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## Version 10.x

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Component & Capacity Point	<b><u>VM Configuration Requirements</u></b>				<b><u>Supported Hardware (Latest)</u></b>						<b><u>Supported Hardware (Older)</u></b>						
	<b><u>click to download UCM OVA file for this version</u></b>				<b><u>UCS Tested Reference Configurations</u></b>						<b><u>UCS or 3rd-party Specs-based on Intel Xeon</u></b>		<b><u>UCS Tested Reference Configurations</u></b>		<b><u>UCS or 3rd-party Specs-based on Intel Xeon</u></b>		
	<b><u>click to download PLM OVA file for this version</u></b>	<b><u>vCPU</u></b>	<b><u>vRAM</u></b>	<b><u>vDisk</u></b>	<b><u>vNIC</u></b>	<b><u>S</u></b>	<b><u>S+</u></b>	<b><u>M</u></b>	<b><u>L</u></b>	<b><u>XL</u></b>	<b><u>2XL</u></b>	<b><u>Full UC Perf. CPU</u></b>	<b><u>Restricted UC Perf. CPU</u></b>	<b><u>S</u></b>	<b><u>M</u></b>	<b><u>Full UC Perf. CPU</u></b>	<b><u>Restricted UC Perf. CPU</u></b>
1000 users <a href="#">See notes</a>	2	4 GB	1x 80 GB	1	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No

- **Co-residency support** = Full
- **Supported Versions of VMware vSphere ESXi** = 4.0 U4, 4.1 U2, 5.0 U1, 5.1, 5.5
- [Click for "IOPS"](#)

Virtualization\_for\_Cisco\_Unified\_Communications\_Manager\_(CUCM)

2500 users <a href="#">See notes</a>	1 <a href="#">See notes</a>	4 GB	1x 80 GB	1	No	No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No
7500 users <a href="#">See notes</a>	2	6 GB	1x 110 GB	1	No	No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No
10,000 users <a href="#">See notes</a>	4	6 GB	1x 110 GB	1	No	No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No
Standalone Cisco Prime License Manager (PLM)	1	4	1x 50 GB	1	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<a href="#">See notes</a>																
Cisco Prime Collaboration Deployment (PCD)	2	4	1x 80 GB	1	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<a href="#">See notes</a>																

**Version 9.1(x)**

[Click here for a Legend](#)

<u>Component &amp; Capacity Point</u>	<u>VM Configuration Requirements</u> <a href="#">click to download OVA file for this version</a>				<u>Supported Hardware (Latest)</u>						<u>Supported Hardware (Older)</u>					
	<u>vCPU</u>	<u>vRAM</u>	<u>vDisk</u>	<u>vNIC</u>	<u>UCS Tested Reference Configurations</u>						<u>UCS or 3rd-party Specs-based on Intel Xeon</u>		<u>UCS Tested Reference Configurations</u>		<u>UCS or 3rd-party Specs-based Intel Xeon</u>	
					S	S+	M	L	XL	2XL	<u>Full UC Perf. CPU</u>	<u>Restricted UC Perf. CPU</u>	S	M	<u>Full UC Perf. CPU</u>	<u>Restrict UC Perf. CPU</u>
					S is same as BE 6000 MD S+ is same as BE 6000 HD M includes BE 7000											

- **Co-residency support** = Full
- **Supported Versions of VMware vSphere ESXi** = 4.0 U3, 4.1 U1, 5.0, 5.1, 5.5
- [Click for "IOPS"](#)

1000 users <a href="#">See notes</a>	2	4 GB	1x 80 GB	1	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
		4 GB		1	No	No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No

## Virtualization\_for\_Cisco\_Unified\_Communications\_Manager\_(CUCM)

2500 users <a href="#">See notes</a>	1		1x 80 GB															
7500 users <a href="#">See notes</a>	2	6 GB	1x 110 GB	1	No	No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	
10,000 users <a href="#">See notes</a>	4	6 GB	1x 110 GB	1	No	No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	
Standalone Cisco Enterprise Licensing Manager (ELM) Platform Administrative Web Services Management (PAWS-M)																		

[See notes](#)

[See notes](#)

### Version 9.0(1)

[Click here for a Legend](#)

**VM Configuration Requirements**  
**click to download OVA file for this version**

**Supported Hardware (Latest)**

**Supported Hardware (Older)**

**Component & Capacity Point**

**vCPU vRAM vDisk vNIC**

**UCS Tested Reference Configurations**

S is same as BE 6000 MD  
S+ is same as BE 6000 HD  
M includes BE 7000

**UCS or 3rd-party Specs-based on Intel Xeon**   **UCS Tested Reference Configurations**   **UCS or 3rd-party Specs-based on Intel Xeon**

<b><u>S</u></b>	<b><u>S+</u></b>	<b><u>M</u></b>	<b><u>L</u></b>	<b><u>XL</u></b>	<b><u>2XL</u></b>	<b><u>Full UC Perf. CPU</u></b>	<b><u>Restricted UC Perf. CPU</u></b>	<b><u>S</u></b>	<b><u>M</u></b>	<b><u>Full UC Perf. CPU</u></b>	<b><u>Rest. UC Perf. CPU</u></b>
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- **Co-residency support** = Full
- **Supported Versions of VMware vSphere ESXi** = 4.0 U3, 4.1 U1, 5.0, 5.1, 5.5
- **Click for "IOPS"**

1000 users <a href="#">See notes</a>	2	4 GB	1x 80 GB	1	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2500 users <a href="#">See notes</a>	1	4 GB	1x 80 GB	1	No	No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	
7500 users <a href="#">See notes</a>	2	6 GB	2x 80 GB	1	No	No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	
10,000 users <a href="#">See notes</a>	4	6 GB	2x 80 GB	1	No	No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	

## Virtualization\_for\_Cisco\_Unified\_Communications\_Manager\_(CUCM)

Standalone  
Cisco  
Enterprise  
Licensing  
Manager  
(ELM)

Same as Unified CM 1000 users VM configuration for all deployments of standalone ELM.

Platform  
Administrative  
Web Services  
Management  
(PAWS-M)

Treat as a Unified CM Subscriber. Use one of the VM configurations above.

### Version 8.6(x)

[Click here for a Legend](#)


<u>Component &amp; Capacity Point</u>	<u>VM Configuration Requirements</u> <u>click to download OVA file for this version</u>				<u>Supported Hardware (Latest)</u>						<u>Supported Hardware (Older)</u>					
	<u>vCPU</u>	<u>vRAM</u>	<u>vDisk</u>	<u>vNIC</u>	<u>UCS Tested Reference Configurations</u> S is same as BE 6000 MD S+ is same as BE 6000 HD M includes BE 7000						<u>UCS or 3rd-party Specs-based on Intel Xeon</u>		<u>UCS Tested Reference Configurations</u>		<u>UCS or 3rd-party Specs-based on Intel Xeon</u>	
					<u>S</u>	<u>S+</u>	<u>M</u>	<u>L</u>	<u>XL</u>	<u>2XL</u>	<u>Full UC Perf. CPU</u>	<u>Restricted UC Perf. CPU</u>	<u>S</u>	<u>M</u>	<u>Full UC Perf. CPU</u>	<u>Restricted UC Perf. CPU</u>

- **Co-residency support** = Full
- **Supported Versions of VMware vSphere ESXi** = 4.0 U1, 4.1, 5.0, 5.1
- **Click for "IOPS"**

1000 users <a href="#">See notes</a>	2	4 GB	1x 80 GB	1	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
2500 users <a href="#">See notes</a>	1 <a href="#">See notes</a>	4 GB	1x 80 GB	1	No	No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No
7500 users <a href="#">See notes</a>	2	6 GB	2x 80 GB	1	No	No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No
10,000 users <a href="#">See notes</a>	4	6 GB	2x 80 GB	1	No	No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No

### Version 8.5(x)

[Click here for a Legend](#)

 **Note:** clean these up these are not accurate. Fix download link and VM specs (and add notes on what each vDisk is for in the notes).

**VM Configuration Requirements**  
[click to download OVA file for this version](#)

**Supported Hardware (Latest)**

**Supported Hardware (Older)**


<b><u>Component &amp; Capacity Point</u></b>	<b><u>VM Configuration</u></b>				<b><u>UCS Tested Reference Configurations</u></b>						<b><u>UCS or 3rd-party Specs-based on Intel Xeon</u></b>		<b><u>UCS Tested Reference Configurations</u></b>		<b><u>UCS or 3rd-party Specs-based on Intel Xeon</u></b>	
	<b><u>vCPU</u></b>	<b><u>vRAM</u></b>	<b><u>vDisk</u></b>	<b><u>vNIC</u></b>	<b><u>S</u></b>	<b><u>S+</u></b>	<b><u>M</u></b>	<b><u>L</u></b>	<b><u>XL</u></b>	<b><u>2XL</u></b>	<b><u>Full UC Perf. CPU</u></b>	<b><u>Restricted UC Perf. CPU</u></b>	<b><u>S</u></b>	<b><u>M</u></b>	<b><u>Full UC Perf. CPU</u></b>	<b><u>Restricted UC Perf. CPU</u></b>

- **Co-residency support** = UC with UC only
- **Supported Versions of VMware vSphere ESXi** = 4.0, 4.1, 5.0, 5.1
- **Click for "IOPS"**

1000 users <a href="#">See notes</a>	2	4 GB	1x 80 GB	1	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
2500 users <a href="#">See notes</a>	1 <a href="#">See notes</a>	2.25 GB	1x 80 GB	1	No	No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No
7500 users <a href="#">See notes</a>	2	6 GB	2x 80 GB	1	No	No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No

## Version 8.0(2+)

[Click here for a Legend](#)

 **Note:** clean these up these are not accurate. Fix download link and VM specs (and add notes on what each vDisk is for in the notes).

**VM Configuration Requirements**  
[click to download OVA file for this version](#)

**Supported Hardware (Latest)**

**Supported Hardware (Older)**

<b><u>Component &amp; Capacity Point</u></b>	<b><u>VM Configuration</u></b>				<b><u>UCS Tested Reference Configurations</u></b>						<b><u>UCS or 3rd-party Specs-based on Intel Xeon</u></b>		<b><u>UCS Tested Reference Configurations</u></b>		<b><u>UCS or 3rd-party Specs-based on Intel Xeon</u></b>	
	<b><u>vCPU</u></b>	<b><u>vRAM</u></b>	<b><u>vDisk</u></b>	<b><u>vNIC</u></b>	<b><u>S</u></b>	<b><u>S+</u></b>	<b><u>M</u></b>	<b><u>L</u></b>	<b><u>XL</u></b>	<b><u>2XL</u></b>	<b><u>Full UC Perf. CPU</u></b>	<b><u>Restricted UC Perf. CPU</u></b>	<b><u>S</u></b>	<b><u>M</u></b>	<b><u>Full UC Perf. CPU</u></b>	<b><u>Restricted UC Perf. CPU</u></b>

- **Co-residency support** = UC with UC only
- **Supported Versions of VMware vSphere ESXi** = 4.0, 4.1, 5.0, 5.1
- **Click for "IOPS"**

2	4 GB	1	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
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## Virtualization\_for\_Cisco\_Unified\_Communications\_Manager\_(CUCM)


1000 users <a href="#">See notes</a>			1x 80 GB															
2500 users <a href="#">See notes</a>	1 <a href="#">See notes</a>	2.25 GB	1x 80 GB	1	No	No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No		
7500 users <a href="#">See notes</a>	2	6 GB	2x 80 GB	1	No	No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No		

## Notes on 1000 user VM configuration

- Use for publishers, subscribers, standalone TFTP, standalone multicast MOH nodes, ELM or PAWS-M.
- User count based on:
  - ◆ 1 device per user
  - ◆ 1K phones per VM
  - ◆ 4K max phones per cluster
  - ◆ 6K max BHCC per VM
  - ◆ 24K max BHCC per cluster
  - ◆ Your design/results may vary

Certain solution releases of Cisco Hosted Collaboration Solution also support a 600 user VM configuration. For more details, see [http://docwiki.cisco.com/wiki/Cisco\\_Hosted\\_Collaboration\\_Solution](http://docwiki.cisco.com/wiki/Cisco_Hosted_Collaboration_Solution) (specifically the OVA Requirements of the Compatibility Matrix for the HCS solution release desired).

## Notes on 2500 user VM configurations

 **Note:** The 2500 user VM configuration with one vcpu may exhibit performance issues during CPU/IO-intensive operations (such as installs, upgrades, backups and CDR writes), or if your deployment has certain characteristics such as a large quantity of TFTP files. Changing the VM config to 2 vcpu is recommended as a prevention strategy. Otherwise you may deploy with one vcpu and be TAC-supported, but note that if the root cause of performance issues is found to be insufficient vcpu, Cisco TAC will ask that you change this to 2 vcpu. If your deployment is not experiencing any issues you are not required to change to 2 vcpu and may remain on 1 vcpu.

- Use for publishers, subscribers, standalone TFTP, standalone multicast MOH nodes.ELM or PAWS-M
- User count based on:
  - ◆ 1 device per user
  - ◆ 2.5K phones per VM
  - ◆ 10K max phones per cluster
  - ◆ 15K max BHCC per VM
  - ◆ 60K max BHCC per cluster
  - ◆ Your design/results may vary

## Virtualization\_for\_Cisco\_Unified\_Communications\_Manager\_(CUCM)

Cisco Hosted Collaboration Solution has an alternative 2500 user VM configuration. For more details, see [http://docwiki.cisco.com/wiki/Cisco\\_Hosted\\_Collaboration\\_Solution](http://docwiki.cisco.com/wiki/Cisco_Hosted_Collaboration_Solution) (specifically the OVA Requirements of the Compatibility Matrix for the HCS solution release desired).

### Notes on 7500 user VM configuration

- Use for publishers, subscribers, standalone TFTP, standalone multicast MOH nodes, ELM or PAWS-M.
- User count based on:
  - ◆ 1 device per user
  - ◆ 7.5K phones per VM
  - ◆ 30K max phones per cluster
  - ◆ 45K max BHCC per VM
  - ◆ 180K max BHCC per cluster
  - ◆ Your design/results may vary
- VM configurations with 2 virtual disks use them as follows:
  - ◆ vDisk 1 = Operating System + app binaries
  - ◆ vDisk 2 = Logs

### Notes on 10000 user VM configuration

- Use for publishers, subscribers, standalone TFTP, standalone multicast MOH nodes, ELM or PAWS-M.
- User count based on:
  - ◆ 1 device per user
  - ◆ 10K phones per VM
  - ◆ 40K max phones per cluster
  - ◆ 60K max BHCC per VM
  - ◆ 240K max BHCC per cluster
  - ◆ Your design/results may vary
- VM configurations with 2 virtual disks use them as follows:
  - ◆ vDisk 1 = Operating System + app binaries
  - ◆ vDisk 2 = Logs

### Notes on Standalone ELM and PAWS-M VM configurations

For Small or Small Plus TRCs, or for Specs-based servers with a Restricted UC Performance CPU, use UCM 1K user VM configuration as the "Small ELM" or "Small PAWS-M" capacity point.

For all other TRCs, and for Specs-based servers with a Full UC Performance CPU, use the UCM 2.5K user VM configuration as the "Medium/Large ELM" or "Medium/Large PAWS-M" capacity point.

## Notes on Standalone PLM VM configurations

VM configuration applies to all TRCs, and for Specs-based both Restricted UC Performance CPUs and Full UC Performance CPUs. Also ships as part of UCM media kit.

## Notes on PCD VM configurations

VM configuration applies to all TRCs, and for Specs-based both Restricted UC Performance CPUs and Full UC Performance CPUs. PCD OVA containing preinstalled app ships as part of UCM media kit.

## IOPS and Storage System Performance Requirements

This section provides the IOPS data for a Cisco Unified Communications Manager system under load. These values are per active VM. Which VMs are active, and how many are active simultaneously, depends on how the CUCM cluster nodes are setup with respect to service activation, redundancy groups, etc. (see [www.cisco.com/go/ucsrnd](http://www.cisco.com/go/ucsrnd) for details).

93-98% of total IO is "sequential writes" with an IO block size of 4 kilobytes.

- Active call processing: As a reference, the following steady state IOPS were observed at various loads (expressed in Busy Hour Call Attempts):
  - 10K BHCA produces ~ 35 IOPS
  - 25K BHCA produces ~ 50 IOPS
  - 50K BHCA produces ~ 100 IOPS
  - 100K BHCA produces ~ 150 IOPS
- Software upgrades during business hours generate 800 to 1200 IOPS in addition to steady state IOPS.
- CDR/CMR via CDR Analysis and Reporting (CAR)
  - ◆ CUCM sending CDR/CMR to the external billing server does not incur any additional IOPS.
  - ◆ Enabling CAR continuous loading results in around 300 IOPS average on the system.
  - ◆ Scheduled uploads are around 250 IOPS for Publisher's VM only.
- Trace collection is 100 IOPS (occurs on all VMs for which tracing is enabled).
- Nightly backup (usually Publisher's VM only) is 50 IOPS.

## CUCM in Cisco Mobile Ready Net (MRN)

- [Click here](#) for an overview of Cisco Mobile Ready Net (MRN).
- [Click here](#) for CUCM authorized platforms when part of Cisco MRN.
- From a technical perspective, CUCM 8.6 or higher is allowed on these platforms, but customers must verify that the desired CUCM version meets certification requirements (JITC, etc.).