



CHAPTER 1

Prerequisites

This chapter describes the prerequisites for installing Cisco Unified Provisioning Manager on a Windows system. It includes:

- [Product Overview, page 1-1](#)
- [New Features in Cisco Unified Provisioning Manager 1.3.1, page 1-2](#)
- [Server Requirements, page 1-3](#)
- [Client Requirements, page 1-6](#)

Product Overview

Cisco Unified Provisioning Manager (Provisioning Manager) is a provisioning tool for Cisco Unified Communications initial deployments and implementations. Provisioning Manager manages IP communication services in an integrated IP telephony, voicemail, and unified messaging environment that includes Cisco Unified Communications Manager, Cisco Unified Communications Manager Express, Cisco Unity, Cisco Unity Express, and Cisco Unity Connection systems.

Provisioning Manager is a product from the Cisco Unified Communications Management Suite. It provides provisioning for Cisco Unified Communications initial deployments and implementations, and then remains deployed to provide ongoing operational provisioning and activation services for individual subscriber changes. Provisioning Manager provides a single, consolidated view of subscribers across the organization. It provides a set of business-level management abstractions, which are policy-driven through the use of automation, for managing subscriber services across the Cisco Unified Communications infrastructure.

A template capability permits defining standard configurations that can be reused for new sites or location deployments. Batch provisioning permits the rollout of large numbers of subscribers at the same time.

Administrators can configure policy at various levels to determine who can do delegated management, for whom that delegation applies, and how business-level services apply to Cisco Unified Communications voice and messaging applications and which types of end users (subscribers) are permitted to order which standard services. Through the use of this policy and standard configuration approach, provisioning and activating subscriber services is greatly simplified, while retaining the overall ability to manage and provide services that make use of the underlying Cisco Unified Communications applications.

New Features in Cisco Unified Provisioning Manager 1.3.1

Cisco Unified Provisioning Manager adds the following:

- Set-only Provisioning Attributes—Provisioning attributes that can only be set. You can provision their settings, but they are not stored once they are set, and they are not retrieved from the Call Processor during a synchronization.

Following is a list of the new set-only provisioning attributes:

- BLF Directed Call Park
- Device Mobility Mode
- DND Incoming Call Alert
- DND Option
- Do Not Disturb
- Call Pickup Group Audio Alert Setting (Phone Active)
- Call Pickup Group Audio Alert Setting (Phone Idle)
- Ignore Presentation Indicators (Internal Calls Only)
- Presence Group
- Primary Phone
- Rerouting Calling Search Space
- Secondary Calling Search Space for Forward All
- SIP Profile
- Subscribe Calling Search Space
- The following provisioning attributes:
 - Busy Lampfield Info
 - Enable ResyncMWI
- The following provisioning attributes for Extension Mobility Line:
 - Alerting Name
 - ASCII Alerting Name
 - ASCII Display (Internal Caller ID)
 - ASCII Line Text Label
 - Line Groups
- The following business rules:
 - AssociateUsersByDevicePool
 - AssociateUsersByLocation
- Enhancements to the Call Pickup Group configuration template.
- Ability to unlock voicemail accounts.
- Ability for users to have privileges for multiple Domains.
- Ability to add external AAA servers (LDAP servers) for user authentication.
- Support for third-party SIP phones.

- Support for Cisco Unified Communications Manager 6.1(3).
- Support for Cisco Unified Communications Manager Express 7.0(1).
- Support for Cisco Unity Express 7.0.1.
- Support for Third-party SIP Device (Advanced and Basic).
- Support for VMware.

Server Requirements

Table 1-1 lists the minimum server system requirements for different levels of performance and scale.

Table 1-1 Server System Requirements (Standalone)

Requirement Type	Minimum Requirements
System Processor	<p>Server platform with one of the following processor configurations:</p> <ul style="list-style-type: none"> • (Up to 1,000 phones) Single Intel Pentium 4, 3.0 GHz. • (Up to 10,000 phones) Dual-core Intel Pentium 4, 3.0 GHz. • (Up to 30,000 phones) Two-system deployment, with the following configuration: <ul style="list-style-type: none"> – Two Intel Xeon processors, 3.0 GHz, for the Web and application server. – Two Intel Xeon processors, 3.0 GHz, for the database. <p>Note If you will have more than five operators placing concurrent orders, you should use two dual-core Intel Xeon processors.</p>
Other System Hardware	<ul style="list-style-type: none"> • Color monitor. • CD-ROM drive. • 100 Mbps NIC.
Memory (RAM) ¹	<ul style="list-style-type: none"> • 2 GB—Up to 1000 phones. • 4 GB—Up to 10,000 phones. • 4 GB on each system—Up to 30,000 phones.
Swap File Space	Same as RAM, with a maximum size of twice that of RAM.
Available Drive Space ²	<ul style="list-style-type: none"> • 30 GB—Up to 1000 phones. • 60 GB—Up to 10,000 phones. • Two-system configuration (up to 30,000 phones); requires the following: <ul style="list-style-type: none"> – 30 GB on the Web and application system. – 80 GB on the database system.
System Software ³	Windows Server 2003 with Service Pack 1 or Service Pack 2, Standard or Enterprise Edition.

1. Provisioning Manager will not install either the medium (up to 10,000 phones) or the large (up to 30,000 phones) configuration if Windows 2003 reports that less than 4 GB of memory is installed. There is a known issue with Windows 2003 when working with certain hardware. Even though 4 GB of memory is installed on the system, Windows 2003 reports that there is less than 4 GB of memory installed. For more details, see <http://msdn2.microsoft.com/en-us/library/ms791485.aspx>.
2. SAS or SCSI drives in a RAID configuration are recommended for servers supporting 1000 to 10,000 phones. SAS drives in a RAID (1+0) configuration are recommended for servers supporting over 10,000 phones.

- You must install Provisioning Manager on a dedicated system. Do not install Provisioning Manager on a Primary Domain Controller (PDC) or Backup Domain Controller (BDC).



Coresident Guidelines

Operations Manager, Service Monitor, Service Statistics Manager, and Provisioning Manager can be coresident with up to 10,000 phones. [Table 1-2](#) provides the minimum requirements for a coresident installation.

Table 1-2 *Installation Server System Minimum Requirements for Coresidence*

Requirement Type	Minimum Requirements for Coresident Deployment of up to 10,000 Phones
Processor	Two-way quad-core Xeon X5365 processors at 3 GHz. Note A two-way quad-core processor is a system that contains 2 physical processors—each of which is a quad-core processor—effectively containing 8 (2x4) logical CPUs.
Memory (RAM)	16 GB (PAE enabled)
Page File Space ¹	32 GB.
Disk Space	<ul style="list-style-type: none"> 320 GB recommended. (Minimum four SAS drivers.) <p>For optimal I/O throughput, you must have a Battery Backed Write Cache (BBWC); we also recommend two I/O controllers (with two disks on each controller).</p> <ul style="list-style-type: none"> NTFS file system (required for secure operation). At least 16 MB in Windows temporary directory (%TEMP%).
Hardware	<ul style="list-style-type: none"> Color monitor. ((For optimum viewing on the Operations Manager display, Cisco recommends that you use the highest native resolution supported by the client PC and monitor. A large, high resolution display will also allow for less scrolling through information presented and increase operator efficiency. The minimum resolution recommended is 1024 x 768 on a 17" monitor.) CD-ROM drive. Support for one or two 1-GB NICs (one is required, and the second is for failover support; both NIC cards must have the same IP address).

Table 1-2 Installation Server System Minimum Requirements for Coresidence (continued)

Requirement Type	Minimum Requirements for Coresident Deployment of up to 10,000 Phones
Software	One of these: <ul style="list-style-type: none"> • Windows Server 2003 Enterprise Edition SP2 (32-version) • Windows Server 2003 R2 Enterprise Edition SP2 (32-version)
	<div style="border: 1px solid black; padding: 5px;">  <p>Note The system that you use for your Operations Manager server should meet all the security guidelines that Microsoft recommends for Windows 2003 Server. See the Microsoft website for security guidance: http://www.microsoft.com/technet/security/prodtech/WindowsServer2003.mspx (This website is Copyright © 2009, Microsoft Corporation.)</p> </div>
	<ul style="list-style-type: none"> • ODBC Driver Manager² 3.5.10 or later. <div style="border: 1px solid black; padding: 5px; margin-top: 10px;">  <p>Note</p> <ul style="list-style-type: none"> • If you are going to use Cisco Unified Service Monitor, configure the server to use Network Time Protocol (NTP) to synchronize with the time server that is used by Cisco Unified Communications Managers in your network. See Installation Guide for Operations Manager 2.2. • Windows Terminal Services is supported in Remote Administration mode only. Use of Windows Terminal Services or Remote Desktop and Virtual Network Computing (VNC) to remotely control the server is not recommended for performing day-to-day operations (for example, running reports, keeping dashboards and Service Level View open, and so on). For more information, see Installation Guide for Operations Manager 2.2. </div>

1. When configuring the page file, you should set both the minimum and maximum file size parameters to 32 GB. This will ensure that Windows creates a 32-GB page file.

2. To verify the version of ODBC Driver Manager, from the Windows desktop, select **Start > Settings > Control Panel > Administrative Tools > Data Sources (ODBC)**. Select the **About** tab. If necessary, install Microsoft Data Access Component (MDAC) 2.5 or later.

- Install each application along with its databases on a separate drive. You can install one of the applications on the system drive (C:), but, if you have a sufficient number of drives, we recommend that none of the applications be installed on the system drive.
- Install applications in this order (recommended, not required):
 1. Operations Manager (includes Service Monitor)
 2. Service Statistics Manager
 3. Provisioning Manager (in Advanced mode)




Note If Operations Manager and Provisioning Manager are using the same port number for SSL, you must change the port used by SSL for one of the applications (see [Changing the Port Used By SSL, page 2-4](#)).

Client Requirements

Table 1-3 lists the minimum client system requirements for installing Provisioning Manager.

Table 1-3 *Client System Requirements*

Requirement Type	Minimum Requirements
System Hardware	<ul style="list-style-type: none"> Any PC or server platform with a Pentium 4 processor greater than 1.0 GHz. Color monitor with video card set to 24 bits color depth. Screen resolution of 1024 x 768 dpi. <p> Note Not every LCD projector or monitor provides a clear display at the minimum resolution. On LCD projectors and monitors, dot pitch impacts the readability of the screen.</p>
System Software	<ul style="list-style-type: none"> One of the following: <ul style="list-style-type: none"> Windows XP with Service Pack 2. Windows Server 2003 with Service Pack 1 or Service Pack 2, Standard or Enterprise Edition. One of the following <ul style="list-style-type: none"> Internet Explorer 6.0 with Service Pack 2 or 7.0. Mozilla 1.7.x. Firefox 2.0
Memory (RAM)	1 GB recommended.
Environment	<p>Clients must be able to access Provisioning Manager:</p> <ul style="list-style-type: none"> From outside a firewall—Refer to the documentation for your firewall for information on how to configure client access. Across a Virtual Private Network (VPN)—The VPN tunnel should connect the client and a VPN router or similar device. See Ports that Provisioning Manager Uses, page 2-11.

IPv6-Aware Support in Provisioning Manager

Provisioning Manager is IPv6 aware. IPv6 aware is defined as containing IPv6 functional information, but using IPv4 for transport.

As an IPv6-aware application, Provisioning Manager continues to communicate with Cisco Unified Communications Manager devices through an IPv4 link.

The following also apply to IPv6-aware support in Provisioning Manager:

- In the Call Processor Configuration page, you can only enter an IPv4 IP address. If you enter an IPv6 address, an error message appears.

- Configuring an IP phone for IPv6-only does not affect Provisioning Manager functionality.
- The support for IPv6-aware functions does not affect Provisioning Manager support for Cisco Unified Communications Manager Express, Cisco Unity Express, Cisco Unity, or Cisco Unity Connection devices.

VMware Support in Provisioning Manager

Provisioning Manager supports VMware environments. For Provisioning Manager to meet its minimum system requirements (Table 1-1) in a virtual environment, Provisioning Manager must have the same resources available to it inside the virtual environment that it does for a standard (non-virtual) installation. When determining the performance of Provisioning Manager in your virtual setup, you must take into account that the VMware instance will use up system resources that would normally be available to Provisioning Manager in a standard installation.

Provisioning Manager has been tested on VMware ESX Server 3i version 3.5 and VMware ESX Server 3.5.

When setting up Provisioning Manager in a VMware environment, keep in mind the following guidelines:

- To enable you to use Provisioning Manager in a VMware environment, you must configure your virtual machine with a static MAC address. If you try to install Provisioning Manager on a virtual machine that does not have a static MAC address, a message appears stating that a static MAC address is required.
- Resources must be dedicated to the virtual machines, resources cannot be shared.
- For better performance in a distributed deployment, it is recommended that you install the application and the database on the same physical server.
- Due to the additional resource requirements of virtualization, it is recommended that you do not have more than five concurrent client (browser) logins to Provisioning Manager running at one time.



Note

Using VMWare snapshots in a product environment will drastically degrade performance and may even impact stability. You should not have any snapshots on a production system.

To set up a static MAC address, do the following:

- Step 1** Power down the virtual machine.
- Step 2** In the Inventory Panel, select the virtual machine.
- Step 3** Click the **Summary** tab and then click **Edit Settings**.
- Step 4** In the Hardware list, select **Network Adapter**.
- Step 5** For MAC address, select **Manual**.
- Step 6** Change the current MAC address of the virtual machine to a static MAC address in the following range: 00:50:56:00:00:00 to 00:50:56:3F:FF:FF.
- Step 7** Click **OK**.

