IP Office Release 8.0

1100/1200 Series Phone Installation

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Chapter 1.
1100/1200 Phone Installation

1. 1100/1200 Phone Installation

For IP Office Release 6.1 and higher, selected phones from the Avaya 1100 Series and 1200 Series are supported on IP500 and IP500v2 systems. The following 1100 Series and 1200 Series are supported on a IP Office system. These are the only phones from the 1100 and 1200 Series that are supported.

1120E Telephone

1140E Telephone

1220 Telephone

1230 Telephone

- **1100 Series**
  The 1120E and 1140E are supported. The 1100 Series 18 button Key Expansion Module is also supported, with up to 3 modules attached to a phone.
- **1200 Series**
  The 1220 and 1230 are supported. The 1200 Series 12 button LCD Key Expansion Module is supported as well, with up to 7 modules attached to a phone. The 1200 Series 18 button Key Expansion Module is also supported, with up to 3 modules attached to a phone.

1.1 Pre-Requisites and Known Limitations

Supported Phones

The 1120E, 1140E, 1220 and 1230 are the only phones supported. Other phones in the 1100 Series and 1200 Series such as the 1165E, 1210 and 1110 are not supported.

Note: Phones with only 8MB of flash memory (such as earlier versions of the 1120e) are supported. However, user data such as custom ring tones, images, etc. must not exceed a total of 500kB on those phones due to the memory limit and rapidly growing load sizes.

Supported Firmware

Only phones with the following existing firmware can be installed:

- The basic boot loader **BootC**. This normally applies to new (out of the box) 1220 and 1230 phones. New 1120E and 1140E phones are shipped with UNIStim firmware. However, all phones can be made to invoke the BootC loader 30 if required.
- Nortel BCM6.0 UNIStim GA F/W level 06XXC7M or higher. The firmware name is briefly displayed on the screen at startup. If an earlier version than ***C7M*** is displayed, refer to the recovery process 30.
- SIP firmware.

Supported SIP Software

Only the SIP firmware supplied with the IP Office Administration software release should be used. Other software should only be used if specifically documented as supported. Software obtained from other sources has not been tested by Avaya and validated for the IP Office system operation.

- For IP Office Release 6.1, 1100/1200 Series SIP firmware release 4.0 is supported.
- For IP Office Release 7.0, 1100/1200 Series SIP firmware release 4.1 is supported.
- For IP Office Release 8.0, 1100/1200 Series SIP firmware release 4.3 is supported.

If you currently utilize UNIStim firmware, see the section Upgrading from UNIStim to SIP 22.

Supported IP Office Systems

The 1100/1200 Series phones are supported on the following IP Office systems:

- The control unit must be an IP500 or IP500v2 running IP Office Release 6.1 or higher software.
- If installed with earlier versions of IP Office software, these phones will operate as third-party IP end points. They will require a **3rd Party IP Endpoint** license, will only support basic telephony features (equivalent to an analogue extension) and are not supported by Avaya.
- For IP500v2 systems, the IP Office system must be running in IP Office Standard Mode mode. SIP Extensions are not supported by systems running in IP Office Essential Edition - Norstar Mode, IP Office Essential Edition - PARTNER Mode or IP Office Essential Edition - Quick Mode modes.

Avaya IP Endpoint Licenses

Each IP end point supported by the system requires a license, either an ***Avaya IP Endpoint*** license or a ***3rd Party IP Endpoint*** license.

- 1100 Series and 1200 Series SIP phones use ***Avaya IP Endpoint licenses***.
- The licenses are added to the telephone system configuration and are based on the unique feature key serial number. For IP500v2 systems this is the FK number of the System SD card fitted to the control unit. For IP500 systems this is the serial number of the smart media card fitted to the control unit. The licenses are added to the telephone system configuration and are based on the unique feature key serial number. This is the FK number of the System SD card fitted to the control unit.
- Note that each IP500 VCM 32 and IP500 VCM64 card installed in the system enables 12 Avaya IP endpoint without requiring licenses.

Voice Compression Channels

The telephone system must be fitted with voice compression channels, also known as VCM channels. Channels can be added up to the system maximum of 148 channels. In summary, an available voice compression channel is required:

- During incoming or outgoing call setup with the system.
- During any call to or from a non-IP trunk or phone.

- During any call to or from an IP trunk or phone that is using a different codec than the 1100/1200 phone.

Voice compression channels can be added to a system using a combination of the following options:

- **IP500 VCM Base Cards**
  For IP500 and IP500v2 systems, installation of up to 2 IP500 VCM base cards. There are 2 types of card are available, the IP500 VCM 32 and the IP500 VCM 64, each providing 32 and 64 VCM channels respectively. Note that each IP500 VCM card also enables 12 Avaya IP endpoints without requiring licenses (see license below).
- **IP500 Combination Cards**
  For IP500v2 systems only, installation of up to 2 IP500 Combination cards. These cards provide a mix of digital extension ports, analog trunk ports and trunk ports. Each card also provides 10 voice compression channels. These cards do not enable any unlicensed Avaya IP endpoints.
- **IP400 VCM Cards**
  For IP500 and IP500v2 systems, installation of up to 2 legacy IP400 VCM cards using an IP500 Legacy Card Carrier. The IP400 VCM cards supported 4, 8, 16, 24, or 30 voice compression channels.

Power Supply

Each phone requires a power supply. They can either use power over ethernet (PoE) or use a separate power supply unit and mains power outlet. The IP Office system does not supply power to the phones.

File Server Operation

During boot up the phones use HTTP to request files from a provisioning file server.

- For IP Office operation, installation is only supported using the control unit's memory card as the file server for the phones.
  - For IP500v2 control units, the System SD card is used. This is a mandatory card that is present in all IP500v2 systems.
  - For IP500 control units, the optional Compact Flash card slot is used. If no card is present, a suitable Compact Flash card should be obtained for use.
- Only 1100/1200 Series phone software supplied as part of an IP Office core software release should be used.
- For IP Office operation, installation is only supported using the control unit's memory card as the file server for the phones. This uses files stored on the systems System SD card.
-

DHCP Server Operation

Use DHCP for ease of installation and maintenance. Note however that for DHCP, only use of the IP Office system as the DHCP server is supported for installation of 1100/1200 phones.

Known Limitations

The following are known limitations in the current IP Office system support for 1100/1200 Series telephones:

- Other phones such as the 1110, 1165E and 1210 are not supported.
- For 1100 Series phones, the BlueTooth integration feature is not supported.
- For IP Office Release 6.1: No IP Office directory integration is supported.
- For IP Office Release 7.0: The Address Book directory includes the telephone system directory and other telephone system users and groups. However, it does not include the user personal directory from the telephone system. Personal directory entries created and edited on the phone are stored locally on the phone only.

Chapter 2.
IP Office Configuration

2. IP Office Configuration

The best practice for installation is to use the IP Office system as the DHCP server for the phones. This simplifies both installation and maintenance. Other methods should only be used if the customer does not want the IP Office system to perform DHCP for telephones.

Before installing any 1100 or 1200 Series phones, the following processes should be completed to prepare the system to support those phones:

1. **Ensure that the installation pre-requisites have been met** 8.
2. **Load the 1100/1200 Software Files onto the system** 13.
3. **Enable SIP Phone Support** 15.
4. **Check the System File Server Settings** 17.
5. **User and Extension Creation** 18.
6. **Add licenses** 19.
7. Once the above steps have been completed, installation of individual phones 22 can be started.

2.1 Loading Software Files

The 1100/1200 Series firmware suitable for IP Office system operation is supplied as part of the IP Office Manager software and is copied onto the PC when IP Office Manager is installed. No other firmware should be used with IP Office unless specifically documented.

There are a number of methods by which the firmware installed with IP Office Manager can be copied onto the telephone system's memory card. The method used depends mainly on the type of control unit.

- **! WARNING**
  A memory card should never be removed from a running system without either the card or the system first being shutdown. IP Office Manager should be used to shutdown the memory card before it is removed from the system.
- For IP Office operation, only the 1100/1200 Series phone .bin files and .lng files need to be present on the memory card. Other files (.cfg and .txt) required by the phones are automatically generated by the system in response to requests from the phones.

IP500 V2 Control Unit

The system's System SD card is used to store the files. This is a mandatory card that is present in all IP500 V2 systems. The firmware files are loaded onto the card in a number of ways:

- If the system was upgraded using the **Recreate SD Card** option in IP Office Manager, the firmware is copied onto the card as part of that process.
  - If this option was used, a manual reboot of the phone is required in order to install the new firmware.
- If the system was upgraded using IP Office Manager's Upgrade Wizard, if the **Upload System Files** option was selected, the firmware is copied onto the card as part of that process. The **Upload System Files** option is enabled by default.

If you think the correct files are not present, you can use the embedded file manager part of IP Office Manager to check the files on the card and to copy the files onto the card if necessary.

IP500 Control Unit

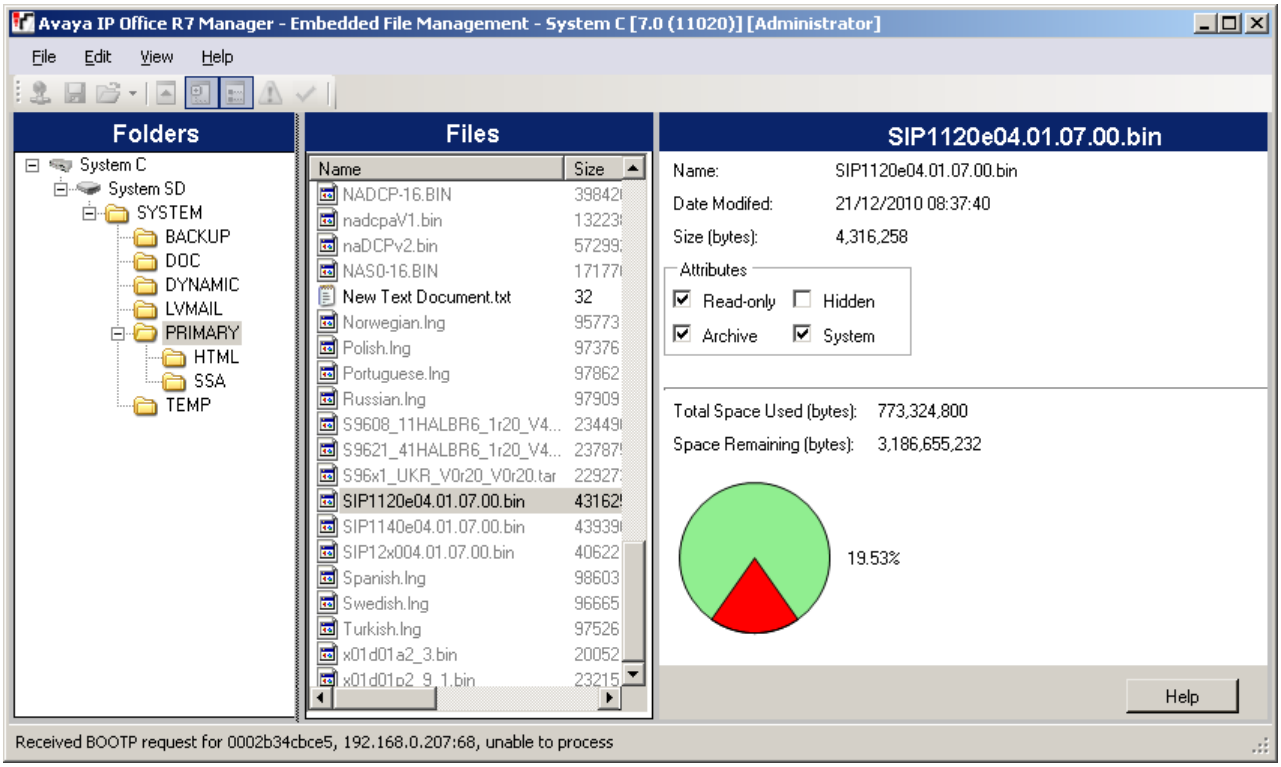
The compact flash memory card is used to store the files. This is an option card that is present if the system is using embedded voicemail. The files need to be copied manually onto the memory card. This can be done in a number of ways:

- Files can be copied remotely onto the card in a running system using IP Office Manager's embedded file management.
- The card can be shutdown and removed from the system. Files can then be copied onto the card using a PC with a suitable memory card slot.

Using Embedded File Manager

Embedded file manager allows you to remotely view the files on the memory card used by the telephone system. It also allows you to upload new files.

1. In IP Office Manager, select **File | Advanced | Embedded File Management**.
2. The **Select IP Office** menu is displayed.
3. Select the telephone system and click **OK**.
4. Enter the name and password for the system. These are the same as used for configuring the system.
5. The contents of the memory card are displayed.



6. For an IP500 memory card, all the firmware files are held in the top level folder. For an IP500 V22 system, use the folder tree to navigate to ***System SD | SYSTEM | PRIMARY***. Use the folder tree to navigate to ***System SD | SYSTEM | PRIMARY***.
7. Files can be copied onto the card by using drag and drop or by selecting **File | Upload File**.
   - The source files can be found on the IP Office Manager PC in ***C:\Program Files\Avaya\IP Office\Manager\memory Cards\Common\system\primary***.

Manually Copying Files

Files can be copied onto the memory card by placing it into a PC with a suitable memory card slot.

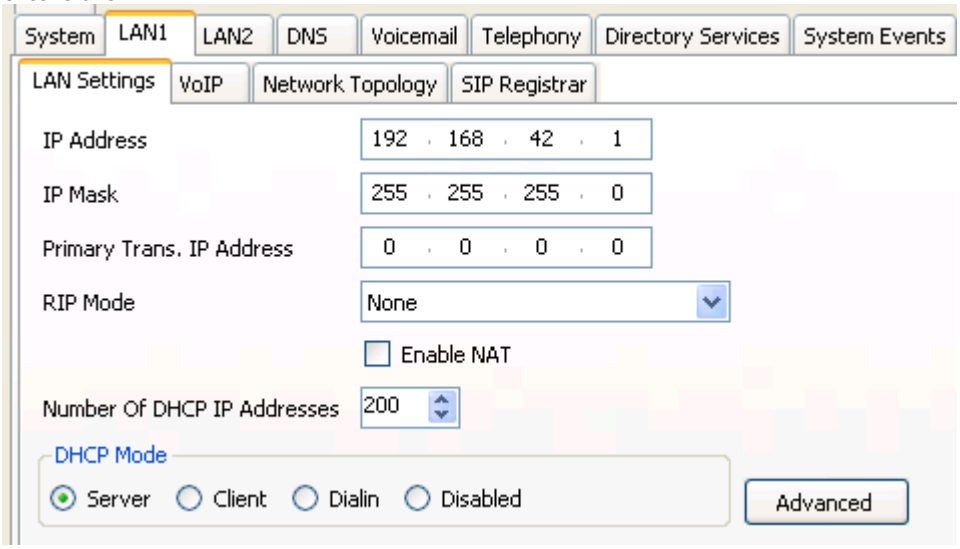
- **! WARNING**
  A memory card should never be removed from a running system without first being shutdown.IP Office Manager should be used to shutdown the memory card before it is removed from the system.

1. Using IP Office Manager, select **File | Advanced | Memory Card Command | Shutdown**.
2. The **Select IP Office** menu is displayed.
3. Select the telephone system and click **OK**.
4. Enter the name and password for the system. These are the same as used for configuring the system.
5. You are prompted to confirm which card you want to shutdown. Select **System** and click **OK**.
6. On the back of the control unit, check that the LED for the memory card slot is off before removing the memory card.
7. Place the card into the PC's memory card slot and examine the contents.
8. For an IP500 memory card, all the firmware files are held in the top level folder. For an IP500 V22 system, use the folder tree to navigate to ***System SD | SYSTEM | PRIMARY***. Use the folder tree to navigate to ***System SD | SYSTEM | PRIMARY***. The source files can be found on the IP Office Manager PC in ***C:\Program Files\Avaya\IP Office\Manager\memory Cards\Common\system\primary***.
9. When the card is reinserted into the system, card usage is automatically restarted.

2.2 Enable SIP Phone Support

Support for SIP extensions is enabled by default. However, it is important to be aware of and check the settings used. The system has two LAN interfaces, LAN1 and LAN2. These match the LAN and WAN ports respectively on the back of the IP500 and IP500v2 control units. LAN1, LAN2 or both can be used to support SIP phones including 1100/1200 Series phones.

1. Using IP Office Manager, retrieve the configuration from the system.
2. Select **System**.
3. Select the **LAN1** or **LAN2** tab depending on which of the system's LAN interfaces you want to use to support SIP extensions.

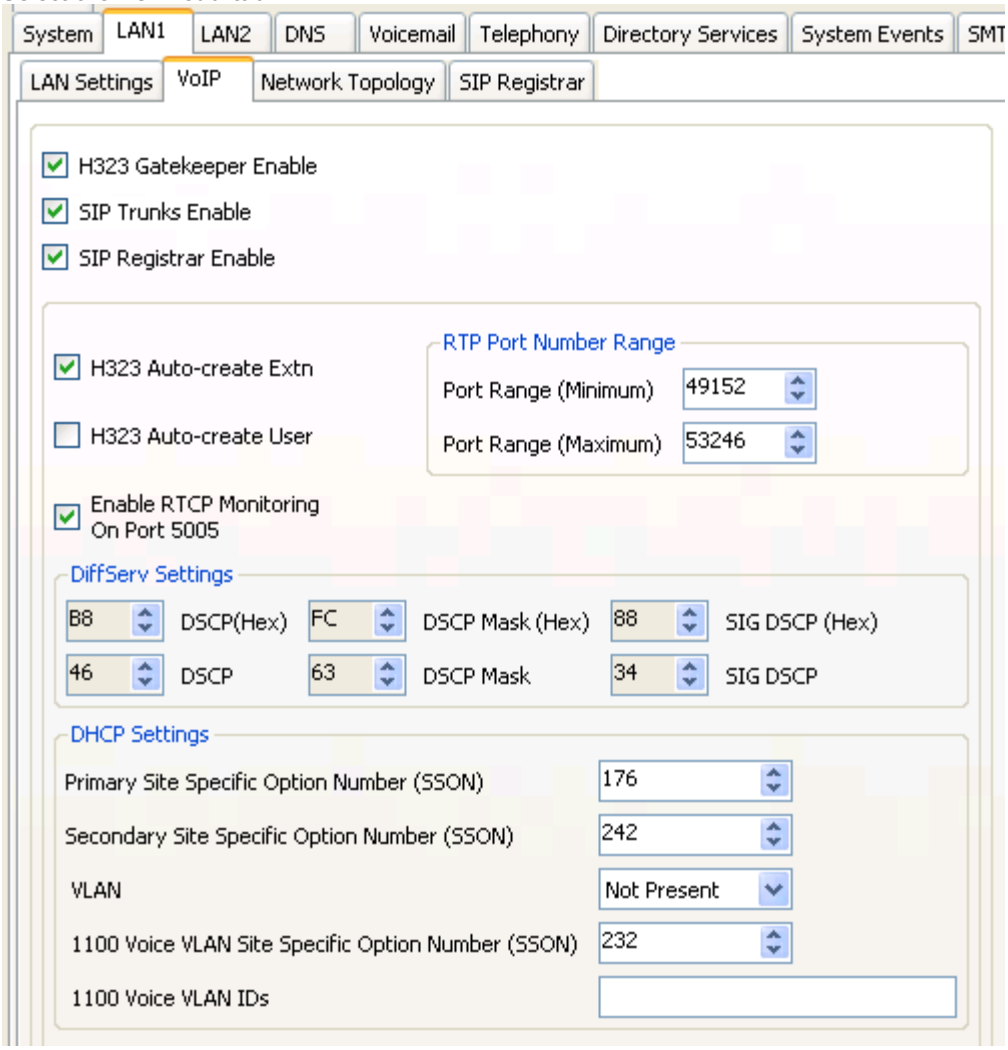


   a. Note the **IP Address** settings for the LAN. These will be used as the file provisioning address for the 1100/1200 SIP phones.

   b. If the system is going to be used as the DHCP server for the SIP phones, check that the DHCP settings are enabled and the DHCP pool supports sufficient addresses.

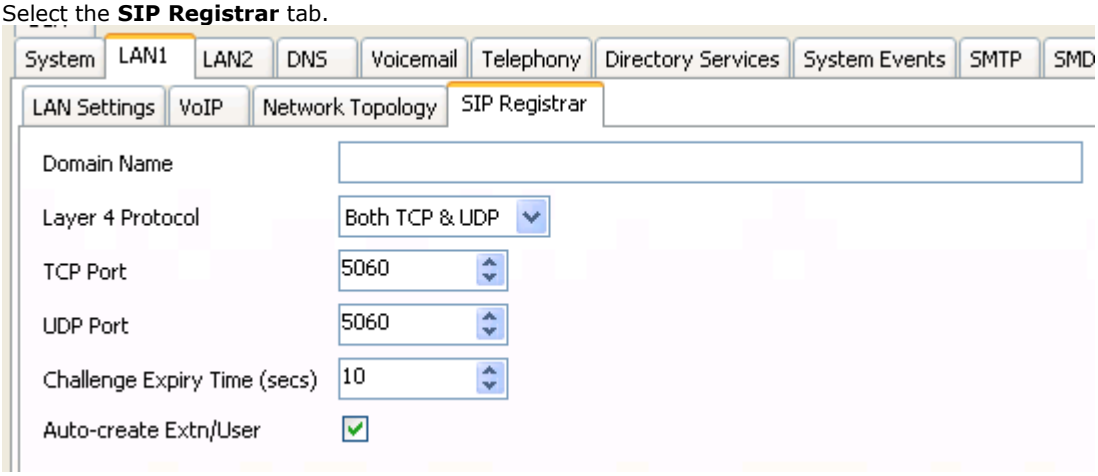
      - Installation of 1100 Series and 1200 Series phones using DHCP is only supported if using the system as the DHCP server. The system's **Apply to Avaya IP Phones Only** option should not be used.

4. Select the **VoIP** sub-tab.



a. Check that the **SIP Registrar Enable** setting is selected.

5. Select the **SIP Registrar** tab.



a. These settings are used for all SIP extensions registering with the system. Accept the defaults.

b. If you want to allow the user and extension entries to be automatically created when each SIP extension is registered, check that **Auto-create Extn/User** is enabled.

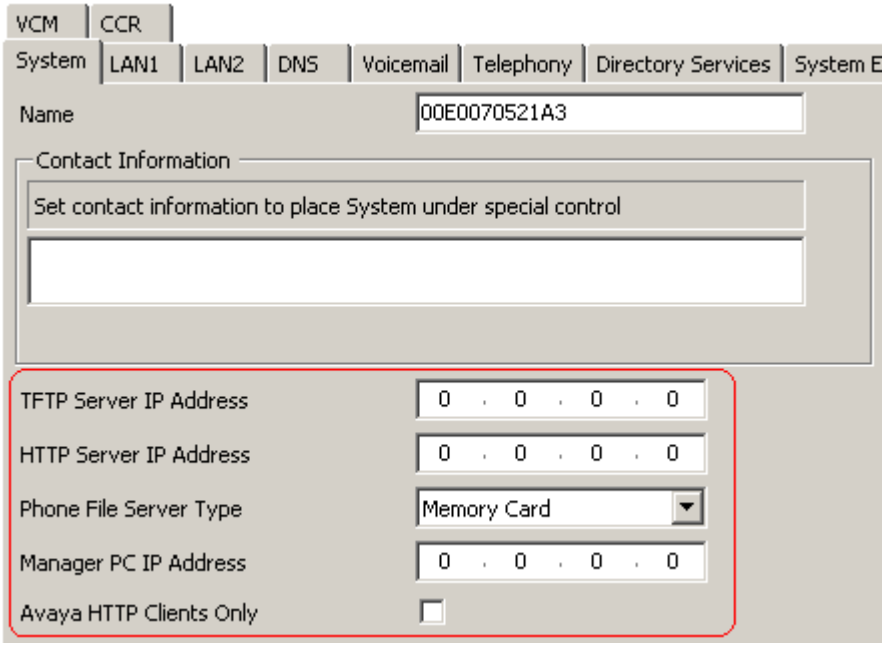
6. If you have made any changes, click **OK** and save the configuration back to the system.

2.3 File Server Settings

You can use the system's memory card or a custom option as the source for the files used by the 1100/1200 Series phones. The memory card is the default source.

Checking the File Server Setting

1. Using IP Office Manager, receive the configuration from the telephone system.
2. Select **System**.
3. Select the **System** tab.



4. Check the **Phone File Server Type** setting. The settings are used as follows.

   - **Phone File Server Type:** *Default = Memory.*

   For phones using the telephone system as their DHCP server, the DHCP response includes the addresses of the HTTP and TFTP file server from which the phones should request files. The setting of this field controls which addresses the system uses in that DHCP response.

   For 1100/1200 Series phones, the **Phone File Server type** should be set to ***Memory Card*** *or* ***Custom***.

Phone File Server Type	DHCP Response uses...	
	HTTP Source	TFTP Source
Custom	*HTTP Server IP Address*	*TFTP Server IP Address*
Memory Card	*LAN IP Address*	*LAN IP Address*
Manager	*LAN IP Address*	*Manager PC IP Address*

   TFTP Server IP Address: *Default = 0.0.0.0 (Broadcast).*
   This address is used in DHCP responses if the **Phone File Server Type** is set to ***Custom***. This is not used for 1100/1200 phone installation so leave set to 0.0.0.0.

   - **HTTP Server IP Address:** *Default = 0.0.0.0 (Disabled).*
     This address is used in DHCP responses if the **Phone File Server Type** is set to ***Custom***. This is not used for 1100/1200 phone installation so leave set to 0.0.0.0.
   - **Manager PC IP Address:** *Default = 0.0.0.0 (Broadcast).*
     This address is used when the Phone File Server Type is set to ***Manager***. This is not used for 1100/1200 phone installation so leave set to 0.0.0.0.
   - **Avaya HTTP Clients Only:** *Default = On.*
     For 1100/1200 Series phones this setting should be off.

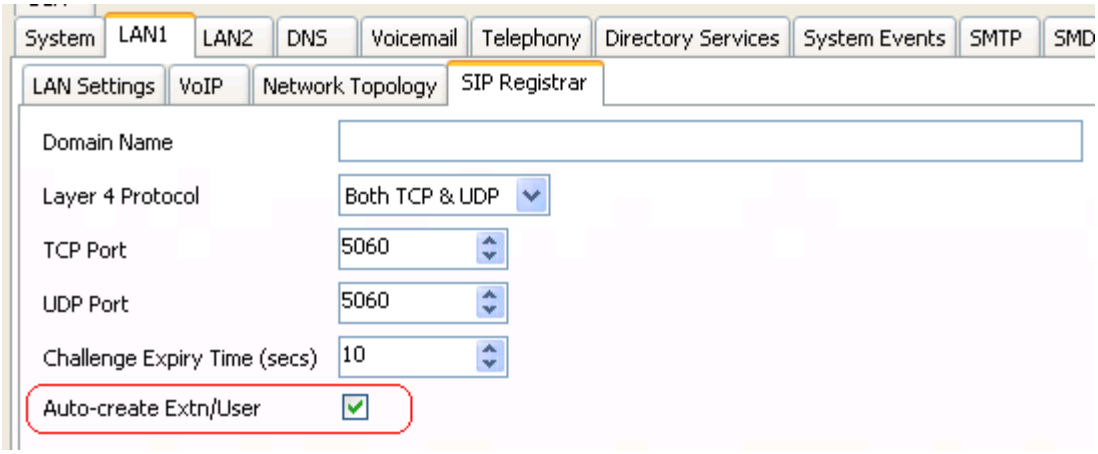
2.4 User/Extension Creation

During installation, the required extension and user entries in the telephone system configuration can be created in one of two ways. They can either be created manually or they can be created automatically.

Auto Creation

By default, whenever a SIP extension is installed, the system automatically creates matching user and extension entries in its configuration as long as there are available licenses. The default password used for the user is ***0000***.

This behavior is controlled by the **Auto-create Extn/User** setting on the system's **System | LAN1 | SIP Registrar** 15 tab. This setting can be disabled after installation of the 1100/1200 Series phones to prevent additional unplanned SIP extension registration.



Manual Creation

Using IP Office Manager, you can add entries for SIP extensions and extension users before those extensions are added to the system.

1. Using IP Office Manager, receive the configuration from the telephone system.
2. Select **User**.
3. Click on the icon and select **User**.
4. Enter the details for the user. At minimum you must set a unique name and extension number.
5. The **Login Code** on the **User | Telephony | Supervisor Settings** tab is also used during registration if set.
6. Click **OK**.
7. You will be prompted whether Manager should also create a matching extension. Select **SIP Extension** and click **OK**.
8. Click on the save icon.

2.5 Licensing

Each 1100 Series or 1200 Series phone uses an **Avaya IP Endpoint** license. Installation cannot be completed without available licenses.

- **Avaya IP Endpoint Licenses**
  Each IP end point supported by the telephone system requires a license, either an ***Avaya IP Endpoint license*** or a ***3rd Party IP Endpoint license***. 1100 Series and 1200 Series SIP phones use ***Avaya IP Endpoint licenses***.
  - Phones can be licensed up to the system's 384 extensions limit for all phones of any type.
  - Note that each IP500 VCM 32 and IP500 VCM 64 card installed in the system enables 12 Avaya IP endpoint without requiring licenses.
  - Licenses are normally automatically assigned to phones in order of phone registration. However, existing extensions can be configured to reserve a license. This ensures that they do not become unlicensed when newly added extensions manage to register first following a system reboot.

2.5.1 Checking the Serial Number

Licenses are issued against a unique feature key/dongle serial number. For IP500v2 control units that number is unique to the System SD card fitted to the system. For IP500 control units that number is unique to the smart media card inserted in the back of the control unit. The licenses are issued against a unique feature key that number is unique to the System SD card fitted to the system. For any licenses entered into the system configuration to be valid, they must be licenses issued against that serial number.

1. Using IP Office Manager, receive the configuration from the telephone system.
2. Select  **System**.
3. Select the **System** tab.
4. The feature key serial number is shown by the **Dongle Serial Number** field.

2.5.2 Adding Licenses

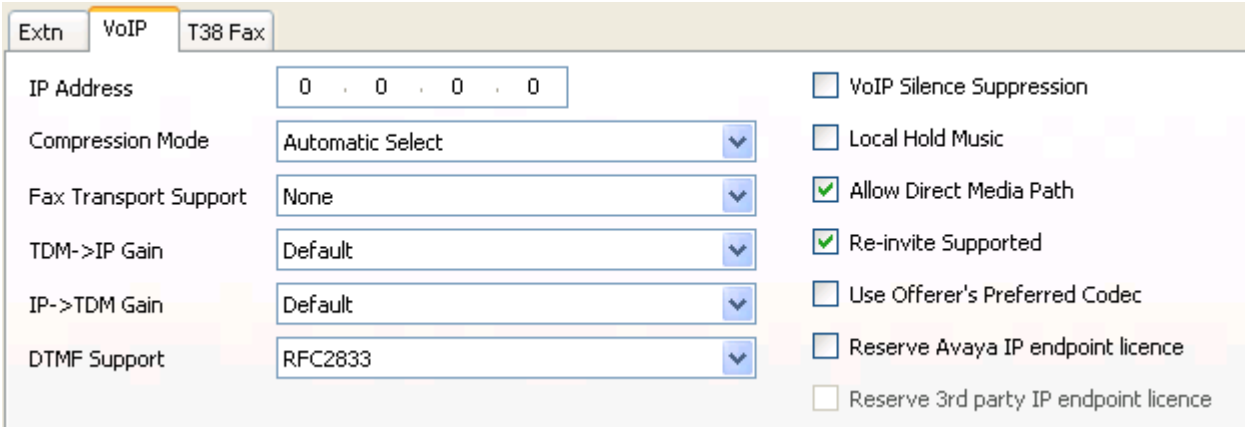
Use the following process to add licenses to the telephone system configuration. Multiple licenses can be added for a cumulative number of license instances.

1. Using IP Office Manager, receive the configuration from the telephone system.
2. Select  **License**.
3. The current licenses in the system configuration are displayed.
4. To add a license, click on  and select **License**.
5. Enter the license which you have been supplied into the field and click **OK**.
6. The type of the license should be displayed but with its **License Status** set to ***Unknown***. If the **License Type** was not recognized, check that it has been entered correctly.
7. Save the configuration back to the system and then receive the configuration from the system again.
8. The **License Status** should now be ***Valid***.

2.5.3 Reserving Licenses

Licenses are normally automatically assigned to extensions in order of registration. However existing extensions can reserve a license in order to ensure they do not become unlicensed when new extensions added to the system manage to register first following a system reboot.

1. Using IP Office Manager, receive the configuration from the telephone system.
2. Select **Extension** and then select the SIP extension.
3. Select the **VoIP** tab.



4. The **Reserve Avaya IP endpoint license** setting is used to reserve an existing license for the extension.
5. Repeat the process for any other SIP extensions for which you want to reserve the license.
6. Save the configuration back to the telephone system.

Chapter 3.
Phone Installation

3. Phone Installation

Having configured the telephone system 12 to support 1100/1200 phones, there are a number of methods for actual 1100/1200 Series phone installation. The method to use depends on the following:

- The type of phone: 1100 Series or 1200 Series.
- Whether the phone is new or already has firmware, for example an existing phone being redeployed from a BCM system or another IP Office system.
- Whether the telephone system is being used for DHCP for the phones or whether static addressing is being used instead.

Use the table below to identify the method to use:

	DHCP		Static IP Addressing	
Installation type	**1100 Series**	**1200 Series**	**1100 Series**	**1200 Series**
New Phone	Method 1 25	Method 2 25	Method 3 26	Method 4 28
Redeployment from BCM	Method 1 25	Method 1 25	Method 3 26	Method 3 26
Redeployment from SIP	Method 1 25	Method 1 25	Method 5 29	Method 5 29
Automatic Migration	Automatic Migration Method 22			

3.1 Automatic Migration Method

In order to upgrade your current firmware from UNIStim to SIP, you must first install the migration patch on the BCM, and then the BCM will reboot and upload the new firmware to the applicable IP sets. Refer to the section Loading Software Files 13 for more information.

After applying the Migration patch, the BCM comes online and you are able to migrate the applicable IP sets to IPO through the automatic procedure outlined in Migration - Cases 23. After the migration the user can log in to the phone as a SIP user, as described at the ends of Method 1 25 and Method 3 26. Before you proceed, be aware of the assumptions and limitations and ensure that you meet the prerequisites.

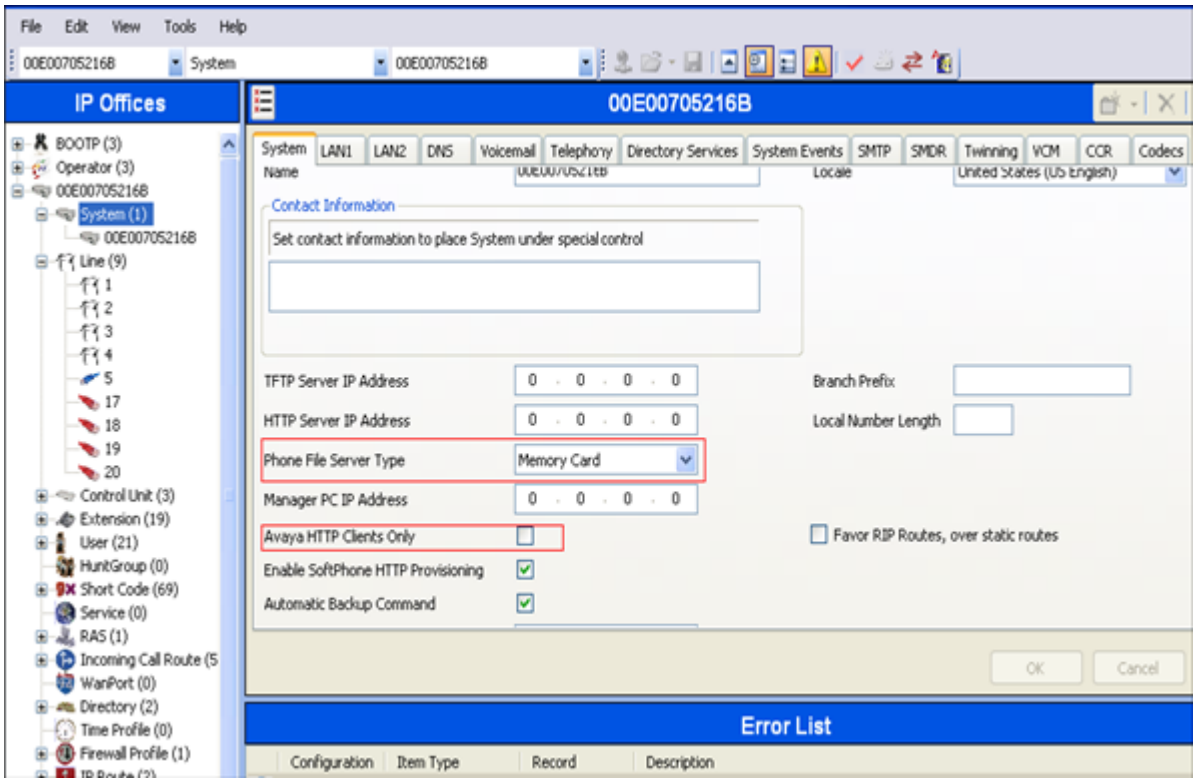
Assumptions and Limitations

- Sets which are offline will not be included in this automatic migration (each offline set must be migrated manually by entering the IPO address in the TFTP address field and then rebooting the set).
- The sets must be in the idle state.
- The BCM UNIStim Sets must be well within their DHCP lease period(s).
- BCM 50 R2 and lower releases will not be supported, unless upgraded.

Prerequisites

If the following prerequisites are not met, the sets will not migrate to IP Office:

- Working BCM installation, patched to the latest SU. Currently, the latest SU is SU 7.
- Working IP Office, updated to the latest hardware/software, with users created.
- In IP Office, the following mandatory configuration needs to be ensured, along with other required configurations:
  - The **'Phone File Server Type'** should be set to **'Memory Card'**.
  - The **'Avaya HTTP Clients Only'** checkbox should be unchecked.

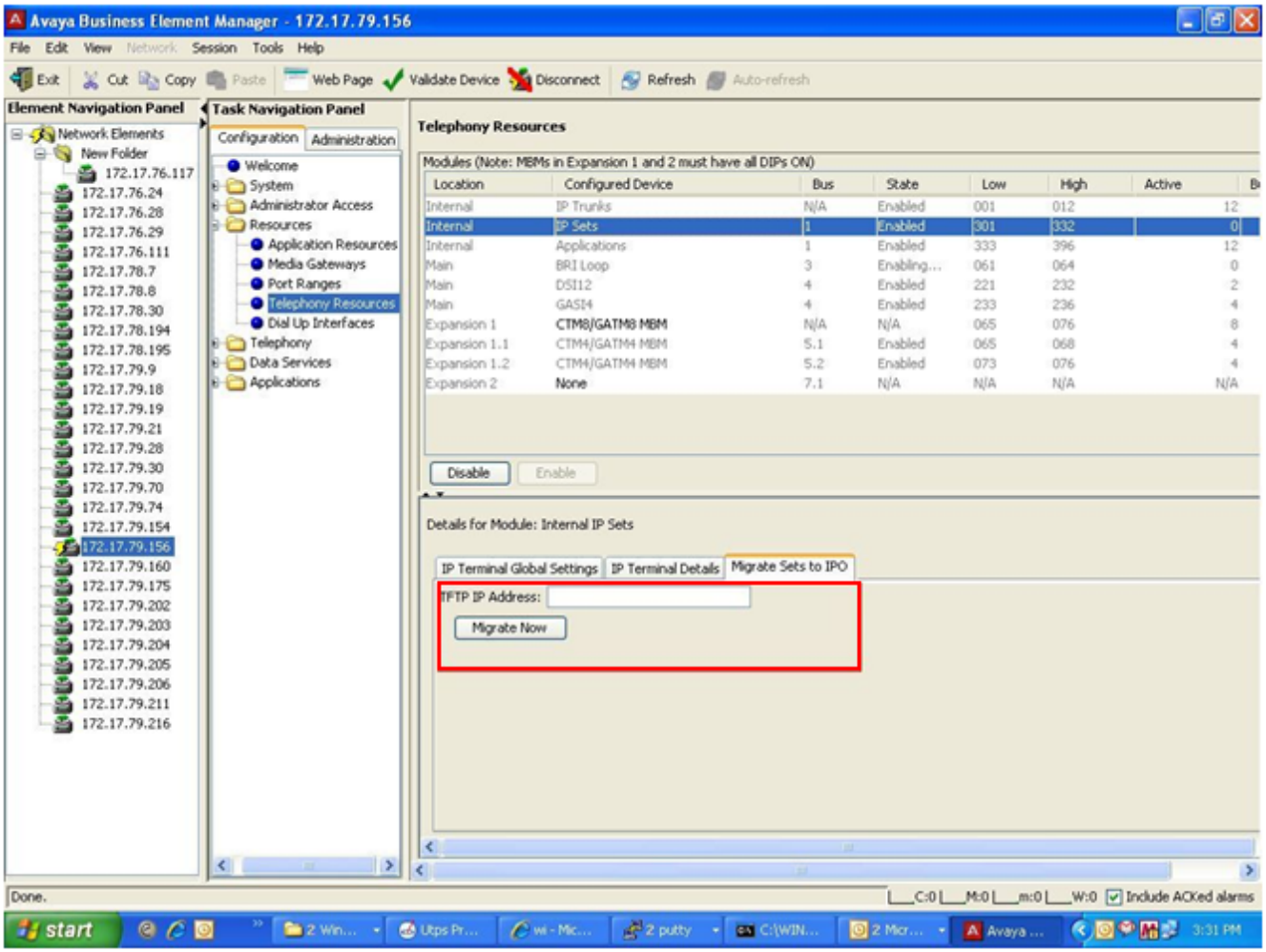


3.1.1 Migration

Once the BCM comes online, Element Manager will display an interface for the administrator to enter the TFTP IP (IP Office IP) information prior to migrating the firmware. It will also display a **Migrate Now** button under the **Migrate Sets to IPO** tab.

Important: If the BCM is acting as the DHCP server, switch *off* the DHCP in BCM. Conversely, keep the IPO ready, up, and running. Switch *on* the DHCP of the IPO if the IPO is to act as the DHCP server.

Once you have entered the TFTP IP information and you are ready to proceed, navigate to the **Migrate Sets to IPO** tab in Element Manager and click **Migrate Now**.



From this point, you must consider two distinct cases relevant to terminal types. These cases are outlined below. Pay attention to their configurations and use an appropriate procedure based on your terminal type.

Case 1: The IP addresses of BCM and IPO are the same

Within seconds of pressing **Migrate Now**, a popup will display that reads "Disconnect the BCM in next couple of seconds and connect IPO immediately. This should happen within 1 minute." Immediately (within one minute), disconnect the BCM and connect the up-and-running IPO to the network.

Note: If you were unable to disconnect/connect each system within the required timeframe, or if some or all of the sets are still not migrated, perform one of the following actions:

- Reboot the sets which are not migrated.
  or
- Power Off/On the PoE to which the sets are connected.

Case 2: The IP addresses of BCM and IPO are different

Note: No time window applies. The BCM and IPO can both be connected to the Network at the same time.

After you select **Migrate**, the upgrade process depends on your configuration.

3.1.2 Error Handling

If you encounter incomplete or partial migration (few sets do not get migrated to IPO, but some do), you can be experiencing a BCM-IPO swapping timing issue.

Solution:

- Reboot the sets which are not migrated.
  or
- Power Off/On the PoE to which the sets are connected.

3.2 Method 1

This method requires the telephone system to act as both the DHCP and file provisioning server for the phone. The objective is then to configure the phone as a DHCP client. It will then learn the IP address, IP netmask, IP gateway and file provisioning server parameters from the IP Office system.

This method applies to:

- New 1100 Series phones.
- 1100 Series and 1200 Series phones being redeployed from a BCM system.
- 1100 Series phones being redeployed from another SIP system.
- 1200 Series phones being redeployed from another SIP system.

1. Connect the phone to the LAN port. If the LAN port supports Power over Ethernet (PoE) the phone will start up immediately. Otherwise connect a separate power supply.
   - The phone comes up with UNIStim firmware ***06XXC7M*** or higher. The firmware name is briefly displayed on the screen at startup. If an earlier version than ***C7M*** is displayed, refer to the recovery process 30.
   - If the firmware name comes up as ***04.xx.xx.xx*** and the terminal has not been reconfigured, it means the phone is already running SIP firmware. If this is suspected not to be IP Office SIP firmware, then it is recommended to do a factory reset 30 of the phone. Following the factory reset, the User Login prompt should show the IP Office SIP domain on the screen and the user is ready to login; No additional phone configuration is required.
2. Once the phone has booted follow the steps below.
   a. Press the **Service** key (English labeled set) or the globe icon key (icon labeled set).
   b. Navigate down to item **3 Network configuration**.
   c. Soft keys display **Apply Auto -- Cancel**.
   d. Press **Auto**.
   e. Right navigate until you see **DHCP Enable**.
   f. If deselected, select the check box by pressing the **Auto** soft key.
   g. Navigate down to item **12 Provision Server**.
   h. If deselected, select the check box by pressing the **Auto** soft key.
   i. Press **Apply**.
3. The phone reboots twice and shows SIP firmware name **04.xx.xx.xx** on the second reboot. A set of files get downloaded by the phone.
   a. When the **User Login** prompt screen shows up and the SIP domain on the screen matches the server's IP address, the upgrade process is complete. If the SIP domain shows ***avaya.com*** then there was a problem with the value of the option 66 parameter provided by the DHCP server.
   b. The SIP phone is ready to login a SIP user.
      i. The phone displays **ID:**. Enter the extension number that the phone should use. You can use the right and left cursor keys to move the digit entry cursor. Use the up cursor to delete the previous digit.
      ii. Press **Login**.
      iii. The phone displays **Password:**.
      iv. If logging in to a pre-configured user/extension 18, match the **Login Code** set for that user.
      v. If using the system's **Auto-Create Extn/User** function, enter ***0000***.
      vi. Press **Next** twice.
   c. The SIP user should now be logged in. If not, then verify the licenses and the user configuration.

3.3 Method 2

This method requires the telephone system to act as both the DHCP and file provisioning server for the phone. The objective is then to configure the phone as a DHCP client. It will then learn the IP address, IP netmask, IP gateway and file provisioning server parameters from the IP Office system.

This method applies to:

- New 1200 Series phones. These phones come up with a special basic boot loader called **BootC**.

1. Connect the phone to the LAN port. If the LAN port supports Power over Ethernet (PoE) the phone will start up immediately. Otherwise connect a separate power supply.
   - The phone comes up with Unistim firmware ***06XXC7M*** or higher. The firmware name is briefly displayed on the screen at startup. If an earlier version than ***C7M*** is displayed, refer to the recovery process 30.
2. Once the phone has booted, the phone asks if you want **Manual Configuration?**
   a. Press the 4 buttons under the LCD from left to right one after the other.
   b. The phone displays **DHCP? [0=N 1=Y]**. Enter **1** to enable DHCP.
   c. Navigate down to **Provision Server**. The phone displays ***0.0.0.0***.
   d. Press the backspace soft key to clear the value. Then enter the IP Address of the IP Office system, for example 192.168.43.1. Press **OK**.
   e. If the phone prompts for a DNS IP address, enter a valid DNS server IP address. If none is available use the IP address of the IP Office system. Press **OK**.
   f. Press **Apply**.
3. The phone reboots twice and shows SIP firmware name **04.xx.xx.xx** on the second reboot. A set of files get downloaded by the phone.
4. When the **User Login** prompt screen shows up and the SIP domain on the screen matches the IP Office system IP address, the upgrade process is not yet completed. Follow the additional steps below:
   a. Press the **Service** key (English labeled set) or the globe icon key (icon labeled set).
   b. Select **Device Settings**. Enter the default password: ***26567*738*** (***color*set***).
   c. Navigate down to item **9 Provision Server**.
   d. Make sure the check box is selected. If not, press **Auto**.
   e. Press **Apply**.
5. The phone reboots twice and shows SIP firmware name **04.xx.xx.xx** on the second reboot. A set of files get downloaded by the phone.
   a. When the **User Login** prompt screen shows up and the SIP domain on the screen matches the server's IP address, the upgrade process is complete. If the SIP domain shows ***avaya.com*** then there was a problem with the value of the option 66 parameter provided by the DHCP server.
   b. The SIP phone is ready to login a SIP user.
      i. The phone displays **ID:**. Enter the extension number that the phone should use. You can use the right and left cursor keys to move the digit entry cursor. Use the up cursor to delete the previous digit.
      ii. Press **Login**.
      iii. The phone displays **Password:**.
      iv. If logging in to a pre-configured user/extension 18, match the **Login Code** set for that user.
      v. If using the system's **Auto-Create Extn/User** function, enter ***0000***.
      vi. Press **Next** twice.
   c. The SIP user should now be logged in. If not, then verify the licenses and the user configuration.

3.4 Method 3

This method manually configures the phone parameters with static values for IP address, IP netmask, IP gateway and file provisioning server.

This method applies to:

- New 1100 Series phones.
- 1100 Series phones being redeployed from another SIP system.
- 1200 Series phones being redeployed from another SIP system.

1. Connect the phone to the LAN port. If the LAN port supports Power over Ethernet (PoE) the phone will start up immediately. Otherwise connect a separate power supply.
   - The phone comes up with UNIStim firmware **06XXC7M** or higher. The firmware name is briefly displayed on the screen at startup. If an earlier version than ***C7M*** is displayed, refer to the recovery process 30.
   - If the firmware name comes up as ***04.xx.xx.xx*** and the terminal has not been reconfigured, it means the phone is using SIP firmware. If this is suspected not to be IP Office SIP firmware, do a factory reset 30 of the phone.
2. Once the phone has booted, follow the steps below.
   a. Press the **Service** key (English labeled set) or the globe icon key (icon labeled set).
   b. Select item **3 Network configuration**.
   c. The soft keys display **Apply Auto -- Cancel**. Press **Auto**.
   d. Right navigate until you see: **DHCP Enable.**
   e. If selected, deselect the check box by pressing the **Man** soft key.
   f. Navigate down to item **9 Provision Server**.
   g. If selected, deselect the check box by pressing the **Man** soft key.
   h. Press the **Cfg** soft key.
   i. Scroll down through the options until you see **DHCP? [0=N 1=Y]**.
   j. Enter **0** to disable DHCP and press the down arrow.
   k. Populate: Set IP address, IP netMask and IP gateway values as appropriate to your network (e.g. Set IP = 192.168.43.114, Netmask = 255.255.255.0, Gateway=192.168.1.1).
   l. Navigate down to **Prov:**. Enter the IP Address of the IP Office system, for example 192.168.43.1. Press **OK**.
   m. Navigate down to **Protocol**. Check that the protocol is set to ***TFTP***.
   n. Press **Apply**.
3. The phone reboots and shows the SIP firmware name **04.xx.xx.xx**. A set of files get downloaded by the phone.
4. When the User Login prompt screen shows up and the SIP domain on the screen matches the IP Office IP address, the upgrade process is not yet completed. Follow the additional steps below.
   a. Press the **Service** key (English labeled set) or the globe icon key (icon labeled set).
   b. Select **Device Settings**.
   c. Enter the default password: ***26567*738*** (***color*set***).
   d. Navigate down to item **9 Provision Server**.
   e. Make sure the check box is deselected. If not, then press "Man" softkey.
   f. Press the **Cfg** softkey.
   g. Navigate down to the **Prov:** prompt. Validate that the IP address is that of telephone system. Then press the down arrow.
   h. For protocol change **TFTP** to **HTTP**. Either use the right arrow twice (1200 Series) or use the pull-down menu (1100 Series).
   i. Press **Apply**.
5. The phone reboots twice and shows SIP firmware name **04.xx.xx.xx** on the second reboot. A set of files get downloaded by the phone.
   a. When the **User Login** prompt screen shows up and the SIP domain on the screen matches the server's IP address, the upgrade process is complete. If the SIP domain shows ***avaya.com*** then there was a problem with the value of the option 66 parameter provided by the DHCP server.
   b. The SIP phone is ready to login a SIP user.
      i. The phone displays **ID:**. Enter the extension number that the phone should use. You can use the right and left cursor keys to move the digit entry cursor. Use the up cursor to delete the previous digit.
      ii. Press **Login**.
      iii. The phone displays **Password:**.
      iv. If logging in to a pre-configured user/extension 18, match the **Login Code** set for that user.
      v. If using the system's **Auto-Create Extn/User** function, enter ***0000***.

vi. Press **Next** twice.

c. The SIP user should now be logged in. If not, then verify the licenses and the user configuration.

3.5 Method 4

This method manually configures the phone parameters with static values for IP address, IP netmask, IP gateway and file provisioning server.

This method applies to:

- New 1200 Series phones. These phones come up with a special basic boot loader called **BootC**.

1. Connect the phone to the LAN port. If the LAN port supports Power over Ethernet (PoE) the phone will start up immediately. Otherwise connect a separate power supply.
   - The phone comes up with Unistim firmware ***06XXC7M*** or higher. The firmware name is briefly displayed on the screen at startup. If an earlier version than ***C7M*** is displayed, refer to the recovery process 30.
2. Once the phone has booted, the phone asks if you want **Manual Configuration?**
   a. Press the 4 buttons under the LCD from left to right one after the other.
   b. The phone displays **DHCP? [0=N 1=Y]**. Enter **0** to enable DHCP.
      - Populate: Set IP address, IP netMask and IP gateway values as appropriate to your network, for example IP = 192.168.43.114, Netmask = 255.255.255.0, Gateway=192.168.1.1.
   c. Navigate down to **Provision Server**. The phone displays ***0.0.0.0***.
   d. Press the backspace soft key to clear the value. Then enter the IP Address of the IP Office system, for example 192.168.43.1. Press **OK**.
   e. If the phone prompts for a DNS IP address, enter a valid DNS server IP address. If none is available use the IP address of the IP Office system. Press **OK**.
   f. Press **Apply**.
3. The phone reboots twice and shows SIP firmware name **04.xx.xx.xx** on the second reboot. A set of files get downloaded by the phone.
4. When the **User Login** prompt screen shows up and the SIP domain on the screen matches the IP Office system IP address, the upgrade process is not yet completed. Follow the additional steps below:
   a. Press the **Service** key (English labeled set) or the globe icon key (icon labeled set).
   b. Select **Device Settings**. Enter the default password: ***26567*738*** (***color*set***).
   c. Navigate down to item **9 Provision Server**.
   d. Make sure the check box is not selected. If not, then press the **Man** softkey.
   e. Press the **Cfg** softkey.
   f. Navigate down to the **Prov:** prompt. Check that the IP address is that of the telephone system. Then press the down arrow.
   g. For protocol, change ***TFTP*** to ***HTTP***. Either use the right arrow twice (1200 Series) or use the pull-down menu (1100 Series).
   h. Press **Apply**.
5. The phone reboots twice and shows SIP firmware name **04.xx.xx.xx** on the second reboot. A set of files get downloaded by the phone.
   a. When the **User Login** prompt screen shows up and the SIP domain on the screen matches the server's IP address, the upgrade process is complete. If the SIP domain shows ***avaya.com*** then there was a problem with the value of the option 66 parameter provided by the DHCP server.
   b. The SIP phone is ready to login a SIP user.
      i. The phone displays **ID:**. Enter the extension number that the phone should use. You can use the right and left cursor keys to move the digit entry cursor. Use the up cursor to delete the previous digit.
      ii. Press **Login**.
      iii. The phone displays **Password:**.
      iv. If logging in to a pre-configured user/extension 18, match the **Login Code** set for that user.

v. If using the system's **Auto-Create Extn/User** function, enter ***0000***.

vi. Press **Next** twice.

c. The SIP user should now be logged in. If not, then verify the licenses and the user configuration.

3.6 Method 5

This method manually configures the phone parameters with static values for IP address, IP netmask, IP gateway and file provisioning server.

This method applies to:

- 1200 Series phones being redeployed from another SIP system.

1. Connect the phone to the LAN port. If the LAN port supports Power over Ethernet (PoE) the phone will start up immediately. Otherwise connect a separate power supply.
   - The phone should display **F/W Version: 04.xx.xx.xx**. if it already has SIP firmware.
   - If the phone firmware looks like **06XXC7M** or higher, use Method 3 26. If an earlier version than ***C7M*** is displayed, refer to the recovery process 30.
   - If the terminal displays **manual configuration**, use Method 4 28).
2. Perform a factory reset 30 of the phone. Once the phone has rebooted, follow the steps below.
   a. Select **Service** key (English labeled set) or globe icon (icon labeled set).
   b. Select **Device Settings**. Enter the default password: ***26567*738*** (***color*set***).
   c. The soft keys display **Apply Auto -- Cancel**. Press **Auto**.
   d. Right navigate until you see: **DHCP Enable.**
   e. If selected, deselect the check box by pressing the **Man** soft key.
   f. Navigate down to item **9 Provision Server**.
   g. If selected, deselect the check box by pressing the **Man** soft key.
   h. Press the **Cfg** soft key.
   i. Scroll down through the options until you see **DHCP? [0=N 1=Y]**.
   j. Enter **0** to disable DHCP and press the down arrow.
   k. Populate: Set IP address, IP netMask and IP gateway values as appropriate to your network (e.g. Set IP = 192.168.43.114, Netmask = 255.255.255.0, Gateway=192.168.1.1).
   l. Navigate down to **Prov:**. Enter the IP Address of the IP Office system, for example 192.168.43.1. Press **OK**.
   m. Navigate down to **Protocol**. Check that the protocol is set to ***TFTP***.
   n. Press **Apply**.
3. The phone reboots and shows the SIP firmware name **04.xx.xx.xx**. A set of files get downloaded by the phone.
   a. When the **User Login** prompt screen shows up and the SIP domain on the screen matches the server's IP address, the upgrade process is complete. If the SIP domain shows ***avaya.com*** then there was a problem with the value of the option 66 parameter provided by the DHCP server.
   b. The SIP phone is ready to login a SIP user.
      i. The phone displays **ID:**. Enter the extension number that the phone should use. You can use the right and left cursor keys to move the digit entry cursor. Use the up cursor to delete the previous digit.
      ii. Press **Login**.
      iii. The phone displays **Password:**.
      iv. If logging in to a pre-configured user/extension 18, match the **Login Code** set for that user.
      v. If using the system's **Auto-Create Extn/User** function, enter ***0000***.
      vi. Press **Next** twice.
   c. The SIP user should now be logged in. If not, then verify the licenses and the user configuration.

3.7 Factory Reset

If the telephone has previously been deployed with non-IP Office SIP firmware, this process is required in order to return all the phone's settings to their defaults. You do not need to perform this procedure on a phone being redeployed from another IP Office system.

- **! WARNING**
  This process should only be used with phones that have SIP firmware loaded. Do not use this process on a phone that has UNIStim firmware loaded.

1. On the back of the phone, locate the white label with three bar codes.
2. The number just above the bottom bar code is the MAC address of the phone. This is used as part of the factory default process.
3. Write down the MAC address. It should consist of six pairs of hexadecimal numbers, each pair separated by a : or space.
4. The MAC address needs to be translated into a number that can be dialed as part of the default process. To do this:
   - The numbers 0 to 9 remain numbers 0 to 9.
   - The letters A to F are translated to the number key on which the letter is printed on the phone. So ABC = 2, DEF = 3.
   - Any **:** characters and any spaces are ignored.
   - For example, the MAC address ***A1:B2:C3:D4:E5:F6*** translated to value ***212223343536***.
5. The number that needs to be dialed on the phone is ****73639***<*Translated MAC*>***##*** (****renew***<*Translated MAC*>***##***). Write this down, inserting the translated MAC address of the phone.
6. Dial the reset string. This can be done when the phone is idle or when starting.
7. If the string was recognized, the phone will display **Reset to Factory Settings**.
8. Press **Yes** to complete the reset to factory procedure. Press **No** to quit without resetting the phone.

3.8 Recovery Process

The two processes below can be used to attempt to recover a phone to a known state in order to upgrade or install. The BootC method is preferred as it can be used on all supported 1100 and 1200 Series phones. The second method can be used with phones that already have a UNIStim firmware of an earlier version than ***06XXC7M***.

Invoking the BootC Loader

1. Power off the phone.
2. Press and hold the keypad 2 button and the up arrow.
3. Connect the phone power (either through PoE or power adapter) while the buttons above for about 7 seconds while the phone is powered up.
   - On a 1100 Series phone, release the buttons immediately after the blue and red light go off.
   - On a 1200 Series phone, release the button immediately **Loading BootC** is displayed.
4. After releasing the buttons, the phone screen shows **Manual configuration**. Here you have 2 options:
   - **Option 1 - Upgrade Firmware and Settings**
     Press the 4 soft keys consecutively one after the other from left to right. This will enter the configuration menu where you can configure the DHCP/static IP address and provisioning server parameters. The parameters can be configured as per Method 2 (DHCP) 25 or Method 4 (static addressing) 28 depending if DHCP is used or not.
   - **Option 2 - Resume Previous Operation**
     Let the phone continue its boot up process. The phone will resume its previously configured parameters and firmware.

Loading UNIStim C7M Firmware

In this process we use a TFTP file server to upgrade the UNIStim firmware already on a phone to UNIStim firmware ***06XXC7M*** or higher. The firmware is includes as part of the installation of IP Office Manager. IP Office Manager can also be used as a TFTP server if one is not available.

1. Prepare the TFTP Server:
   - **If using IP Office Manager:**
     a. Start IP Office Manager:
     b. Select **File | Preferences**.
     c. On the **Preferences** tab, check that **Enable BootP and TFTP Servers** is selected.
     d. On the **Directories** tab, note the current setting of the **Binary Directory (.bin files)** file path. Change the path to ***C:\Program Files\Avaya\IP Office\Manager\IPSET-UNISTIM-C7M***.
     e. Click **OK**.
     f. Leave IP Office Manager running.
   - **If using another TFTP Server:**
     1. Copy the files from ***C:\Program Files\Avaya\IP Office\Manager\IPSET-UNISTIM-C7M*** to the root folder of the TFTP server.
     2. Check that the TFTP server application is running.
2. Enter the phone configuration menu:
   a. Either press the **Services** button twice or use the BootC procedure above.
   b. If prompted for a password, try ***26567*738*** (***color*set***).
   c. In the configuration menus, manually configure the provisioning server to the IP address of the PC running the TFTP server (that is IP Office Manager) and apply the settings. If using the SIP firmware configuration menu, make sure to configure the provisioning server protocol to TFTP. If using the SIP firmware, this protocol setting appears when OK is pressed after entering the provisioning server IP address.
3. The phone reboots and attempts to do a TFTP download to the TFTP server IP address. The phone will download the .cfg and .bin files appropriate to the phone type and then reboot.
   - If the TFTP download does not work, try disabling the firewall on the PC.
   - If still not working, use Wireshark to trace the TFTP traffic coming to the PC IP address. Verify that the DHCP settings or the static IP address used by the IP set can reach the PC IP address.
4. After one or two consecutive reboots the phone will show ***Contacting S1...*** followed by ***Server unreachable***.
5. The IP set is now loaded with UNIStim C7M firmware that is supported for the upgrade process to IP Office firmware 22. Enter the configuration menu by following Method 1 (DHCP) 25 or Method 3 (static addressing) 26 for the to SIP migration procedure.
   - **If using IP Office Manager:** UNIStim
     a. Select **File | Preferences**.
     b. On the **Preferences** tab, disable **Enable BootP and TFT Servers** is it was only enabled for this process.
     c. On the **Directories** tab, change the **Binary Directory (.bin files)** path back to its original settings (normally ***C:\Program Files\Avaya\IP Office\Manager***).

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