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Updates to this Page

The following is a list of significant updates to this page:

Date	Update
November 20, 2010	Initial version of virtualization information for Cisco Unified Intelligence Center.
July 18, 2013	Qualification of ESXi 5.1 for Cisco Unified Intelligence Center 9.x and above.

Information for Partners about Unified Intelligence Center Deployment Certification and Ordering

It is important that partners who are planning to sell UCS products on Unified Intelligence Center, read the [Unified Contact Center Enterprise DocWiki page](#).

This page contains essential information for partners about the following:

- ◇ Partner Certification Requirements
- ◇ UCS Server Ordering Information
- ◇ Important Notes on Cisco UCS Service and Support

Unified Intelligence Center Details for VMWare Requirements

See [Unified Communications VMWare Requirements](#) for supported/non-supported VMWare features with Unified Intelligence Center.

Virtual Machine(VM)-Specific Unified Intelligence Center Hardware Requirements

Virtualization of Unified Intelligence Center on Cisco Unified Computing Systems (UCS) C-Series hardware is supported on the following reference configurations:

- UCS C-Series C210-M1 Reference Configuration 1 (UCS-C210M1-VCD1) and Reference Configuration 2 (UCS-C210M1-VCD2)
- UCS C-Series C210-M2 Reference Configuration 1 and Reference Configuration 2
- Unified Intelligence Center 9.X and 10.0(1) are also supported over UCS C-Series C260-M2 server

VMware and Application Software Requirements

The following software requirements apply specifically to Unified Intelligence Center:

Unified Intelligence Center Release	VMware version
Unified Intelligence Center 8.0(x)	VMWare ESXi 4.0; minimum version 4.0U1.
Unified Intelligence Center 8.5(2)	VMWare ESXi 4.0; the minimum supported version is 4.0U1.
Unified Intelligence Center 8.5(3)	VMWare ESXi 4.0 or 4.1; the minimum supported version is 4.0U1.
Unified Intelligence Center 8.5(4)	VMWare ESXi 4.0 or 4.1; the minimum supported version is 4.0U1.
Unified Intelligence Center 9.0(1) and 9.0(2)	VMWare ESXi 5.0.
Unified Intelligence Center 9.1(1) and 10.x	VMWare ESXi 5.0 and 5.1.

- For Unified Intelligence Center Release 8.5(2), 8.5(3), and 8.5(4), if you want to ensure that the version of VMware Tools matches the version of the ESX host, then download and install the "COP file for upgrading Virtual Machine Tools (Applicable for Unified Intelligence Center 8.5(2) and later)" file from the [Software download page](#).
- For Unified Intelligence Center Release 9.0(1) and 9.0(2), if you want to upgrade to ESXi version 5.0 before installing Unified Intelligence Center, you can follow the procedures mentioned in VMWARE [knowledge base](#).
- For Unified Intelligence Center Release 9.x and above, if you want to upgrade to ESXi version 5.1 before installing Unified Intelligence Center, you can follow the procedures mentioned in VMWARE [ESXi 5.1 best practices for upgrade](#).
- Informix, and other third party software requirements for the Unified Intelligence Center applications in the ESXi/UCS platform are the same as in the physical server. For such information, refer to the Hardware and System Software Specification for Unified Intelligence Center available in the *Hardware and System Software Specification (Bill of Materials) Guide* at [\[1\]](#).

See [Unified Communications VMWare Requirements](#) for more information.

Configuring the ESXi Host Network for the Virtual Machines

To configure the network for VMs, you create a virtual switch connected to an Ethernet port on the server, and then associate the virtual machine's network adapter to this virtual switch. To add a vSwitch, do the following:

1. Log in to the ESXi host using VMware Infrastructure Client.
2. Select the ESXi host.
3. Click the **Configuration** tab.
4. Click **Hardware/Networking**.
5. Click **Add Networking**.
6. Select Connection Types: Virtual Machine. Click **Next**.
7. Select "Create a virtual switch" and select an associated VM NIC.
8. Enter Port Group Properties/Network label: VM Network n, where n is an integer.(Example: "VM Network 1")
9. Click **Finish**.

To Associate a VM Network Adapter to Network Connection, do the following:

1. Edit virtual machine settings.
2. Select the Network Adapter.
3. Select a virtual switch from the Network Connection/network label. (Example: "VM Network 1")
4. Click **OK**.
5. Click **Hardware/Networking**.
6. Click **Add Networking**.
7. Select Connection Types: Virtual Machine. Click **Next**.
8. Select "Create a virtual switch" and select an associated VM NIC.
9. Enter Port Group Properties/Network label: VM Network n, where n is an integer.(Example: "VM Network 1")
10. Click **Finish**.

To Associate a VM Network Adapter to Network Connection, do the following:

1. Edit virtual machine settings.
2. Select the Network Adapter.
3. Select a virtual switch from the Network Connection/network label. (Example: "VM Network 1")
4. Click **OK**.

C-Series Considerations

If deploying Clustering Over the WAN with C-Series hardware, do not trunk public and private networks. You must use separate physical interfaces off of the C-Series servers to create the public and private connections. See the configuration guidelines below.

Unified Intelligence Center on C-Series Network Configuration

This section provides instructions on performing the network configuration needed to deploy Cisco Unified Contact Center Enterprise (Unified CCE) on UCS C-Series servers.

Network Requirements for C-Series Servers

When you install ESXi 5.0 and 5.1, connect the VMKernel port for the ESX Management Network to the virtual switch that is connected to the public network.

During the ESXi 5.0 and 5.1 installation, be sure to enable the second Network Interface Card so you can use it to connect to the private network.

You are required to configure the Unified Intelligence Center public and private networks on the C-Series servers the same as on the MCS servers.

To configure the network for the VMs using the vSphere client, do the following:

1. Create a virtual switch connected to a 1GB physical port on the server.
2. Connect this physical port to the public network, and associate the virtual machine's network adapter to this virtual switch.
3. You need to do the same for the private network as required by Cisco Unified Intelligence Service components, such as Cisco Unified Intelligence Center Reporting server and OAMP.

Installing Unified Intelligence Center components on Virtual Machines

Follow the steps and references below to install OR migrate the Unified Intelligence Center components on Virtual Machines.

1. Install setup and configure the UCS Hardware.
2. Configure the UCS Network. Follow the link [UCS Network Configuration](#).
3. Install and Boot VMWare ESXi. See the following installation guide:
 - ◆ [Cisco UCS C-Series VMware Installation Guide](#).
4. Create the Unified Intelligence Center Virtual Machines from the OVA template. OVA templates are available at: [Cisco.com](#).

Creating Virtual Machines from OVA VM Template

See [Unified Communications Virtualization Downloads \(including OVA/OVF Templates\)](#) for more information.

[Unified Intelligence Center OVA Templates download](#)

Downloading OVA Template

1. Proceed to the [Cisco download page](#).
1. To download a OVA file, click the **Download File** button next to that file.
1. Click the **Add to Cart** button and then click the **Download Cart** link. A Download Cart page appears.
1. Click the **Proceed with Download** button on this page. A Software License Agreement page appears.

1. Read the Software License Agreement and click the **Agree**.
1. Click either the **Download Manager** link (requires Java) or the **Non Java Download Option** link in the next window. A new browser window appears.
1. If you select **Download Manager** option, a Select Location dialog box appears. Specify the location where you want to save the file, and click **Open** to save the file to your local machine.
1. If you select **Non Java Download** option, click the **Download** link in the new browser window. Specify the location and save the file to your local machine.

Creating Virtual Machines by Deploying the OVA Templates

In the vSphere client, perform the following steps to deploy the Virtual machines.

1. Highlight the host or cluster to which you wish the VM to be deployed.
2. Select **File > Deploy OVF Template**.
3. Click the **Deploy from File** radio button and specify the name and location of the file you downloaded in the previous section OR click the **Deploy from URL** radio button and specify the complete URL in the field, then click **Next**.
4. Verify the details of the template, and click **Next**.
5. Give the VM you are about to create a name, and choose an inventory location on your host, then click **Next**.
6. Choose the datastore on which you would like the VM to reside - be sure there is sufficient free space to accommodate the new VM, then click **Next**.
7. Choose a virtual network for the VM, then click **Next**.
8. Verify the deployment settings, then click **Finish**.

Note:

- VM CPU affinity is not supported. You don't need to set CPU affinity for the VMs that are running Unified Intelligence Center applications on the VMware ESXi on UCS platform.
- VM resource Reservation - VM resource reservation is not supported for the VMs that are running Unified Intelligence Center applications on the VMware ESXi on UCS platform. The VM computing resources should have a default reservation setting, which is no resource reservations.
- You cannot change the computing resource configuration of your VM at any time.
- You can never go below the minimum VM computing resource requirements as defined in the OVA templates.
- ESXi Server hyperthread is enabled by default.

Unified Intelligence Center Component Capacities and VM Configuration Requirements

This table shows the supported Unified Intelligence Center components, their capacities, and the VM computing resource requirements. You must use the OVA virtual machine templates to create the Unified Intelligence Center component VMs.

Unified Intelligence Center components	virtual CPU	RAM(GB)	vDisk(GB)	vNIC	Template Name
Reporting and OAMP	4	6	146	1	For release:

Virtualization_for_Unified_Intelligence_Center

					<ul style="list-style-type: none">• 8.x - CUIC_852_OVA.ova• 9.x - cuic_9.0_vmv8_v2.1.ova• 10.x - CUIC_10.0.1_vmv8_v2.2
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Unified Intelligence Center Component Co-Residency

You can have one or more Unified Intelligence Center VMs co-residing on the same ESXi server, however you must follow the rules described below.

- You must not have CPU overcommitted on the ESXi server that is running Unified Intelligence Center application. The total number of CPUs among all the virtual machines on an ESXi host must not greater than the total number of CPUs available on the ESXi server.
- You must not have memory overcommitted on the ESXi host that is running UC realtime applications. You must allocate minimum 6 GB of memory for the ESXi kernel.

IOPS and Storage System Performance Requirements

- CPU usage (average) should not exceed 60% for the ESXi Server and for each of the individual processors, and for each VM.
- Memory usage (average) should not exceed 80% for the ESXi Server and for each of the VMs.
- VM snapshots are not supported in production since they have significant impact on system performance.
- Enable hyper threading on all ESXi servers.
- The SAN must be able to handle the following Cisco Unified Intelligence Center application disk I/O characteristics:

Details	Write (Kilobytes/Sec)	Read (Kilobytes/Sec)	IOPS
Maximum	7758.00	466.00	781.40
95 Percentile	6446.30	433.10	628.34
Average	5727.44	74.32	460.17
Minimum	4897.00	0.00	288.75

Installation

Installing VMware Tools

The VMware Tools must be installed on each of the VMs and all of the VMware Tools default settings should be used. Refer to the [VMware documentation](#) for instructions on installing or upgrading VMware Tools on the VM with Windows operating system.

Installing Unified Intelligence Center Components on Virtual Machines

You can install the Unified Intelligence Center components after the configuration of the VMs. Installation of these Unified Intelligence Center components on a VM is the same as the installation of these components on physical hardware. See the *[Installation and Upgrade Guide for Cisco Unified Intelligence Center](#)* for the steps to install Unified Intelligence Center components.

Migrating

- You can upgrade or migrate the Unified Intelligence Center components from physical hardware or another virtual machine after the configuration of the VMs. Upgrade or Migration of these Unified Intelligence Center software components to a VM is the same as the migration of these components to new physical hardware
 - Refer to the *[Installation and Upgrade Guide for Cisco Unified Intelligence Center](#)* for the steps to install Intelligence Center components.
 - To migrate to VMWare ESXi version 5.1 for Cisco Unified Intelligence Center 10.0(1), ensure that you migrate the ESXi server to 5.1 first. Next, upgrade the Unified Intelligence Center installation to 10.0(1).
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