AVAYA | LEARNING

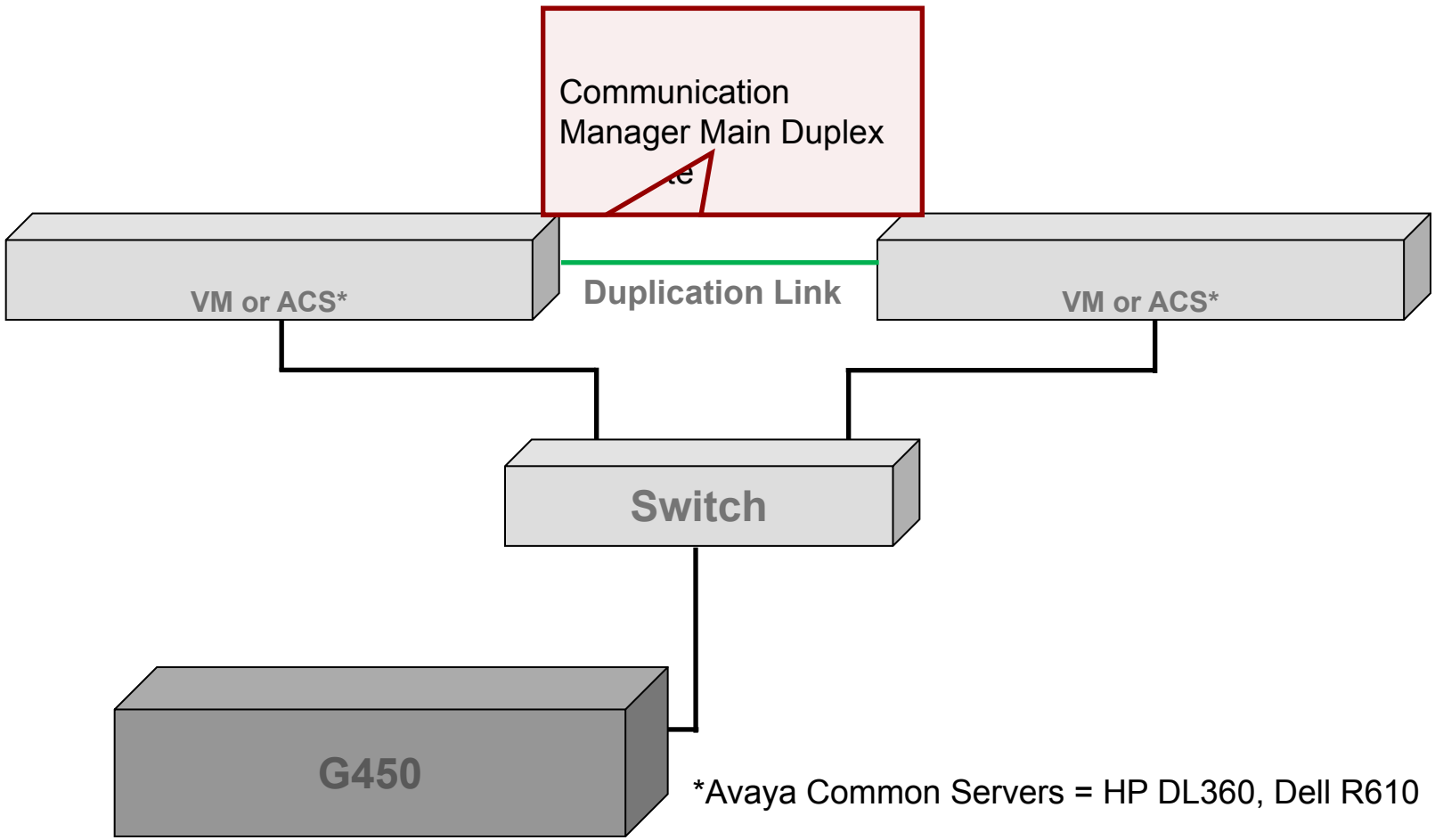
Install the CM Duplex

AVAYA | LEARNING

Hardware Configuration

Hardware Configuration—General

4 Avaya Aura® Communication Manager Main Duplex in this configuration:



*Avaya Common Servers = HP DL360, Dell R610

Hardware Configuration (continued)

Equipment checklist:

4 Ensure that the following equipment is properly rack-mounted and grounded according to local codes:

- Avaya Common Server (ACS) or VMware VM
- Ethernet switch – connect one end of the power cord to the Ethernet switch and the other end to an outlet on the UPS.
- Avaya G450 Gateway
- UPS improves availability of the system, protects the equipment from electrical surges, and provides an input voltage of 110 V or 220 V auto-sensing to the internal power supply of the server.
  1. Place the UPS at the bottom of rack.
  2. Connect one end of the server power supply connector to the UPS.
  3. Connect the power cord of the UPS to a properly grounded electrical outlet.

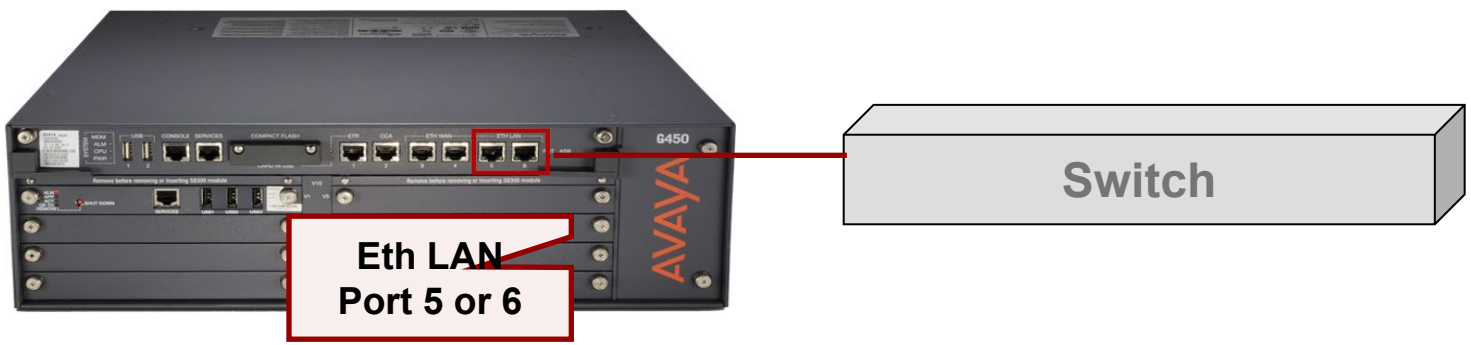
Note

Avaya recommends using separate UPS units for each server in a duplex system.

Hardware Configuration (continued)

Gateway checklist:

1. Ensure that the media modules are inserted in the correct slots
2. Connect LAN cable from the Eth LAN 5 or 6 on gateway to the switch



3. Connect power cable to the gateway.

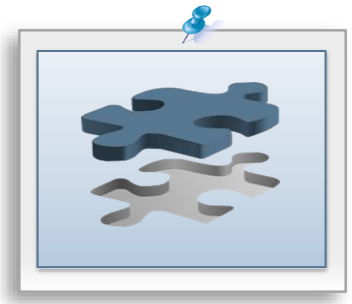
G450 Media Module Slot Assignments

Media module	Permitted slots	Description
MM340	V3, V4, V8	Provides one E1/T1 WAN port for connecting to a WAN endpoint device.
MM342	V3, V4, V8	Provides one USP WAN port for connecting to a WAN endpoint device.
MM710	V1 - V8	Provides one E1/T1 trunk port for connecting an E1/T1 telephone trunk.
MM711	V1 - V8	Provides eight universal analog ports for connecting analog telephones or trunks.
MM712	V1 - V8	Provides eight ports for connecting DCP telephones.
MM714	V1 - V8	Provides four analog ports for analog telephones and four analog ports for analog trunks.
MM714B	V1 - V8	Provides four analog ports for analog telephones, four analog ports for analog trunks, and an emergency transfer relay.
MM716	V1 - V8	Provides one amphenol connector that connects to a punch down block to provide 24 analog line ports.
MM717	V1 - V8	Provides one amphenol connector that connects to a punch down block to provide 24 ports for connecting DCP telephones.
MM720	V1 - V8	Provides eight ports for connecting up to eight ISDN trunks or 16 ISDN BRI stations.
MM722	V1 - V8	Provides two ports for connecting ISDN trunks.
S8300	V1	Server

Deployment of the CM OVA

Deploy the CM OVA

- At the end of this lesson, you should be able to:
  - Identify the steps to deploy the CM OVA.



Deployment and Servers

- Virtualized Environment (VE) – Avaya and customer work together to enable the solution:
  - Avaya supplied server and VMware® (AVP)
  - Customer supplied server and VMware® (VE)
- Avaya Appliance Model - Deploy or upgrade to Avaya Aura® Release applications on the following servers:
  - Dell™ PowerEdge™
  - HP ProLiant DL360
  - S8300D
- Deployment into the blade, cluster, and server is managed as follows:
  - Avaya Appliance Virtualization Platform (AVP) from System Manager Solution Deployment Manager or the Solution Deployment Manager client
  - Virtualized Environment (VE) – VMware ® vSphere or VMware ® vCenter

Note The deployment method used in our labs is VE (vCenter/vSphere).

Planning and Configuration

- **Ensure that you complete the following before deploying the Communication Manager open virtual application (OVA):**

	Task	Description
1	Identify the hypervisor and verify that the capacity meets the OVA requirements.	See *Server hardware and resources*.
2	Plan the staging and verification activities and assign the resources.	See *Communication Manager virtual machine resource requirements*.
3	Purchase the required licenses. **Note**: WebLM Licensing for CM is covered in Lesson 2.	Go to the Avaya Product Licensing and Delivery System at https://plds.avaya.com/.
4	Download the required Communication Manager OVA.	See *Downloading software from PLDS*.
5	If applicable, migrate from Communication Manager 5.2.1 or Communication Manager 6.3 to Communication Manager . .	See *Migration data*.

Communication Manager Resource Requirements

- **The CM virtual machine requires the following set of resources to be available on the ESXi host before**

deployment. CM OVA specifies the required resources.

VMware Resources	Simplex Values	Duplex Values
CPU Core	CPU to support up to 1000 users on a Main server •1 CPU to support up to 1000 users on a survivable server •2 CPU to support up to 2400 users on a Main server •2 CPU to support up to 36,000 users on a Main server	3
CPU Reservation	•3900 MHz to support up to 1000 users on a Main server •1950 MHz to support up to 1000 users on a survivable server	• 7800 MHz to support up to 36,000 users • 6600 MHz to support up to 30,000 users

Communication Manager Resource Requirements (cont'd)

- The CM virtual machine requires the following set of resources to be available on the ESXi host before

VMware Resources	Simplex Values	Duplex Values
CPU Resources (cont'd)	4400 MHz to support up to 2400 users on a Main server •4400 MHz to support up to 36,000 users on a Main server •For a S8300D or S8300E Server: When you deploy Communication Manager using System Manager Solution Deployment Manager, the CPU reservation is reduced to 0. •For an Midsize Enterprise deployment: The CPU reservation is reduced to 2200 MHz.	To reduce reservation on Communication Manager Duplex server, see Reducing reservation on CM Duplex Server in the **Deploying Avaya Aura® Communication Manager in Virtualized Environment Guide**
Minimum CPU speed based on Xeon E5620 or equivalent processor	2400 MHz	• 2900 MHz to support up to 36,000 users • 2400 MHz to support up to30,000 users

Communication Manager Resource Requirements (cont'd)

- The CM virtual machine requires the following set of resources to be available on the ESXi host before

VMware Resources	Simplex Values	Duplex Values
Memory Reservation	•3.5 GB to support up to 1000 users on a Main server •3.5 GB to support up to 1000 users on a survivable server •4.0 GB to support up to 2400 users on a Main server •4.0 GB to support up to 36,000 users on a Main server	5.0 GB
Minimum CPU speed based on Xeon E5620 or equivalent processor	2400 MHz	• 2900 MHz to support up to 36,000 users • 2400 MHz to support up to30,000 users

Communication Manager Resource Requirements (cont'd)

- The CM virtual machine requires the following set of resources to be available on the ESXi host before

VMware Resources	Simplex Values	Duplex Values
Storage Reservation	64 GB	64 GB
Shared NICs	Two vmxnet3 @ 1000 Mbps	Three vmxnet3 @ 1000 Mbps
IOPS	4	4
Average Network usage	3500 Kbps	3500 Kbps CM duplication bandwidth requires 1Gbps for CM duplication link bursts. For more information about Communication Manager duplication bandwidth, see **PSN003556u**.

VMware Software Requirements

- The following VMware software versions are supported:
  - VMware vSphere ESXi 5.0
  - VMware vSphere ESXi 5.1
  - VMware vSphere ESXi 5.5
  - VMware vCenter Server 5.0
  - VMware vCenter Server 5.1
  - VMware vCenter Server 5.5
  - VMware vSphere ESXi 6.0

- ESXi 5.0 can be added under vCenter Server 5.0 and vCenter Server 5.1. However, ESXi 5.1 can be added only under vCenter Server 5.1 and ESXi 5.5 under vCenter Server 5.5. To view compatibility with other solution releases, see *VMware Product Interoperability Matrices* at **http:// partnerweb.vmware.com/comp_guide2/sim/interop_matrix.php**.

Note:
ESXi 4.1 is not supported.

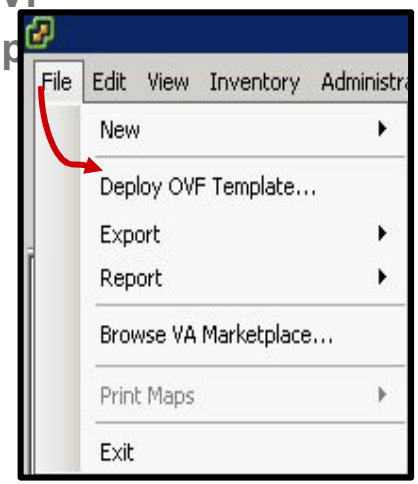
Deploy Communication Manager

- Gather the following information before you deploy the OVA:

Name	Description
CM IPv4 Address	Specifies the IP address of the Communication Manager virtual machine.
CM IPv4 Netmask	Specifies the subnet mask of the Communication Manager virtual machine.
CM IPv4 Gateway	Specifies the IP address of the default gateway.
Out of Band Management IPv4 Address	Specifies the IP Address for Out-of-Band Management. This is an optional field. If you do not want to configure Out-of-Band Management, leave the value of this field as zeros.
Out of Band Management IPv4 Netmask	Specifies the netmask for Out-of-Band Management. This is an optional field. If you do not want to configure Out-of-Band Management, leave the value of this field as zeros.
CM Hostname	Specifies the host name or an FQDN of Communication Manager.
NTP Server(s)	Specifies the IP Address of the Network Time Protocol (NTP) server for the Communication Manager virtual machine. This is an optional field. You can add up to three NTP servers.
DNS Server(s)	Specifies the IP Address of the Domain Name System (DNS) server for the Communication Manager virtual machine. This is an optional field. You can add up to three DNS servers.
Search Domain List	This is an optional field.
WebLM Server IPv4 Address	Specifies the IP address of WebLM Server .
CM Privileged Administrator User Login	Specifies the login name for the Communication Manager privileged administrator.
CM Privileged Administrator User Password	Specifies the password for the Communication Manager privileged administrator. The value range is from 8 to 255 characters.

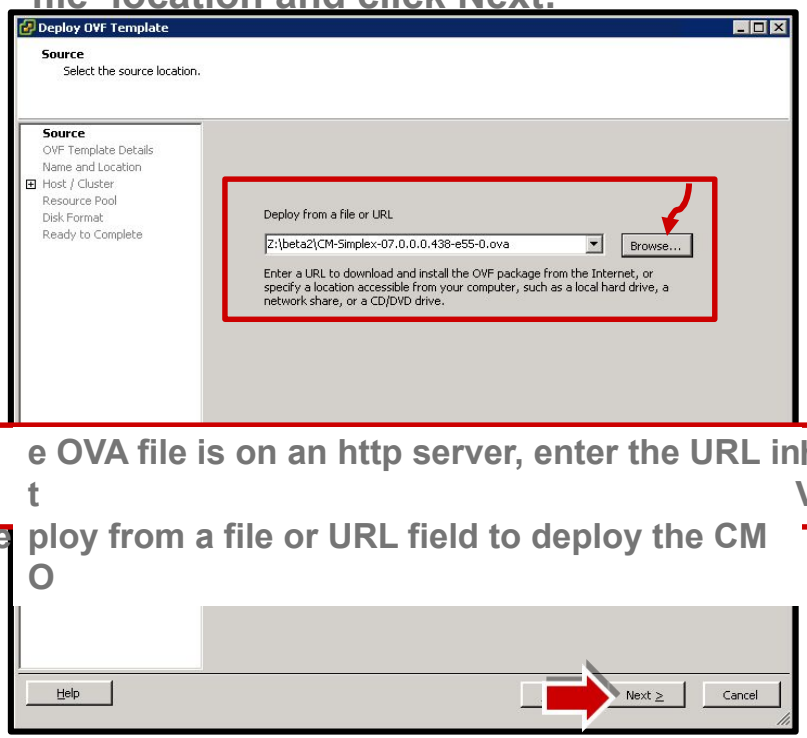
Deploy Communication Manager (cont'd)

- From File, click Deploy OVF Template...



Note: An OVA is an OVF file packaged together with all of its supporting files (disk images, etc.).

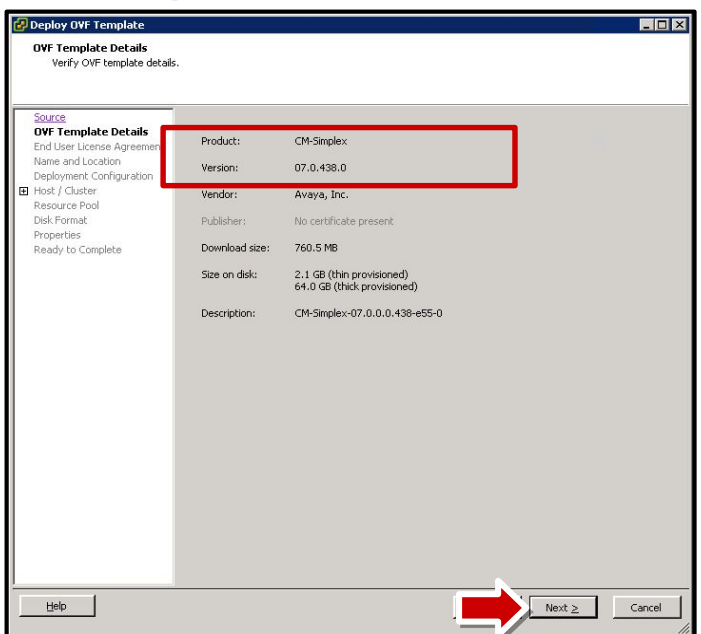
- Click Browse and provide the CM OVA file location and click Next:



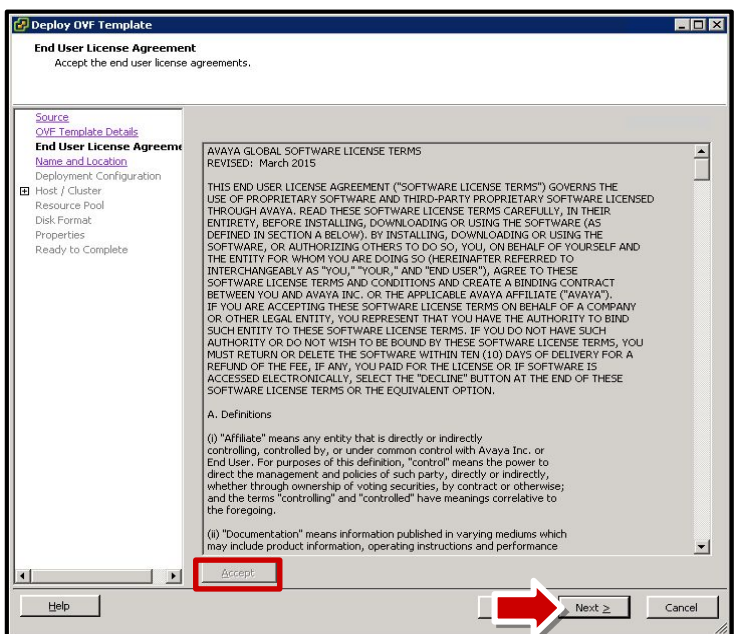
If the OVA file is on an http server, enter the URL in the Deploy from a file or URL field to deploy the CM OVA.

Deploy Communication Manager (cont'd)

- Verify the details of the installed OVA Template and click Next.

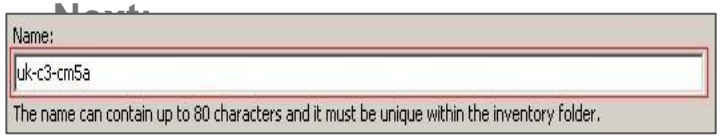


- Read the *License Agreement* and click Accept to accept the license, and then click Next:



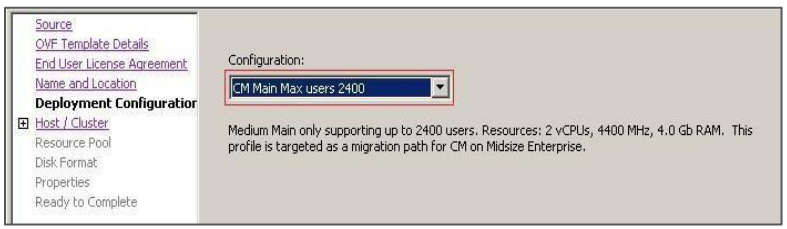
Deploy Communication Manager (cont'd)

- In the Name field, type the name of the new virtual machine and select the Inventory Location to deploy the virtual machine and click Next:



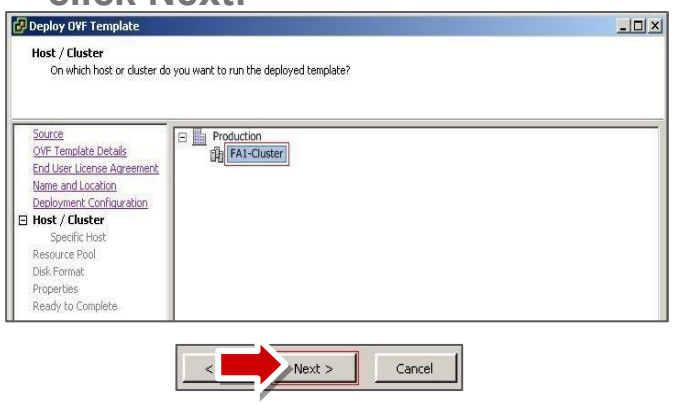
- Select a Deployment Configuration

and click Next:

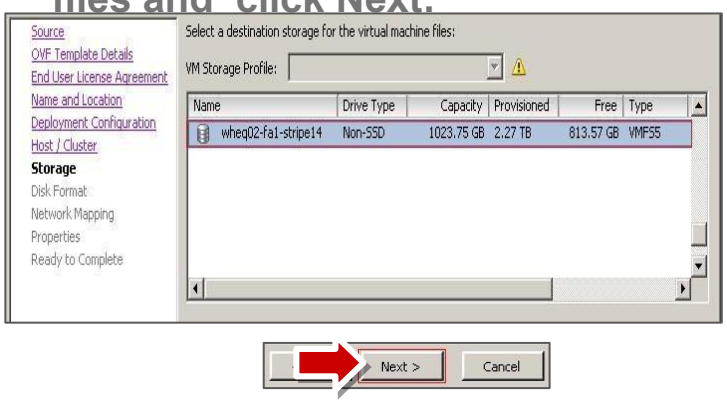


Deploy Communication Manager (cont'd)

- Select the Host/Cluster to run the deployed template and click Next:



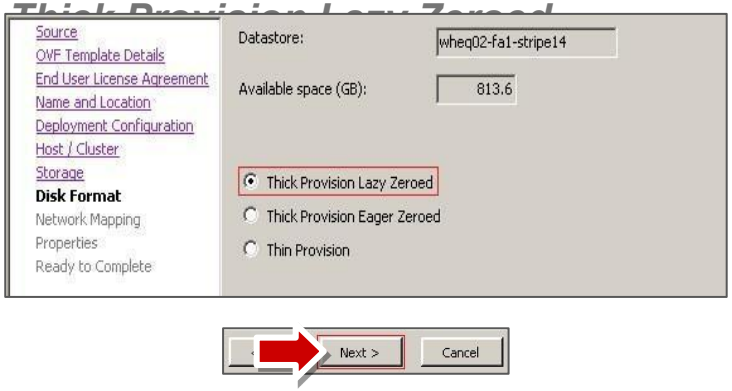
- Select the data store location to store the virtual machine files and click Next:



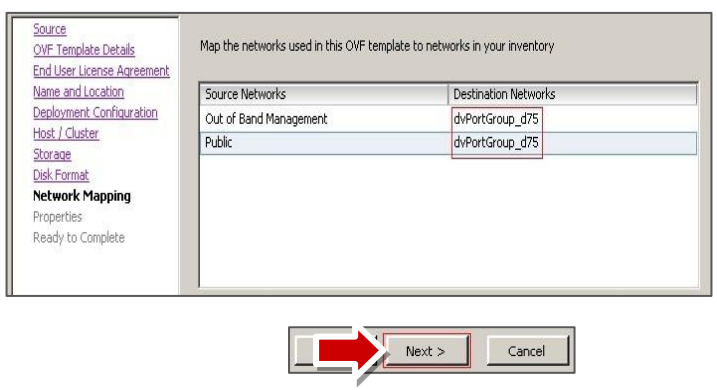
Deploy Communication Manager (cont'd)

- On the *Disk Format* page, select the required disk format and click Next:

Note: In this example we will use *Thick Provision Lazy Zeroed*

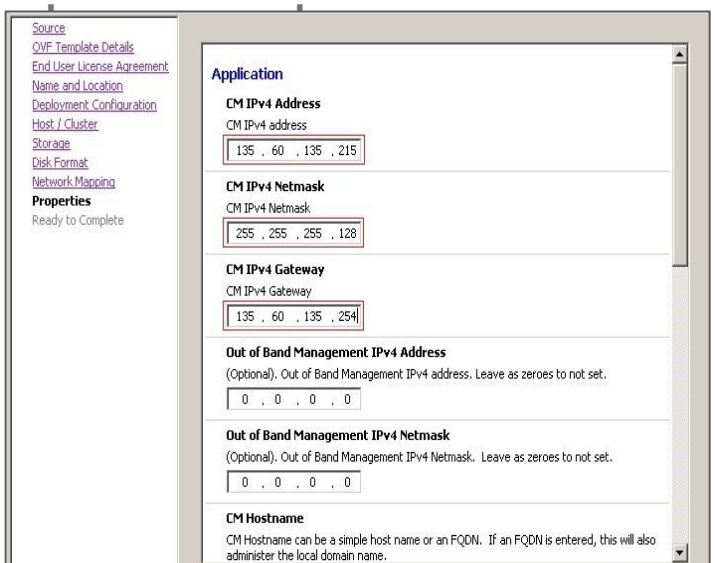


- If you have multiple virtual machine networks in your environment you will be presented with the option of selecting the appropriate network. Select the required network and click *Next:*



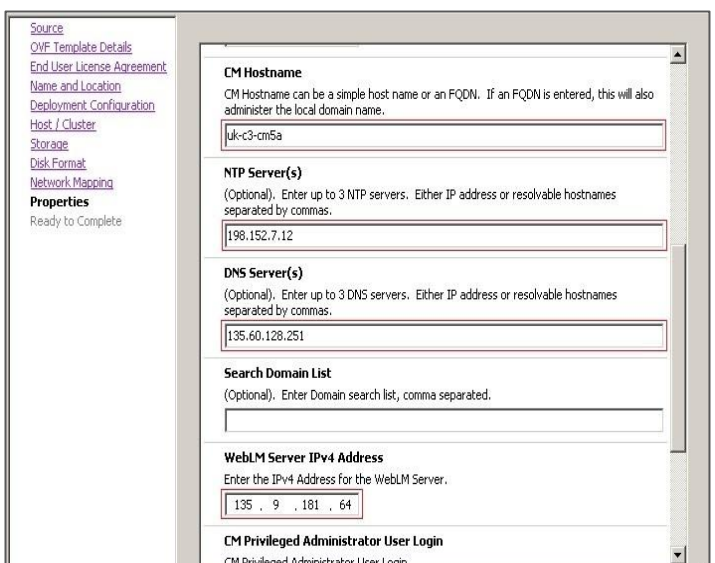
Deploy Communication Manager (cont'd)

- Next the *Management Network Settings* page will be displayed. From this page you will enter the relevant IP addresses, host names, etc. Scroll down to complete the required fields and click *Next*



- Management Network Settings (cont'd)

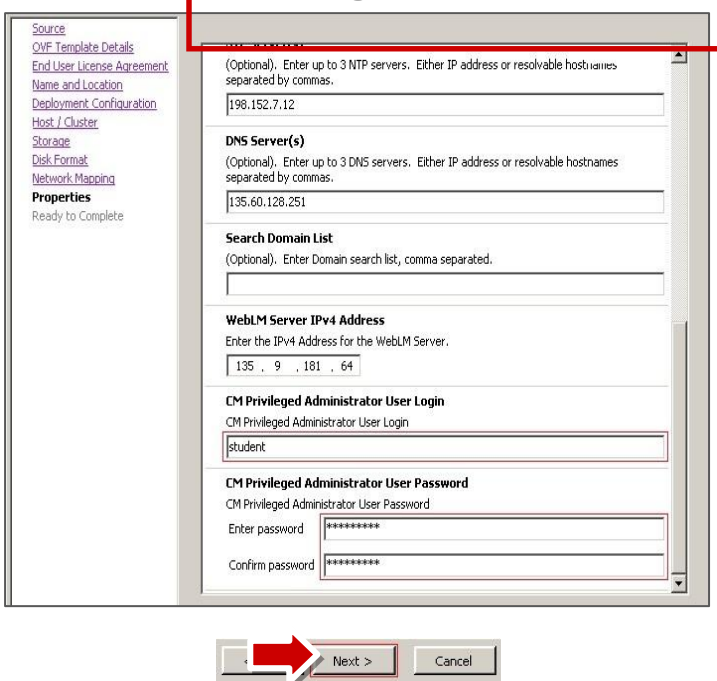
Scroll down



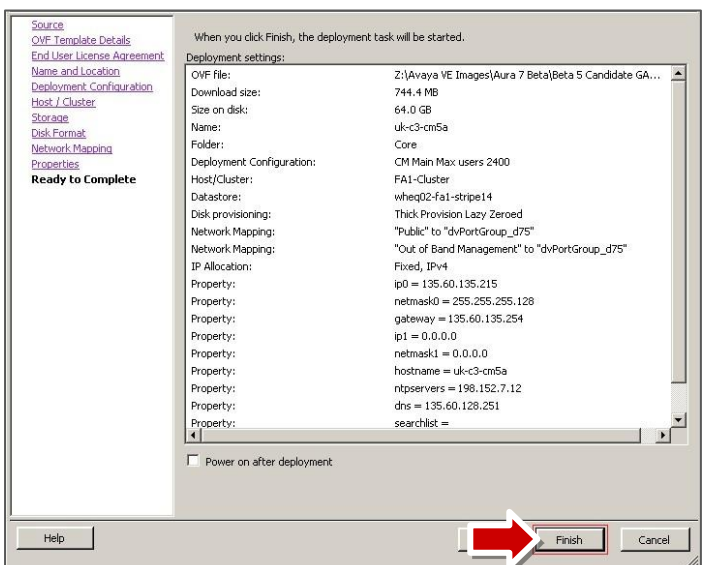
Deploy Communication Manager (cont'd)

- **Management Network Settings (cont'd)**

Scroll down to complete the remaining fields and click Next.

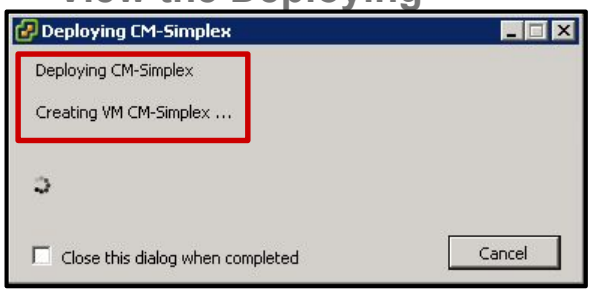


- **The *Ready to Complete* screen displays the values you entered for review. Click *Finish* to build the virtual machine.**

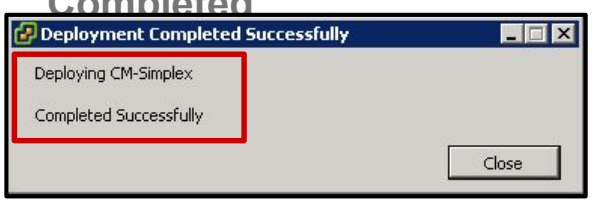


Deploy Communication Manager (cont'd)

- View the Deploying



- Deployment Completed

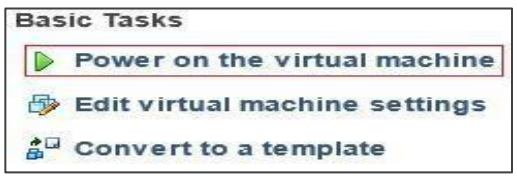


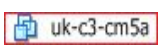
Note : It is possible to further refine the virtual machine settings once deployment has completed. For details on how to edit the virtual machine, download the *Deploying Avaya Aura Communication Manager on VMware in Virtualized Environment* guide from the Avaya Support website.

Deploy Communication Manager (cont'd)

Starting the Virtual Machine

1. The new virtual machine will be in a powered-off state after deployment. To power on the virtual machine, select the virtual machine and then click the *Power on virtual machine* option in the main window.



Note: Alternatively, right-click on the virtual machine 

and select *Power* → *Power On*.

2. Next you will open a Console to allow initial administration of the new Communication Manager system. Right click on the virtual machine and select *Open Console*.

From here you can view the newly deployed virtual machine start-up.

Communication Manager (CM) OVA Deployment - Duplex

To deploy the Duplex OVA, install the Duplex OVA on two different hosts. Ensure that the hosts reside on two different clusters. Similar to the Simplex OVA, the Duplex OVA has one network interface configured in the OVA. The system automatically assigns the Duplex OVAs first NIC and second NIC to the one network. An example host configuration for the Duplex OVA can be setup to include two virtual machine network connection type vSwitches, For example,

- *VM Network* to use with the CM NIC 0 administration/call_processing traffic – connected to say vmnic 0
- *CM_duplication_link* to use with the CM NIC 1 duplication link traffic – connected to say vmnic 2

Before you start the virtual machine, you must change the CM virtual machine settings to configure the second NIC. For information about changing the virtual machine settings, see *Changing the virtual machine settings* in the guide listed below.

Note:

For the CM Duplex virtual appliance:

- If you are using a 2900 MHz (2.9GHZ) processor, the CM virtual appliance supports the 36000 endpoints.
- If you are using a 2400 MHz (2.4GHZ) processor, the CM virtual appliance supports the 30000 endpoints.

For more detailed information on Deploying the CM OVA, refer to the following Avaya support document: Deploying Avaya Aura® Communication Manager on VMware®

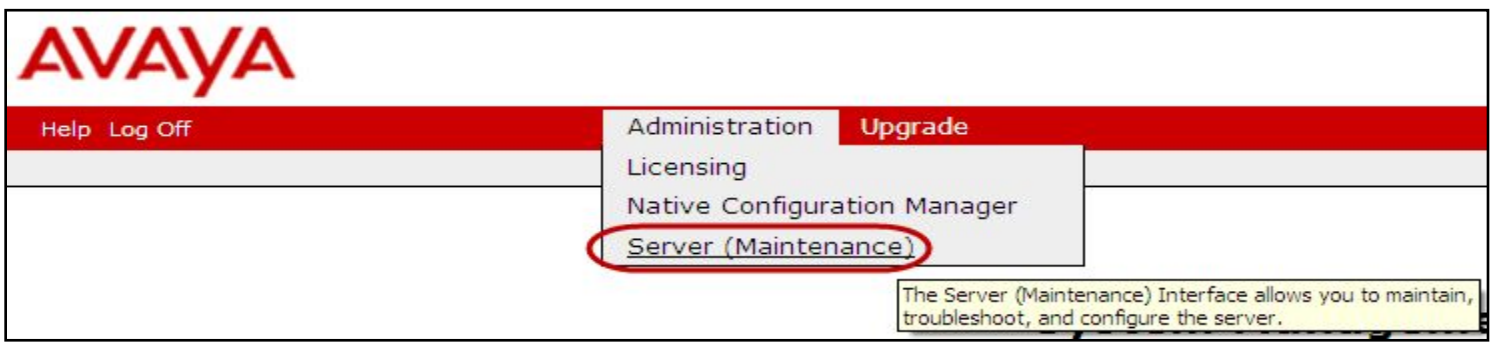
Install the CM Main Duplex

- Launch another browser on your computer.
- Type the Communication Manager IP address for this server in the **Address** field and press **Enter**.
- Log in to the Communication Manager System Management Interface using the customer login you created when you installed the template (**newlogin/newlogin01**).

Install the CM Main Duplex

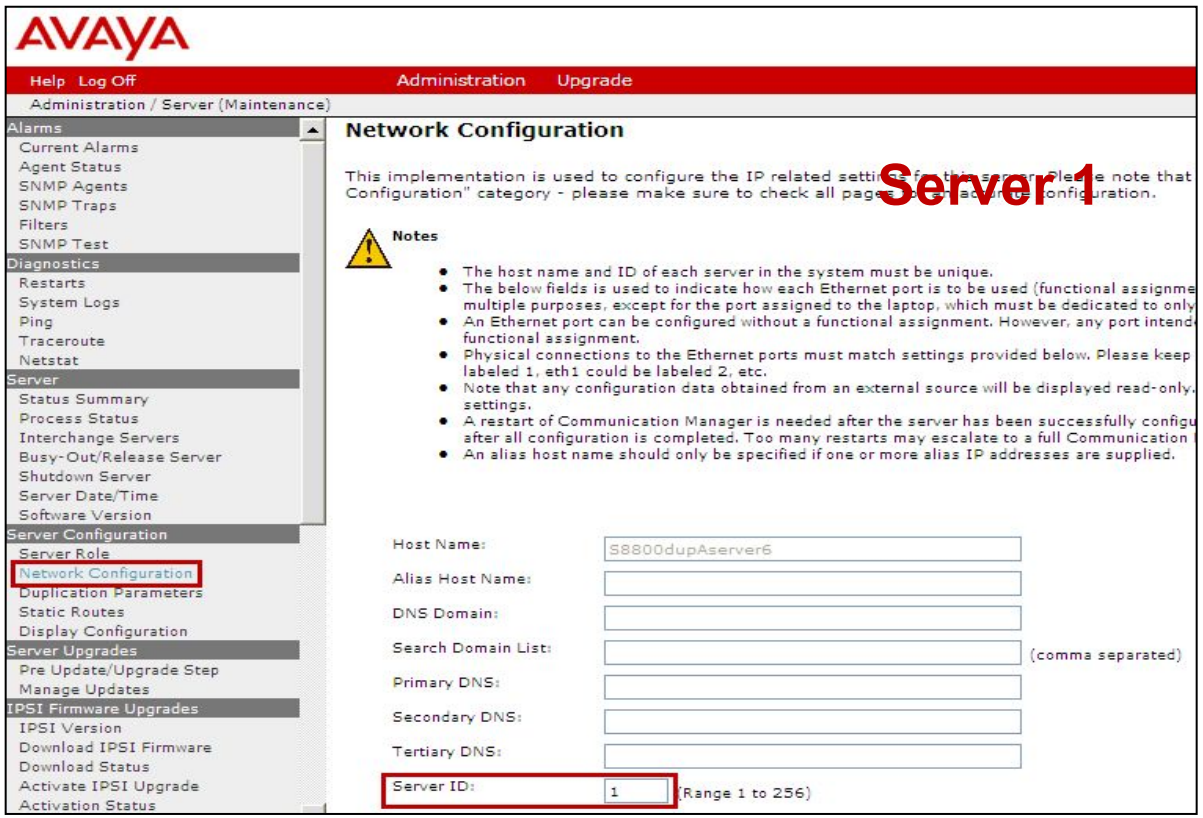
4 The Messages page indicates the last time that login was used. Click **Continue**.

4 Select **Administration** > **Server (Maintenance)**.



Install the CM Main Duplex

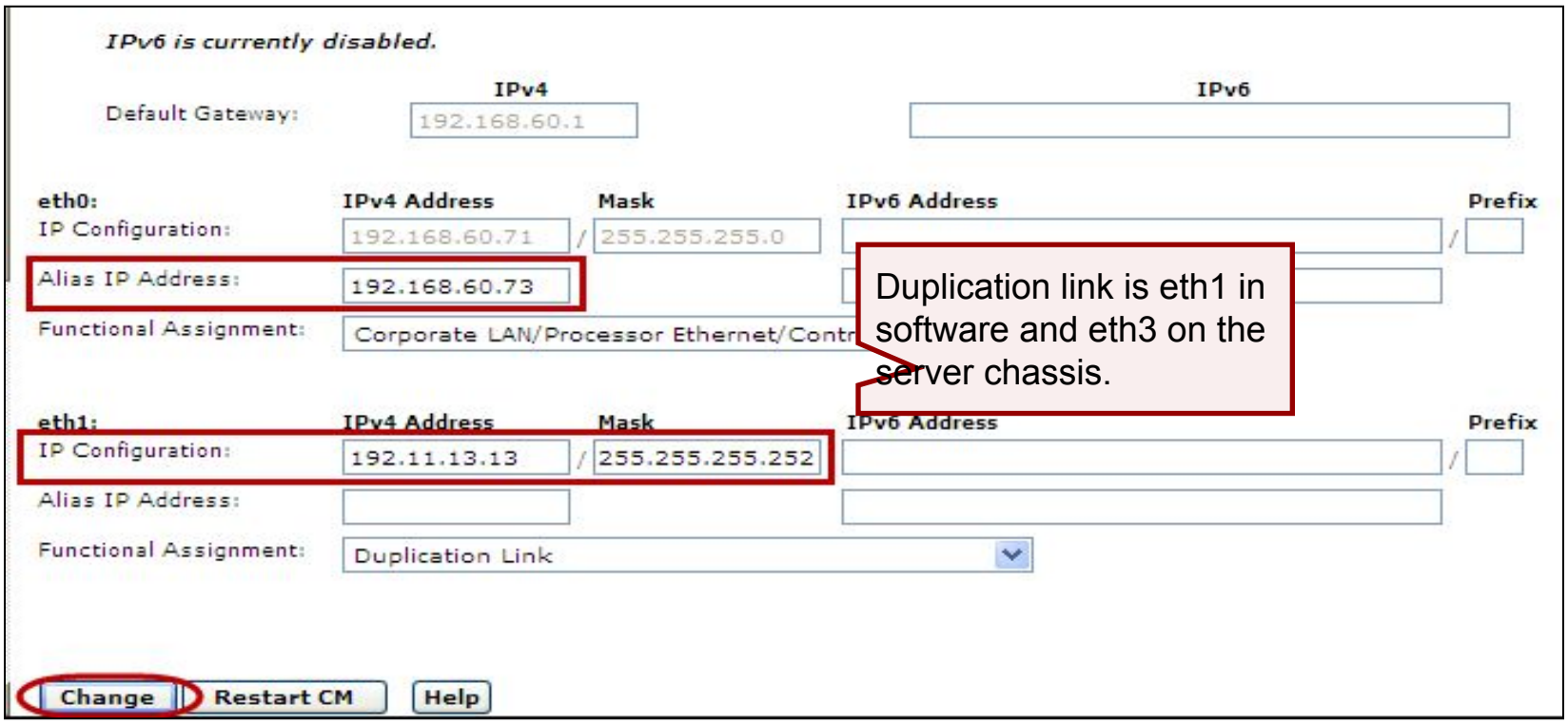
4 Select **Server Configuration > Network Configuration** to administer the network connections (top of page shown).



Install the CM Main Duplex

4 Complete the administration of **eth1** at the bottom of the **Network Configuration** page.

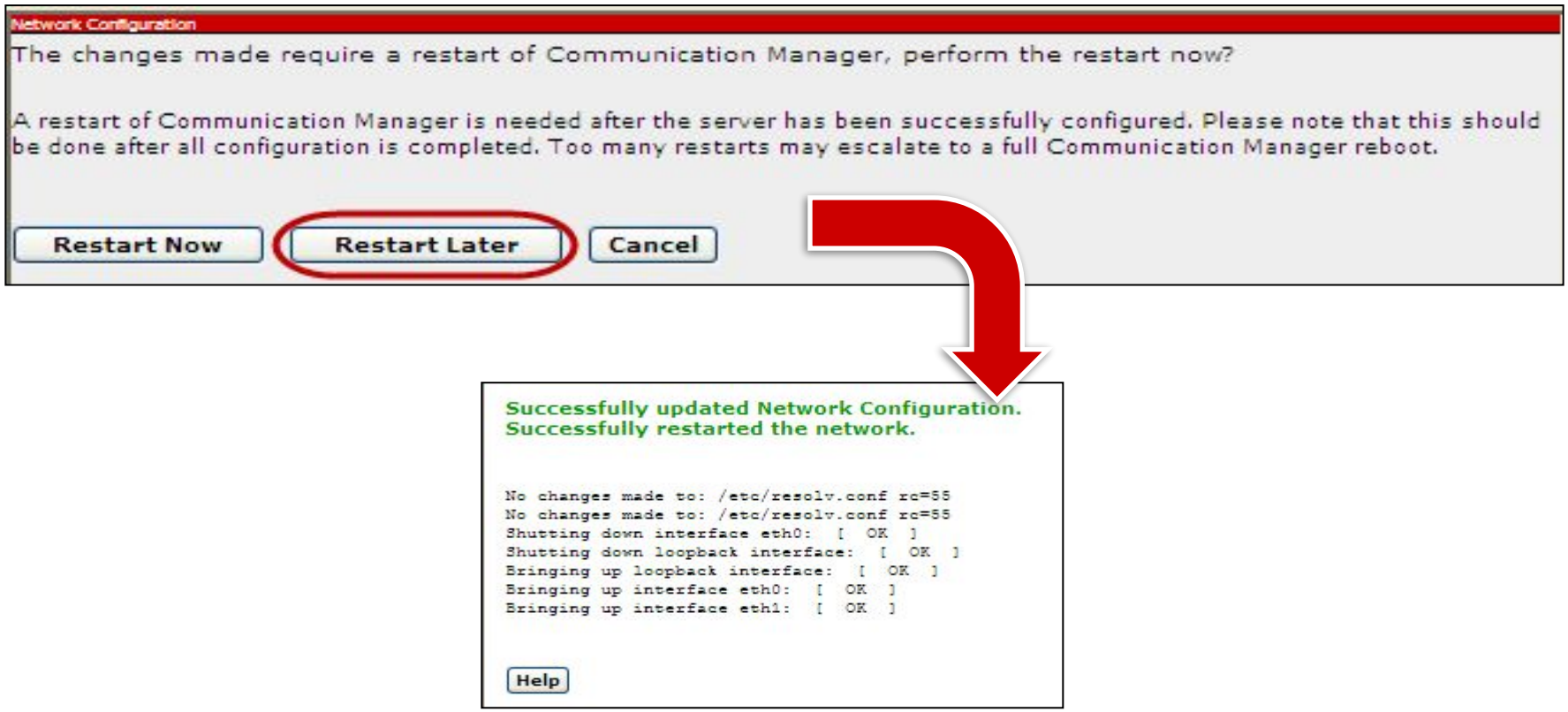
4 Click **Change**.



Install the CM Main Duplex

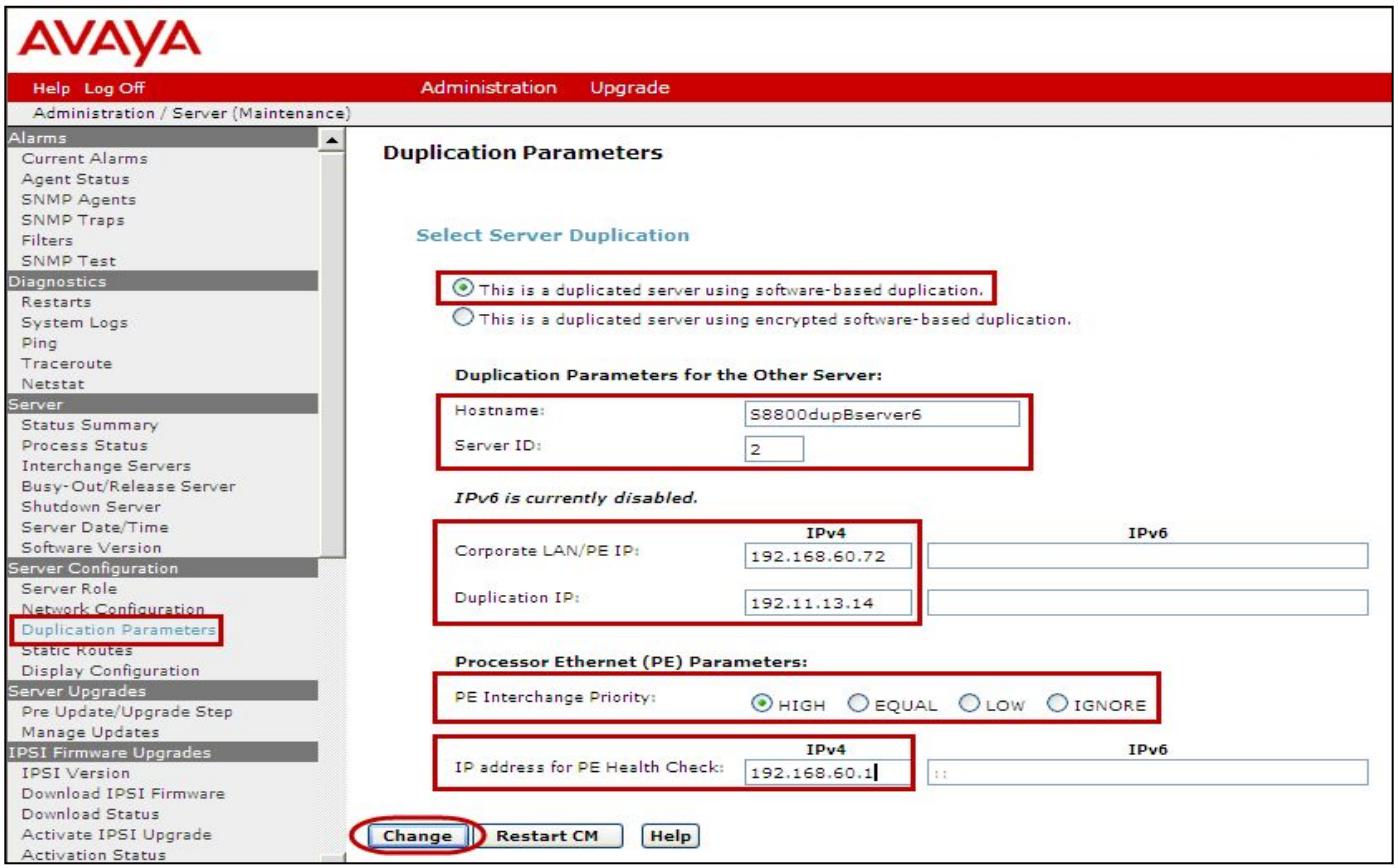
4 A message asking if you want to restart CM now or later displays.

4 Click **Restart Later**.



Install the CM Main Duplex

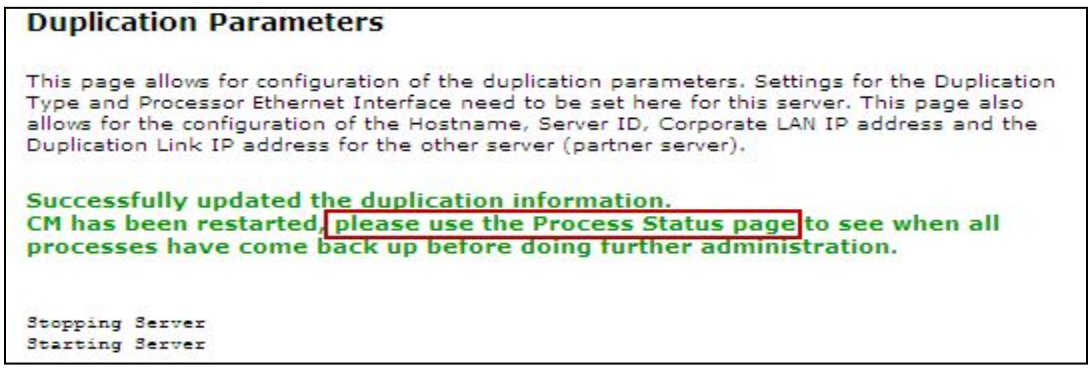
4 Select **Server Configuration** > **Duplication Parameters** to administer the duplicate server parameters, then click **Change**.



Install the CM Main Duplex

- Click **Restart Now**.

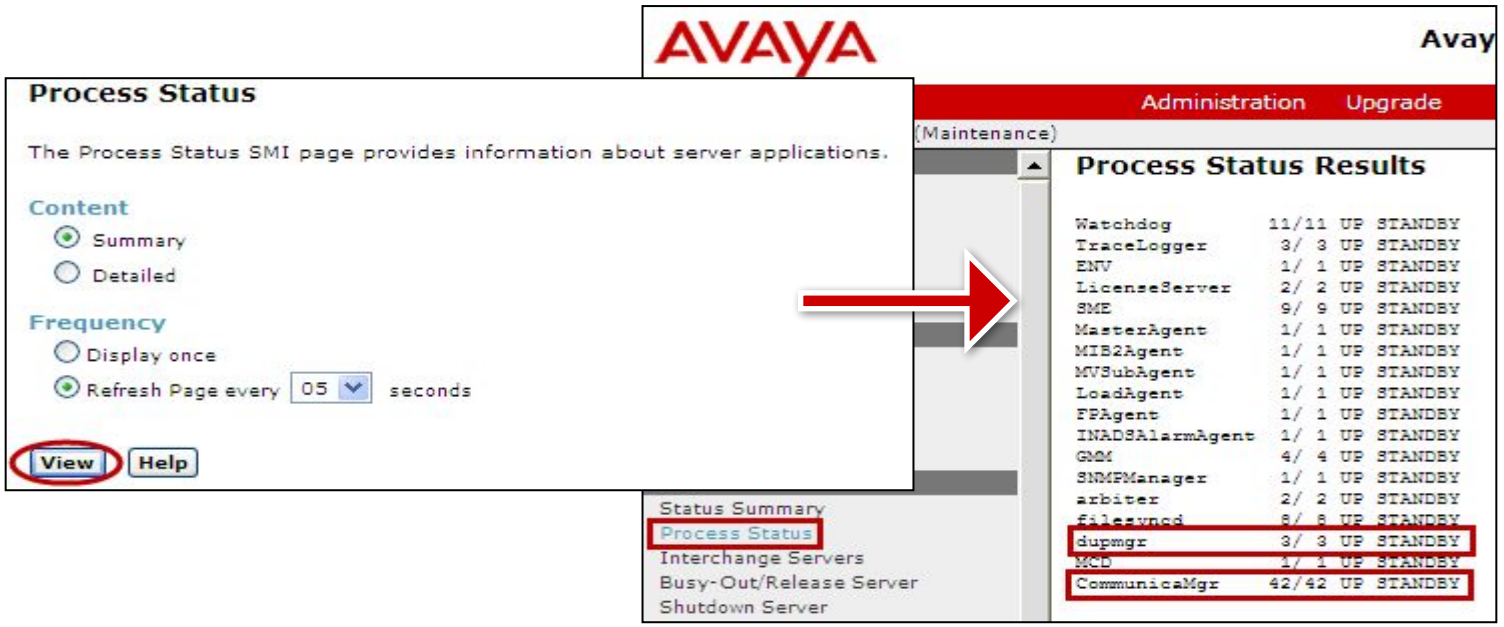
- A message indicating that the duplication parameters have been updated.



- You have completed the **Server 1** administration ONLY.
- Next you will configure the standby server (**Server 2**).

Install the CM Main Duplex

4 Select **Server > Process Status** and ensure that Communication Manager is **up**.



4 You have completed the **server1** administration ONLY.

4 Next you will configure the standby server (**server2**).

Install the CM Main Duplex

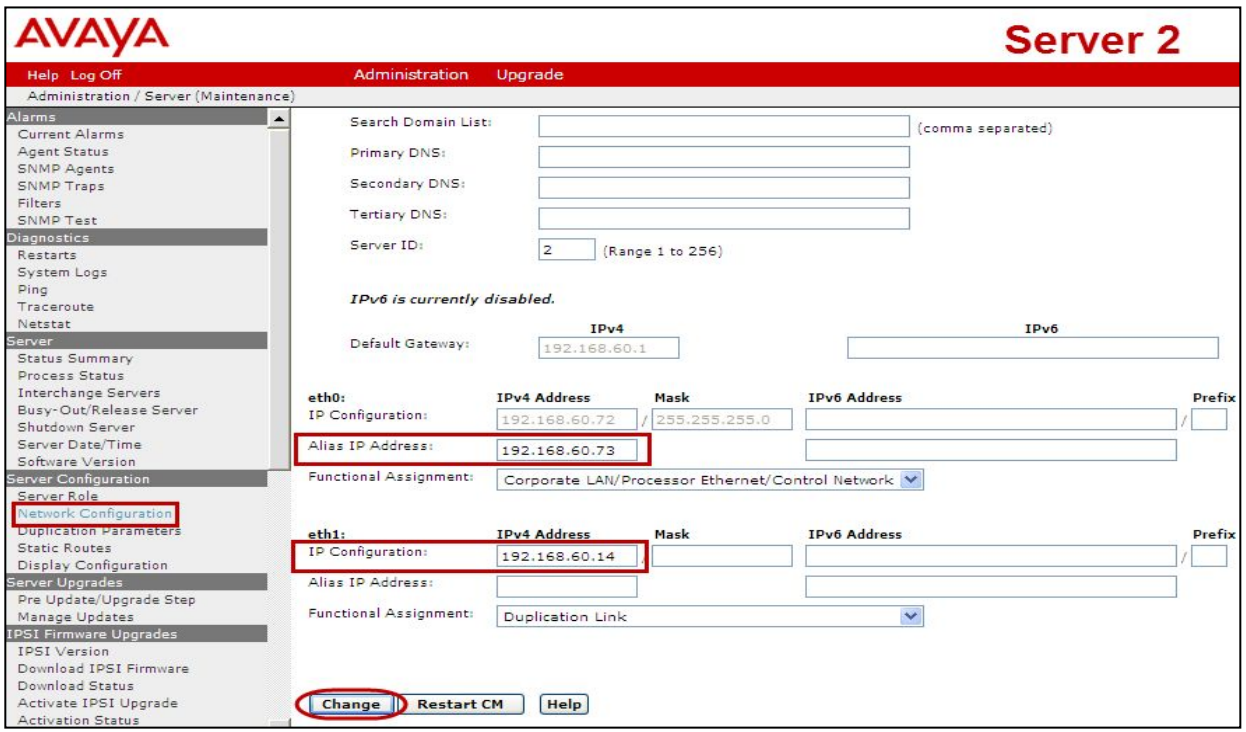
4 At Server 2, do the following:

- Install System Platform using the information in the *ATI02348IEN-VEN-Lab Logins, Hostnames, and IP Addresses* document.
- Install the CM_Duplex template with the following parameters:
  - CM IP address is **192.168.n0.72**, where *n* is your lab number.
  - The server name is **S8800dupBserver<*n*>**, where *n* is your lab number.
  - Same customer login (newlogin/newlogin01) as Server1.

Install the CM Main Duplex

4 Log in to Server 2 System Management Interface (SMI) and select **Server Configuration > Network Configuration** to administer the network connections for Server2:

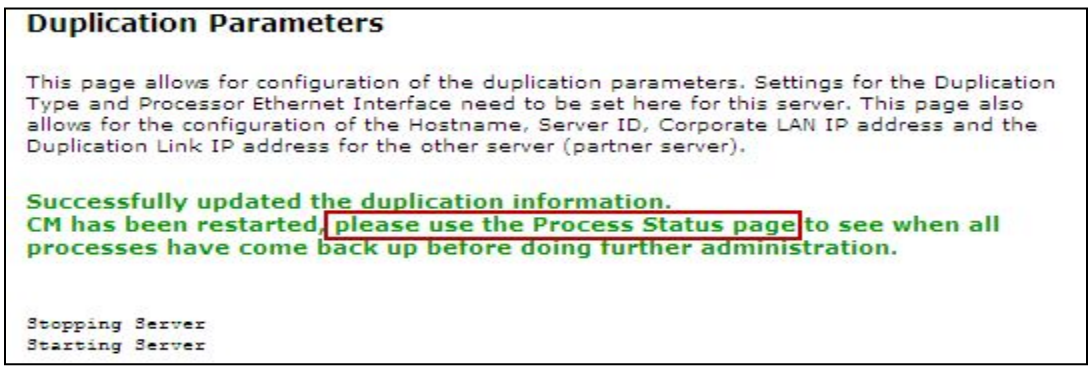
4 Click **Change**.



Install the CM Main Duplex

4 Click **Restart Now**.

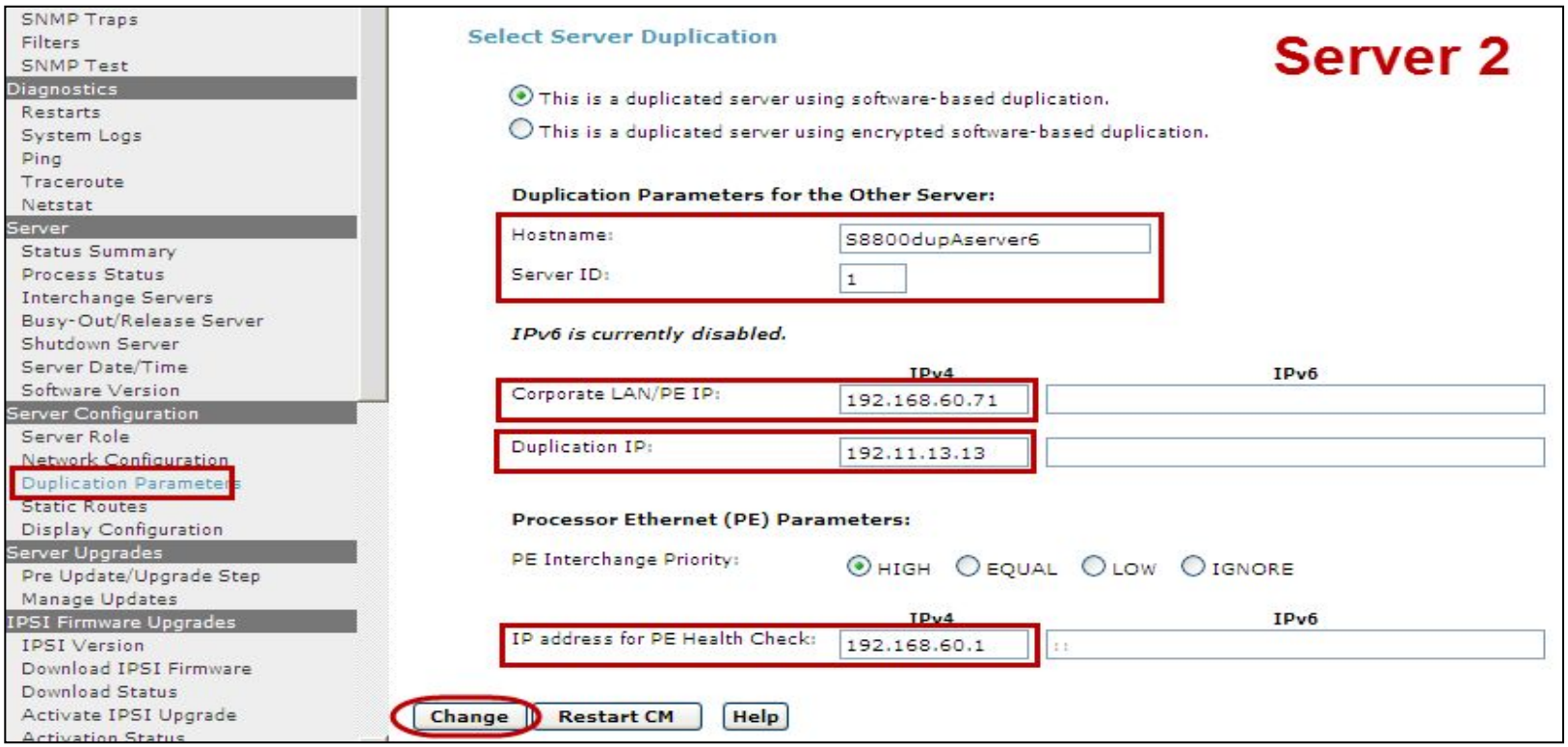
4 A message indicating that the duplication parameters have been updated.



Install the CM Main Duplex

4 At the SMI for **server2** select **Server Configuration** > **Duplication Parameters** to administer the duplicate server parameters.

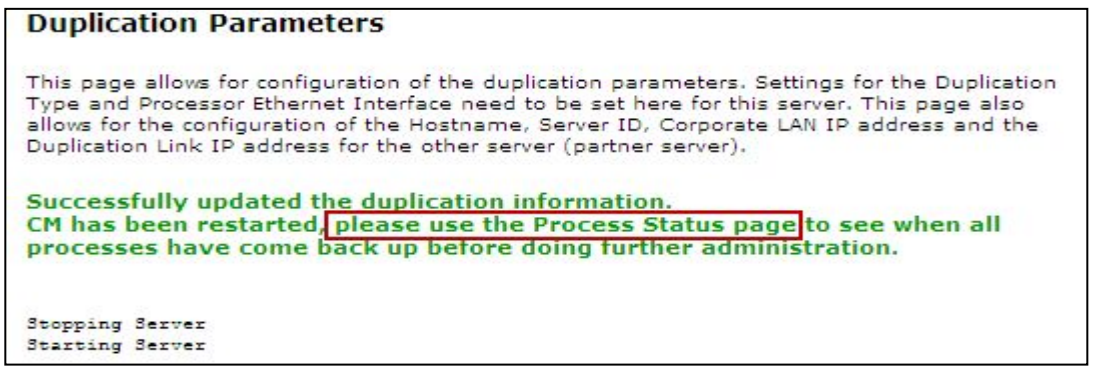
4 Click **Change**.



Install the CM Main Duplex

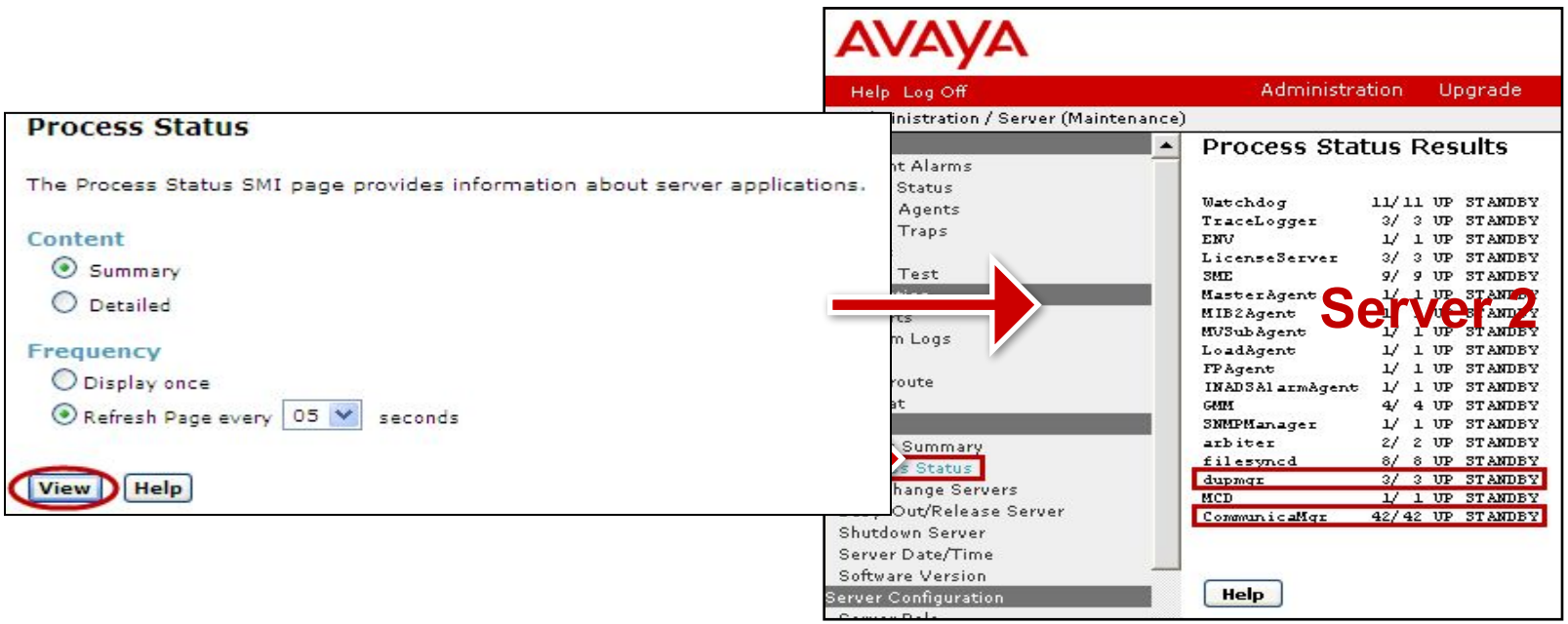
4 Click **Restart Now**.

4 A message indicating that the duplication parameters have been updated.



Install the CM Main Duplex

4 To check the progress of the CM restart select **Server > Process Status**.

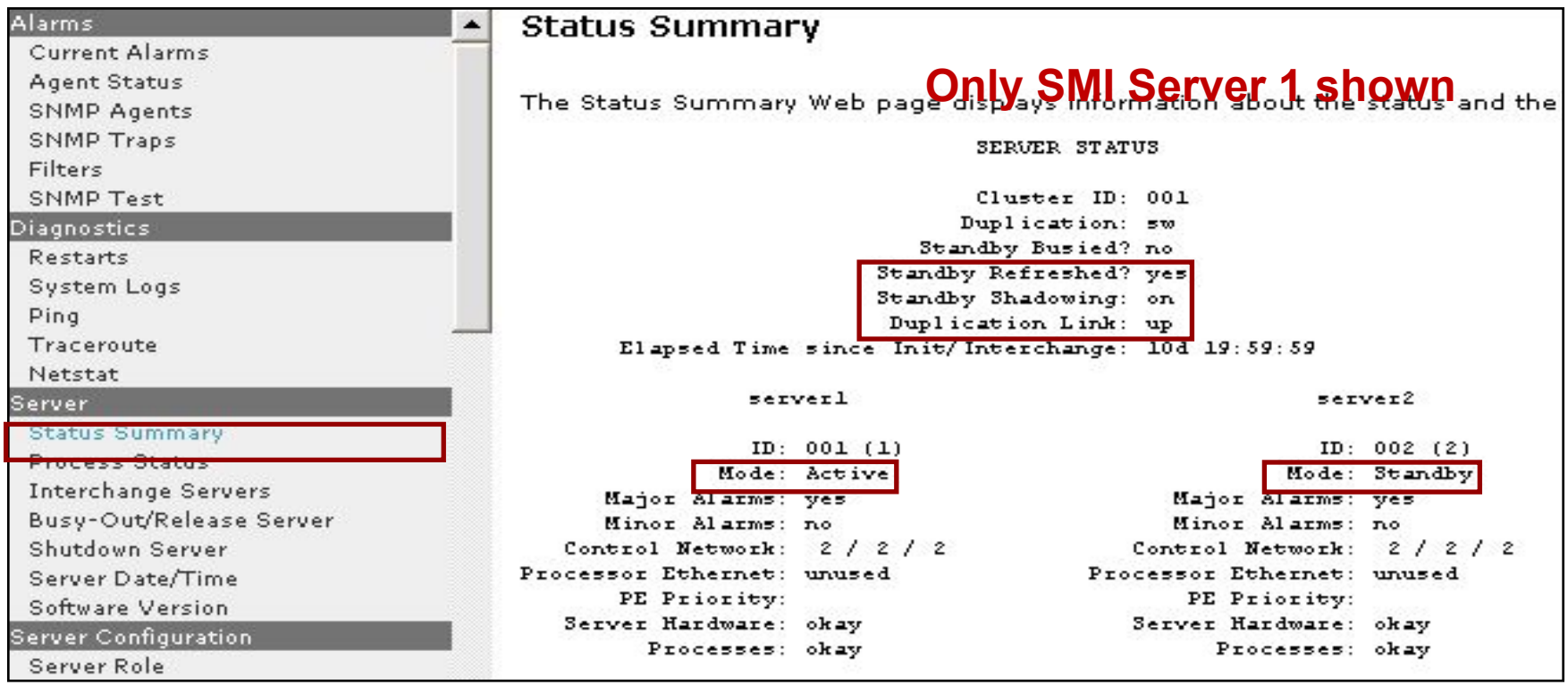


4 Wait until **dupmgr** and **CommunicaMgr** are **`standby`**.

Install the CM Main Duplex

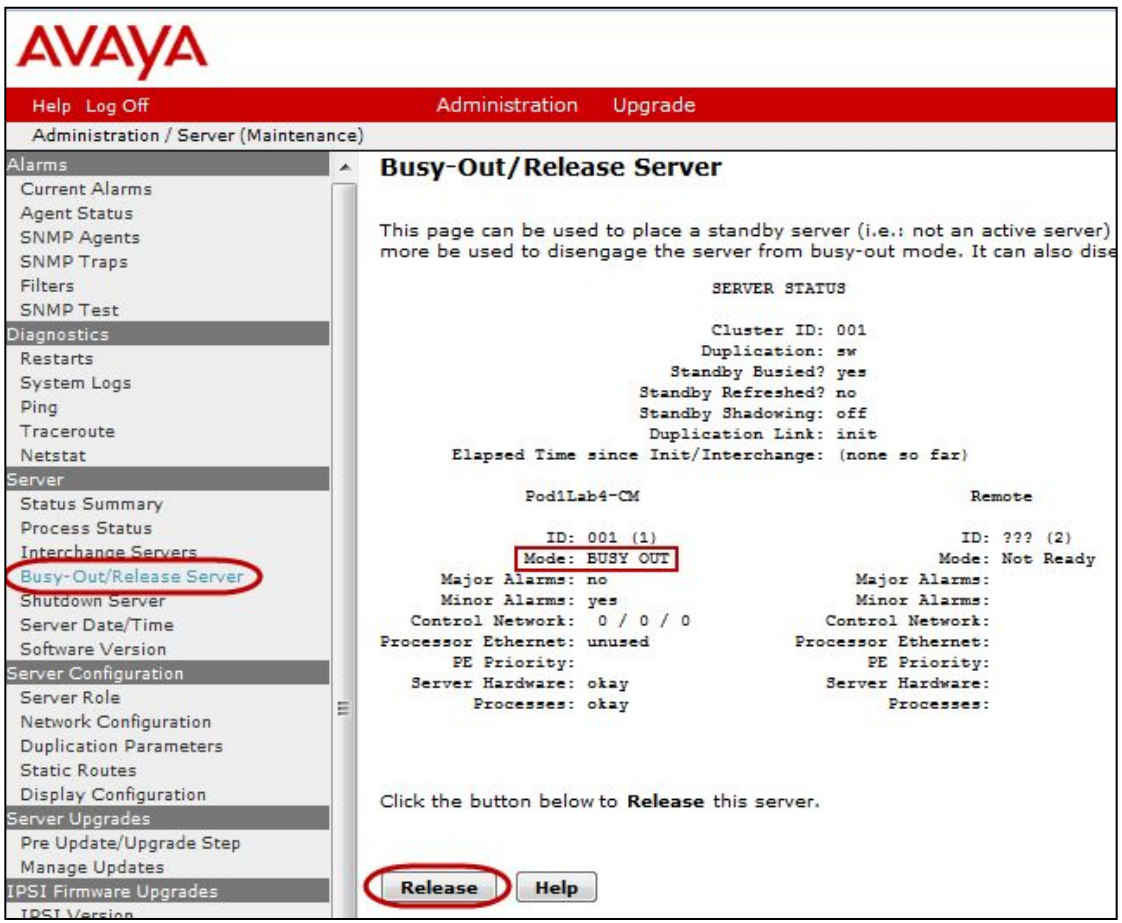
4 At the SMI for both **Server 1** and **Server 2** select **Server** > **Status Summary**.

4 Ensure that each server reports the proper active and standby server roles, the duplication link is up and that the Standby is refreshed.



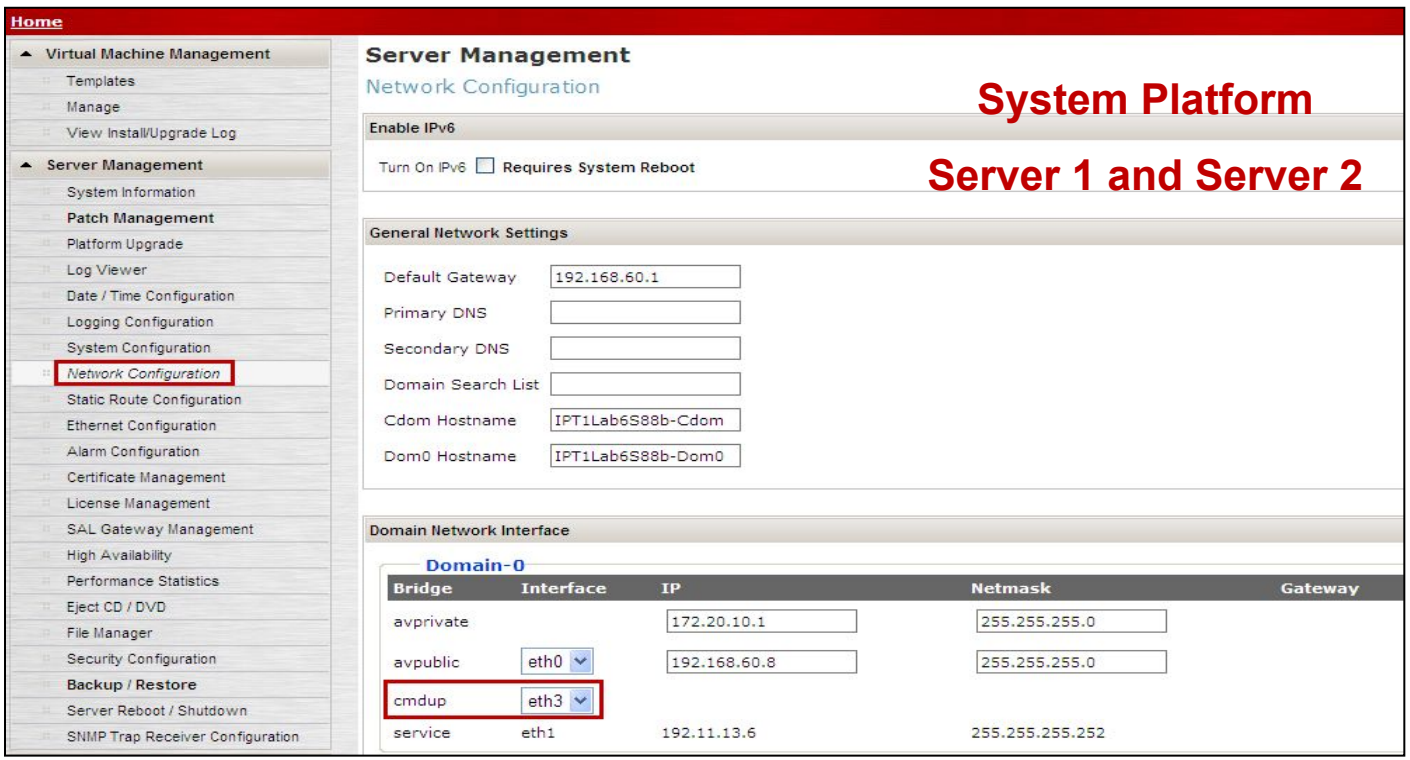
Install the CM Main Duplex

- At the SMI for the Standby Server select **Server > Busyout/Release Server**.
- Click **Release** to put this server into service.



Install the CM Main Duplex

- At the System Platform Management Interface (cdom) for both **Server 1** and **Server 2** select **Server Management** > **Network Configuration**.
- Ensure that the **eth3** interface is assigned to **cmdup** on both servers.



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Install the License Files

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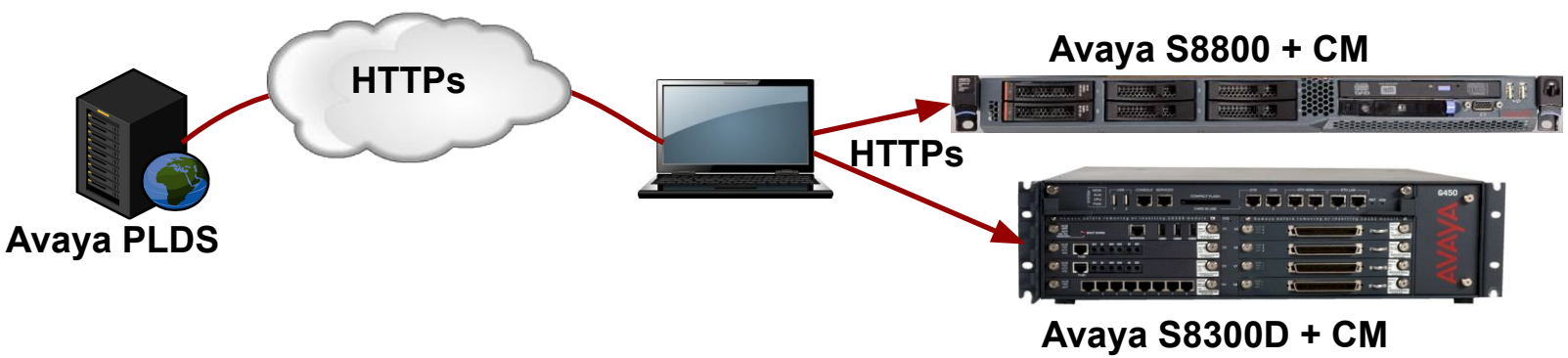
Download License from PLDS

Download License from PLDS

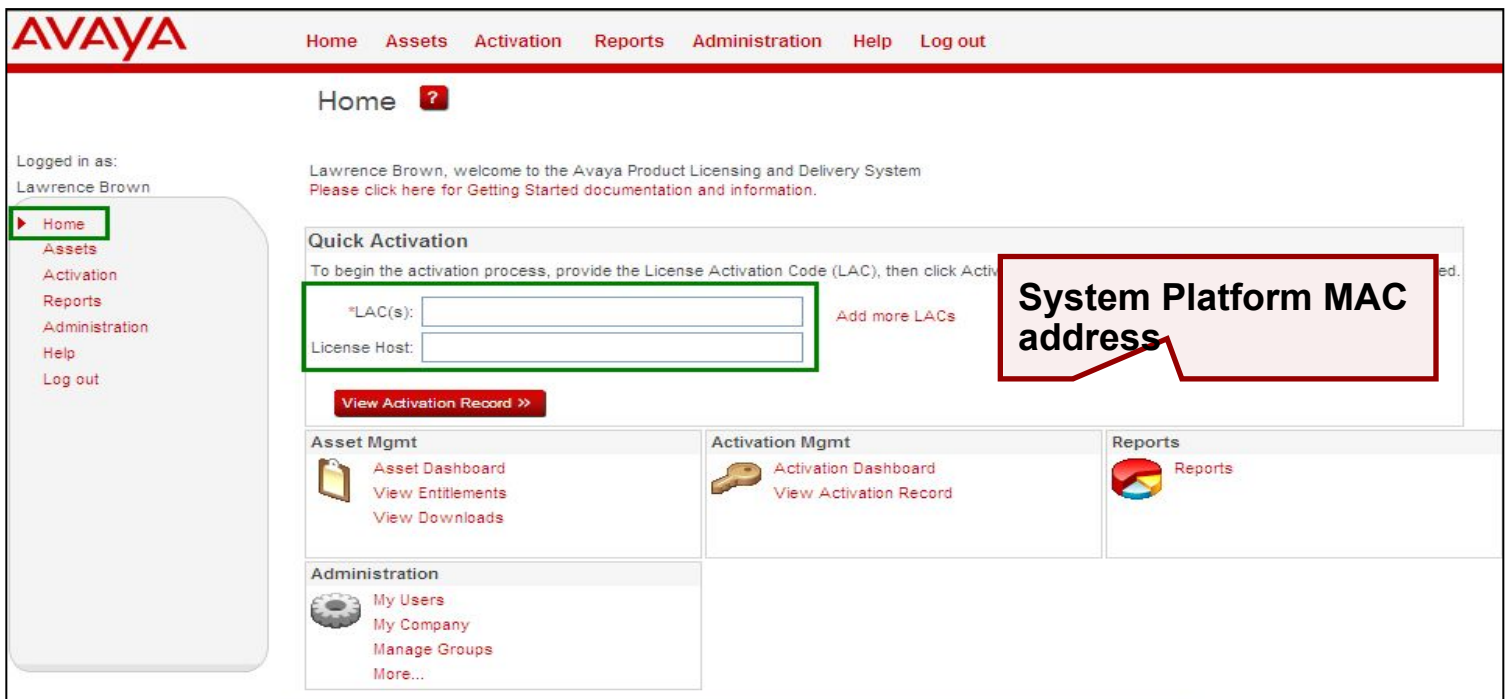
- System Platform (SP) does not require a license.
- Communication Manager (the “solution ”) does require a license.
- The license generation and installation process involves multiple interfaces:
  - Avaya PLDS
  - Avaya Aura System Platform Console (cdom)
  - Communication Manager SAT and SMI



Download License from PLDS (continued)

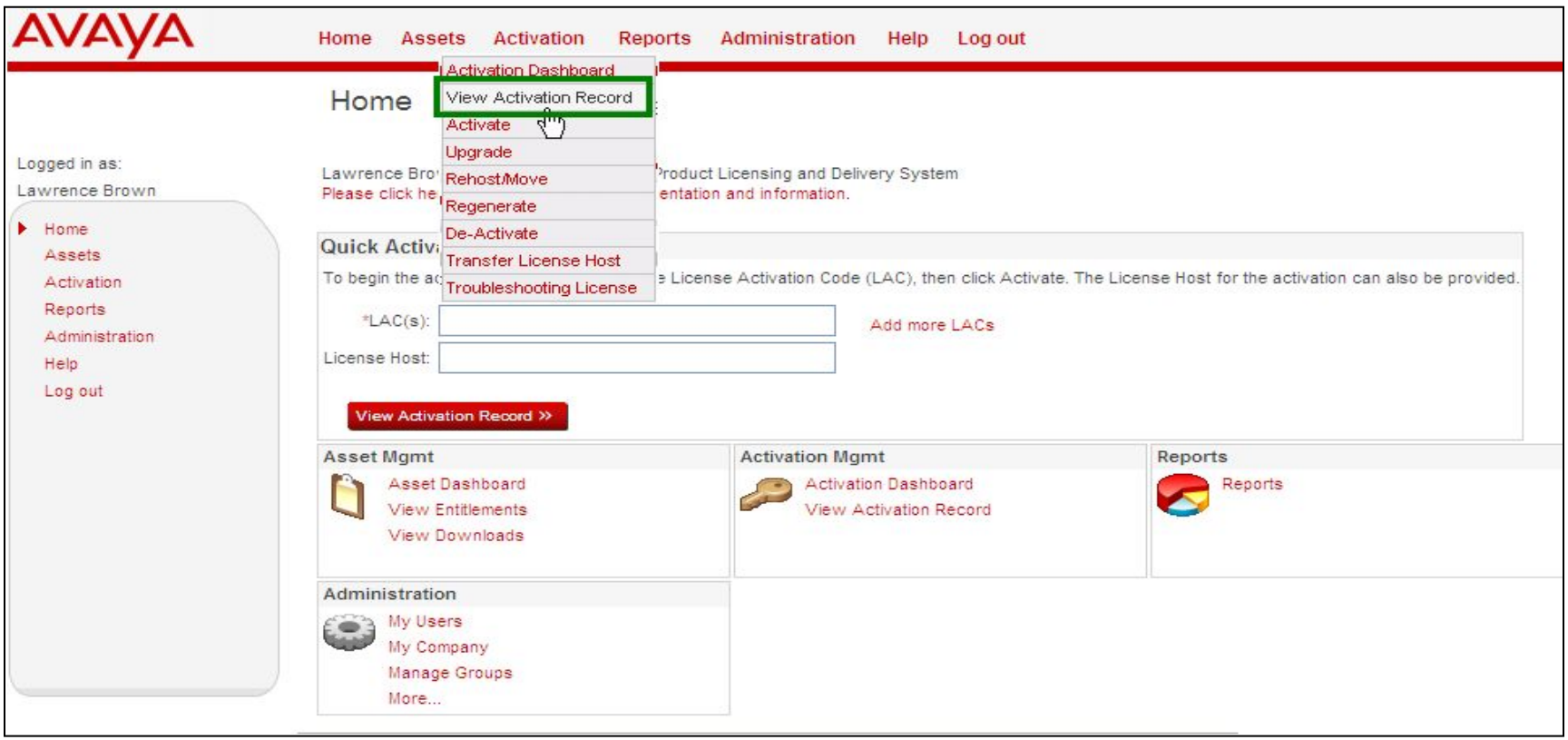
4 PLDS lookup through:

- **License Activation Code** (LAC)
- **License Host** is the MAC address established at the time System Platform is installed.



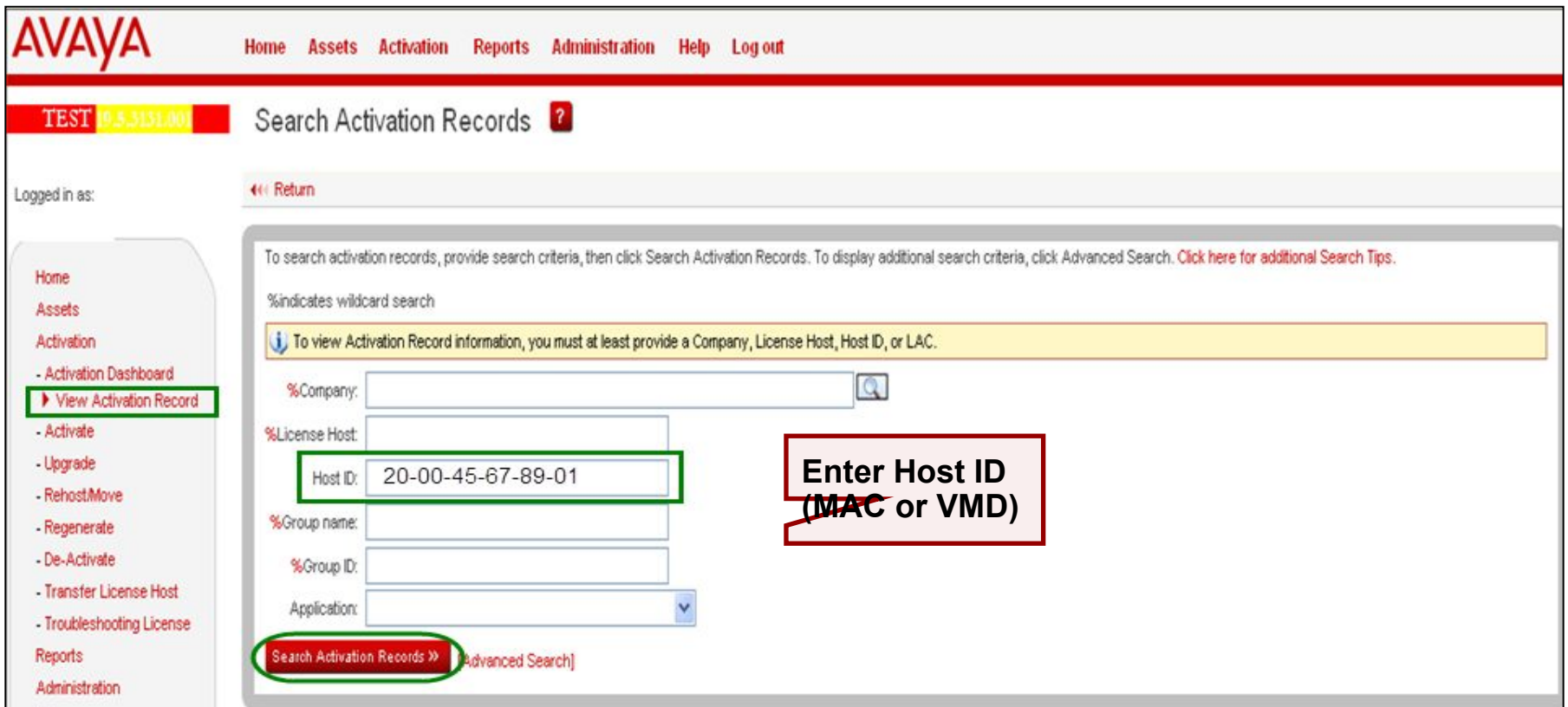
Download License from PLDS (continued)

4 Select **Activation > View Activation Record**.



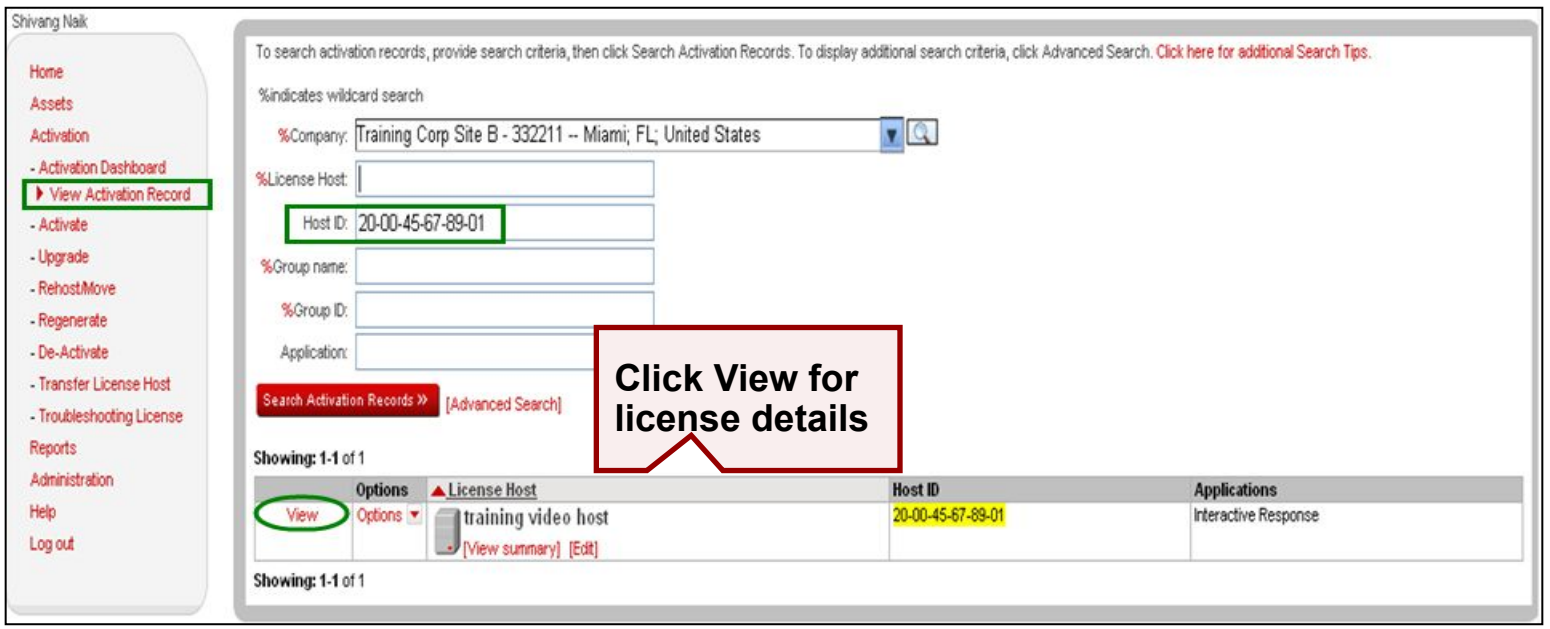
Download License from PLDS (continued)

- Type the **Host ID** (MAC address).
- Click **Search Activation Record**.



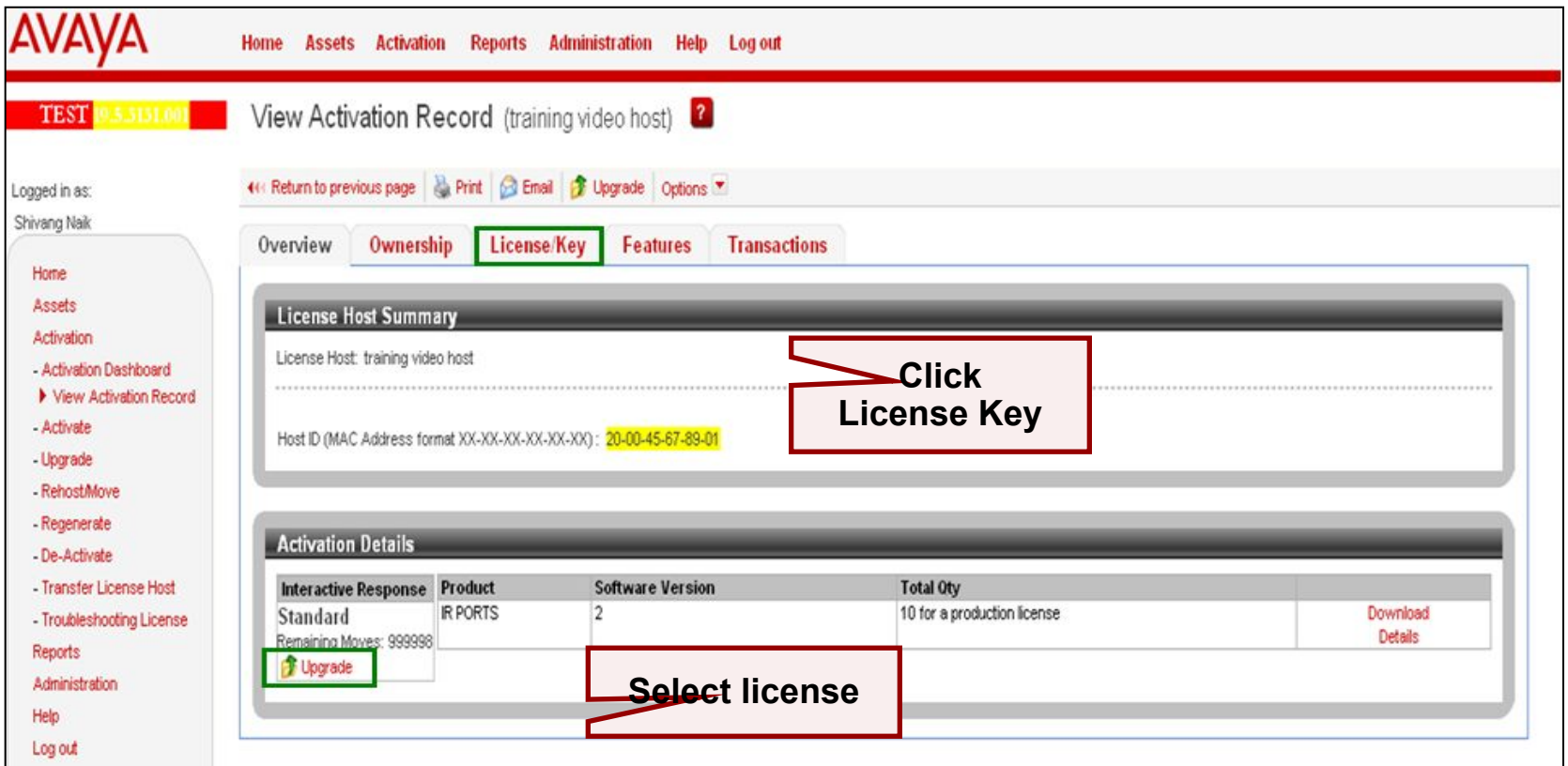
Download License from PLDS (continued)

4 To view the license details, click **View**.



Download License from PLDS (continued)

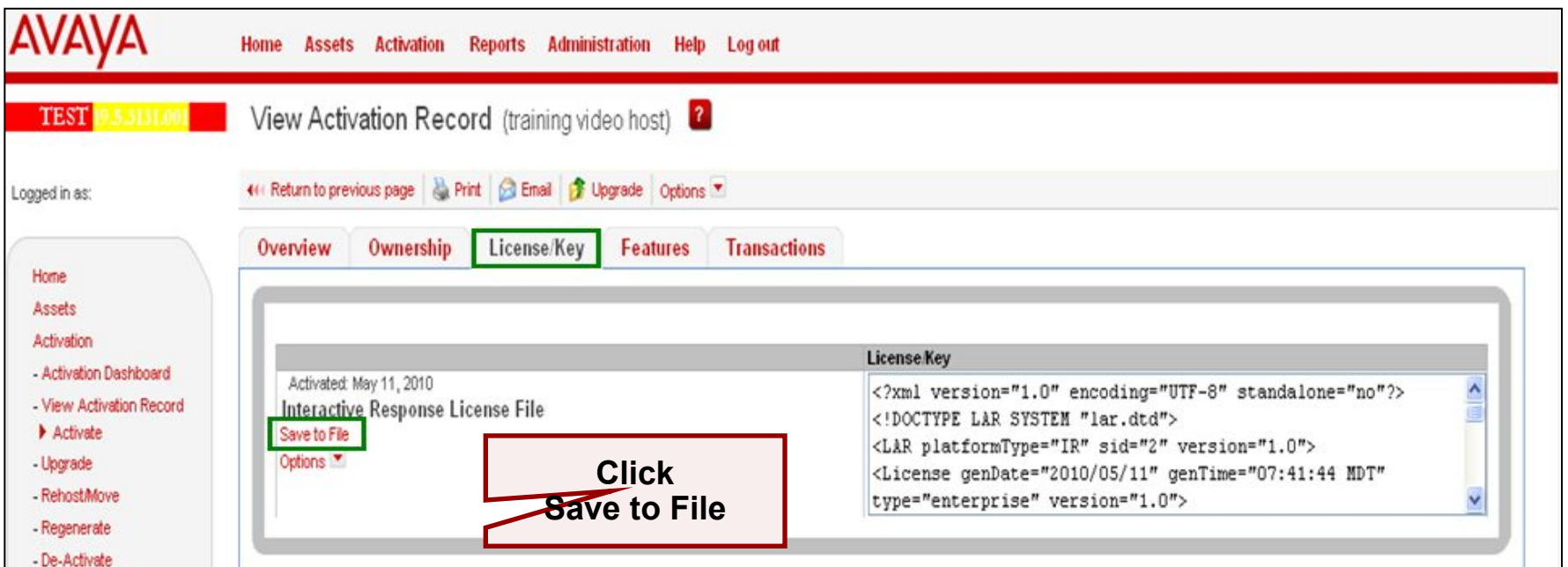
4 Click **License Key** then select the license.



Download License from PLDS (continued)

4 Click **Save to File**.

4 Save file to Service PC.



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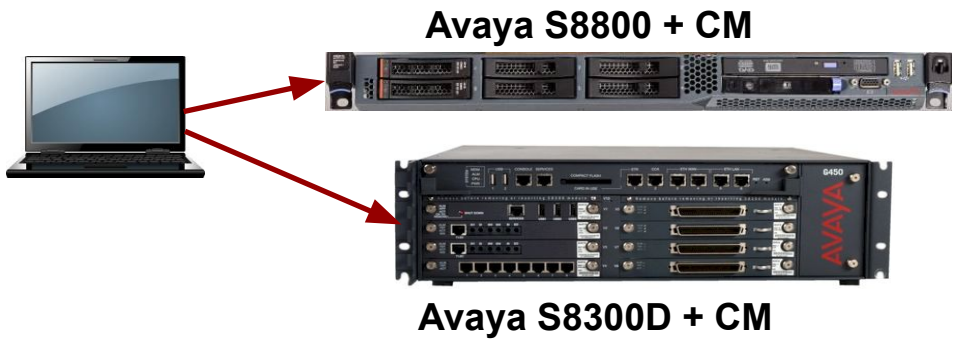
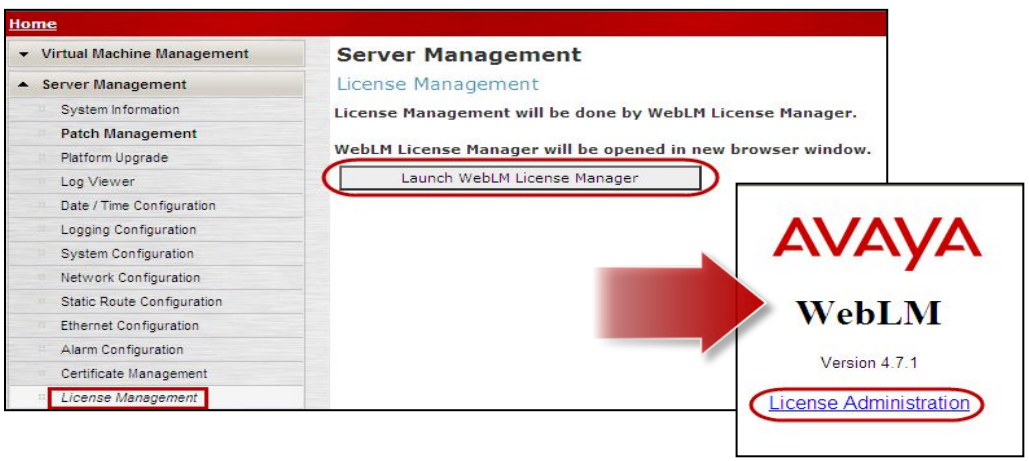
Install the License File

Install the License File

- Connect Service PC to Services port on server.



- Open a browser.
- Go to System Platform console (cdom) for Communication Manager.
- Select **Server Management > License Management**.
- Click **Launch WebLM License Manager**.
- Click **License Administration**.



Install the License File (continued)

The first time that you launch the Web License Manager you must log in with these credentials:

- User Name: **admin**
- Password: **weblmadmin**

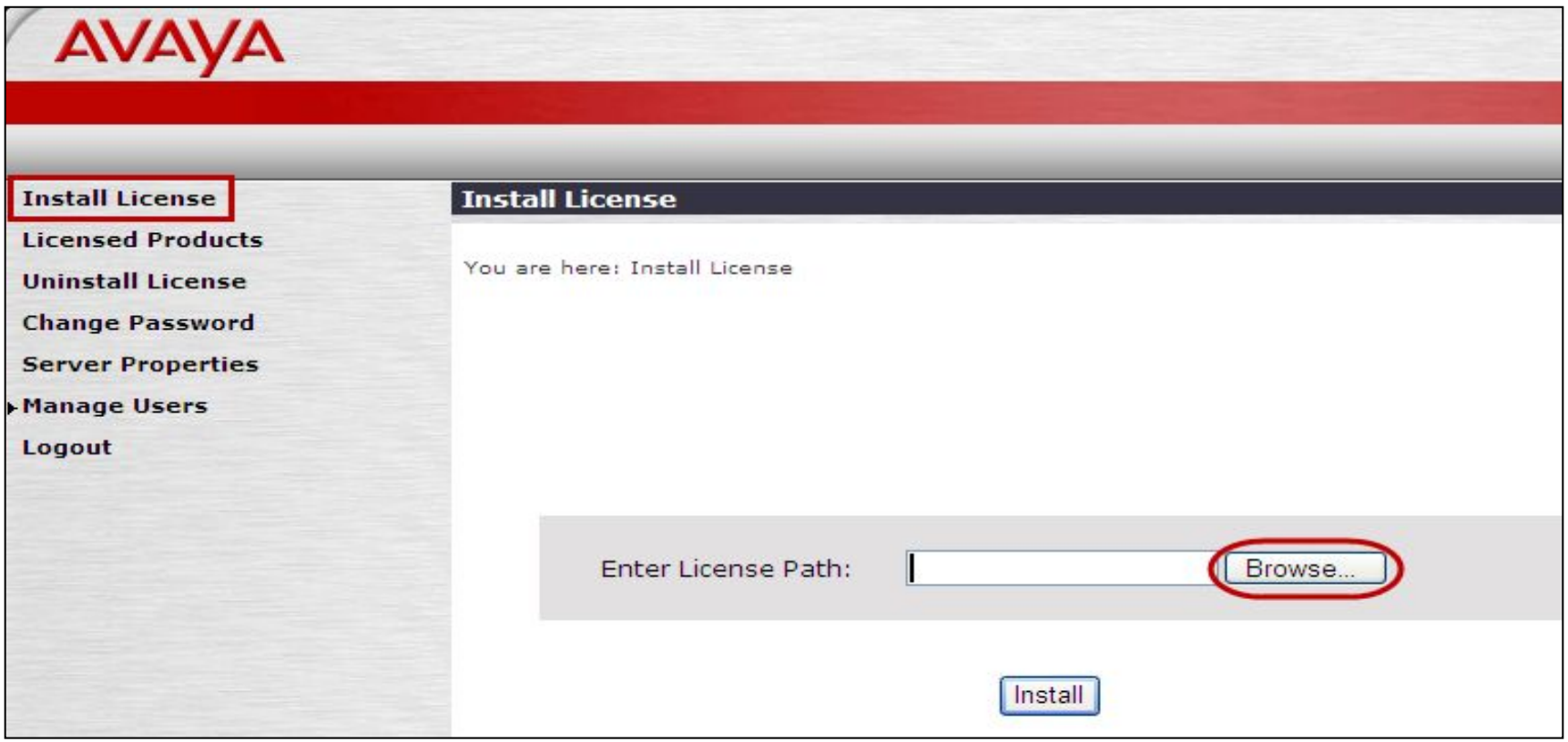
Then you must reset the WebLM password:

- Type the Current Password.
- Type the New Password .
- Re-type the new password.
- Click **Submit**.

Install the License File (continued)

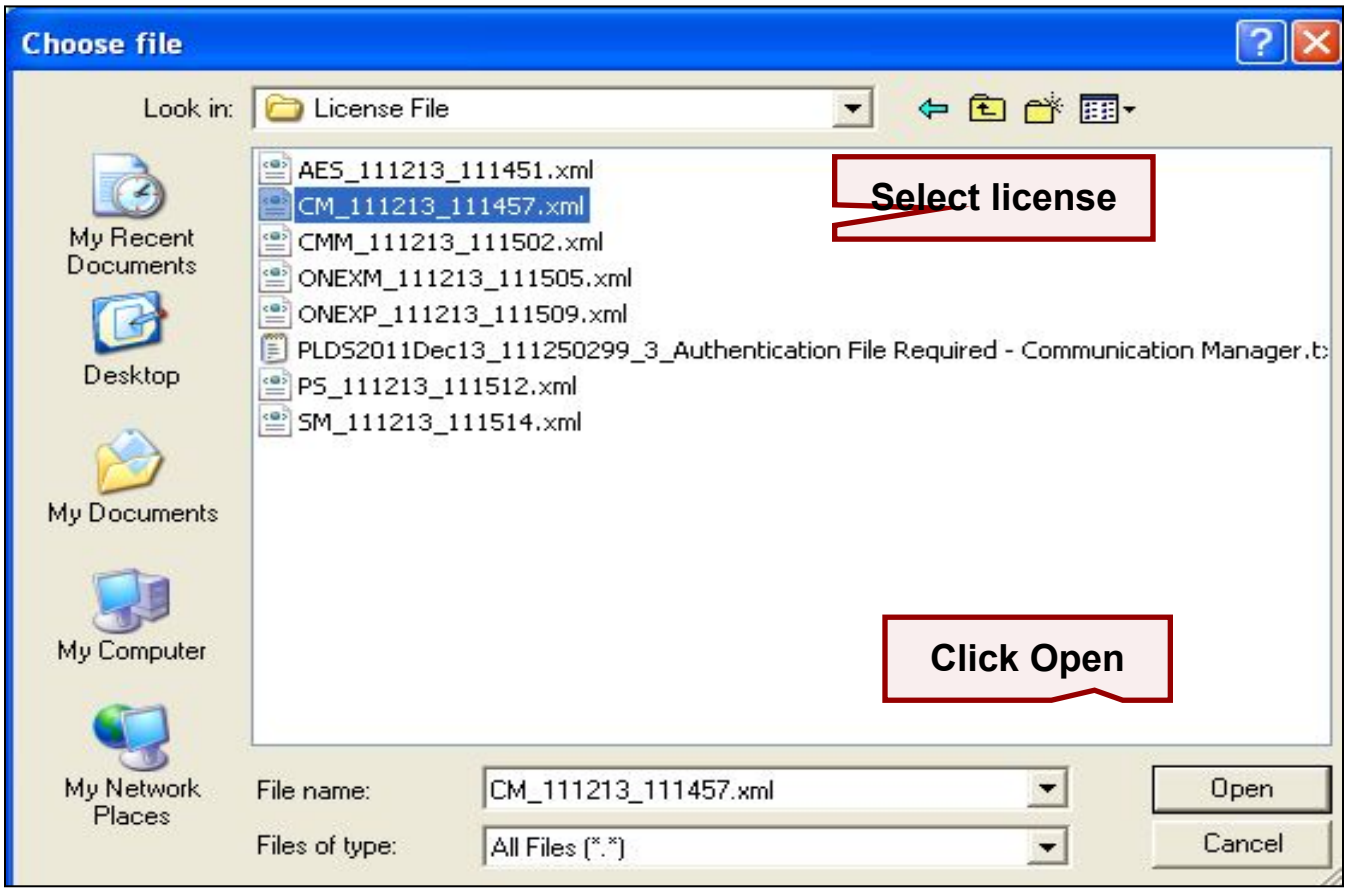
4 Select **Install License**.

4 **Browse** to the license file location on the Service PC.



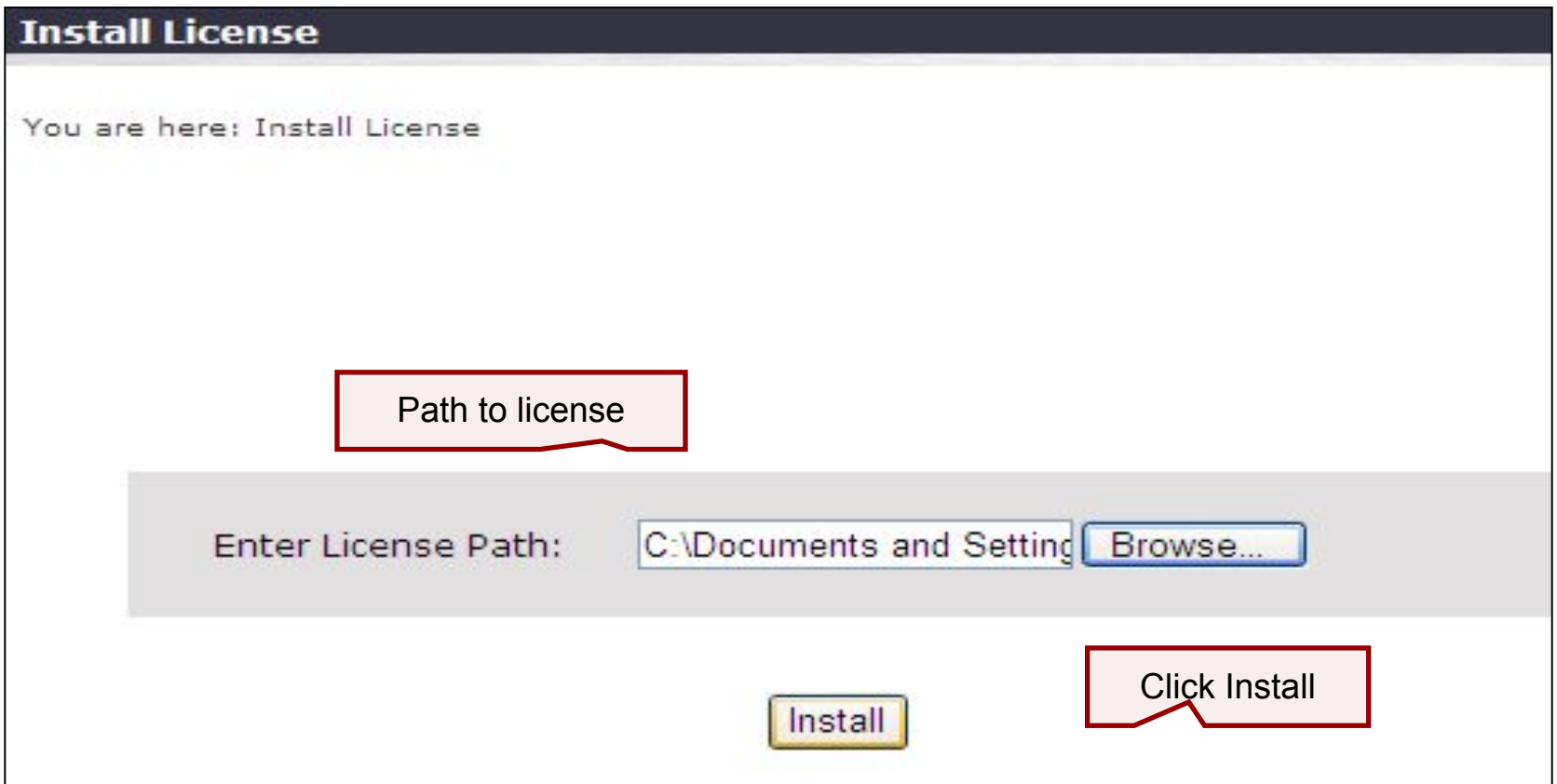
Install the License File (continued)

4 Select the license and click **Open**.



Install the License File (continued)

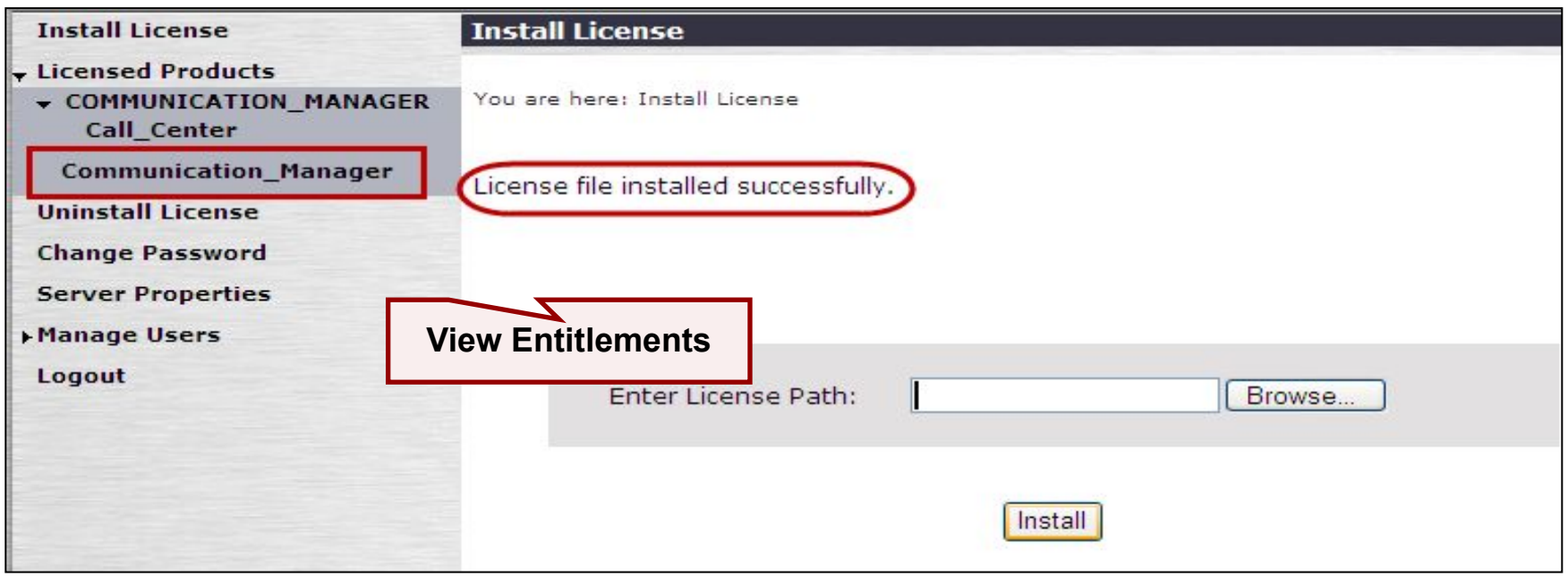
4 Click **Install**.



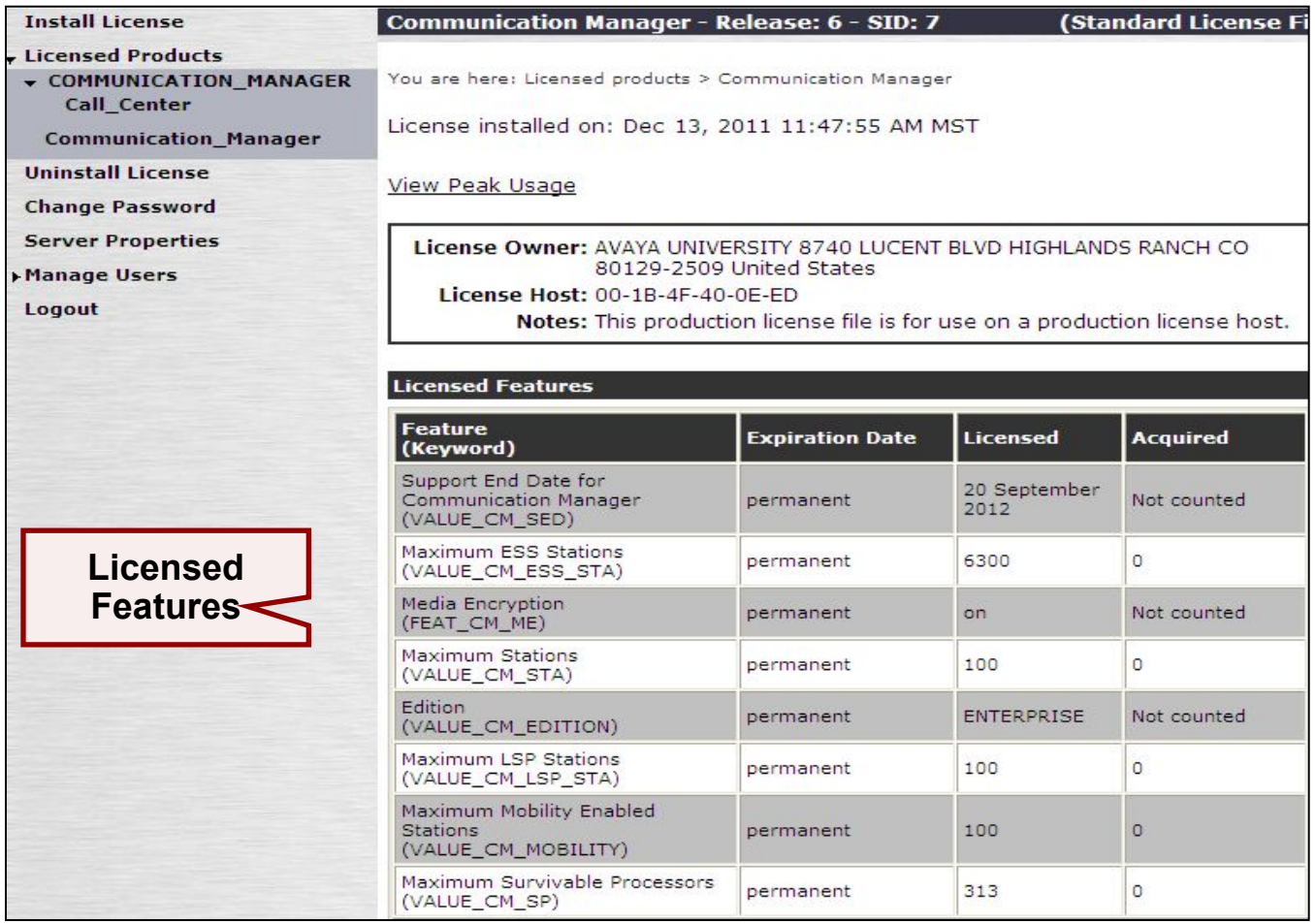
Install the License File (continued)

4 Ensure that the **Licensed Products** page shows the license was installed successfully.

4 Click on **Communication_Manager**.



Install the License File (continued)



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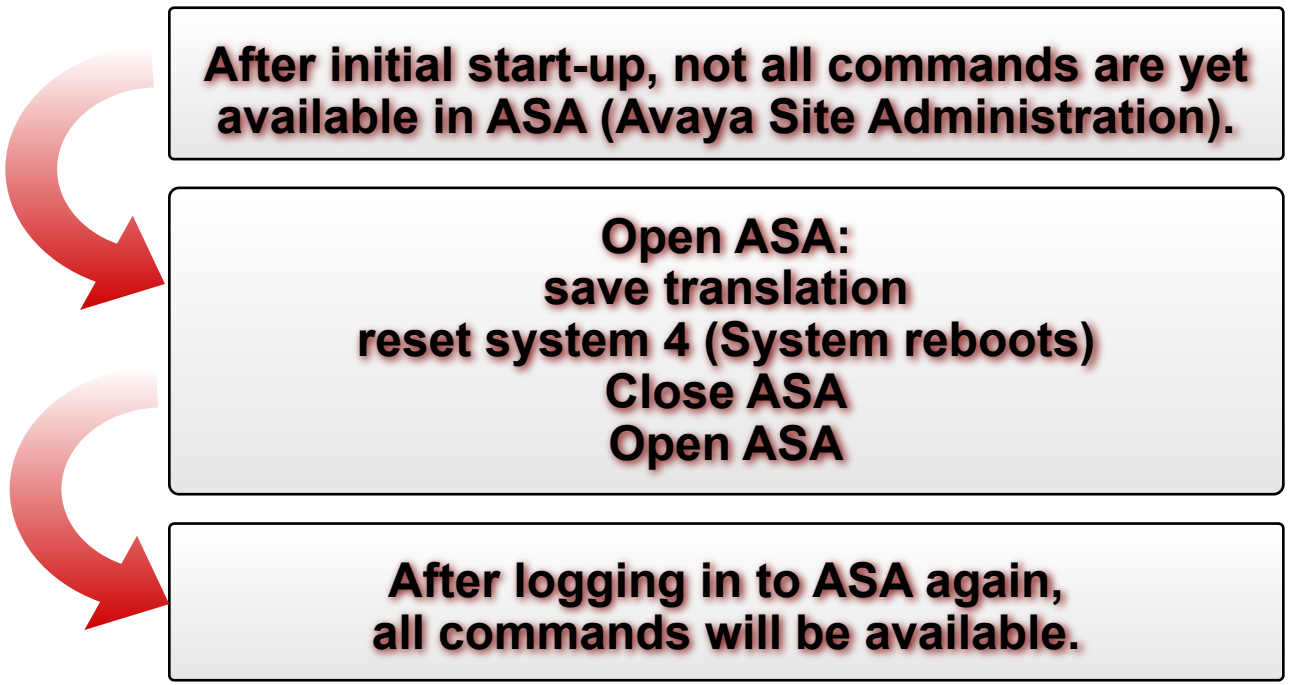
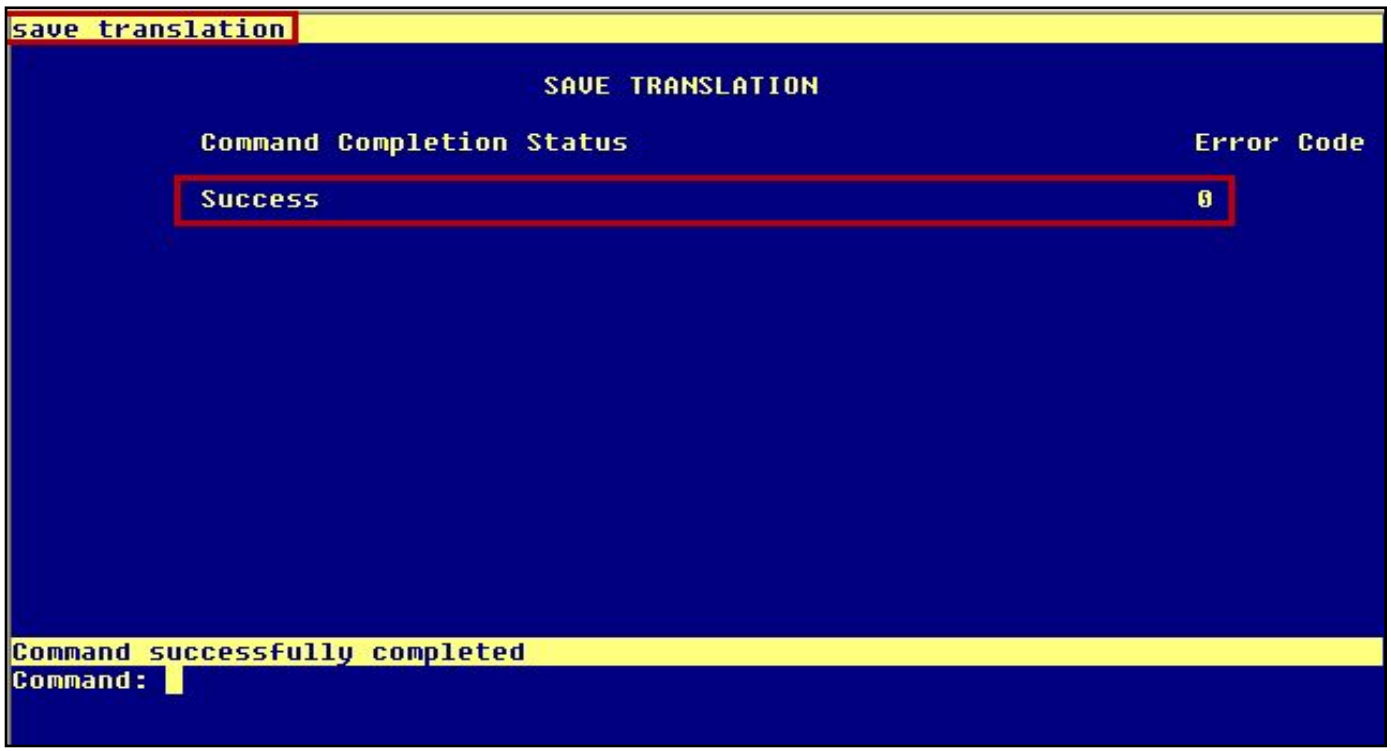
Complete Installation

Log in to Communication Manager



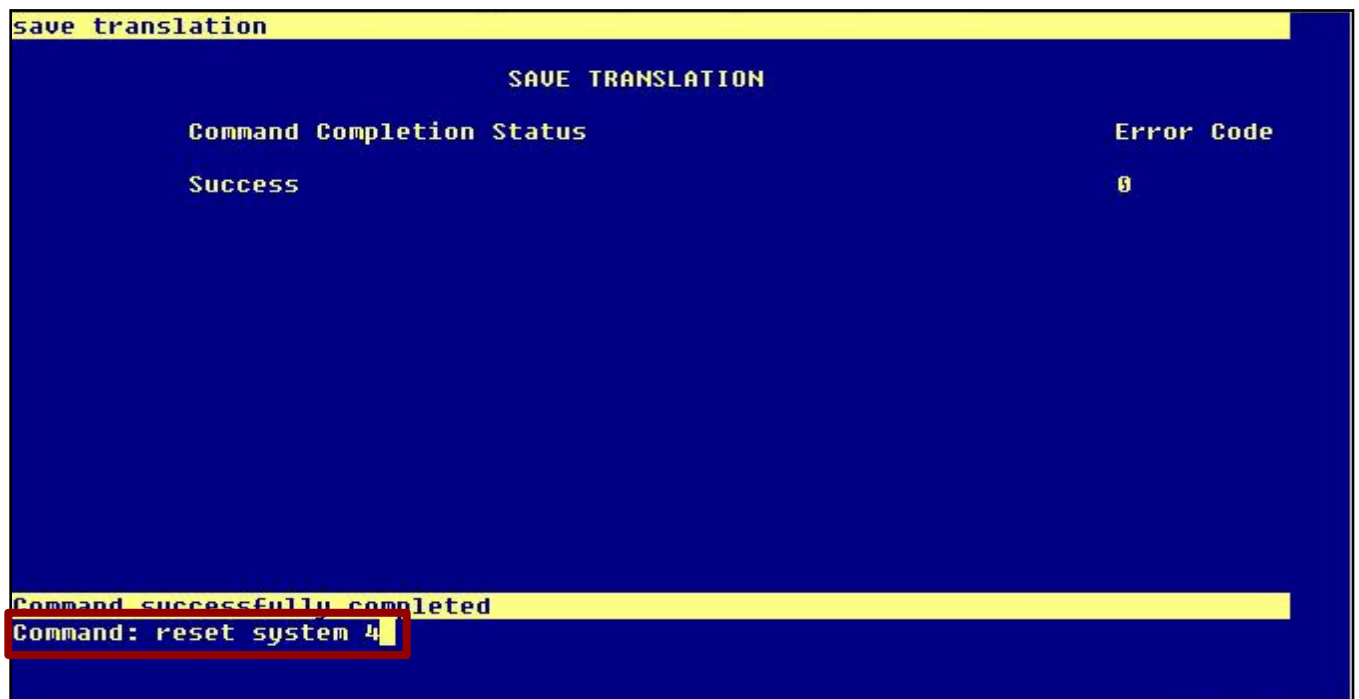
Save Communication Manager Translations

- Type **save translation** and press **Enter** to save changes to the system in case it loses power before the next backup.
- Ensure that the command completes successfully with an **Error Code** of **0**.



Reset System 4

- Type **reset system 4** and press **Enter** to commit the updates to the system.
- The command reboots the system, breaking the connection with ASA.
- After the system reboots, log back into Communication Manager.



AVAYA | LEARNING

Configure G430/G450 Gateway

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Log in to Gateway CLI

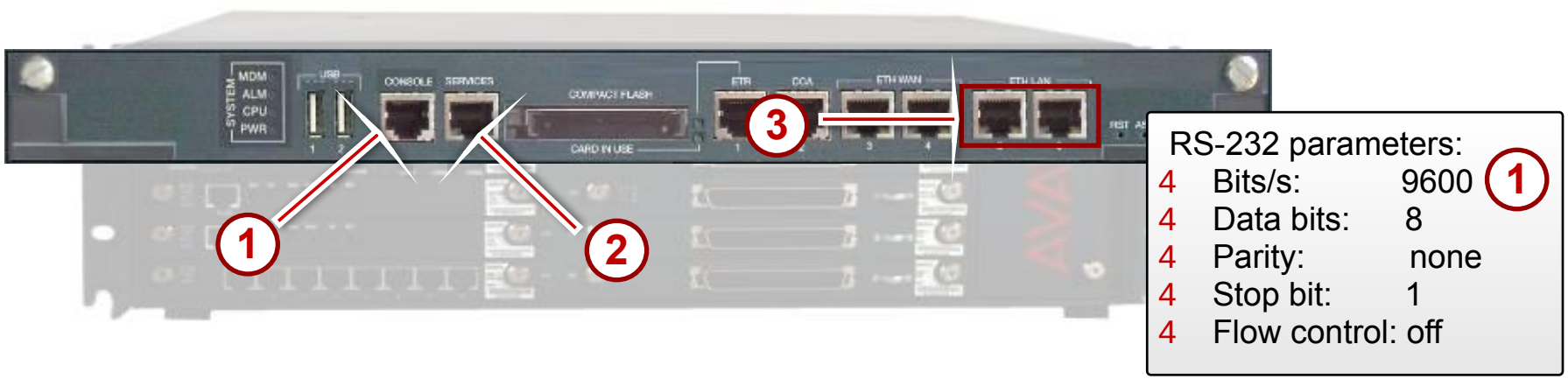
Log in to Gateway Command Line Interface (CLI)

You can connect to the G450 Command Line Interface (CLI) using:

1. HyperTerminal: CONSOLE socket with RS-232 cable, used for the initial configuration of the G450 and for subsequent modifications.
2. Ethernet: SSH session on Service IP address (192.11.13.6/255.255.255.252) of the G450, used for the initial configuration of the G450 and for subsequent modifications.
3. Ethernet: SSH session on IP address (PMI) of the G450, used for subsequent modifications if access to corporate network is possible.

4 For more information on the servers, see the following document:

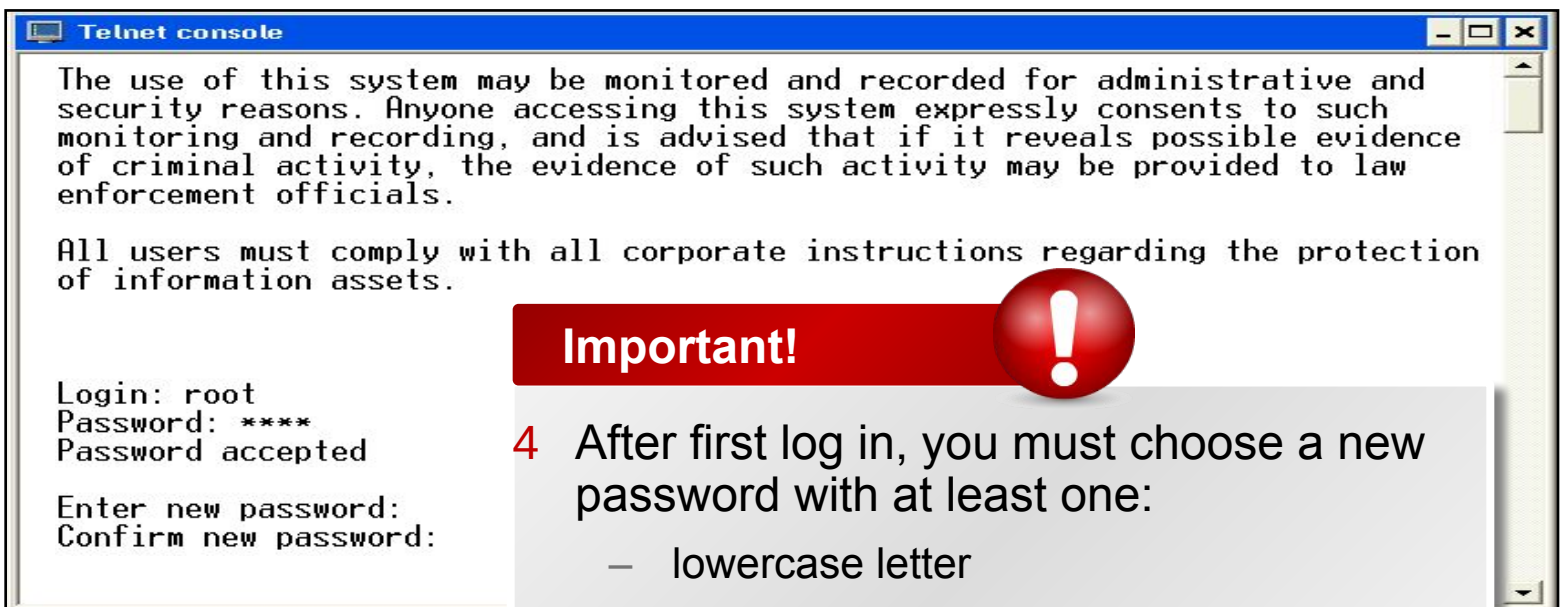
- *Administration for the Avaya G450 Media Gateway*



Log in to the Gateway CLI (continued)

4 Log in to the gateway using HyperTerminal, PuTTY, or other connection software:

- User: **root**
- Password (**vILT only**): **Passw0rd1** (case-sensitive)



Important!

4 After first log in, you must choose a new password with at least one:

- lowercase letter
- digit

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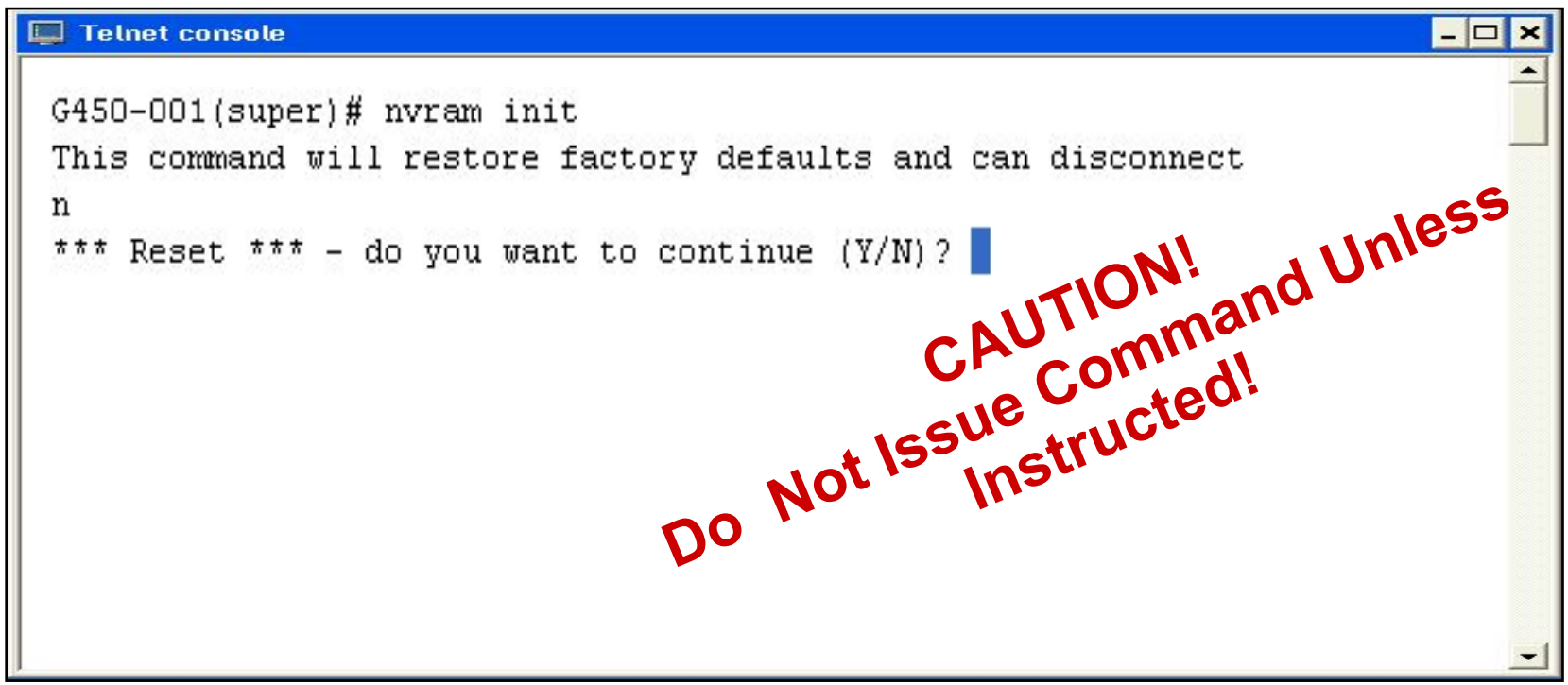
Gateway Configuration

Restore Factory Defaults

4 At the gateway CLI type **nvram init** and press **Enter**.
This command deletes all data and returns to factory default settings.

4 Type **Y** at the prompt to continue.



Manual vs. Automatic Gateway Configuration

Two types of gateway configuration:

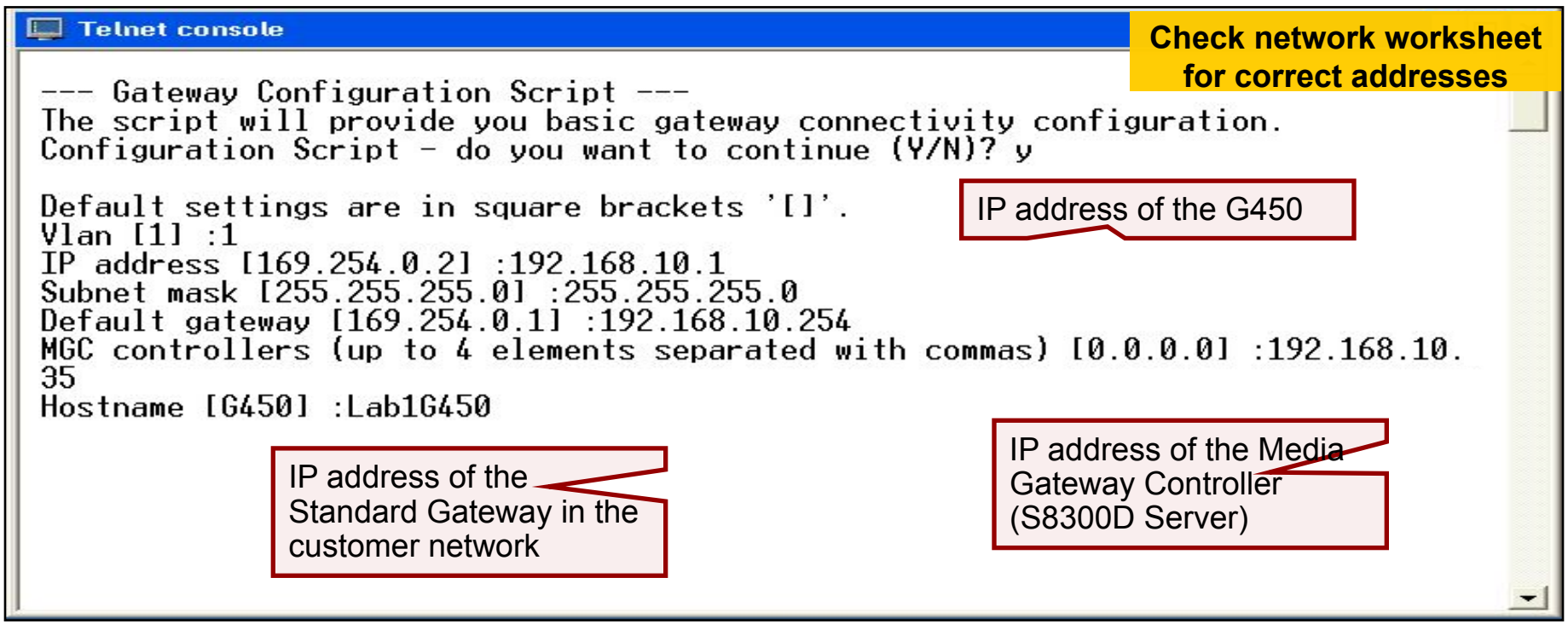
- Manual – use when repurposing or reconfiguring a gateway
- Automatic – use when gateway is new

Manual Gateway Configuration

- Execute the following commands at the gateway command line interface (CLI):
  - **interface vlan 1 x.x.x.x y.y.y.y,** where “x” is the IP address and “y” is the subnet mask. NOTE THE SPACE!
  - **set mgc list z.z.z.z.**, where “z” is the Processor Ethernet (PE) or CLAN IP address supplying control to the gateway
  - **copy run start** copies the running configuration file to non-volatile memory (NVRAM)
  - **reset** command resets the gateway and reads the new configuration file

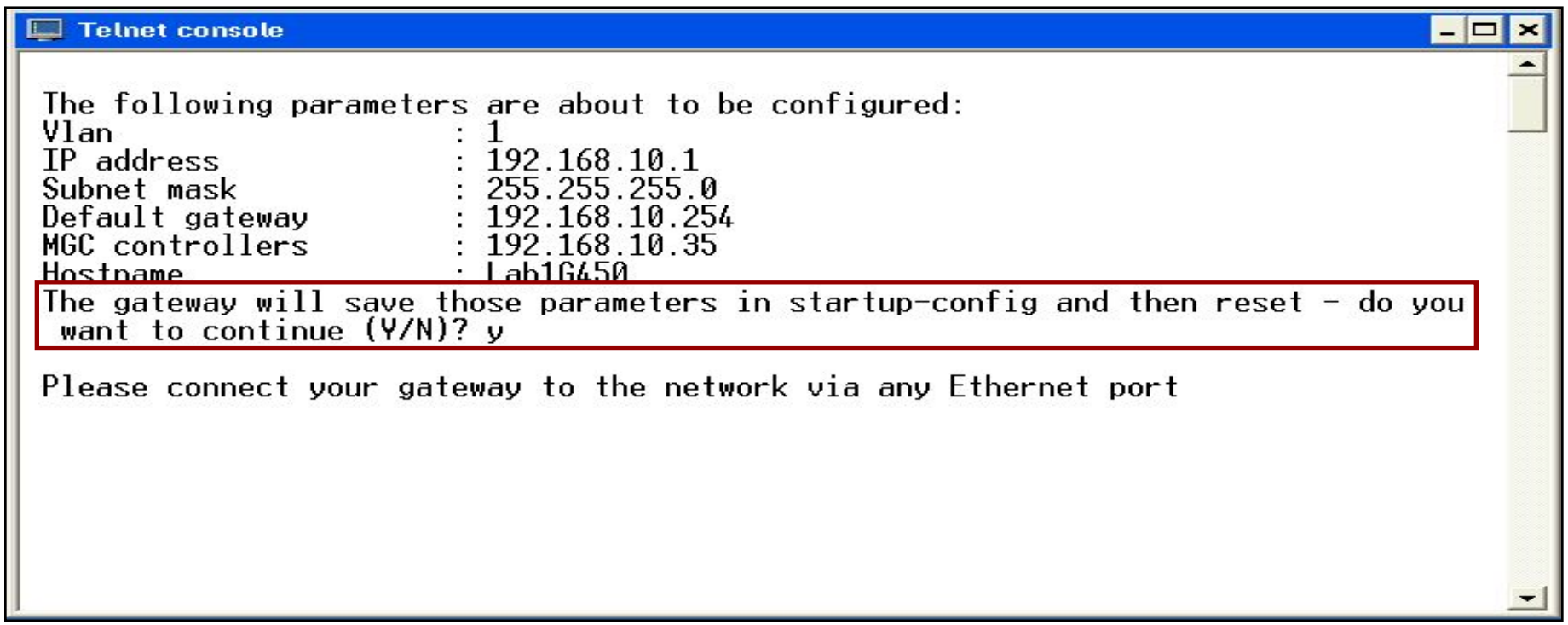
Automatic Gateway Configuration Script

- After you re-login and enter the password, the Gateway Configuration Script is automatically launched.
- For the lab exercise, use the *ATI02348IEN-VEN -Lab Logins, Hostnames, and IP Addresses* document for the IP addresses.



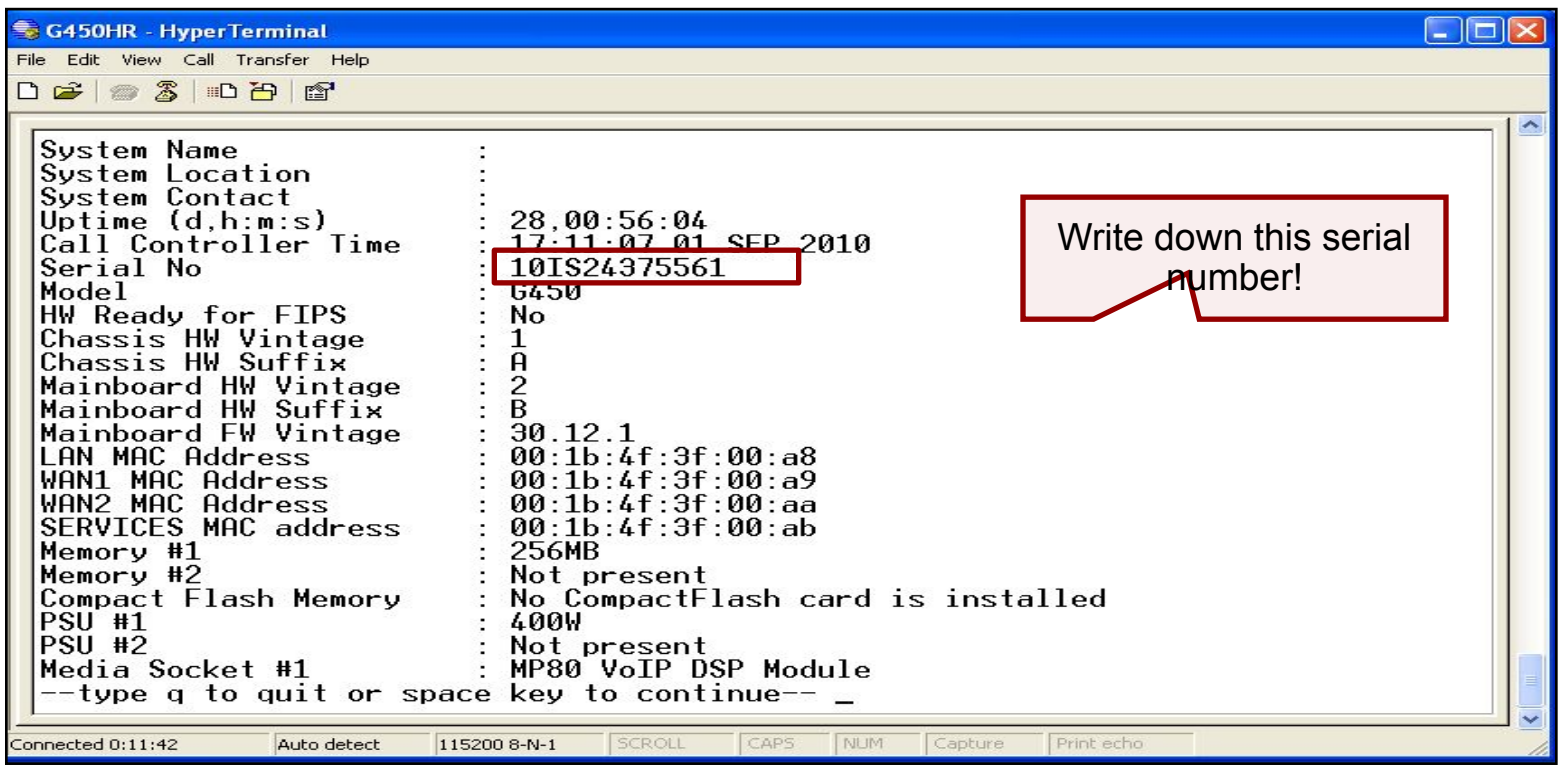
Automatic Gateway Configuration Script (continued)

- When the script has completed, save the new configuration by typing y at the prompt.
- The Gateway automatically resets.



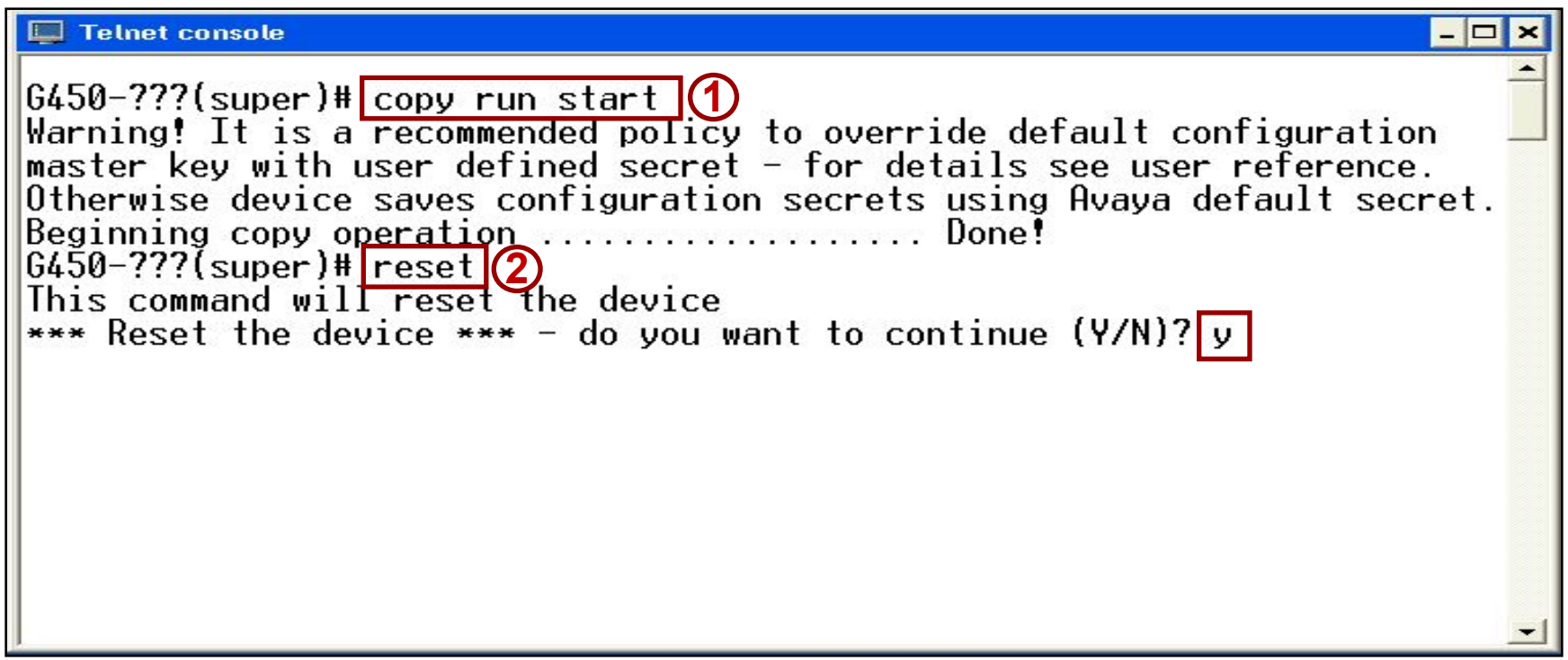
Review Gateway Administration

- Use the **show system** command to review the gateway administration.
- Write down the serial number of the gateway—it is required for Communication Manager administration.



Save Gateway Administration

1. Copy the configuration from the volatile to the non-volatile memory of the G450 gateway using the **copy run start** command at the gateway CLI.
2. **Reset** the G450 gateway so that IP address is adopted.



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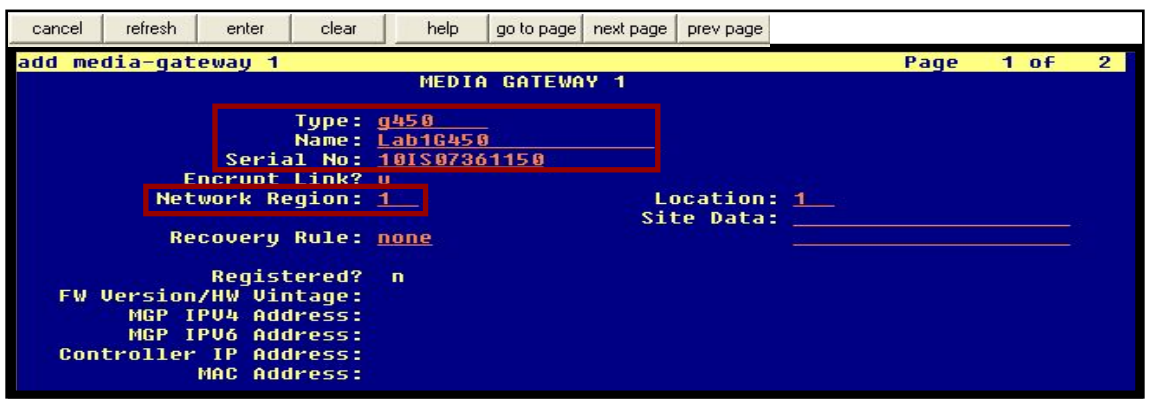
Add the Gateway to CM Administration

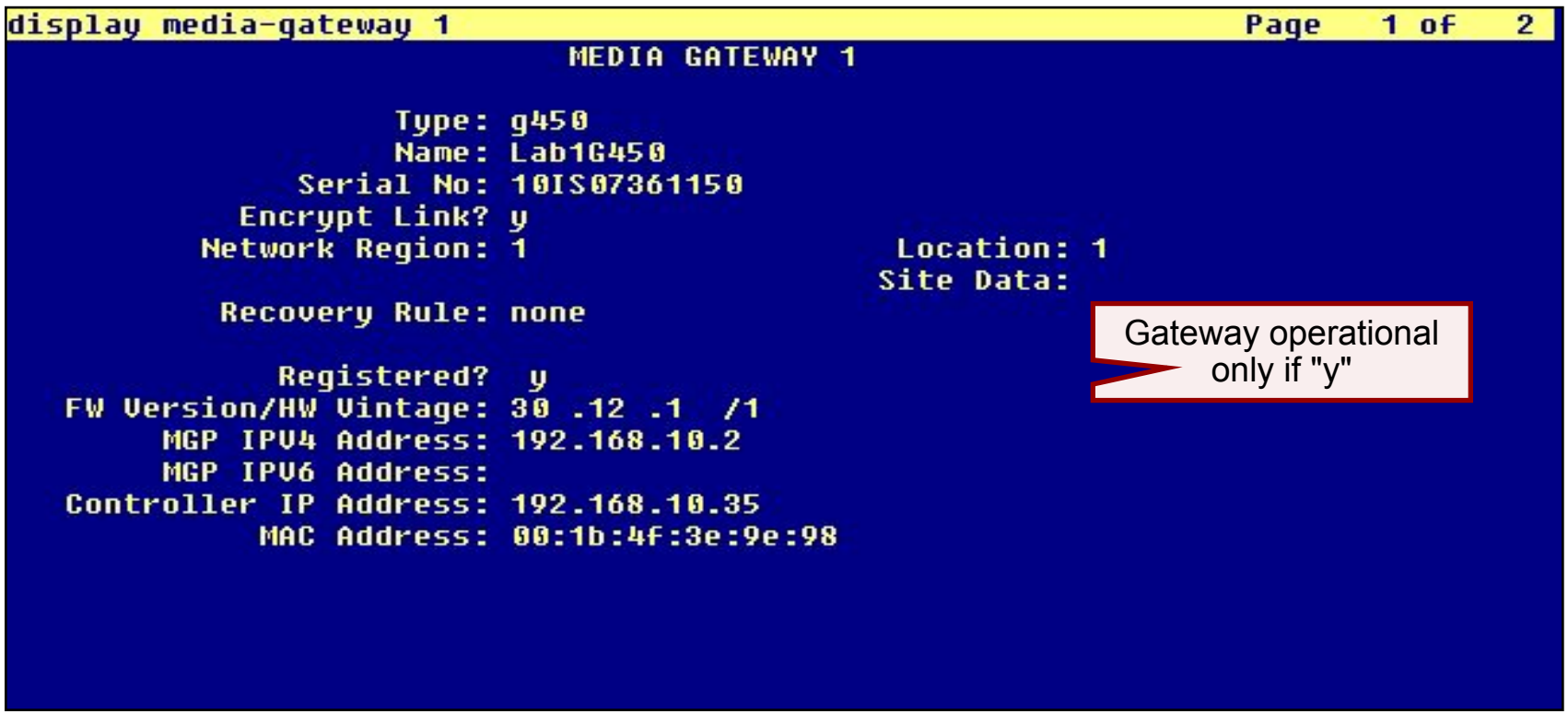
Add Gateway to CM Administration

- At the CM SAT type **add media-gateway 1** and press **Enter**.
- Set the **Type** field to **G450**.
- Type a descriptive name in the **Name** field.
- Type the gateway serial number (**show system**) in the **Serial No**. field (serial number obtained from gateway CLI using **show system** command),
- Set **Network Region** field to **1**.
- Optional: Describe the physical location of the gateway in the **Site Data** field. This helps Avaya Services dispatch a technician to the correct location.
- Save the changes.



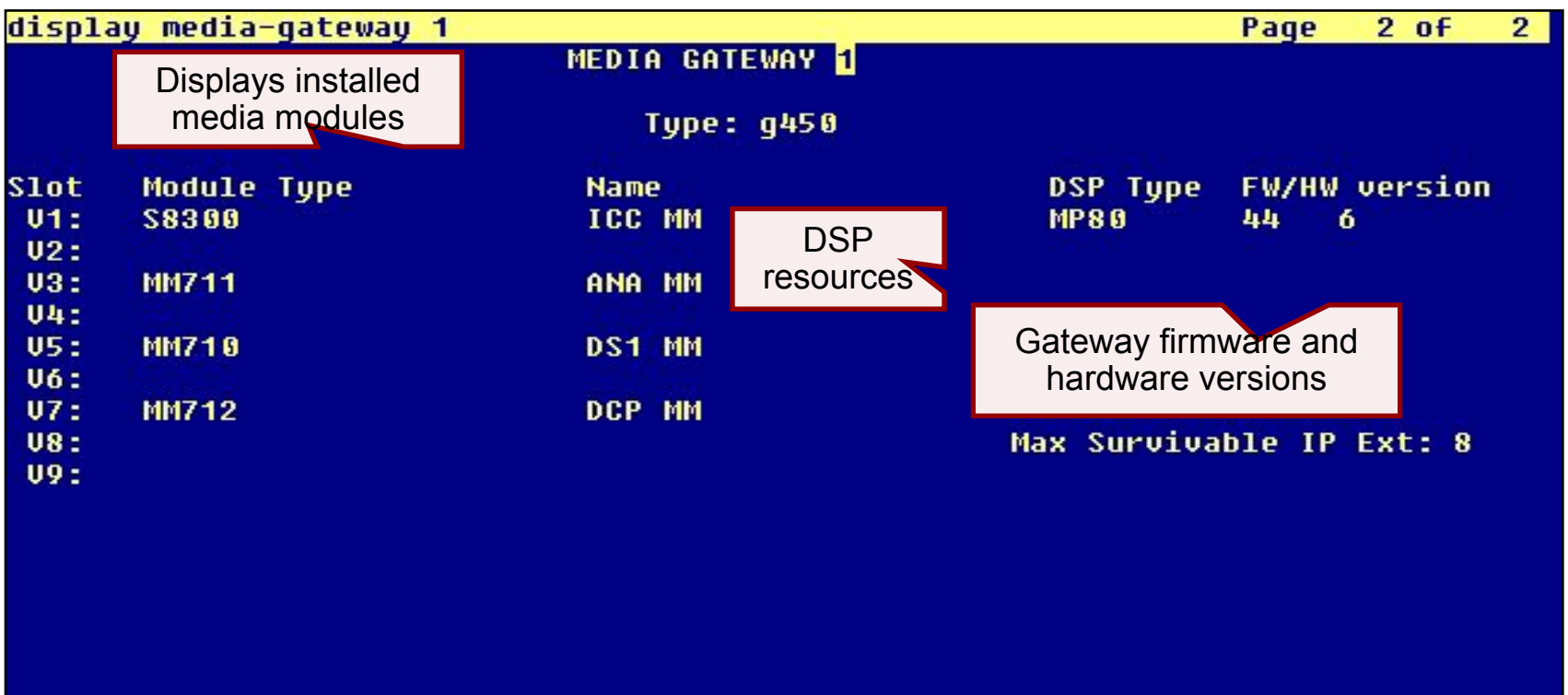
G450 – Display Media Gateway 1 – Page 1

- Type **display media-gateway 1** to verify the gateway administration.
- Ensure that the **Registered** field is y.



G450 – Display Media Gateway 1 – Page 2

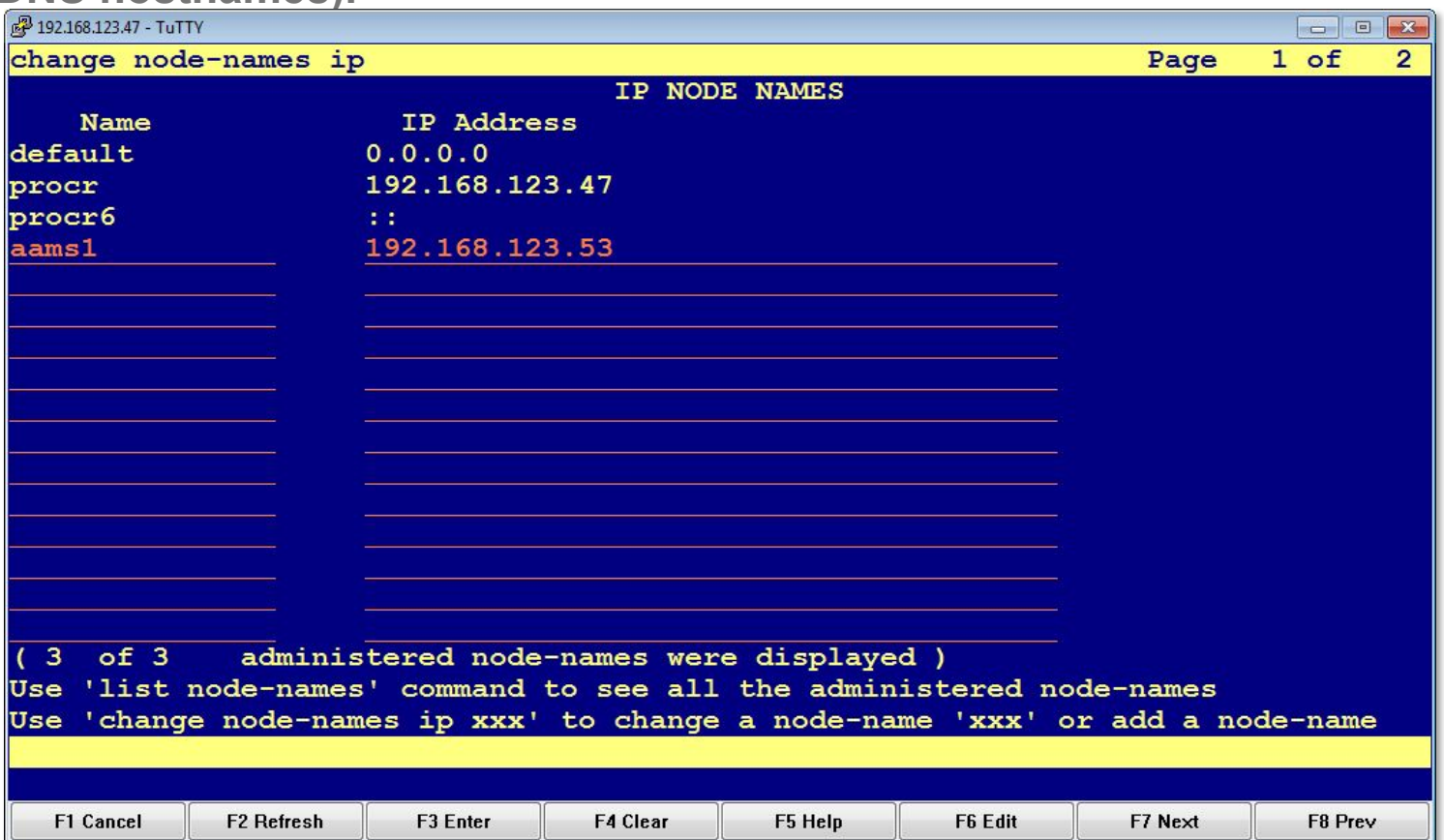
- Go to Page 2.
- Ensure that an Avaya server is in slot V1 and that the report shows the media module/slot assignments.



Configuring Communication Manager for AAMS connectivity

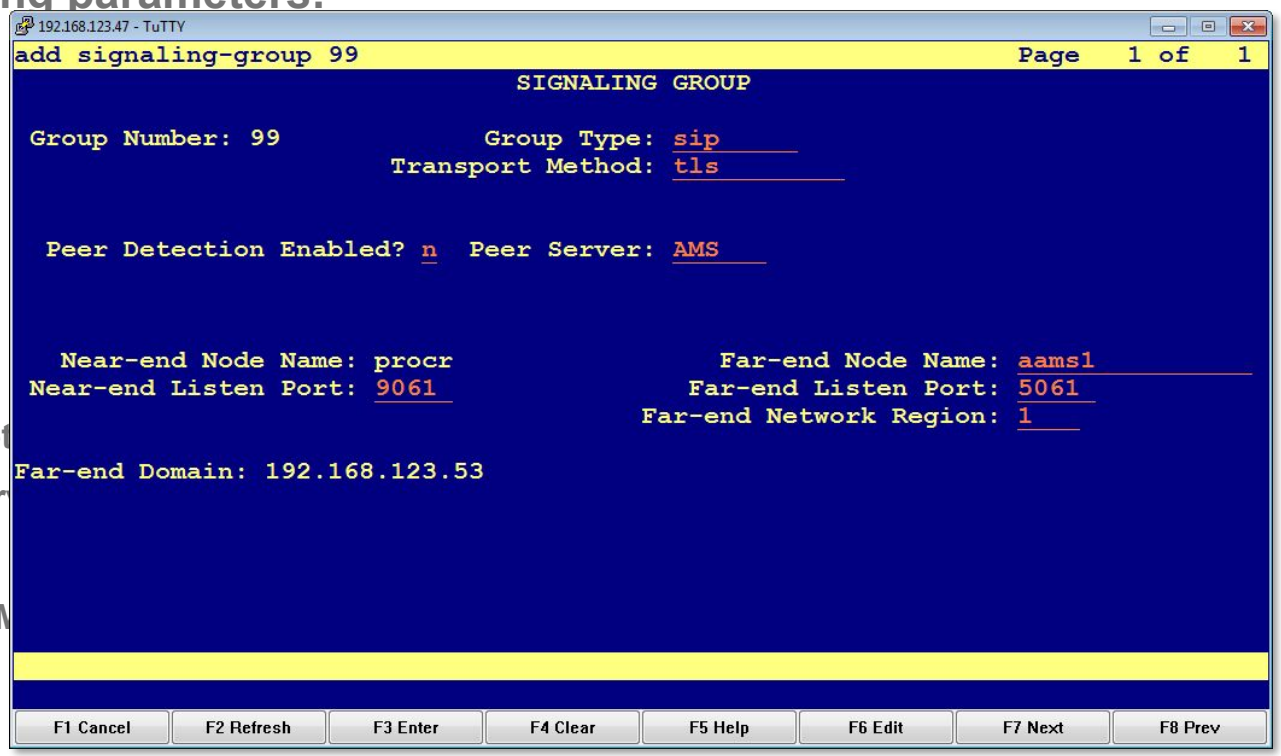
Configuring Communication Manager for AAMS connectivity

- To configure Communication Manager for AAMS resources usage we need to add AAMS IP address to Node Names list of CM. This names are for future references in CM configuration only and may be assigned freely (these are not real DNS hostnames).



Configuring Communication Manager for AAMS connectivity

- Next we need to add a Signaling Group to define parameters of signaling between CM and AAMS servers. Use “add signaling-group 99” command to add a new one and specify following parameters:



Group Type: sip Transport Met

Detection Enabled: n Peer Ser

Near-end Listen Port: 9061

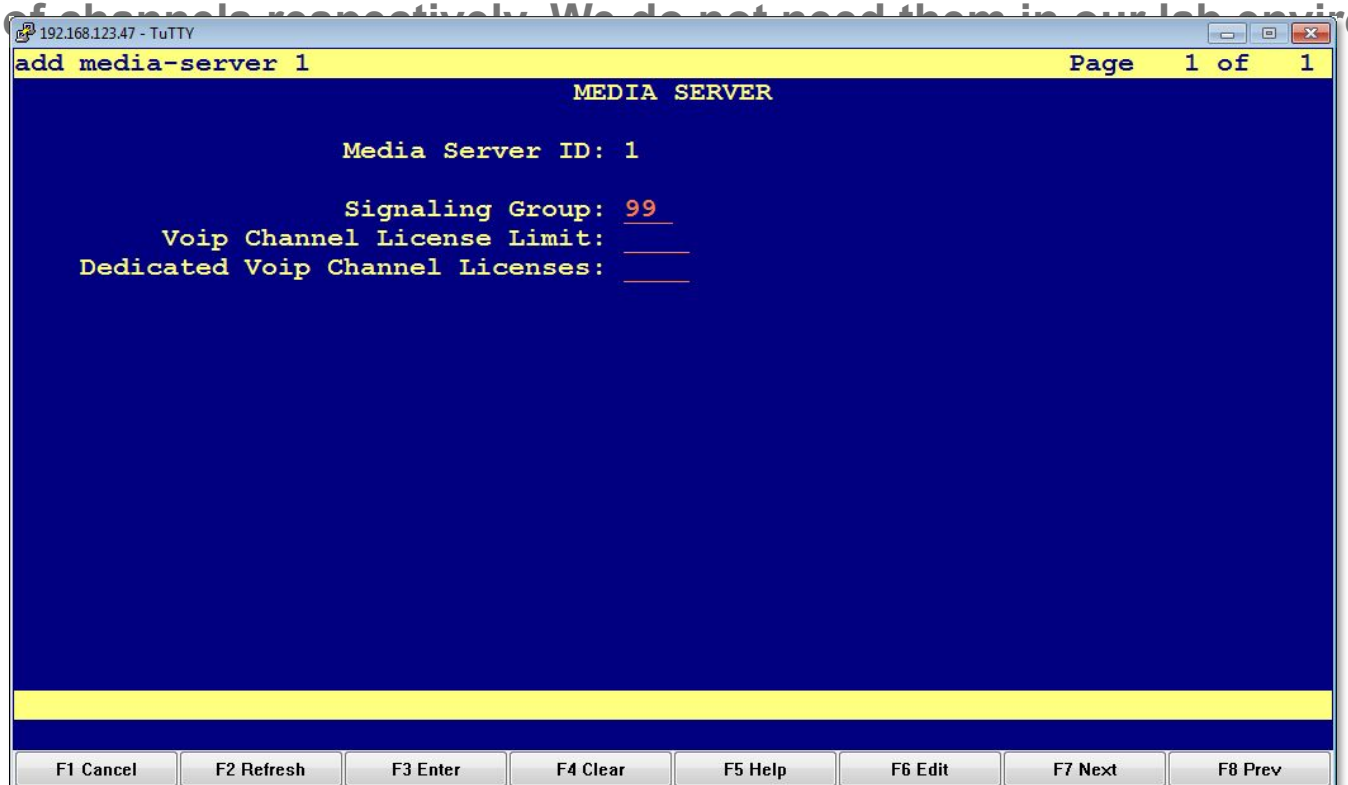
Far-end Node Name: Your AAM

Far-end Listen Port: 5061

Far-end Network Region: 1

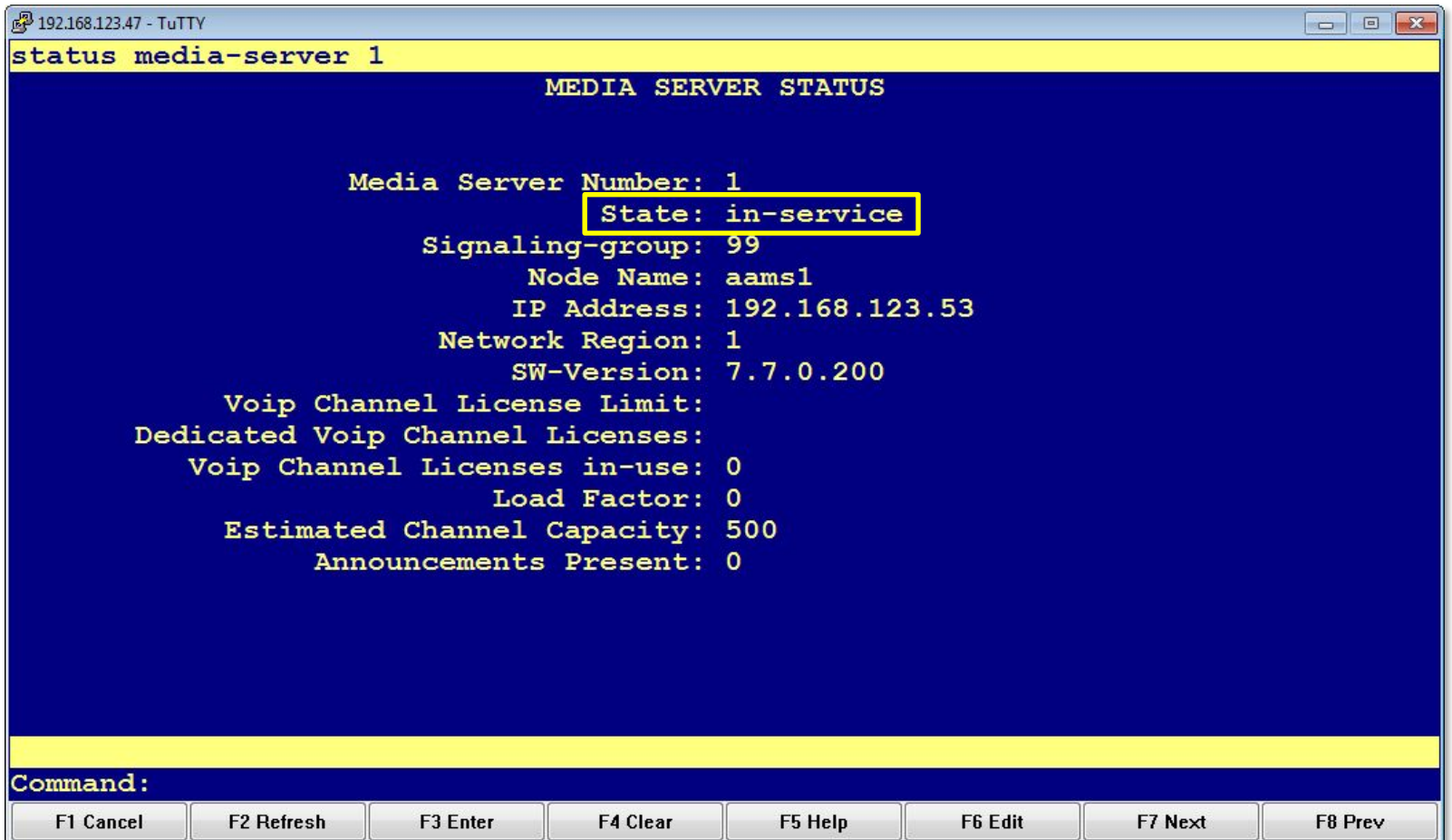
Configuring Communication Manager for AAMS connectivity

- And now we can add a media server to CM configuration. Use “add media-server 1” (or use can always use “next” instead of a particular number) to add a new one. Type Signaling Group (99) number in corresponding field. Fields “Voip Channel License Limit” and “Dedicated Voip Channel Licenses” can be used in production environment to limit the number of resources and to reserve certain amount of channels respectively. We do not need them in our lab environment.



Configuring Communication Manager for AAMS connectivity

- After adding the Media Server you can check it's status by issuing the "status media-server XXX" command, where XXX is a sequential number of your media server. Health state must be "in-service". Now CM has access to AAMS resources.



AVAYA | LEARNING

Configure IPSI Circuit Pack

Configure IPSI–Overview

Overview - TN2312BP IP Server Interface (IPSI)

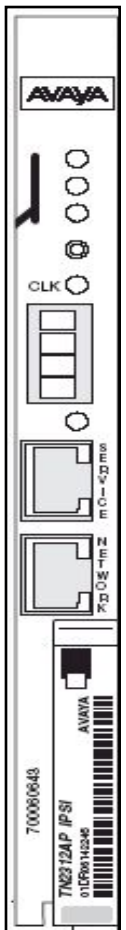
- When a circuit pack wants to send a message to the CM server (such as “a telephone just went off-hook”), it puts a Control Channel Message Sequence (CCMS) message onto the port network’s signaling bus.
- The IPSI takes the messages from the signaling bus, puts them into an Ethernet frame, and sends the frame across the LAN to the Communication Manager server for processing.
- After processing, the CM server sends its messages to the IPSI, which takes the messages out of the frames and puts them onto the signaling bus.
- These control messages direct the actions of all circuit packs within that port network.

Configure IPSI–Overview (continued)

Overview - TN2312BP IP Server Interface (IPSI)

4 In addition to sending control messages across the IP network, the IPSI also provides many of the services required for a port network, such as:

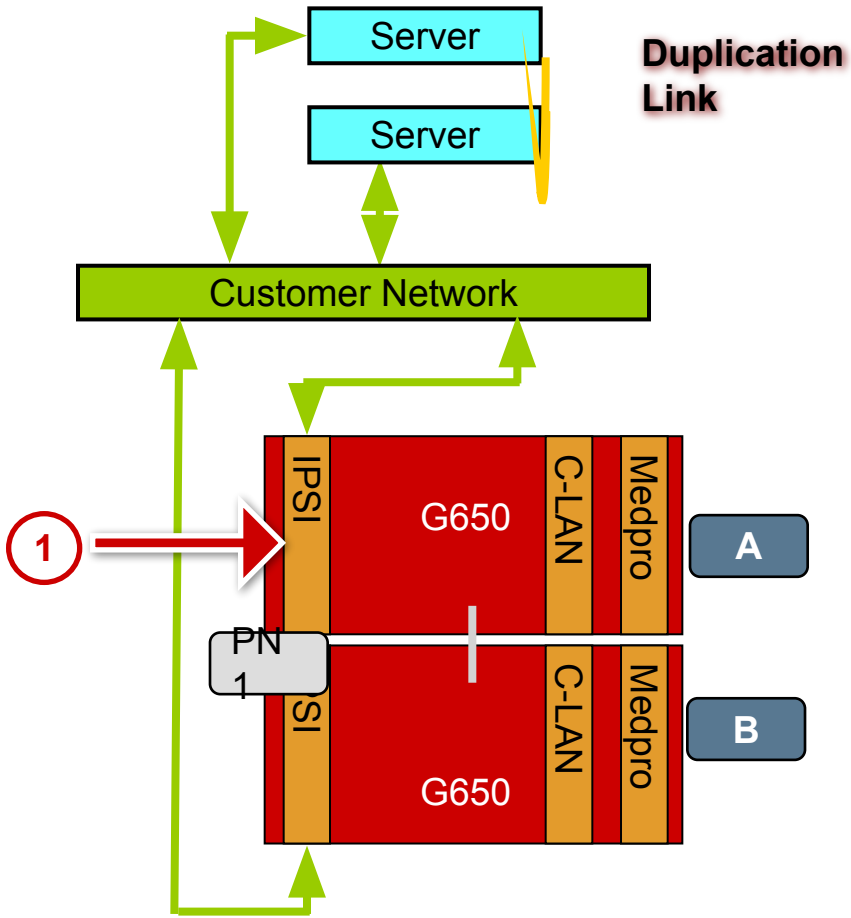
- Tone generation
- Tone detection
- Call classification
- Clock generation (equivalent to TN2182 and TN744)
- Packet bus
- Environmental maintenance
- Emergency transfer
- Customer-provided alarm device control



Configure IPSI–Duplication

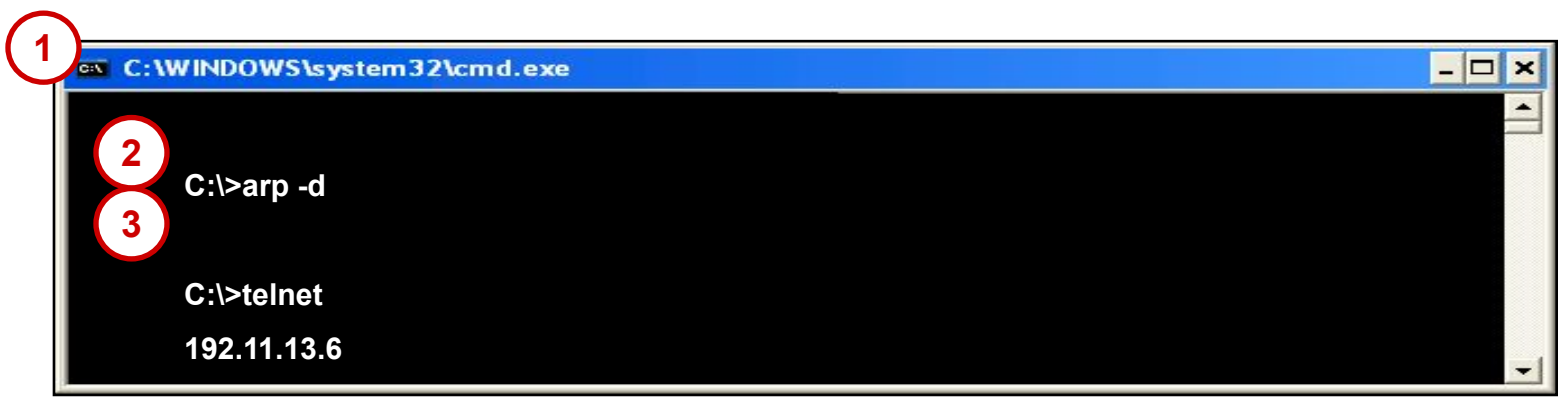
- For High and Critical Reliability
- IPSI 1 = Slot 01A01
- IPSI 2 (redundant) = Slot 01B01
- Short service interruption can occur if the active IPSI fails (if TDM bus involved)
- Yellow LED on IPSI on = active IPSI
- Active/standby changeover (without service interruption) possible with this ASA command:

set ipserver-interface <*slot of new active IPSI*>



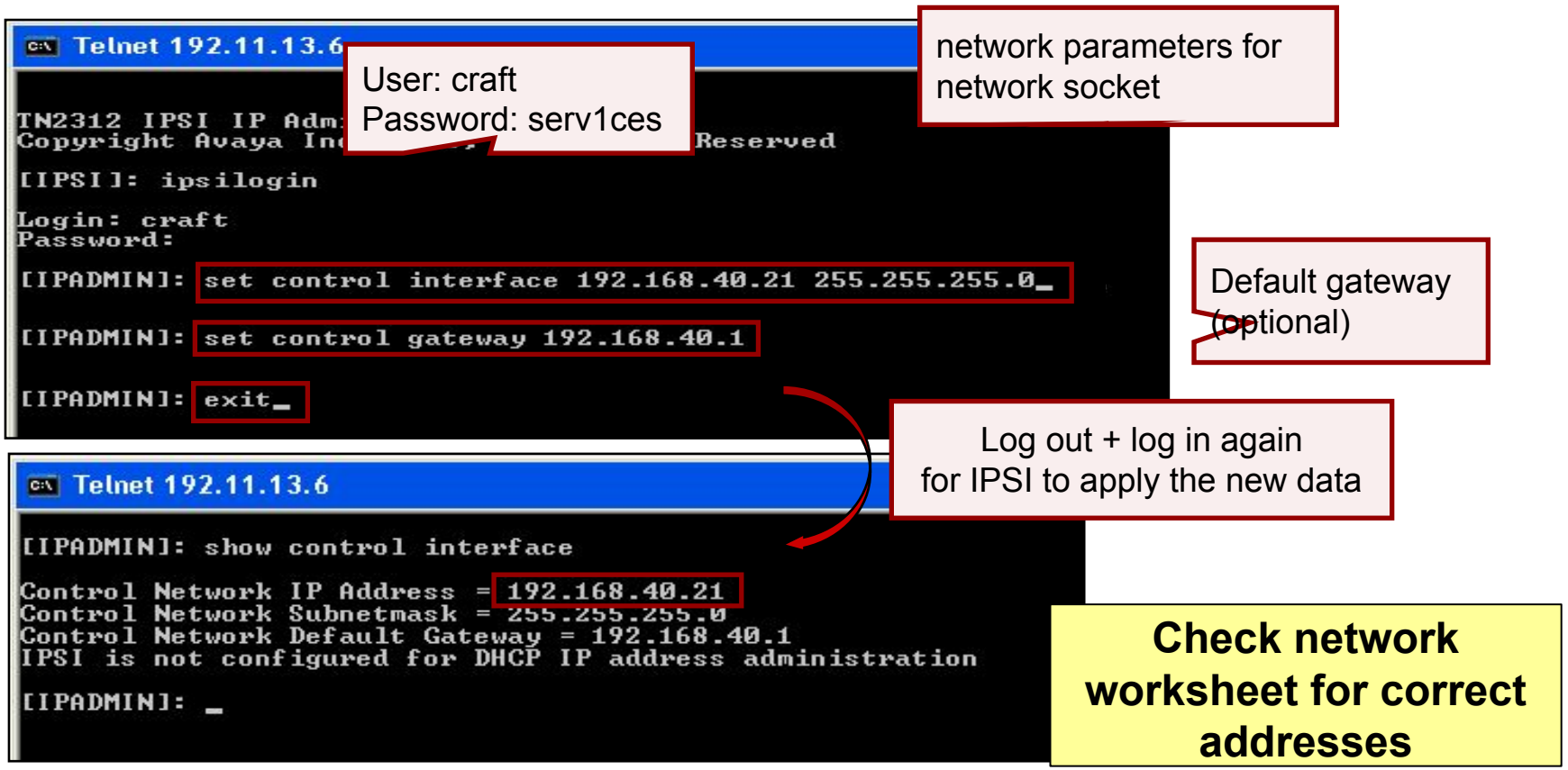
Configure IPSI–Access

1. Open a command line interface on the Service PC (**Start > Run > cmd**).
2. Type **arp –d** and press **Enter** to delete the cache memory from the Service PC. This is needed if the same IP address, but a different MAC address, was worked on the server shortly before attempting this connection.
3. Type **telnet <*IPSIboardIPaddress*>** and press **Enter** to start a Telnet session to the IPSI circuit pack.

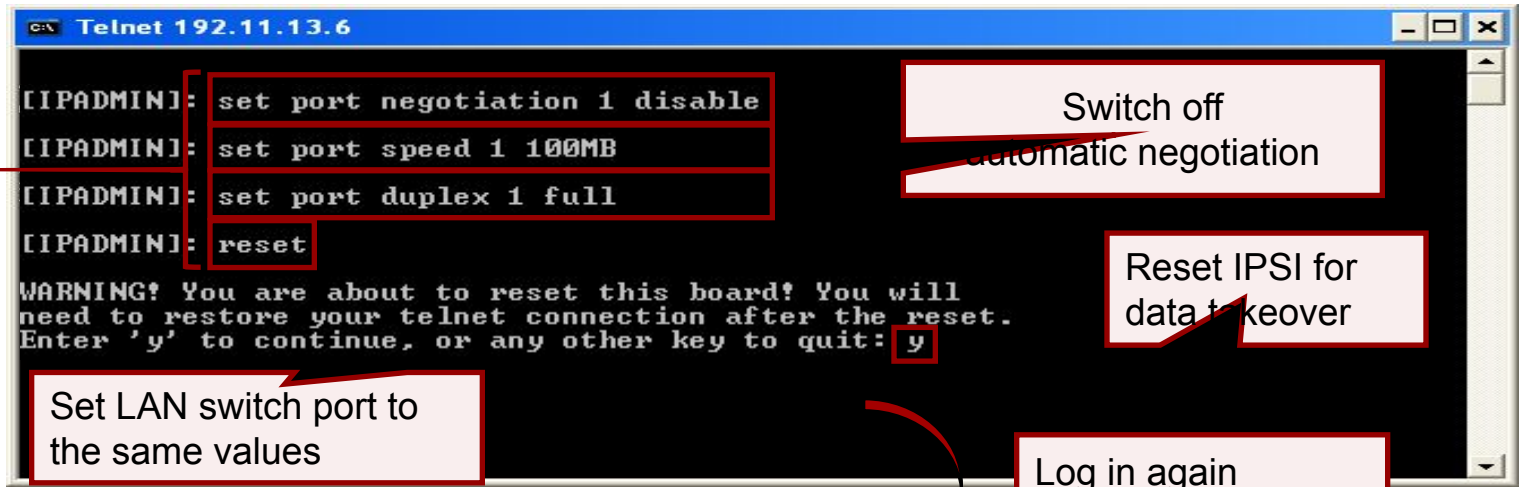


Configure IPSI–Administration

4 Commands must be entered in the full syntax as shown with no abbreviations nor shortcuts.



Configure IPSI–Administration (continued)

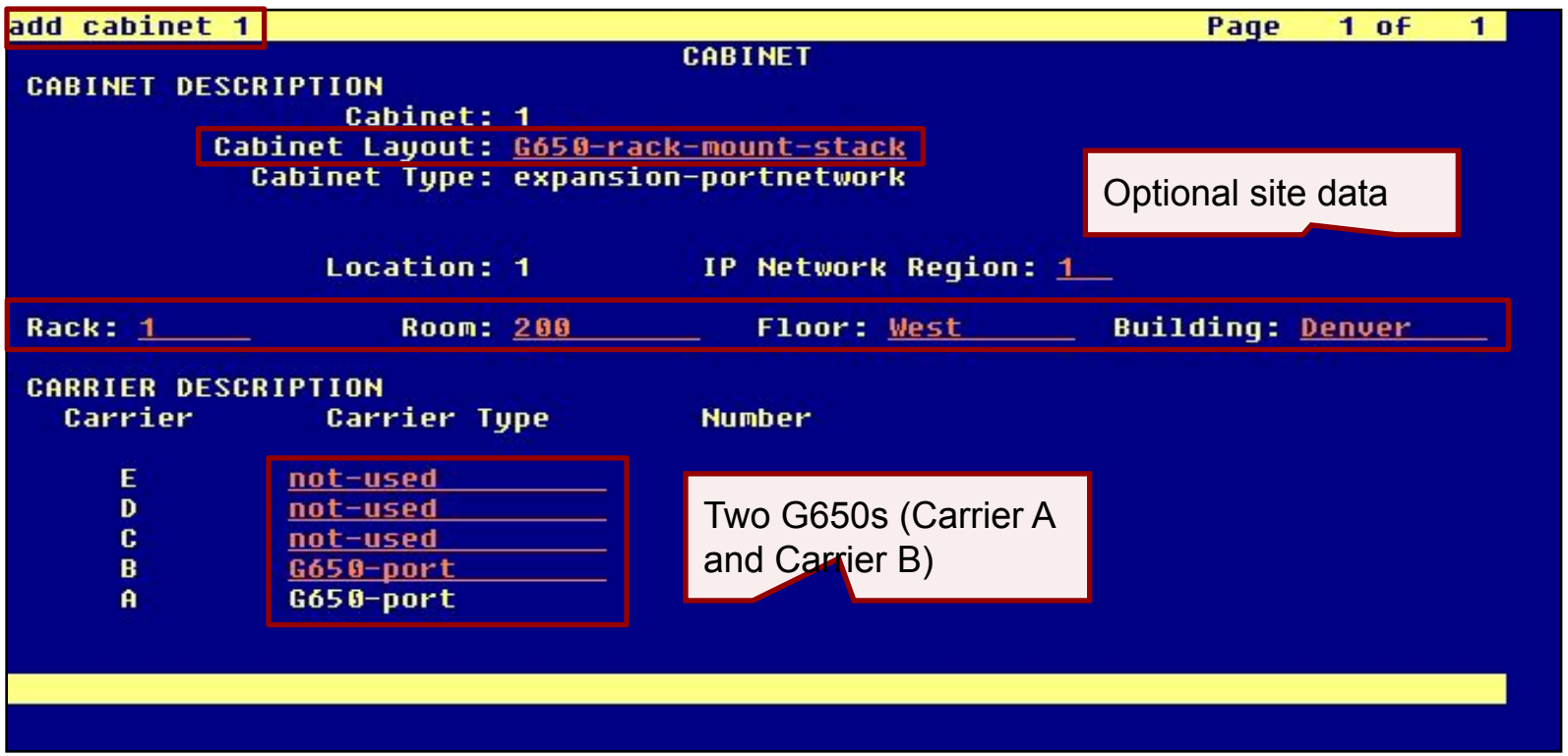


AVAYA | LEARNING

G650 Cabinet and Circuit Pack Administration in CM

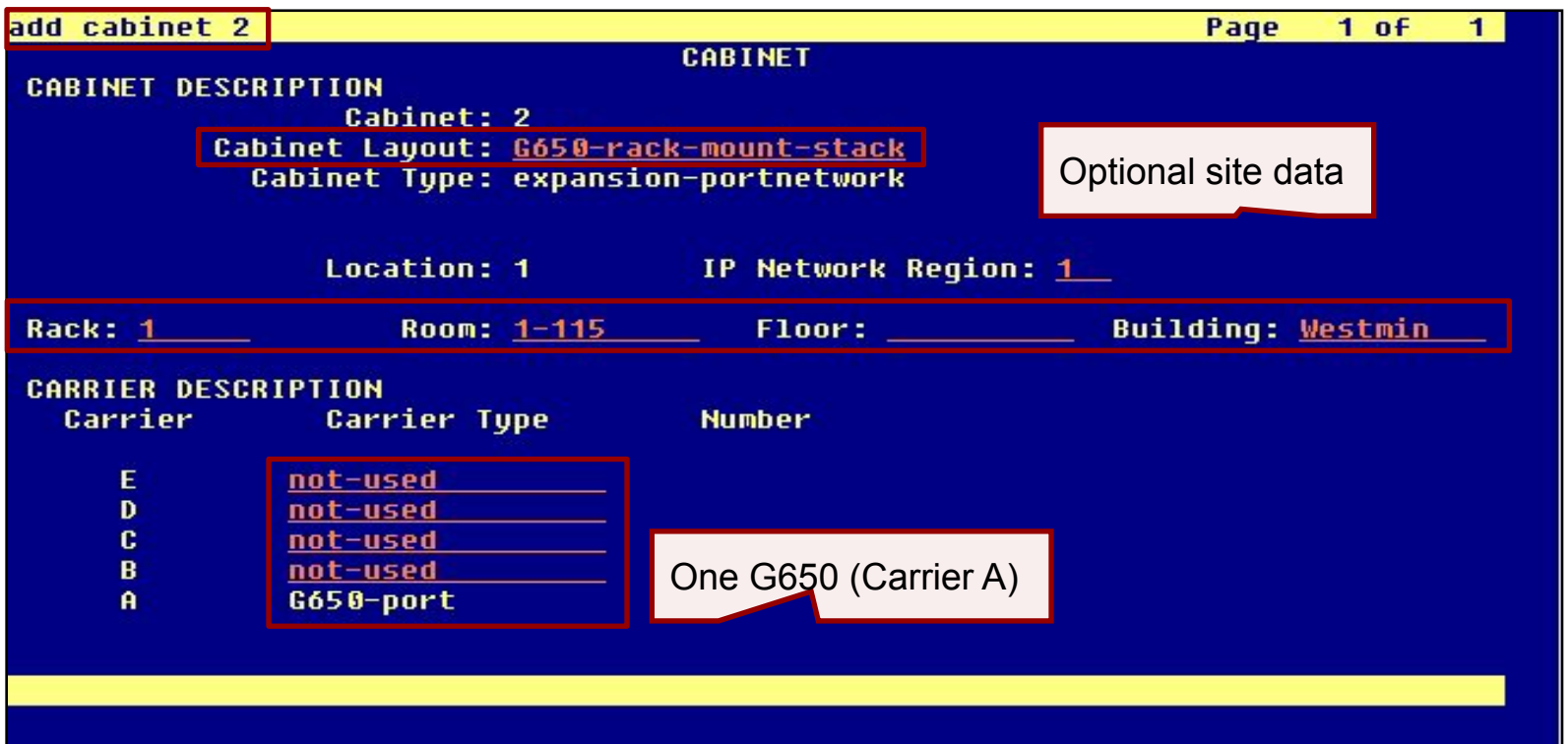
Add Cabinet for Port Network 1

4 At the CM SAT type **add cabinet 1** and press **Enter**.



Add Cabinet for Port Network 2

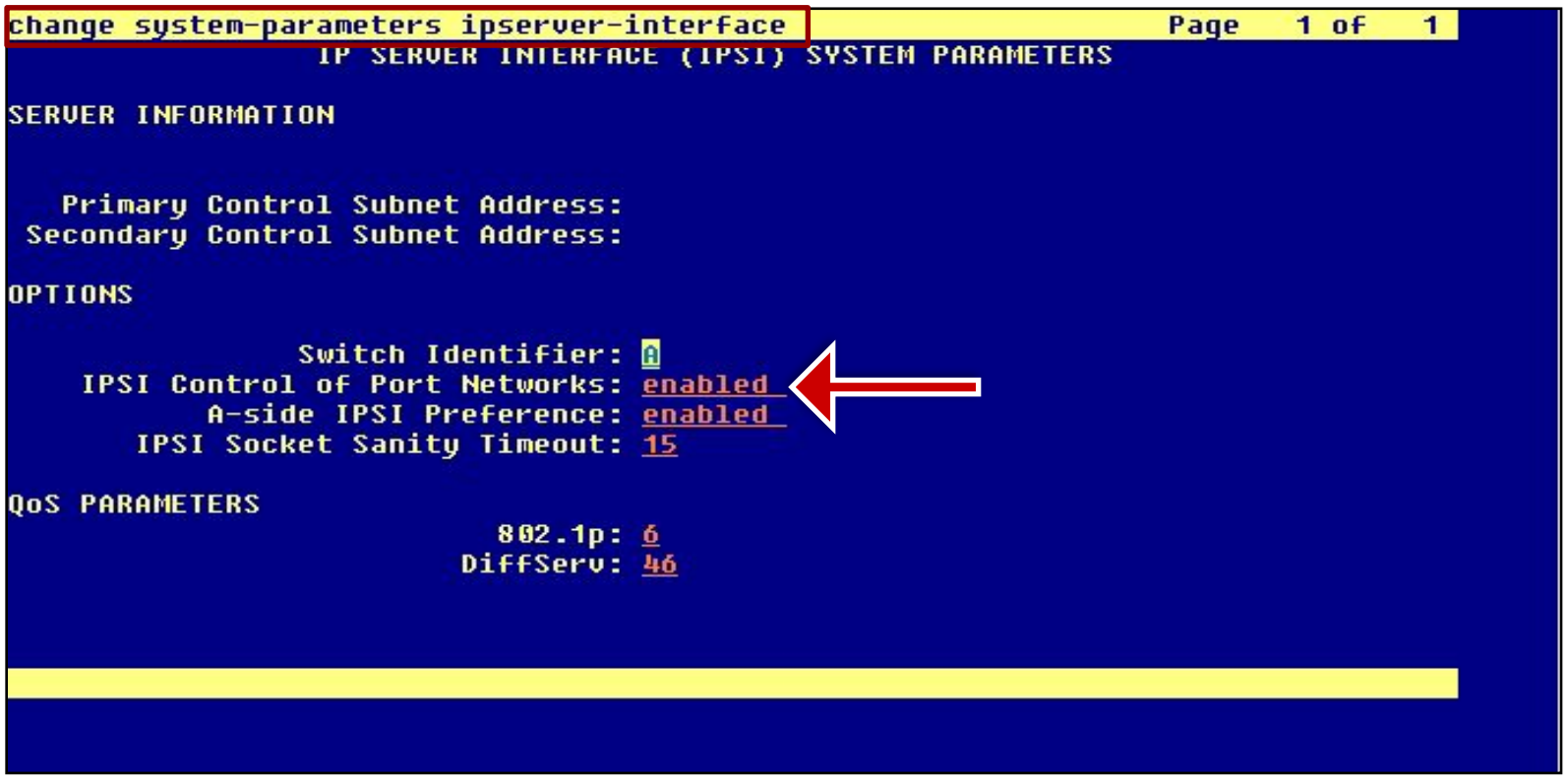
4 At the CM SAT type **add cabinet 2** and press **Enter**.



Enable IPSI Control of Port Networks

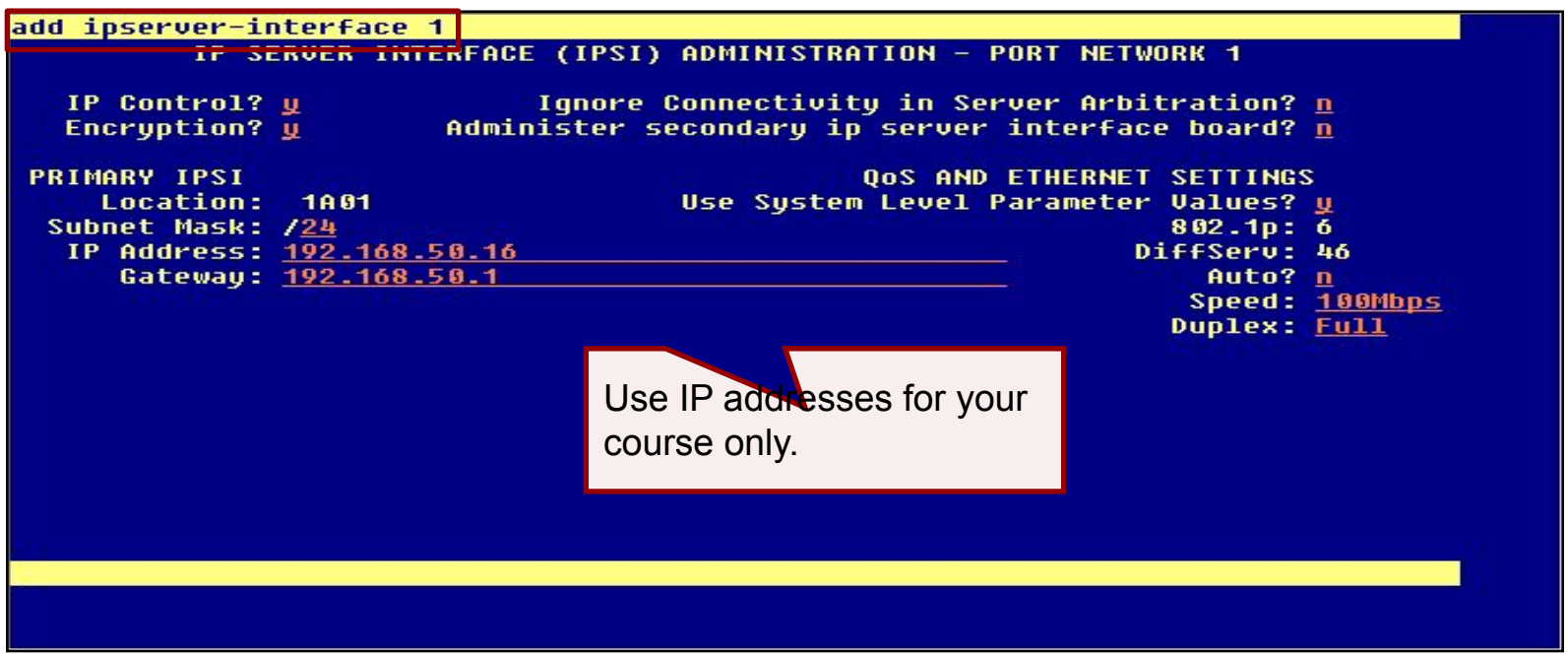
4 At the CM SAT type **change system-parameters ip-server-interface** and press **Enter**.

4 Set the **IPSI Control of Port Networks** field to **enabled**.



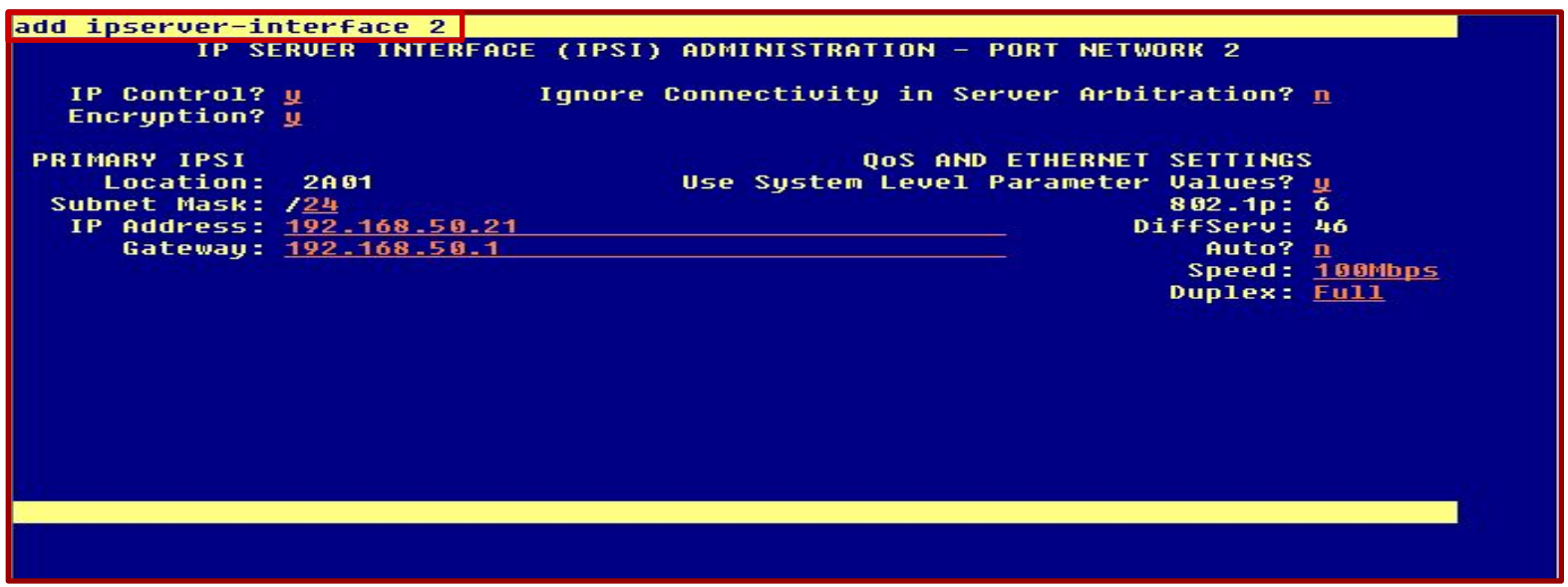
Administer IPSI 1

- At the CM SAT type **add ipserver-interface 1** and press **Enter**.
- Administer the form like the example.
- **IMPORTANT:** use the *ATI02348IEN-VEN-Lab Logins, Hostnames, and IP Addresses* information for your lab.



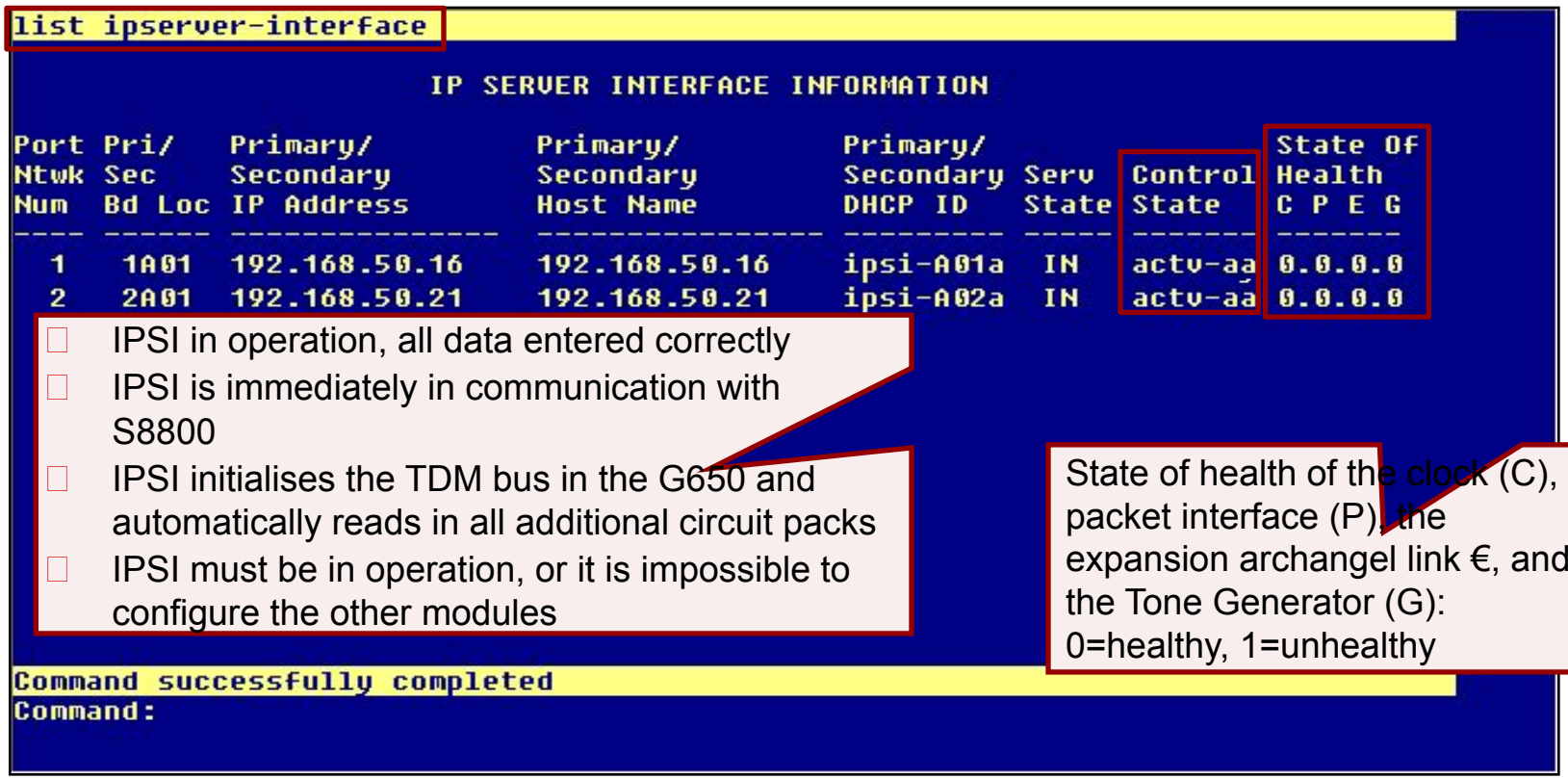
Administer IPSI 2

- At the CM SAT type **add ipserver-interface 2** and press **Enter**.
- Administer the form like the example.
- **IMPORTANT:** use the ATI02348IEN-VEN-Lab Logins, Hostnames, and IP Addresses information for your lab.



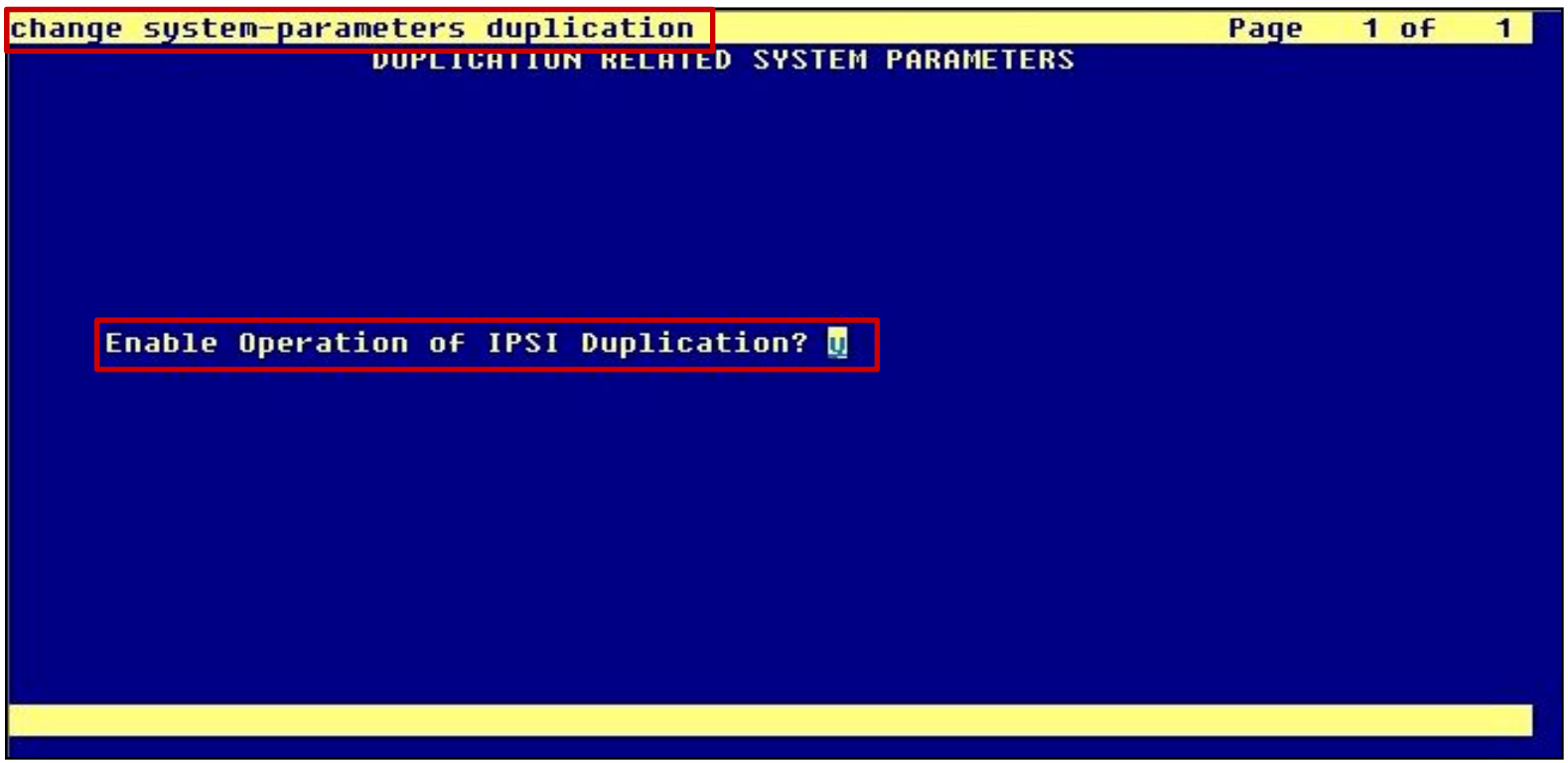
Check IPSI Status

- At the CM SAT type **add ipserver-interface 2** and press **Enter**.
- Verify that all IPSI interfaces have been added correctly and are operational.



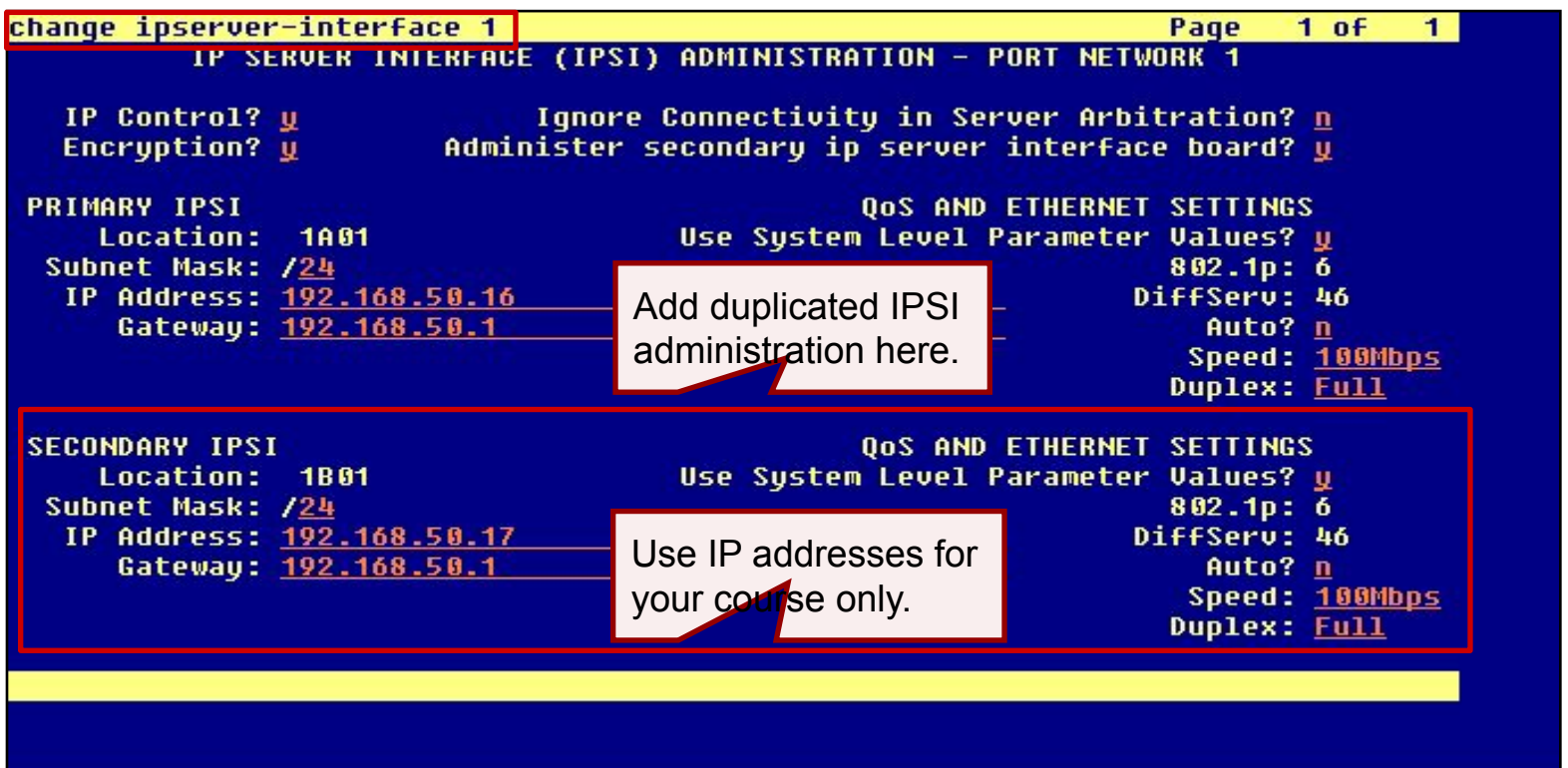
Enable Operation of IPSI Duplication

- At the CM SAT type **change system-parameters duplication** and press **Enter**.
- Set the **Enable Operation of IPSI Duplication** field to **y**.



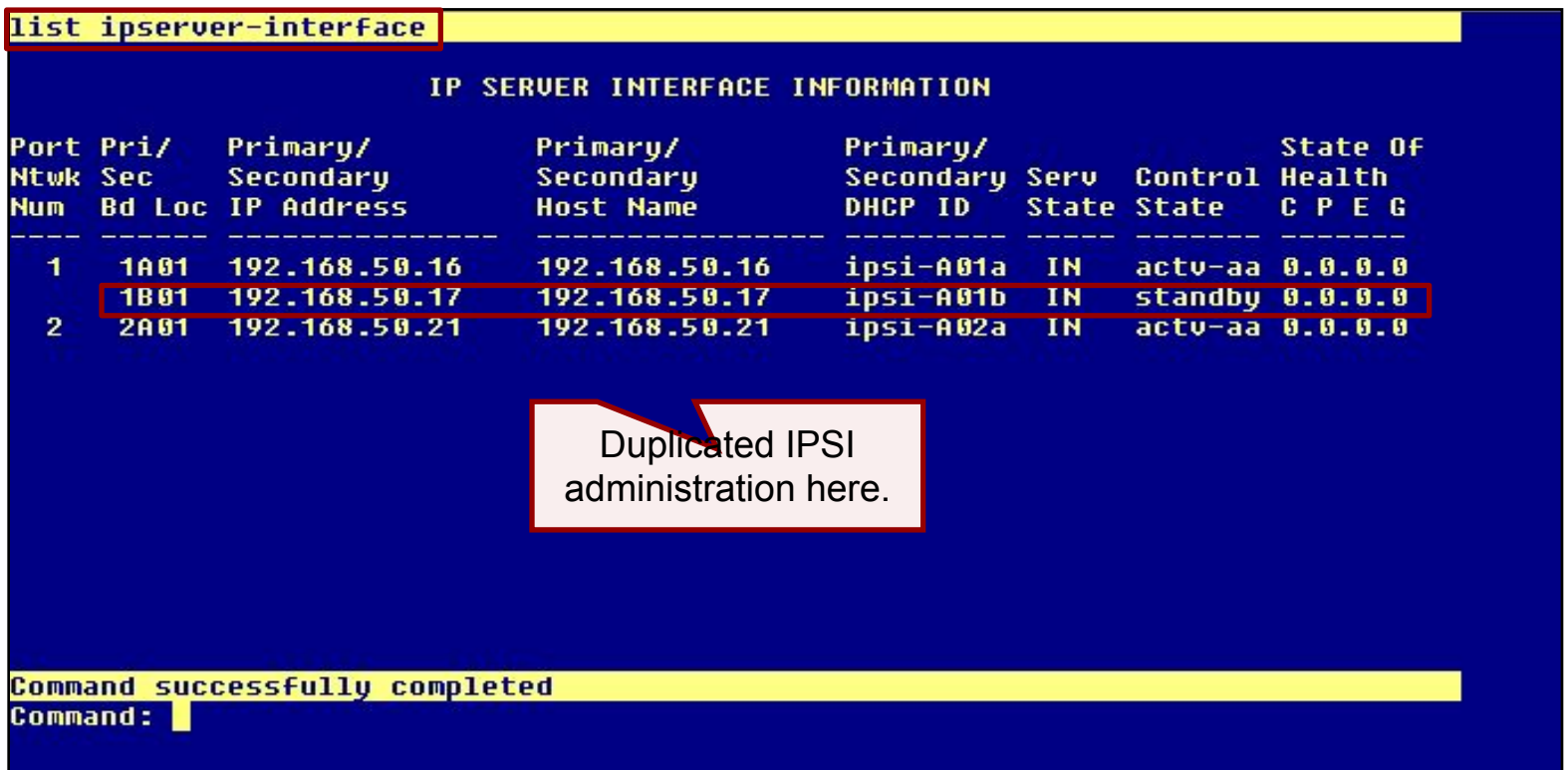
Duplicated IPSI Administration in CM

- Go back to the IPSI interface 1 form and add the duplicated IPSI administration.
- At the CM SAT type **change ipserver-interface 1** and press **Enter**.



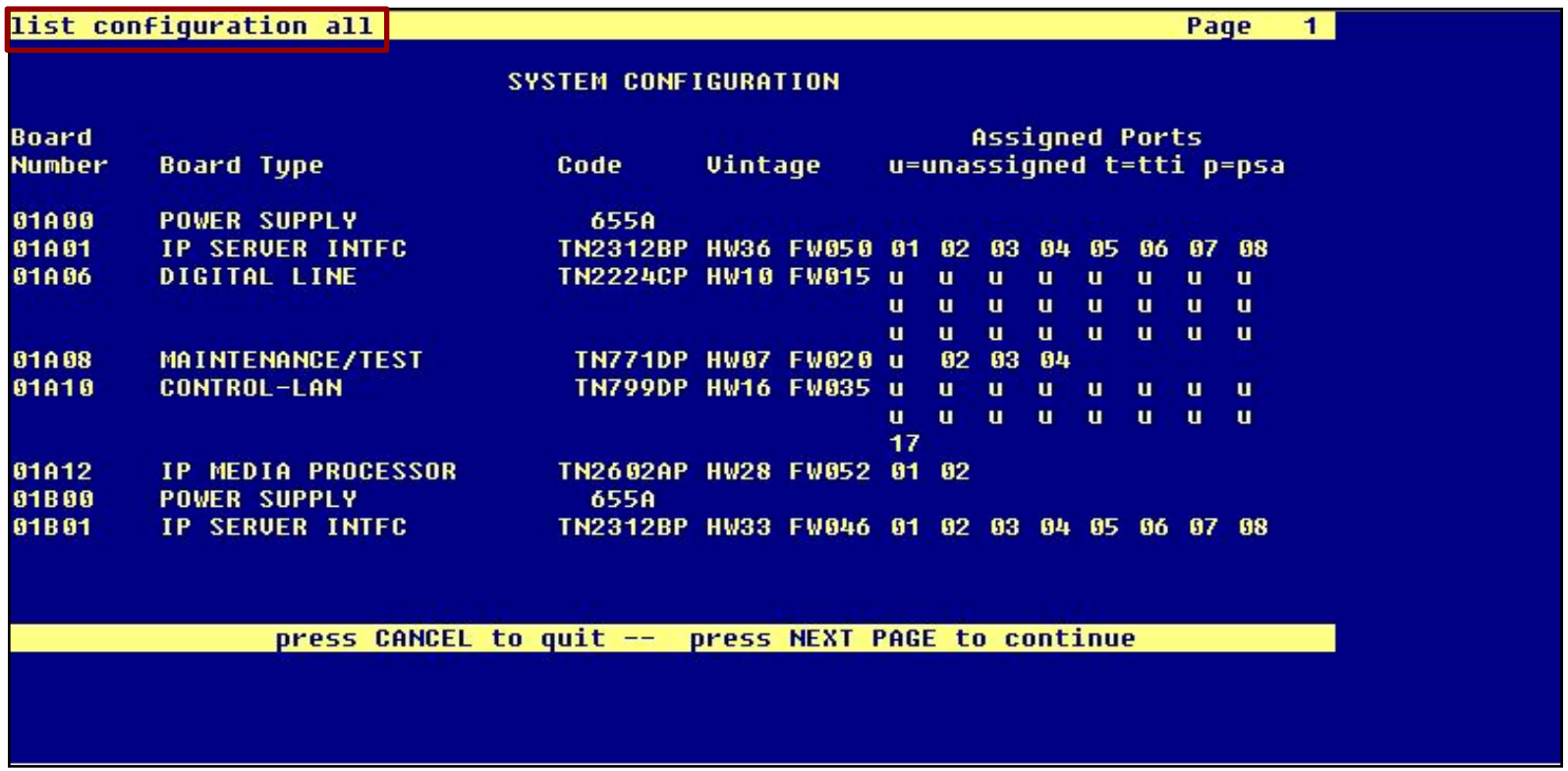
Check IPSI Status

- At the CM SAT type **list ipserver-interface** and press **Enter**.
- Verify that the duplicated IPSI administration is correct and that it is operational.



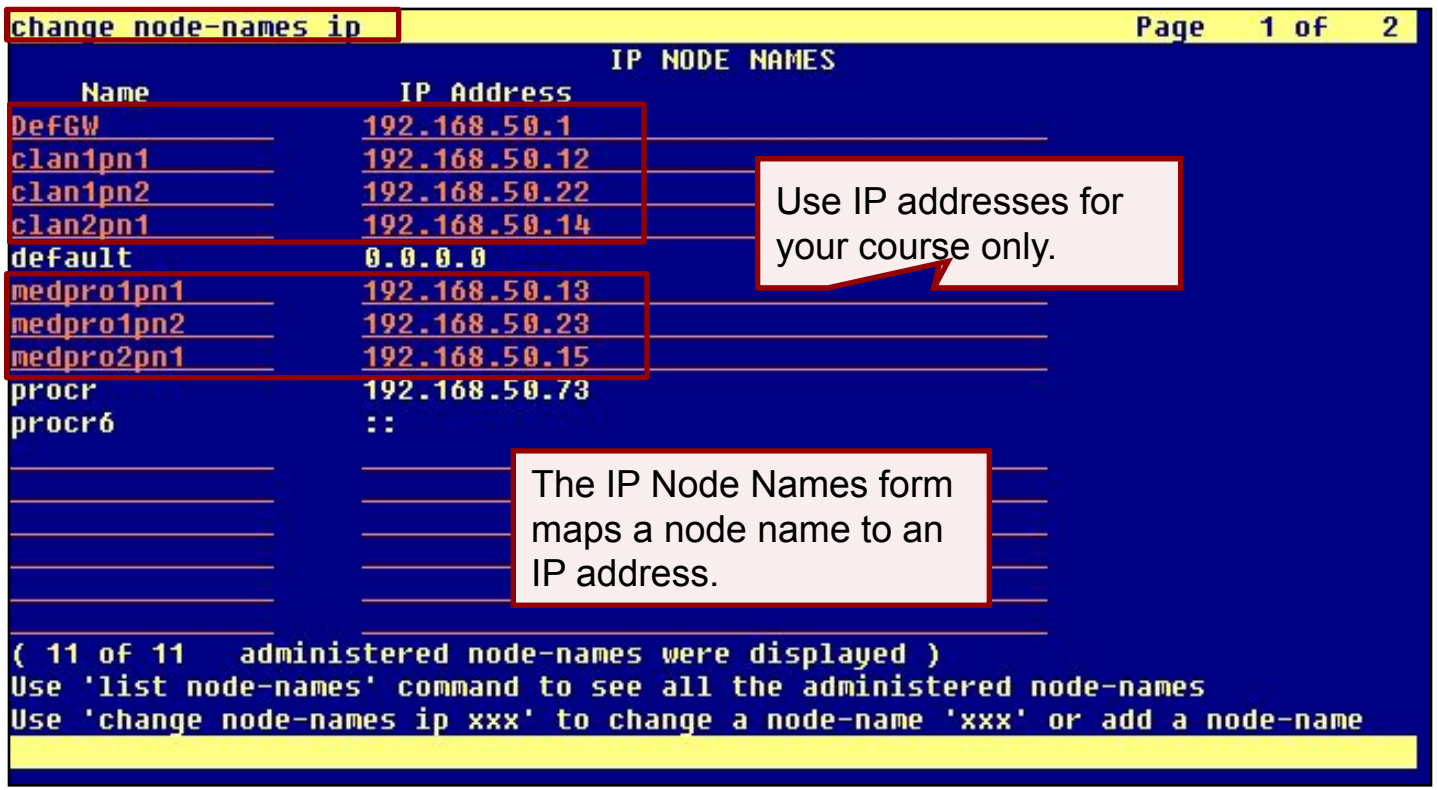
Confirm System Configuration

- At the CM SAT type **list configuration** all and press **Enter**.
- Verify that all circuit packs have been detected and appear in the report.



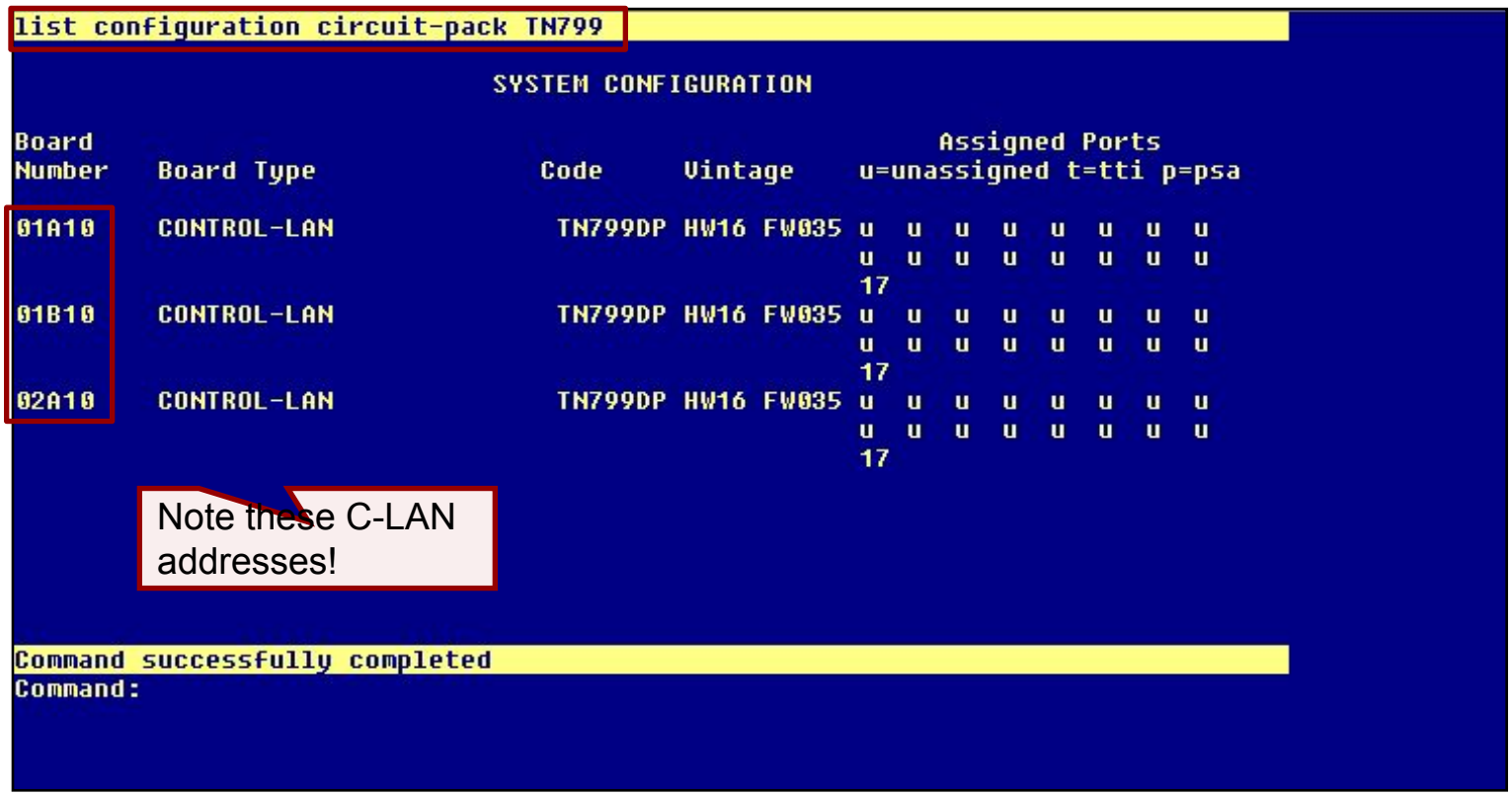
Administer Node Names IP Table

- At the CM SAT type **change node-names ip** and press **Enter**.
- Add all C-LAN and Medpro/MedRes circuit pack administration.



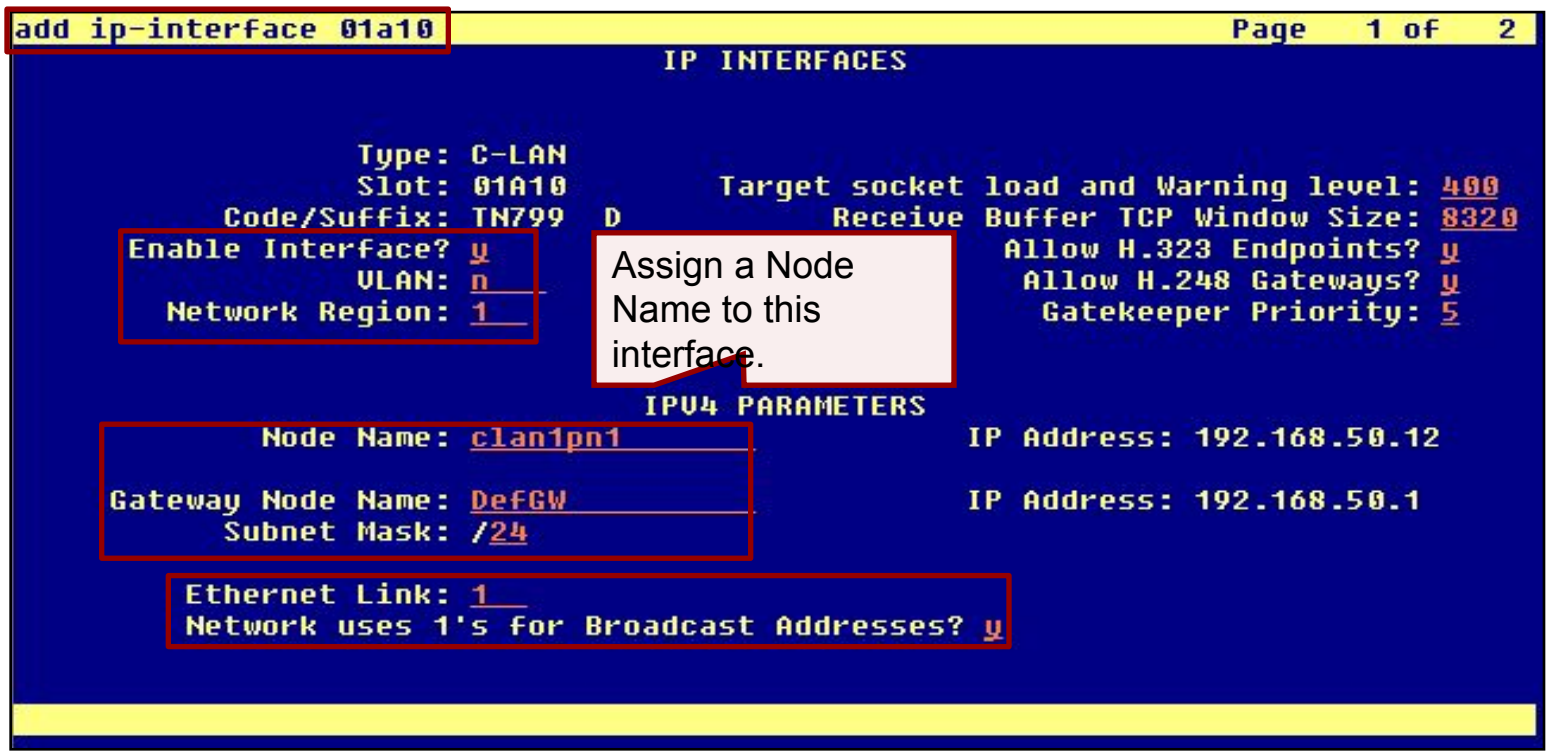
Look Up C-LAN Configuration

- At the CM SAT type **list configuration circuit-pack TN799** and press **Enter**.
- Look up the location of the C-LAN circuit packs in the system.



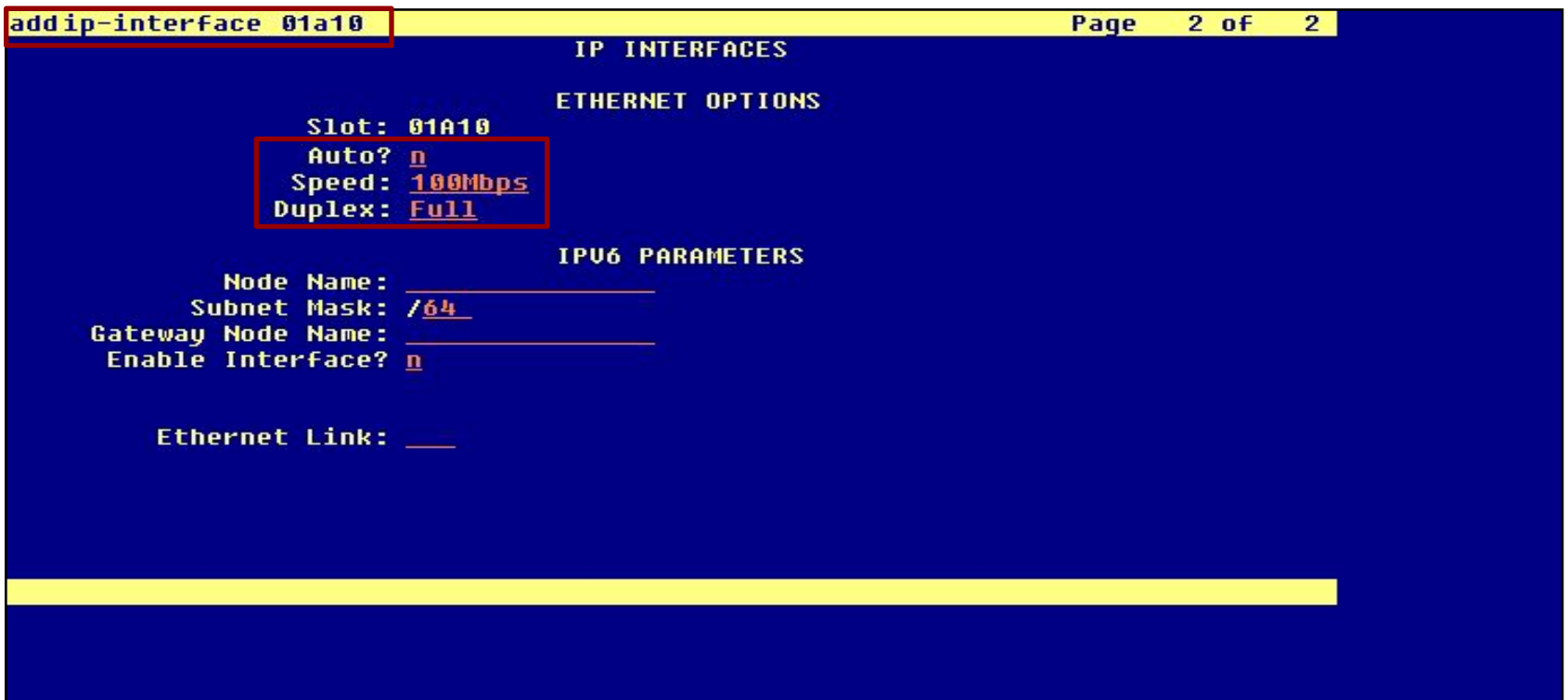
C-LAN 1 Administration

- At the CM SAT type **add ip-interface 01a10** and press **Enter**.
- Assign a **Node Name** for this interface and administer the form like the example.
- Go to the next page.



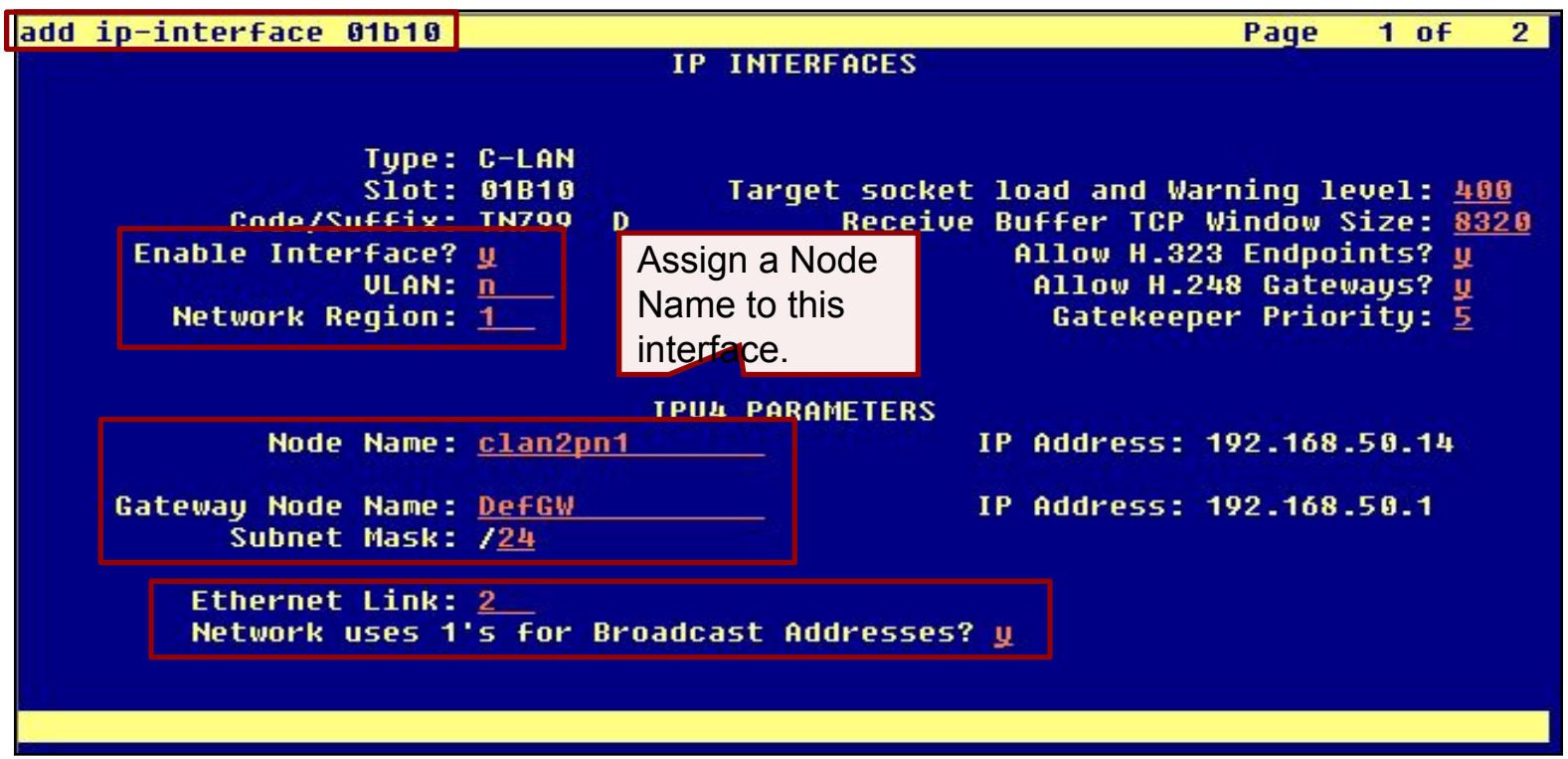
C-LAN 1 Administration (continued)

- Set the **Auto** (negotiation) field to n.
- Set the **Speed** and **Duplex** fields.



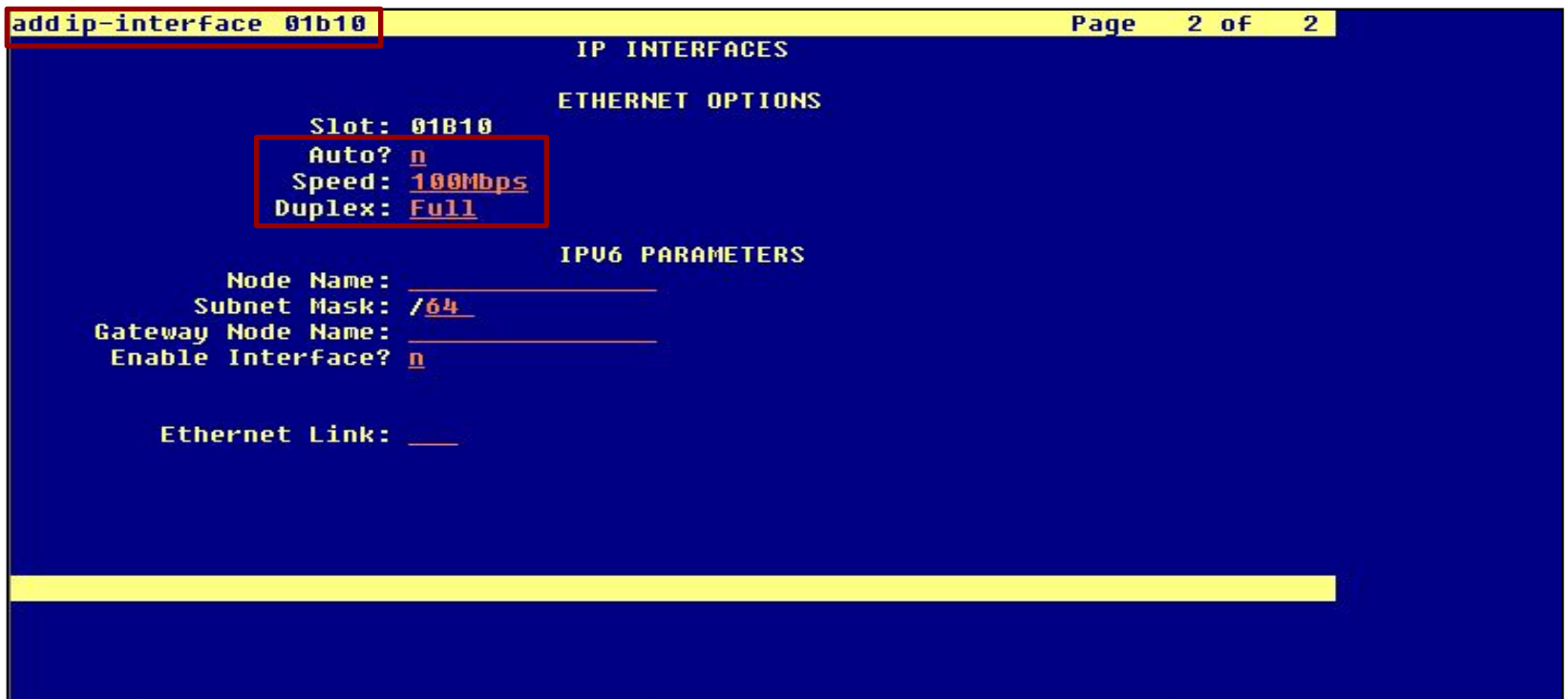
C-LAN 2 Administration

- At the CM SAT type **add ip-interface 01b10** and press **Enter**.
- Assign a **Node Name** for this interface and administer the form like the example.
- Go to the next page.



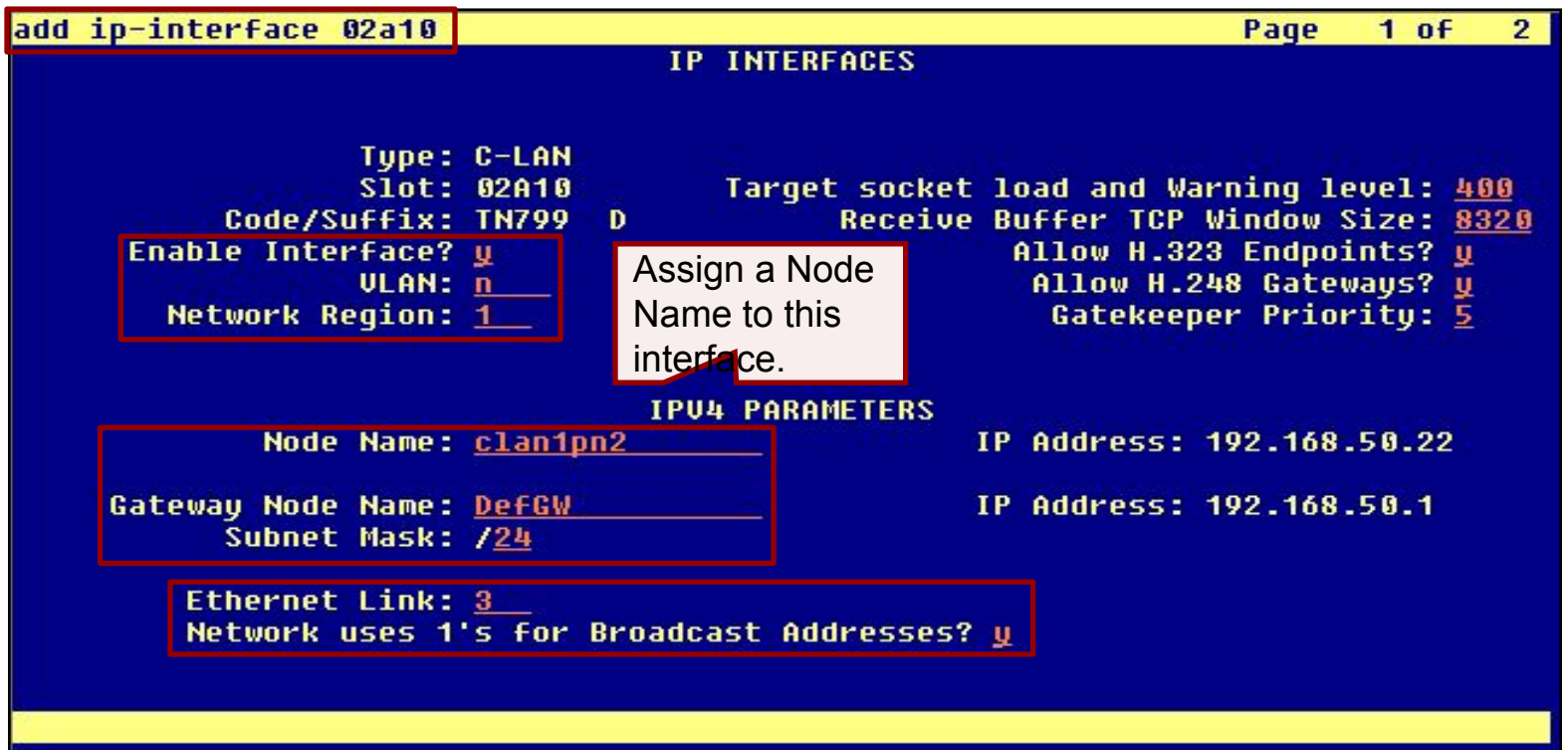
C-LAN 2 Administration (continued)

- Set the **Auto** (negotiation) field to n.
- Set the **Speed** and **Duplex** fields.



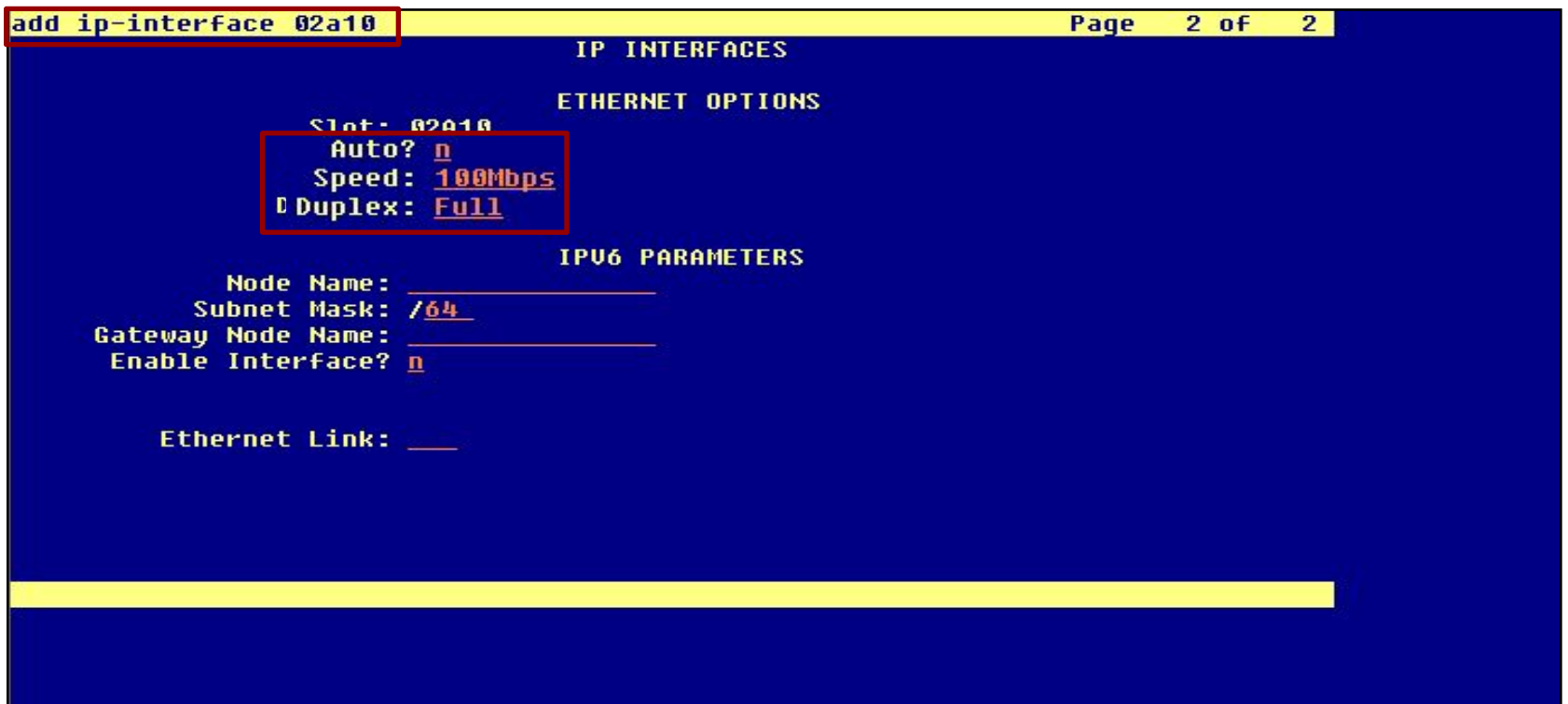
C-LAN 3 Administration

- At the CM SAT type **add ip-interface 02a10** and press **Enter**.
- Assign a **Node Name** for this interface and administer the form like the example.
- Go to the next page.



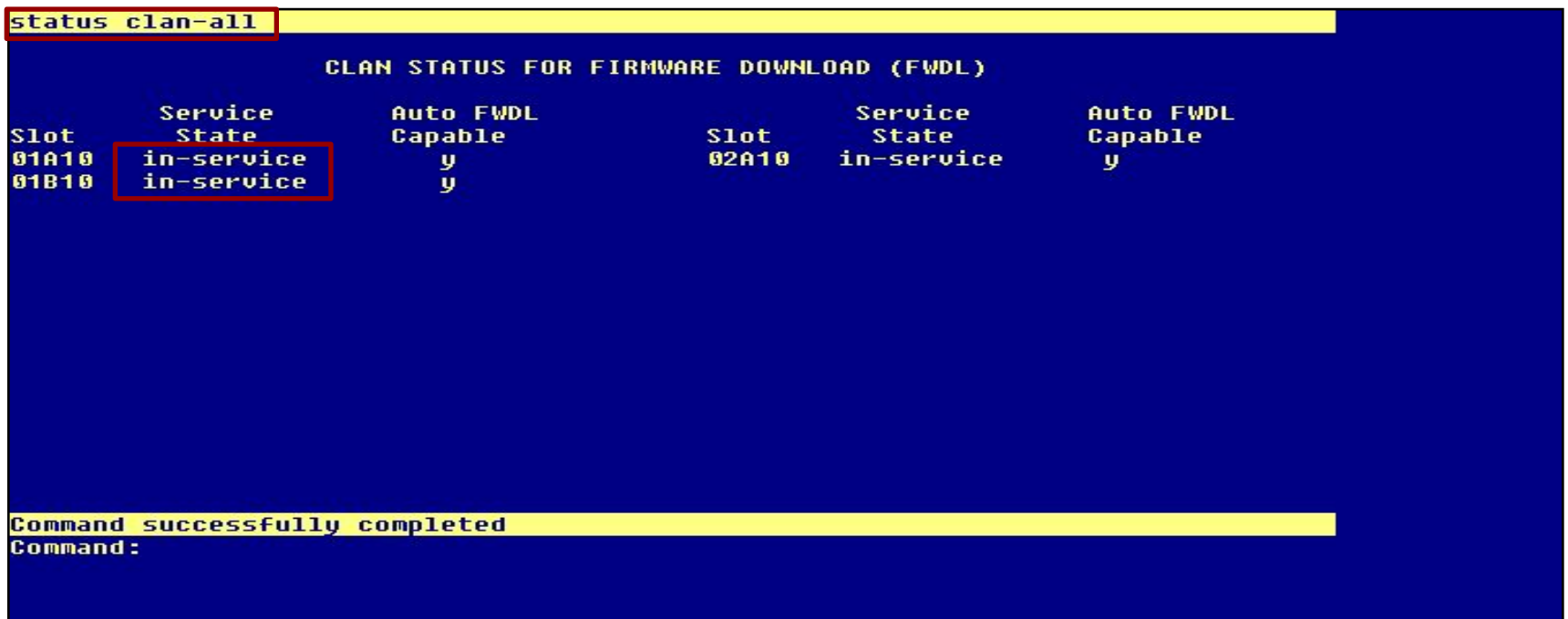
C-LAN 3 Administration (continued)

- Set the **Auto** (negotiation) field to n.
- Set the **Speed** and **Duplex** fields.



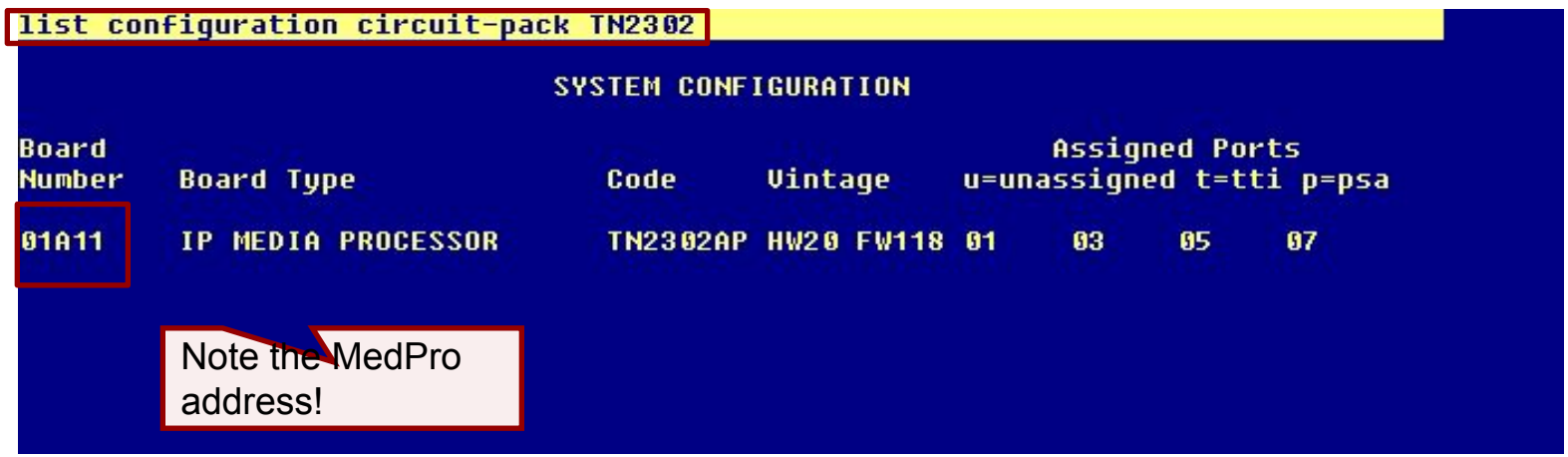
Verify C-LAN Status

- At the CM SAT type **status clan-all** and press **Enter**.
- Verify that all configured C-LAN circuit packs are **in service**.



List Configuration for MedPro

- At the CM SAT type **list configuration circuit-pack TN2302** and press **Enter**.
- Look up the location of the MedPro circuit packs in the system.

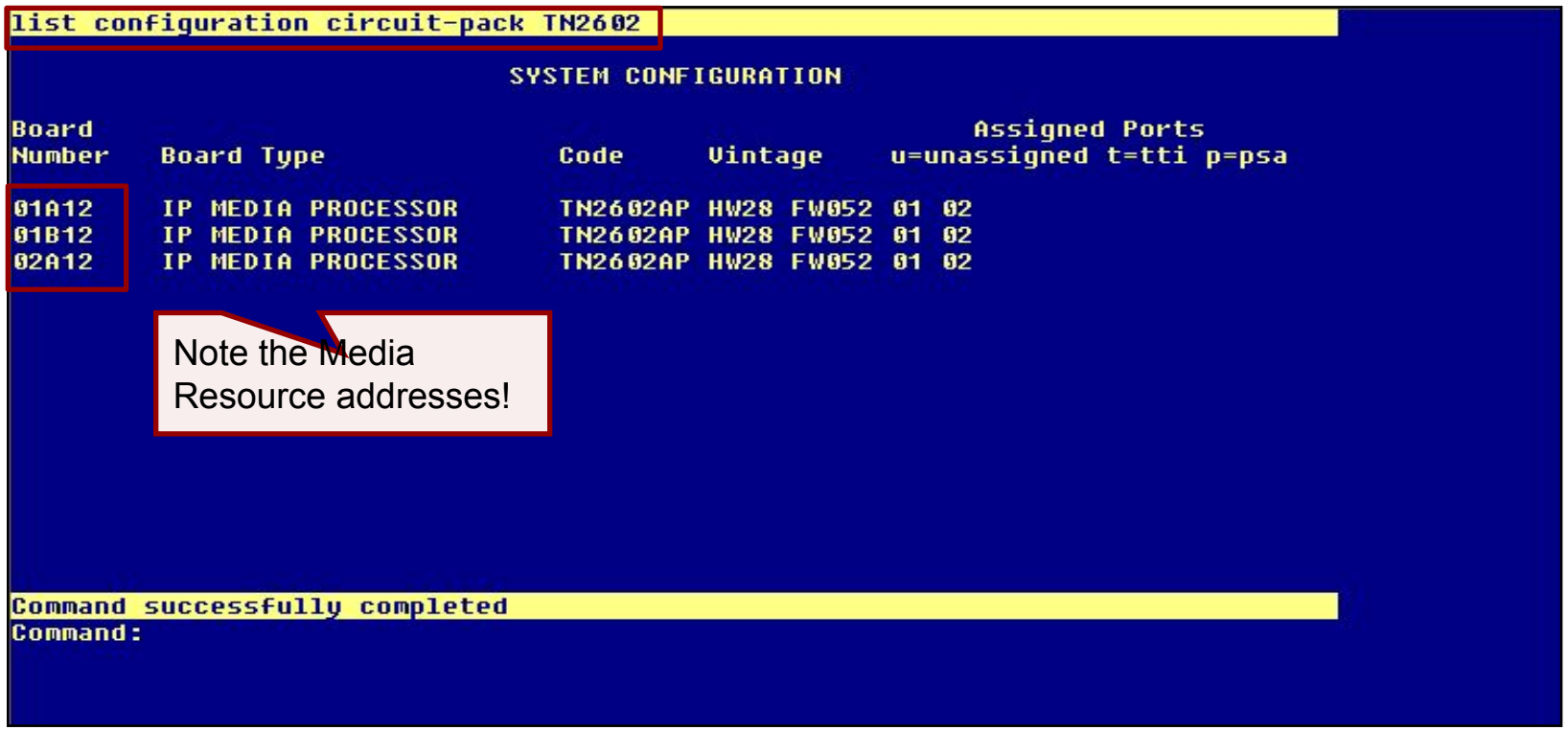


Note

Only TN2602 circuit packs used in vLab.

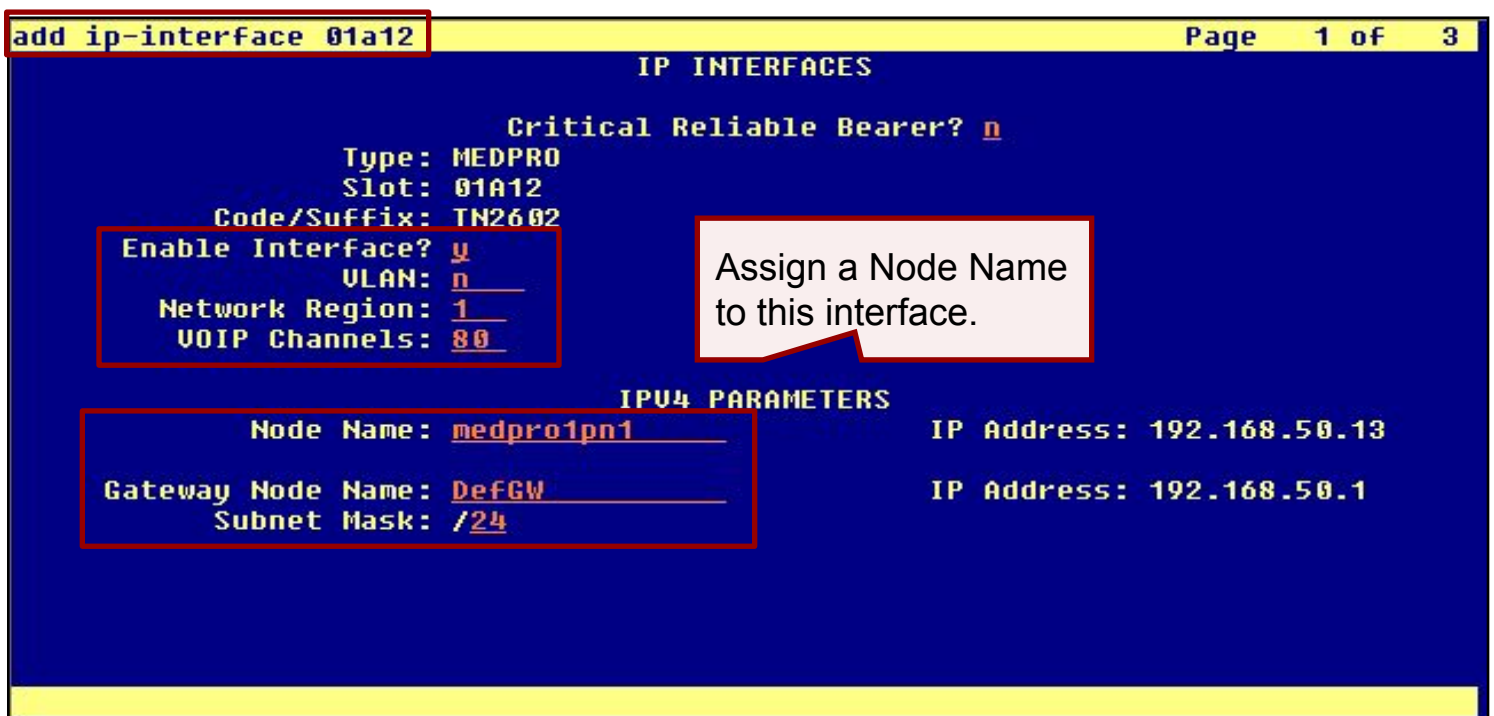
List Configuration for Media Resource 320

- At the CM SAT type **list configuration circuit-pack TN2602** and press **Enter**.
- Look up the location of the Media Resource circuit packs in the system.



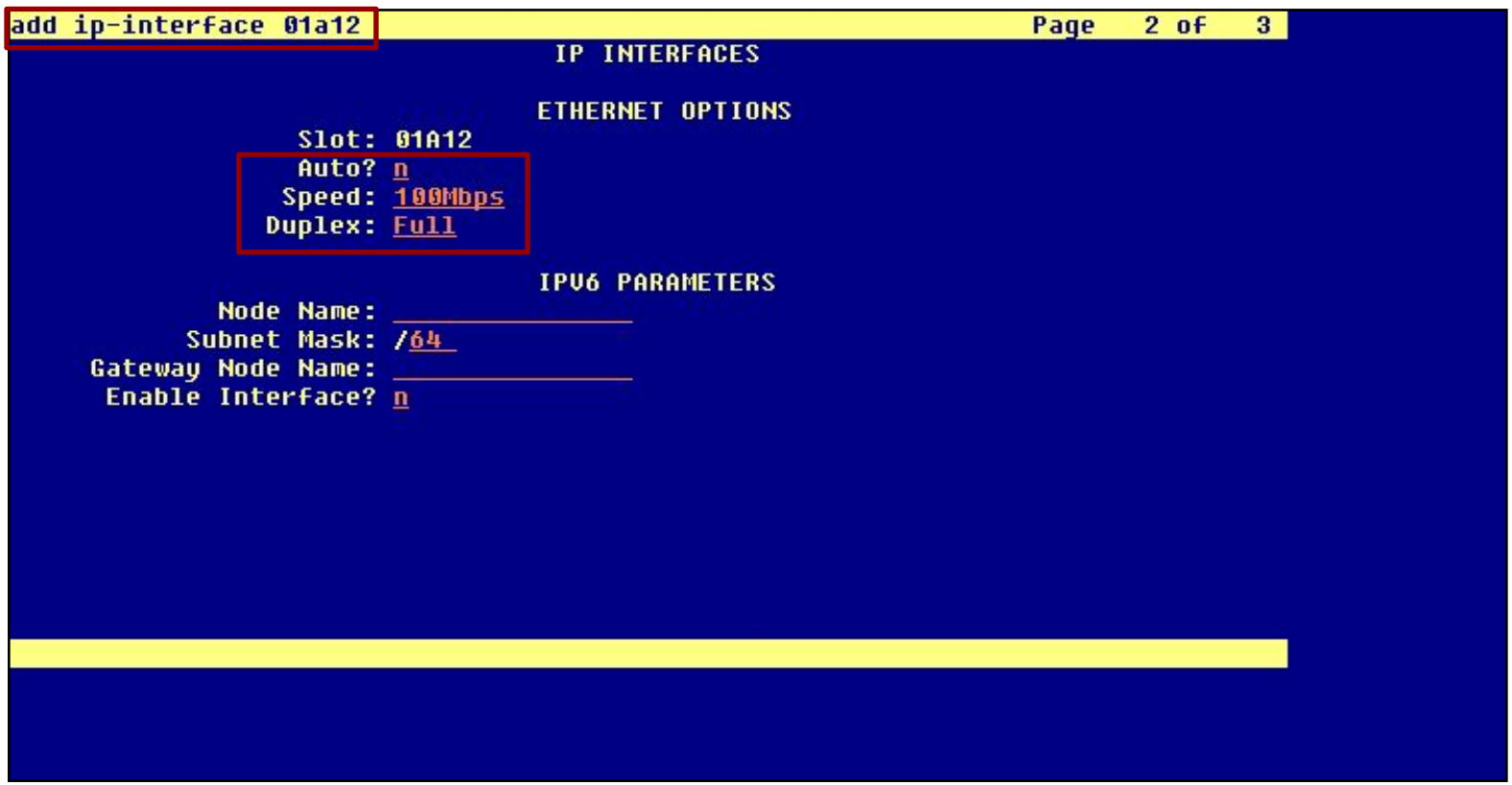
Media Resource 1 Administration

- At the SAT type **add ip-interface 01a12** and press **Enter**.
- Set the **Enable Interface** field to **y**.
- Assign a **Node Name** and complete the form like the example.
- Go to the next page.



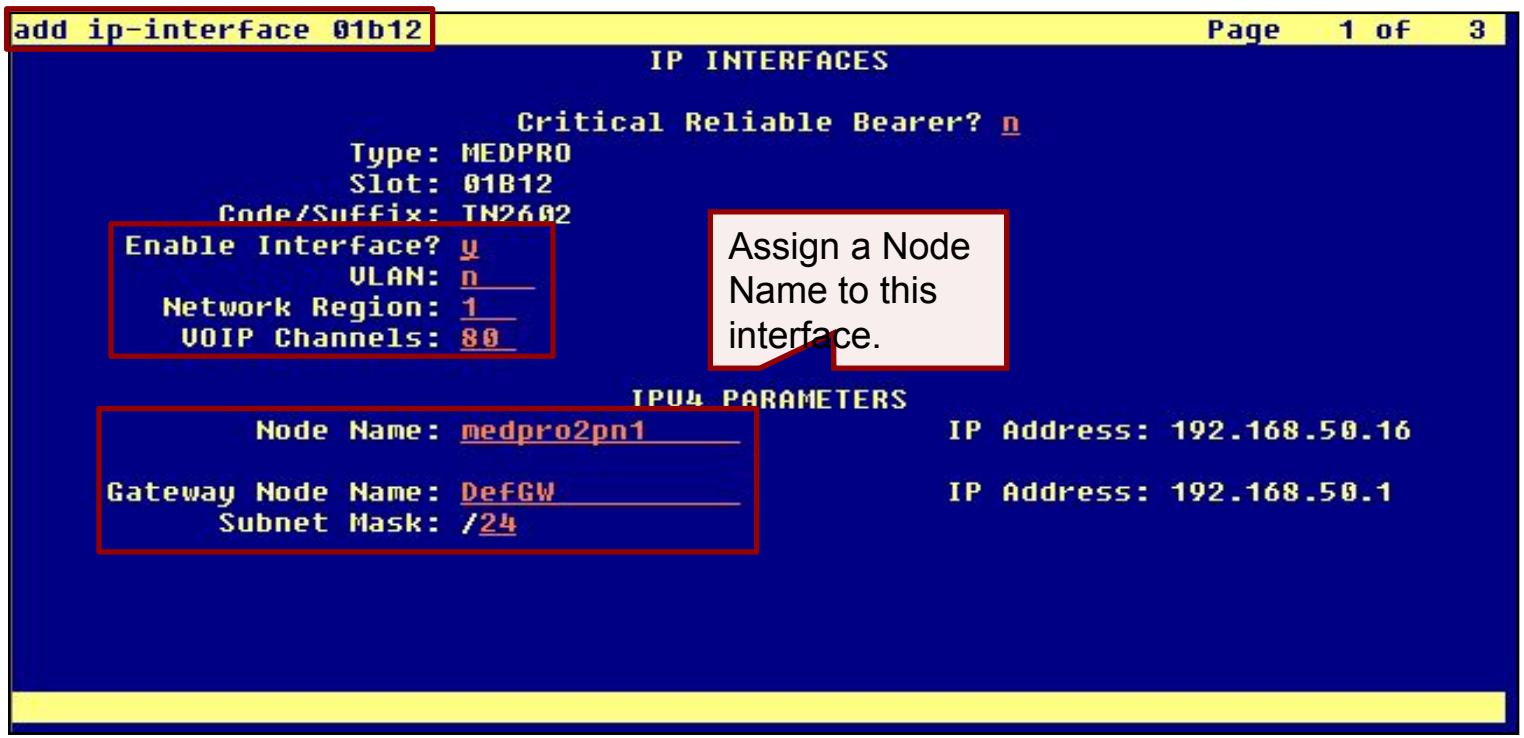
Media Resource 1 Administration (continued)

- Set the **Auto** (negotiation) field to **n**.
- Set the **Speed** and **Duplex** fields.



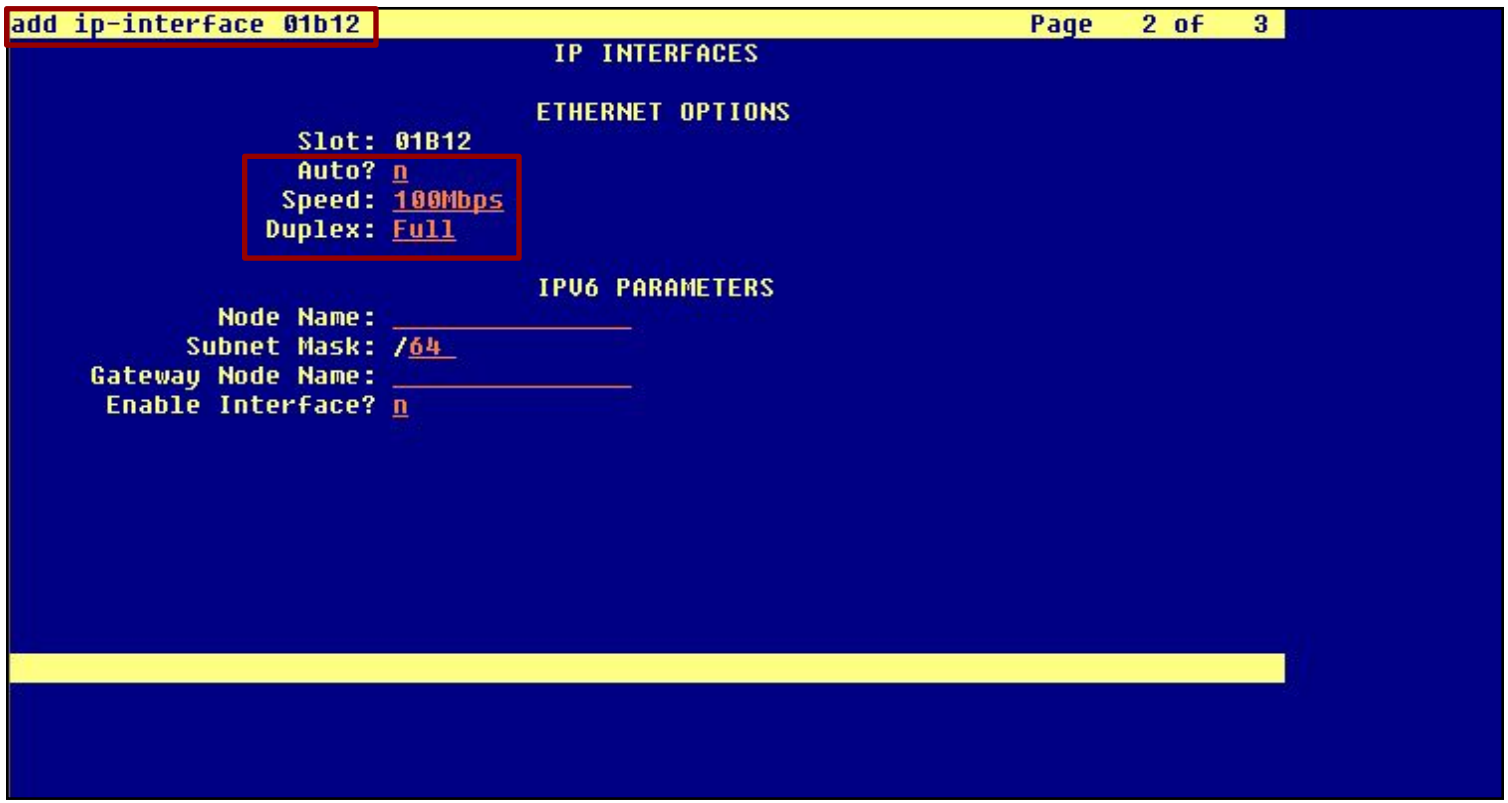
Media Resource 2 Administration

- At the SAT type **add ip-interface 01b12** and press **Enter**.
- Set the **Enable Interface** field to **y**.
- Assign a **Node Name** and complete the form like the example.
- Go to the next page.



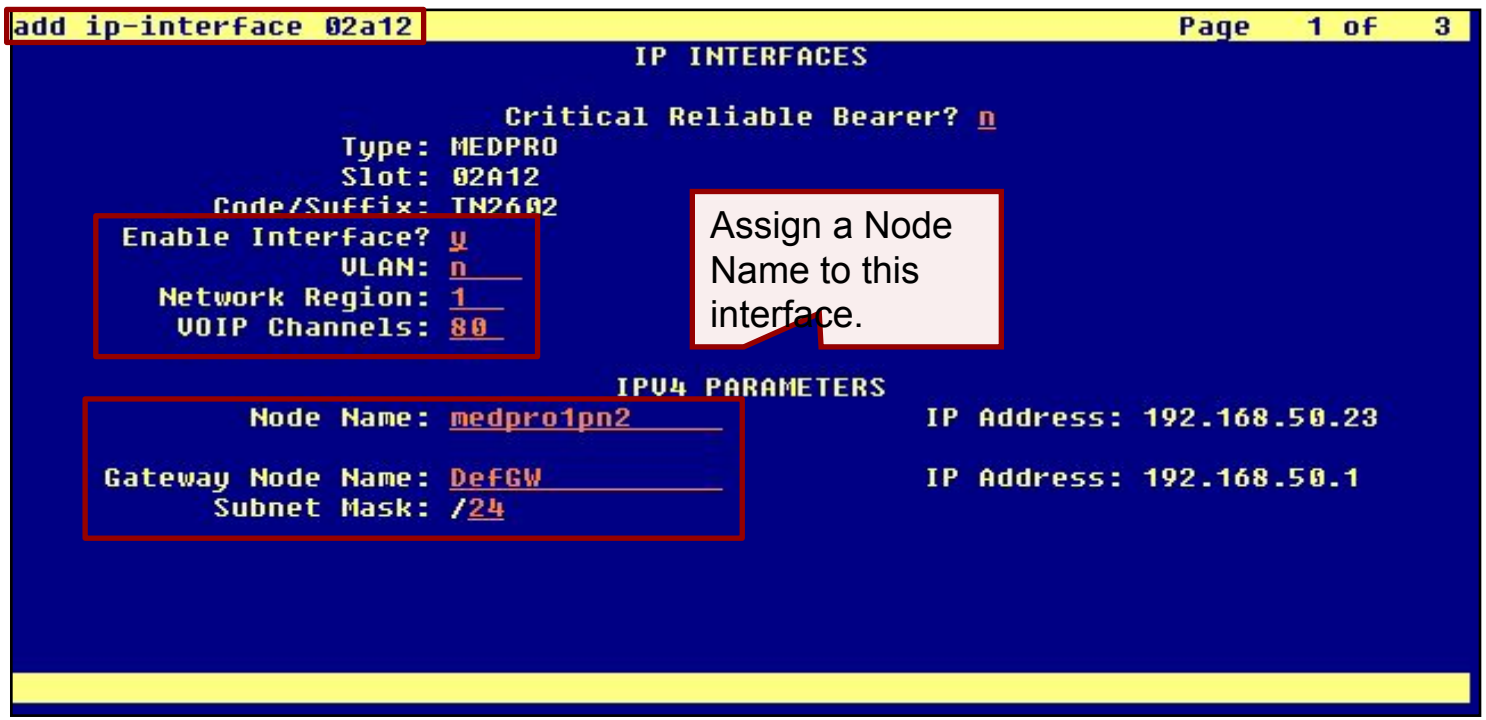
Media Resource 2 Administration (continued)

- Set the **Auto** (negotiation) field to **n**.
- Set the **Speed** and **Duplex** fields.



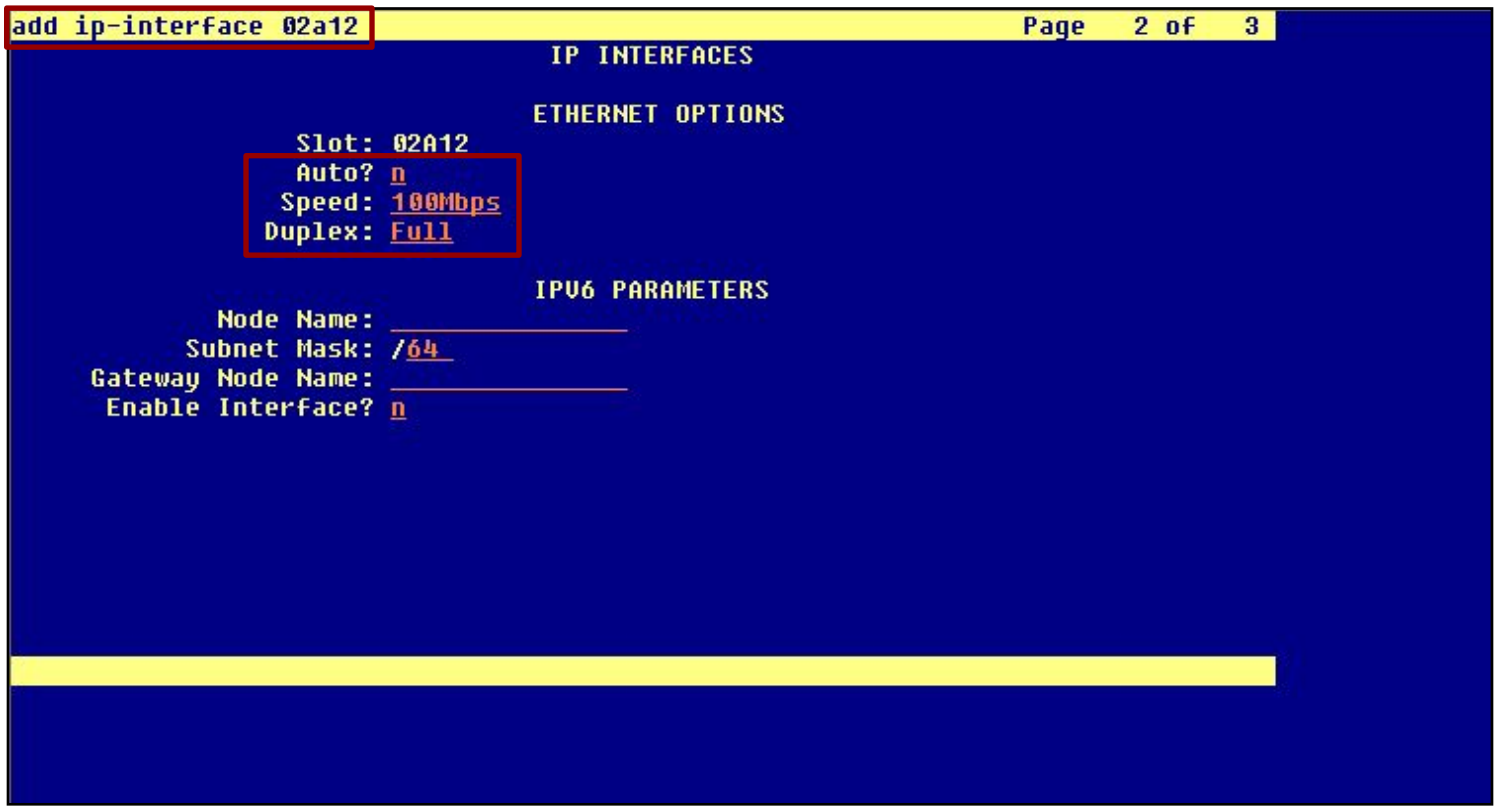
Media Resource 3 Administration

- At the SAT type **add ip-interface 02a12** and press **Enter**.
- Set the **Enable Interface** field to **y**.
- Assign a **Node Name** and complete the form like the example.
- Go to the next page.



Media Resource 3 Administration (continued)

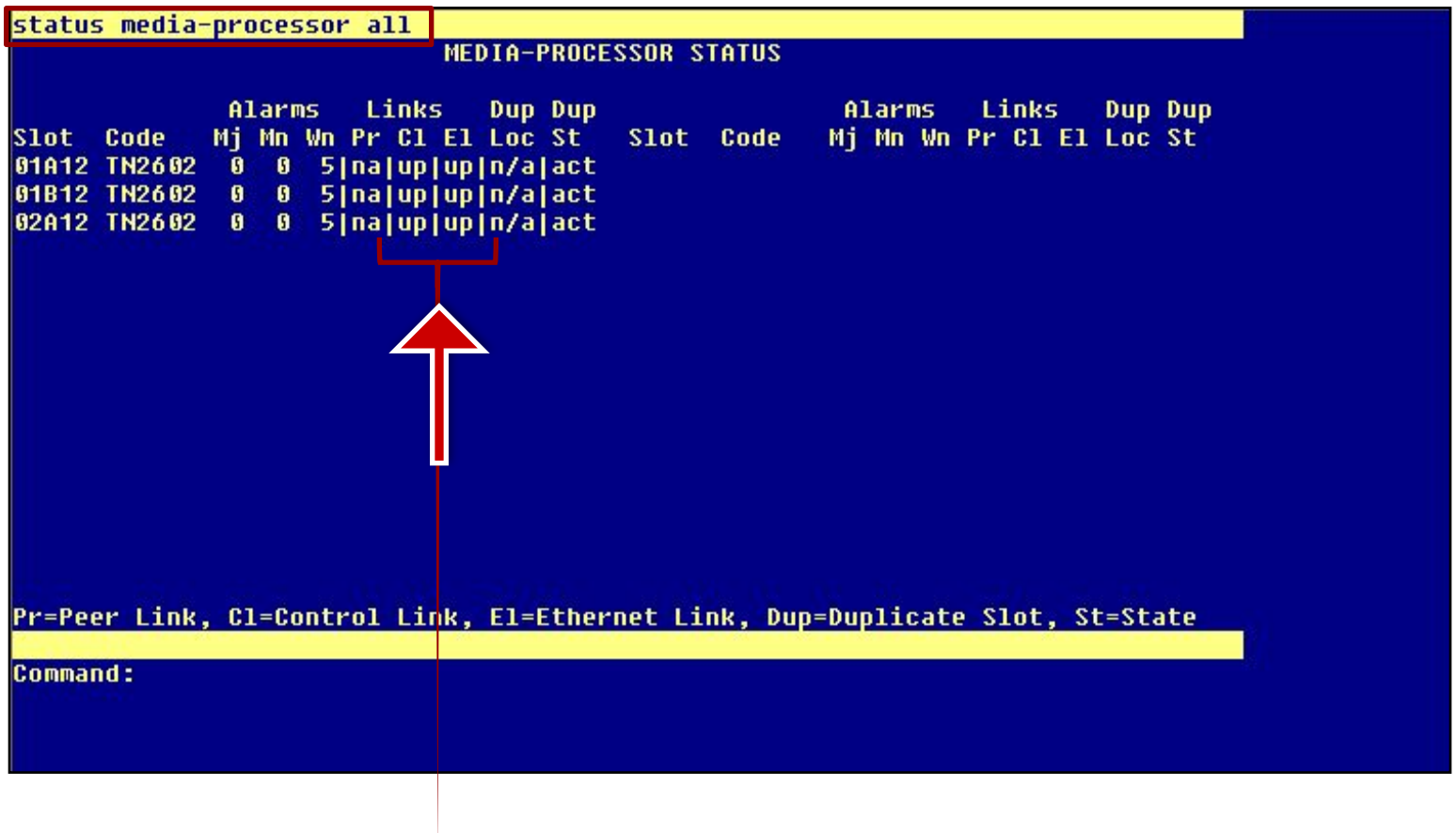
- Set the **Auto** (negotiation) field to **n**.
- Set the **Speed** and **Duplex** fields.



Verify Media Processor/Resource Status

4 At the SAT type **status media-processor all** and press **Enter**.

4 Verify that all configured Media Processor/Resource circuit packs are in service.



AVAYA | LEARNING

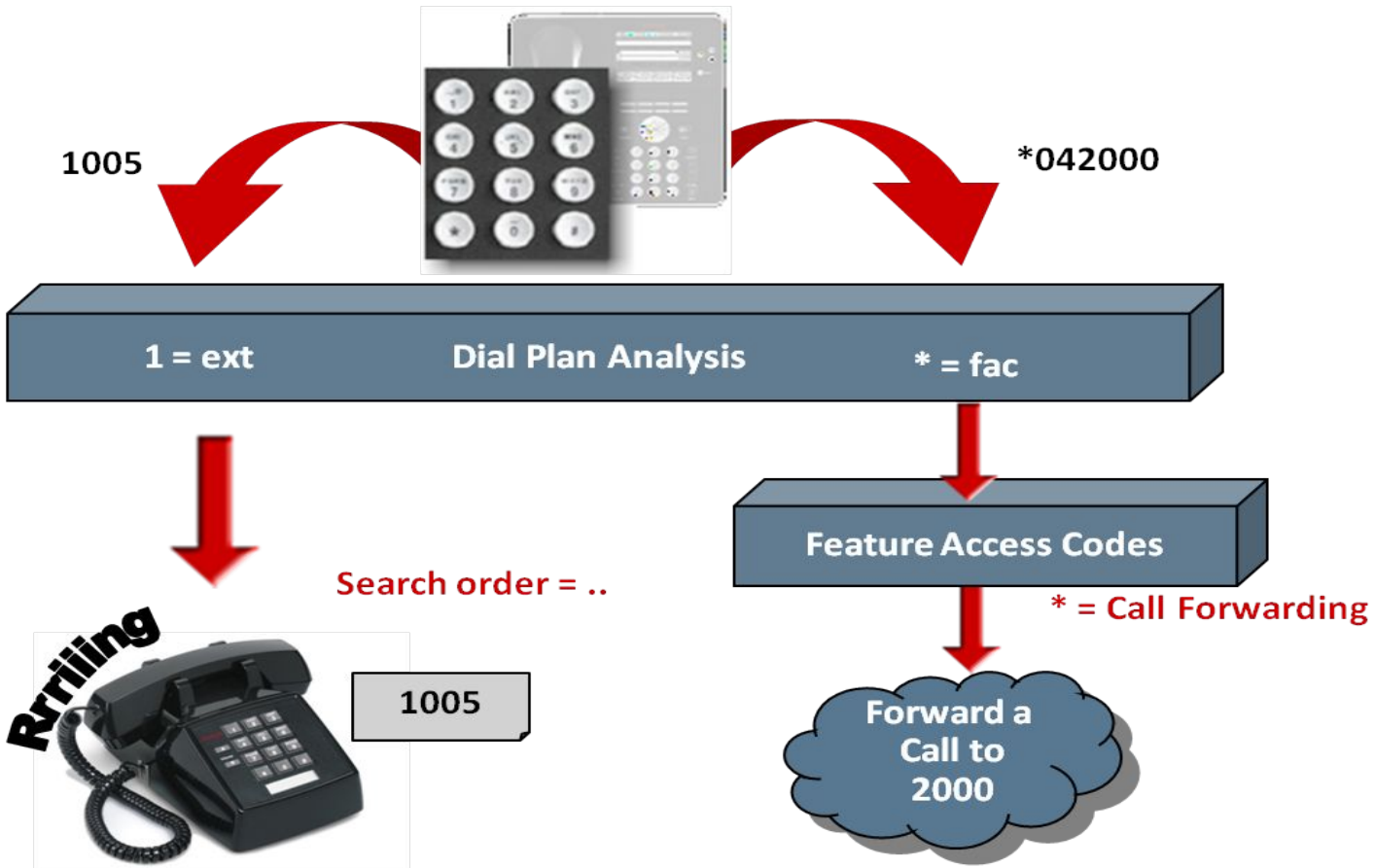
Make a Test Call

AVAYA | LEARNING

Administer CM Endpoints

Administer CM Endpoints—Dial Plan

The dial plan interprets dialed digits.



Administer CM Endpoints—Dial Plan (continued)

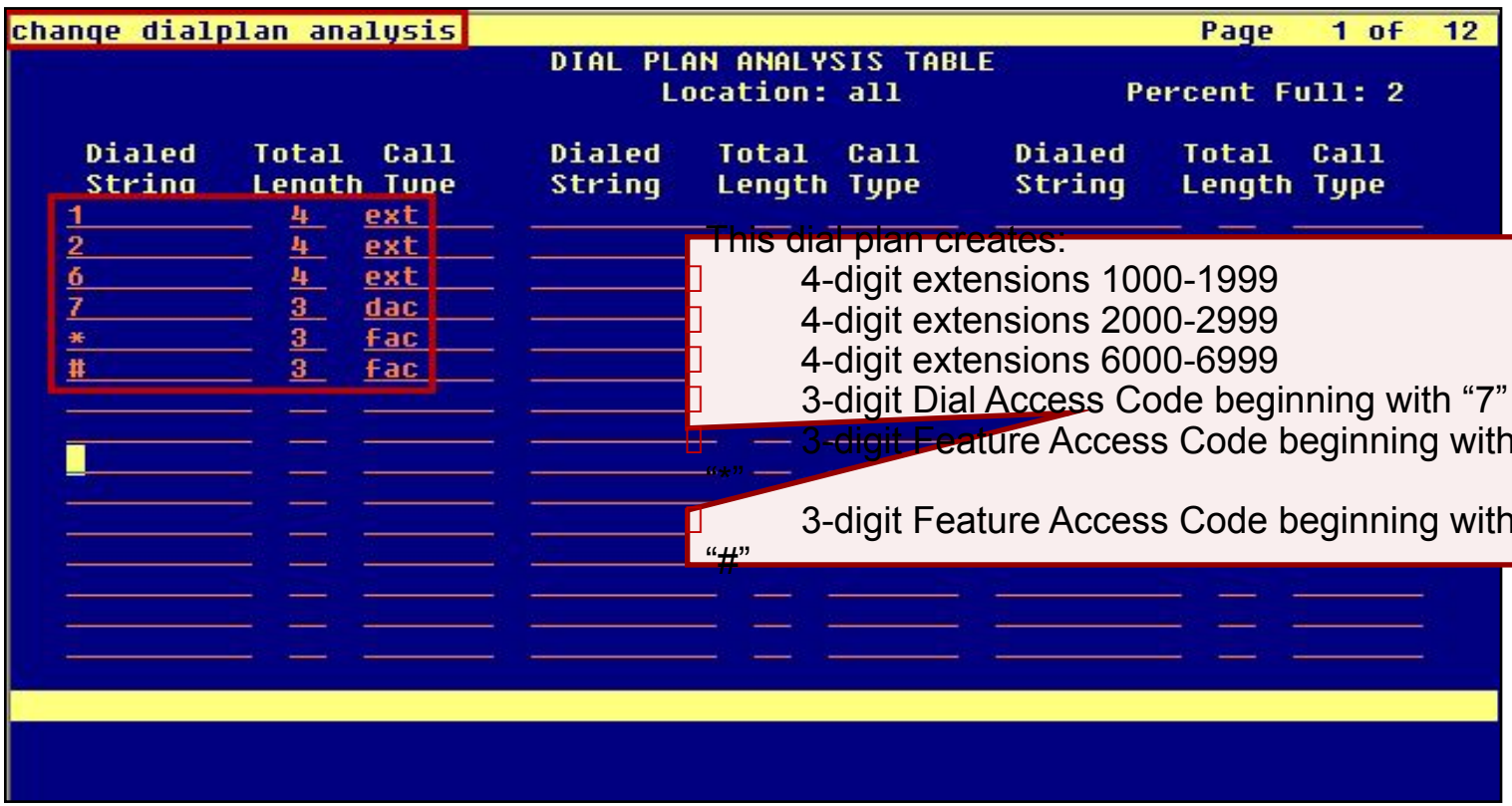
4 The recommended dial plan for this course contains 3 types of entries:

- Extensions
- Feature Access Codes (FAC)
- Dial Access Codes (DAC)

Extensions	Feature Access Codes	Dial Access Codes
Defines the extension ranges and extension length in the system.	Activates or deactivates a feature. FAC assignment must match dial plan.	Allows use of trunk access codes and feature access codes in the same range.

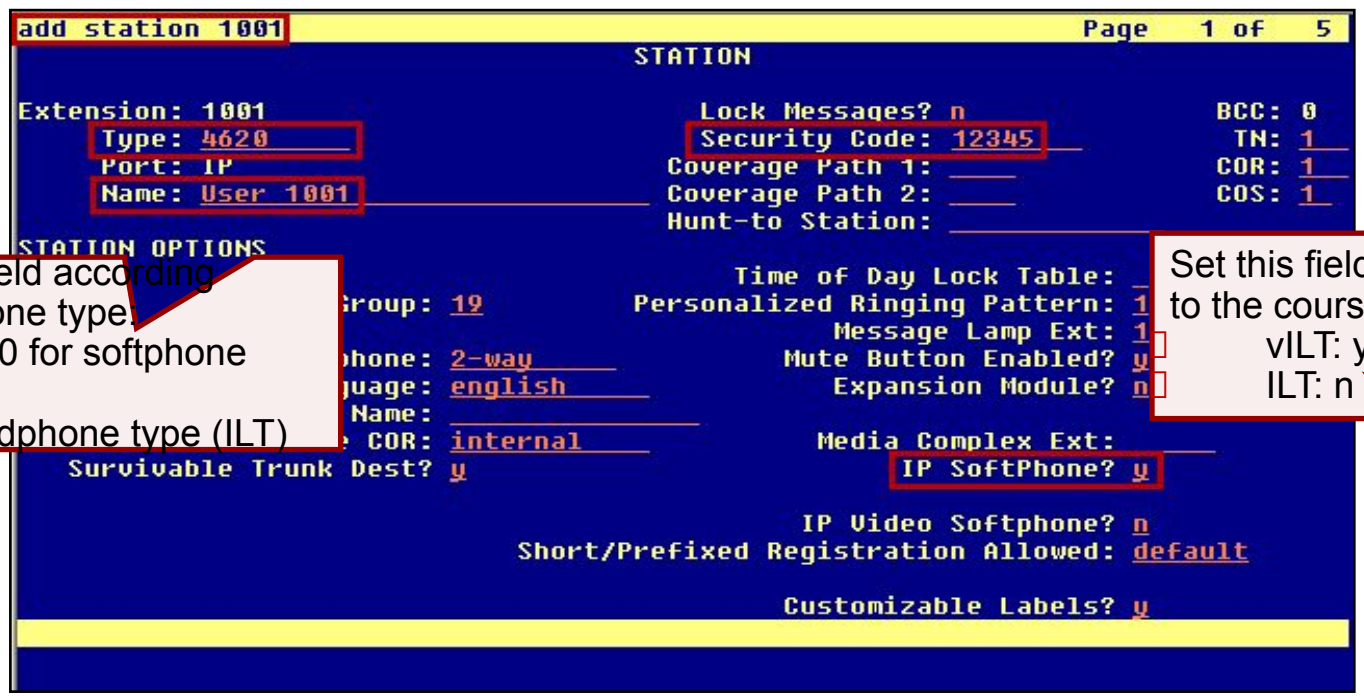
Administer CM Endpoints—Dial Plan (continued)

4 Type **change dialplan analysis** to administer the system-wide dial plan according to the example.



Administer CM Endpoints—Create Endpoints

- Launch Avaya Site Administration, select **Advanced** > **Terminal Emulation**, and connect to Communication Manager at the IP address provided.
- At the SAT command line, type **add station 1001** and press **Enter**.
- Complete the fields as indicated then press **Enter**.

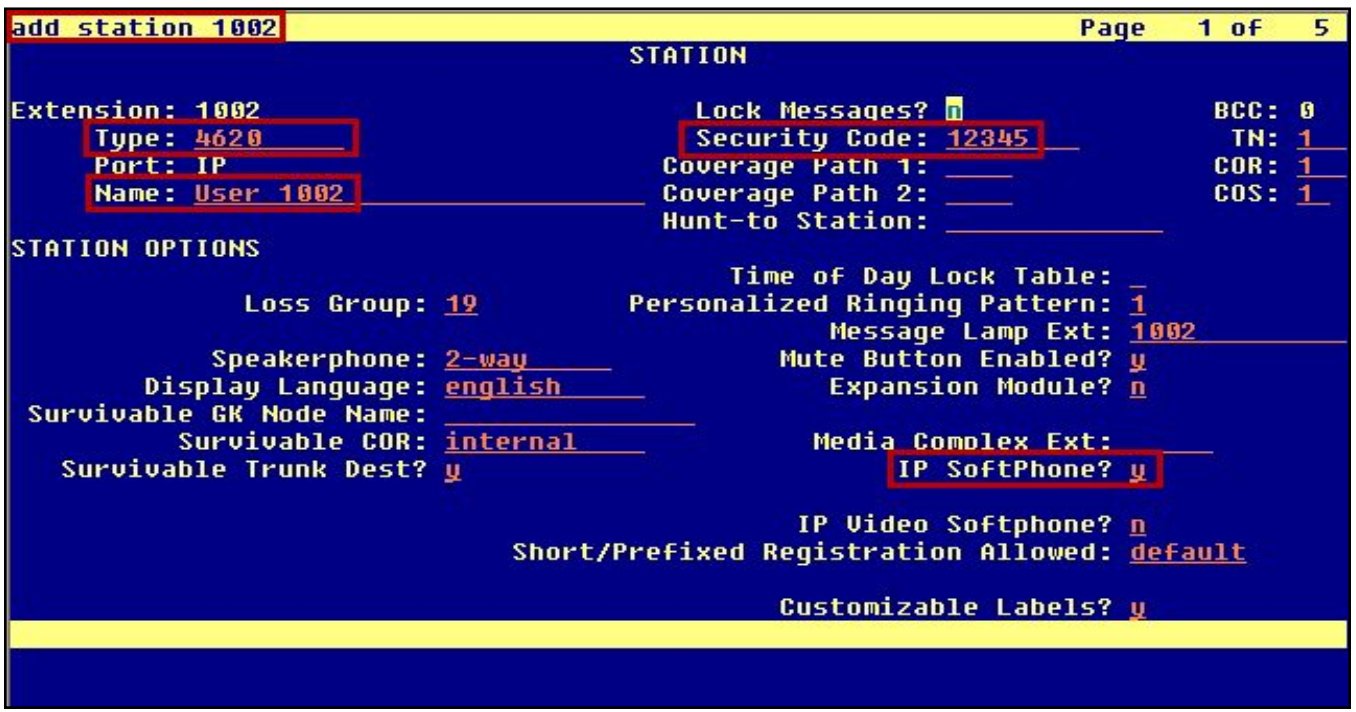


Administer CM Endpoints—Create Endpoints (continued)

Repeat the administration for extension 1002.

4 At the SAT command line, type **add station 1002** and press **Enter**.

4 Complete the fields as indicated then press **Enter**.

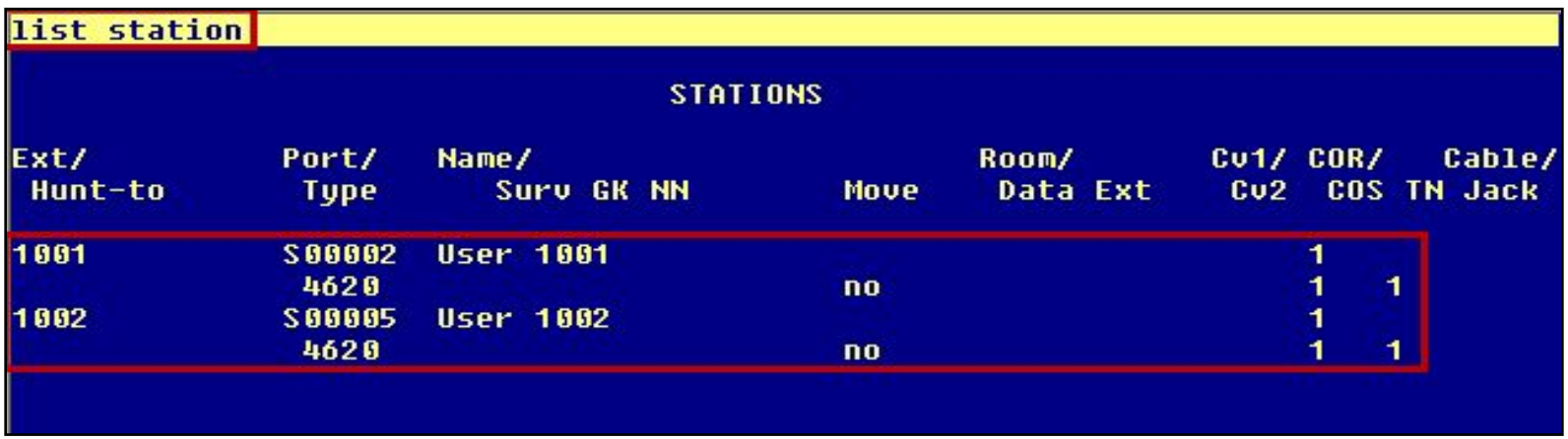


Administer CM Endpoints—Create Endpoints (continued)

Confirm the station administration:

4 At the SAT command line, type **list station** and press **Enter**.

4 Ensure that the two extensions appear in the list.



AVAYA | LEARNING

Administer one-X® Communicator

Administer one-X® Communicator

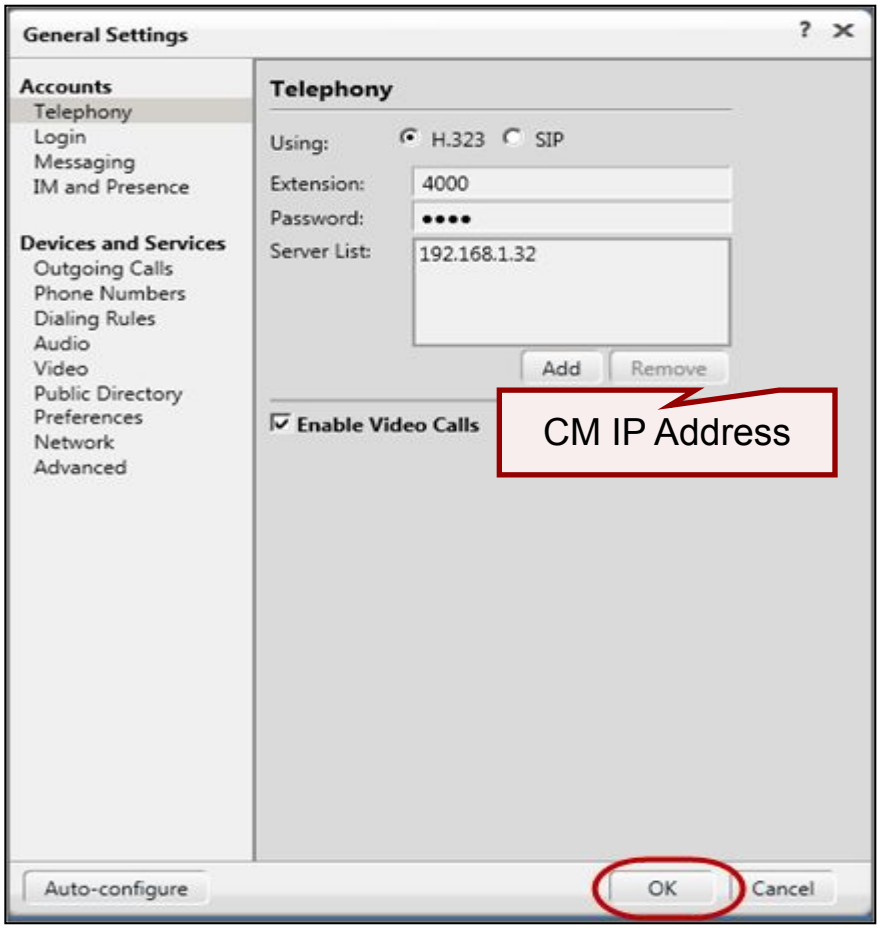
4 Click **Start** and select **Programs** > **Avaya one-X® Communicator** or double-click the **Avaya one-X® Communicator** application icon on the desktop.

4 Click on the **General Settings** icon in the upper-right corner of the login screen.

Administer one-X® Communicator (continued)

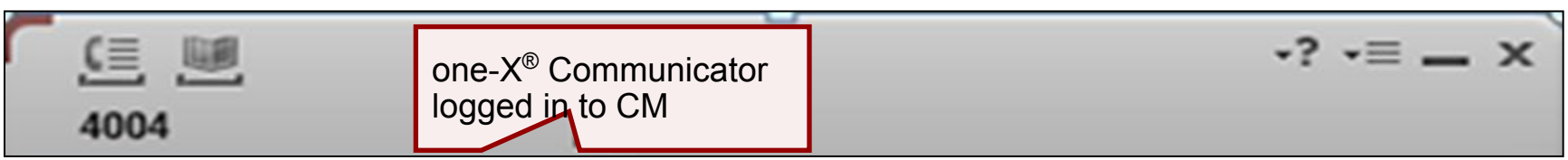
Configure the settings as follows:

- **Using** – select H.323 or SIP
- **Extension** – station number from add station
- **Password** – the security code created on the add station form
- **Server List** – IP address for CM
- **Enable Video Calls** – select if you have capability for video calling
- Click **OK**.



Administer one-X® Communicator (continued)

4 Log on with the extension (station number) and password that you configured on the settings menu.



Verify IP Telephone Registration

- At the Avaya Site Administration window, type **list registered-ip-stations** and press **Enter**.
- The two one-X® Communicator extensions that you used to make the test call should show as registered to Communication Manager.

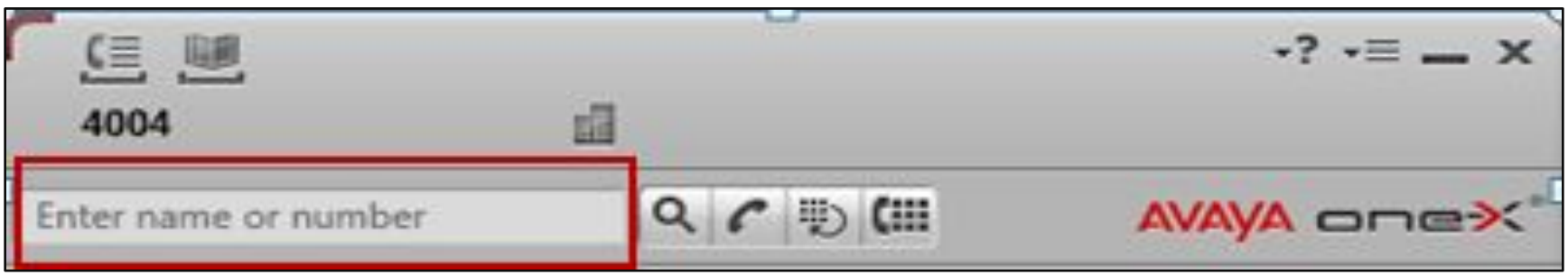
```
list registered-ip-stations

                          REGISTERED IP STATIONS

Station Ext    Set Type/  Prod ID/    TCP Station IP Address/
or Orig Port   Net Rgn    Release     Skt Gatekeeper IP Address
-------------- ---------- ----------- --- ---------------------------------------
1001           4620       IP_Soft      y  135.122.80.71
               1          5.650           135.122.80.82
1002           4620       IP_Soft      y  135.122.80.72
               1          5.650           135.122.80.82

Command successfully completed
Command:
```


AVAYA | LEARNING

Dial the Test Call

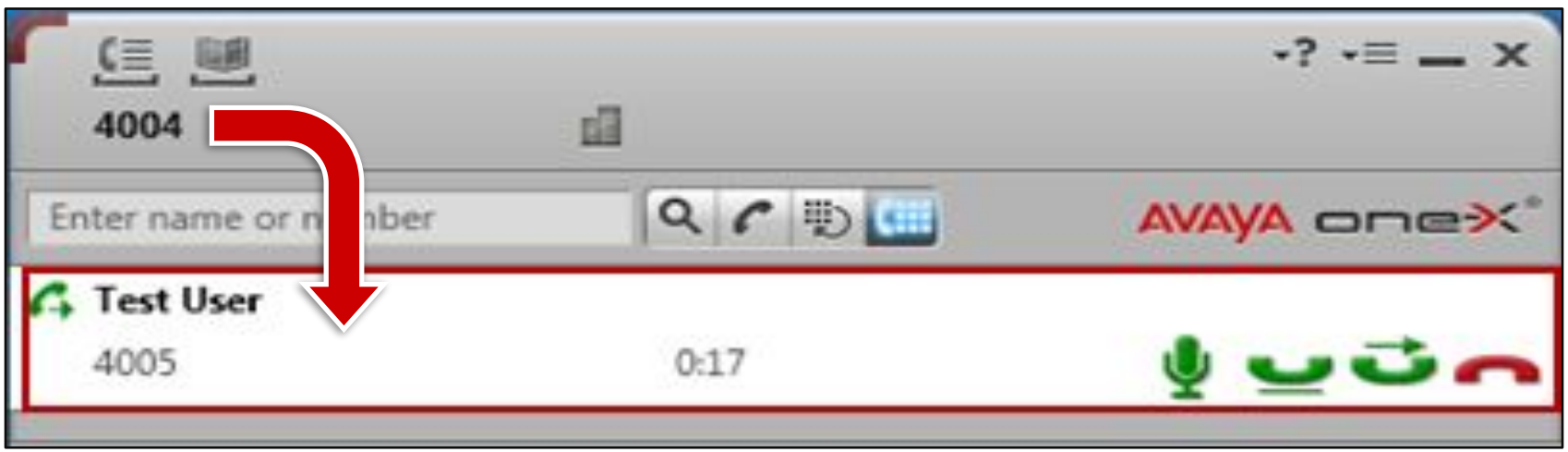
Dial the Test Call

4 Type the number of the extension that you want to call in the address bar and press **Enter** to dial the call.



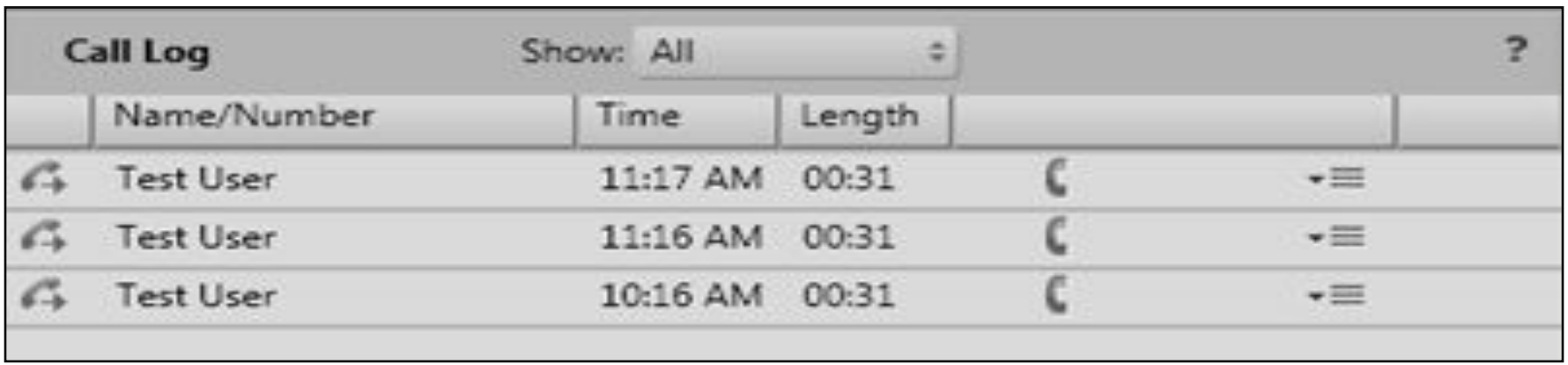
Dial the Test Call (continued)

4 The example below shows a call from extension 4004 to extension 4005:



Dial the Test Call (continued)

4 The Call Log at the bottom of the window shows the call status:



Summary

You should now be able to:

- Cable and configure all hardware components
- Install and configure the Communication Manager – Embedded CM Main
- Describe the Dot Release and Patch Guardian functionality
- Install the license file
- Install Communication Manager patches
- Configure the G450/G430 Gateway and media modules.
- Make a test call

