# Cisco UCS 6200, 6332, and 6324 Series Configuration Limits for Cisco UCS Manager, Release 3.2

**First Published:** 2017-09-15

**Last Modified:** 2019-08-21

## Configuration Limits

## Configuration Limits

The following tables list the Cisco verified limits for Cisco UCS 6200, 6332, and 6324 series fabric interconnects with Cisco UCS Manager Release 3.2.

The limits in this document indicate the maximum scale capability tested for the corresponding feature individually. This number is the absolute maximum currently supported by Cisco UCS Manager for the corresponding feature. When used in combination, the practical limit for each feature may be lower than the maximum limit cited in this document.

**Note** For additional VMware ESX configuration information, see the *Cisco VM-FEX Best Practices for VMware ESX Environment Deployment Guide* available at the following URL: http://www.cisco.com/en/US/solutions/collateral/ns340/ns517/ns224/ns944/vm_fex_best_practices_deployment_guide_ns1124_Networking_Solutions_White_Paper.html

## Ethernet Environment Configuration Limits

| Feature | Cisco UCS 6200 Series | Cisco UCS 6332 Series | Cisco UCS 6324 |
|---|---|---|---|
| Active VLANs per Cisco UCS domain | 2000<br>This is the combined total of VLANs and VSANs that can be configured on each fabric interconnect. Of that total, no more than 32 can be VSANs. | 3000<br>This is the combined total of VLANs and VSANs that can be configured on each fabric interconnect. Of that total, no more than 32 can be VSANs. | 982 |
| VLAN/VSAN ID space per Cisco UCS domain | 4030-4047 and 4095 are reserved | 4030-4047 and 4095 are reserved | 4030-4047 and 4095 are reserved |

| Feature | Cisco UCS 6200 Series | Cisco UCS 6332 Series | Cisco UCS 6324 |
|---|---|---|---|
| STP logical Interfaces (also referred to as VLAN port count) per fabric interconnect<br>**Note** The only exception is for failover vNICs. These consume resources on a per Cisco UCS domain basis. | 64000 (with VLAN Port Count Optimization enabled)<br>32000 (with VLAN Port Count Optimization disabled) | 64000 (with VLAN Port Count Optimization enabled)<br>16000 (with VLAN Port Count Optimization disabled) | 4096 |
| VIFs (virtual interfaces) per fabric interconnect that map through VM-FEX to a vNIC or VM itself<br>**Note** The only exception is for failover vNICs. These consume resources on a per Cisco UCS domain basis. | VMware VM-FEX—2750<br>Hyper-V and KVM—2000 | VMware VM-FEX—2750 | 648 |
| IGMP groups per Cisco UCS domain | 4000 | 4000 | 1000 |
| Uplink port channels per fabric interconnect | 12 | 12 | 4 |
| Maximum number of uplinks per fabric interconnect (including up to12 port channels) | 31 | 31 | 4 |
| Member interfaces per port channel | 16 | 16 | 4 |
| Interfaces per FCoE port channel | 16 | 16 | 4 |
| Primary VLANs per Cisco UCS domain<br>**Note** Private VLANs count towards the total number of VLANs. | 150 | 150 | N/A |
| Secondary VLANs per Cisco UCS domain | 1000 | 1000 | N/A |
| Maximum secondary VLANs per primary VLANs. | 200 | 200 | N/A |
| QOS system classes per Cisco UCS domain | 6 (including the class default) | 6 (including the class default) | 6 |

# VIC Environment Configuration Limits

### Static Virtual NICs per Host for Cisco UCS 6200 Series, Cisco UCS 6332 Series, and Cisco 6324 Fabric Interconnect

| OS | vNICs | vHBAs | Max Combination of vNICs and vHBAs |
|---|---|---|---|
| Win 2008 SP2 and R2 SP1 | 20 | 16 | 12 Enics and 8 Fnics |
| Win 2012 and Win 2012 R2 | 20 | 16 | 12 Enics and 8 Fnics |
| Win 2016 | 20 | 16 | 12 Enics and 8 Fnics |
| Red Hat Enterprise Linux 5.9 - 7.3 64bit | 32 | 16 | 24 Enics and 8 Fnics |
| ESX 5.0 U2 - ESX 6.5 | 26 | 16 | 18 Enics and 8 Fnics<br>or 24 Enics and 2 Fnics |
| XenServer 6.1 – 7.2 | 32 | 16 | 24 Enics and 8 Fnics |
| OL 6.4 to 7.3 | 18 | 6 | 18 Enics and 6 Fnics |
| SUSE Linux Enterprise Server 11.2 to 11.4 64bit | 32 | 16 | 24 Enics and 8 Fnics |
| Ubuntu 12.04.2 to 16 | 32 | N/A | 32 Enics |

### Dynamic Virtual NICs

**Note** Dynamic vNICs are not supported on VIC 14XX adapters with Windows and ESX OS versions.

| Cisco UCS 6200 Series, Cisco UCS 6332 Series, and Cisco 6324 Fabric Interconnect | | | | |
|---|---|---|---|---|
| | Max vNICs for Emulated Mode | | Max vNICs for Hypervisor Bypass Mode | |
| OS | Half Width Blade (1 VIC) | Full Width Blade (2 VIC) | Half Width Blade (1 VIC) | Full Width Blade (2 VIC) |
| ESXi 5.0 U2—5.5 | 114 vNICs and 2 vHBAs | 114 vNICs and 2 vHBAs | 114 vNICs and 2 vHBAs | 114 vNICs and 2 vHBAs |
| ESXi 6.5 | **Note** VM-FEX is not supported for ESXi 6.5. | | | |
| Windows 2012 (SR-IOV) | 114 vNICs and 2 vHBAs | 223 vNICs with 4 vHBAs | 114 vNICs and 2 vHBAs | 223 vNICs with 4 vHBAs |

| Cisco UCS 6200 Series, Cisco UCS 6332 Series, and Cisco 6324 Fabric Interconnect | | | | |
|---|---|---|---|---|
| | Max vNICs for Emulated Mode | | Max vNICs for Hypervisor Bypass Mode | |
| KVM 6.1—6.5 (SR-IOV)<br>**Note** KVM is not supported on the Cisco 6324 Fabric Interconnect | 114 vNICs and 2 vHBAs | 223 vNICs with 4 vHBAs | 114 vNICs and 2 vHBAs | 223 vNICs with 4 vHBAs |
| KVM 7.0 —7.4 | 114 vNICs and 2 vHBAs | 223 vNICs with 4 vHBAs | 114 vNICs and 2 vHBAs | 223 vNICs with 4 vHBAs |

# Fibre Channel Environment Configuration Limits

| Feature | Cisco UCS 6200 Series | Cisco UCS 6332 Series | Cisco UCS 6324 |
|---|---|---|---|
| VSANs | 32<br>**Note** A combined total of 2000 VLANs and VSANs can be configured on each fabric interconnect. | 6332-16UP—15<br>6332—32<br>**Note** A combined total of 3000 VLANs and VSANs can be configured on each fabric interconnect. | 32 |
| Zones | • Per VSAN—8000<br>• Across all VSANS—8000<br>**Note** If you implement Cisco UCS Manager-based zoning, the maximum number of targets per service profile is 64. | • Per VSAN—8000<br>• Across all VSANS—8000<br>**Note** If you implement Cisco UCS Manager-based zoning, the maximum number of targets per service profile is 64. | • Per VSAN—4000<br>• Across all VSANS—4000<br>**Note** If you implement Cisco UCS Manager-based zoning, the maximum number of targets per service profile is 4. |
| Native FC links | 6248—Up to 48<br>6296—Up to 96 | 6332-16UP—16<br>6332—N/A | 4 |

| Feature | Cisco UCS 6200 Series | Cisco UCS 6332 Series | Cisco UCS 6324 |
|---|---|---|---|
| Virtual Fibre Channel interfaces per fabric interconnect | 320 | 320 | 30 |
| Virtual Fibre Channel interfaces per blade<br>For more information, see VIC Environment Configuration Limits, on page 3. | 16 | 16 | 16 |
| Flogis per fabric interconnect | 320 | 320 | 255 |
| Maximum number of SAN port channels | 4 | 4 | 1 |
| Maximum port channel members per port channel | 16 | 16 | 4 |
| Port channel mode in NPV | Active | Active | N/A |
| Port channel mode in FC switching | On | On | On |

# VM-FEX Environment Configuration Limits

| | Cisco UCS 6200 Series | | Cisco UCS 6332 Series | | Cisco UCS 6324 | |
|---|---|---|---|---|---|---|
| | Hypervisor Manager | DVS /Logical Switches | Hypervisor Manager | DVS /Logical Switches | Hypervisor Manager | DVS /Logical Switches |
| ESX/ESXi | 4 vCenter per Cisco UCS domain | 8 DVS per vCenter | 4 vCenter per Cisco UCS domain | 8 DVS per vCenter | 1 vCenter per Cisco UCS domain | 2 DVS per vCenter |
| Hyper-V | 4 SCVMM hosts per Cisco UCS domain | 8 logical switches per SCVMM | 4 SCVMM hosts per Cisco UCS domain | 8 logical switches per SCVMM | 1 SCVMM hosts per Cisco UCS domain | 2 logical switches per SCVMM |
| KVM | N/A | 1 DVS per Cisco UCS domain | N/A | 1 DVS per Cisco UCS domain | N/A | N/A |
| Port profiles per Cisco UCS domain | 512 | | 512 | | 512 | |

| | Cisco UCS 6200 Series | | Cisco UCS 6332 Series | | Cisco UCS 6324 | |
|---|---|---|---|---|---|---|
| | Hypervisor Manager | DVS /Logical Switches | Hypervisor Manager | DVS /Logical Switches | Hypervisor Manager | DVS /Logical Switches |
| Dynamic ports per port profile | 4096 | | 4096 | | 4096 | |
| Dynamic ports per DVS | 4096 | | 4096 | | 4096 | |

### SCVMM Support Matrix

**Note** When you configure scale environment, make sure to configure retention timer value as 30 minutes.

| Microsoft Software | Cisco UCS Software | Active Directory Services |
|---|---|---|
| SCVMM 2012 SP1, SCVMM 2012R2, or SCVMM 2016 [1] | Cisco UCS Manager, release 3.2(1a) Infrastructure Bundle and Adapter Firmware<br>Cisco ENIC Drivers for Windows Server 2012<br>Cisco ENIC Drivers for Windows Server 2012 R2<br>Cisco ENIC Drivers for Windows Server 2016 | AD 2008 R2 and SP1, Windows 2012, Windows 2012R2, Windows 2016<br>AD Domain Controller must have the following:<br>• DNS<br>• DHCP |
| Windows 2012, Windows 2012R2, or Windows 2016 with Hyper-V installed | | |

[1] Using SCVMM also requires MS SQL Server and Windows ADK. Refer to the Microsoft documentation for additional instructions.

# General Network Configuration Limits

| Feature | Cisco UCS 6200 Series | Cisco UCS 6332 Series | Cisco UCS 6324 |
|---|---|---|---|
| Unicast MAC addresses per fabric interconnect | 20000 entries | 32000 entries | 20000 entries |
| Multicast MAC addresses per fabric interconnect | 7000 | 7000 | 400 |
| Secured interfaces per Cisco UCS domain | 1000<br>1000 out of the 2000 VIFs can be port-secured. | 1000<br>1000 out of the 2000 VIFs can be port-secured. | N/A |

| Feature | Cisco UCS 6200 Series | Cisco UCS 6332 Series | Cisco UCS 6324 |
|---|---|---|---|
| Secured MAC addresses per Cisco UCS domain | 2000<br>MAC addresses secured using the port-security feature. | 2000<br>MAC addresses secured using the port-security feature. | N/A |
| Maximum MTU | 9000 | 9000 | 9216 |
| 1G ports [2] | 6248—Up to 48<br>6296—Up to 96 | 6332-16UP—16<br>6332—First 4 ports | 4—First 4 unified ports |
| SPAN active sessions per fabric interconnect | 4 | 4 | 2 |
| Appliance ports per fabric interconnect | 16 | 16 | 2 |

[2] For Ethernet Traffic Monitoring sessions in 6332 and 6332-16UP FIs, you cannot use the 1Gbps speed configuration for the configured Ethernet Destination Port.

# General Management Configuration Limits

| Feature | Cisco UCS 6200 Series | Cisco UCS 6332 Series | Cisco UCS 6324 |
|---|---|---|---|
| Chassis per Cisco UCS domain | 20 | 20 | 2 |
| Maximum combined number of blade and rack servers per Cisco UCS domain | 160 | 160 | 20 (16 blade servers and 4 rack servers) |
| Maximum number of 2232PP Fabric Extenders per Cisco UCS domain [3] | 20 (10 per fabric interconnect) | 20 (10 per fabric interconnect) | N/A |
| Local user accounts per Cisco UCS domain | 48 | 48 | 48 |
| Concurrent logins per user account | 64<br>This total includes a maximum of 32 concurrent GUI logins and 32 concurrent CLI logins per user account.<br>This value is the same for both local and remote user accounts. | 64<br>This total includes a maximum of 32 concurrent GUI logins and 32 concurrent CLI logins per user account.<br>This value is the same for both local and remote user accounts. | 64<br>This value is the same for both local and remote user accounts.<br>This total includes a maximum of 32 concurrent GUI logins and 32 concurrent CLI logins per user account. |
| Active KVM sessions per individual CIMC | 4 | 4 | 4 |

| Feature | Cisco UCS 6200 Series | Cisco UCS 6332 Series | Cisco UCS 6324 |
|---|---|---|---|
| Concurrent CLI logins per Cisco UCS Manager | 32 | 32 | 32 |
| Concurrent GUI logins per Cisco UCS Manager | 256 | 256 | 256 |
| Number of LDAP groups per Cisco UCS Manager | 160 | 160 | 160 |
| Number of adapter end points per Cisco UCS Manager | 320 | 320 | 30 |

[3] There is a limit of twenty FEX for each UCS domain. For example, you can either have ten 2232 FEX for each FI or a combination of ten chassis and ten FEX.