs per host with 3xK1-cards. This figure may change, refer to the *Citrix XenServer Hardware Compatibility List* for current supported limit: http://hcl.xensource.com/vGPUDeviceList.aspx.

[8] If a host has one or more 32-bit paravirtualized guests (Linux VMs) running a maximum of 128GB RAM is supported on the host.

[9] This figure may change, refer to the *Citrix XenServer Hardware Compatibility List* for current supported limit: http://hcl.xensource.com/GPUPass-throughDeviceList.aspx.

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# Resource Pool Limits

| Item | Limit |
|---|---|
| **Compute** | |
| VMs per resource pool | 4096 |
| Hosts per resource pool | 16 |
| | |
| **Networking** | |
| VLANs per resource pool | 800 |
| Active hosts per cross-server private network | 16 |
| Cross-server private networks per resource pool | 16 |
| Virtual NICs per cross-server private network | 16 |
| Cross-server private network virtual NICs per resource pool | 256 |
| Hosts per vSwitch controller | 64 |
| Virtual NICs per vSwitch controller | 1024 |
| VMs per vSwitch controller | 1024 |
| | |
| **Disaster Recovery** | |
| Integrated Site Recovery storage repositories per resource pool | 8 |
| | |
| **Storage** | |
| Paths to a LUN | 8 |
| Multipathed LUNs per host | 256 [10] |
| Multipathed LUNs per host (used by storage repositories) | 256 [10] |
| VDIs per SR | 600 |
| | |
| **Storage XenMotion** | |
| (non-CDROM) VDIs per VM | 6 |
| Snapshots per VM | 1 |
| Concurrent transfers | 3 |
| | |
| **XenCenter** | |
| Concurrent operations per pool | 25 |

If you have any comments about this documentation, submit your feedback to: XenServerlimits@citrix.com.

[10] When HA is enabled, Citrix recommends increasing the default timeout to at least 120 seconds when more than 30 multipathed LUNs are present on a host. For information about increasing the HA timeout, see http://support.citrix.com/article/CTX139166.

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