Setting up Devices for Cisco Prime Collaboration Provisioning 12.6SU1

Preparing End Systems

In Prime Collaboration Provisioning, the physical resources (end systems that deliver voice and messaging services) are modeled as Processors.

Few examples of physical resources modeled as processors are:

- Cisco Unified Communications Manager or Cisco Unified Communications Manager Express system is modeled as a Call Processor

- Cisco Unity Express are modeled as Unified Message Processor

- Cisco Unity Connection voicemail/unified messaging system is modeled as Unified Message Processor

- Cisco Unified Presence Processor is modeled as Presence Processor

Using Prime Collaboration Provisioning, an administrator creates and configures these various processors. After the processors have been configured, all configuration and interaction with the end systems is handled by Provisioning.

Some minimal configuration maybe required on some end systems before you can use them with Prime Collaboration Provisioning. This section describes the pre-configuration steps required for Cisco Unified Communications Manager, Cisco Unified Communications Manager Express, Cisco Unity Connection, and Cisco Unity Express.

Cisco Unified Communications Manager Pre-configuration Dependencies

The Cisco Unified Communications Manager is the software-based, call-processing component of the Cisco IP telephony solution, and is part of Cisco Architecture for Voice, Video and Integrated Data (AVVID).
The additional data, voice, and video services are unified messaging, multimedia conferencing, collaborative contact centers, and interactive multimedia response systems. These additional services interact with the IP telephony solution through Cisco Communications Manager's open telephony Application Programming Interface (API). In addition to Cisco Media Convergence Server (MCS), Cisco unified communication manager can also be installed in Unified Computing System (UCS).
No specific pre-configuration is generally required on the Cisco Unified Communications Manager for Prime Collaboration Provisioning. However, the following conditions should already have been met during a normal installation or upgrade. These conditions are noted here as installation dependencies for creating a Call Processor in Prime Collaboration Provisioning:

- Install Cisco Unified Communications Manager.

- If Cisco Unity is used in this configuration, configure the Cisco Unified Communications Manager voicemail ports.

- Create a user and password with administrator privileges that can be used by Provisioning Manager to access Cisco Unified Communications Manager. The requirements of the user and password vary depending on whether Multilevel Administration Access (MLA) is enabled (see Table 1-1).

Note: All interactions with Cisco Unified Communications Manager and Prime Collaboration Provisioning are through the AVVID XML Layer APIs (AXL/SOAP).

Cisco Unified Communications Manager Version on Media Server	MLA Enabled or Disabled for Cisco Unified Communications Manager	Required Account
7.x, or 8.x	N/A	A Unified Communications Manager user who is assigned a role with the privilege to use the AXL Database API resource in the Cisco Call Manager AXL Database application. Standard AXL API Access is one of the predefined roles in Unified Communications Manager that has this privilege.

Cisco Unified Communications Manager Express Pre-configuration Dependencies

Cisco Unified Communications Manager Express is a solution, embedded in Cisco IOS Software that provides call processing for Cisco Unified IP Phones.

Similar to Cisco Unified Communications Manager, Cisco Unified Communications Manager Express is modeled in Prime Collaboration Provisioning as a Call Processor. The only difference from an administrative aspect is that it is represented by a different type of Call Processor.

Prime Collaboration Provisioning requires that the Cisco Unified Communications Manager Express be installed on a supported platform with the appropriate Cisco IOS Software version and Cisco Unified Communications Manager Express load.

Before you can create a Call Processor based on a Cisco Unified Communications Manager Express in Prime Collaboration Provisioning, you must:

- Disable the auto-allocation of directory numbers. Do this through the Cisco IOS interface.

- Disable the ephone auto-registration. You must do this through for Cisco Unified Communications Manager Express 4.0 or later.

If you have changed the Rivest, Shamir, and Adelman (RSA) key pair for Secure Shell Version 2 (on the router where Cisco Unified Communications Manager Express resides) to a length less than 512 bits, you must reconfigure the RSA key back to a length equal to or greater than 512 bits. For information on configuring the RSA keys in Secure Shell Version 2, see your router's documentation.

Disabling the Auto-Allocation of Directory Numbers and Ephone Auto-Registration

Perform the following configurations through the Cisco IOS interface.

1. Verify that auto-allocation is enabled.

```
$ telnet 172.19.50.247

Trying 172.19.50.247...

Connected to 172.19.50.247.

Escape character is '^]'.

User Access Verification

Password:

CCME-1>enable

Password:

CCME-1#show telephony

CONFIG (Version=3.0)

=====================

Cisco Communications Manager Express

ip source-address 172.19.50.247 port 2000

max-ephones 24

max-dn 100

max-conferences 4

max-redirect 5

time-format 12

date-format mm-dd-yy keepalive 30

timeout interdigit 10

timeout busy 10

timeout ringing 180

web admin system name root password cisco

web admin customer name cisco password cisco

edit DN through Web: enabled.

edit TIME through web: enabled.
```

```
Log (table parameters):

max-size: 150

retain-timer: 15

(password): abcd

create cnf-files version-stamp 7960 Jan 15 2004 16:48:05

auto assign 1 to 100 type 7960 cfw 5001 timeout 30

local directory service: enabled.

xml  schema  http://gkar.cisco.com/schema/axlsoap.xsd

In this case, auto-allocation is on, as shown by the auto assign line.
```

2. To disable auto-allocation, run the following command at the enable prompt:

```
CCME-1#config term

Enter configuration commands, one per line. End with CNTL/Z.

CCME-1(config)#telephony-service

CCME-1(config-telephony)#no auto assign 1 to 100 type 7960 cfw 5001 timeout 30

CCME-1(config-telephony)#no  auto-reg-ephone
```

Note: The no auto-reg-ephone command is required for Cisco unified Communications manager Express 4.0 or later.

```
CCME-1(config-telephony)#exit

CCME-1(config)#exit CCME-1#show telephony
```

3. To verify that the change has taken effect, run another show telephony command.

The *auto assign* line should no longer appear.

4. Run a write memory command, which will write the changes out to the system's nonvolatile memory in case of a reboot.

How Prime Collaboration Provisioning Manages Communications Manager Express

Cisco Unified Communications Manager Express uses the following configlets to synchronize and provision phones for subscribers:

- ephone-dn?Manages directory numbers.

- ephone?Manages phones and assigns directory numbers to lines on one or more phones.

Alone, neither configlet contains all the information about a subscriber. When provisioning occurs, Provisioning Manager uses the following to store subscriber information:

- The description command in the ephone configlet is used to store the subscriber ID, first name, last name, and department in the following format:

  description CUPMUsers: subscriber ID: ephone tag: last name, first name: department

- The description command in the ephone-dn configlet is used to store the subscriber ID in the following format:

  description CUPMUsers: subscriber ID

The Cisco Unified Communications Manager Express description field for ephone-dn is limited to 30 characters for Cisco Unified Communications Manager Express 8.0, and 40 characters for earlier supported versions. The character limit includes the CUPMUsers prefix and the subscriber ID (combined).

- The name command in the ephone-dn configlet is used to store the first name and last name in the following format:

  name first namelast name

Note: The Cisco Unified Communications Manager Express ephone-dn name field is limited to 30 characters. If the sub-scriber's first and last names (combined) exceed that limit, you may get an error.

- The username command in the ephone configlet is used to store the subscriber ID.

Prime Collaboration Provisioning is able to synchronize back the phones, lines, directory numbers and subscriber information from an existing Cisco Unified Communications Manager Express that was not provisioned using Provisioning Manager.

However, depending on how the subscriber information was entered in the ephone and ephone-dn configlets, Prime Collaboration Provisioning may not be able to fully construct the subscriber information and consequently identify shared Lines or Phones.

Cisco Unity and Cisco Unity Connection System Pre-configuration Dependencies

Before you can create a Unified Message Processor based on Cisco Unity in Prime Collaboration Provisioning, you must:

- Install and configure the message store using Microsoft Exchange 2000, 2003, or 2007.

- Configure an integration with one corresponding Cisco Unified Communications Manager.

- Define Class of Service and Subscriber templates.

- Create an SQL Server user and password that can be used by Provisioning Manager to access the SQL Server database on Cisco Unity. The SQL Server user requires access to both the Cisco Unity and master databases.

- Verify the TCP/IP port used by Cisco Unity. This port number is required when you create a Unified

- Message Processor.

Before you can create a Unified Message Processor based on Cisco Unity Connection in Prime Collaboration Provisioning, you:

- Configure an integration with one corresponding Cisco Unified Communications Manager.

- Define Class of Service and Subscriber templates.

- The Connection Access Layer must be running (for all versions of Unity Connection). For Unity Connection 7.1.3 and higher, the Connection REST Service must also be running. The default settings must have these services running.

- Configure IMAP in Cisco Unity Connection. This is required so that Provisioning Manager can

- Provision email and Unified Messaging Services in Cisco Unity Connection. IMAP configuration is only required for Unified Messaging deployments. You do not have to configure IMAP for voicemail-only deployments.

Note: To configure IMAP on the Cisco Unity Connection system, go to System Settings > External Services > Add New,and fill in all the fields required to add external services.

Cisco Unity Express Pre-configuration Dependencies

Before you can create a Unified Message Processor based on Cisco Unity Express in Provisioning Manager, you must do the following:

- If you have changed the RSA key pair for Secure Shell Version 2 (on the router where Cisco Unity Express resides) to a length less than 512 bits, you must reconfigure the RSA key back to a length equal to or greater than 512 bits. For information on configuring the RSA keys in Secure Shell Version 2, see your router's documentation.

- Determine the Service Engine Interface number for Cisco Unity Express. The Service Engine Interface number is required when adding a Cisco Unity Express to Provisioning Manager.

Determining the Service Engine Interface Number for Cisco Unity Express

The Service Engine Interface number is located on the router that hosts Cisco Unity Express.

1. Log into the router that hosts Cisco Unity Express.

2. Run the command show running-config.

In the resulting output, look for the following:

Interface Service-Engine 2/0

In this example, *2/0* is the Service Engine Interface number.