



Expanding the Business

This lab exercise provides step-by-step instructions on how to upgrade the UC500 user license, how to add a switch to increase the LAN port density and also, how to migrate from one wireless reference design to another.

After initial installation and as a result of the organic growth of an organization, it may be necessary to add more network components in order to accommodate more users. This lab provides detailed instructions on how to grow a business, starting with the following assumptions:

- An UC500 8 user SKU with an embedded AP has already been deployed, supporting a mixture of wired and wireless phones and computers.
- The business needs to accommodate 8 additional phones, all of them wireless and also needs to accommodate 8 additional LAN servers, supporting different productivity applications.

Based on the above needs, it has been determined that the following software and hardware components need to be added:

- License upgrade from 8U to 16U, to accommodate the 8 additional IP extensions. **Note: Final upgrade license or evaluation license needs to be purchased from Cisco.**
- 8 x SPA525 phones, operating in wireless mode.
- An AP521, to support the additional wireless IP phones
- An 8 port CE520 switch, for server connectivity.

In terms of wireless VoIP planning, it has been determined that a migration from Reference Design #1 to Reference Design #2 will satisfy the technical requirements for a successful expansion. The following table details the differences between RD#1 and RD#2:

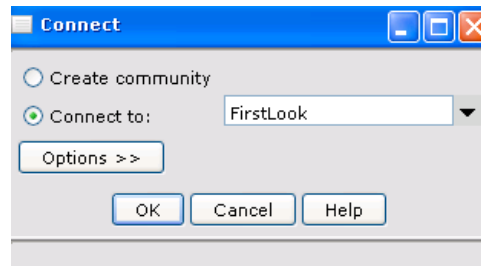
Hardware Detected	Automated Configuration Details
UC500 with an embedded access point; no other access points present	RD1 Combined QoS configuration for voice and data configured on the embedded access point, with separate SSIDs and passwords for voice and data. Support for up to 8 wireless phones.
UC500 with an embedded access point and one (1) external AP521 access point	RD2 Separate QoS configuration for voice and data, with voice SSID and security configured on the external access point and data SSID and security configured on the embedded access point. Support for up to 16 wireless phones.

For more information about the other RD's, please refer to the *SPA525 Wireless Voice Deployment Guide*.

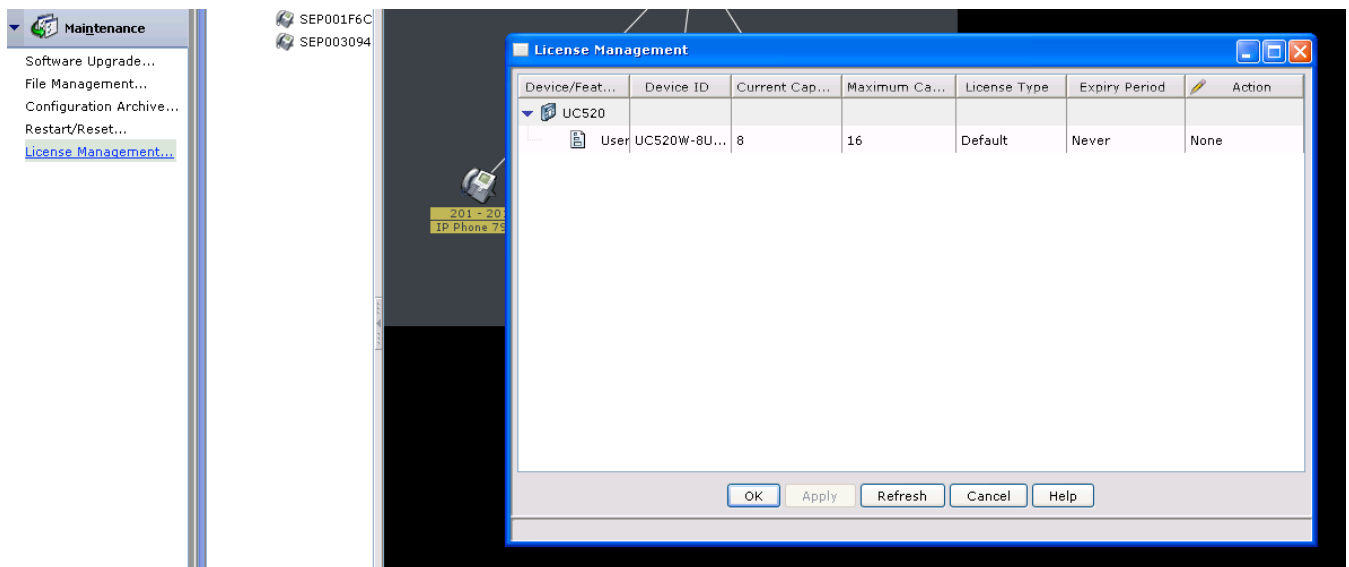
Upgrading the User License on the UC500

Following these steps to upgrade from 8U to 16U on the UC500:

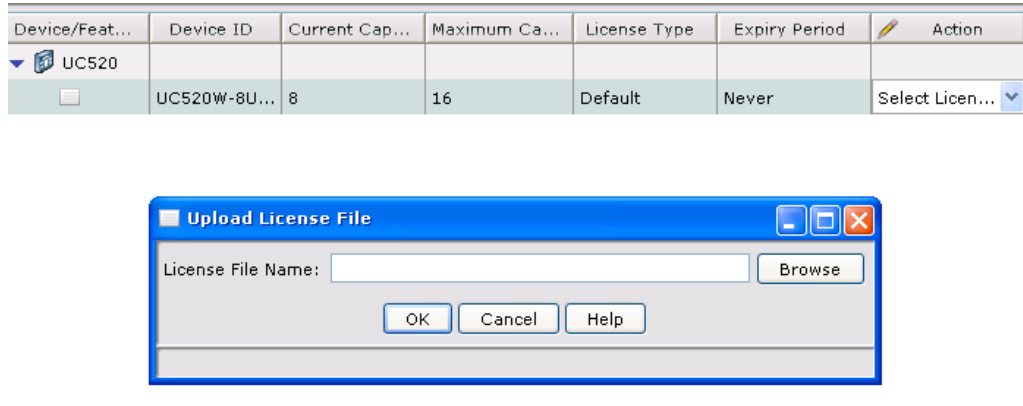
- Step 1. Connect a PC to one of the PoE ports on the UC500 platform and launch CCA.
- Step 2. Connect to an existing community or use the UC500 LAN IP address (default is 192.168.10.1). When prompted, use your current UC500 administration credentials.



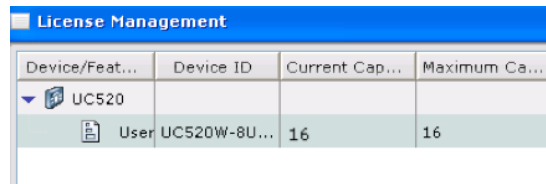
- Step 3. Click on **Maintenance > License Management**. The License Management window shows up:



- Step 4. Under **Action** click on **Select License File and** browse to the license file (.lic or .xml extensions) purchased from Cisco. You can optionally request an evaluation license from Cisco, and install it using the corresponding option on this screen. Click **OK**.



Step 5. After installing the license file, the **Current Capacity** tab will change to reflect 16 users.

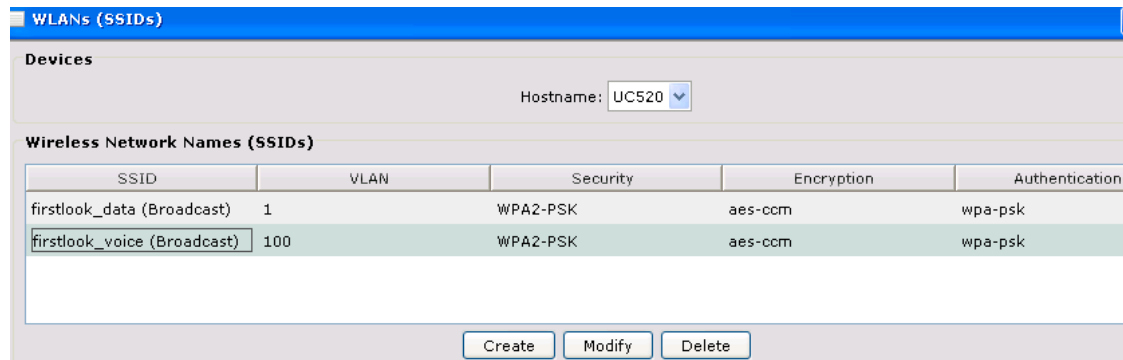


At this point, your system is ready to accommodate up to 8 additional IP phones.

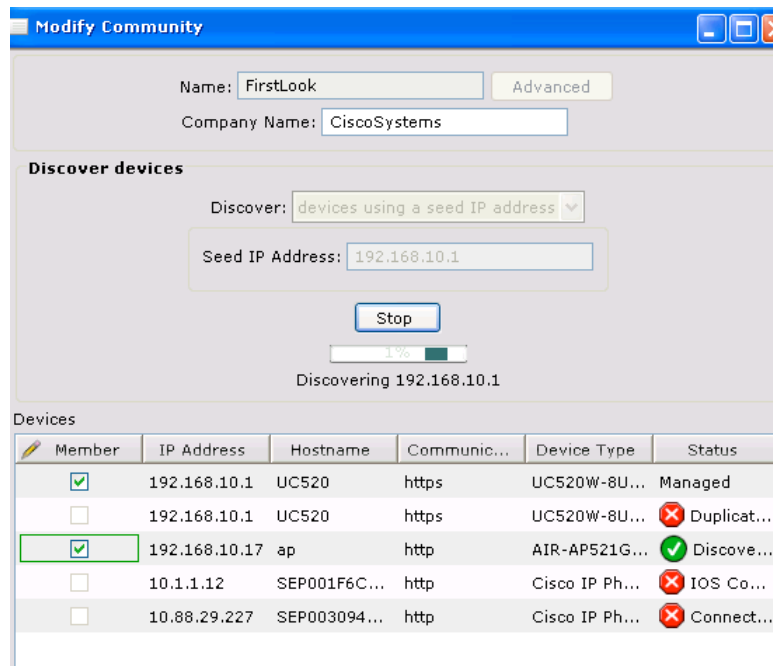
Migrating from Reference Design #1 to Reference Design #2

In this exercise, we will add an external AP521 wireless access point, to support up to 16 SPA525 phones operating in wireless mode. We will also move the Data SSID to the embedded AP, for wireless data support.

- Step 1. Connect a PC to one of the PoE ports on the UC500 platform and launch CCA.
- Step 2. Navigate to **Configure > Wireless > WLANs (SSIDs)** and remove the voice SSID from the embedded access point by highlighting it and clicking **Delete**. Click **Apply** once you are done:

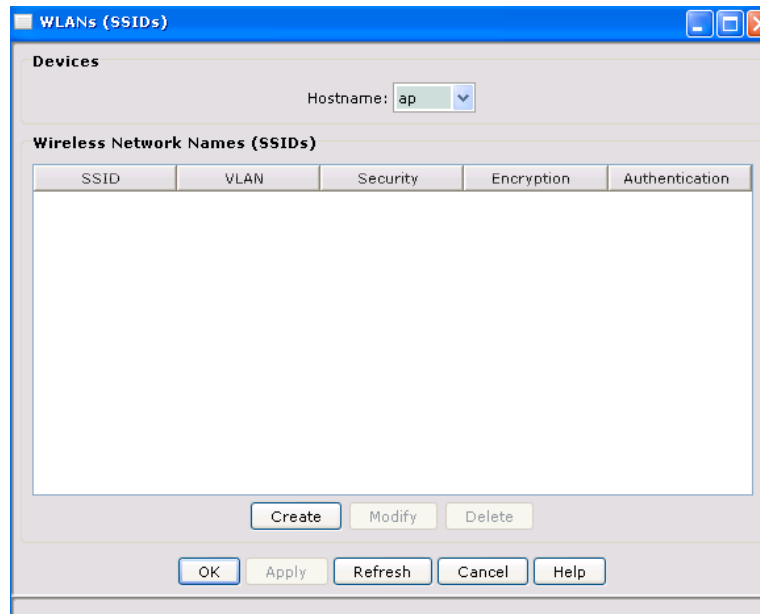


- Step 3. Connect the AP521 AP to a PoE port on the UC500.
- Step 4. When the AP521 has completed powering up, add the AP521 to the community. To do this, click on **System** on the top menu bar, then **Communities**. Select your community and click **Modify**. You will need to enter the seed IP for the UC500 again, for the system to discover the AP. If necessary, re-enter the UC500 admin credentials and the AP521 admin credentials, once it is discovered (default is Cisco/Cisco):



- Step 5. Once you verify the AP is listed and operational, click **Apply** and then **OK**.

- Step 6. From feature bar in CCA, choose **Configure > Wireless**, then click **Wireless (SSIDs)**.
- Step 7. In the Wireless (SSIDs) window, select the hostname for the AP521 access point you just added. The default hostname for the AP521 is "ap". Once you select the new access point, you will see that no SSIDs are configured.



- Step 8. You have retained the SSID for the data network on the embedded access point and now you need to create the voice SSID on the external access point you just added. Click **Create** and add your voice SSID. Select **WPA2-PSK** as the authentication method, enter the key and type the voice VLAN (100). Click **OK** and then **Apply**.



At this point, all previously installed SPA525 phones should start re-registering to the network.

Installing additional SPA525 phones in Wireless Mode

- Step 1. Connect one end of an Ethernet cable to the Ethernet port on the phone and the other to an available PoE port on the UC500. The phone will boot up and receive its SSID and profile information from the UC500 automatically. The phone reboots once it receives this information. When the phone has finished rebooting, it will have the correct SSID and profile and receive an extension.
- Step 2. Unplug the Ethernet cable from the phone and move the phone to the desired location.
- Step 3. Connect the phone to power using a PA100 power supply.
- Step 4. Enable Wi-Fi mode on the phone (these are the same steps included in the Wireless Setup Wizard):
 - a. Press the **Settings** button on the phone.
 - b. Use the down arrow key on the Navigation button to scroll to the **Network Configuration** option, then press the **Select** softkey.
 - c. Press the right arrow key on the Navigation button to enable Wi-Fi mode (Wi-Fi setting will change from OFF to ON).
 - d. Click **Save**.
 - e. Click **Exit**.
 - f. Verify that the wireless icon that displays signal strength appears at the top of the phone display.
 - g. Press the **Setup** button on the phone and navigate to **Network Configuration > Wireless > Wireless Status** to check the signal strength level at the location of the phone.

Note: Once Wi-Fi mode is enabled, the phone will begin registering with UC500. It will receive the same extension that it did previously when plugged into the PoE port on the UC500.
- Step 5. Continue configuring the phone in CCA, just as you would configure a wired phone.
- Step 6. Once setup is verified, save and back up your device configuration through CCA.

Installing additional Catalyst Express 500 Switch (CE520)

In this exercise, we will add a CE520 switch that will provide 8 additional FE ports for server connectivity.

- Step 1. Power up the CE520 and connect **Port 1** to the **Expansion** port on the UC500, using an Ethernet cable.
- Step 2. Connect a PC to one of the PoE ports on the UC500 platform and launch CCA.
- Step 3. When the CE520 has completed powering up, add it to the community. To do this, click on **System** on the top menu bar, then **Communities**. Select your community and click **Modify**. You will need to enter the seed IP for the UC500 again, for the system to discover the switch. If necessary, re-enter the UC500 admin credentials.

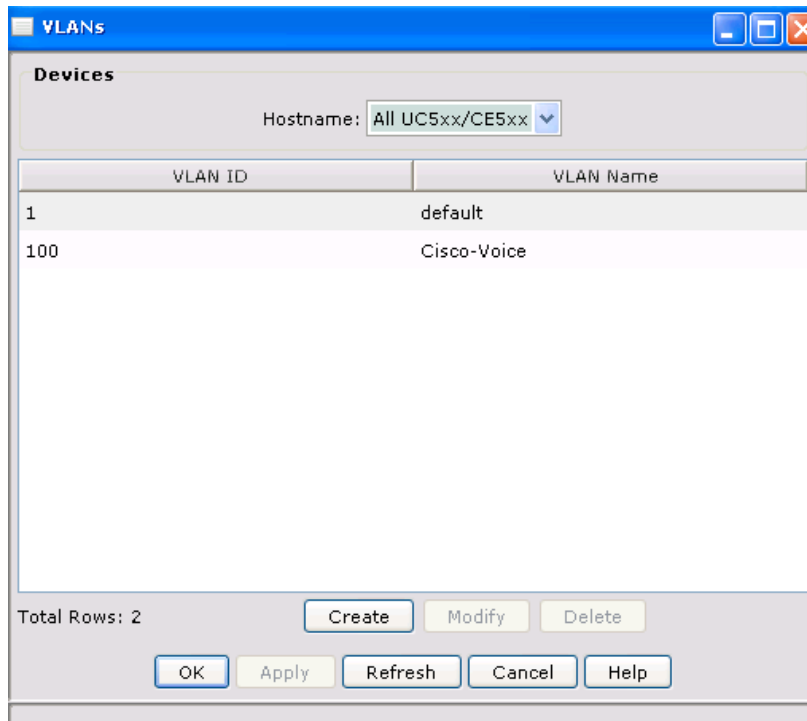
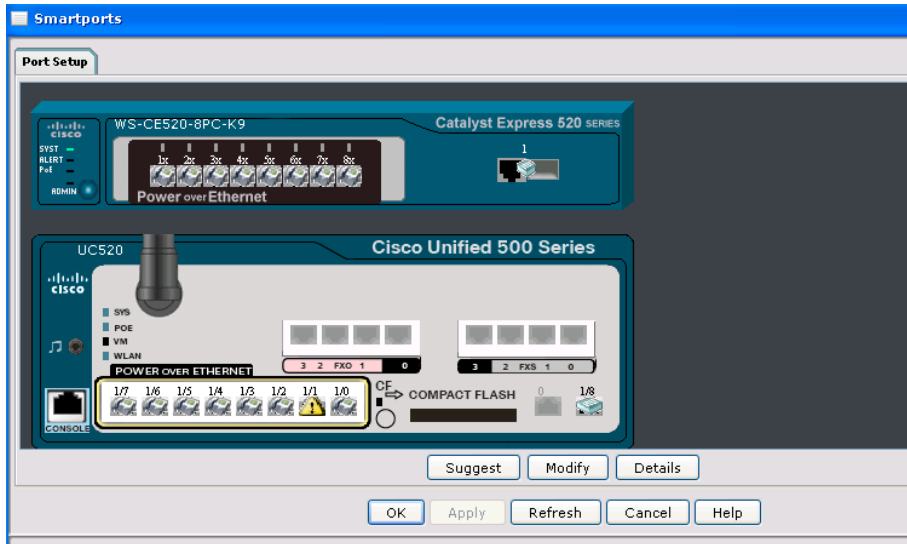
The screenshot shows the 'Modify Community' window with the following details:

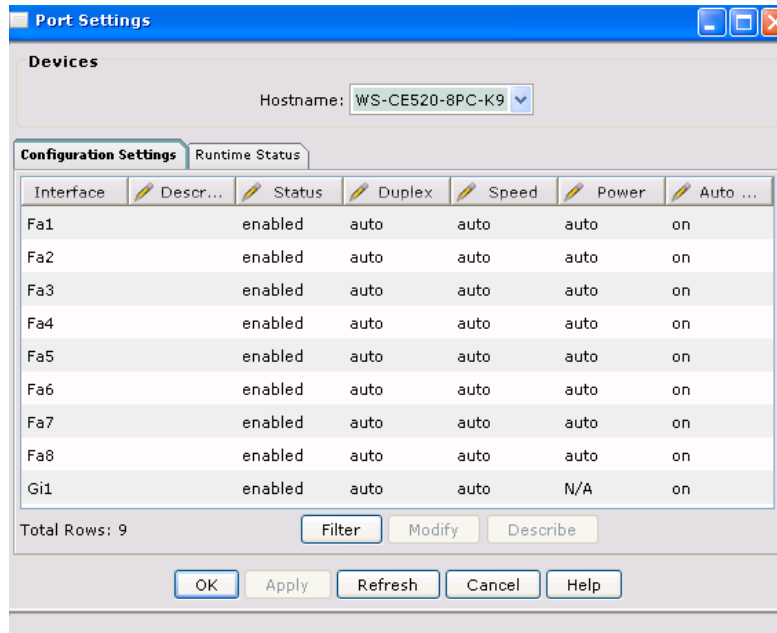
- Name: FirstLook
- Company Name: CiscoSystems
- Discover: devices using a seed IP address
- Seed IP Address: 192.168.10.1
- Stop button
- Discovering 10.88.29.227

Member	IP Address	Hostname	Communic...	Device Type	Status
<input checked="" type="checkbox"/>	192.168.10.1	UC520	https	UC520W-8U...	Managed
<input checked="" type="checkbox"/>	192.168.10.17	ap	http	AIR-AP521G...	Managed
<input type="checkbox"/>	192.168.10.1	UC520	https	UC520W-8U...	Duplicat...
<input type="checkbox"/>	192.168.10.17	ap	http	AIR-AP521G...	Duplicat...
<input checked="" type="checkbox"/>	192.168.10.18	WS-CE520-...	http	WS-CE520-...	Discove...

Total Rows: 5

- Step 4. Once you verify the CE520 is listed and operational, click **Apply** and then **OK**.
- Step 5. At this point you can navigate to **Configure > Smartports** or **Configure > VLANs** to modify the settings for the CE520 and enter the smartport role ("Server"). You can also navigate to **Configure > Port > Port Settings** to modify the access port speed, duplex configuration and others. Make sure you select the correct hostname every time.





For More Information

For more information on Cisco SBCS solutions, visit the SBCS Support Community at the following URL:

www.myciscocommunity/community/smallbizsupport