



Avaya Solution & Interoperability Test Lab

Configuring Avaya 1120E, 1140E, 1220 and 1230 IP Deskphones with Avaya IP Office Release 6.1 – Issue 1.0

Abstract

These Application Notes describe a solution comprised of Avaya IP Office and Avaya 1100 Series/1200 Series IP Deskphones with SIP software. During interoperability testing, the IP Deskphones successfully registered with Avaya IP Office, placed and received calls to and from SIP and non-SIP telephones, and executed other telephony features such as conference, transfer, hold, and call forward.

Table of Contents

1	Introduction.....	3
2	Equipment and Software Validated.....	5
3	Configure Avaya IP Office.....	5
3.1	Verify IP Office License.....	5
3.2	Obtain LAN IP Address.....	6
3.3	Configure Network Topology.....	7
3.4	Administer SIP Registrar.....	7
3.5	Administer Codec Preference.....	8
3.6	Administer SIP Extension.....	9
3.7	Configure User.....	11
3.8	Save Configuration.....	12
4	Configure Avaya 1100 and 1200 Series IP Deskphones.....	12
5	Verification Steps.....	14
5.1	Verify Avaya IP Office.....	14
5.2	Verification Scenarios.....	15
6	Conclusion.....	15
7	Additional References.....	15

1 Introduction

These Application Notes describe a solution comprised of Avaya IP Office and Avaya 1100/1200 Series IP Deskphones with SIP software. During interoperability testing, the IP Phones successfully registered with Avaya IP Office, placed and received calls to and from SIP and non-SIP telephones, and executed other telephony features such as conference, transfer, hold, and call forward.

The sample configuration is shown in **Figure 1**. Avaya IP Office 500 has Avaya 1600 Series IP Deskphones (H.323), 1400 Series Digital Telephones, 1100 Series IP Deskphones (SIP) and 1200 Series IP Deskphones.

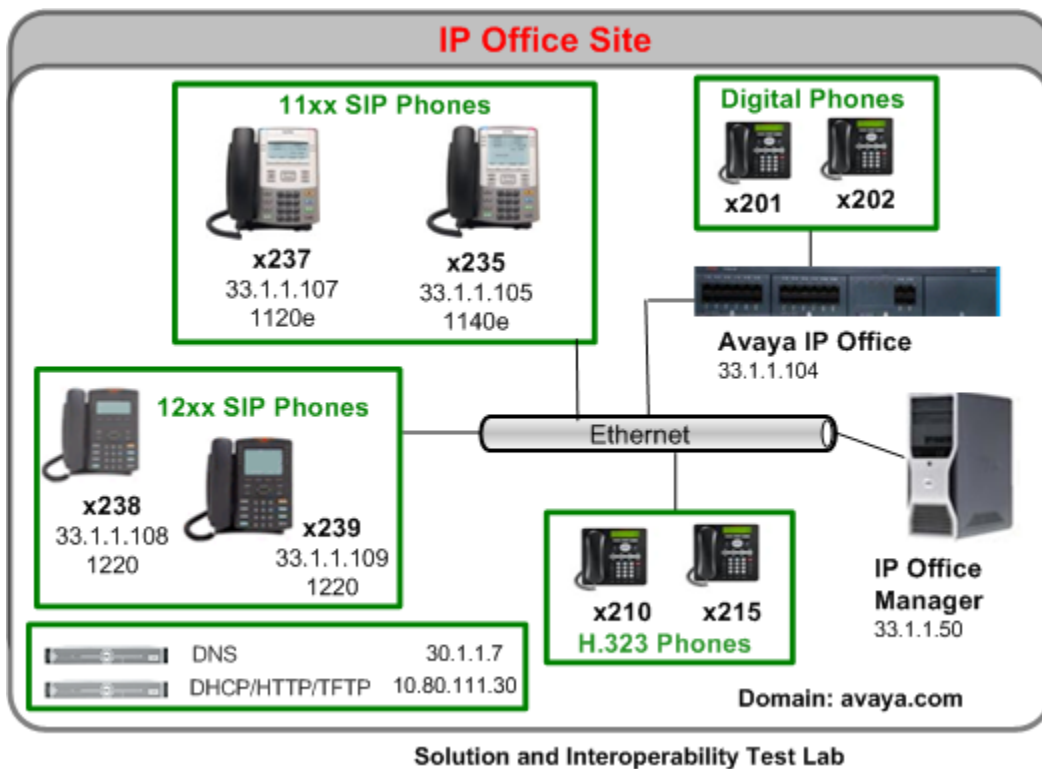


Figure 1 – Sample Configuration

Table 1 gives a summary of the features supported and tested with Avaya 1100 and 1200 Series IP Deskphones with SIP software.

Features	1120E	1140E	1220	1230	Notes
Basic Calling Features					
Extension to extension call	X	X	X	X	
Basic call to non-SIP Phones	X	X	X	X	
Compressed Codecs	X	X	X	X	G.711, G.729A
Intercept tones/displays	X	X	X	X	
Call Waiting	X	X	X	X	
Message Waiting Support	X	X	X	X	
Do not Disturb	X	X	X	X	
Speed Dial Buttons	X	X	X	X	Only programming on the 11xx/12xx sets is supported. IP Office Manager User → Button Programming tab will not work.
Other Features					
Call Hold	X	X	X	X	
Consultation Hold	X	X	X	X	
Unattended Transfer	X	X	X	X	
Attended Transfer	X	X	X	X	
Call Forwarding Unconditional	X	X	X	X	
Call Forward Busy	X	X	X	X	
Call Forward No Answer	X	X	X	X	
Conference – 3 rd party added	X	X	X	X	
Conference – 3 rd party joins	X	X	X	X	
Twinning	X	X	X	X	
Priority Call	X	X	X	X	
Automatic Redial	X	X	X	X	
Password Authentication	X	X	X	X	
Trunk Calls	X	X	X	X	

Table 1

2 Equipment and Software Validated

The following equipment and software versions were used in the test environment:

Hardware Component	Software Version
Avaya IP Office Server (500 V2)	Release 6.1 (5)
Avaya 1400 Series Digital Deskphones	NA
Avaya 1600 Series IP Deskphones (H.323)	1.22
Avaya 1100 Series IP Deskphones (SIP) 1120e 1140e	4.00.03.00
Avaya 12xx Series IP Deskphones (SIP) 1220 1230	04.00.03.00

3 Configure Avaya IP Office

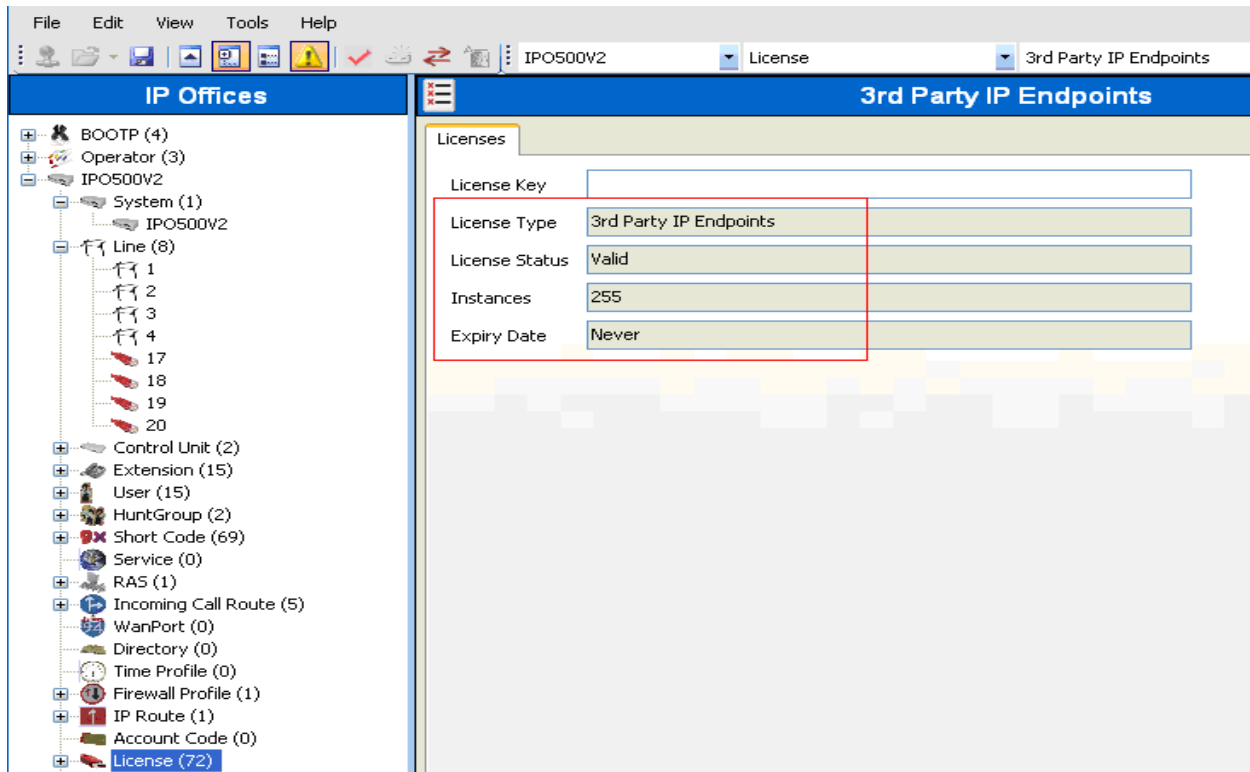
This section provides the procedures for configuring Avaya IP Office. The procedures include the following areas:

- Verify IP Office license
- Obtain LAN IP address
- Configure Network Topology
- Administer SIP Registrar
- Administer Codec Preference
- Configure SIP Extension
- Configure Users

3.1 Verify IP Office License

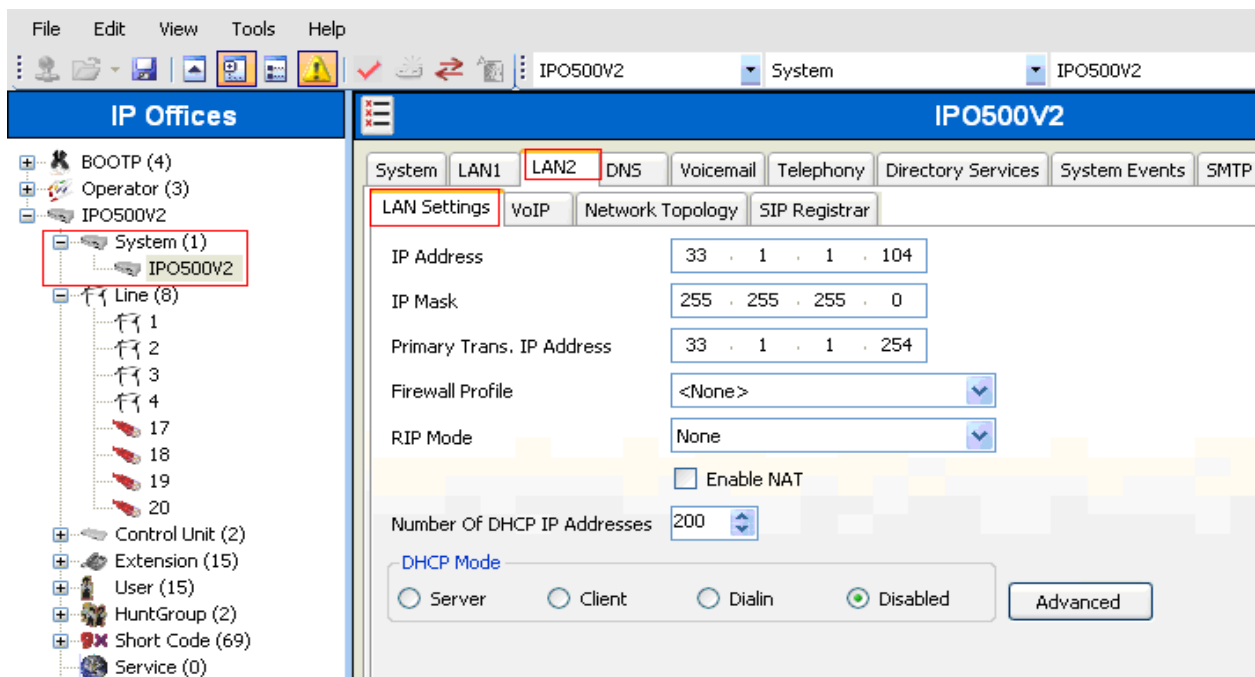
From a PC running the Avaya IP Office Manager application, select **Start > Programs > IP Office > Manager** to launch the Manager application. Select the proper IP Office system, and log in with the appropriate credentials.

The **Avaya IP Office Manager** screen is displayed. From the configuration tree in the left pane, select **License > 3rd Party IP Endpoints** to display the screen in the right pane. Verify that the **License Status** is “Valid”. If there is insufficient capacity or a required feature is not enabled, contact an authorized Avaya sales representative to make the appropriate changes.



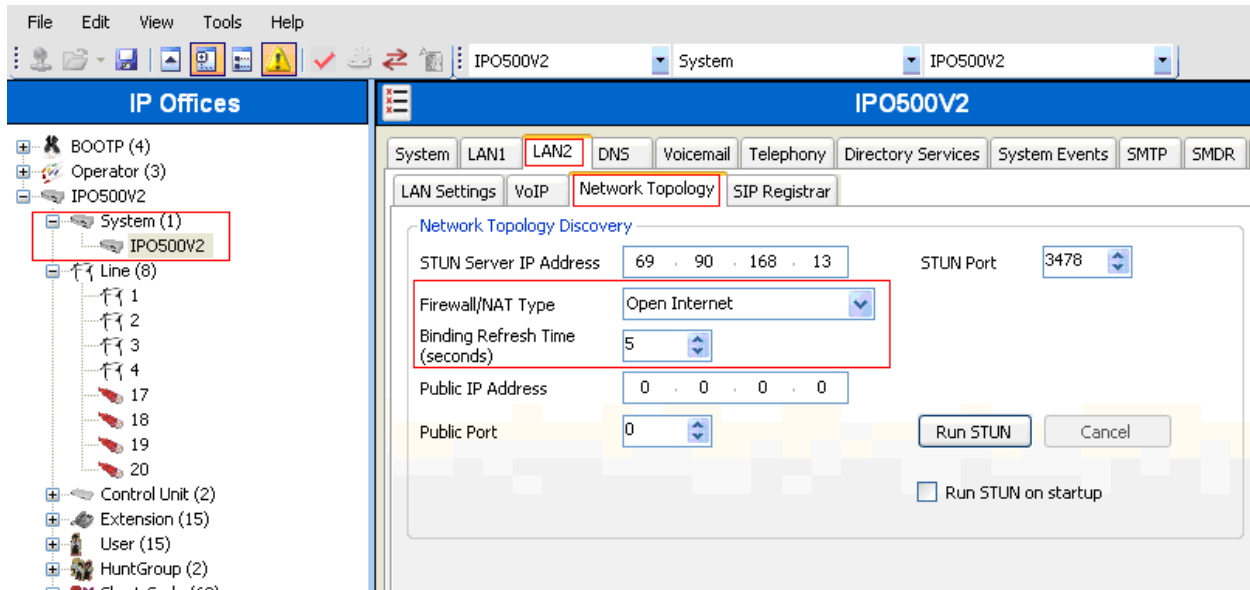
3.2 Obtain LAN IP Address

From the configuration tree in the left pane, select **System** to display the **IPO500V2** screen in the right pane. Select the **LAN2** tab, followed by the **LAN Settings** sub-tab in the right pane. Make a note of the **IP Address**, which will be used later to configure the SIP endpoints in **Section 4.2**.



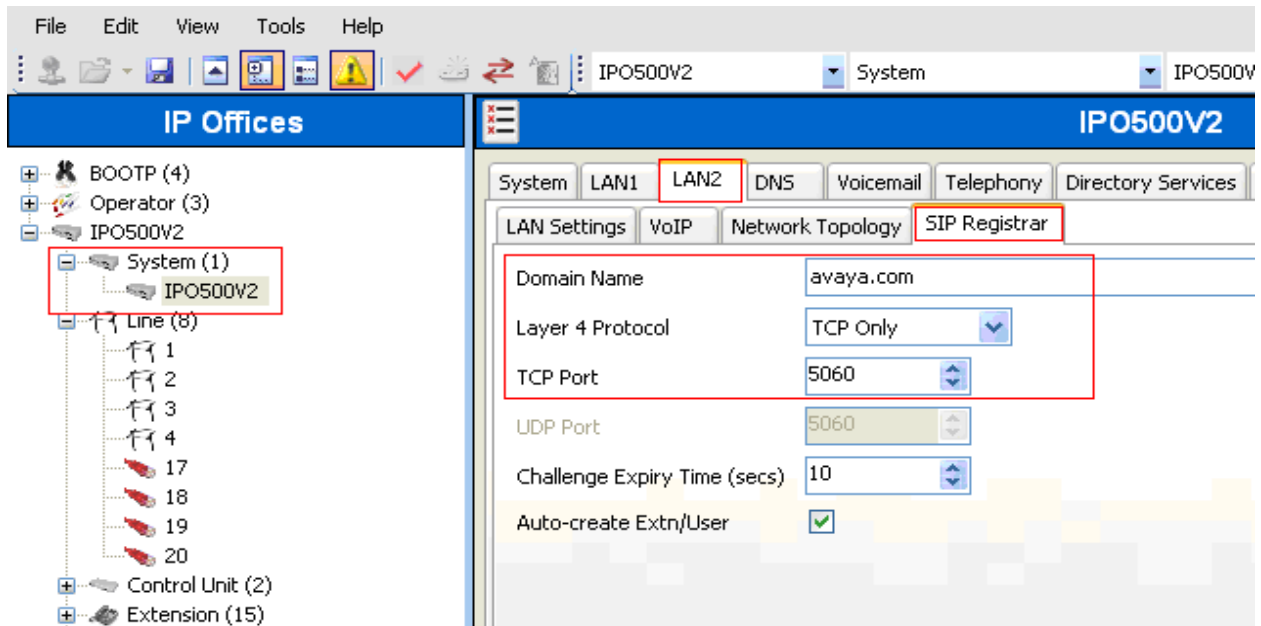
3.3 Configure Network Topology

From the configuration tree in the left pane, select **System** to display the **IPO500V2** screen in the right pane. Select the **LAN2** tab, followed by the **Network Topology** sub-tab in the right pane. Configure **Firewall/NAT Type** to “Open Internet”. Configure **Binding Refresh Time** to “5”. Click **OK** (not shown).



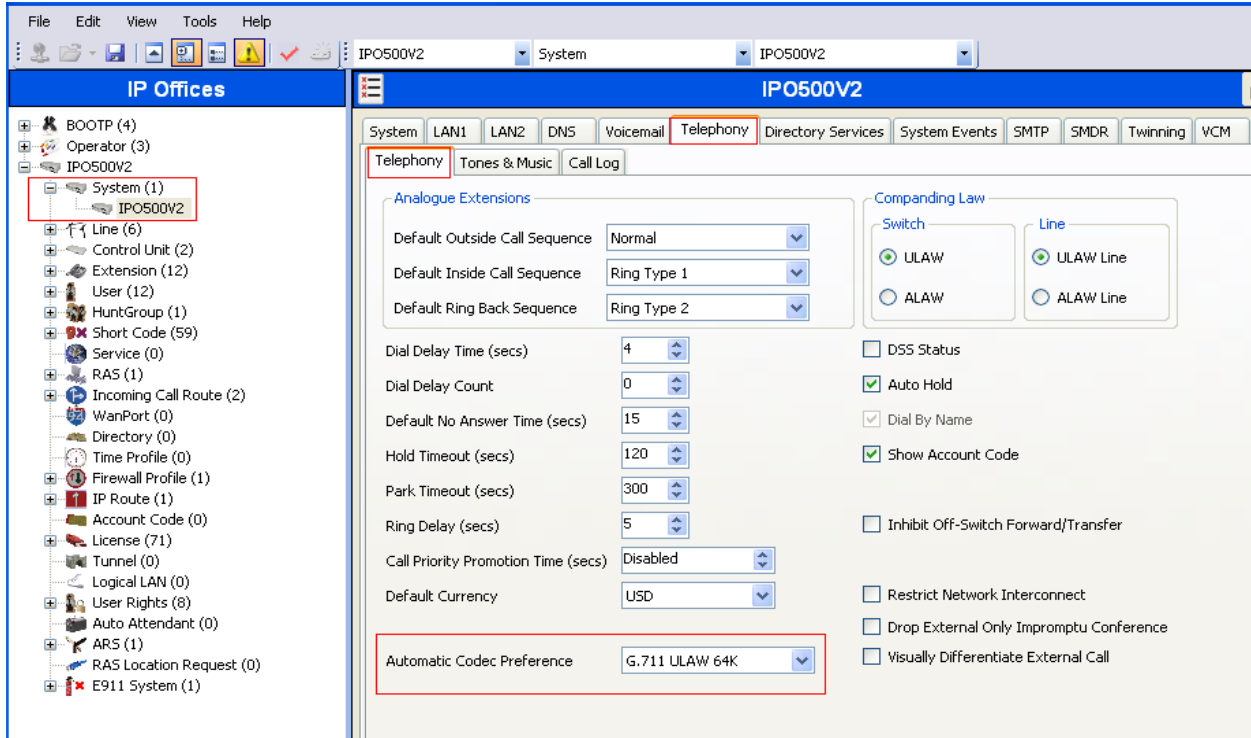
3.4 Administer SIP Registrar

Select **SIP Registrar** sub-tab in the right pane. Enter a valid **Domain Name**. Select **TCP only** from the drop down menu for **Layer 4 Protocol**. Make a note of the **TCP Port** number. These will be used later to configure SIP endpoints. Click **OK** (not shown).



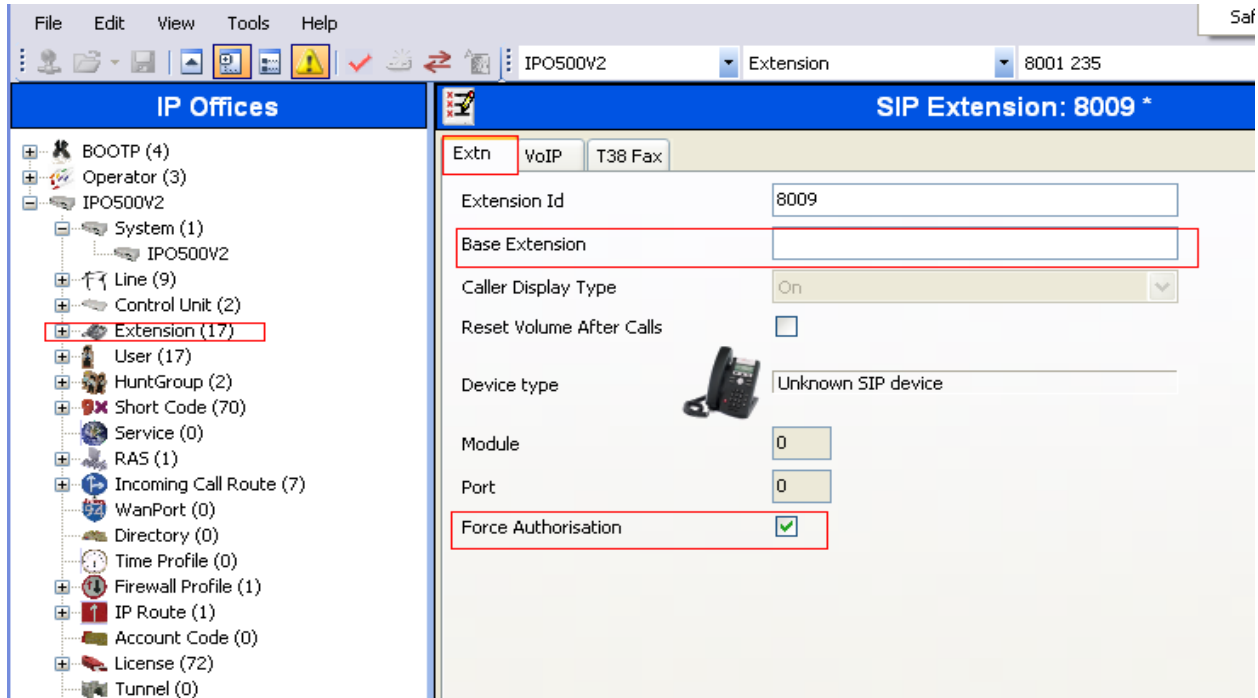
3.5 Administer Codec Preference

From the configuration tree in the left pane, select **System** to display the **IPO500V2** screen in the right pane. Select the **Telephony** tab. Configure **Automatic Codec Preference** to “G.711 ULAW 64K”. Click **OK** (not shown).

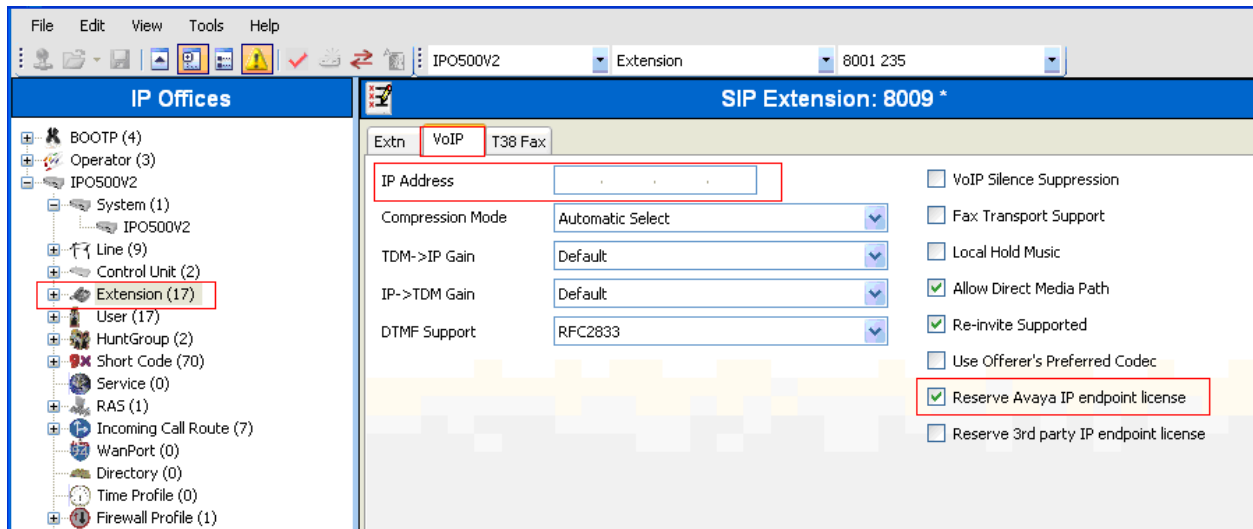


3.6 Administer SIP Extension

From the configuration tree in the left pane, right-click on **Extension** and select **New > SIP Extension** to add a new SIP extension. In the **Extn** tab, enter the three digit extension in the Base Extension field. Enable **Force Authorisation** field. Retain default values for all other fields. Note: Extension Id (8009 in the screen below) is a system generated id.

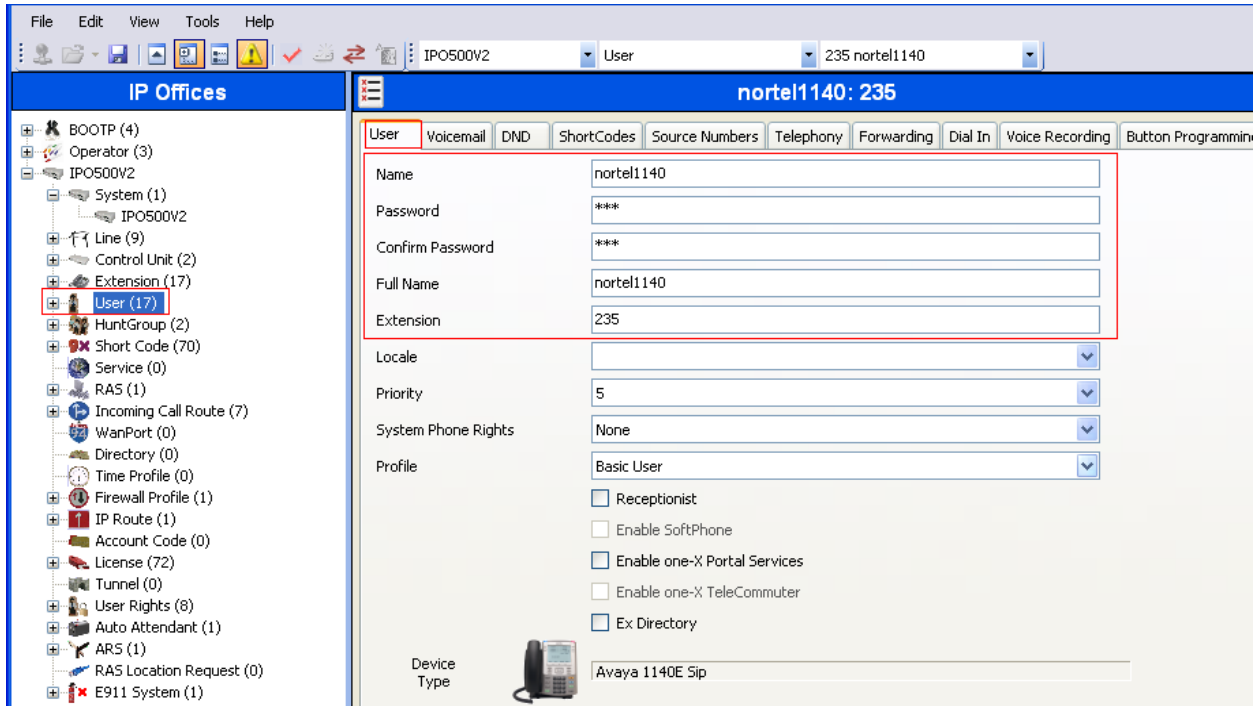


In the **VoIP** tab, enter an IP Address for the 1100/1200 Series IP Deskphone. Enable **Reserve Avaya IP endpoint license** field. Retain default values for all other fields. Click **OK** (not shown).

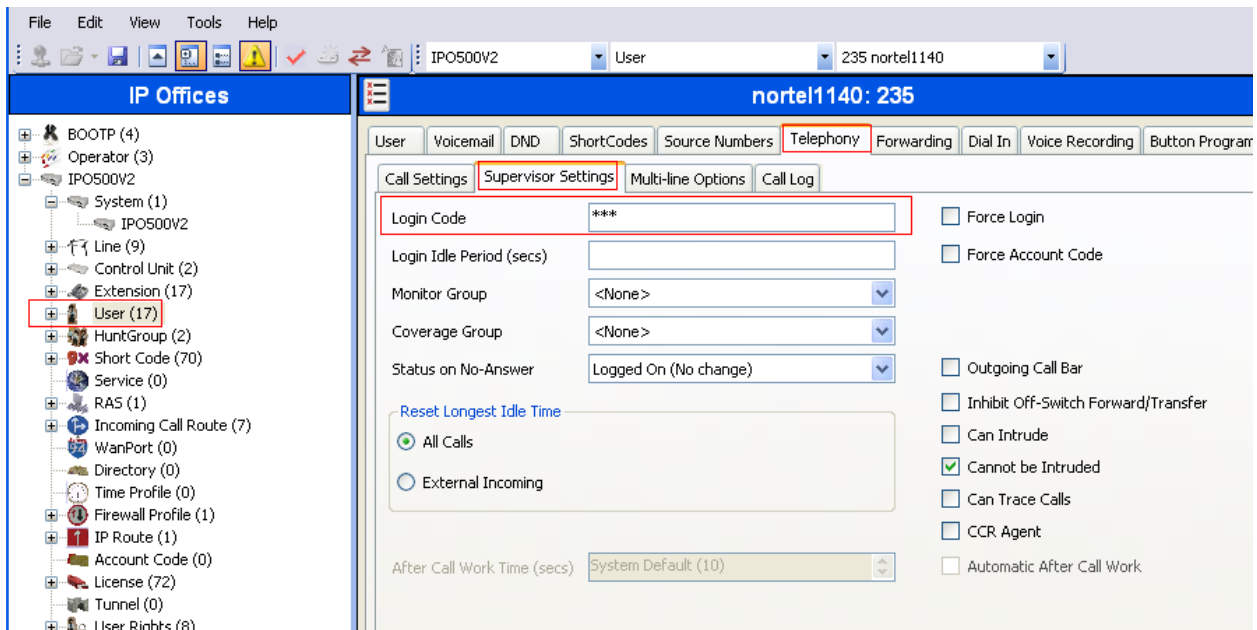


3.7 Configure User

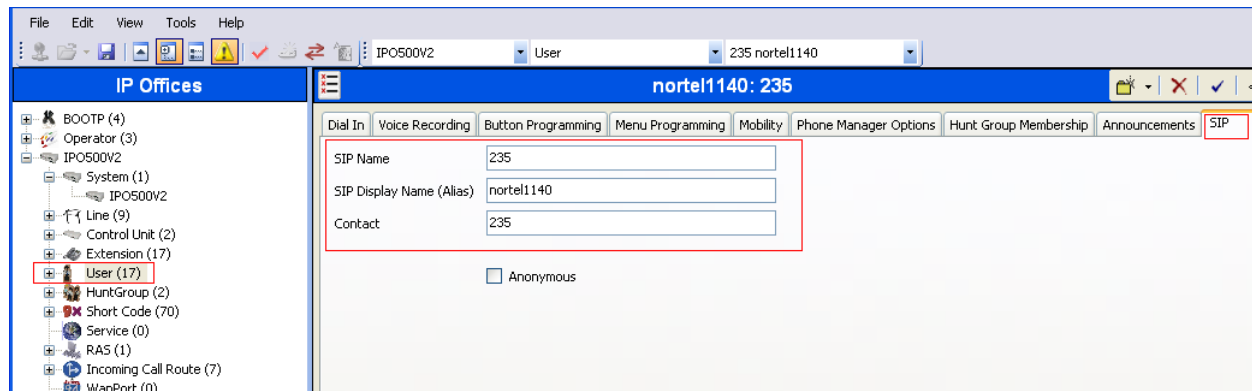
From the configuration tree in the left pane, right-click on **User** and **New > User**. Select **User** tab. Enter **Name**, **Full Name**, **Password**, **Confirm Password** and **Extension** for the extension configured in **Section 3.6**. The other fields can be left as default.



Select **Telephony** → **Supervisor Settings** tab. Enter a **Login Code**. The other fields can be left as default. This code will be used by the 1100/1200 Series IP Deskphone to log in the SIP user.



Select **SIP** tab. Modify the **SIP Name** to be the same as the user's extension number. The other fields can be left as default. Click **OK** (not shown).



Repeat steps in **Section 3.6** and **Section 3.7** to add additional extensions and users.

3.8 Save Configuration

Select **File > Save Configuration** to save and send the configuration to the IP Office server.

4 Configure Avaya 1100 and 1200 Series IP Deskphones

This section describes the basic configuration of the Avaya 1100 and 1200 Series IP Deskphones. For additional details, see references [2] – [4] listed in **Section 7**.

Four models were tested: Avaya 1120E, 1140E, 1220 and 1230. Configuration files (firmware, languages, etc.) are downloaded from the Avaya IP Office. Use of IPO Manager or another HTTP server to download the files is not supported. The configuration & settings files are auto generated by the IP Office (similar to Avaya IP 1600 series telephones).

To configure the setting on the phone, press the **Services** or “Globe” button twice. The phone will ask for an Admin password. Enter the proper credentials.

Select **Server Settings** and enter the following:

- **Domain Name:** Enter the domain name configured in **Section 3.4**. For the sample configuration, avaya.com was used.
- **S1:** Enter the IP address configured in **Section 3.2**. For the sample configuration 33.1.1.104 was used.
- **TCP Port:** Enter **5060**.
- **S2:** Enter the IP address configured in **Section 3.2**.
- **TCP Port:** Enter **5060**.
- Retain default for all other values.
- Select **Apply**.

Select **Device Settings** and enter the following:

- **EAP Mode:** **Disable**
- **DHCP:** **No**
- **Phone IP:** Enter the IP address configured in **Section 3.6**.
- **Net Mask:** Enter the appropriate value. For the sample configuration 255.255.255.0 was used.
- **Gateway:** Enter the appropriate value. For the sample configuration 33.1.1.254 was used.
- **DNS1 IP:** Enter the appropriate value. For the sample configuration 30.1.1.7 was used.
- **DNS2 IP:** Enter the appropriate value. For the sample configuration 30.1.1.7 was used.
- **Provisioning Server URL:** Enter the IP address configured in **Section 3.2**. For the sample configuration 33.1.1.104 was used.
- **Protocol:** **HTTP**
- Retain default for all other values.
- Select **Apply**.
- The telephone will reboot upon selecting Apply. It will automatically upgrade the firmware version (if needed). After that, the telephone will provide the user with a login prompt.
- Enter the login and password configured in **Section 3.7**.

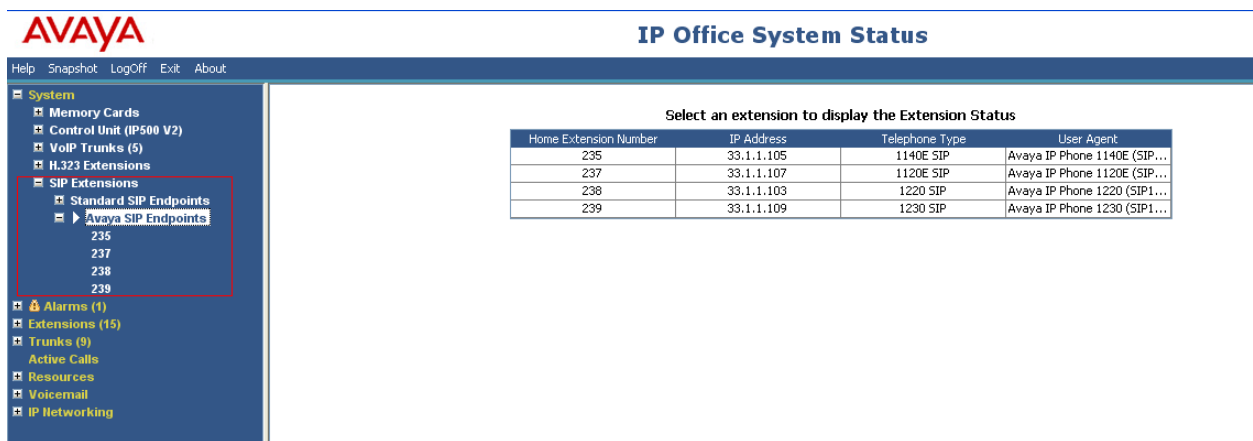
5 Verification Steps

This section provides the tests that can be performed on Avaya IP Office to verify proper configuration.

5.1 Verify Avaya IP Office

IP Office can be debugged with the System Status Application. Log into the IP Office Manager PC and select **Start** → **Programs** → **IP Office** → **System Status** to launch the application. Log in to the application using the appropriate credentials.

In the left panel, double-click on the **System** entry and select **Avaya SIP extensions**. All the users created in **Section 3.7** will be listed here as shown below.



Select an extension to display the Extension Status			
Home Extension Number	IP Address	Telephone Type	User Agent
235	33.1.1.105	1140E SIP	Avaya IP Phone 1140E (SIP...
237	33.1.1.107	1120E SIP	Avaya IP Phone 1120E (SIP...
238	33.1.1.103	1220 SIP	Avaya IP Phone 1220 (SIP1...
239	33.1.1.109	1230 SIP	Avaya IP Phone 1230 (SIP1...

In the left panel, double-click on the **Extensions** entry and select the appropriate extension. Shown below are the details for extension 235.

Help Snapshot LogOff Exit About

- System
- Memory Cards
- Control Unit (IP500 V2)
- VoIP Trunks (5)
- H.323 Extensions
- SIP Extensions
 - Standard SIP Endpoints
 - Avaya SIP Endpoints
 - 235
 - 237
 - 238
 - 239
- Alarms (1)
- Extensions (15)
 - 201
 - 202
 - 203
 - 204
 - 205
 - 206
 - 207
 - 208
 - 210
 - 215
 - ▶ 235
 - 236
 - 237
 - 238
 - 239
- Trunks (9)
- Active Calls
- Resources
- Voicemail
- IP Networking

Extension Status

Extension Number: 235
 IP address: 33.1.1.105
 User Agent: Avaya IP Phone 1140E (SIP1140e.04.00.03.00)
 Telephone Type: 1140E SIP
 Current User Extension Number: 235
 Current User Name: nortel1140
 Forwarding: Forward On Busy 210
 Twinning: Off
 Do Not Disturb: Off
 Message Waiting: Off
 Number of New Messages: 0
 Phone Manager Type: None
 SIP Device Features: UPDATE
 License Reserved: Yes
 Last Date and Time License Allocated: 12/5/2010 3:09:44 PM
 Packet Loss Fraction:
 Jitter:
 Round Trip Delay:
 Connection Type:
 Codec:
 Remote RTP Address:

Call Ref	Current State	Time in State	Calling Number or Called Number	Direction
	Idle	00:23:08		

5.2 Verification Scenarios

Verification scenarios for the configuration described in these Application Notes included all the features listed in **Table 2**. Proper display of the calling and called party name and number information was verified for all calls.

6 Conclusion

These Application Notes have described the administration steps required to use Avaya 1100 and 1200 Series IP Deskphones with SIP software with Avaya IP Office Release 6.1.

7 Additional References

This section references the product documentation relevant to these Application Notes.

- [1] Avaya IP Office Manager, Doc ID 15-601011, available at <http://support.avaya.com>.
- [2] 1220 IP Deskphone with SIP Software for User Guide, Document ID – NN43170-101, Rev 02.01, available at <http://support.nortel.com>.
- [3] SIP Software for Avaya 1100 Series IP Deskphones – Administration, Release 3.2, Document ID – NN43170-600, Issue 01.01.
- [4] SIP Software for Avaya 1200 Series IP Deskphones – Administration, Release 3.2, Document ID – NN43170-601, Issue 01.01.

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