



# Planning Considerations

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## Prerequisites

Before you plan the initial system requirements and planned growth for the Cisco Hosted Collaboration Solution (HCS). To make sure you have seen the Collaboration Sizing Tool at [tools.cisco.com cucst](https://tools.cisco.com/cucst)

You should also review the following documents:

- *Cisco Hosted Collaboration Solution, Release 11.5 Solution Reference Network Design Guide*
- *Cisco Hosted Collaboration Solution, Release 11.5 Capacity Planning Guide*



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**Note** In Shared Architecture deployment, if you are planning to add more number of customers or sites, contact A2Q ([hcbu-a2q@cisco.com](mailto:hcbu-a2q@cisco.com)).

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# VMware Planning Considerations

Use VMware's Distributed Resource Scheduler and high availability features to improve the resiliency of HCM-F nodes. For more information, see [www.vmware.com](http://www.vmware.com).



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**Note** VMware's Distributed Resource Scheduler is not supported for UC applications.

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## Service Inventory planning considerations

Service Inventory is a Cisco HCM-F service that queries Cisco Unified Communications Domain Manager 10.x/11.5(x) daily and reports detailed configurations of customers, subscribers, and devices for all Unified Communications Manager and Cisco Unity Connection application instances. The Service Inventory report also provides a summary of all customers, UC clusters, users, and end devices deployed within HCS.



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**Note** For deployments of both Cisco Unified Communications Domain Manager 8.x and Cisco Unified Communications Domain Manager 10.x/11.5(x), Service Inventory pulls customer information from both and generates a report file (or files) for all customers.

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Complete the following steps when planning service inventory:

### Procedure

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- Step 1** Plan to deploy an SFTP server (and an optional backup SFTP server) with adequate capacity to receive Service Inventory report files. A typical compressed file size would be 8-10 MB for 200,000 users.
- Step 2** Decide whether the files will be pushed or pulled, scheduled or automatic.
- Step 3** Decide which application you will use to parse the detailed inventory data into a form that can be used by your business system.

**Note** For details on Service Inventory reports and their formatting, see the *Cisco Hosted Collaboration Solution, Release 11.5 Maintain and Operate Guide*.

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## License Planning Considerations

### HCS License Manager

HCS License Manager is an HCM-F service that provides centralized license management for HCS. HCS License Manager extends the functionality of Prime License Manager (formerly Enterprise Licence Manager) beyond the scope of one enterprise for use by service providers. HCS License Manager is used to assign each

cluster to an Prime License Manager. HCS License Manager aggregates license usage by each cluster from each Prime License Manager into a License Summary report.

Consider the steps in the following procedure for HCS License Manager planning:

- Use one HCS License Manager for each installation of HCS.
- Set up each Prime License Manager in the HCS License Manager.
- Load HCS licenses on a Prime License Manager before configuring the Prime License Manager on an HCS License Manager
- When new customers are onboarded, their clusters must be assigned to an Prime License Manager through the HCS License Manager. Do not use the native management interface of Prime License Manager to assign a cluster. Always use the HCS License Manager to assign clusters to Prime License Manager.

## Prime License Manager

Prime License Manager manages licensing for Unified Communications Manager clusters, and Cisco Unity Connection servers for multiple customers deployed in HCS. Typically, multiple customers are assigned to the same Prime License Manager server. HCS License Manager allows a customer's clusters to be assigned to different Prime License Managers.

HCS licenses are registered to and loaded and activated onto the Prime License Managers deployed in HCS. The Prime License Managers deploy the HCS licenses to the UCM clusters and Unity Connection servers that are assigned.

Take the following actions for Prime License Manager planning:

### Procedure

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- Step 1** Determine if you need multiple instances of Prime License Manager, which would be the case in either of the following scenarios:
- If a Service Provider has resellers and wants to segregate the HCS licenses it provides to each reseller
  - If there will be more than 1000 Unified Communications application clusters in the HCS deployment
- Step 2** Install the Prime License Manager on the same management network as HCM-F so that Prime License Manager can access all Unified Communications application clusters.
- Note** Make sure to refer *Cisco Hosted Collaboration Solution Compatibility Matrix* for the compatible versions of HCM-F and PLM before installation.
- Step 3** Install standalone Prime License Managers in the HCS Management domain. Set up each customer domain firewall to allow Prime License Manager to connect to UCM and Unity Connection through the HTTPS port 443 from the HCS management domain.
- Note** We don't recommend using the same Prime License Manager in two different HCM-Fs.
- Step 4** Plan for appropriate usage of the Prime License Manager web interface:
- For initial configuration, to generate license requests, to load license files, and to display license usage by cluster if desired.

- To assign a cluster (using only the HCS License Manager) to a Prime License Manager instance so that the HCS License Manager can set the appropriate deployment mode to the cluster and consolidate license usage for all customers and clusters.

## Coresident Prime License Manager

If you require separate licenses per customer, Prime License Manager can reside in Cisco Unified Communications Manager (Co-resident PLM).

The Standalone PLM generally resides in the Service Provider space. However, Co-resident PLM resides in the Application Space along with Unified CM in the same Virtual Machine. The only exception is when using Shared Architecture (SA) deployment. In SA, the Unified CM is shared among multiple customers and both the Unified CM and PLM (Co-resident PLM) can reside in the Service Provider space.

When a PLM is added in HCM-F (**License Management > License Manager Summary**), the **Network Space** field signifies where the PLM is located and not which address space to use to reach PLM.

Use the following values depending on the PLM location:

- If Standalone PLM located in Service Provider space, use **Service Provide Space**.
- If Co-resident PLM is located in Application space, use **Application Space**.



**Note** Before adding the Co-resident PLM, ensure to add Unified CM cluster and applications in HCM-F with all the network settings and credentials.

Ensure that the License Management service is started to activate Cisco Prime License Manager Resource API and Cisco Prime License Manager Resource Legacy API.



**Note** To add PLM to HLM, start the following two PLM services using the CLI commands:

- `utils service activate Cisco Prime LM Resource API`
- `utils service activate Cisco Prime LM Resource Legacy API`

## Platform Manager Planning Considerations

Platform Manager is a Cisco Hosted Collaboration Mediation Fulfillment service that allows you to schedule and monitor the automated installation, upgrade, restart and backup of multiple application instances across customers for the following applications:

- Cisco Unified Communications Manager
- Cisco Unity Connection
- Cisco Unified Presence / Cisco Unified IM and Presence

Take the following actions for Platform Manager planning as you onboard each customer or cluster:

- Determine the number of server groups needed.
- Select server groups for backup tasks that will avoid overloading blade hardware or I/O bandwidth to data storage LUNs.
- Put all servers (for example, Publishers) on a specific ESXi-Host or blade into a common server group. This way the backup of the servers on the host is done serially, minimizing the backup CPU load on the host.
- Spread the SFTP servers assigned to backup groups across different storage LUNs so that backup transfer load is spread out.
- Ensure that no more than two applications are backed up on a specific blade at any one time.

For details on Platform Manager, see the *Cisco Hosted Collaboration Mediation Fulfillment Install and Configure Guide, Release 11.5(1)*.

## Prime Collaboration Deployment for UC Applications

Cisco Prime Collaboration Deployment helps you manage Unified Communications (UC) applications (release 11.5(1)). Its primary high-level functions are to:

- Migrate a cluster of UC servers to a new cluster (such as MCS to virtual, or virtual to virtual).



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**Tip** Cisco Prime Collaboration Deployment does not delete the source cluster VMs after migration is complete. You can fail over to the source VMs if there is a problem with the new VMs. When you are satisfied with the migration, you can manually delete the source VMs.

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- Perform operations on clusters (9.2(1) SU2 or later), such as:
  - Upgrade
  - Switch version
  - Restart
- Fresh install a new release 11.5(1) UC cluster
- Change IP addresses or hostnames in release 11.5(1) clusters (for a network migration).

Cisco Prime Collaboration Deployment supports simple migration and network migration. Changing IP addresses or hostnames is not required for a simple migration. For more information, see the *Cisco Prime Collaboration Deployment Administration Guide* at [http://www.cisco.com/c/en/us/td/docs/voice\\_ip\\_comm/cucm/pcdadmin/11\\_5\\_3/cucm\\_b\\_pcd-admin-guide-1153.html](http://www.cisco.com/c/en/us/td/docs/voice_ip_comm/cucm/pcdadmin/11_5_3/cucm_b_pcd-admin-guide-1153.html).

The functions supported by Cisco Prime Collaboration Deployment can be found in the *Cisco Prime Collaboration Deployment Administration Guide* at <https://www.cisco.com/c/en/us/support/unified-communications/unified-communications-manager-callmanager/products-maintenance-guides-list.html>.

The functions supported by Platform Manager, and Infrastructure Platform Automation are listed in the following tables. Each table identifies the UC applications and versions that the functions support. Support for UC applications and their versions are irrespective of Cisco HCS releases.

Table 1: HCM-F Platform Manager Functions (for pre-10.x UC Applications)

Product and Functions	Cluster Discovery	Migration to 10.x Cluster	Upgrade Task (Upgrade Application Server or Install COP Files)	Restart Task	Switch Version Task	Fresh Install a New 10.x Cluster	Readdress Task (Change Hostname or IP Addresses for One or More Nodes in a Cluster)
Cisco Unified Communications Manager	9.0.(1), 9.1(1), 9.1(2), 10.0(1), 10.5 (2), 11.5(1)	Not Supported	9.0.(1), 9.1(1), 9.1(2), 10.0(1), 10.5 (2), 11.5(1)	9.0.(1), 9.1(1), 9.1(2), 10.0(1), 10.5 (2), 11.5(1)	9.0.(1), 9.1(1), 9.1(2), 10.0(1), 10.5 (2), 11.5(1)	Not Supported	Not Supported
Cisco Unified IM and Presence Service	9.0.(1), 9.1(1), 9.1(2), 10.0(1)	Not Supported	9.0.(1), 9.1(1), 9.1(2), 10.0(1)	9.0.(1), 9.1(1), 9.1(2), 10.0(1)	9.0.(1), 9.1(1), 9.1(2), 10.0(1)	Not Supported	Not Supported*
Cisco Unity Connection	9.x, 10.0(1), 10.5 (2)	Not Supported	From 9.x to 9.x From 9.x to 10.x From 10.0(1) to 10.x	9.x, 10.0(1), 10.5 (2)	9.x, 10.0(1), 10.5 (2)	Not Supported	Not Supported



**Note** \*Changing a hostname in Cisco Unified IM and Presence Service must be done manually. Refer to the version of the *Changing IP Address and Hostname for Cisco Unified Communications Manager and IM and Presence Service* document that applies to your configuration.

Cisco supports virtualized deployments of Cisco Prime Collaboration Deployment. The application is deployed using an OVA that contains the pre-installed application. This OVA is obtained with a licensed copy of Cisco Unified Communications Manager software. For information about how to extract and deploy the PCD\_VAPP.OVA file, see the *Cisco Prime Collaboration Deployment Administration Guide*.

In your Cisco HCS environment, install only one instance of Cisco Prime Collaboration Deployment, which must have the following:

- Access to all Cisco Unified Communications Manager clusters for all customers, including those behind a NAT
- A fixed, non-overlapping IP address

Use the **Cluster Discovery** feature to find application clusters on which to perform fresh installs, migration, and upgrade functions. Perform this discovery on a blade-by-blade basis.



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**Note** If you use Cisco Prime Collaboration Deployment to migrate Cisco Unified Communications Manager and Cisco Unified Communications Manager IM and Presence Service to the 10.5(x) (or later) version of those applications, remember to update the version in Cisco Unified Communications Domain Manager. Select the new version in the **Version** drop list for each application in the Cisco Unified Communications Domain Manager user interface.

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For more information about features, installation, configuration and administration, best practices, and troubleshooting, see the following documents:

- *Cisco Prime Collaboration Deployment Administration Guide*: <http://www.cisco.com/c/en/us/support/unified-communications/unified-communications-manager-callmanager/products-maintenance-guides-list.html>
- *Release Notes for Cisco Prime Collaboration Deployment*: <http://www.cisco.com/c/en/us/support/unified-communications/unified-communications-manager-callmanager/products-release-notes-list.html>

## Infrastructure Platform Automation (IPA) Planning Considerations



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**Note** This service is deprecated.

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Infrastructure Platform Automation (IPA) is an application designed to be an optional tool used to assist in the automation of the provisioning steps for on-boarding customers inside both the Cisco Unified Communications Manager application and the Cisco Unity Connection by using an XML configuration file that is loaded in Infrastructure Manager within the Cisco HCM-F interface. The automation process includes Virtual Machine cloning from golden templates and running change identity on the Cisco Unified Communications Manager or Cisco Unity Connection Publisher and Subscriber Virtual Machines. If the Virtual Machines are pre-cloned, for example by Cloud-O or manually, IPA performs only identity operations on Virtual Machines.

IPA supports deployment of IM and Presence nodes in a Cisco Unified Communications Manager cluster.

Golden templates are master copies of Cisco Unified Communications Manager and Cisco Unity Connection that you can reuse or install on multiple virtual machines. They are built on a source system controlled by a service provider. Golden templates are built one for publisher and one for subscriber. After golden templates are built, IPA automates the process of cloning, identity, and post-installation operations of the virtual machine.



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**Note** IPA requires the Cisco Nexus 1000V Switch for VMware vSphere and vSphere Enterprise Plus to function. This impacts Micro Node deployments which only require a vNetwork Standard Switch (vSwitch) and vSphere Standard. For more information on vNetwork Distributed Switch concepts see [Overview of vNetwork Distributed Switch concepts \(1010555\)](#) at the VMware Knowledge Base.

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Take the following actions for IPA planning:

## Procedure

**Step 1** Create golden templates one time for the Cisco Unified Communications Manager Publisher, Cisco Unified Communications Manager Subscriber, and Cisco Unity Connection nodes for IPA use. For details on creating golden templates, see the *Cisco Hosted Collaboration Mediation Fulfillment Install and Configure Guide, Release 11.5(1)*.

**Step 2** Carefully gather the detailed configuration defined by the XML configuration file. The XML configuration file requires details for the customer organization, Cisco Unified Communications Manager and Cisco Unity Connection applications, and Virtual Machines.

**Note** IPA can only be used in data center deployments. On-premises setup is not supported by IPA because there is no access to the EXSi host.

**Note** Be aware that IPA version 9.2.1 does not create the IM and Presence server; you need to create it manually.

For details on IPA, see the *Cisco Hosted Collaboration Mediation Fulfillment Install and Configure Guide, Release 11.5(1)*.

# Infrastructure Platform Automation Deprecation

Infrastructure Platform Automation (IPA) is an optional application within Cisco Hosted Collaboration Solution (HCS) that you can use to automate the provisioning steps when you onboard customers. IPA automates the provisioning steps in the Cisco Unified Communications Manager application and the Cisco Unity Connection by using an XML configuration file that is loaded in Infrastructure Manager within the HCM-F interface. The automation process includes cloning the virtual machine from golden templates and changing the identity of the Unified CM or Cisco Unity Connection Publisher and Subscriber virtual machines. If the virtual machines are precloned manually, or for example, by Cloud-O, IPA only identifies the virtual machines.

Golden templates are master copies of Cisco Unified CM and Cisco Unity Connection that you can reuse or install on multiple virtual machines. The templates are built on a source system controlled by a service provider. Two Golden templates are built: one for Publisher and one for Subscriber. After golden templates are built, IPA automates the process of cloning, identity, and postinstallation operations of the virtual machine.

The following table identifies the UC applications, functions, and versions of the functions that IPA supports.



**Note** IPA support of UC applications does not depend on the Cisco HCS release.

**Table 2: IPA Support**

UC Application	VMware Cloning from Golden Template	Readdress Task (Change Hostname or IP Addresses for One or More Nodes in a Cluster)
Cisco Unified CM	9.0.(1), 9.1(1), 9.1(2), 10.0(1)	9.0.(1), 9.1(1), 9.1(2), 10.0(1)
Cisco Unified Communications Manager IM and Presence Service	Not Supported	Not Supported



UC Application	VMware Cloning from Golden Template	Readdress Task (Change Hostname or IP Addresses for One or More Nodes in a Cluster)
IM and Presence Service	10.0.(1)	10.0.(1)
Cisco Unified Contact Center Express	Not Supported	Not Supported
Cisco Unity Connection	9.x and 10.0.(1)	9.x and 10.0.(1)



**Note** UC application teams and Cisco TAC do not support Golden templates for Unified Communications 10.5 applications and later.

Introduced in HCS Release 10.1(2), Cisco Prime Collaboration Deployment (PCD) is an application that you can use to manage Unified Communications (UC) applications. It allows you to perform tasks such as migration of older software versions of clusters to new virtual machines, fresh installs, and upgrades on existing clusters.

Cisco Prime Collaboration Deployment has four primary high-level functions:

1. Migrating an existing cluster of UC servers to a new cluster (such as MCS to virtual, or virtual to virtual)
2. Performing operations on existing clusters (8.6(1) or later), such as
  - Upgrades
  - Switching versions
  - Restarts
3. Changing IP addresses or hostnames in the cluster on existing Release 10.x clusters
4. Performing a fresh install of a new Release 10.x or 11.0 Unified Communications cluster

The following table identifies the UC applications, functions, and versions of the functions that Prime Collaboration Deployment supports.



**Note** Prime Collaboration Deployment support of UC applications does not depend on the Cisco HCS release.

Table 3: Prime Collaboration Deployment Support

Product and Functions	Cluster Discovery	Migration to 10.x Cluster	Upgrade Task (Upgrade Application Server or Install COP Files)	Restart Task	Switch Version Task	Fresh Install a New 10.x Cluster	Readdress Task (Change Hostname or IP Addresses for One or More Nodes in a Cluster)
Cisco Unified Communications Manager	9.1(2) SU2, 10.0(1), 10.5(1), 10.5(2)	9.1(2) SU2, 10.0(1), 10.5(1), 10.5(2)	9.1(2) SU2, 10.0(1), 10.5(1), 10.5(2)	9.1(2) SU2, 10.0(1), 10.5(1), 10.5(2)	9.1(2) SU2, 10.0(1), 10.5(1), 10.5(2)	10.x, 10.5(1), 10.5(2)	10.x
Cisco Unified IM and Presence Service	9.1(1) SU1 or optionally 9.1(1) SU2, 10.5(2b), (10.5.2.21900-4)	9.1(1) SU1 or optionally 9.1(1) SU2, 10.5(2b), (10.5.2.21900-4)	9.1(1) SU1 or optionally 9.1(1) SU2, 10.5(2b), (10.5.2.21900-4)	9.1(1) SU1 or optionally 9.1(1) SU2, 10.5(2b), (10.5.2.21900-4)	9.1(1) SU1 or optionally 9.1(1) SU2, 10.5(2b), (10.5.2.21900-4)	10.x, 10.5(1), 10.5(2)	Not Supported
Cisco Unified Contact Center Express	10.0(1), 10.x	Not Supported	10.0(1), 10.x	10.0(1), 10.x	10.0(1), 10.x	10.6(x)	10.6(x)
Cisco Unity Connection	9.1(2) SU2, 9.x, 10.x	Not Supported	From 9.x to 9.x From 10.0(1) to 10.x	8.6(1), 8.6(2), 9.x, 10.x	9.1(2) SU2, 9.x, 10.x	10.5(x)	10.5(x)

In order to maintain UC applications installation alignment with the [Cisco Unified Communications Answer File Generator \(AFG\)](#) and Prime Collaboration Deployment, Cisco HCS is officially deprecating the IPA tool in HCS Release 11.5(1). We encourage service providers to transition to Prime Collaboration Deployment if you wish to continue using a Cisco-provided tool.

For more information on AFG, and procedures to install Cisco UC applications, see

- [Installing Cisco Unified Communications Manager and IM and Presence Service, Release 10.0\(1\)](#)
- [Cisco Unity Connection Install and Upgrade Guides](#)

## API Gateway Proxy Planning Considerations



**Note** This service is deprecated.

The API Gateway Proxy, which provides a single point of integration for the HCS Management Fulfillment APIs, runs on a web services node and provides a routing proxy that is based upon customer information stored in the Shared Data Repository (SDR). The API Gateway Proxy provides access to Service Fulfillment

APIs of HCS management components HCM-F, Cisco Unified Communications Domain Manager, and Unified CCDM. It leverages infrastructure information in the Shared Data Repository to route API requests to the appropriate application. The API Gateway also provides an Application Reference Directory that provides a list of unique URLs for every routable application.

Take the following actions for API Gateway Proxy planning:

### Procedure

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- Step 1** Determine if you will use the automated provisioning system that communicates through the API Gateway Proxy or manual provisioning with the GUI interface.
- Step 2** Deploy the API Gateway Proxy only if one of the following scenarios exists:
- You want to manage some fulfillment activities from your in-house portal.
  - You want to automate HCS Fulfillment by integrating one or more of your in-house systems with HCM-F or Cisco Unified Communications Domain Manager.
- If neither of these scenarios apply, you do not need to deploy the API Gateway Proxy.
- Step 3** For high availability, implement at least two instances of the API Gateway Proxy web services node, including the following: use a load balancer to provide a single virtual IP address and balance the traffic flowing to the API Gateway Proxy nodes. The load balancer must be sourced by the service provider.
- Step 4** Use a DNS to support API Gateway Proxy deployment to avoid a 10-second delay each time a new session is established between the gateway and other HCS components.

**Note** Redundancy is provided as N+1 multinode in conjunction with a partner-deployed load balancer. For details, refer to the *Cisco Hosted Collaboration Solution API Gateway Proxy Developer Guide*.

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## API Gateway Planning Considerations

The API Gateway provides a single point of integration for the Cisco HCS Management Fulfillment APIs. The API Gateway provides access to Service Fulfillment APIs of HCS management components Cisco Unified Communications Domain Manager 10.x/11.5(x) and CCDM.

Take the following actions for API Gateway planning:

### Procedure

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- Step 1** Determine if you will use the automated provisioning system that communicates through the API Gateway, or manual provisioning with the GUI interface.
- Step 2** Determine if you will use a load balancer to provide a single virtual IP address and balance the traffic flowing to the API Gateway nodes. The load balancer must be sourced by the service provider.
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# Cisco Unified Communications Domain Manager 8.1(x) Planning Considerations

Cisco Unified Communications Domain Manager is an integral part of the service fulfillment subsystem. It is primarily responsible for the configuration and registration of users, subscribers, and endpoints with the back-end Cisco Unified Communications Manager, Cisco Unity Connection, and Cisco Unified Communications IM and Presence Service servers. Cisco Unified Communications Domain Manager provides the day-to-day service and device provisioning and management tools. One instance supports all deployment sizes up to 200,000 subscribers.

Consider the steps in the following procedure for Cisco Unified Communications Domain Manager planning:

## Procedure

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- Step 1** Determine if WebEx and Contact Center is integrated.
- Step 2** Set up Cisco Unified Communications Domain Manager redundancy at the initial install; it cannot be introduced later. Cisco Unified Communications Domain Manager is deployed as one Unified Communications Domain Manager Master or Active instance and one Disaster Recovery (DR) instance hosted across two data centers, and management must be able to route to both. There is an added layer of High Availability that is provided by VMware HA for both the active and standby Cisco Unified Communications Domain Manager node. Redundancy is provided by the active sync of data between the active Cisco Unified Communications Domain Manager node and the standby Cisco Unified Communications Domain Manager node.
- Step 3** Determine which dial plan to use. See the "Customer-specific dial plan" section in this document.
- Step 4** For user activations, decide if you use automated system activations based on system inventory or the Cisco Unified Communications Domain Manager administrator interface.
- Step 5** Decide if you want to use the Cisco Unified Communications Domain Manager user self-care portal. If yes, you need to allow access for customers or end users.
- Step 6** Check to see what the static deployment requirements are on Cisco Unified Communications Manager clusters before managing a cluster from Cisco Unified Communications Domain Manager. Gather the following information:
- Location of the Cisco Unified Communications Domain Manager
  - Determine latency between Cisco Unified Communications Domain Manager and UC applications, which must be within defined limits. The maximum supported latency is 200 ms Round Trip Time (RTT).
- Note** A higher latency (for example 250 ms RTT) may work in certain instances, but this must be tested before deployment.
- Step 7** Determine if extra languages are required for the system other than English.
- Step 8** Determine if custom branding is desired.
- Step 9** For a Shared Architecture deployment:
- A single Cisco Unified Communications Domain Manager can manage both types of clusters (dedicated and shared architecture) in one HCS deployment.
  - You can provision a single Cisco Unified Communications Domain Manager with separate service providers for a shared architecture cluster and a standard cluster.

**Note** License Manager and SI reporting do not provide tenant-specific information.

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# Cisco Unified Communications Domain Manager Planning Considerations

Cisco Unified Communications Domain Manager is an integral part of the service fulfillment subsystem. It is primarily responsible for the configuration and registration of users, subscribers, and endpoints with the back-end Cisco Unified Communications Manager, Cisco Unity Connection, and IM and Presence Service servers. Cisco Unified Communications Domain Manager provides the day-to-day service and device provisioning and management tools. One instance supports all deployment sizes up to 200,000 subscribers.

Consider the steps in the following procedure for Cisco Unified Communications Domain Manager planning:

## Procedure

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- Step 1** Determine if WebEx and Contact Center will be integrated.
- Step 2** Cisco Unified Communications Domain Manager is deployed either as a single node, or a cluster of multiple nodes with High Availability (HA) and/or Disaster Recovery (DR) qualities. Each node can be assigned one or more of the following functional roles:
- WebProxy – load balancing across multiple application roles
  - Application – transactional business logic
  - Database – persistent storage of data
- The following combined roles are defined:
- Standalone – combines the Application and Database roles for use in a non-clustered environment
  - Unified – similar to the Standalone role combining Application and Database roles, but clustered with other nodes to provide HA and DR capabilities.
- Step 3** Determine which dial plan to use. See the "Customer specific dial plan" section in this document
- Step 4** For user activations, decide if you will use automated system activations based on system inventory or the Cisco Unified Communications Domain Manager admin interface.
- Step 5** Decide if you want to use the Cisco Unified Communications Domain Manager user self-care portal. If yes, you need to allow access for customers or end users.
- Step 6** Check to see what the static deployment requirements are on Cisco Unified Communications Manager clusters before managing a cluster from Cisco Unified Communications Domain Manager. Gather the following information:
- a) Location of the Cisco Unified Communications Domain Manager
  - b) Determine latency between Cisco Unified Communications Domain Manager and UC applications, which must be within defined limits. The maximum supported latency is 200 ms Round Trip Time (RTT).
- Note** A higher latency (e.g. 250 ms RTT) may work in certain instances, but this must be tested prior to deployment.

- Step 7** Determine if additional languages are required for the system other than English.
- Step 8** Determine if custom branding is desired.
- Step 9** For a Shared Architecture deployment:
- A single Cisco Unified Communications Domain Manager can manage both types of clusters (Dedicated Instance and Shared Architecture) in one HCS deployment.
  - You can provision a single Cisco Unified Communications Domain Manager with separate service providers for a Shared Architecture cluster and a standard cluster.

**Note** License Manager and SI reporting do not provide tenant-specific information.

## Cisco Unified Communications Domain Manager 8.1(x) Resource Requirements

The following table lists the resource requirements for the listed SF components.

HCS				
Fulfillment component	vCPU	RAM (GB)	Storage (GB)	IOPS
CUCDM	7	32	325 (includes a 100 GB dedicated backup partition)	300 during provisioning and 650 during database backup
HCM-F	4	16 (Res). Web service node (if used) uses 8 MB of RAM	80	200
Prime License Manager	1	4	50	-
CCDM	8	32	100	775 (DB server) 565 (web server)



**Note** For current updates to the above requirements see the *Cisco Hosted Collaboration Solution Compatibility Matrix*.

## Resource Requirements

The following table lists the resource requirements for the listed SF components.

HCS 11.5					
Fulfillment component	vCPU	RAM (GB)	Storage	IOPS	OS
CUCDM 10.1.1 Multi-node	4vCPU @ 2GHz	8GB	370GB partitioned as follows: <ul style="list-style-type: none"> <li>• 20GB for OS</li> <li>• 40GB for application</li> <li>• 10GB for logs</li> <li>• 50GB for compressed backups</li> <li>• 250GB for database</li> </ul>	300	
WebProxy Nodes	2vCPU @ 2GHz	4GB	150GB		
HCM-F	4 x 1.8 GHz	16 (Res)	80	200	
PLM	1 vCPU x 1.8 GHz	4	50	-	
CCDM	8	32	100	775 (DB server) 565 (web server)	Microsoft Windows

The Database storage partition is sized at the initial installation to support the maximum deployment size for the release. Further increase in the size of the partition is not required as new customers are on-boarded.

To set up the disk requirements, the disk should be set up on the VMWare GUI Resources tab where a disk can be created. This task should be done after the OVA import but prior to the boot of the system.

## Compatibility considerations

See the Service Fulfillment compatibility table in *Cisco Hosted Collaboration Solution Compatibility Matrix*.

## Call Detail Records

Service Providers (SPs) can use Usage-based billing, using call detail records (CDRs) or Call Manager Management Records (CMRs) for the enterprise.

If a service provider is interested in usage type billing, they can direct CDRs from Unified Communications Manager to their billing system. If Cisco Prime Collaboration Assurance is configured as a management

application, the Cisco HCS Provisioning Adapter (CHPA) service configures any CUCM (release 9.0(1) or higher) to send CDRs to Cisco Prime Collaboration Assurance. The option also exists to work with our third-party vendor to consume CDRs and CMRs to produce necessary billing information or invoices.



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**Note** Cisco Prime Collaboration Assurance uses CDR and CMR for diagnostic purpose only (not for billing).

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The Cisco TelePresence Exchange System collects and displays call detail records (CDRs) for calls that are placed on the system. From the administration console, you can view CDR details for the system and export a comma-separated value (.csv) file of that information.

The Cisco TelePresence Exchange System retains CDRs for up to 30 days from the recorded end time of the CDR. The system automatically purges CDRs that exceed this 30-day limit. If the total number of CDRs retained by the system reaches 100,000, the system retains only the most recent 100,000 records and automatically purges the rest.

The Cisco TelePresence Exchange System also provides an Application Programming Interface (API) for managing and retrieving call records. For more details, see the *API User Guide for the Cisco TelePresence Exchange System*.