



# **IP Office**

## **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 IP Office systems. 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.

Only phones with 8MB of flash memory (excluding 1120E SCR phones) 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.

The limitation of 500kB for custom data was chosen to allow enough space for the phone operation, while some space was reserved for future needs. It does *not* mean that if custom data exceeds the 500kB limit then the user will immediately start experiencing issues.

However, if you happen to exceed the 500kB limit and any of the issues below occur, you must free some space by deleting custom files either on the Provisioning server or on the IP phone (using the File Manager dialog).

The following table identifies the issues that can occur when a supported phone exceeds the 500kB limit:

Issue	Consequence
IP phone may be unable to save configuration files downloaded from Provisioning server.	The administrator may not be able to load proper configurations to the phone.
IP phone may not be able to save and use different files which are loaded from the Provisioning server (images, languages, certificates, address book files, etc.)	The corresponding features may not work as expected.  <b>Example 1:</b> If a certificate can't be installed, the phone won't be able to establish a secure connection that requires that certificate.  <b>Example 2:</b> If a language file cannot be saved, the phone won't be able to display prompts in the corresponding language.
If a new user registers on a phone, the corresponding user profile may not be created.	User preferences cannot be saved (rebooting the phone will cause user settings to be restored to default values) and incoming/outgoing call history cannot be collected.
When an IP phone is <a href="#">upgraded</a> <sup>[23]</sup> from UNISTim firmware to SIP firmware, the phone may not be able to create the required configuration files in the file system.	The phone will work with default settings and it won't be possible to save configuration changes.

### 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](#)<sup>[30]</sup> 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](#)<sup>[30]</sup>.
- 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 9.0 Feature Pack 1 (9.0.3), 1100/1200 Series SIP firmware release 4.04 is supported.

If you currently utilize UNISTim firmware, see the section [Upgrading from UNISTim to SIP](#)<sup>[23]</sup>.

## Supported IP Office Systems

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

- The control unit must be 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 IP500 V2 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. For Server Edition systems the licenses are based on the system's unique **System Identification** number.
- For IP500 and IP500 V2 systems, each IP500 VCM 32 and IP500 VCM64 card installed in the system enables 12 Avaya IP endpoint without requiring licenses.

## Voice Compression Channels

For IP500 and IP500 V2 systems, 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 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.

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## 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.
  - For Linux based systems the servers own hard disk is used.
- Only 1100/1200 Series phone software supplied as part of an IP Office core software release should be used.

## 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**

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## 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](#)<sup>[10]</sup>.
2. [Load the 1100/1200 Software Files onto the system](#)<sup>[15]</sup>.
3. [Enable SIP Phone Support](#)<sup>[17]</sup>.
4. [Check the System File Server Settings](#)<sup>[18]</sup>.
5. [User and Extension Creation](#)<sup>[19]</sup>.
6. [Add licenses](#)<sup>[20]</sup>.
7. Once the above steps have been completed, [installation of individual phones](#)<sup>[22]</sup> 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:

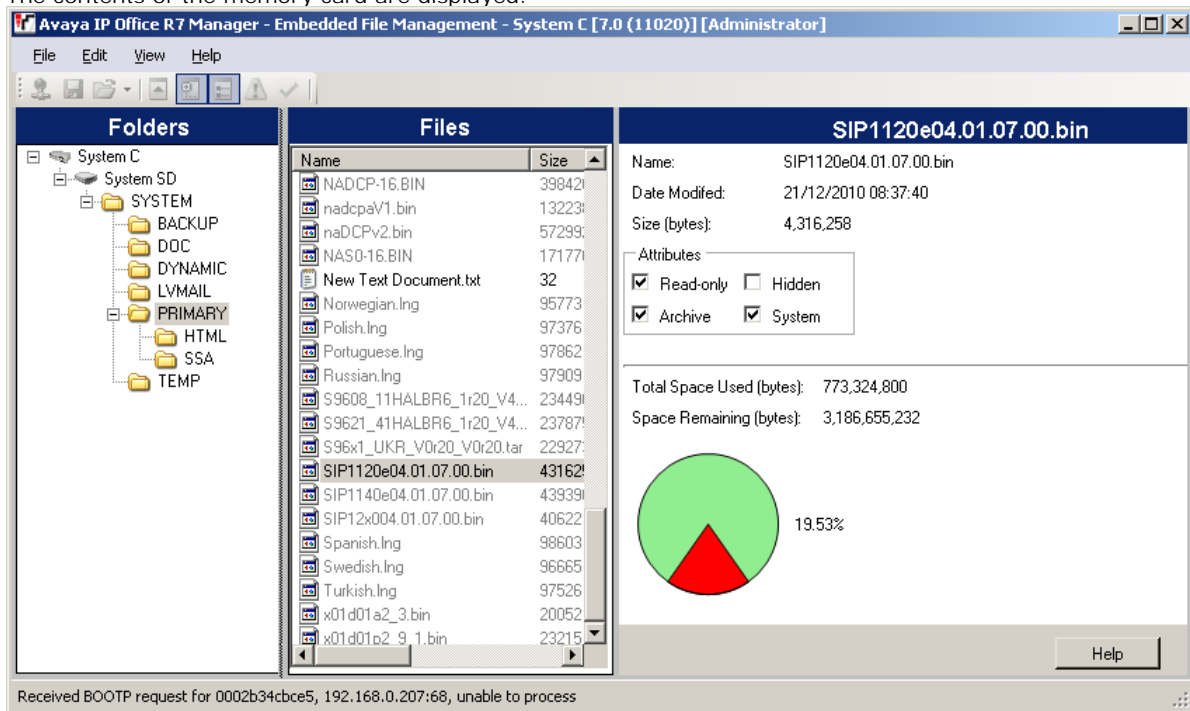
- Files can be copied remotely onto the card in a running system using IP Office Manager's embedded file management.
- The card can be shutdown and removed from the system. Files can then be copied onto the card using a PC with a suitable memory card slot.

### 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.

- The contents of the memory card are displayed.



- For an IP500 memory card, all the firmware files are held in the top level folder. For an IP500 V2 system, use the folder tree to navigate to **System SD | SYSTEM | PRIMARY**. For a Linux based systems use the folder tree to navigate **system | primary**.
- 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.

- Using IP Office Manager, select **File | Advanced | Memory Card Command | Shutdown**.
- The **Select IP Office** menu is displayed.
- Select the telephone system and click **OK**.
- Enter the name and password for the system. These are the same as used for configuring the system.
- You are prompted to confirm which card you want to shutdown. Select **System** and click **OK**.
- On the back of the control unit, check that the LED for the memory card slot is off before removing the memory card.
- Place the card into the PC's memory card slot and examine the contents.
- For an IP500 memory card, all the firmware files are held in the top level folder. For an IP500 V2 system, 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**.
- 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.

The screenshot shows the IP Office Manager configuration window. The 'System' tab is selected, and the 'LAN1' sub-tab is active. The 'LAN Settings' section is expanded, showing fields for IP Address (192.168.42.1), IP Mask (255.255.255.0), Primary Trans. IP Address (0.0.0.0), and RIP Mode (None). There is an unchecked checkbox for 'Enable NAT' and a 'Number Of DHCP IP Addresses' field set to 200. Below these, the 'DHCP Mode' section has four radio buttons: 'Server' (selected), 'Client', 'Dialin', and 'Disabled'. An 'Advanced' button is located at the bottom right of the configuration area.

- 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.
    - **SIP Registrar Enable**  
Check that **SIP Registrar Enable** is selected.
    - **Domain Name: Default = Blank**  
This is the local SIP registrar domain name that will be needed by SIP devices in order to register with the IP Office. If this field is left blank, registration is against the LAN IP address. The examples in this documentation all use registration against the LAN IP address.
    - **Layer 4 Protocol: Default = Both TCP & UDP**  
The transport protocol for SIP traffic between the IP Office and SIP extension devices. UDP and TCP are enabled by default. TLS can be enabled if required.
    - **TCP Port: Default = 5060**  
The SIP port if using TCP. The default is 5060.
    - **UDP Port: Default = 5060**  
The SIP port if using UDP. The default is 5060.
    - **TLS Port: Default = 5061**  
The SIP port if using TLS. The default is 5061.
      - **Challenge Expiry Time (sec): Default = 10**  
The challenge expiry time is used during SIP extension registration. When a device registers, the IP Office SIP Registrar will send a challenge back to the device and waits for an appropriate response. If the response is not received within this timeout the registration is failed.
  5. 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 Card (IP500/IP500 V2) or Disk (Linux).*  
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.

Phone File Server Type	DHCP Response uses...	
	HTTP Source	TFTP Source
<b>Custom</b>	<i>HTTP Server IP Address</i>	<i>TFTP Server IP Address</i>
<b>Memory Card / Disk</b>	<i>LAN IP Address</i>	<i>LAN IP Address</i>
<b>Manager</b>	<i>LAN IP Address</i>	<i>Manager PC IP Address</i>

- **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 | VoIP](#) tab. This setting must be disabled after installation of the 1100/1200 Series phones to prevent additional unplanned SIP extension registration.

The screenshot shows the 'Primary-30' configuration window with the 'System | LAN1 | VoIP' tab selected. Under 'LAN Settings', 'H323 Gatekeeper Enable' is checked, while 'Auto-create Extn' and 'Auto-create User' are unchecked. 'H323 Remote Extn Enable' is checked. Under 'SIP Settings', 'SIP Trunks Enable' and 'SIP Registrar Enable' are checked, while 'Auto-create Extn/User' and 'SIP Remote Extn Enable' are unchecked. The 'Domain Name' field is empty. For 'Layer 4 Protocol', 'UDP' and 'TCP' are checked with ports 5060 and 5060 respectively, while 'TLS' is unchecked with port 5061. Remote ports are 5070 for UDP/TCP and 5071 for TLS. 'Challenge Expiry Time (secs)' is set to 10.

### 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.

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## 2.5 Licensing

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

# Chapter 3.

## Phone Installation

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## 3. Phone Installation

Having [configured the telephone system](#)<sup>[14]</sup> 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. In addition, sets currently operating on a BCM system that is being replaced by an IP Office system can be directly migrated from the BCM. See [Automatic BCM Migration](#)<sup>[23]</sup>.

Installation type	DHCP		Static IP Addressing	
	1100 Series	1200 Series	1100 Series	1200 Series
New Phone	<a href="#">Method 1</a> <sup>[28]</sup>	<a href="#">Method 2</a> <sup>[28]</sup>	<a href="#">Method 3</a> <sup>[28]</sup>	<a href="#">Method 4</a> <sup>[28]</sup>
Redeployment from BCM	<a href="#">Method 1</a> <sup>[28]</sup>	<a href="#">Method 1</a> <sup>[28]</sup>	<a href="#">Method 3</a> <sup>[28]</sup>	<a href="#">Method 3</a> <sup>[28]</sup>
Redeployment from SIP	<a href="#">Method 1</a> <sup>[28]</sup>	<a href="#">Method 1</a> <sup>[28]</sup>	<a href="#">Method 5</a> <sup>[29]</sup>	<a href="#">Method 5</a> <sup>[29]</sup>
Automatic Migration	<a href="#">Automatic Migration Method</a> <sup>[23]</sup>			

## 3.1 Automatic BCM Migration

This method of migration can be used with 1100 and 1200 Series phones that are currently operating with a BCM system .

In order to upgrade your current firmware from UNISTim to SIP, you must first install the migration patch on the BCM. The BCM will then reboot and upload the new firmware to the applicable IP sets.

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](#)<sup>[24]</sup>. After the migration, the user can log in to the phone as a SIP user, as described at the ends of [Method 1](#)<sup>[25]</sup> and [Method 3](#)<sup>[26]</sup>.

Before you proceed, be aware of the assumptions and limitations and ensure that you meet the prerequisites.

### Assumptions and Limitations

- Offline sets are not included in this automatic migration.
- 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.

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### 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

Immediately after pressing **Migrate Now**, a popup displays *"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.

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 have not migrated.
- Power off/on the PoE to which the sets are connected.

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

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.

Either:

- Reboot the sets which have not migrated.
- 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](#) <sup>[30]</sup>.
  - 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](#) <sup>[29]</sup> 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](#) <sup>[19]</sup>, 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](#)<sup>[30]</sup>.
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](#)<sup>[19]</sup>, 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](#)<sup>[30]</sup>.
  - 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](#)<sup>[29]</sup> 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](#)<sup>[19]</sup>, 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](#) <sup>[30]</sup>.
  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](#) <sup>[19]</sup>, 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](#)<sup>[26]</sup>. If an earlier version than **C7M** is displayed, refer to the [recovery process](#)<sup>[30]</sup>.
    - If the terminal displays **manual configuration**, use [Method 4](#)<sup>[28]</sup>.
  2. Perform a [factory reset](#)<sup>[29]</sup> 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](#)<sup>[19]</sup>, 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.

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- **! 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 \(DHCP\)](#)<sup>[25]</sup> or [Method 4 \(static addressing\)](#)<sup>[26]</sup> 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 included 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](#)<sup>[22]</sup>. Enter the configuration menu by following [Method 1 \(DHCP\)](#)<sup>[25]</sup> or [Method 3 \(static addressing\)](#)<sup>[26]</sup> 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 TFTP Servers** if 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**).





# Chapter 4.

## Document History

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## 4. Document History

Date	Issue	Changes
5th April 2018	06a	<ul style="list-style-type: none"><li>• Conversion to new authoring tool.</li></ul>



