APPENDIX B: Key System w/ Voicemail

Introduction:
UC520 supports two voice system configuration types – PBX type and Key system type. Appendix B focuses on the Key System configuration. Typical Key Systems consist of one or more lines coming from the PSTN (e.g. Analog FXO trunks) that ring a group of selected phones. To make outbound calls, IP Phone users would select one of the buttons on their IP Phones that correspond to the lines from the PSTN. In addition to the PSTN lines, users would have internal extensions with voicemail.
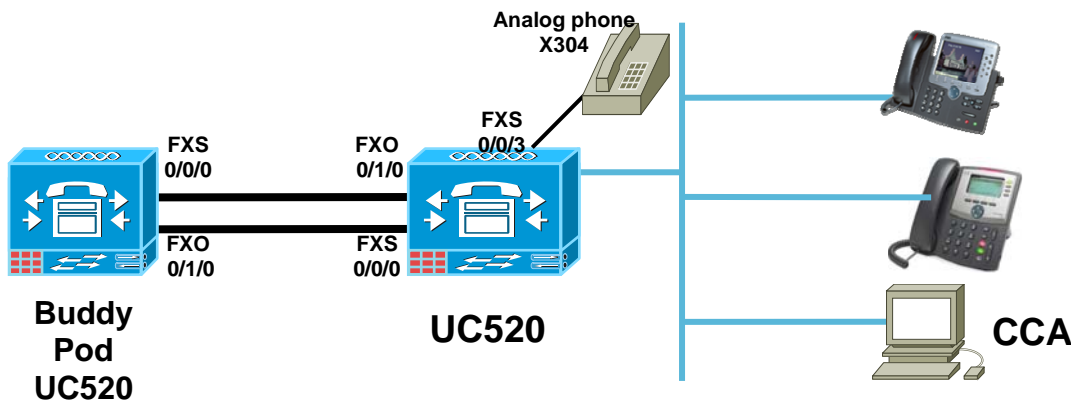
Objective:
The main objective of this lab is to configure the basic Key System with some voicemail features. This would be configured using the Cisco Configuration Assistant (CCA). At the completion of this lab, the system will be setup as a Key System with extensions of all users, voicemail boxes, intercom, paging and power failover config.
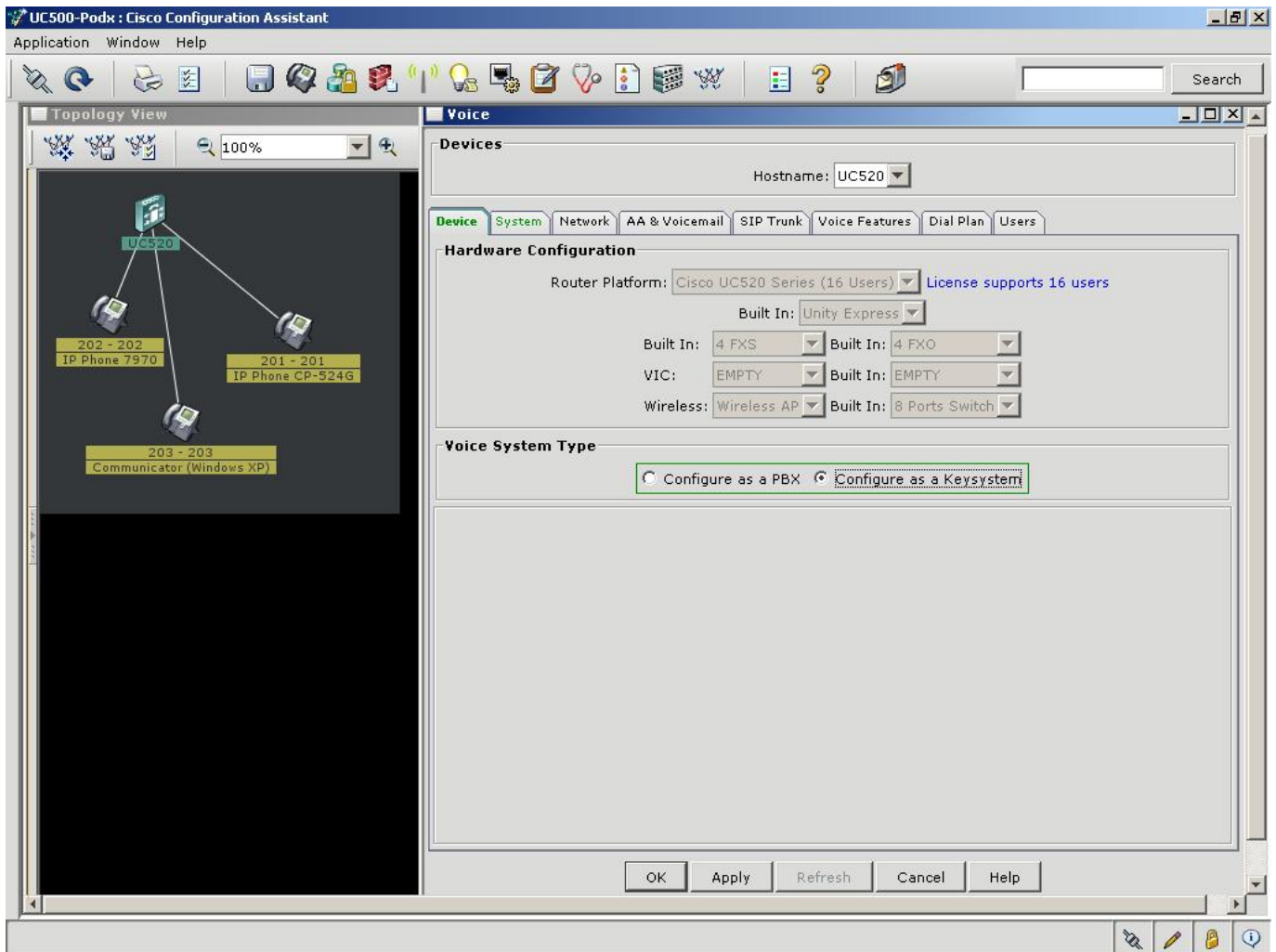
Reference:
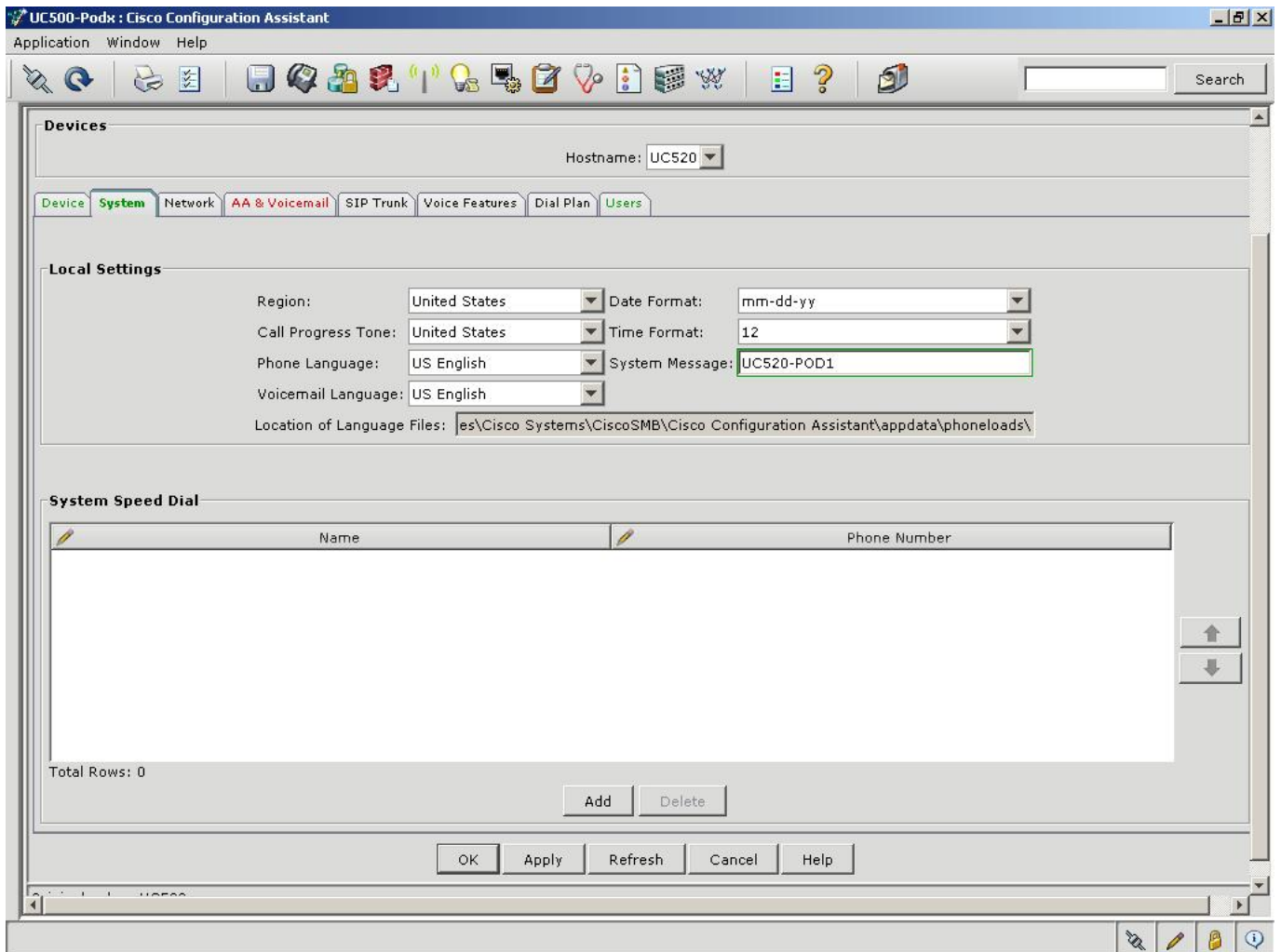Video Demo for CCA: http://tools.cisco.com/cmn/jsp/index.jsp?id=61293

Topology:

Setup steps:
1. Launch CCA, connect to the created community and enter the username and password (cisco/cisco) and let it discover the network and connected devices. If you have not already done so, plug in the 7970 and the 524 IP Phones to the PoE ports on the UC500. Once the IP Phones get an extension assigned, launch CIPC and make sure it gets extension 203 (x203)

2. Check the topology to ensure all the connected phones are showing up. Unplug any lines that are connected to the FXO ports on the PODs.
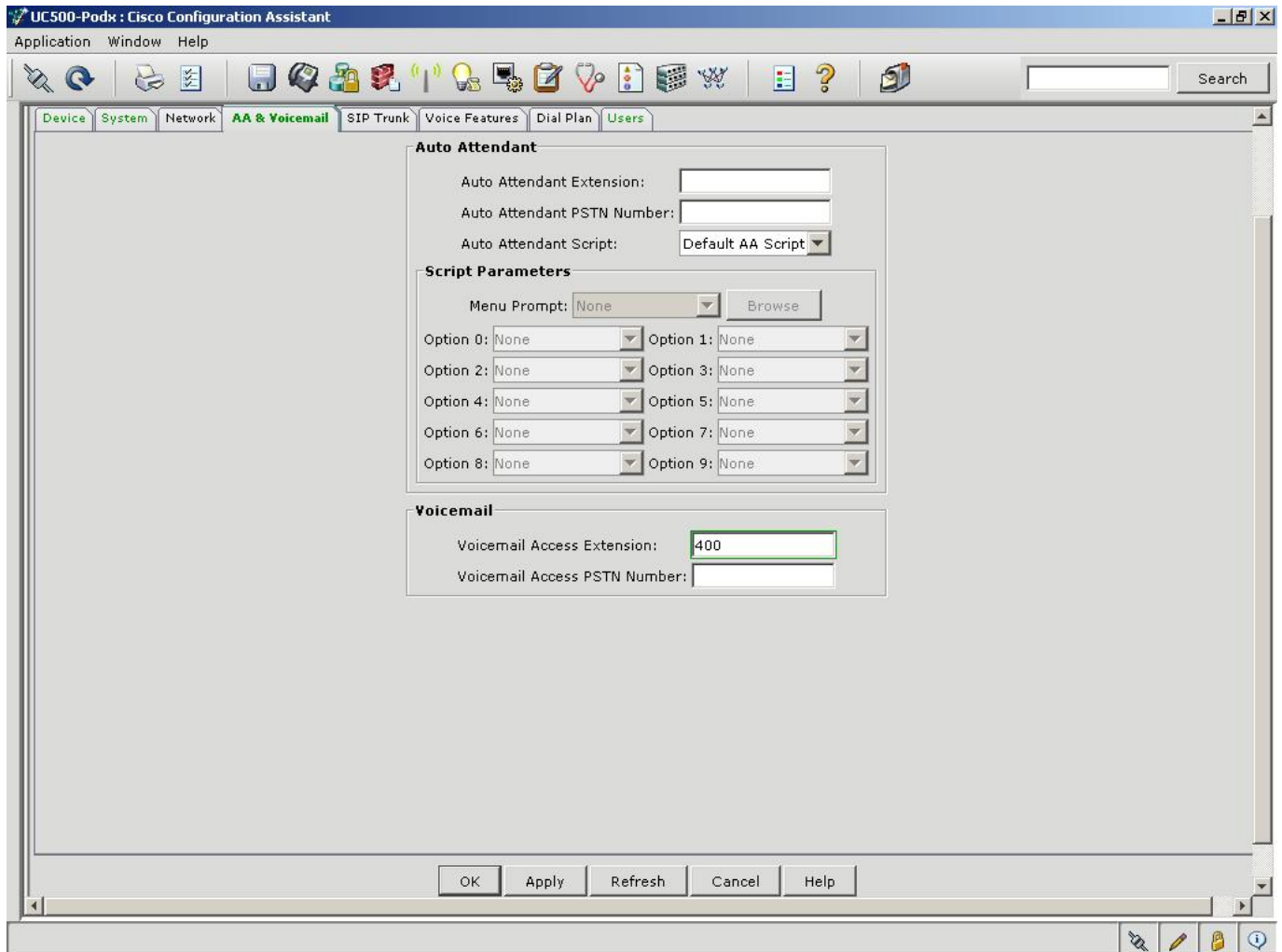
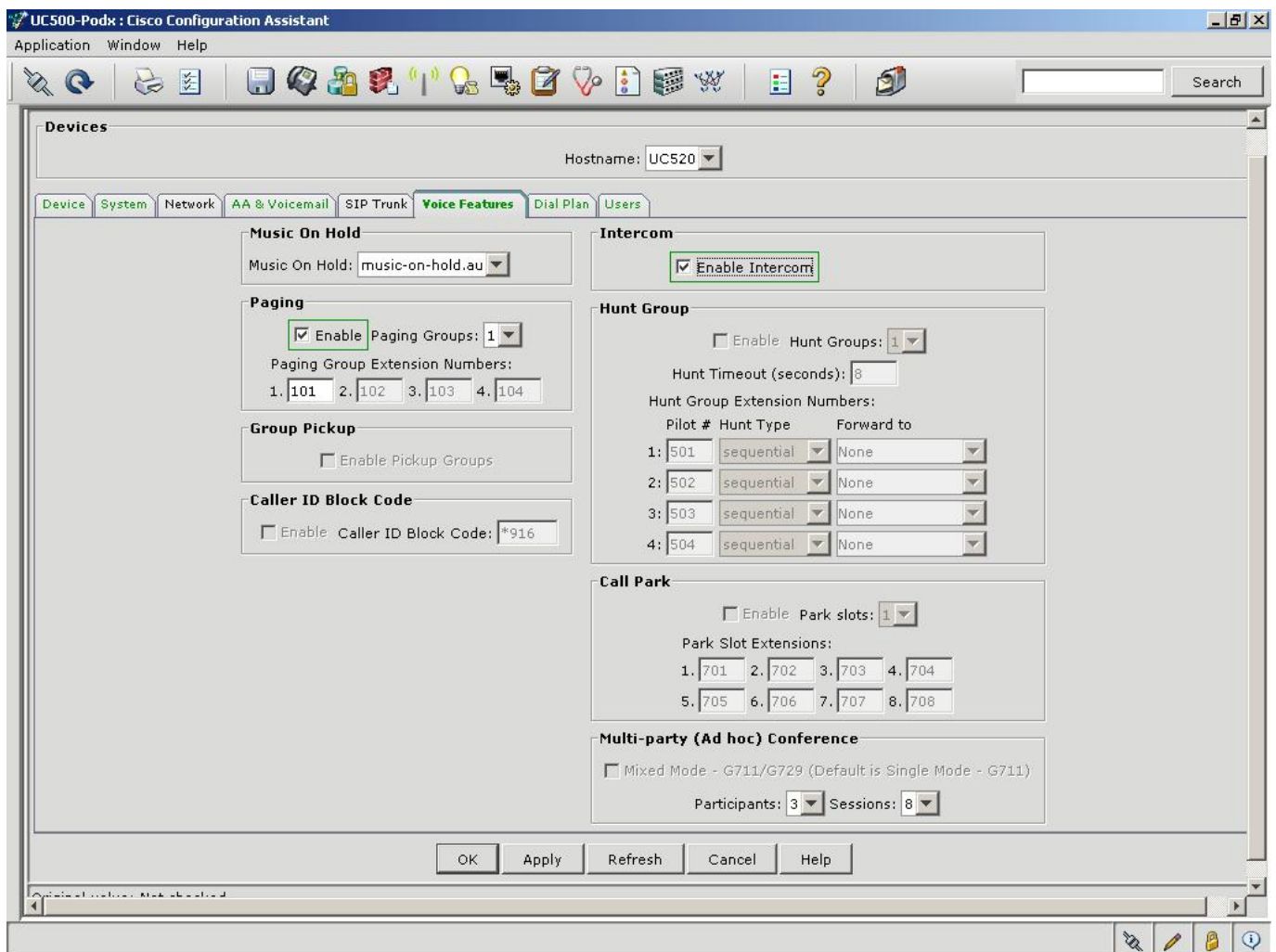3. Click on the "Device" tab & select the System Type as a "KeySystem".

4. Click on "System" tab and change the System Message to "UC520-PODxx". We won't configure "System speed dial" feature for this lab.

5. Click on "AA & Voicemail" tab. For this lab, don't configure the Auto Attendant. Configure the "Voicemail Access Extension" as 400. This number is transparent to the end user and is used by the UC500 as a trigger for Voicemail application.
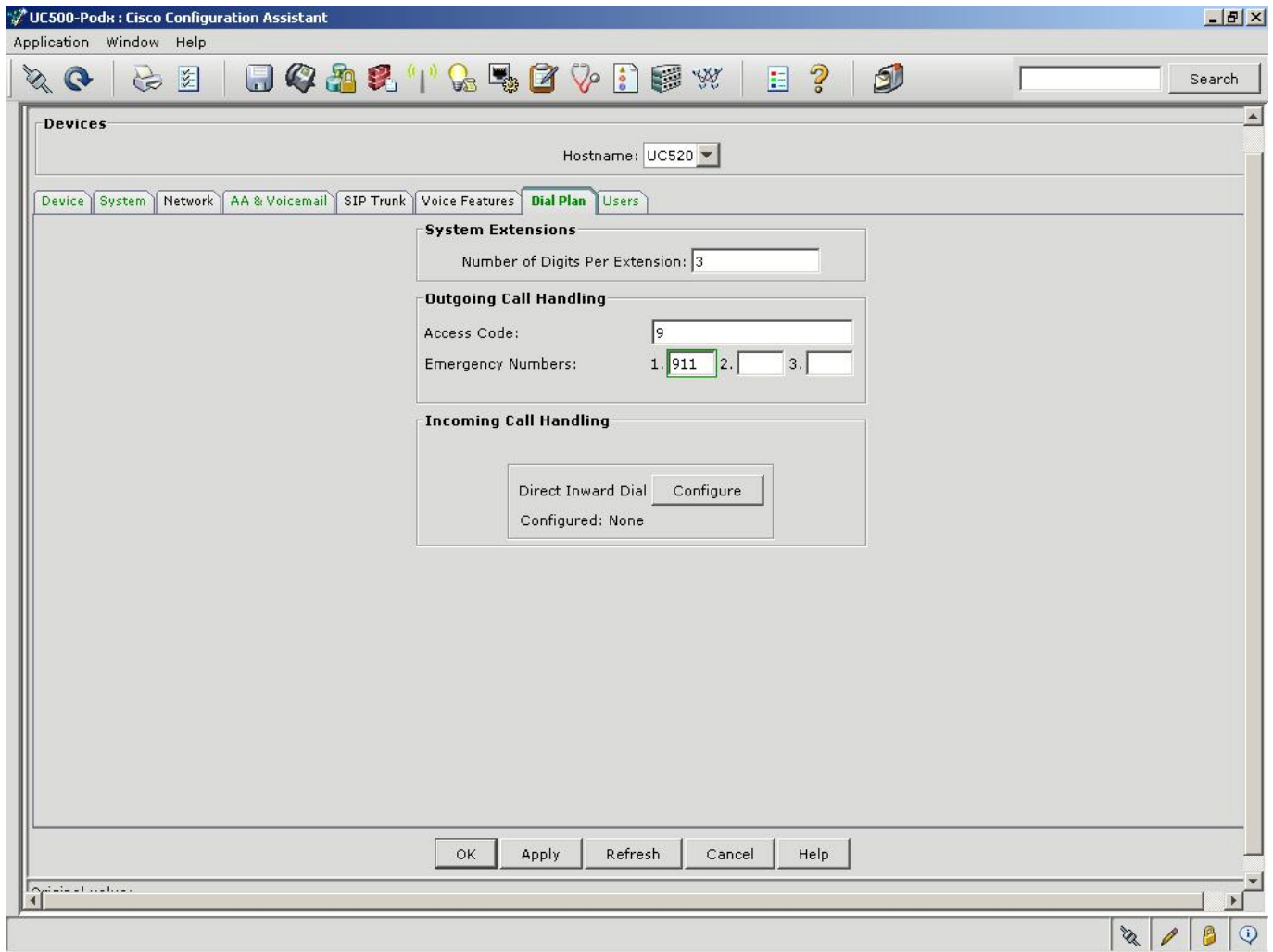
6. On CCA, SIP Trunk feature is disabled for KeySystem mode. Now, click on the "Voice Features" tab.
   - Check box to enable Paging
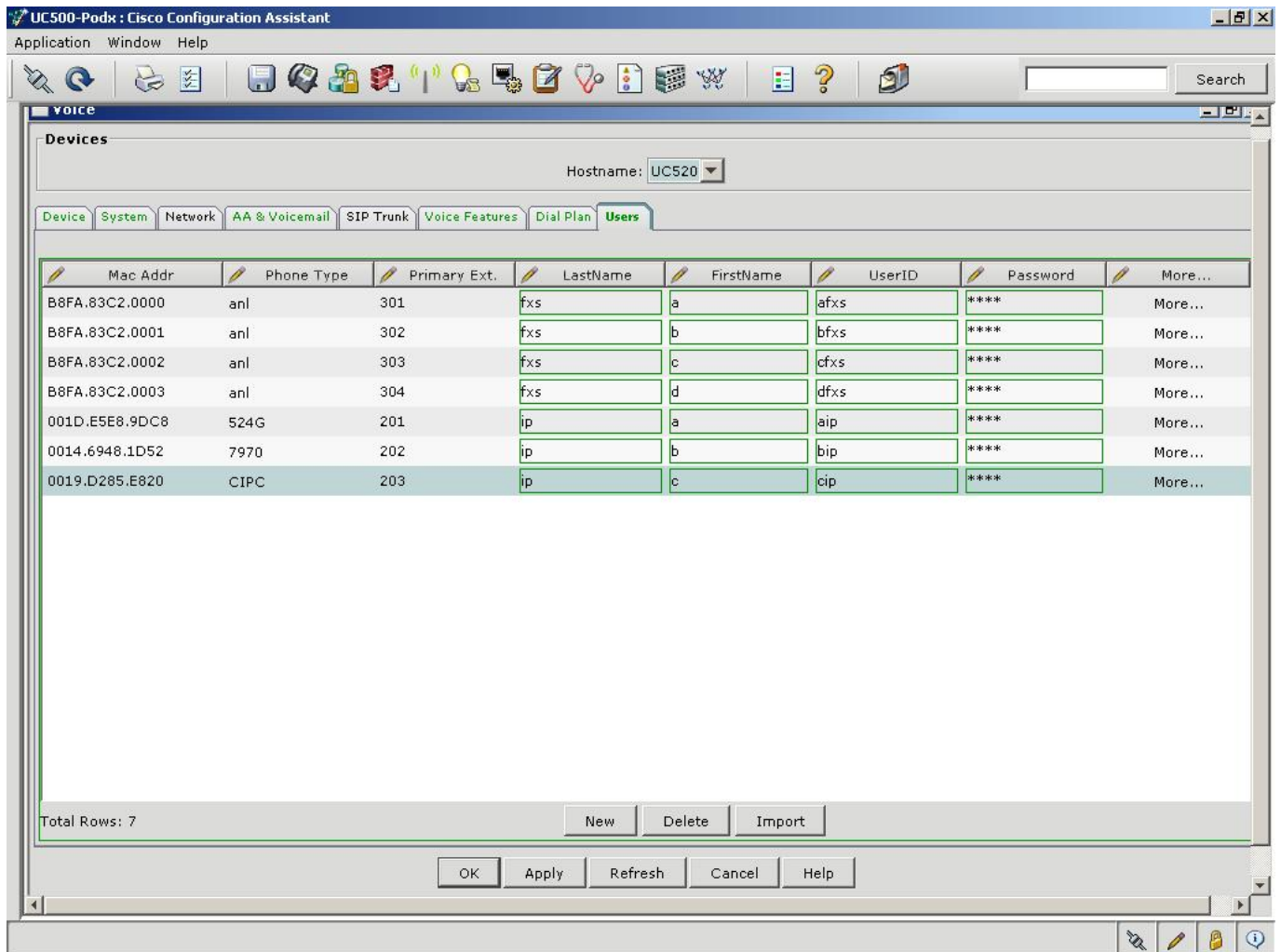   - Check box to enable Intercom

Notice that the other features are greyed out as they are not supported in Keysystem mode.

7. Click the "Dialplan" tab. We won't configure "Incoming Call Handling" feature for this lab.
   o Set "Number of Digits Per Extension" to 3
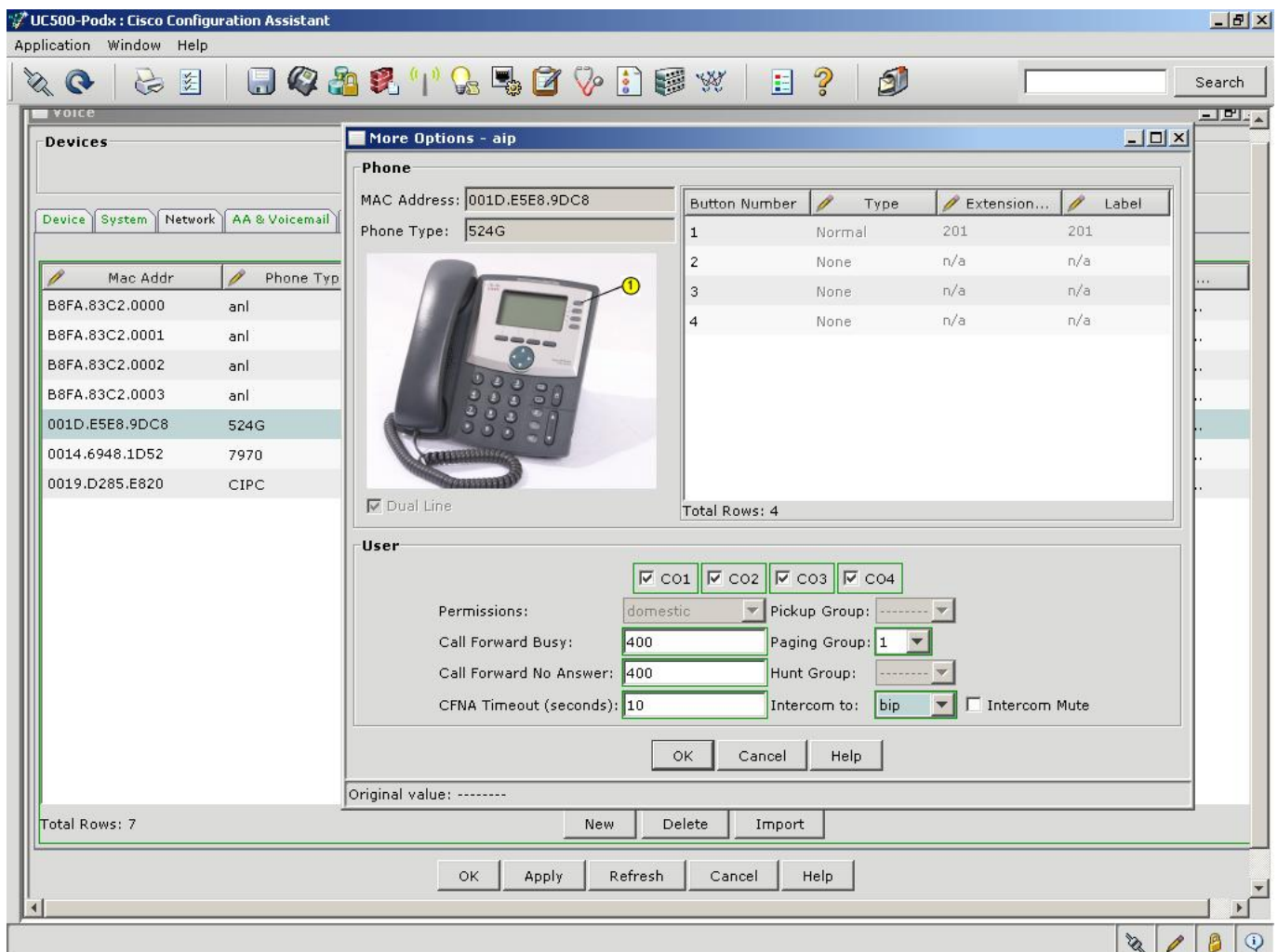   o Configure 911 for "Emergency numbers"

8. Click on the "Users" tab:
    o For all the Analog Phones (none connected but configured by default on the UC520):
        i. Configure the LastName for all Analog phones as fxs
        ii. Configure the FirstName as a, b, c, d.
        iii. Configure the userid as afxs, bfxs, cfxs, dfxs.
        iv. Set the passwords to 1234.
    o For all the IP Phones:
        i. Configure the LastName for all IP phones as ip
        ii. Configure the FirstName as a, b, c.
        iii. Configure the userid as aip, bip, cip.
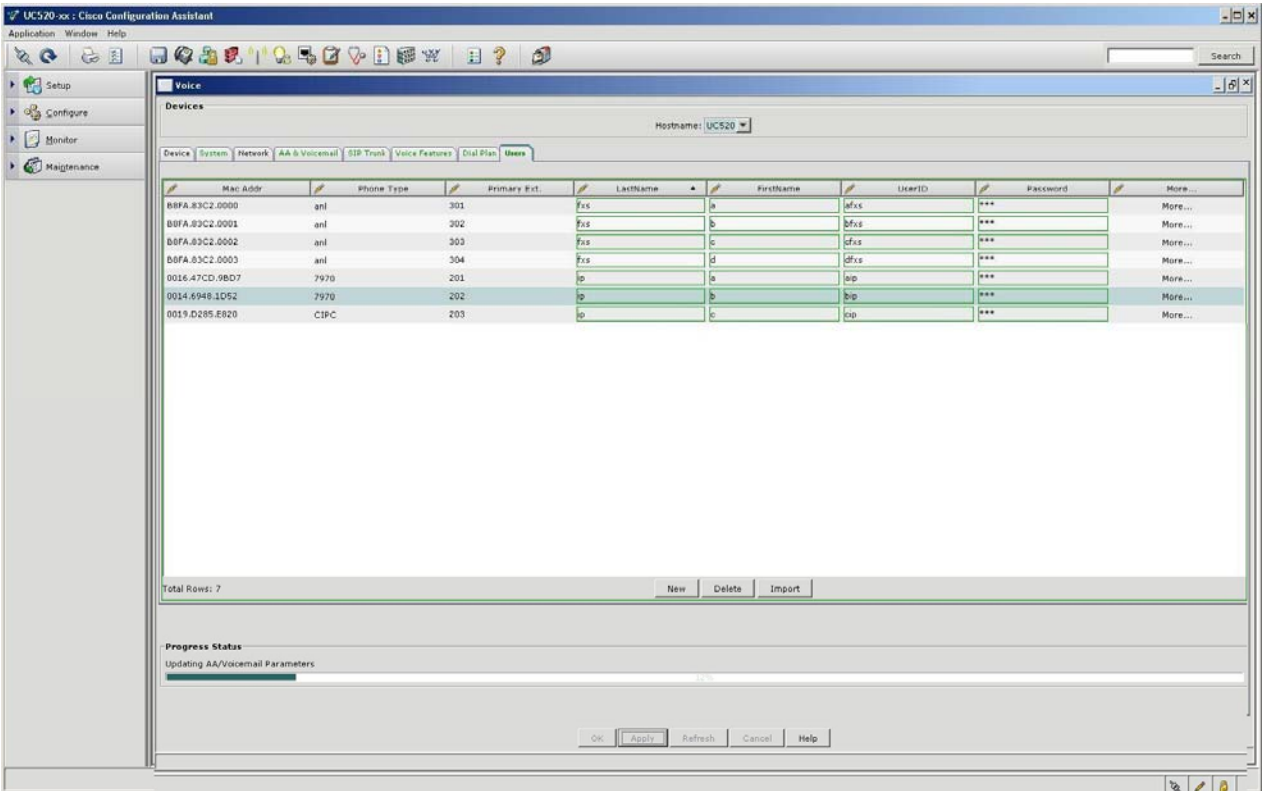   iv. Set the passwords to 1234.

9. Select the "More" button for the IP Phones one at a time as below
   - For IP phone with x201,
     - Select the Paging Group from the pull down
     - Select Intercom to IP phone x202 (bip) from the pull-down. Do not check "Intercom Mute" box.
     - Check all C01 to C04 options – these are the PSTN lines (CO lines) on the 4 FXO ports – then click OK
   - For IP Phone with x202
     - Select the Paging Group from the pull down
     - The Intercom should show to x201 (aip). Check the "Intercom Mute" box.
     - Check C01 to C03 which implies this phone has 3 PSTN lines – then click OK
   - For the CIPC phone with x203
     - Select the Paging Group from the pull down
     - Check C01 to C04 to select all 4 PSTN lines – then click OK

10. Click on "Apply" button at the bottom of the screen and observe the progress bar. Click OK when the "Configuration successfully sent to UC520" message pops up. Save the Configuration by clicking on the "Save" icon at the top of CCA.

NOTE: The first time you configure the unit, the progress bar will take longer as the voicemail is being setup during this interval.

Verify Steps:

1. Check the FirstName and LastName on the IP Phones. Place a call from x201 to x202, do not answer the call and ensure that call rolls over to VM – leave a test message.

2. Verify that the Message Waiting (MWI) light turns on for x202. Press the "Messages" button on x202 and enroll the user in voicemail. Use "789" as a password. After enrollment is complete, check the message left by x201.

3. Test Intercom by pressing the button x201 setup for Intercom

4. Dial the paging extension 101 from x202 to test the Paging feature.

5. For steps 5 & 6, you need to work with your 'partner' POD. Connect an analog cable from FXO port 0/1/0 (on your POD), to the FXS port 0/0/3 (on the partner's POD). Configure the CFNA timer on the analog FXS ports to 20 seconds. Run the test below and then reverse the ports between the two PODs.
   a. Call from an IP Phone on your POD by selecting CO Line 1 button – you should get dial tone – go ahead and dial 202 and it should ring the appropriate phone on the buddy POD.
   b. From the partner's POD call x304 – this should ring x201 on your POD.

NOTE: You may run into an issue with calls disconnecting as soon as they are answered. You will not run into this issue in field. This is only observed on back-to-back (FXS-FXO) UC500 setup. If so, contact your proctor and have him/her configure "no battery-reversal" on FXS ports.

6. Test power failure feature – this allows for emergency calls to be completed even if UC520 is down – the ports that allow for this are FXS port 0/0/3 to FXO port 0/1/0. To verify this:
   a. On CCA, use the Configure > Save Configuration option to save the UC500 config
   b. Unplug the power at the back of the POD with the analog phone.
   c. Go offhook on the analog phone – you should still get dialtone on the analog phone – dial x201 and this should ring the phones on the buddy POD
   d. From the pod with power, call from an IP phone to x301 should ring the analog phone.

   Plug the UC500 back in…. Let the team in your buddy pod repeat the same test before resetting your system.

NOTE: When both you and your buddy pod have completed this lab, please reset UC500 and CUE to factory default setting using the procedure in Appendix A! Also, make sure you close CIPC now – launch this when instructed in the next lab.