

Configuration Maximums

VMware Infrastructure 3

When you are selecting and configuring your virtual and physical equipment, you must stay at or below the maximums supported by VMware® Infrastructure 3. The following tables provide information about supported configuration maximums for virtual machines, ESX Server hosts, and VirtualCenter for the ESX Server 3.0.1 and VirtualCenter 2.0.1 releases.

- [“Virtual Machine Maximums”](#) on page 1
- [“ESX Server Host Maximums”](#) on page 2
- [“VirtualCenter Maximums”](#) on page 4

The limits presented in this document can be affected by other factors, such as hardware dependencies. For more information about supported hardware, see the appropriate ESX Server 3.x Hardware Compatibility Guide.

Virtual Machine Maximums

The following table contains configuration maximums related to virtual machines.

Table 1. Virtual Machine Maximums

Item	Maximum
SCSI controllers per virtual machine	4
Devices per SCSI controller	15
Devices per virtual machine (Windows)	60
Devices per virtual machine (Linux)	60
Size of SCSI disk	2TB
Number of virtual CPUs per virtual machine	4
Size of RAM per virtual machine	16384MB
Number of NICs per virtual machine	4
Number of IDE devices per virtual machine	4
Number of floppy devices per virtual machine	2
Number of parallel ports per virtual machine	3
Number of serial ports per virtual machine	4
Size of a virtual machine swap file	16384MB
Number of virtual PCI devices: NICs, SCSI controllers, audio devices (VMware Server only), and video cards (exactly one is present in every virtual machine).	6
Number of remote consoles to a virtual machine	10

ESX Server Host Maximums

The following tables contain configuration maximums related to ESX Server hosts.

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- [“Compute Maximums”](#) on page 3
- [“Memory Maximums”](#) on page 3
- [“Networking Maximums”](#) on page 3

Storage Maximums

The following table contains configuration maximums related to ESX Server host storage.

Table 2. Storage Maximums

Item	Maximum
Block size (MB)	8
Raw Device Mapping size (TB)	2
Recommended number of hosts that can share a VMFS volume while running virtual machines against that volume.	32
Number of hosts per virtual cluster	32
Number of volumes configured per server	256
Number of extents per volume	32
VMFS-2	
Extent size	2TB ¹
Volume size	64TB
File size (block size = 1MB)	456GB
File size (block size = 8MB)	2TB
File size (block size = 64MB)	27TB
File size (block size = 256MB)	64TB
Number of files per volume	256 + (64 x number of extents)
VMFS-3²	
Volume size (block size = 1MB)	~16TB-4GB
Volume size (block size = 2MB)	~32TB-8GB
Volume size (block size = 4MB)	~64TB-16GB
Volume size (block size = 8MB)	64TB
File size (block size = 1MB)	256GB
File size (block size = 2MB)	512GB
File size (block size = 4MB)	1TB
File size (block size = 8MB)	2TB
Number of files per directory	~30,000 ³
Number of directories per volume	~30,000 ³
Number of files per volume	~30,000 ³
Fibre Channel	
LUNs per server	256
LUN size	2TB
SCSI controllers per server	16

Table 2. Storage Maximums (Continued)

Item	Maximum
Devices per SCSI controller	16
Number of paths to a LUN	32
Number of total paths	1024
LUNs concurrently opened by all virtual machines	256
LUN ID	255
NAS	
Default number of NAS datastores	8
Number of NAS datastores	32 (requires changes to advanced settings)
Hardware and Software iSCSI initiators	
LUNs per server	256
Hardware iSCSI initiators per server	2
Targets	64
Maximum portals per target	32
<ol style="list-style-type: none"> 1. Minimum = 100 MB 2. Limits apply to on-disk version 3.21 3. Sufficient to support the maximum number of virtual machines. 	

Compute Maximums

The following table contains configuration maximums related to ESX Server host compute resources.

Table 3. Compute Maximums

Item	Maximum
Number of virtual machines registered on a server	128
Number of virtual CPUs per server	128
Number of cores per server	32
Number of (hyperthreaded) logical processors per server	32
Number of virtual CPUs per core	8

Memory Maximums

The following table contains configuration maximums related to ESX Server host memory.

Table 4. Memory Maximums

Item	Maximum
Size of RAM per server	64GB
RAM allocated to service console	800MB

Networking Maximums

The following table contains configuration maximums related to ESX Server host networking.

Table 5. Networking Maximums

Item	Maximum
Physical NICs	
Number of e100 NICs	26
Number of e1000 NICs	32

Table 5. Networking Maximums (Continued)

Item	Maximum
Number of Broadcom NICs	20
Advanced, physical traits	
Number of port groups	512
Number of NICs in a team	32
Number of Ethernet ports	32
Virtual NICs/switches/VLANs	
Number of virtual NICs per virtual switch	1016
Number of virtual switches	127
Number of port groups (VLANs)	4069

VirtualCenter Maximums

The following table contains configuration maximums related to VirtualCenter.

Table 6. VirtualCenter Maximums

Item	Maximum
Number of virtual machines (for management server scalability)	1500
Number of hosts per DRS cluster	16
Number of hosts per HA cluster	16
Number of hosts per VirtualCenter server	100

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