



BCM/Norstar to IP Office Phone Convergence Handbook

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Chapter 1: Engineering overview

With IP Office Releases 7 and 8, Avaya has introduced a number of new hardware items to enable Norstar and BCM customers to easily upgrade to the IP Office platform. The upgrade solution, provided in this guide, allows customers to maintain their investment into their existing telephony infrastructure in order to leverage IP Office features, thereby increasing profitability, improving productivity, and gaining competitive advantages.

The purpose of this guide is to provide installers and administrators with all the information required to upgrade a BCM or Norstar system to IP Office. It is recommended that you follow the procedures from beginning to end and that you read the notes carefully.

Before performing the upgrade, you will need to obtain a record of your current BCM configuration using Data Migration Manager to extract the data. Following the upgrade, you will configure your new IP Office features (for example, you will configure your BCM 'skillsets' as IPO 'hunt groups').

In this guide, you will also find information pertinent to:

- hardware support and limitations
- language support
- firmware and firmware upgrade
- button programming
- voicemail configuration
- ensuring optimal audio performance
- supporting digital mobility solutions

Supported hardware

The desktop PC that is used to run Data Migration Manager must have network LAN access to the source device to perform a data extraction. Similarly, network access to the target device must be available to apply the operation. To avoid networking issues, if the source device IP address is reused for the target device, you will need to disconnect the source device from the network prior to performing the apply operation (another approach is to use the OAM port connection on the target device to avoid LAN address contention). Refer to the DMM user guide for more information.

Prior to performing the upgrade, you must ensure that any existing IP Office, Norstar, or BCM hardware are supported. Verify that your hardware is listed below.

IP Office hardware

The TCM8 card, DS16A Module, and DS30A Module all provide support for Norstar and BCM Digital telephones on the IP Office Platform. The new IP Office Wall Mount Kit allows the IP Office 500 chassis and Expansion modules to be easily mounted to the wall and provides integrated cable management.

With IP Office Release 8.0, the C110 Preferred Edition Processor Card provides the option to run VM Pro and one-X Portal within the main chassis of the IP Office 500 platform. The C110 Card can be installed in one of the four IP Office Slots, which will allow IP Office, VM Pro, and One-X Portal to run on Linux.

TCM8 Card:

The TCM8 card, shown below, is an 8–port digital extension card that supports Norstar and BCM digital telephones. The TCM8 card is only supported on the IP Office 500 v2 and requires IP Office Release 7.0 or later. A maximum of 4 TCM8 cards can be installed per IP Office 500 v2 system. The following telephone types are supported on the TCM8:

- Norstar and BCM T7000 Series phones
- Norstar and BCM M7000 Series phones (some limitations apply)
- Norstar and BCM Digital Mobility Solution
- Norstar and BCM Digital Conferencing Unit (NACU)
- Norstar and BCM T7406[E] cordless phone



The TCM8 Card has 12 RJ45 ports of which the first eight are used for the digital station ports. The remaining four ports are the trunk daughter cards. The following trunk daughter cards can be used with the TCM8 Card:

- IP500 Analog Trunk Card
- IP500 BRI Trunk Card
- IP500 PRI Trunk Card

The TCM8 Card can be used in combination with all other IP 500 base cards, including the IP500 Digital Station 8 card.

DS16A and DS30A Modules:

The DS16A and DS30A are new 16 and 30–port expansion modules which support the connection of Norstar and BCM Digital telephones to IP Office. Both modules are only supported on the IP Office 500 v2 and require IP Office Release 7.0 or later.

Please refer to the IP Office Telephone Support section for more details about support for legacy BCM and Norstar telephones. Classic Avaya Digital Phones are not supported on the DS16A and DS30A Expansion Modules.



DS16A Module



DS30A Module

The DS16A and DS30A Expansion Modules feature RJ21 connectors to simplify installation and minimize rewiring when upgrading from a Norstar or BCM. The RJ21 pin-out is consistent with the BCM DSM16 or DSM32 Media Bay Module so that they can easily be moved to the IP Office. In the case of the DS30A, two stations might have to be rewired when upgrading from a BCM DSM32 Media Bay Module.

A maximum of 12 DS16A/DS30A Expansion Modules are supported on each IP Office system. They can be used in any combination with the IP500 DS8 and TCM8 cards, or the IP500 DS16 and DS30 Expansions, thereby providing a future growth path with Avaya digital phones.

IP Office 500 Wall Mount Kit:

Similar to the BCM50 and BCM450, the IP Office 500 chassis and Expansion modules can be wall-mounted. The IP Office Wall Mount Kit solution simplifies cable management and allows for a clean installation covering cables and connectors. It can be installed by a single person.



SRG50 and SRG 200/400

Customers of the Survivable Remote Gateway 50 (SRG50) or Survivable Remote Gateway 200/400 (SRG 200/400) system upgrading to IP Office receive the same investment protection as BCM and Norstar users. SRG systems can either be upgraded to an IP Office or a B5800, however, it is important to note that neither IP Office 8.0/8.1 or B5800 6.2 support centralized applications or phone registration.

1120, 1140, 1220 and 1230 Series IP phones can be upgraded to the SIP firmware and connected to an IP Office or alternatively B5800 system. M7000 and T7000 Series digital phones, however, are not supported on the SRG50 and hence cannot be migrated.

It is also not possible to use the Data Migration Manager tool to extract or convert data, voice messages, or greetings from SRG systems.

Supported BCM and Norstar phones

To provide investment protection for BCM and Norstar customers, Avaya has integrated a large number of the phones used on the BCM and Norstar platforms into the IP Office platform. This protects 40% to 60% of the investment that the customer has made into BCM and Norstar. The following sections provide an overview of such phones supported on IP Office in terms of digital phones, IP phones, and wireless phones.

Related topics:

[Digital phones](#) on page 11

[IP phones](#) on page 14

[Wireless phones](#) on page 15

[List of BCM and Norstar phones supported on IP Office](#) on page 15

Digital phones

The T7000 and the majority of M7000 Series digital phones from Norstar and BCM can be transferred to the IP Office by using the DS16A/ DS30A expansion module or a TCM8 card. While the key telephony functions will operate on IP Office in a familiar fashion, there will be some differences in feature support and operation, in particular for advanced users.

The M7000 and T7000 Series phones that are supported on IP Office are shown below. Note that the M7xxxN versions of the phones are also supported as indicated in the more comprehensive [List of BCM and Norstar phones supported on IP Office](#) on page 15.



M7100



M7208



M7310



M7324



M7410



T7000



T7100



T7208



T7316



T7316e



T7406



T7406e

Notes:

- The firmware of the M7000 and T7000 Series phones cannot be upgraded, nor do they require an upgrade to be supported on IP Office
- The Analog Terminal Adapter and Doorphone from the BCM and Norstar are not supported on IP Office
- Digital phones from the CS1000 and Option 11 platform (e.g. M3900 Series digital phones) are not supported on IP Office

M7000 Series phone support

Global and Non-Global version:

Only the Global version of the M7000 Series phones will be supported on IP Office. The Non-Global version (also called NA version) of the M7000 Series phone is not supported on IP Office. The Non-Global versions were available from the late 1980s to the early 1990s and

were only sold in North America. The Global version was available in all regions including North America as of the early-to-mid 1990s until the End of Sale of the M7000 Series phones.

The Global and Non-Global phones can best be identified through their contrast level as follows:

- Global version – 9 contrast levels
- Non-Global version – 4 contrast levels

The contrast level can be identified using F*7 on the BCM and IP Office.

The Global version of the M7000 Series phones can also be identified through the production release of the phone. M7000 Series phones which meet the minimum production release requirements as listed in the table below are Global phones:

M7000 Series Phone	Required Production Release of Global M7000 Series Phone
M7100	All releases
M7208	Release 16 or higher
M7310	Release 16 or higher
M7324	Release 5 or higher

The production release number can be found on a white label on the bottom of the M7000 series phone.

The non-global M7000 Series phones will boot when connected to IP Office, but there might be impacts to audio quality and volume control when operated on the IP Office, and hence they are not supported.

It is not possible to determine the version of M7000 Series phones remotely or through the BCM Element Manager and IP Office Manager.

Avaya recommends that Avaya partners make the end-customers aware that the M7000 phones have reached the End of Life status and limited technical support will be offered for these phones.

Dial pad lettering:

On the M7000 Series phones, the 'Q' and 'Z' letters are printed on the '0' (zero) digit. When these phones are used in an IP Office environment, the phones will function as if 'Q' is on the '7' digit and 'Z' on the '9' digit.

IP phones

A number of popular BCM IP phones running the BCM Unistim firmware can also be used on IP Office by upgrading the firmware on the phones to the Avaya SIP firmware 4.x. In past releases, Avaya has improved the operations and feature support of the SIP firmware.

The 1120, 1140E, 1220, and 1230 IP phones and their expansion modules can be upgraded to SIP and are supported on IP Office Release 6.1 and higher.

The 1110, 1210, 2033 conference phone, and 2000 Series IP phones are not supported on IP Office and need to be replaced as part of an upgrade from BCM to IP Office.

An Avaya IP Endpoint license is required to use the BCM IP phones on IP Office. The user is not required to purchase a 3rd-party IP Endpoint license.

Before upgrading the 1100/1200 Series IP phones, they need to be on Unistim version 06xx**C7M** or higher. The firmware data is briefly displayed on the screen at startup. The C7M firmware is included in the GA load of BCM 6.0 and the latest Smart Updates of BCM 4.0, BCM50 R3, BCM450 R1, BCM 5.0 and BCM 6.0.

*** Note:**

All hardware releases of the 1100/1200 Series phones support the SIP 4.x firmware. However, some older versions of the 1120 phones have only 8MB of memory, which means user data such as custom ring tones, images, etc. must not exceed a total of 500kB on those phones.

Supported SIP firmware

- 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

Wireless phones

Similar to the T7000 and M7000 Series phones, the Digital Mobility Solution and T7406[E] phones can be transferred to an IP Office through the use of TCM8 cards or DS16A/30A expansion modules. The Feature Key functionality will remain available on the IP Office with the same functionality and limitations as on the T7000 Series phones.

The BCM 6100 and 2000 Series Wi-Fi phones are not supported on the IP Office and need to be replaced with 3640 Series Wi-Fi sets. It is not possible to upgrade the firmware of the 6100 Series phones to the firmware of the 3640 Series phones or to a generic SIP firmware.

List of BCM and Norstar phones supported on IP Office

All supported Business Series Terminal (BST) phones require IP Office Release 7.0 or higher, with the exception of the IP Phones which require IP Office Release 6.1 or higher. In the context of this document, the term 'BST' encompasses all Norstar/BCM M7000 and T7000 phones, as well as all 11xx/12xx SIP phones.

The table below provides an overview of the BST phones and phone accessories and their support status on IP Office:

Family	Model	Support on IP Office	Comments
Digital Phones			
T7000 Series Digital Deskphones (BST)	T7000	✓	All model and revisions of the T7000 Series Digital Deskphones are supported. There are no regional versions of the T7000 Digital Deskphones. Note that on BCM/Norstar, the T7000 Series phone model was only supported in certain locales. This restriction does not exist on IP Office.
	T7100	✓	
	T7208	✓	
	T7316	✓	
	T7316E	✓	
	T24 Key Indicator Module (KIM)	✓	In IP Office all expansion modules can have line appearance. ¹
M7000 Series Digital Deskphones	M7100 Global	✓	
	M7100N Global	✓	
	M7208 Global	✓	Bottom button is dedicated handsfree
	M7208N Global	✓	Bottom button is dedicated handsfree
	M7310 Global	✓	Bottom right button is dedicated handsfree
	M7310 Global + BLF module	✓	Bottom right button is dedicated handsfree
	M7310N	✓	Bottom left button is dedicated handsfree
	M7324 Global	✓	Bottom left button is dedicated handsfree
	M7324 CAP Module (KLM)	✓	In IP Office, all expansion modules can have line appearance. ⁽¹⁾

¹ No differentiation between Ordinary CAP and Enhanced CAP; IP Office supports a maximum of 1024 buttons on expansion modules (programmed and un-programmed) - the maximum is combined for IP and digital phone expansion modules.

Family	Model	Support on IP Office	Comments
	M7208 Non-global	✗	
	M7310 Non-global	✗	
	M7324 Non-global	✗	
Digital Audio Conference Unit	(Norstar) Audio Conference Unit	✓	
Doorphone	BCM Doorphone	✗	
	Norstar Doorphone	✗	
Analog Terminal Adapter	Analog Terminal Adapter (ATA) II	✗	All regional versions and releases of the ATA are not supported on the IP Office.
Call Button	Algo Call Button	✗	
IP Phones			
1100 Series IP Deskphones	1110 IP Deskphone	✗	
	1120E IP Deskphone	✓	Text & Icon version, firmware will be updated to SIP, phones cannot be reversed to Unistim FW after the SIP FW has been installed.
	1140E IP Deskphone	✓	
	1100 Series Expansion Module	✓	In IP Office, all expansion modules can have line appearance.(1)
1200 Series IP Deskphones	1210 IP Deskphone	✗	
	1220 IP Deskphone	✓	Text & Icon version, firmware will be updated to SIP, phones cannot be reversed to Unistim FW after the SIP FW has been installed.
	1230 IP Deskphone	✓	
	1200 Series Expansion Module - 12 Keys Display	✓	In IP Office all expansion modules can have line appearance(1)
	1200 Series Expansion Module - 18 Keys Paper	✓	

Family	Model	Support on IP Office	Comments
2000 Series IP Deskphones	2001 IP Deskphone	✗	
	2002 IP Deskphone	✗	
	2004 IP Deskphone	✗	
	2007 IP Deskphone	✗	
	i24 Key Expansion Module for 2000 Series IP Phones	✗	
2050 Softphone	2050 IP Softphone v2 & v4	✗	Alternative: IP Office Softphone
	2050 Mobile Voice Client	✗	Alternative: IP Office Softphone and One-X Mobile Preferred Clients for Android and iOS
2033 IP Audio Conferencing Unit	2033 IP Audio Conferencing Unit	✗	
Wireless Phones			
Digital Mobility Solution	Digital Mobility Controller 080 (NA)	✓	All DMC base station models and repeater models are support for use with the IP Office.
	Digital Mobility Controller 320 (NA)	✓	
	Digital Mobility Controller 081 (Intl)	✓	
	Digital Mobility Controller 321 (Intl)	✓	
	7430 DMC Handset	✓	
	7434 DMC Handset	✓	
	7439 DMC Handset	✓	
	7440 DMC Handset	✓	
	7444 DMC Handset	✓	
	7449 DMC Handset	✓	
	4135 DMC Handset	✓	
	4145 DMC Handset	✓	
	4136 DMC Handset	✓	
	4146 DMC Handset	✓	

Family	Model	Support on IP Office	Comments
	4145Ex DMC Handset	✓	
T7406[E] Wireless Phone	T7406	✓	
	T7406E	✓	
M7410 Wireless Phone	M7410	✓	See section below for information about identifying the Non-Global version M7000 Series phones.
Wifi Phones	6120 Wireless LAN Handset	✗	It is not possible to Upgrade the Unistim firmware on the phones to Avaya SIP or H.323 Firmware.

For information on loop length differences, refer to [Appendix 5: Loop length differences between BCM and IP Office](#) on page 142.

Using M7000 and T7000 Series phones on IP Office

In order to minimize the requirement for new end-user training, IP Office supports the majority of BCM/Norstar button layouts, feature keys, and feature activation codes. While Avaya has attempted to align the functionality and operation of the M7000 and T7000 Series digital phones on the IP Office as much as possible with the functionality and operation on the BCM or Norstar system, there are differences to note when transitioning from a BCM to IP Office. Users will note differences in important features like conferencing, transferring, or forwarding calls, call park and page functionality, call ringing display, and voicemail.

These differences will not affect most regular users, but the impact will likely be noticed by advanced phone users. Avaya recommends that customers moving from Norstar or BCM to IP Office are made aware of the differences as appropriate in order to set the right expectations.

The following sections provide an extensive overview of the functional differences when using the M7000 and T7000 Series phones on IP Office. For a short list of the most common differences, refer to [Key feature differences](#) on page 34. To view a table that lists *all* the features currently supported by M7000 and T7000 Series phones on IP Office, refer to [Appendix 1: Norstar and BCM user feature codes](#) on page 119.

Related topics:

[Idle display and call functionality](#) on page 20

[Default button programming](#) on page 21

[Programming buttons](#) on page 23

[Call transfer](#) on page 24

[Conference](#) on page 24

[Call forward](#) on page 25

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[Hold call](#) on page 28

[Other](#) on page 28

Idle display and call functionality

Idle display

The idle display of the M7000 and T7000 Series phones will be slightly different on IP Office than on the BCM. Currently, M7000 and T7000 Series phones do not display any static status messages on IP Office as you might expect on BCM.

- Time and date will be displayed in a different format
- Status letters will be displayed if, for example, the user is part of a Hunt Group (G), in Do Not Disturb mode (N), Twinned (T) or Forwarded (D)
- On two-line display phones, the extension number will be displayed

Incoming calls

Incoming calls will provide CLID information on the display and flash the call appearance and Message Waiting Indicator (MWI) light. On IP Office, the users have the option to Ignore incoming calls or Divert them to voicemail.

- **Ignore:** The phone will stop ringing audibly, but will persist and can be picked up through the Call Appearance. The caller will not know that the called party pressed Ignore.
- **Divert/ToVM:** The call will be forwarded to the voicemail of the extension.

User of M7000 and T7000 Series phones with soft keys will have an Ignore and a ToVM soft key while a call is ringing.

Note that if any incoming call contains Name and Number CLID information, only the Name information will be displayed and it will not be possible to switch to the Number information. The Number information displays only when the Name information is unavailable.

Active calls

The active call display will show Name and Number CLID information on two-line display phones and only the Name Information on single-line display phones. It is not possible to switch

between Name and Number information on single-line displays (for example, via Feature 811).

Note that M7000 and T7000 Series users will not receive soft keys for Transfer or Conference. To activate these features, you need to program BCM/Norstar feature codes:

- F3 = Conference
- F70 = Transfer

Call waiting

M7000 and T7000 Series phones on IP Office provide 2–3 ring splashes for an incoming call when the user is already on a call. The display will continue to switch between the CLID for both calls and the Line Appearances will indicate a second call as long as the second call is ringing. On Norstar and BCM, the M7000 and T7000 Series phones provide a ring-splash for the entire duration of the call waiting.

Default button programming

Once the M7000 and T7000 Series phones are connected to an IP Office, default button programming is not affected. However, if the phone is logging into a User for the first time, that User's button programming is defaulted (unless the ***DCP** short code is used; see below). The default button programming in IP Office is very similar to the BCM default programming, with the exception of some features which do not exist on IP Office.

The diagram below illustrates just one example of the button conversion when upgrading from BCM/Norstar to IP Office.

BCM/Norstar Default Configuration



IP Office Default Configuration



Button programming will be set to default when the phone is connected for the first time, which might overwrite any programming that was performed for the extension prior to connecting the phone. The short code ***DCP** would prevent this from happening, but the default IP Office configuration does not contain the ***DCP** short code. It will be necessary to add the ***DCP** short code to each extension if, for example, the button programming is performed prior to connecting the phones as part of system staging (see [System staging](#) on page 82 for more information).

Once the phone is connected and the buttons are set to default, IP Office will then automatically create the ***DCP** short code, so that the buttons will not be set to default again when the phone is reconnected or the system reboots.

The ***DCP** short code is part of the system configuration files and hence it is important to save the configuration file once the phones have been connected so that they continue to include the short code. Otherwise, it is possible that an older configuration file for the extension will default the button programming once applied, without the ***DCP** short code.

Programming buttons

On IP Office, users can continue to self-administer the programmable buttons of M7000 and T7000 Series phones using **Feature *1**, **Feature *2** and **Feature *3**. These feature codes are explained in detail below.

The user may be prompted to enter the login password, if configured, in order to program buttons. The login password can be configured through IP Office Manager.

Note that if IP Office is in Basic mode, you must select a trunk line before dialing an external number that has been programmed on a button. It is not possible to assign a trunk line or pool to a button.

External Autodial (Feature *1)

The user presses **F*1**, followed by the button to be programmed and the external or internal number to be programmed on that button. This feature functions the same as it did on BCM.

Internal Autodial (Feature *2)

The user presses **F*2**, followed by the button to be programmed and the internal number to be programmed on that button. Internal autodials will have a Busy Lamp Field if the button has an LED indicator. This feature functions the same as it did on BCM.

Feature button (Feature *3)

On IP Office, users of the M7000 and T7000 Series phones have two additional options to self-administer feature button programming.

After pressing **Feature *3**, on two-line display phones, the user will see a **More** soft key. Pressing **More** once will provide a list of call features that can be programmed on buttons. On single and zero-line display phones, the user must press **Feature *3*** (note the extra '*') in order to access the same list. The available features include traditional BCM features, but also IP Office features which have no equivalent BCM feature code, like Twinning or Self-Administration.

The table below lists all the features available for programming:

Feature list		
Speed Dial	Group PickUp	Forward On No Answer
Ring Agn/Back	Direct PickUp	Pickup
Conference	Timer	Directory
Call Fwd All	Do Not Disturb	Flash Hook
Lost No. Redial	Contrast	Internal Auto
Page Group	Group Listen	Set Hunt GroupN
Voicemail	Time of Day	Trinning
Voice/Auto IC	Call Log	Ringer Off

Feature list		
Priority Call	Self-Administration	Stamp Log
Transfer	Account Code	
Call Park	Forward On Busy	

*** Note:**

Pressing **Feature *3 > [Login Code] > More > More > Prog** on two-line display phones will provide the option to reset the button programming to default. To reset button programming to default on single and zero-line display phones, press **Feature *3 [login code] * * #**.

Call transfer

The Call Transfer functionality on IP Office works very similar to the BCM and Norstar. Using **Feature 70** will invoke the transfer. The user can enter the destination or, on any two-line display phone, access the system directory through the **Dir** soft key.

Important to note is that on IP Office the user cannot press the **Release** button to complete the transfer. Instead, the user must press the **Complete** soft key, **Transfer** button or **F70** again. The user has the option to consult with the transfer recipient to perform either a supervised or unsupervised transfer.

There will no longer be a **Transfer** soft key available on the T7316E, M7310 and M7324. Users either need to use **F70** or program a button with the **Transfer** feature.

On IP Office, a transfer requires a free Call Appearance. By default, there are two Call Appearances on each M7000 and T7000 Series phone, which means that a user cannot transfer a call when the user has a second call on hold. In this situation, the administrator needs to add an additional Call Appearance to the phone.

Note also that On IP Office, if a call is transferred internally, the transfer recipient will receive the CLID of the caller and not the person transferring the call. For example, User A calls User B. User B transfers the call to User C. User C will receive the CLID of User A and not User B. On BCM, User C would have first received the CLID of User B, until the transfer had been completed.

Conference

Unlike BCM and Norstar, invoking the Conference feature (**F3**) while only a single (or no) call exists on the phone will not create the desired conference. Instead, the user is presented with an error tone and a message indicating that you must have another call in progress (this will not affect the current call).

On the IP Office, the user must have one active call and one or more calls on hold before invoking the Conference feature (**F3**) in order to add all parties into the conference. Additional parties can be added by selecting a free call appearance and dialing the next party. Pressing **F3** again will collapse all calls into a single conference call.

It is important to note that on IP Office all conference participants on the same IP Office have the same rights, which means all conference participants will have the ability to mute or drop participants through their phones or through the One-X Portal interface. On the BCM, only the conference originator has these rights.

Also, note that the Conference Split feature is not supported on IP Office. On IP Office, the conference is consolidated to a single line appearance, which means the conference originator can no longer press one of the line appearances to put one participant on hold and only speak to the other participant.

Any conference participants that are registered on the IP Office hosting the conference and that are using M7000 and T7000 Series or Avaya phones need to press the **Release** button twice to disconnect from the conference. Pressing once will provide the option to select a participant that can be disconnected from the conference.

Call forward

The IP Office platform provides a wider variety of Forward options than the BCM. Using **Feature 4** on M7000 and T7000 Series phones will invoke the IP Office “Call Forward Unconditional” feature. In general, IP Office does not forward internal and hunt group calls unless configured in IP Office Manager. By default, when using **F4** on M7000 and T7000 Series phones on the IP Office, Forward Internal is on and Forward Hunt Group is off, much like BCM behavior.

Feature 4 will enable the Forward and will prompt the user to enter the Call Forward destination. The user can then enter the destination or, on two-line display phones with the **Dir** soft key, select a destination from the Directory.

The Call Forward setting is canceled through **Feature #4** like on the BCM. When the user reactivates Call Forward using **F4** again, the phone will display the last number the extension was forwarded to, at which point the user can either confirm the same destination or enter a new one.

If the call is not answered at the Forwarded To destination, the call will be treated based on the Forwarded To extension rules. Short codes will also be based on the Forwarded To extension rules. Follow Me To/Here is an alternative feature but can only be used to forward calls to internal destinations. If a call is forwarded through Follow Me To/Here from phone A to phone B, the call will be treated based on the rules for phone A. For example, the short codes will be based on phone A and the call would go to phone A's voicemail.

IP Office has a feature called Single Mailbox Working that allows externally forwarded calls, which are unanswered, to go back to the IP Office mailbox. Single Mailbox Working requires trunks with answer supervision.

Note that, depending on the configuration, the user might be prompted for a security PIN in order to enable (**F4**) and disable (**F#4**) call forwarding on the IP Office.

Call park and page

Park/Unpark

On IP Office, calls are parked in a similar way to BCM, but it is no longer possible to unpark calls by dialing the park code. On IP Office, the user has to invoke the Unpark feature followed by the Park code. **Feature #74** has been added as a new feature code on IP Office to unpark calls. Parked calls can also be retrieved by the user who originally parked the call by selecting **Feature #74** followed by the **Done** soft key. On phones that do not have soft keys, pressing the **Hold** button completes the unpark operation.

When a call is parked on IP Office, the Line Appearance for the call will remain solid and it will not flash to indicate its held status.

Note that the park/unpark feature is not supported across an IP Office Small Community Network (SCN).

Page

On IP Office, a soft key will not be presented after parking a call for Park'and'Page. Users will have to manually invoke the Page feature through a programmed button, short code, or **Feature 60**.

On IP Office, it is necessary to configure Page Hunt Groups that contain the phone extensions that should receive pages. The user is prompted to enter the Page Group once the Page Feature is used.

The following BCM and Norstar page features are *not* supported on IP Office: Page Internal (**Feature 61**), Page External (**Feature 62**) and Page Internal and External (**Feature 63**). The administrator can create Page Groups to support these extensions individually or as a whole.

Directory and speed dials

Directory

M7000 and T7000 Series phone users have access to the directory functionality of IP Office. A "Directory" button can be configured on the phone via System Administration or by using **F*3**. In addition, on two-line display phones with soft keys, a **Dir** soft key is displayed when the phone is active or a line appearance is selected.

The Directory button enables the user to dial by name and will automatically match search entries. The user can also scroll through the directory entries using the volume bar on the M7000 and T7000 Series phones. The entries appear in alphabetical order.

Speed dials

On M7000 and T7000 Series phones on IP Office, the user can program personal speed dials through **Feature *4**. The personal speed dials will also be added to the personal directory of the user.

Personal speed dials can be dialed in a fashion similar to the BCM (press **Feature 0**, followed by the speed dial code). Each user has a limit of 100 personal speed dial entries, numbered from 00 to 99.

Voicemail

M7000 and T7000 Series phone users on IP Office can continue to use **Feature 65** or **Feature 981** to access their voicemail, but will not have Visual Voicemail. Users must navigate the audio command prompts of the IP Office, although M7000 and T7000 Series users can use One-X Portal or One-X Mobile Preferred to get Visual Voicemail functionality.

It is important to understand that IP Office Embedded Voicemail and Voicemail Pro will function differently than the BCM Voicemail system, including a different flow of options.

For example, if a user wants to save a message in IP Office Embedded Voicemail in order to listen to it again at a later date, the message needs to be marked as **Saved**. Otherwise, the message will be automatically deleted after 24 hours.

Message Waiting Indicator

On Norstar and BCM, the M7000 and T7000 Series phones will notify the user about a new voice message by displaying "Message(s) For You" on the phone display and by lighting up the red Messaging Waiting Indicator (MWI) light on that phone.

On IP Office, the M7000 and T7000 Series will *not* display "Message(s) For You" on the phone display, but IP Office *will* light up the red MWI indicator of the T7000 Series phones.

Since the M7000 Series phones have no designated MWI light there will be no message waiting indication by default. To receive MWI on IP Office, M7000 Series phone users have two options:

- **Indicator Button programmed with F65 or F981:** With this button programmed, new messages will cause the indicator lamp to light up. This option is not available for the M7100[N] and T7100 phones since they have no programmable indicator button.
- **Voicemail Ringback Feature:** When this feature is enabled, the IP Office will ring the phone once it is active again (handset lifted or call placed) to notify the user about the available voicemail. This feature is disabled by default.

Hold call

When a user places a call on hold on IP Office, the Line Appearance on the same phone will flash to indicate that the call is being held. The Line Appearance for the same line on other phones will not be flashing but will remain solid instead.

Other

Saved Number Redial (Feature 67): The BCM Saved Number Redial feature (**Feature 67**) is not available on IP Office. Alternatively, users must use either the Call Log feature (**F812**) to redial phone numbers or the Last Number Redial (**F5**) feature.

Ring delay: In North America, on IP Office systems using analog trunks, there will be a delay of one or two ring cycles before the extension will start to ring. The ring delay is due to IP Office's ability to route calls based on the incoming CLID information. IP Office waits until the entire CLID has been transmitted. It is not possible to reduce the delay, however, it is possible to change the analog trunk configuration to "Loop Start" (rather than "Loop Start ICLID") such that incoming calls on that trunk ring immediately without CLID delivery (not that the user must forfeit access to CLID).

Dialing options: On BCM, the user has the option to choose from three dialing modes by using **Feature *82**. The modes are Standard Dial (selection of line followed by number), Pre-Dial (dial number followed by line button) and Automatic Dial (Dial number and automatic selection of line). On IP Office, **Feature *82** enables and disables the Enbloc Dialing feature. Enbloc Dialing Off is equivalent to Automatic Dial. Enbloc Dialing On is equivalent to Pre-Dial.

Dial Pad lettering: On the M7000 Series phones the 'Q' and 'Z' letters are printed on the '0' (zero) digit. When these phones are used in conjunction with IP Office, the phones function as if 'Q' is on the '7' digit and 'Z' is on the '9' digit.

Background music: IP Office does not support the Background Music feature available on the BCM (**Feature 86**), which allows the user to play the Music on Hold music through the phone speaker.

Using 1100 and 1200 Series phones on IP Office

The 1120, 1140E, 1220, 1230, and their associated button modules can be used on the IP Office by upgrading the firmware for the phones to SIP. The SIP firmware has been updated several times with IP Office Releases 6.1, 7.0, and 8.0. The content in the following sections is based on IP Office Release 8.0, using SIP firmware Release 4.3.

Once the 1100 or 1200 Series phone firmware has been upgraded from Unistim to SIP, the functionality of the phone will differ from before. The user will continue to be able to use BCM feature codes, but the number of feature codes is fewer than on the M7000 and T7000 Series phones on IP Office.

The major difference for the end user will be that the phones only have one Intercom/Call Appearance button and it is no longer possible to switch between calls or initiate additional calls using the Intercom/Call Appearance buttons. However, customers can still have multiple calls and also switch between them using the soft keys and navigation keys.

The following sections provide an extensive overview of the functional differences when using the 1100 and 1200 Series phones on IP Office. For a short list of the most common differences, refer to [Key feature differences](#) on page 34. To view a table that lists *all* the features currently supported by 1100 and 1200 Series phones on IP Office, refer to [Appendix 1: Norstar and BCM user feature codes](#) on page 119.

Related topics:

[Idle display and call functionality](#) on page 29

[Line Appearances and Intercom keys](#) on page 30

[Programming buttons](#) on page 30

[Conference](#) on page 32

[Call forward](#) on page 32

[Call park and page](#) on page 33

[Directory and speed dials](#) on page 33

[Voicemail](#) on page 33

Idle display and call functionality

The 1120 and 1220 only have a single line to display call information. It will only display the caller's Name information. The user can use the Navigation keys to scroll to the Number information. For external incoming calls without available Name information, the phone display will simply read "External." For internal calls, however, the phone will display whatever name

or number information is available, resorting to “External” only when no other information is available.

Line Appearances and Intercom keys

The 1100 and 1200 Series phones only display one Line Appearance or Intercom key while they are connected to the IP Office using SIP.

Users can still handle multiple calls in parallel, but will have to use soft keys to navigate to (and initiate) additional calls, pickup other incoming calls, or switch between calls.

Making a new call

To establish a new call while already on a call, the user needs to have a free Call Appearance and select **New Call** from the soft key menu (press **More...** to get to the second page of soft keys).

Answering a call waiting

The user will be notified of incoming calls through a short, single ring splash and the call CLID details displayed on the phone display. The user can select **Answer**, **Decline**, or **Ignore** for the call waiting through the appropriate soft key. Answering a call waiting automatically places all other calls on hold.

Moving between calls

Active calls are displayed and the user can use the navigation keys to select one of the calls. Calls on hold will have a flashing hold icon and can be retrieved by selecting the call and pressing the **Activate** soft key (press **More...** to get to the second page of soft keys). Retrieving a call automatically places any other active calls on hold.

Programming buttons

On IP Office, users can continue to self-administer the programmable buttons of 1100 and 1200 Series phones using **Feature *1**, ***2** and ***3**.

Note that the users must enter their login code before being allowed to program buttons. The login code is configured through IP Office Manager.

External Autodial (Feature *1) and Internal Autodial (Feature *2)

On the 1100 and 1200 Series phones with SIP firmware, **Feature *1** and **Feature *2** basically perform the same action. The user presses **F*1** or **F*2**, followed by the button to be programmed and the external or internal number to be programmed on that button.

It is important to note that the use of **F*1** and **F*2** does not provide Busy Lamp Field (BLF) on *any* BST phone. On the 1100 and 1200 Series phones, the BLF buttons can *only* be programmed via IP Office Manager.

Feature button (Feature *3)

On IP Office, users of the 1100 and 1200 Series phones have two options to self-administer feature button programming on the phone and the LED/LCD key expansion modules; **Feature *3** or the Feature soft key followed by the **BtnPg** key.

- After pressing **Feature *3** or the **BtnPg** soft key, the user can press the button to be programmed, followed by the Feature code to be programmed on that button. Only the following Features can be programmed using this method:
 - **F4 – Call Forward** (pressing the programmed button will turn call forwarding on and off)
 - **F60 – Page**
 - **F66 – Dial Voice Call**
 - **F74 – Call Park**
 - **F75 – Call Pickup Group**
 - **F76 – Call Pickup Extn**
 - **F85 – Do Not Disturb**
 - **F9*9 – Stamp Log**
- After pressing **Feature *3** or the **BtnPg** soft key, and after selecting the button to be programmed, the user will be prompted to select the feature to be programmed. Instead of entering the Feature code, as in step 1, the user can scroll through the list of programmable features using the soft keys. The available features include traditional BCM features as well as IP Office features which have no equivalent BCM Feature Code, like Twinning or Self-Administration.

The following features will be available:

Feature list		
Call Forward All (FwdAll)	Call Pickup Ext (DpkUp)	Extension Login (ElogI)
Page (GrpPage)	Call Pickup Any (PickA)	Extension Logout (ElogO)
After Call Work (ACWrk)	Do Not Disturb (DND)	Remote Park (RPark)
Automatic Callback (AutoCB)	Voicemail On (VMOOn)	Conference MeetMe (ConfMM)
Private Call (PrivC)	Trinning (Twin)	Follow Me Here (Here+)
Dial Voice Call (IAuto)	Relay On (Relay+)	Follow Me To (FollowTo)
Call Park (CPark)	Relay Pulse (Relay)	Follow Me Cancel (Here–)
Call Park Retrieve (RCall)	Account Code (Acct)	Stamp Log
Call Pickup Group (PickG)	Call Record (CRec)	

Conference

A conference can be set up one of three ways: via IP Office short code, via **Conf** soft key available during a call, or by using Feature 3.

1100 and 1200 Series phone users do not have conference control options like Mute or Drop on their phone.

Call forward

The IP Office platform provides a greater variety of Forward options than the BCM. Using Feature 4 on 1100/1200 Series phones will invoke the IP Office “Call Forward Unconditional” feature. In IP Office, **Feature 4** enables the Forward and prompts the user to enter the Call Forward destination. The user can enter the destination number or, as an alternative for users with two-line display phones and the **Dir** soft key, select a destination from the Directory. In general, the IP Office does not forward internal or Hunt Group calls unless configured in IP Office Manager.

As with the BCM, the Call Forward setting is canceled through **Feature #4**. When the user re-activates Call Forward using **Feature 4** again, the phone will display the last number the extension was forwarded to and the user can either confirm the same destination or enter a new destination.

If the call is not answered at the Forwarded To extension, the call will be treated based on the Forwarded To extension rules. Short codes will be based on the Forwarded To extension.

Follow Me To/Here is an alternative feature but can only be used to forward calls to internal destinations. If a call is forwarded through Follow Me To/Here from phone A to phone B, the call will be treated based on the rules for phone A. For example, the short codes will be based on phone A and the call would go to phone A's voicemail.

IP Office has a feature called Single Mailbox Working that allows externally forwarded calls, which are unanswered, to go back to the IP Office mailbox. Single Mailbox Working requires trunks with answer supervision.

Depending on the configuration, the user might be prompted for a Security Pin to enable (**F4**) and disable (**F#4**) call forwarding through IP Office.

Call park and page

Park/unpark

On IP Office, calls are parked in a similar way to BCM, but it is no longer possible to unpark calls by dialing the park code. On IP Office, the user has to invoke the Unpark feature followed by the Park code. **Feature #74** has been added as a new feature code on IP Office to unpark calls. Parked calls can also be retrieved by the user who originally parked the call by selecting **Feature #74** followed by the **Unpark** soft key.

When a call is parked on IP Office, the Line Appearance for the call will remain solid and it will not flash to indicate its held status.

Note that the park/unpark feature is not supported across an IP Office Small Community Network (SCN).

Page

On IP Office, a soft key will not be available after parking a call for Park'and'Page. Users will have to manually invoke the Page feature through a programmed button, short code, or **Feature 60**.

On IP Office, it is necessary to configure Page Hunt Groups that contain the phone extensions that should receive pages. The user is prompted to enter the Page Group once the Page Feature is used.

The following BCM and Norstar page features are *not* supported on IP Office: Page Internal (**Feature 61**), Page External (**Feature 62**) and Page Internal and External (**Feature 63**). The administrator can create Page Groups to support these extensions individually or as a whole.

Directory and speed dials

Directory

The 1100 and 1200 Series phones provide the user access to the system and personal directory. Users can search the directory by pressing the **Directory** button and using the keypad to enter letters. In addition, the user can select **Services > Search** and then perform a **Local** or **Global** search.

Speed dials

The speed dial feature is not available on the 1100 or 1200 Series phones administered on the IP Office. Users should leverage the directory functionality instead.

Voicemail

1100 and 1200 Series phone users on IP Office can access their voicemail through the **Msgs** soft key or through **Feature 981**. **Feature 65** cannot be used to access voicemail and there is

no support for Visual Voicemail. Users must navigate the audio command prompts of the IP Office. M7000 and T7000 Series users, on the other hand, can use One-X Portal or One-X Mobile Preferred to get Visual Voicemail functionality.

It is important to understand that IP Office Embedded Voicemail and Voicemail Pro will function differently than the BCM Voicemail system, including a different flow of options.

For example, if a user wants to save a message in IP Office Embedded Voicemail in order to listen to it again at a later date, the message needs to be marked as **Saved**. Otherwise, the message will be automatically deleted after 24 hours.

Features and feature codes

On the BCM, most telephony features are used through the Feature key. Avaya has implemented the Feature key for the most commonly used features on IP Office, but not all of the feature codes will remain available to users post-migration. For an overview of the feature codes available on the IP Office for the M7000 and T7000 Series phones as well as the 1100/1200 IP phones, refer to [Appendix 1: Norstar and BCM user feature codes](#) on page 119. Detailed information on how to use the features in IP Office can be found in the following sections:

- [Using M7000 and T7000 Series phones on IP Office](#) on page 19
- [Using 1100 and 1200 Series phones on IP Office](#) on page 29

The chapters below illustrate the key differences when accessing features and operating feature codes on certain phones.

Related topics:

[Key feature differences](#) on page 34

Key feature differences

Some of the core telephony features and configurable options differ when used in conjunction with IP Office. For example, feature codes are available for M7000, T7000, and 1100/1200 Series phone users on IP Office, but a number of feature codes will no longer be available. Users will need to program IP Office Short Codes in order to use equivalent or similar IP Office features (refer to the IP Office user documentation for short code information). For a complete list of features and feature codes and their support status on IP Office, refer to [Appendix 1: Norstar and BCM user feature codes](#) on page 119.

The following sections identify the key feature differences on IP Office.

Core telephony and management features

Call Forward:

IP Office provides a greater variety of forwarding options. When **F4** is pressed on BST phones, IP Office enables/disables the call forwarding number (which is configured separately).

The Call Forward routing behavior of BCM and IP Office are similar. IP Office has a feature called Single Mailbox Working, which allows externally forwarded calls that are unanswered to go back to the IP Office mailbox. Single Mailbox Working requires trunks with answer supervision.

The IP Office Follow Me To/Here features are similar to Call Forward. They can only forward calls to internal extensions, but additional user features (auto-answer features and paging) will transfer the Follow Me destination.

Call Transfer:

Very similar functionality on IP Office, but the user can no longer press the **Release** button to complete the transfer. Instead the user must press the **Complete** soft key, **Transfer** button, or **F70** again.

The user has the option to Consult with the Transfer-to party first or can do a direct (unsupervised) transfer.

On IP Office, a transfer requires a free Call Appearance. By default there are two Call Appearances on a BST phone, which means that a user cannot transfer a call when the user has a second call on hold. If this is required, the administrator needs to add an additional Call Appearance to the phone.

Conference:

In IP Office, users need to establish calls to participants first and then merge them to conference through **F3**, **Conference** button, or soft key. The IP Office conference feature does not support the BCM three-party conference feature (with master and slaves).

Invoking the conference features instantly pulls all active and held calls into one conference. Also, each user has control over dropping others out as well as dropping themselves out (via RIs RIs).

Call Park/Unpark:

Calls are parked to park slots which can be entered by the user (by default User ID + 1 digit). Calls need to be retrieved through the new Unpark feature (**F#74** on BST). By default, it is not possible to simply dial the number of the park slot as on the BCM. Short codes can be used to simplify the Park Call and Unpark Call interactions. Users can push a Call Park (**F74**) programmed feature button when calls have been parked and there is no active call.

Directory:

M7000, T7000, and 1100/1200 Series phone users can leverage the IP Office directory functionality. Users can press **F*3** to program a directory button on the BST.

Voicemail:

BCM users will have to adapt to either of the IP Office Voicemail versions. Overall, the functionality is very similar, but the user interface will be different. Users moving from BCM Call

Pilot voicemail to IP Office Embedded Voicemail will experience a loss in functionality, while users moving to Voicemail Pro will have a additional functionality.

There will be no visual voicemail support on M7000, T7000, or 1100/1200 Series phones, but users can use One-X Portal, Phone Manager, and Webmail for easy access to their voice mails.

Unified Messaging:

IP Office Unified Messaging does not rely on an installable application like the BCM Call Pilot Desktop Messaging application. On IP Office, the user will set up an IMAP account to retrieve the mails directly from the IP Office messaging system. Alternatively, voicemail messages can be stored directly in MS Exchange. The IP Office voicemail files will be available as standard .wav files, which can be saved or forwarded. BCM Call Pilot Unified Messaging files require a proprietary audio player to play the voice mail recordings.

Hunt Group functionality:

The IP Office Hunt Group functionality provides significantly greater features and more options than BCM Skillsets.

User configurable options:

By default, IP Office has less end-user configurable features and options. The **Self-Administration** button must be assigned by an administrator to allow the end-user to configure further buttons.

M7000 and T7000 Series phones

Button programming:

The default button layout has been matched as closely as possible, but certain buttons will be empty by default. On certain phones, the bottom right button is dedicated to handsfree operation and cannot be changed.

Idle display:

Different Date and Time display. The display shows the current user ID when connected to IP Office. It also shows Hunt Group memberships (G) and DND status (N).

Called, calling, and ringing display:

Ringing display on IP Office; migrated users will have the option to "Ignore" or send a call to VM ("ToVM") via soft keys. Note that *internal* call status displays (such as "On another call" or "Do not disturb") are not available on IP Office.

Loop length specification:

T7000 Series digital deskphones have different maximum loop length specification when connected to a TCM8 card or DS16A/30A expansion modules on IP Office. Refer to [Appendix 5: Loop length differences between BCM and IP Office](#) on page 142 for more information.

Expansion modules:

IP Office does not have the concept of Ordinary KIMs and Enhanced KIMs. All buttons can have line appearances. On IP Office, there is an overall system limit of 1024 buttons of any

kind of expansion module (Digital + IP). However, T7316E phones allow up to 9 KIM add-ons, while the M7324 allow up to 2 KLM/CAP add-ons.

Program Internal/External Autodialer:

If the user has a login code/password defined, they will be prompted to enter it correctly before they can program buttons.

Busy Lamp Field (BLF):

BLF module lamps on a M7310 phones now operate as full feature status indicator lamps and not simply as Busy state indicators as they did on BCM/Norstar. This enables the top 24 buttons on the M7310+BLF to be status-indicator-equipped programmable buttons (one of these buttons could be used as an MWI by programming it to **Feature 65**).

Select dialing option:

In BCM, users had a choice of standard, predial, or automatic. In IP Office, users have the choice of **enbloc on** (predial) or **enbloc off** (automatic dial).

Reply Message Waiting:

In IP Office, this feature connects to audio voicemail (no visual voice).

Page General:

In IP Office, users must enter a group DN rather than a page zone.

Priority Call:

Similar to BCM, this feature in IP Office rings a phone that has DND enabled, but does not barge in on an active call.

Group Call Pickup:

Group Call Pickup answers a ringing hunt group call of which the user is a member. It does not pick up non-hunt group calls to other members of the hunt group.

Voicemail login:

The user is brought to IP Office Embedded Voicemail, or Voicemail Pro. There is no visual voicemail support for BST phones. Users can press **F981** or **F65** to access voicemail login.

Voicemail/Messages:

F981 only. **F65** (get messages) performs the same function as **F981** (enter voicemail).

1100 and 1200 Series IP phones with SIP firmware

Idle display:

Different Date and Time display. On two-line display phones, the display shows the current user ID on the Call Appearance.

Called, calling, and ringing display:

Ringing display on IP Office; migrated users will have the option via soft key to **Ignore** the call (the phone stops ringing, but the caller still hears the ring tone) or **Decline** the call ("Busy" behaviour, e.g. call to VM).

Line Appearance/Busy Lamp Field:

Busy Lamp Field (BLF) is supported but needs to be configured through IP Office Manager.

Program Internal/External Autodialer:

On 1100/1200 Series phones, **F*1** and **F*2** do the same thing.

Select dialing option:

On-hook dialing is equivalent to predial/enbloc dialing. There is no equivalent to BCM/Norstar Standard dial on IP Office.

Voicemail login:

The user is brought to IP Office Embedded Voicemail, or Voicemail Pro. There is no visual voicemail support for BST phones. Users can press **F981** or **F65** to access voicemail login.

Data Migration Manager overview

IP Office Release 8.0 introduces a new tool called the IP Office Data Migration Manager (DMM) designed specifically to facilitate a quick and easy upgrade from BCM and Norstar™ to IP Office. Using DMM allows you to preserve some of the BCM and Norstar programming and use it as a baseline for programming the replacement IP Office, thereby saving time and money.

The DMM application can run on a Microsoft Windows XP SP2, Microsoft Windows Vista, and Microsoft Windows 7 operating system and requires at least 175MB of disk space to install.

You should consider additional disk space for saving the extracted data (an additional 100MB of free disk space per source platform is recommended).

The minimum suggested requirements are as follows:

Operating system	Windows XP or Linux
Memory	1GB RAM recommended, 512K minimum

DMM also allows you to transfer voicemail and Auto-Attendant messages from BCM and Norstar Callpilot to IP Office Embedded Voicemail or Voicemail Pro. This makes the migration to IP Office more seamless and eliminates the need to re-record Auto-Attendant announcements. However, you will be required to manually move the converted audio files to the new IP Office and also rebuild the Auto-Attendant tree in IP Office using the converted files.

Using DMM, you can extract configuration data from the following sources:

- BCM200/400 4.0
- BCM1000 4.0
- BCM50 3.0 to 6.0
- Norstar MICS Release 7.1 / Call Pilot 100/150 3.1
- Norstar CICS Release 7.1 / Call Pilot 100/150 3.1

There are three steps in the migration process: Extract, Convert, and Apply. The following sections describe, at a high level, each step in the process, concluding with some important notes.

Data extraction

The data extraction phase is used to populate Norstar or BCM data into the DMM tool. The data can be extracted from a Norstar or BCM device or it may be loaded from a file created during a previous extraction procedure.

Data review and conversion

The data review page displays the data recovered from the data extraction. If the extracted data came from a BCM 4.0 system, the user is required to input the true MBM configuration from the BCM 4.0 system. This must be done so that DMM can remove any extraneous data that exists in the tool.

IP Office data creation

IP Office data creation happens after you review and approve the extracted data. During this phase, a wizard allows the user to select: the mode of operation in which the target IP Office is to be configured, the target hardware configuration, the system's IP address, and which voicemail system to use. You will be able to manually adjust the conversion results before creating an IP Office configuration file.

Data transfer to IP Office

The data transfer to IP Office is performed using the IP Office Manager application. When the user accepts the IP Office configuration, the data is written to a file and IP Office Manager reads the data extracted by DMM. The voicemail messages and greetings and the Auto-Attendant greetings are available in the folder selected during the IP Office data creation phase.

Notes about Data Migration Manager

The DMM tool helps to transfer a portion of the previous configuration to save time, but it is important to note that DMM will not transfer all of the configuration elements and that the installer will have to review the results, modify them if necessary, and program the configuration elements not transferred by the DMM tool.

The converted configuration elements include:

- Digital & IP phone extensions – phone type, extension numbers, and names
- Extraction and audio codec conversion for:
 - Voicemail (greeting, names, recordings) – requires manual copy and paste into IP Office

- Auto-Attendant greetings
- Contact Center greetings

Note that DMM *will not* convert the following:

- Button programming
- Auto-Attendant trees
- Trunk programming (dial plan, SIP trunks, PRI, analog trunks)
- Any application programming like ICC, RCC, Unified Messaging, FMFM, etc.

Voicemail overview

For a list of all the supported languages, refer to [Appendix 4: Supported languages](#) on page 139. The availability of a language does not necessarily indicate support for IP Office in a country that uses that language.

Read below for more information about voicemail configurations.

IP Office Preferred Edition Voicemail Pro

By default, the prompts installed match the language of the installer and includes English. If other languages are required, they need to be selected during a custom installation. When the IP Office routes a call to a voicemail server, it indicates the locale for which matching prompts should be provided, if available. Within the IP Office configuration, a locale is always set for the system. However, differing locales can be set for each user, for each incoming call route, and for short codes, in addition to the default system locale.

IP Office Embedded Voicemail

The IP Office system “Locale” setting is used to determine the default language prompts. A locale setting is set for the whole IP Office system. For individual users and incoming call routes, the system local can be overridden.

For calls to voicemail, the locale used is determined as follows:

- The user locale, if configured, is used when the caller is internal
- The incoming call route locale, if configured, is used when the caller is external
- If no user or incoming call route locale is applicable, the system locale is used
- A short code locale, if configured, is used and overrides the options above if the call is routed to voicemail using that short code

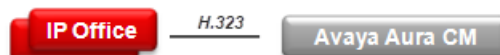
Interoperability

Avaya supports standard SIP interoperability between the BCM and IP Office. The configuration and support features are documented in the IP Office 7.0 and BCM 6.0 – SIP Interoperability Configuration Guide found at <http://support.avaya.com> (this guide is also applicable to IP Office 8.0).

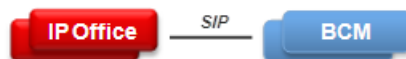
IP Office releases 8.0 and earlier have not been tested in any configuration involving Avaya Aura Session Manager (SM). For partners and customers that need a small to medium branch solution that must be networked with Avaya Aura Core products like Session Manager, Avaya recommends purchasing the Avaya B5800 product. The B5800 is based on the IP Office platform but provides advanced SIP interoperability and functionality with Avaya Aura Core products including Session Manager and Communication Manager, as well as with legacy Nortel products such as BCM, SRG, CS1000 and Call Pilot.

With IP Office 8.1, Avaya will test and support additional interoperability configurations for IP Office not involving Avaya Aura SM. The scenarios include:

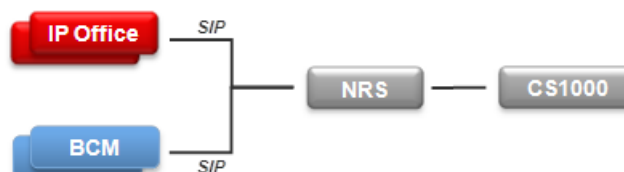
1. IP Office 8.1 and Avaya Aura Communication Manager 6.2



2. IP Office 8.1 and BCM 6.0



3. IP Office 8.1, BCM 6.0 and CS1000 7.5 with NRS



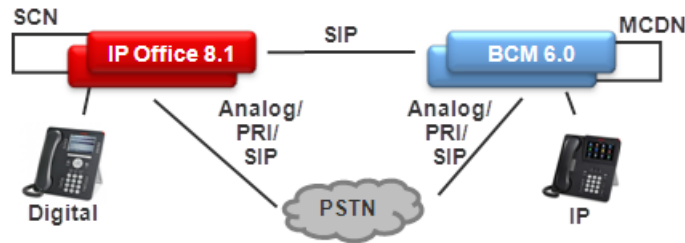
Related topics:

[BCM and IP Office interoperability](#) on page 42

[BCM, IP Office, and CS1000 interoperability](#) on page 43

BCM and IP Office interoperability

The H.323 protocol is used for trunks between the IP Office nodes and the Communication Manager (CM). The IP Offices are a network of SCNs and can use advanced SCN feature sets between each other.



Protocol support:

- IP Office to BCM: SIP
- BCM to BCM: SIP or SIP/MCDN
- IP Office to IP Office: H323 - SCN or SIP

It is not possible to network IP Office and BCM via the MCDN or SCN protocol directly.

Platform requirements:

- IP Office
 - Release: 8.1
 - Edition: Essential, Preferred, Advances, and Midsized
- BCM
 - Release: BCM50 and BCM450 6.0

Centralized voicemail:

- The IP Office system may use a centralized Voicemail PRO system in the SCN network
- The BCM systems may use a centralized voicemail within the BCM MCDN network
- Centralized Voicemail across IP Office and BCM systems is not supported

Phones:

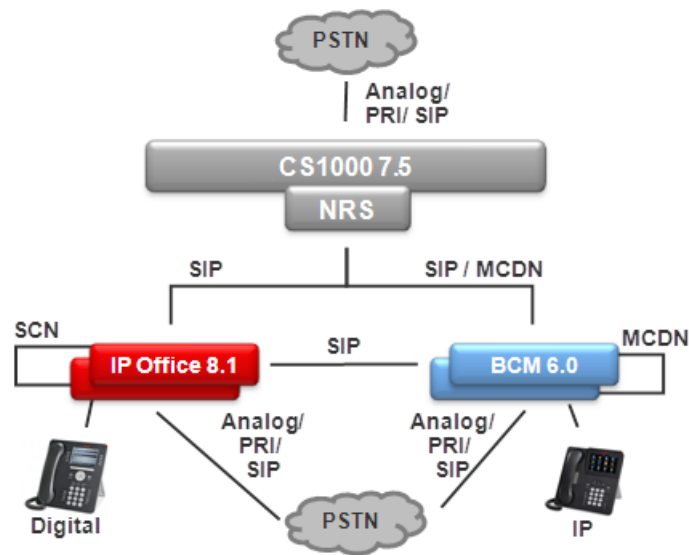
- All phones supported on the individual call servers and releases including:

Avaya IP Phone(H323), Avaya Digital phones, BCM 7000 Series Digital phones, BCM1100/1200 Series IP Phones (SIP), DECT R4, and Analog phones

The advanced feature set of IP Office SCN Networking is available between the IP Office nodes and the BCM MCDN network.

BCM, IP Office, and CS1000 interoperability

The following diagram demonstrates how it is possible to migrate a network of BCM and CS1000 to the IP Office, step-by-step, by adding IP Office systems to it.



Protocol support:

- IP Office to BCM: SIP
- IP Office to CS1000: SIP
- IP Office to IP Office: SIP or H323 - SCN Networking
- BCM to BCM: SIP or SIP/MCDN
- BCM to CS1000: SIP or SIP/MCDN

Platform requirements:

- IP Office
 - Release: 8.1
 - Edition: Essential, Preferred, Advances, and Midsize
- BCM
 - Release: BCM50 and BCM450 6.0
- CS1000
 - Release: CS1000 7.5 with NRS

Centralized voicemail:

- Centralized voicemail for all IP Office system in the SCN network; the BCM system may use centralized voicemail of the CS1000
- IP Office system cannot use centralized voicemail of CS1000

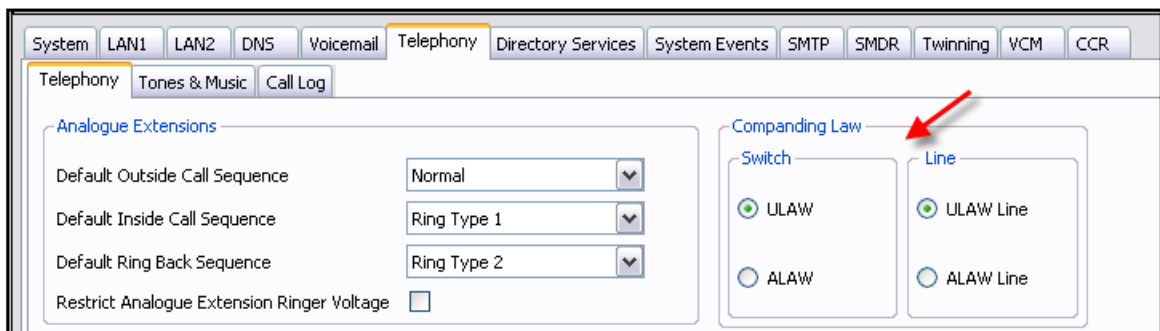
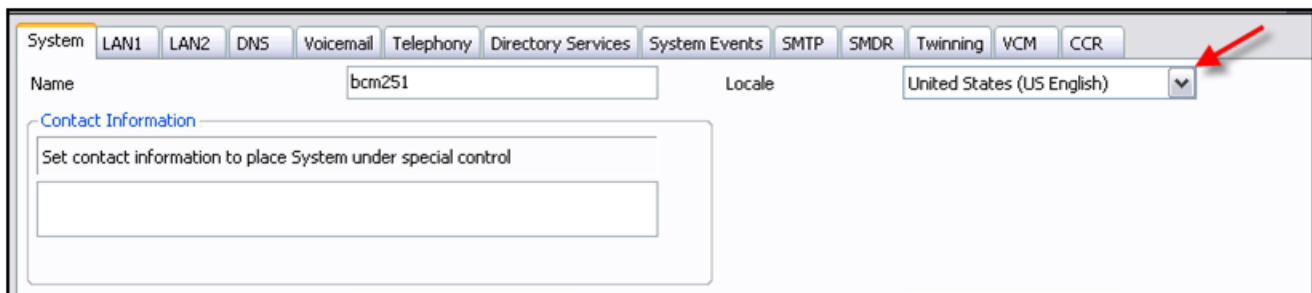
Phones:

- All phones supported on the individual call servers and releases including:
Avaya IP Phone(H323), Avaya Digital phones, BCM 7000 Series Digital phones, BCM1100/1200 Series IP Phones (SIP), DECT R4, and Analog phones

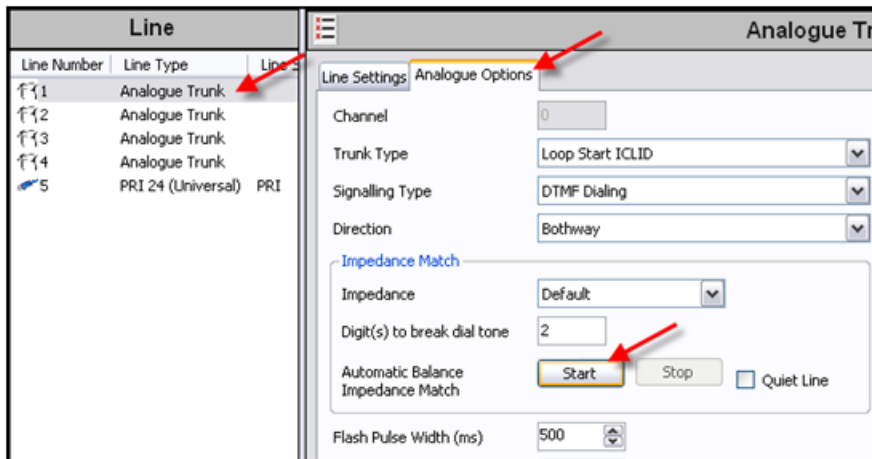
Analog line audio performance

It is recommended that tuning be completed on all analog lines connected to the IP Office. These controls can be used to test the impedance of a line and to then display the best match resulting from the test. This ensures optimal analog line audio performance. Testing should be performed with the line connected but the system otherwise idle.

Before testing, ensure that the system Locale setting is correctly configured. Also check that the system Companding Law settings are configured correctly. If either needs to be changed, make the required change and save the setting to the system before proceeding with impedance matching.

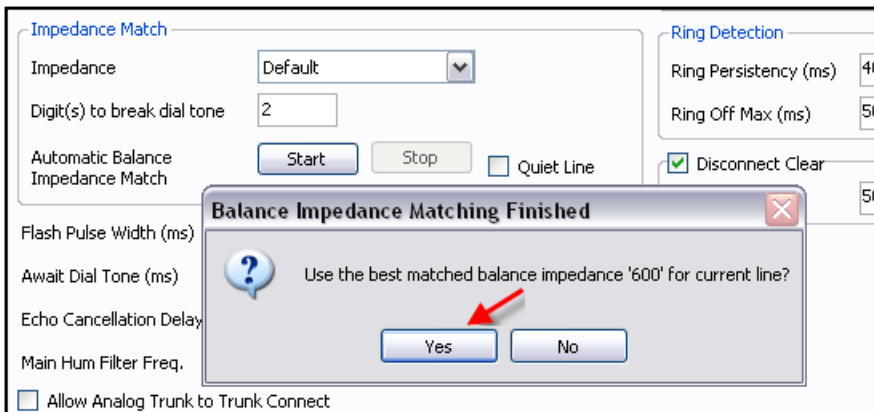


To start testing click **Start**. The system will attempt to break dial tone using the digit specified, then send a series of signals to the line and monitor the response, repeating this at each possible impedance setting.



You can click **Stop** at any time to cease testing.

When testing is complete, Manager will display the best match and ask whether that match should be used for the line. If you select **Yes**, Manager will also ask whether the match should be applied to all other analog lines provided by the same analog trunk card or module.



Further optimization

If you wish to further optimize your analog lines, you can manually adjust the **A -> D** (Receive) and **D -> A** (Transmit) **Gains** as well as the **Echo Cancellation Delay**.

The settings illustrated below prove beneficial where side tone is heard on the M7000 Series and T7000 Series phones while connected to analog lines.



Digital Mobility Solution support

All three of the Digital Mobility Solutions are supported:

- 2G4
- 1G9
- 1G8

All 4100 Series and 7400 Series handsets are supported:

- 4135, 4145, 4145EX, 4136, 4146, 4146EX
- 7420, 7430, 7440, 7439, 7449

The DMC080 can be connected to a TCM8, DSM16A or a DSM30A.

The DMC320 can be connected to a DS30A (may require additional hardware to accommodate the last two ports on the DMC320).

Licensing

License keys are unique 32-character codes based on the feature being activated and the serial number of the IP Office system's Feature Key dongle. You must obtain and activate licenses in order to use software and software features using IP Office Manager. In IP Office Manager, select **License** in the left window pane, select the license type, and enter the required details.

Example 1: Enabling software features

Assume that the IP Office system has a valid Phone Manager Pro license that allows for 20 instances. That means that up to 20 IP Office users can be configured to use Phone Manager

Pro simultaneously. Their previous, license-free Phone Manager Lite software will automatically change to display Phone Manager Pro features.

Example 2: Enabling software *and* software features

Assume that the example above also contains a license for Voicemail Pro. This initial Voicemail Pro license provides for 4 ports between the IP Office system and the Voicemail Pro PC. Additional Voicemail Pro licenses can be added to increase the number of ports up to the limit supported by the particular type of IP Office control unit.

When a license key is entered into the IP Office configuration, the following information is shown.

- **Status:** The status, which is “Unknown” until the configuration file is sent back to the IP Office system.
- **License:** The name of the licensed feature. This may differ from the ordered RFA name.
- **Instances:** Depending on the license, this may be the number of ports enabled or number of simultaneous users of the licensed feature. In some cases, the number of instances is specified in the license name.
- **Expires:** Most purchased licenses have no expiry setting. For some features, trial licenses may be available which will have an expiry date.

The IP500 uses licenses in the same way as other IP Office systems. However there are some licenses that are specific to the IP500 control unit and may be required during installation to ensure correct operation of the system.

• **IP Office Upgrade Standard to Professional**

By default, the IP500 runs in IP Office Standard Edition mode. For full IP Office operation, an *IP Office Upgrade Standard to Professional* license must be added to the configuration.

• **IP500 Voice Networking**

In addition to the upgrade from Standard Edition, if IP trunks are required for voice networking between the IP Office and other systems, *IP500 Standard Networking* licenses are required. This type of license is available as a base license for the first four channels and then additional licenses for any additional channels required.

• **VCM Channels**

Each IP500 VCM base card only supports four voice compression channels unlicensed. Any additional channels available on the card must be licensed by adding *IP500 VCM Channels* licenses.

Licenses can be added individually to the IP Office's configuration. However, the licence key file provided by Avaya from their license ordering web site generates a **License.csv** file containing all the ordered licenses. That file can be imported into the configuration.

*** Note:**

The only license required on the BCM prior to the migration procedure is the *Unified Messaging* license which allows voicemail extracts. If you do not have this license, you will not be able to migrate your voicemail recordings to IP Office.

Before you begin

Ensure that the Feature Key dongle serial number used to generate the license keys matches that of the Feature Key dongle installed and that all the licenses required have been included.

You should use this process to individually copy and paste license keys into the configuration. Cutting and pasting removes any errors that may be caused by the incorrect typing of any license key.

Procedure

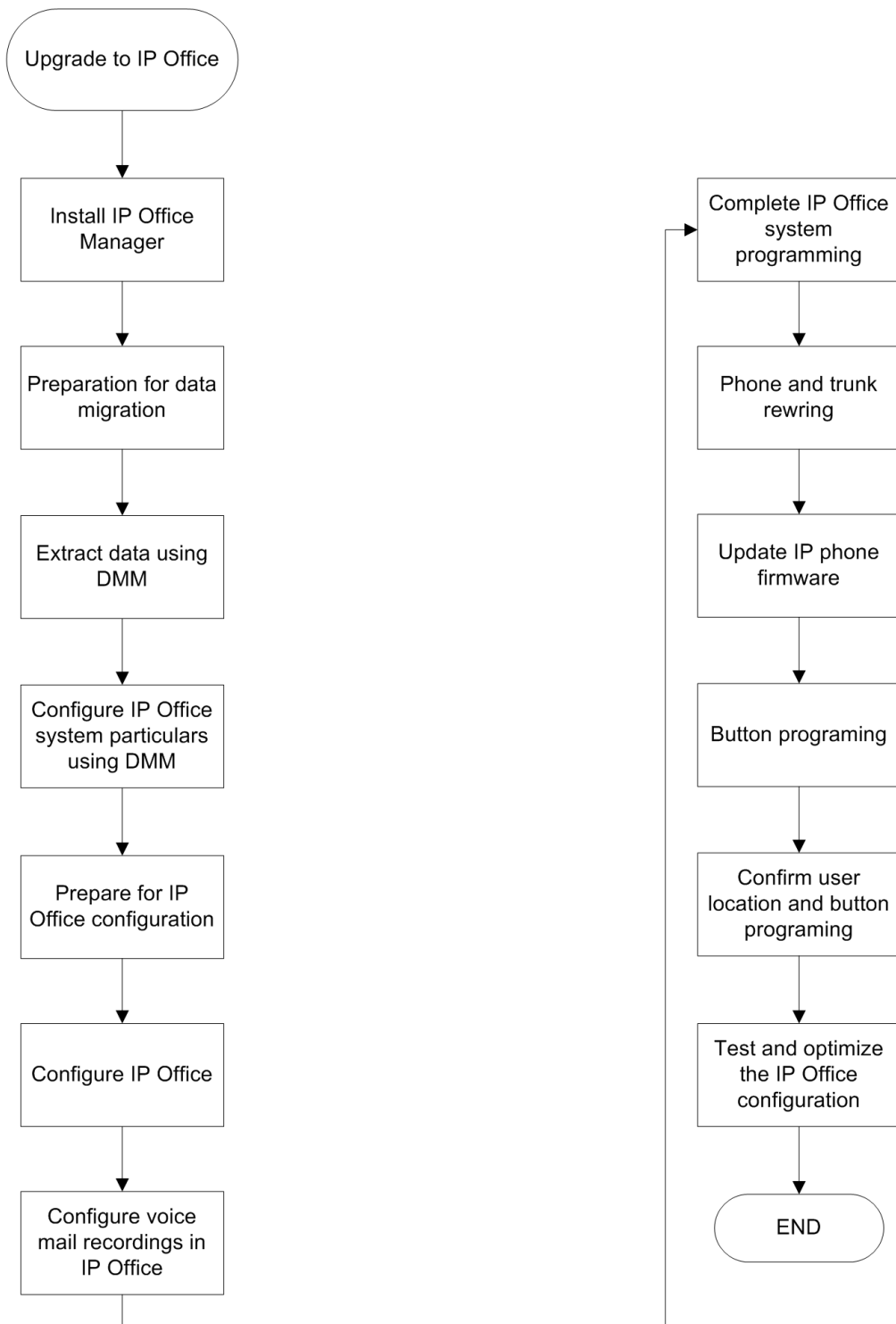
1. Start IP Office Manager and receive the IP Office system's configuration.
 2. Select **License**.
 3. To add a license, click on the small folder icon ("add new" icon) and select **License**. Enter the new license and click **OK**.
 4. The **Status** of the new license should be "Unknown" and the license named as expected. If its **Status** is "Unknown" and the name is "Invalid," the most likely cause is incorrect entry of the license key characters.
 5. Repeat the process for any other licences.
 6. Click on the **Save** icon to send the configuration back to the IP Office.
 7. Use IP Office Manager to retrieve the configuration again and check that the status of the license is now "Valid."
-

Chapter 2: Upgrading to IP Office

Upgrade workflow

The following flowchart provides a high level view of the steps required to migrate data from a BCM system to IP Office. The workflow is similar when migrating from a BCM or SRG system to a B5800 Branch Gateway.

Upgrading to IP Office



Installing IP Office Manager

IP Office Manager is a Windows PC application used to configure Avaya IP Office telephone systems.

When a system configuration is loaded into Manager, it is a configuration file copied to the Manager PC. Any changes made to that configuration have no effect on the system until the copy is saved back to the system from the Manager PC.

Before you begin

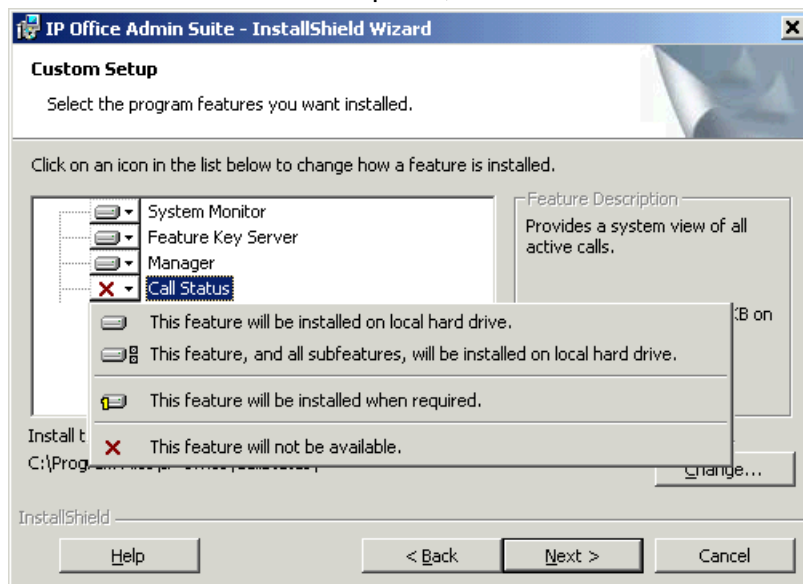
You must have either the IP Office Administrator Applications DVD or the IP Office Administrator Applications suite, which can be downloaded from Avaya's support website (<http://support.avaya.com>). You should also meet the minimum system requirements listed below.

Requirement	Minimum	Recommended
Processor	600MHz Pentium or AMD Opteron, AMD Athlon64, AMD Athlon XP.	800MHz Pentium or AMD Opteron, AMD Athlon64, AMD Athlon XP.
RAM	128MB	256MB
HD Space	1GB - 800MB for .NET2, 200MB for Manager.	1.4GB - 800MB for .NET2, 600MB for the full IP Office Admin suite.
Display	800 x 600 - 256 Colors	1024 x 768 - 16-bit High Color
Operating System	Supported on Windows XP Pro, Windows Vista, Windows 7, Windows 2003 and Windows 2008 <ul style="list-style-type: none"> • 32-bit and 64-bit versions are supported • Vista support is only on Business, Enterprise and Ultimate versions • Windows 7 support is only on Professional, Enterprise and Ultimate versions 	

Procedure

1. Using the **Add or Remove Programs** option in the Windows Control Panel, check that the PC does not already have a version of the IP Office Administration Suite installed.
 - If 'yes' and the suite is a pre-IP Office 3.2 version, remove the existing IP Office Administration Suite via Add/Remove Programs.

- If the existing suite is IP Office 3.2 or higher, it is possible to upgrade without removing the previous installation. However, if the system already has a USB Feature Key, the key should be removed prior to upgrading and then reinserted and the PC restarted.
2. Insert the IP Office Administrator Applications DVD. Select the option for the IP Office Administration Suit. A folder window will display the installation files for the administration suite.
 3. Double-click on **setup.exe**.
 4. Select the language you want to use for the installation process. This does not affect the language used by Manager when running. Click **Next**.
 5. Select who should be able to run the Administration Suite application(s). Click **Next**.
 6. If required select the destination to which the applications should be installed. We recommend that you accept the default destination. Click **Next**.
 7. The next screen is used to select which applications in the suite should be installed. Clicking on each will display a description of the application. Click on the drop down arrow next to each application to change the installation selection. When you have selected the installations required, click **Next**.

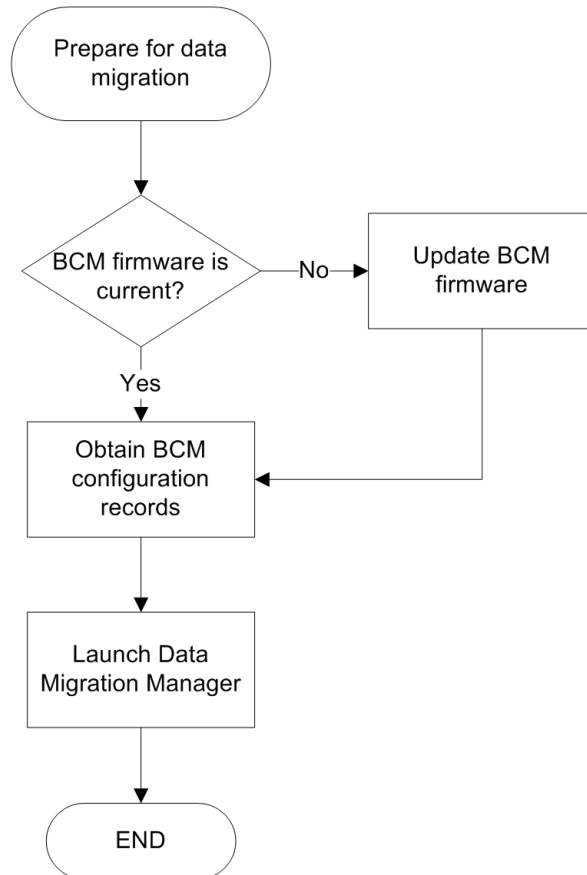


8. Ensure that at minimum **System Monitor** and **Manager** are selected. Click **Next**.
9. Click **Install**.
10. Installation of Windows .Net2 components may be required. If menus for this appear, follow the prompts to install .Net.
11. If requested, reboot the PC.

Next steps

Configure the Manager application as necessary. Refer to the IP Office Manager guide found at <http://support.avaya.com>.

Preparation for data migration



Related topics:

[Updating BCM firmware](#) on page 53

[Obtaining BCM configuration records](#) on page 54

Updating BCM firmware

You must ensure that your BCM is patched with the latest software update. The latest update includes a migration patch that allows you to easily perform the migration of IP phone information and also provides a more streamlined approach to IP phone provisioning. If you

do not have the latest patch, you will have to manually upgrade the firmware on each IP phone registered to IP Office.

The following hardware platforms and software releases are supported:

Supported Hardware Platform	Supported Software Release
BCM/SRG 50	<ul style="list-style-type: none">• R6• R5• R3
BCM450	<ul style="list-style-type: none">• R6• R5• R1
BCM/SRG 200/400	<ul style="list-style-type: none">• R4

Ensure that your patch filename matches one of the patch filenames below (note that the filename also indicates the hardware it supports). This list reflects the most recent patch releases as of IP Office Release 8.1:

- BCM.R400.363-BCM-to-IPO-Migration-1.0-1.1.zip
- BCM450.R500.BCM-to-IPO-Migration-110-1.zip
- BCM450.R600.BCM-to-IPO-Migration-61-1.zip
- BCM450.R100.BCM-to-IPO-Migration-131.zip

Post-patch migration procedure:

Once the patch has been applied, the BCM will reboot. The IP phones are not affected at this point and the BCM will continue to operate as previous once the boot cycle completes. The next login attempt to Element Manager will require the download of a new cartridge.

Obtaining BCM configuration records

Using Element Manager, you must obtain and store a backup record of your BCM configuration before you can upgrade your terminals. Ideally, you will want to backup information pertaining to

- system configuration
- mailbox information
- extensions

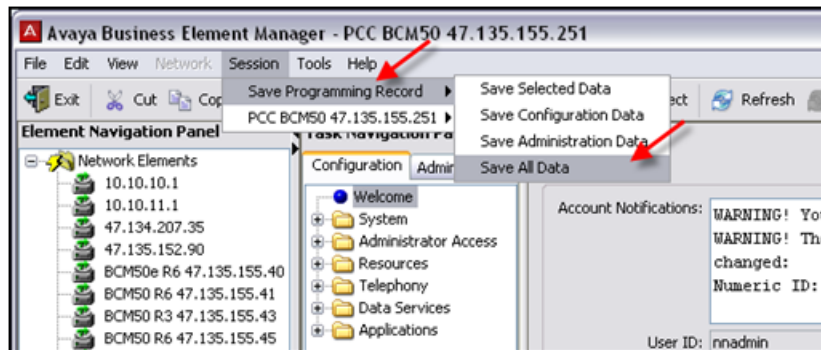
- voicemail recordings
- Auto-Attendant and Contact Center recordings

Using Element Manager to obtain programming records:

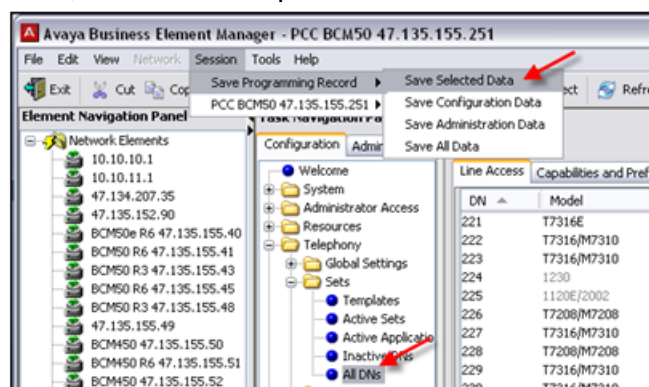
You will want to perform the following task prior to disconnecting your BCM.

Procedure

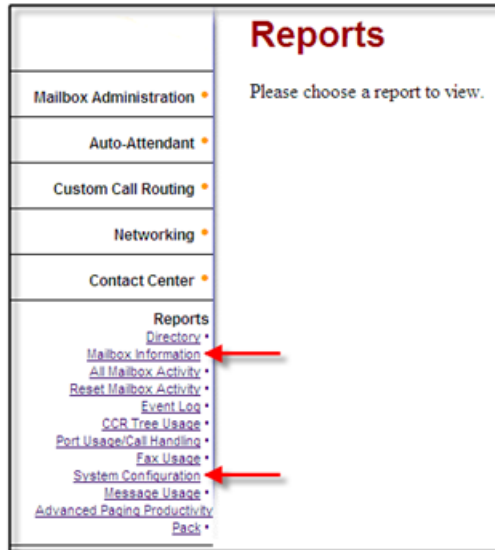
1. Open Avaya Business Element Manager.
2. From the **Sessions** menu, select **Save Programming Record > Save All Data**.



3. Select the appropriate location for the backed up data (most likely a flash or SD memory card).
4. From the **Sessions** menu, select **Save Programming Record > Save Selected Data**.
5. In the **Configuration** tab of the **Task Configuration Panel**, under **Telephony > Sets**, create a backup for **All DN**s in the same location as before.



6. *Recommended:* From the CallPilot **Reports** menu, create reports for “Mailbox Information” and “System Configuration.”



About converting data using Data Migration Manager

Data Migration Manager is used to convert configuration and user data from a BCM, SRG, or Norstar system to an IP Office or B5800 Branch Gateway. Data Migration Manager provides the DMM-IPO wizard that guides you through the conversion process. There are four steps to the conversion process:

- **Data extraction** — during this phase of the conversion process, the BCM, SRG, or Norstar data is populated into the Data Migration Manager tool. The data can be extracted from a BCM, SRG, or Norstar device or it can be loaded from a file created during a previous extraction procedure.
- **Data review** — during this phase of the conversion process, you review the data that was recovered from the data extraction.
- **Data creation** — during this phase of the conversion process, you select the target hardware configuration, the system's IP address, the voicemail system to use, and the mode of operation in which the target IP Office is to be configured. The configuration mode choices are:
 - IP Office Mode
 - IP Office Quick Mode
 - Norstar Mode
 - Partner Mode

- B5800 Mode

- **Data transfer** — this phase of the conversion process is performed using IP Office Manager. When you accept the IP Office configuration, the data is written to a file and IP Office Manager is executed and reads the data from the Data Migration Manager file.

Related topics:

[Launching Data Migration Manager](#) on page 57

[Migrating data from a BCM or SRG system](#) on page 57

[Migrating data from a Norstar system](#) on page 61

[Migrating data from a file to a B5800 Branch Gateway](#) on page 65

[Viewing the extracted BCM configuration record](#) on page 68

Launching Data Migration Manager

See [Data Migration Manager overview](#) on page 38 or refer to the DMM user guide for more information.

Before you begin using DMM, be sure to update your control unit software:

1. From the **Task Navigation** panel in Element Manager, select **Software Management > Software Updates**.
2. Select **Get New Updates**.

Once you've updated your control unit, you are ready to extract the data into IP Office using DMM. The method you use depends on the control unit environment but is limited to the following extracted data sources: File, BCM, and Norstar.

Migrating data from a BCM or SRG system

Before you begin

Ensure that the backup file for the telephony configuration is locally stored (either on the hard drive or on an SD card inserted in the SD card slot). You will need the IP address or host name of the BCM or SRG system as well as the nadmin user name and password.

About this task

Use this procedure to migrate data from a BCM or SRG system to an IP Office or B5800 Branch Gateway. The DMM-IPO wizard prompts you through the migration process.

The BCM or SRG system should be off line before you begin this procedure.

Procedure

1. Launch the Data Migration Manager tool.

2. In the **Data Migration for IP Office** window, click **Start**.
3. Complete the **Data Source Page** as follows:
 - a. In the **Select Extracted Data Source** drop-down box, select **BCM**.
 - * **Note:**

To extract data from an SRG system, you also select **BCM**.
 - b. In the **IP Address or Hostname** field, enter the IP address or host name of the BCM or SRG system.
 - c. In the **User Name** field, enter the appropriate nadmin user name..
 - d. In the **Password** field, enter the appropriate password.
 - e. To extract voicemail messages from this BCM or SRG system, select the **Extract Voicemail Messages** check box,
 - f. Click **Browse**, specify a file name and location on your PC where you want to store the configuration file, and then click **Save**.
 - g. On the **Data Source Page**, click **Next**.

The extraction process begins. This process takes between 20–45 minutes to complete, depending on the source system. You can monitor the extraction process in the DMM-IPO wizard window. The DMM-IPO wizard searches for CallPilot .dat files and converts them to .wav files. When the extraction is finished, the **DMM Extract** dialog box appears.
 - h. In the **DMM Extract** dialog box, click **OK**.

The DMM-IPO wizard indicates the data extraction is **Done**.
 - i. In the **DMM-IPO wizard** window, click **Save Report**, and then do the following:
 - i. Enter an appropriate name and select a location for the report.
 - ii. Click **Save**.
 - * **Note:**

Avaya Support requires a copy of this report if you encounter a problem pertaining to DMM.
 - j. In the **DMM-IPO wizard** window, click **Close**.

The **Extracted Data Page** appears.
4. Review the extracted data. The extracted data includes:
 - Number of sets extracted
 - Number of voicemail messages extracted
 - Number of auto attendant greetings extracted
 - Name
 - DN (domain name)
 - Model
 - Port

- Mailbox number
 - Full name (mailbox name)
 - Number of personal greetings
 - Number of spoken names
 - Number of messages on a per-DN basis.
5. Click **Next**.
 6. Click **Save report**, and then do the following:
 - a. Enter an appropriate name and select a location for the report.
 - b. Click **Save**.
 - c. In the **DMM-IPO wizard** window, click **Close**
The **IP Office Configuration Page** appears.
 7. In the **IP Office Configuration Page**, modify the parameters for the target IP Office or B5800 Branch Gateway as follows:
 - a. In the **IP Office LAN1 IP Address** field, enter the IP address of the IP Office or B5800 Branch Gateway.
 - b. In the **IP Office LAN1 IP Mask** field, enter the appropriate IP mask.
 - c. In the **IP Office LAN1 Default Gateway** field, enter the appropriate gateway.
 - d. In the **IP Office LAN2 IP Address** field, enter the appropriate IP address.
 - e. In the **IP Office LAN2 IP Mask** field, enter the appropriate IP mask.
 - f. In the **IP Office LAN2 Default Gateway** field, enter the appropriate gateway.
 - g. In the **Configuration Mode** drop-down box, select the appropriate mode.
If you are migrating the data to a B5800 Branch Gateway, select **B5800 mode**.

*** Note:**

If you are extracting data from a BCM system, the default value in this field is **IP Office Mode**. If you are extracting data from an SRG system, the default value in this field is **B5800 Mode**.

- h. In the **System Locale** drop-down box, select the appropriate location.
- i. In the **Destination Directory for IP Office Embedded VM and VMPro files** field, enter the directory used to store voice mail recordings. The default location is the DMM folder under user\data.
- j. In the **Voicemail Type** drop-down box, select the appropriate voice mail system..

*** Note:**

B5800 Branch Gateway R6.2 does not support Voicemail Lite/Pro.

- k. If you selected **Voicemail Lite/Pro**, complete the **VMPro IP Address** fields as appropriate. This is the external unit responsible for processing voice mail requests. You can also enter the voice mail backup IP address.
- l. In the **Main Control Unit** section, change the hardware to match the hardware that is installed on the IP Office or B5800 Branch Gateway. The hardware shown

is a recommendation based on the types of phones that were extracted from the BCM or SRG system. Be sure to select sufficient hardware modules to support the amount of terminals.

*** Note:**

If you select insufficient hardware, a **Hardware Mismatch** dialog box appears. Click **OK** and adjust your hardware selections accordingly.

- m. In the **Expansion Module** section, change the hardware to match the hardware that is installed on the IP Office or B5800 Branch Gateway. The hardware shown is a recommendation based on the types of phones that were extracted from the BCM or SRG system. Be sure to select sufficient hardware modules to support the amount of terminals.

*** Note:**

If you select insufficient hardware, a **Hardware Mismatch** dialog box appears. Click **OK** and adjust your hardware selections accordingly.

- n. Click **Next**.
- o. Click **Save Report**, and then do the following:
 - i. Enter an appropriate name and select a location for the report.
 - ii. Click **Save**.

*** Note:**

Avaya Support requires a copy of this report if you encounter a problem pertaining to DMM.

- iii. Click **Close**.

The **IP Office Extensions Page** appears. The page displays the selected hardware and associated extensions. See [Module column description](#) for a description of the entries in this column.

8. In the **IP Office Extensions Page**, modify the extensions as appropriate to ensure successful port-to-extension mapping. If required, move the existing extensions to different modules or ports by editing the cells in the Extension column.

*** Note:**

Cells in the table turn red when you enter duplicate mapping. The DMM tool prohibits you from continuing with red cells activated.

For information to help you modify the extensions, see [Viewing the extracted BCM configuration record](#) on page 68.

9. Once you have mapped the appropriate extensions to the available modules, click **Next**.

The DMM-IPO wizard applies the BCM or SRG station configuration to the IP Office or B5800 Branch Gateway hardware.
10. Click **Save report**, and then do the following:

- a. Enter an appropriate name and select a location for the report.
- b. Click **Save**

*** Note:**

Avaya Support requires a copy of this report if you encounter a problem pertaining to DMM.

- c. Click **Close**.

IP Office Manager is automatically launched. The **Data Migration Manager** window remains open in the foreground.

11. Confirm the BCM/SRG users and extensions have been migrated to the B5800 Branch Gateway. In the IP Office Manager window, do the following:
 - a. In the left navigation pane, select **Extensions** to verify the extensions.
 - b. In the left navigation pane, select **Users** to verify the users.
12. To import voicemail recordings, in the **Data Migration Manager** window, click the **Embedded Voicemail Recordings** link and follow the procedure provided.
13. See “Uploading the IP Office configuration to the control unit” on page xx to transfer the configuration to the B5800 Branch Gateway. [see page 82 in the Convergence Handbook.]

Migrating data from a Norstar system

Before you begin

Ensure that the backup file for the telephony configuration is locally stored (either on the hard drive or on an SD card inserted in the SD card slot). You will need the IP address or host name of the Norstar system as well as the nnadmin user name and password.

About this task

Use this procedure to migrate data from a Norstar system to an IP Office or B5800 Branch Gateway. The DMM-IPO wizard prompts you through the migration process.

The Norstar system should be off line before you begin this procedure.

Procedure

1. Launch the Data Migration Manager tool.
2. In the **Data Migration for IP Office** window, click **Start**.
3. Complete the **Data Source Page** as follows:
 - a. In the **Select Extracted Data Source** drop-down box, select **BCM**.

*** Note:**

To extract data from an SRG system, you also select **BCM**.

- b. In the **IP Address or Hostname** field, enter the IP address or host name of the BCM or SRG system.
- c. In the **User Name** field, enter the appropriate nnadmin user name..
- d. In the **Password** field, enter the appropriate password.
- e. To extract voicemail messages from this BCM or SRG system, select the **Extract Voicemail Messages** check box,
- f. Click **Browse**, specify a file name and location on your PC where you want to store the configuration file, and then click **Save**.
- g. On the **Data Source Page**, click **Next**.
The extraction process begins. This process takes between 20–45 minutes to complete, depending on the source system. You can monitor the extraction process in the DMM-IPO wizard window. The DMM-IPO wizard searches for CallPilot .dat files and converts them to .wav files. When the extraction is finished, the **DMM Extract** dialog box appears.
- h. In the **DMM Extract** dialog box, click **OK**.
The DMM-IPO wizard indicates the data extraction is **Done**.
- i. In the **DMM-IPO wizard** window, click **Save Report**, and then do the following:
 - i. Enter an appropriate name and select a location for the report.
 - ii. Click **Save**.

*** Note:**

Avaya Support requires a copy of this report if you encounter a problem pertaining to DMM.

- j. In the **DMM-IPO wizard** window, click **Close**.
The **Extracted Data Page** appears.
4. Review the extracted data. The extracted data includes:
- Number of sets extracted
 - Number of voicemail messages extracted
 - Number of auto attendant greetings extracted
 - Name
 - DN (domain name)
 - Model
 - Port
 - Mailbox number
 - Full name (mailbox name)
 - Number of personal greetings

- Number of spoken names
 - Number of messages on a per-DN basis.
5. Click **Next**.
 6. Click **Save report**, and then do the following:
 - a. Enter an appropriate name and select a location for the report.
 - b. Click **Save**.
 - c. In the **DMM-IPO wizard** window, click **Close**
The **IP Office Configuration Page** appears.
 7. In the **IP Office Configuration Page**, modify the parameters for the target IP Office or B5800 Branch Gateway as follows:
 - a. In the **IP Office LAN1 IP Address** field, enter the IP address of the IP Office or B5800 Branch Gateway.
 - b. In the **IP Office LAN1 IP Mask** field, enter the appropriate IP mask.
 - c. In the **IP Office LAN1 Default Gateway** field, enter the appropriate gateway.
 - d. In the **IP Office LAN2 IP Address** field, enter the appropriate IP address.
 - e. In the **IP Office LAN2 IP Mask** field, enter the appropriate IP mask.
 - f. In the **IP Office LAN2 Default Gateway** field, enter the appropriate gateway.
 - g. In the **Configuration Mode** drop-down box, select the appropriate mode.
If you are migrating the data to a B5800 Branch Gateway, select **B5800 mode**.

*** Note:**

If you are extracting data from a BCM system, the default value in this field is **IP Office Mode**. If you are extracting data from an SRG system, the default value in this field is **B5800 Mode**.

- h. In the **System Locale** drop-down box, select the appropriate location.
- i. In the **Destination Directory for IP Office Embedded VM and VMPro files** field, enter the directory used to store voice mail recordings. The default location is the DMM folder under user\data.
- j. In the **Voicemail Type** drop-down box, select the appropriate voice mail system..

*** Note:**

B5800 Branch Gateway R6.2 does not support Voicemail Lite/Pro.

- k. If you selected **Voicemail Lite/Pro**, complete the **VMPro IP Address** fields as appropriate. This is the external unit responsible for processing voice mail requests. You can also enter the voice mail backup IP address.
- l. In the **Main Control Unit** section, change the hardware to match the hardware that is installed on the IP Office or B5800 Branch Gateway. The hardware shown is a recommendation based on the types of phones that were extracted from the BCM or SRG system. Be sure to select sufficient hardware modules to support the amount of terminals.

*** Note:**

If you select insufficient hardware, a **Hardware Mismatch** dialog box appears. Click **OK** and adjust your hardware selections accordingly.

- m. In the **Expansion Module** section, change the hardware to match the hardware that is installed on the IP Office or B5800 Branch Gateway. The hardware shown is a recommendation based on the types of phones that were extracted from the BCM or SRG system. Be sure to select sufficient hardware modules to support the amount of terminals.

*** Note:**

If you select insufficient hardware, a **Hardware Mismatch** dialog box appears. Click **OK** and adjust your hardware selections accordingly.

- n. Click **Next**.
- o. Click **Save Report**, and then do the following:
 - i. Enter an appropriate name and select a location for the report.
 - ii. Click **Save**.

*** Note:**

Avaya Support requires a copy of this report if you encounter a problem pertaining to DMM.

- iii. Click **Close**.

The **IP Office Extensions Page** appears. The page displays the selected hardware and associated extensions. See [Module column description](#) for a description of the entries in this column.

8. In the **IP Office Extensions Page**, modify the extensions as appropriate to ensure successful port-to-extension mapping. If required, move the existing extensions to different modules or ports by editing the cells in the Extension column.

*** Note:**

Cells in the table turn red when you enter duplicate mapping. The DMM tool prohibits you from continuing with red cells activated.

For information to help you modify the extensions, see [Viewing the extracted BCM configuration record](#) on page 68.

9. Once you have mapped the appropriate extensions to the available modules, click **Next**.
The DMM-IPO wizard applies the BCM or SRG station configuration to the IP Office or B5800 Branch Gateway hardware.
10. Click **Save report**, and then do the following:
 - a. Enter an appropriate name and select a location for the report.
 - b. Click **Save**

*** Note:**

Avaya Support requires a copy of this report if you encounter a problem pertaining to DMM.

- c. Click **Close**.

IP Office Manager is automatically launched. The **Data Migration Manager** window remains open in the foreground.

11. Confirm the BCM/SRG users and extensions have been migrated to the B5800 Branch Gateway. In the IP Office Manager window, do the following:
 - a. In the left navigation pane, select **Extensions** to verify the extensions.
 - b. In the left navigation pane, select **Users** to verify the users.
12. To import voicemail recordings, in the **Data Migration Manager** window, click the **Embedded Voicemail Recordings** link and follow the procedure provided.
13. See “Uploading the IP Office configuration to the control unit” on page xx to transfer the configuration to the B5800 Branch Gateway. [see page 82 in the Convergence Handbook.]

Migrating data from a file to a B5800 Branch Gateway

About this task

Use this procedure to migrate data from a file to a B5800 Branch Gateway if the data has already been extracted from the system and the configuration file already exists.

Procedure

1. Launch the Data Migration Manager tool.
2. In the **Data Migration for IP Office** window, click **Start**.
3. On the **Data Source Page** do the following:
 - a. In the **Select Extracted Data Source** drop-down box, select **File**.
 - b. Click **Browse** and select the appropriate data source file.
 - c. Click **Next**.
The configuration is imported to the DMM tool. When completed, the DMM-IPO wizard indicates the import is **Done**.
4. In the **DMM-IPO wizard** window, click **Save Report**, and then do the following:
 - a. Enter an appropriate name and select a location for the report.
 - b. Click **Save**.

Avaya Support requires a copy of this report if you encounter a problem pertaining to DMM.

5. In the **DMM-IPO wizard** window, click **Close**.
The **Extracted Data Page** appears.
6. Review the extracted data. The extracted data includes:
 - Number of sets extracted
 - Number of voicemail messages extracted
 - Number of auto attendant greetings extracted
 - Name
 - DN (domain name)
 - Model
 - Port
 - Mailbox number
 - Full name (mailbox name)
 - Number of personal greetings
 - Number of spoken names
 - Number of messages on a per-DN basis.
7. Click **Next**.
8. Click **Save report**, and then do the following:
 - a. Enter an appropriate name and select a location for the report.
 - b. Click **Save**.
 - c. In the **DMM-IPO wizard** window, click **Close**
The **IP Office Configuration Page** appears.
9. In the **IP Office Configuration Page**, modify the parameters for the target B5800 Branch Gateway as follows:
 - a. In the **IP Office LAN1 IP Address** field, enter the IP address of the B5800 Branch Gateway
 - b. In the **IP Office LAN1 IP Mask** field, enter the appropriate IP mask.
 - c. In the **IP Office LAN1 Default Gateway** field, enter the appropriate gateway.
 - d. In the **IP Office LAN2 IP Address** field, enter the IP address of the B5800 Branch Gateway
 - e. In the **IP Office LAN2 IP Mask** field, enter the appropriate IP mask.
 - f. In the **IP Office LAN2 Default Gateway** field, enter the appropriate gateway.
 - g. In the **Configuration Mode** drop-down box, select **B5800 Mode**.
 - h. In the **System Locale** drop-down box, select the appropriate location.
 - i. In the **Destination Directory for IP Office Embedded VM and VMPRO files** field, enter the directory where the voice mail data is stored. The default location is the DMM folder under user\data.
This is the directory used to store voicemail recordings.

- j. In the **Voicemail Type** drop-down box, select **Embedded Voicemail**.

*** Note:**

B5800 Branch Gateway does not support Voicemail Lite/Pro. [writer's note: but for IPO 9.0 it might]

- k. In the **Main Control Unit** section, change the hardware to match the hardware that is installed on the B5800 Branch Gateway. The hardware shown is a recommendation based on the types of phones that were extracted from the BCM or SRG system. Be sure to select sufficient hardware modules to support the amount of terminals.

*** Note:**

If you select insufficient hardware, a **Hardware Mismatch** dialog box appears. Click **OK** and adjust your hardware selections accordingly.

- l. In the **Expansion Module** section, change the hardware to match the hardware that is installed on the B5800 Branch Gateway. The hardware shown is a recommendation based on the types of phones that were extracted from the BCM or SRG system. Be sure to select sufficient hardware modules to support the amount of terminals.

*** Note:**

If you select insufficient hardware, a **Hardware Mismatch** dialog box appears. Click **OK** and adjust your hardware selections accordingly.

- m. Click **Next**.

- n. Click **Save Report**, and then do the following:

- i. Enter an appropriate name and select a location for the report.
- ii. Click **Save**.

*** Note:**

Avaya Support requires a copy of this report if you encounter a problem pertaining to DMM.

- iii. Click **Close**.

The **IP Office Extensions Page** appears. The page displays the selected hardware and associated extensions. See [Module column description](#) for a description of the entries in this column.

10. In the **IP Office Extensions Page**, modify the extensions as appropriate to ensure successful port-to-extension mapping. If required, move the existing extensions to different modules or ports by editing the cells in the Extension column.

*** Note:**

Cells in the table turn red when you enter duplicate mapping. The DMM tool prohibits you from continuing with red cells activated.

For information to help you modify the extensions, see “Viewing the BCM configuration record” on page xx. [procedure is in the handbook, page 68].

11. Once you have mapped the appropriate extensions to the available modules, click **Next**.
The DMM-IPO wizard applies the BCM or SRG station configuration to the B5800 Branch Gateway hardware.
 12. Click **Save report**, and then do the following:
 - a. Enter an appropriate name and select a location for the report.
 - b. Click **Save**
 - * **Note:**
Avaya Support requires a copy of this report if you encounter a problem pertaining to DMM.
 - c. Click **Close**.
IP Office Manager is automatically launched. The **Data Migration Manager** window remains open in the foreground.
 13. Confirm the BCM/SRG users and extensions have been migrated to the B5800 Branch Gateway. In the IP Office Manager window, do the following:
 - a. In the left navigation pane, select **Extensions** to verify the extensions.
 - b. In the left navigation pane, select **Users** to verify the users.
 14. To import voicemail recordings, in the **Data Migration Manager** window, click the **Embedded Voicemail Recordings** link and follow the procedure provided.
 15. See “Uploading the IP Office configuration to the control unit” on page xx to transfer the configuration to the B5800 Branch Gateway. [see page 82 in the Convergence Handbook.]
-

Viewing the extracted BCM configuration record

About this task

Use this procedure to locate and view the telephony resource information you backed up from your BCM. Use the BCM’s extracted programming record to help minimize the amount of station rewiring when editing the **IP Office Extensions Page** to allow specific DNs to reside on specific ports. This should be completed for digital, analog, and IP stations.

Procedure

1. In Element Manager, open the backup file and navigate to the **Summary** tab.
2. Click **Telephone Resources**.

	A	B	C
1	Summary		
2	This report was generated on Fri Jul 29 08:06:36 EDT 2011 for Device 47.135.155.251		
3			
4	Config		
5	Welcome		
6	System		
7	Identification		
8	Date and Time		
9	Keycodes		
10	IP Subsystem		
11	Telephony Regions		
12	Administrator Access		
13	Accounts and Privileges		
14	Security Policies		
15	Email Settings		
16	SNMP		
17	Resources		
18	Application Resources		
19	Media Gateways		
20	Port Ranges		
21	SIP Clients		
22	Telephony Resources		
23	IP Trunks		
24	General		
25	SIP Trunking		
26	H323 Trunking		

Element Manager lists all of the known BCM-configured modules as well as the Ports to DN for each module.

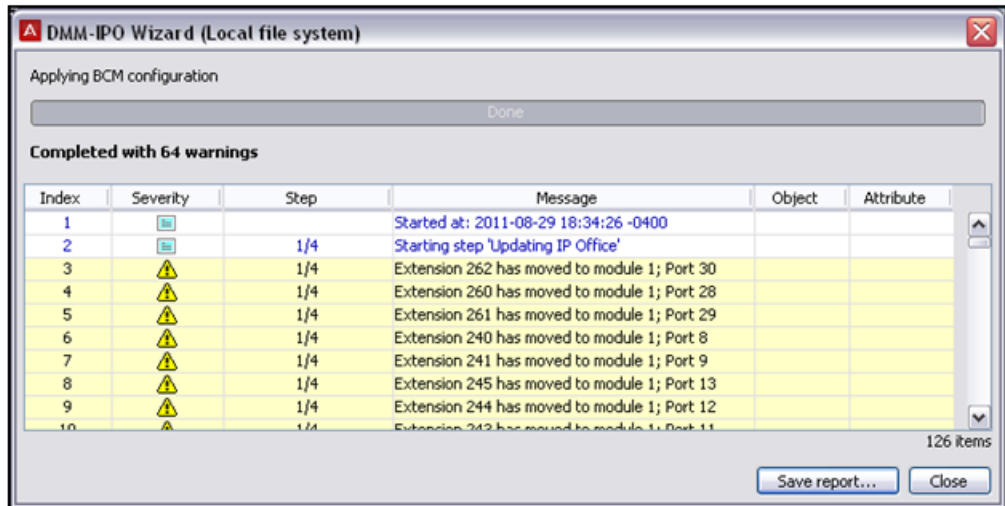
The following image shows an example of the extensions, numbered to reflect current wiring.

IP Office Extensions					Port	DN	Device type	Version	State
23	1	DIG ADPx30 R321	1	233	0501	233	T7208/M7208	30DSD20	Idle
24	1	DIG ADPx30 R321	2	234	0502	234	T7316E	06ChC22	Idle
25	1	DIG ADPx30 R321	3	235	0503	235	Unequipped		Unequipped
26	1	DIG ADPx30 R321	4	236	0504	236	Unequipped		Unequipped
27	1	DIG ADPx30 R321	5	237	0505	237	Unequipped		Unequipped
28	1	DIG ADPx30 R321	6	238	0506	238	Unequipped		Unequipped
29	1	DIG ADPx30 R321	7	239	0507	239	Unequipped		Unequipped
30	1	DIG ADPx30 R321	8	240	0508	240	Unequipped		Unequipped
31	1	DIG ADPx30 R321	9	241	0509	241	Unequipped		Unequipped
32	1	DIG ADPx30 R321	10	242	0510	242	Unequipped		Unequipped
33	1	DIG ADPx30 R321	11	243	0511	243	Unequipped		Unequipped
34	1	DIG ADPx30 R321	12	244	0512	244	Unequipped		Unequipped
35	1	DIG ADPx30 R321	13	245	0513	245	Unequipped		Unequipped
36	1	DIG ADPx30 R321	14	246	0514	246	Unequipped		Unequipped
37	1	DIG ADPx30 R321	15	247	0515	247	Unequipped		Unequipped
38	1	DIG ADPx30 R321	16	248	0516	248	Unequipped		Unequipped
39	1	DIG ADPx30 R321	17	249					

*** Note:**

Use particular care on systems that have used Change DN or Auto Set Relocation.

3. Once you have mapped the appropriate extensions to the available modules, click **Next**.
4. The DMM-IPO Wizard applies the BCM station configuration to the IP Office or B5800 Branch Gateway hardware.



5. Click **Save report**, and then do the following:
 - a. Enter an appropriate name and select a location for the report.
 - b. Click **Save**

*** Note:**

Avaya Support requires a copy of this report if you encounter a problem pertaining to DMM.

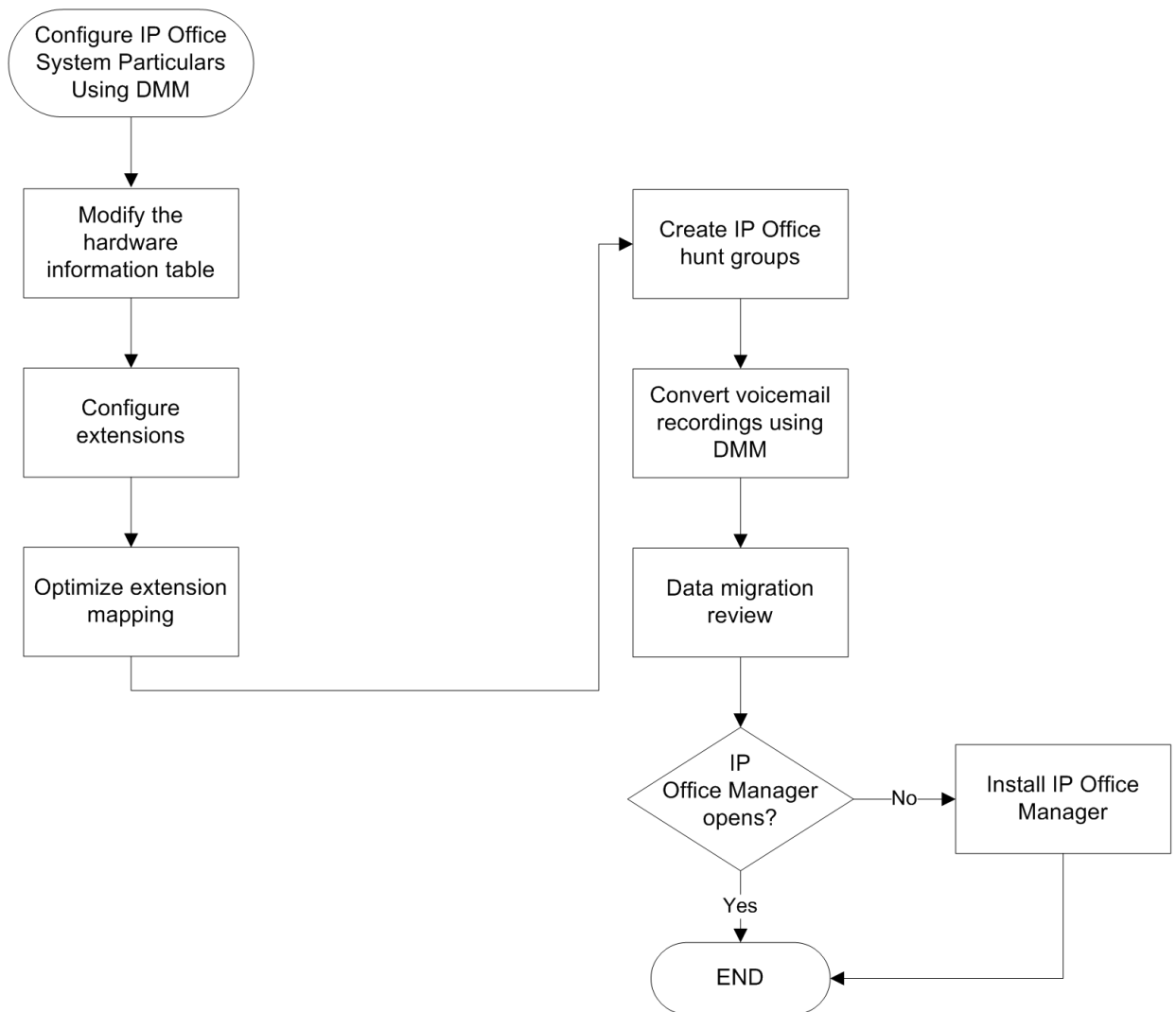
- c. Click **Close**.

Configuring IP Office system particulars using DMM

After you've saved the extracted data page (see [Reviewing the extracted data page](#) for more information), the IP Office configuration page appears. There are three sections to complete:

- System particulars (networking information, system locale, voicemail type, etc.)
- Main control unit hardware configuration
- Expansion module hardware configuration

Once these configurations have been made, you will be prompted to configure extensions and optimize extension mapping.



Related topics:

[Modifying the hardware information table](#) on page 72

[Configuring extensions](#) on page 74

[Optimizing extension mapping](#) on page 77

[Creating IP Office 'hunt groups' to replace BCM 'skillsets'](#) on page 77

[Converting voicemail recordings](#) on page 79

Modifying the hardware information table

For this part of the migration it is imperative that you review and modify the hardware information determined by DMM, and configure and optimize your extensions as required. Be sure to save a report where indicated.

System Particulars configuration

In the System Particulars section, define the attributes that are currently configured in your environment. For example, you will want to change the IP address of IP Office LAN1 to match that of the BCM. You will also want to configure your desired masks and gateways.

Next to “Configuration Mode” ensure that the mode enabled matches that of the software type (IP Office).

The “Destination Directory” is used to store IP Office voicemail recordings. You can change the directory, but the default is `C:\Documents and Settings\username\DMM\user\data`. DMM converts the audio file based on the type of voicemail associated with it, which includes both Voicemail Lite/Pro and Embedded Voicemail. Note that if you do select Voicemail Lite/Pro you will require the IP address of the external unit responsible for processing voicemail requests (you can also indicate the voicemail backup IP address).

IP Office Configuration Page	
IP Office LAN1 IP Address:	47.135.155.252
IP Office LAN1 IP Mask:	255.255.255.0
IP Office LAN1 Default Gateway:	47.135.155.1
IP Office LAN2 IP Address:	192.168.43.1
IP Office LAN2 IP Mask:	255.255.255.0
IP Office LAN2 Default Gateway:	0.0.0.0
Configuration Mode:	IP Office Mode
System Locale:	United States (US English)
Destination Directory for IP Office Embedded VM and VMPro files:	C:\Documents and Settings\galletti\DMM\user\d... Browse...
Voicemail Type:	Voicemail Lite/Pro
VMPro IP Address:	47.135.155.253
Backup VMPro IP Address:	0.0.0.0

Main Control Unit hardware configuration

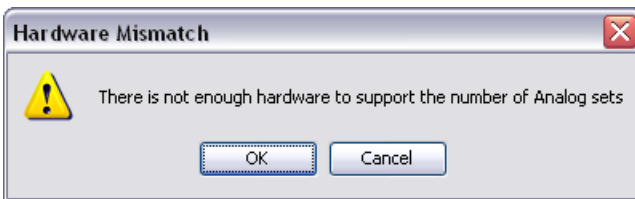
The hardware identified in the Main Control Unit section is a recommendation based on the types of stations that were extracted from the BCM/Norstar configuration. You must change the parameters to reflect the actual IP Office hardware installed. Be sure to select sufficient hardware modules available to support the amount of digital terminals.

Main Control Unit

	Extension/VCM	Trunk
1	PHONE8	ATM 4 UNI
2	None	None
3	VCM32	None
4	None	None

*** Note:**

If you select insufficient hardware, when you click **Next** you will receive the following warning:



Click **OK** or **Cancel** and enter more appropriate hardware.

Expansion Module hardware configuration

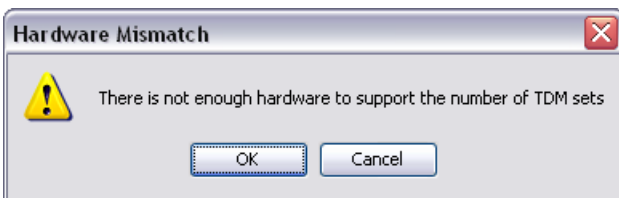
The hardware identified in the Expansion Module section is a recommendation based on the types of phones that were extracted from the BCM/Norstar configuration. You must change the parameters to reflect the actual IP Office hardware installed. Be sure to select sufficient hardware modules available to support the amount of digital terminals.

Expansion Module

	Expansion Module
1	D516A RJ 21
2	D516A RJ 21
3	D516A RJ 21
4	None
5	None
6	None
7	None
8	None

*** Note:**

If you select insufficient hardware, when you click **Next** you will receive the following warning:



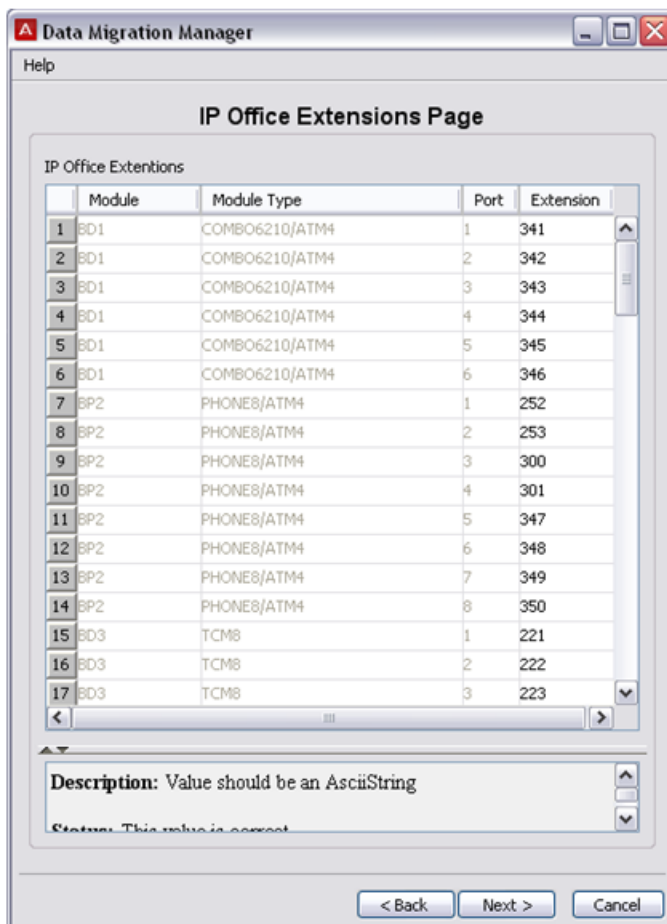
Click **OK** or **Cancel** and enter more appropriate hardware.

Once you have entered in the system particulars and configured the appropriate hardware, DMM reviews the selected hardware to ensure minimum hardware requirements are met and then displays the IP Office Extensions Page.

Configuring extensions

The IP Office Extensions Page displays the selected hardware and their associated extensions. Effectively modifying the extensions will ensure that your Port-to-Extension mapping is as successful as possible.

It is imperative that you click **Save report...** where indicated. Avaya Support will require a copy of this report if you encounter a problem pertaining to the DMM.



*** Note:**

The cells in the table turn red when you enter duplicate extensions and DMM prohibits you from continuing with red cells activated.

Extracted BCM configuration record:

Use the following procedure to locate and view the telephony resource information you backed up from your BCM. Use the BCM's extracted programming record to help minimize the amount of station rewiring when editing the IP Office Extensions Page to allow specific DN's to reside on specific ports. This should be completed for Digital, Analog and IP stations.

Procedure

1. In Element Manager, open the backup file and navigate to the **Summary** tab.
2. Click on **Telephony Resources**.

	A	B	C
1	Summary		
2	<i>This report was generated on Fri Jul 29 08:06:36 EDT 2011 for Device 47.135.155.251</i>		
3			
4	Config		
5	Welcome		
6	System		
7	Identification		
8	Date and Time		
9	Keycodes		
10	IP Subsystem		
11	Telephony Regions		
12	Administrator Access		
13	Accounts and Privileges		
14	Security Policies		
15	Email Settings		
16	SNMP		
17	Resources		
18	Application Resources		
19	Media Gateways		
20	Port Ranges		
21	SIP Clients		
22	Telephony Resources		
23	IP Trunks		
24	General		
25	SIP Trunking		
26	H323 Trunking		

Element Manager lists all of the known BCM-configured modules as well as the Ports to DN for each module.

The following image shows an example of the extensions, numbered to reflect current wiring (as best as possible).

IP Office Extensions					Port	DN	Device type	Version	State
23	1	DIG ADPx30 RJ21	1	233	0501	233	T7208/M7208	30DSD20	Idle
24	1	DIG ADPx30 RJ21	2	234	0502	234	T7316E	06ChC22	Idle
25	1	DIG ADPx30 RJ21	3	235	0503	235	Unequipped		Unequipped
26	1	DIG ADPx30 RJ21	4	236	0504	236	Unequipped		Unequipped
27	1	DIG ADPx30 RJ21	5	237	0505	237	Unequipped		Unequipped
28	1	DIG ADPx30 RJ21	6	238	0506	238	Unequipped		Unequipped
29	1	DIG ADPx30 RJ21	7	239	0507	239	Unequipped		Unequipped
30	1	DIG ADPx30 RJ21	8	240	0508	240	Unequipped		Unequipped
31	1	DIG ADPx30 RJ21	9	241	0509	241	Unequipped		Unequipped
32	1	DIG ADPx30 RJ21	10	242	0510	242	Unequipped		Unequipped
33	1	DIG ADPx30 RJ21	11	243	0511	243	Unequipped		Unequipped
34	1	DIG ADPx30 RJ21	12	244	0512	244	Unequipped		Unequipped
35	1	DIG ADPx30 RJ21	13	245	0513	245	Unequipped		Unequipped
36	1	DIG ADPx30 RJ21	14	246	0514	246	Unequipped		Unequipped
37	1	DIG ADPx30 RJ21	15	247	0515	247	Unequipped		Unequipped
38	1	DIG ADPx30 RJ21	16	248	0516	248	Unequipped		Unequipped
39	1	DIG ADPx30 RJ21	17	249					

*** Note:**

Use additional care on systems that have used 'Change DN' or 'Auto Set Relocation.'

- Once you've mapped the appropriate extensions to the available modules, click **Next**.
- The DMM-IPO Wizard applies the BCM station configuration to the IP Office hardware.

Applying BCM configuration

Done

Completed with 64 warnings

Index	Severity	Step	Message	Object	Attribute
1			Started at: 2011-08-29 18:34:26 -0400		
2		1/4	Starting step 'Updating IP Office'		
3	Warning	1/4	Extension 262 has moved to module 1; Port 30		
4	Warning	1/4	Extension 260 has moved to module 1; Port 28		
5	Warning	1/4	Extension 261 has moved to module 1; Port 29		
6	Warning	1/4	Extension 240 has moved to module 1; Port 8		
7	Warning	1/4	Extension 241 has moved to module 1; Port 9		
8	Warning	1/4	Extension 245 has moved to module 1; Port 13		
9	Warning	1/4	Extension 244 has moved to module 1; Port 12		
10	Warning	1/4	Extension 242 has moved to module 1; Port 11		

126 items

Save report... Close

- Save a report and click **Close**.

The next step is to convert and export the available voicemail recordings.

Optimizing extension mapping

Using the information contained in the extracted BCM configuration record you created in Element Manager, modify the extensions that reside on the hardware in a way that most effectively reduces the amount of station rewiring (refer to [Extracted BCM configuration record](#) on page 75). For example, IP Office can support 16 and 30–port expansion modules, whereas BCM can support the 32–port expansion module. You might have two extra users to account for when upgrading to IP Office, and station rewiring may have to be done. For this reason, you should try to optimize the extension mapping so as to avoid complex rewiring wherever possible.

Creating IP Office 'hunt groups' to replace BCM 'skillsets'

In the BCM, you categorized your users according to their particular abilities in order to route calls more effectively using 'skillsets.' You can do this in IP Office using 'hunt groups' configured in IP Office Manager. Use the procedure below to replace your BCM skillsets with hunt groups in IP Office. This will ensure that the previous call flow is replicated.

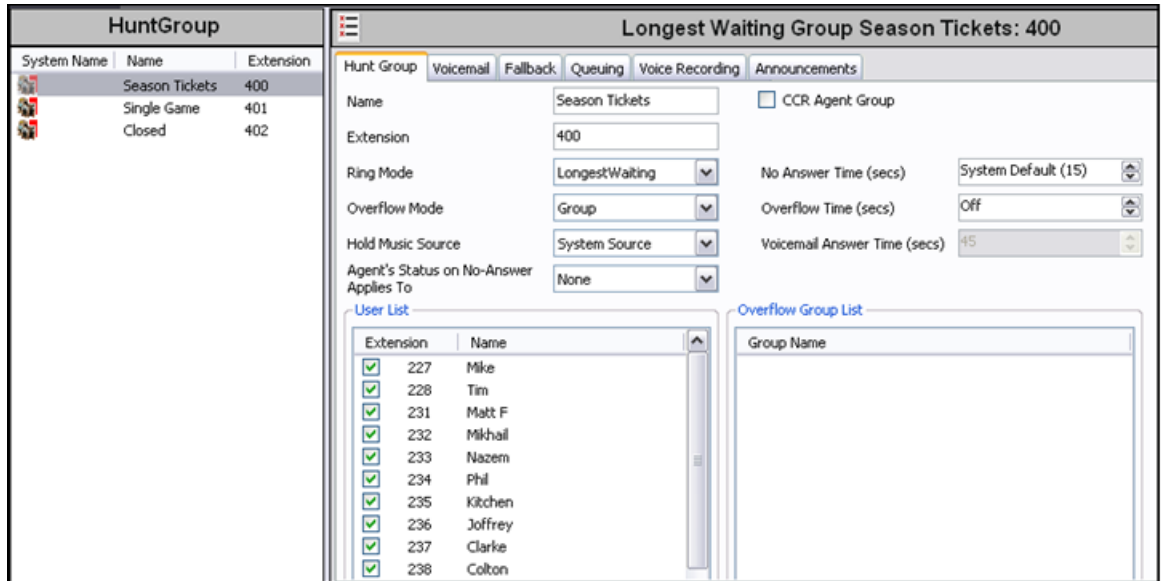
Before you begin

Locate the extracted data page and use it as the source for all ring modes, overflow modes, and Control Directory Number (CDN) configurations indicated below.

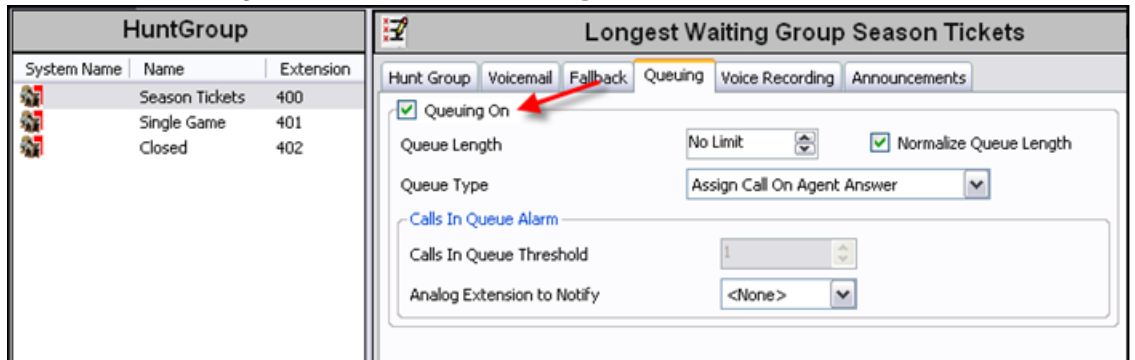
Procedure

1. In IP Office Manager, under the Hunt Group tab, specify the hunt group name in the **Name** field.
2. Enter the BCM skillset CDN in the **Extension** field.
3. Select the **Ring Mode** to match the call distribution mode on the BCM.
4. Select the **Overflow Mode** as required.
5. Select the user extensions you wish to add to the hunt group from the **User List** panel.

The **User List** panel and the various hunt group configurations can be seen in the following image:



- Repeat steps 1–5 for each new hunt group that you require (in the image above, a third hunt group is required to answer 'Closed Business' callers).
- Under the Queuing tab, ensure that **Queuing** is enabled.



- Under the Announcements tab, ensure that **Announcements On** is enabled. You can also specify the time between announcements.

HuntGroup		
System Name	Name	Extension
	Season Tickets	400
	Single Game	401
	Closed	402

Longest Waiting Group Season Tickets: 400*

Hunt Group Voicemail Fallback Queueing Voice Recording **Announcements**

Announcements On Synchronize Calls

Wait before 1st announcement (seconds): 10

Flag call as answered:

Play 1st announcement

Post announcement tone: Music on hold

2nd Announcement:

Wait before 2nd announcement (seconds): 20

Play 2nd announcement

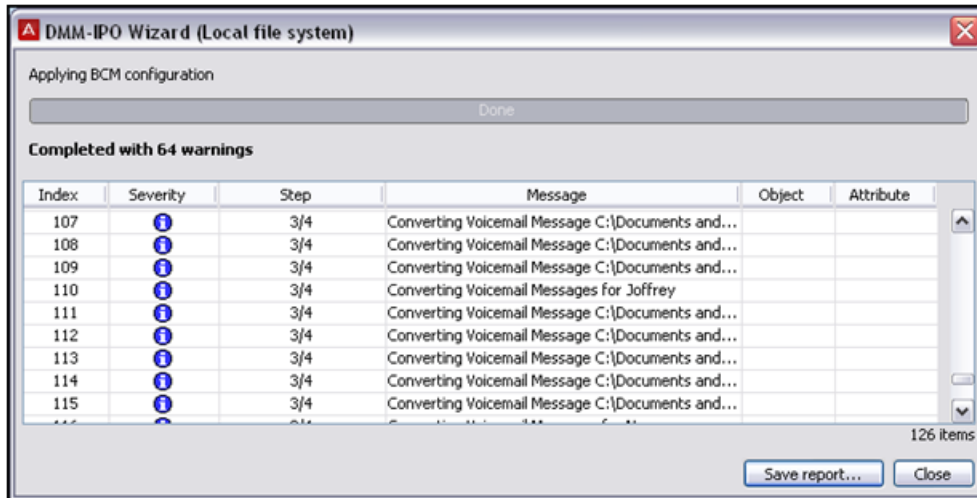
Repeat last announcement:

Wait before repeat (seconds): 20

Converting voicemail recordings

Along with generating an IP Office configuration, DMM converts Mailbox Greetings, Spoken Names, and Voicemail messages to IP Office Voicemail format. You will have to apply these sound files to the appropriate voicemail system later in IP Office configuration. Note that if you do not have a *Unified Messaging* license on the BCM, you will not be able to export these recordings.

All available voicemail recordings will be converted. Voicemail Pro recordings are converted to wave (*.wav) type and Embedded Voicemail recordings are converted to CallPilot (*.clp) type.



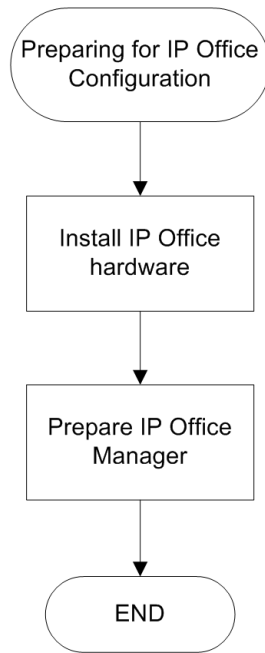
Data migration review

By this point, you have updated your BCM firmware, obtained its configuration records, and installed IP Office Manager and Data Migration Manager.

Using DMM, you have extracted the system configuration data from the appropriate location (either BCM, Norstar, or File). You have also saved the required reports, wherever possible, throughout the data migration procedure. Using the extracted data, you have configured the IP Office system particulars (expansion module configuration, main control unit configuration, etc.) as well as configured and optimized port-to-extension mapping.

Upon converting the voicemail recordings using DMM, IP Office Manager will automatically open (if installed correctly—refer to [Installing IP Office Manager](#) on page 51). You will not be able to configure the IP Office until you install IP Office Manager. While it is not necessary to install IP Office Manager prior to operating DMM, note that if you choose to install IP Office Manager only at this stage, DMM will simply close.

Preparation for IP Office configuration

**Related topics:**

[Installing the IP Office hardware](#) on page 81

[Preparing IP Office Manager](#) on page 82

[System staging](#) on page 82

Installing the IP Office hardware

If you haven't yet, you should now install the IP Office hardware and connect it to the local area network. It is imperative that you follow the installation guide for IP Office and that you bear in mind all the planning, pre-configuration, and safety statements therein. You can find the latest guide at <http://support.avaya.com>.

There are many steps in the installation process, including pre-installation, card installation, power connection, Manager connection, card/CPU LED checks, licensing, and more. Due to the length and importance of this installation, Avaya recommends that you follow and read the entire guide.

The following is a general summary of the tools required. Additional tools and equipment will be required for wall and or rack mounting and to fashion ground cable connections suitable to local requirements.

- 5mm flat-head screwdriver
- Crosshead screwdriver
- Anti-static wrist strap and ground point
- PC with IP Office Admin suite (Manager and System Status application) and RJ45 Ethernet LAN port
- RJ45-RJ45 Ethernet LAN Cable
- Tools and materials suitable for ground cabling

Once the IP Office hardware is installed, you can proceed to configure the basic telephony settings, trunks, and dial plans following the instructions in the IP Office guide. You can export and merge this configuration with the configuration exported by DMM.

Preparing IP Office Manager

Once the DMM has applied the BCM configuration, a window appears that provides detailed information on IP Office configuration, Embedded Voice mailbox recordings, and VM Pro Voice mailbox recordings. If IP Office Manager is installed on the same PC as the DMM, IP Office Manager opens automatically and displays the configuration migrated from DMM.

In the previous steps, DMM has migrated User and Extension information for all DN's on the BCM (active and inactive). Delete the Users and Extensions that were created for inactive DN's as well as the Application/CallPilot DN's prior to importing the configuration file into IP Office.

DMM created Users for BCM Skillset Mailboxes. You may wish to delete these users from the IP Office so there will be no conflict with the Hunt Group names that were created to replicate the Skillset use on the BCM (refer to [Creating IP Office 'hunt groups' to replace BCM 'skillsets'](#) on page 77).

System staging

It is possible to stage a system such that it is wholly configured prior to physically hooking it up and connecting the phones. For example, an installer plugs in the IP Office main system, configures it using IP Office Manager (including user button programming) and then sends the system and its phones to be installed on-site.

The issue with staging is that without knowing how to properly stage BST phone button programming, the instant a BST phone is physically plugged into the IP Office for the first time, all custom button programming for the user of that phone will be wiped.

Preserving button programming:

In order to preserve a User's button programming in a staged installation, a specifically formatted and valued ***DCP** short code must be configured *for that User*.

The steps below describe the quick procedure you can perform during staging to preserve button programming.

Procedure

1. In IP Office Manager, access a user extension and click on its **Short Codes** tab. If a phone has *never* been plugged into this user, there will typically exist no per-user short codes (proceed to step 2 below).

If any BST phone has *ever* been plugged into this user, then a ***DCP** short code is created in this user's permanent configuration data and, as such, the button programming for that user will be preserved. The telephone number associated with this short code will be something along the lines of "8xxxxxxx, 0, 1, 1, 0" where x is probably 0, but could be any number. The important number is the number **8**.

Similarly, if another (non-BST) Avaya phone has ever been plugged into this user, the ***DCP** short code will be apparent and button programming will be preserved, but the telephone number indicated for that short code (for that user) will begin with a **4** instead of an **8**.

If the telephone number indicated for any ***DCP** short code begins with a **c4** instead of a **4** or an **8**, both an Avaya non-BST phone *and* a BST phone have previously been plugged into this user and the button programming will be preserved.

Any other configuration will *not* preserve button programming and you should proceed to step 2 below.

2. In the **Short Codes** tab, click the **Add...** button.
3. Enter data in the fields as below:
 - **Code:** *DCP
 - **Feature:** Dial
 - **Telephone Number:** 84000004,0,1,1,0
 - **Line Group ID:** 0
4. When complete, click the **OK** button. The ***DCP** short code is added to that user's programming.
Perform this procedure for *each user* whose programming you wish to preserve during staging.

Related topics:

[Notes on preserving button programming](#) on page 84

Notes on preserving button programming

Ring volume and contrast

When adding the ***DCP** short code during the staging process, you are instructed to include '4000004' in the Telephone Number field. The digits in this sequence represent different parameters which you can modify. Using this information you can stage a BST phone's contrast and ring volume.

The first digit in this sequence is used to store the BST phone's contrast level. It can be valued from 1–9.

The last digit in this sequence is used to store the BST phone's ring volume attenuation level. In this situation, attenuation means that a higher value results in a lower ring volume, and vice versa (e.g., 0 is full volume). The ring volume attenuation level can be valued from 0–7.

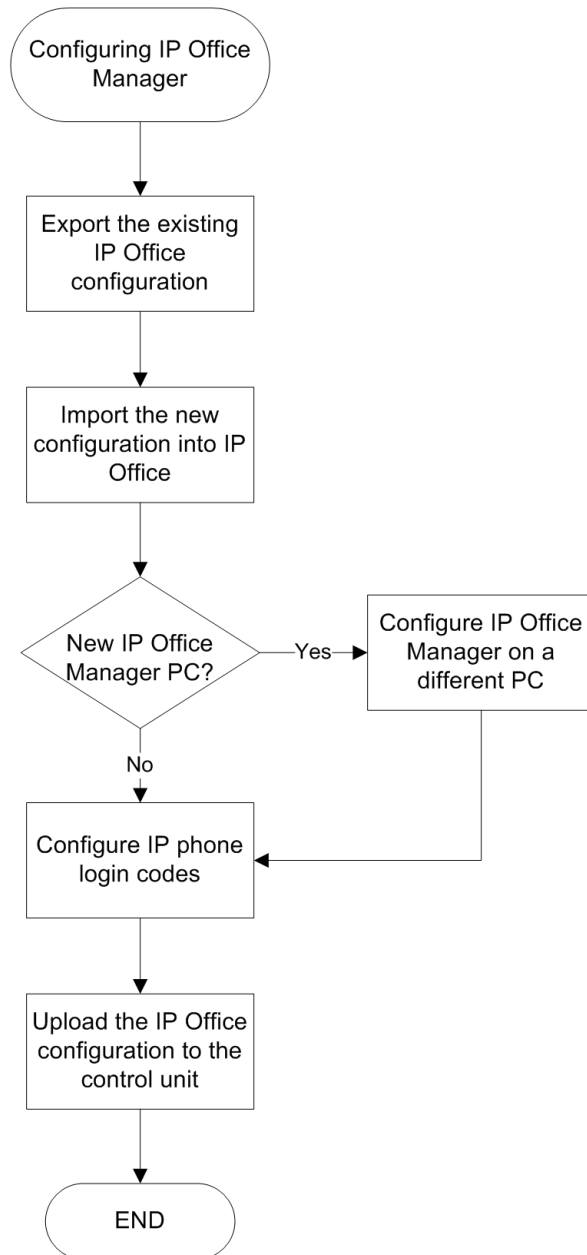
Remotely defaulting a BST phone

Using the ***DCP** short code, an administrator can remotely force a BST phone to return to default button programming and contrast/ring-volume for that phone type. If you simply remove the short code from a user extension and then save that back into IP Office, then (if there is a BST phone currently connected to that user) it will:

- default all button programming per BST phone model currently connected to that user extension,
- default the BST phone contrast level,
- not affect any calls that are currently active (although caution is recommended).

Note that you can also use this procedure to “reset” a user extension such that the next time a BST phone model of any type is connected to it, that user's programming will be defaulted appropriately to that BST phone.

Configuring IP Office

**Related topics:**

[Exporting the existing IP Office configuration](#) on page 86

[Importing the new configuration into IP Office](#) on page 86

[Configuring IP phone login codes](#) on page 88

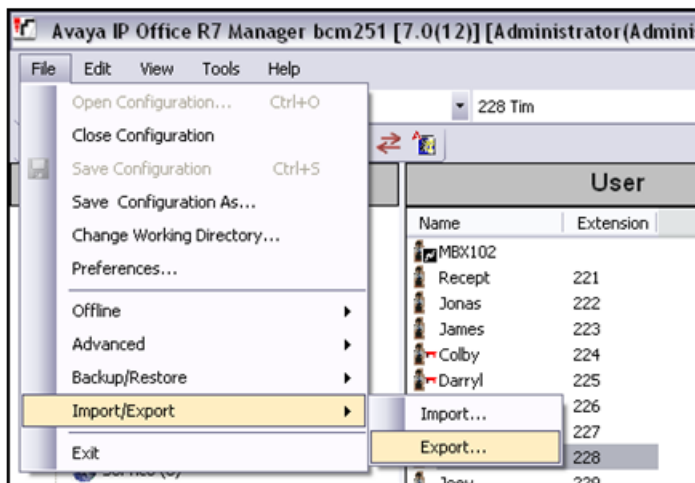
[Uploading the IP Office configuration to the control unit](#) on page 88

Exporting the existing IP Office configuration

If you have an IP Office with prior configuration programming applied, you may wish to export it prior to importing the configuration created by DMM. If you were to simply apply the configuration file from DMM you would be overwriting the existing IP Office configuration.

*** Note:**

Note that selecting a Binary output instead of CSV will allow for greater item selection.



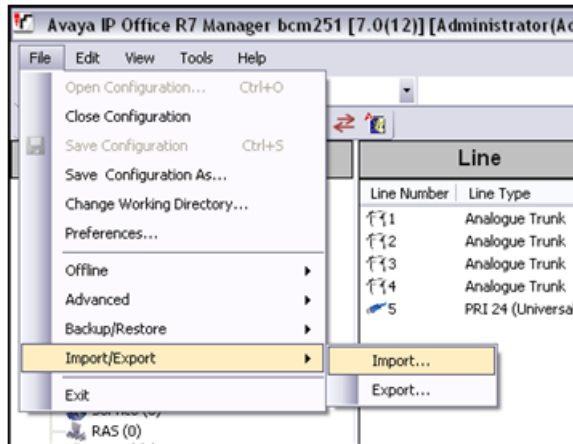
It is also possible that you might wish to merge the DMM-created configuration file with the current IP Office configuration file. Refer to the import procedure below.

Importing the new configuration into IP Office

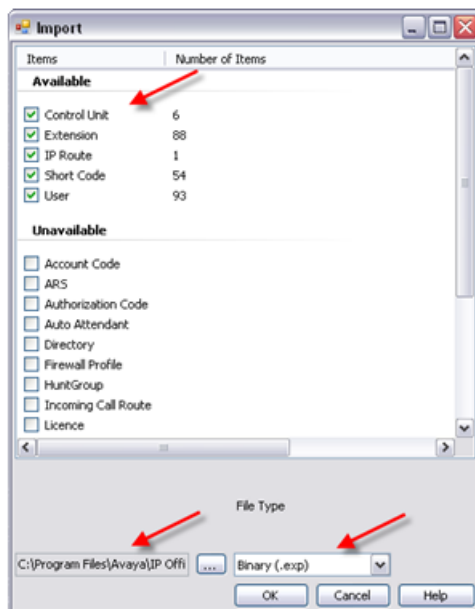
It is now possible to merge the configuration file created by DMM with the current/default IP Office configuration file. If you are merging the new configuration but you wish to save your current configuration, be sure to have exported the Binary file first. Otherwise, proceed with the import.

Procedure

1. In IP Office Manager, under the **File** menu, select **Import/Export > Import...**



2. Select **Binary** from the File Type drop down menu. You will notice that “Licensing” is not an option.



3. Navigate to the new configuration file and click **OK** to open it.

Result

The selected items have merged with the existing configuration.

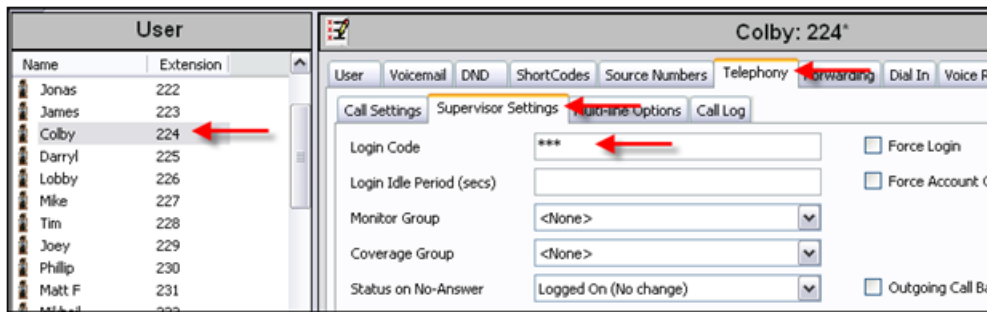
Configuring IP Office Manager on a different PC

If IP Office Manager is installed on a different PC, ensure that you copy the xml file specified in DMM to the PC that will be used. You should use the default directory: `C:\Documents and Settings\username\DMM\user\data\`

Configuring IP phone login codes

DMM will migrate User and Extension information for all phone types. When IP phone Users are created there is no default password configured. This means you will need to manually add a login code for each IP phone user prior to the phone connecting to the IP Office. If a *new* IP phone User attempts to register to the IP Office and the option for Auto-create Extn/User is enabled, the default password of 0000 is required. It is the fact that the User has already been created by DMM that the new Login password is required.

Use the extracted data and the DMM to configure the IP phone's login codes as illustrated below.



Uploading the IP Office configuration to the control unit

Once the required IP Office system particulars have been configured, you can publish the new configuration to the IP Office control unit.

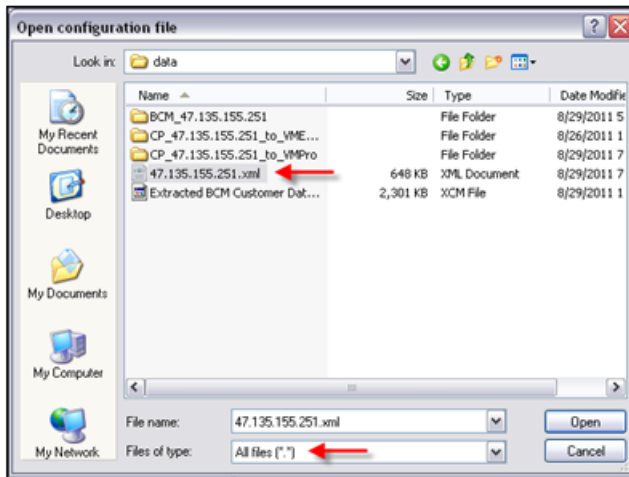
Before you begin

If the configuration file is already open in IP Office Manager, skip to step 4.

Procedure

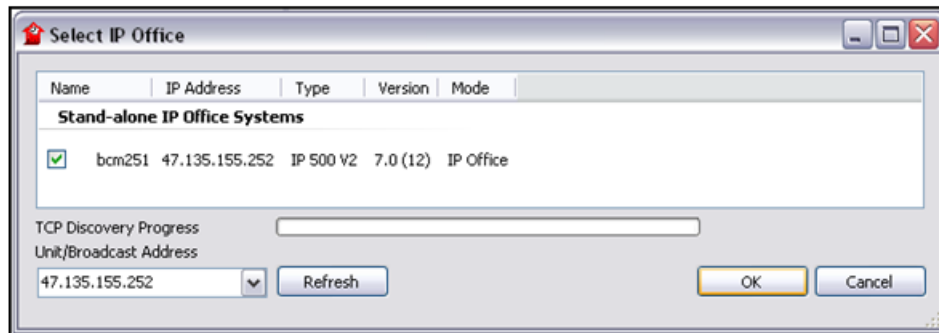
1. In IP Office Manager, navigate to the saved xml configuration file located on the PC.
2. Under the "Files of Type" drop down menu select **All Files (*.*)**

3. Select the appropriate xml file and click **Open**.

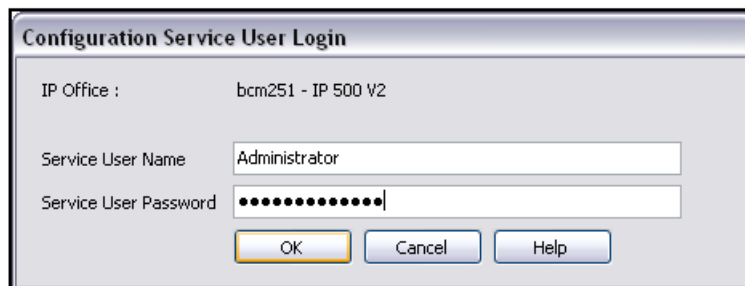


With the desired configuration file open, you must send it to the appropriate devices.

4. From the **File** menu select **Offline > Send Config...**
A window appears requesting IP information.



5. Select the current IP address of the IP Office you wish to apply the configuration to and press **OK**.
The Configuration Service User Login window appears.



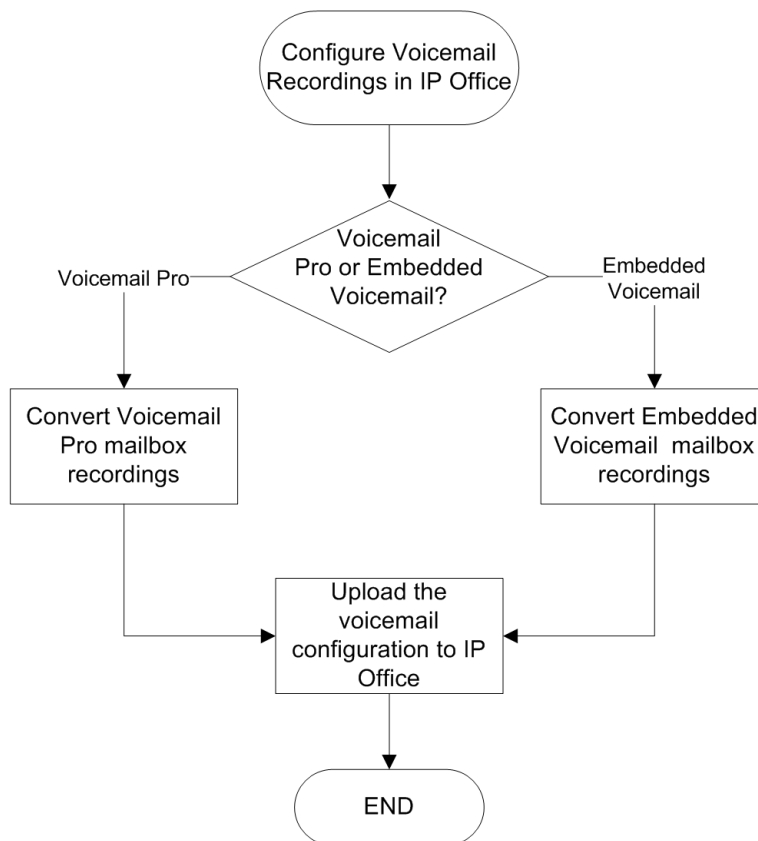
6. Enter the *Service User Password* and click **OK**.
The Send Configuration window appears.

7. The new configuration requires a reboot of IP Office. Select a reboot option under “Configuration Reboot Mode” and click **OK** when you are ready. The system reboots.

Configuring voicemail recordings in IP Office

DMM has extracted mailbox greetings, spoken directory names, and voicemail messages into the required format. These sound files must be applied to the appropriate IP Office voicemail system. Using the procedures below you must transfer and configure your Voicemail Pro and Embedded Voicemail recordings, which were previously migrated from DMM, into IP Office. You will also create Auto Attendant, Contact Center, and Customer Call Reporter greetings.

If you do not require voicemail service or the configuration of voicemail recordings, skip to [Completing IP Office system programming](#) on page 102.



Related topics:

[Voicemail Pro](#) on page 91

[Embedded Voicemail](#) on page 97

[Uploading the voicemail configuration to IP Office](#) on page 102

Voicemail Pro

Related topics:

[Transferring Voicemail Pro recordings](#) on page 91

[Creating Auto Attendant in Voicemail Pro](#) on page 94

Transferring Voicemail Pro recordings

The converted VM files are located in the VM Sound Files folder located at `C:\Documents and Settings\username\DMM\user\data\CP_47.135.155.251_to_VMPro`. The methods used to send the sound files to the IP Office Voicemail system will depend on the IP Office Voicemail Type.

If Voicemail Pro was selected as the Voicemail Type, DMM will convert the Mailbox Greetings, Spoken Names, and Voicemail messages to a Voicemail Pro backup file. The default location is:

```
<DMM Home Directory>/user/data
```

and all Voicemail recording files will be located in the subfolder:

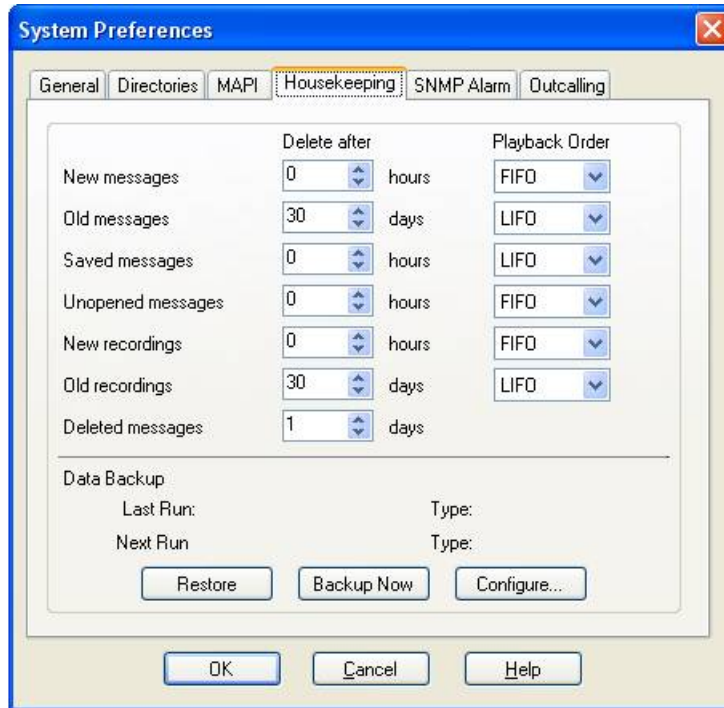
```
CP_<IP address of BCM/CallPilot>_to_VMPro
```

About this task

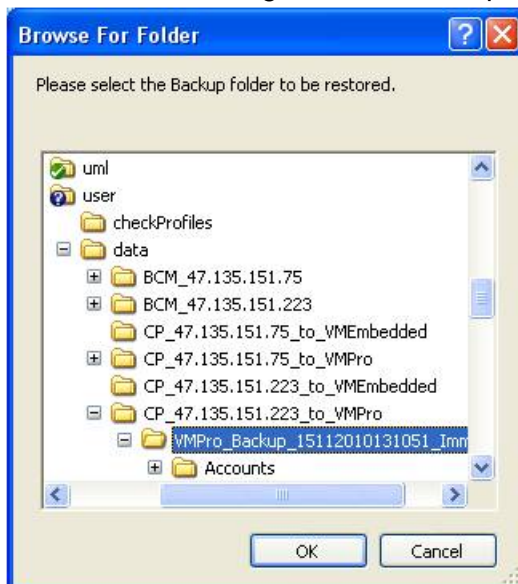
To upload the converted VM Pro voicemail recordings, the VM Pro backup must be copied to the server running VM Pro.

Procedure

1. On the VM Pro server, start the the VM Pro client and then connect to the VM Pro Server.
Ensure that the connection is established prior to the next step.
2. From the VM Pro client, select **Administration > Preference > General**.
The System Preferences dialog box appears.
3. Click on the **Housekeeping** tab.



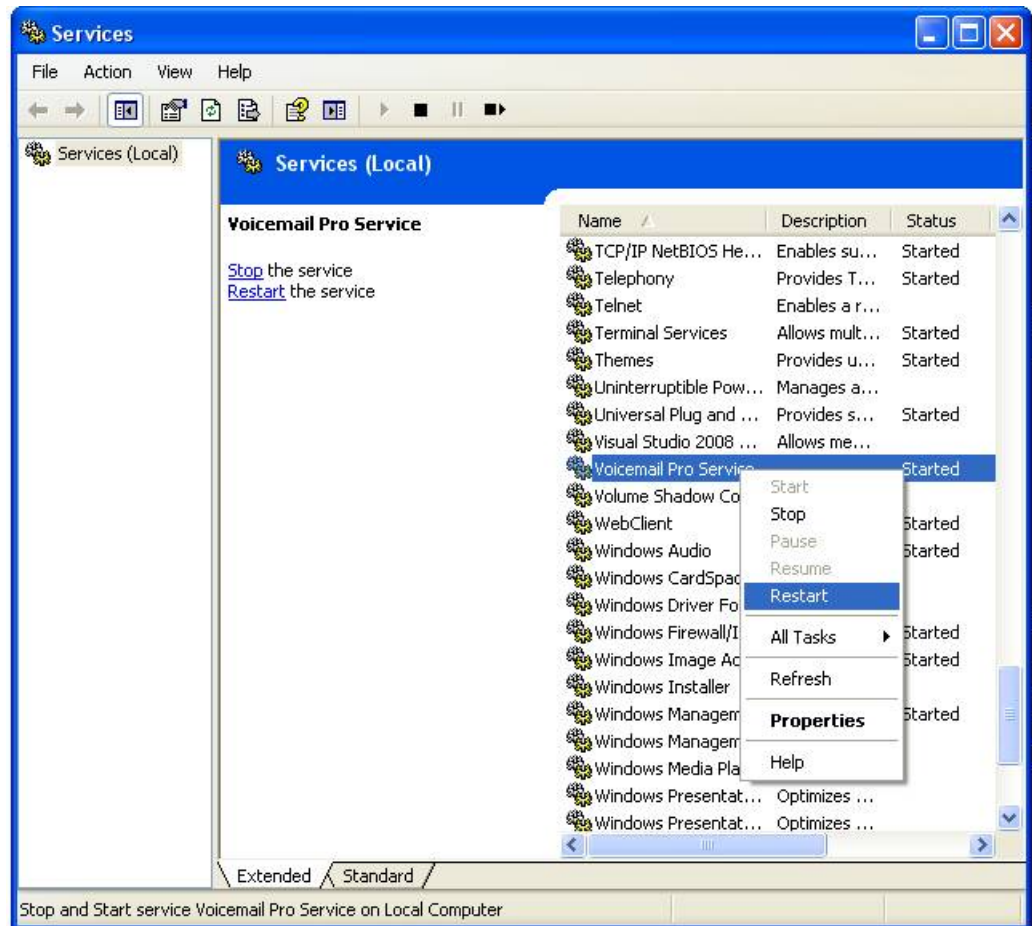
4. Click **Restore** , navigate to the backup folder to be restored, and click **OK**.



The Voicemail Data Restore screen appears.

5. Under "Restore From," select the VM Pro backup generated by the DMM that was copied to the server.

the service has restarted, re-log back into the VM Pro Server with the VM Pro Client and attempt the restore again.

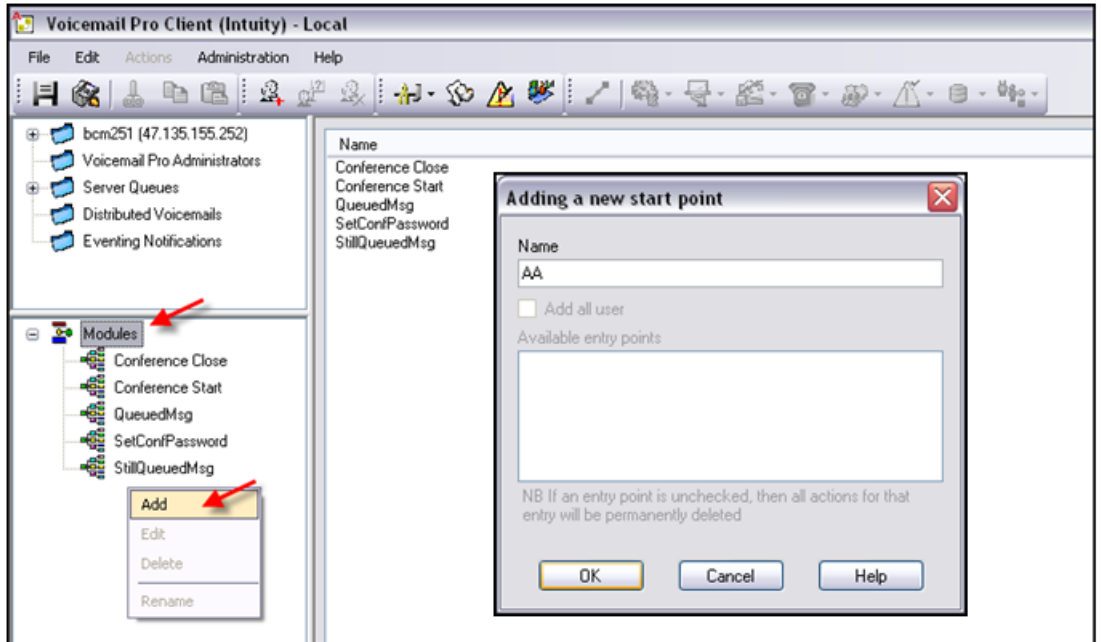


Creating Auto Attendant in Voicemail Pro

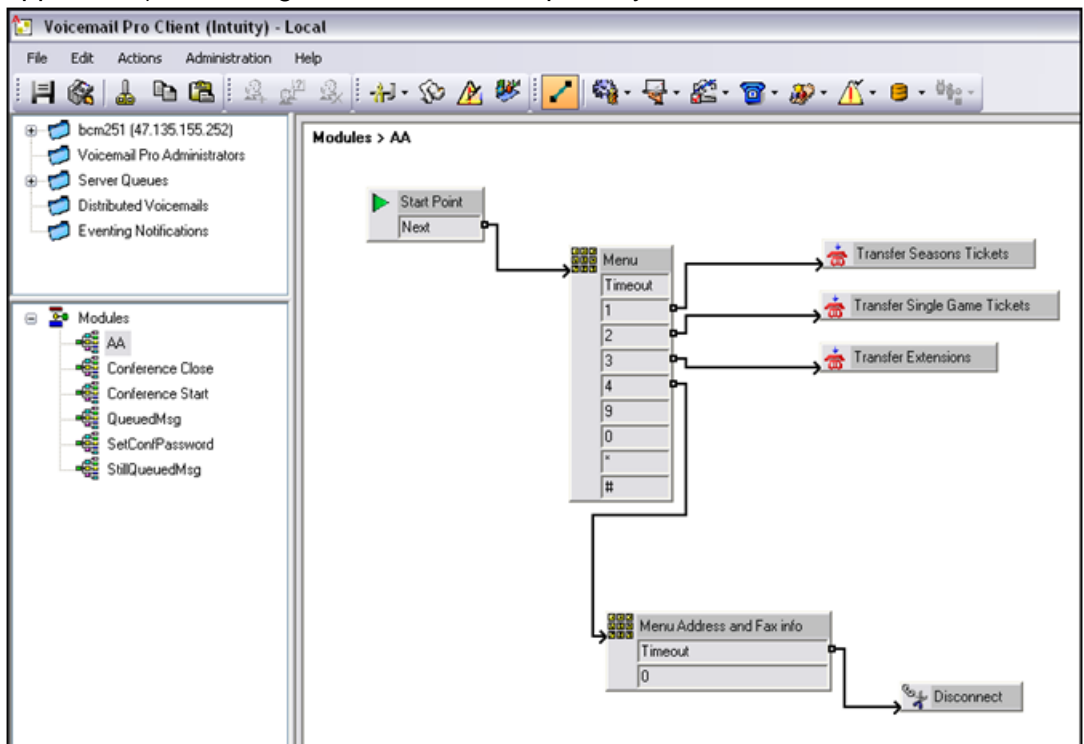
Once you've migrated the telephone data and configured the necessary extensions, you can create an Auto Attendant in the Voicemail Pro client to route incoming calls automatically. As well as creating the Auto Attendant, you need to create an incoming call route to use the Auto Attendant.


Procedure

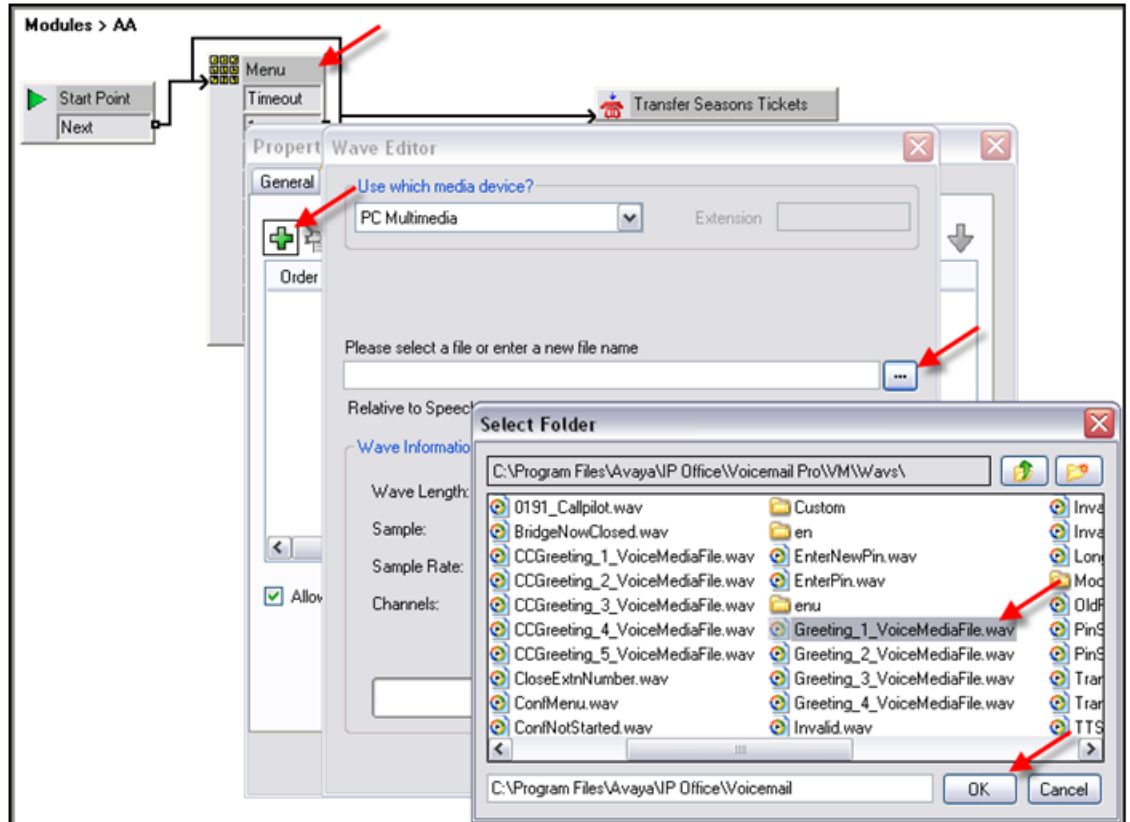
1. Using the Voicemail Pro client, right-click on **Modules** and select **Add**.
2. Enter a name for the module in the **Name** field. In the example below, we have used 'AA.'



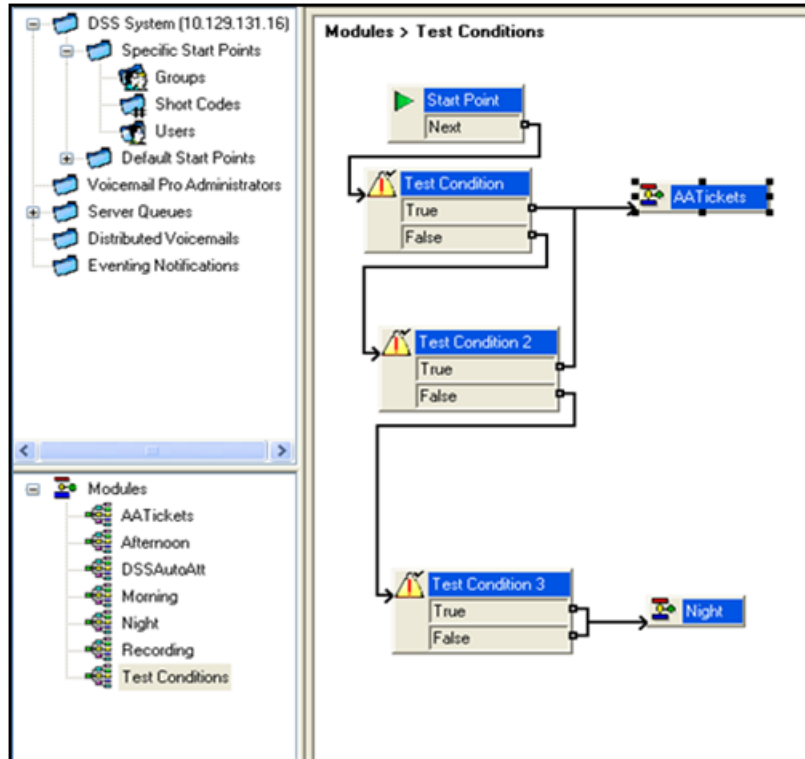
3. Create an Auto Attendant using Voicemail Pro (tutorials are available within the application). The image below is for example only.



4. Select new greetings or use the greetings exported from the BCM by clicking on the  icon on the Properties panel as shown below.



5. Create **Test Conditions** to route callers based on the time of day. An example is shown below.



6. **Important:** Create an incoming call route to use the Auto Attendant created above.
 - a. Using Manager, create an Incoming Call Route.
 - b. In the Destinations tab, ensure the Destination is set to **VM:** followed by the name of the Auto Attendant. In this instance, it should be **VM:Test Condition**.

Incoming Call Route		
Line Group Id	Incoming Number	Destination
0		VM:Test Condition

0	
Standard	Destinations
TimeProfile	Destination
Default Value	VM:Test Condition

Embedded Voicemail

Related topics:

[Transferring Embedded Voicemail recordings](#) on page 98

[Creating Auto Attendant in Embedded Voicemail](#) on page 100

Transferring Embedded Voicemail recordings

The converted VM files are located in the VM Sound Files folder located at `C:/Documents and Settings/username/DMM/user/data/CP_47.135.155.251_to_VMEbedded`. The methods used to send the sound files to IP Office Voicemail system will depend on the IP Office Voicemail Type.

If Embedded Voicemail was selected as the Voicemail Type, DMM will convert the mailbox greetings, spoken names, and voicemail messages to IP Office Embedded voicemail format. The embedded voicemail files will be stored in the directory specified during the migration. The default location is

```
<DMM Home Directory>/user/data
```

and all Voicemail recording files will be located in the subfolder:

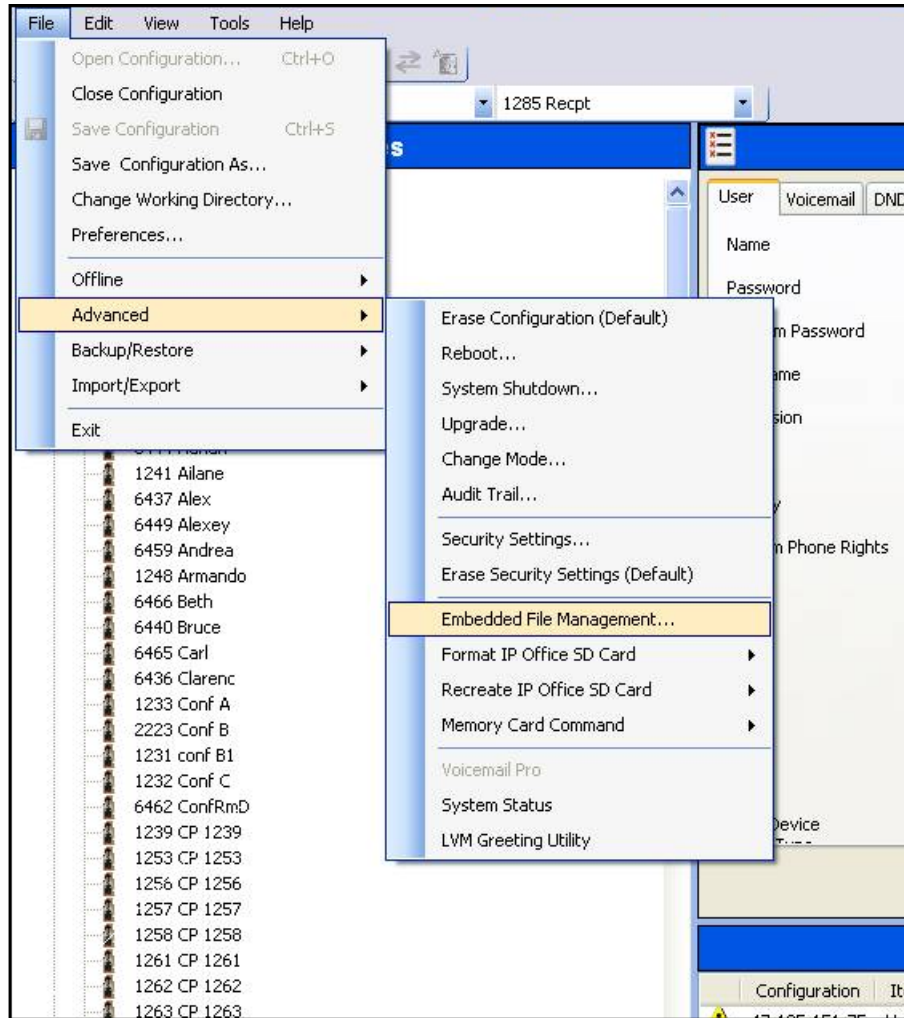
```
CP_<IP address of BCM/CallPilot>_to_VMEbedded
```

About this task

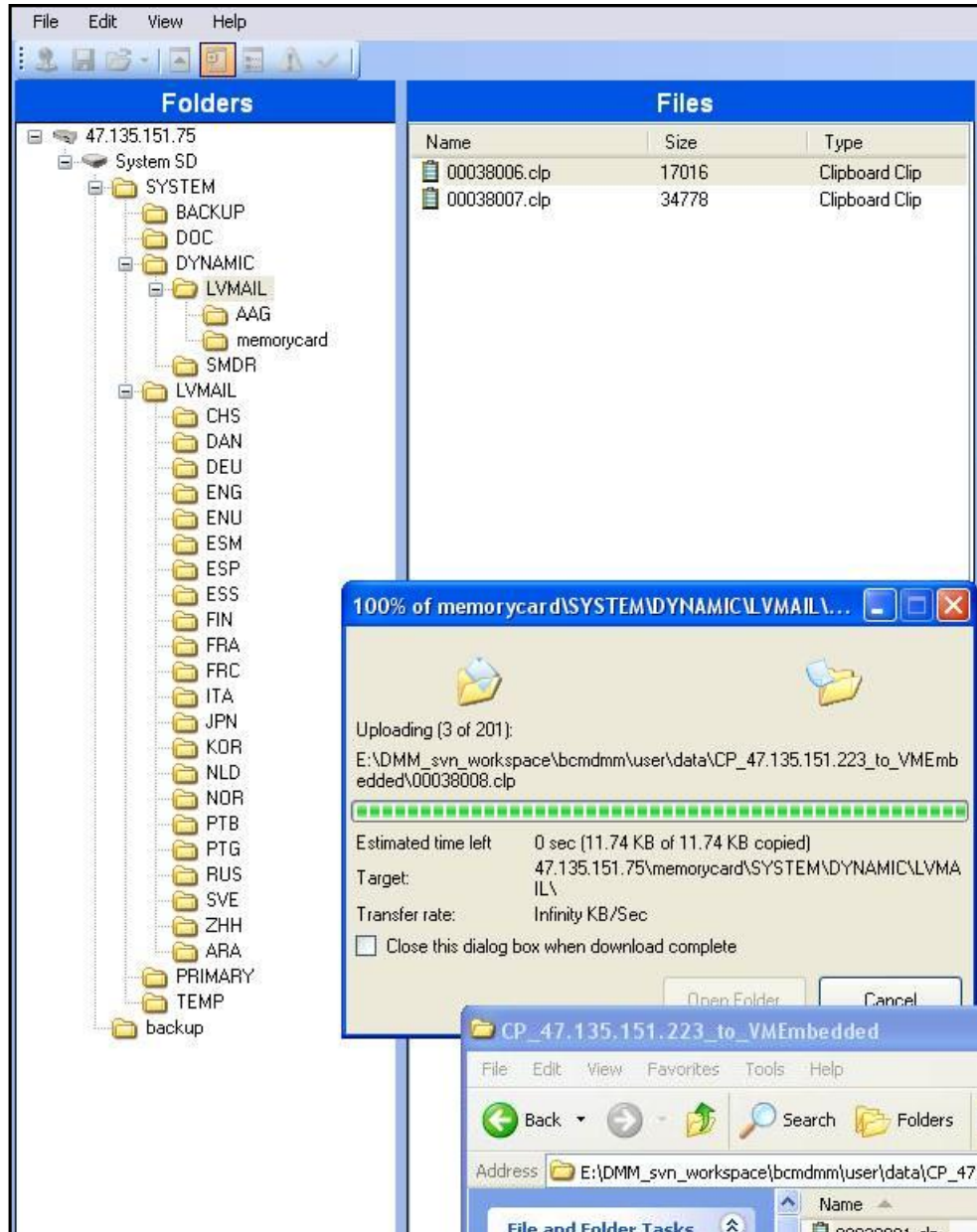
To upload Embedded Voicemail files, you must use Embedded File Management.

Procedure

1. In IP Office Manager, under the **File** menu, select **Advanced > Embedded File Management...**



2. Select the target IP Office, and enter the user name and password of the IP Office to gain access to the embedded files.
3. Using Embedded File Management, copy all of the .clp files in the CP_<IP address of BCM/CallPilot>_to_VMEEmbedded subfolder and paste them into the SYSTEM->DYNAMIC->LVMAIL folder on the flashcard.



Once the files have completed copying, reboot IP Office. IP Office will automatically pick up the uploaded greetings and messages.

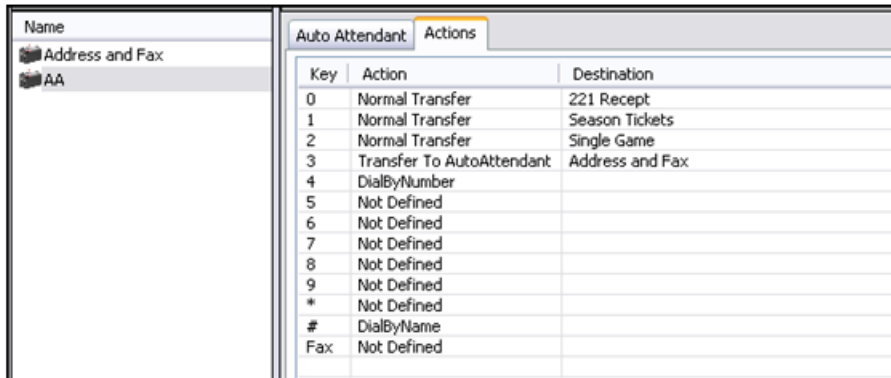
Creating Auto Attendant in Embedded Voicemail

Once you've migrated the telephone data and configured the necessary extensions, you can create an Auto Attendant in the Embedded Voicemail client to route incoming calls automatically. You will need to create two Auto Attendants; 'AA' and 'Address and Fax.' As well

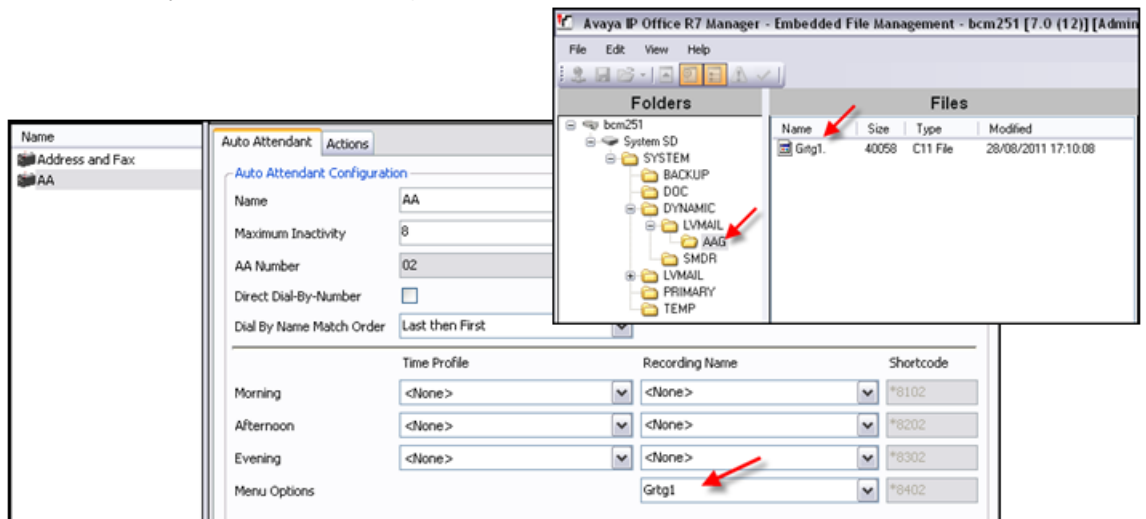
as creating the Auto Attendants, you need to create incoming call routes to use the Auto Attendants.

Procedure

1. Using the Embedded Voicemail client, create Auto Attendants called 'AA' and 'Address and Fax' (tutorials are available within the application).
2. Under the **Actions** tab, modify the 'AA' Auto Attendant to indicate transfer actions and destinations.

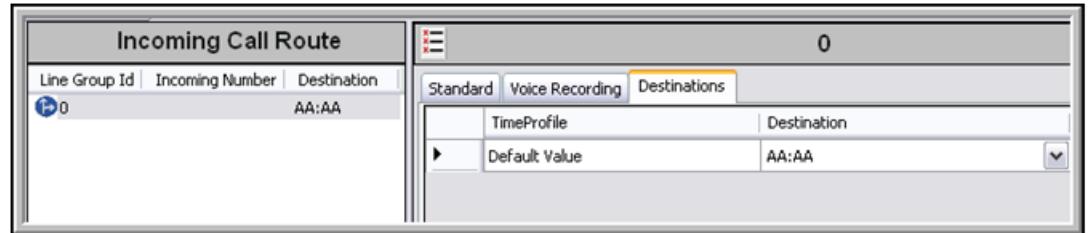


3. Under the **Auto Attendant** tab, select new greetings or use the greetings exported from the BCM.
4. In the **Recording Name** field, ensure that you enter the correct name of the recording (you can browse the IP Office memory card using IP Office Manager in order to verify the correct name).



5. **Important:** Create an incoming call route to use the 'AA' Auto Attendant created above.
 - a. Using Manager, create an Incoming Call Route.

- b. In the Destinations tab, ensure the Destination is set to **AA:** followed by the name of the Auto Attendant. In this instance, it should be **AA:AA**.



Uploading the voicemail configuration to IP Office

With the voicemail system now configured for IP Office, you need to update the control unit. Use the same procedure as in [Uploading the IP Office configuration to the control unit](#) on page 88.

Completing IP Office system programming

Having imported the new configuration file into IP Office you should have configured the IP phone login codes and you should have also configured voicemail recordings and greetings. You can proceed to configure IP Office system particulars.

A list of important configurable parameters follows. You should configure these parameters, or at least check that their current configuration is adequate. For more information on each setting and for information on additional settings, refer to the IP Office Manager manual at <http://support.avaya.com>.

When you are satisfied with the system programming, publish the update to the control unit using the procedure found in [Uploading the IP Office configuration to the control unit](#) on page 88.

Incoming call routes:

Incoming call routes are used to determine the destination of voice and data calls received by the system. On systems where a large number of incoming call routes need to be configured for DID numbers, the MSN/DID Configuration tool can be used (select **Tools | MSN Configuration**).

For a IP Office Server Edition network, these settings can be configured at the network level and are then automatically replicated in the configuration of all systems in the network. They can only be seen and edited at the individual system configuration level if record consolidation is switched off.

Determining which incoming call route is used is based on the call matching a number of possible criteria. In order of highest priority, the criteria, if configured, must be matched by the call in order for the call to use that route are:

1. The **Bearer Capability** indicated, if any, with the call. For example whether the call is a voice, data or video call.
2. The **Incoming Group ID** of the trunk or trunk channel on which the call was received.
3. The **Incoming Number** received with the call.
4. The **Incoming Sub Address** received with the call.
5. The **Incoming CLI** of the caller.

Short codes:

The system uses short codes to match the number dialed to an action. The number dialed or part of the number dialed can be used as parameter for the feature.

* Note:

User dialing of emergency numbers must not be blocked. If short codes are edited, the users ability to dial emergency numbers must be tested and maintained.

For a description of the individual fields, refer to the IP Office Manager manual.

The order of short codes below is the order of priority in which they are used when applied to user dialing:

- *User Short Codes*

These are usable by the specific user only. User short codes are only applied to numbers dialed by that user. For example they are not applied to calls forwarded via the user.

- *User Rights Short Codes*

These are usable by any users associated with the user rights for which they are configured. User Rights short codes are only applied to numbers dialed by that user. For example they are not applied to calls forwarded via the user.

- *System Short Codes*

These are available to all users on the system. They can be overridden by user or user rights short codes.

ARS (Alternate Route Selection):

ARS (Alternate Route Selection) replaces LCR (Least Cost Routing) used by previous releases of IP Office. It also replaces the need to keep outgoing call routing short codes in the system short codes.

When a dialed number matches a short code that specifies that the number should be dialed, there are two methods by which the routing of the outgoing call can be controlled:

- *Routing Calls Directly to a Line*

Every line and channel belongs has an Outgoing Group ID setting. Several lines and channels can have belong to the same Outgoing Group ID. Within short codes that should

be routed via a line within that group, the required Outgoing Group ID is specified in the short code's Line Group ID setting.

- *Routing Calls via ARS*

The short code for a number can specify an ARS form as the destination. The final routing of the call is then controlled by the setting available within that ARS form.

Hunt groups:

A 'hunt group' is a collection of users accessible through a single directory number. Calls to that hunt group can be answered by any available member of the group. The order in which calls are presented can be adjusted by selecting different group types and adjusting the order in which group members are listed.

When you configure the IP Office particulars in DMM, you create hunt groups to replace BCM 'skillssets.' You should verify the hunt group member lists prior to publishing the configuration to the control unit. Refer to [Creating IP Office 'hunt groups' to replace BCM 'skillssets'](#) on page 77.

As you configure the hunt groups, you can maintain settings for the following:

- **Call Presentation:** The order in which the available members of the hunt group are used for call presentation is selectable.
- **Availability:** There are a range of factors which control whether hunt group calls are presented to a user in addition to that user being a member of the hunt group.
- **Queuing:** This optional feature allows calls to be queued when the number of calls to be presented exceeds the number of available hunt group members to which call can be presented.
- **Announcements:** On systems with a voicemail server (Voicemail Pro, Voicemail Lite (pre-Release 5.0) or Embedded Voicemail), announcements can be played to callers waiting to be answered. That includes calls that are ringing and calls that are queued.
- **Overflow:** This optional feature can be used to include additional agents from an overflow group or groups when a call is not answered.
- **Fallback:** A hunt group can be taken out of operation manually or using a time profile. During fallback, calls can be redirected to a fallback group or sent to voicemail or just receive busy tone. Two types of fallback are supported; night service and out of service.
- **Voicemail:** Calls can be redirected to voicemail. The system allows selection of whether hunt group calls remain in the hunt group mailbox or are copied (broadcast) to the individual mailboxes of the hunt group members. When messages are stored in the hunt group's own mailbox, selection of who receives message waiting indication is possible.

Customer Call Reporter:

Customer Call Reporter (CCR) is an application that collects and displays information on the current status of hunt groups and users that have been configured for Customer Call Reporter operation. IP Office Customer Call Reporter is not currently supported by IP Office Server Edition.

The following configuration settings are available:

- **Busy Not Available Reason Codes:** Agents who indicate that they are in a 'busy not available' state can be prompt to also indicate the reason for being in that state. This menu allows descriptions for the possible reasons to be entered. The descriptions are then used in menus from which the Agent's make selections when setting themselves into busy not available state and in reports on Agent status.

- **Code/Reason:** Rows 1 to 8 can be used to contain descriptions of up to 31 characters each. Rows 0 and 9 are fixed as Unsupported and Busy Not Available.
- For Customer Call Reporter 6.1, the reason codes are used to categorize calls in the Agent Time Card report. Reason 1 is used to define lunch. All other reason codes are reported as breaks.

- **Default After Call Work Time (seconds):** *Default = 10. Range = 10 to 999 seconds.*

If an agent goes into the After Call Work (ACW) state, either automatically or manually, the value in this field determines the duration of that state after which it is automatically cleared. This duration can be overridden by the Agent's own setting (User | Telephony | Supervisor Settings | After Call Work Time). During ACW state, hunt group calls are not presented to the user.

Phone and trunk rewiring

In the event that you have an excess of users for the amount of available channels, you will be required to rewire some of the extensions per the IP Office configuration. You might also have to move physical wires or configure IP phones for multiple users.

Each IP Office trunk card provides a fixed number of trunk ports. For digital trunks each trunk provides a fixed number of digital channels. In cases where the number of trunks connected to the IP Office is lower or the number of channels provided is lower, those unused trunks and channel must be disabled.

Caution:

Failure to do this will cause problems with outgoing calls. For example, on a system with an ATM4 trunk card fitted but only two analog trunks actually connected, failure to disable the other two trunks within the IP Office configuration will cause 50% of outgoing call attempts to fail.

Procedure

1. In IP Office Manager, in the IP Office configuration section, select **Line**.
2. For each line, configure those lines or channels that are not connected or being used as 'Out Of Service'. The location of the relevant setting varies for each trunk type:

- **Analog Trunks**

Set the **Trunk Type** to 'Out of Service'.

Channel	0	Ring Persistence	Units (ms)	400	Disconnect Clear	Units (ms)	500
Trunk Type	Out Of Service	Ring Off Maximum	Units (ms)	5000	Pulse Width	On (Units - ms)	40
Signalling Type	DTMF Dialing	Flash Pulse Width	Units (ms)	500	Pulse Width	Off (Units - ms)	60
Direction	Bothway	Secondary Dial Tone					
Bearer	Any						

- **BRI, E1, PRI, S0, and QSIG Trunks**

Set the channels quantities to match the actual subscribed channels.

Line Number	05	Line SubType	ETSI
Telephone Number		TEI	0
Prefix		Number of Channels	20
National Prefix	0	Outgoing Channels	20
International Prefix	00	Voice Channels	20
		Data Channels	20
CRC Checking	<input checked="" type="checkbox"/>		
Clock Quality	Network	Line Signalling	CPE

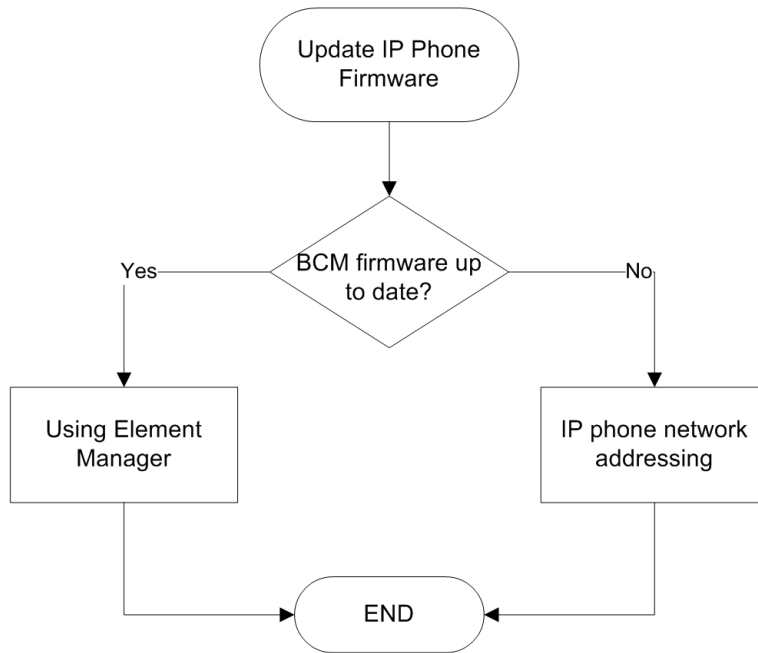
- **T1, T1 PRI, and E1R2 Trunks**

Select the **Channels** tab. Select those channels that are not used and click **Edit**.

Channel	Groups	Line Appearance	Direction	Bearer	Type
1	0 0	705	Bothway	Any	Ground Start
2	0 0	706	Bothway	Any	Ground Start
3	0 0	707	Bothway	Any	Ground Start
4	0 0	708	Bothway	Any	Ground Start
5	0 0	709	Bothway	Any	Ground Start
6	0 0	710	Bothway	Any	Ground Start
7	0 0	711	Bothway	Any	Ground Start
8	0 0	712	Bothway	Any	Ground Start
9	0 0	713	Bothway	Any	Out Of Service
10	0 0	714	Bothway	Any	Out Of Service
11	0 0	715	Bothway	Any	Out Of Service
12	0 0	716	Bothway	Any	Out Of Service
13	0 0	717	Bothway	Any	Out Of Service
14	0 0	718	Bothway	Any	Out Of Service
15	0 0	719	Bothway	Any	Out Of Service
16	0 0	720	Bothway	Any	Out Of Service
17	0 0	721	Bothway	Any	Out Of Service
18	0 0	722	Bothway	Any	Out Of Service
19	0 0	723	Bothway	Any	Out Of Service
20	0 0	724	Bothway	Any	Out Of Service
21	0 0	725	Bothway	Any	Out Of Service
22	0 0	726	Bothway	Any	Out Of Service
23	0 0	727	Bothway	Any	Out Of Service
24	0 0	728	Bothway	Any	Out Of Service

- For T1 set the **Type** to 'Out of Service'.
- For T1 PRI set the **Admin** field to 'Out of Service'.
- For E1R2 trunks set the **Line Signalling Type** to 'Out of Service'.

Updating IP phone firmware



IP phones connected to a BCM use UNISTim firmware. This firmware is not supported on IP Office and, as a result, IP phones need to connect to a Provisioning File Server to obtain the new SIP firmware. The required SIP firmware is supplied as part of the IP Office Administration Software and is copied onto the PC when you install IP Office Manager. There are several methods by which the firmware can be copied onto the IP Office memory card. The method will depend on the IP Office Control Unit. For IP Office operation, only the **.bin** and **.Ing** files need to be present on the memory card. Other files (.cfg and .txt) required by the phones are automatically generated by the IP Office system in response to requests from the phones.

Note that it is also possible to upgrade the IP phone firmware using a BCM-IPO migration patch, which considerably shortens and simplifies the migration procedure. See below.

For IP Office operation, installation is only supported using the IP Office control unit's memory card as the file server for the phones.

For IP500v2 control units, the System SD card is used. There are different ways to load the required firmware files onto the SD card. If the IP500v2 was upgraded to IP Office Release 6.1 or higher using the Recreate SD Card option in IP Office Manager, the firmware is copied onto the card as part of that process. If the IP500v2 was upgraded to IP Office Release 6.1 or higher 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.

For IP500 control units, the optional Compact Flash card slot is used. IP500 Control Units use an optional compact flash memory card to store files. The compact flash card may only be present if the system is using Embedded Voicemail. The files need to be manually copied onto the memory card. This can be done in a number of ways:

- the files can be copied remotely onto the card in a running system using IP Office Manager's embedded file management

or

- the card can be shutdown and removed from the system

The files can then be copied onto the card using a PC with a suitable memory card slot.

Only 11xx/12xx series phone software supplied as part of an IP Office core software release should be used.

IP Office 6.1 supports 11xx/12xx series SIP firmware Release 4.0.

IP Office 7.0 supports 11xx/12xx series SIP firmware Release 4.1.

The required SIP firmware is supplied as part of the IP Office Administration Software and is copied onto the PC when you install IP Office Manager. There are several methods by which the firmware can be copied onto the IP Office memory card. The method will depend on the IP Office Control Unit. For IP Office operation, only the 11xx/12xx series phone .bin 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 IP Office system in response to requests from the phones.

Before you update your phone firmware, ensure the following configuration is set:

1. In IP Office Manager, under the **System** tab, set the “Phone File Server Type” to “Memory Card.”
2. Ensure that the checkbox next to “Avaya HTTP Clients Only” remains **unchecked** as in the image below.

The screenshot shows the IP Office Manager configuration interface for a system named 'bcm251'. The 'System' tab is active. The 'Phone File Server Type' is set to 'Memory Card' (indicated by a red arrow), and the 'Avaya HTTP Clients Only' checkbox is unchecked (indicated by a red arrow). Other fields include TFTP Server IP Address, HTTP Server IP Address, and Manager PC IP Address, all set to 0.0.0.0.

Supported IP Phones:

- 1120E / FW 0624C7M or higher
- 1140E / FW 0625C7M or higher
- 1220 / FW 062AC7M or higher
- 1230 / FW 062AC7M or higher

Acquiring the supported IP phone firmware:

The xxxxC7M firmware is available in the following BCM patch content:

BCM	Patch content
BCM 1000/200/400 4.0 (BCM.R400.332-UTPS)	BCM.R400.029-SU.System
BCM50 R3 (BCM050.R300.UTPS-249)	BCM050.R300.258-SU.System
BCM50 R5 (BCM050.R500.UTPS-54)	BCM050.R500.008-SU.System
BCM50 R6	Included in R6 GA release

Related topics:

[Using Element Manager](#) on page 110

[IP phone network addressing](#) on page 112

Using Element Manager

You will use Element Manager to migrate the BCM users to an up-and-running, fully functioning IP Office. Once the BCM has the latest patch installed, Element Manager will enable the **Migrate Now** button that allows the IP phones on the system to connect to the IP Office and use its firmware. In other words, if you haven't installed the latest firmware, you won't be able to converge the BCM users into IP Office with one click (you will have to migrate each phone individually).

Similarly, the latest BCM firmware also enables an interface in Element Manager for an administrator to enter the TFTP IP address (the IP address of the IP Office control unit).

Application of the patch does not negatively impact the normal operation of the BCM. After installing the patch, the BCM will continue to run normally and migration can be done at any time in the future. Operation of any digital phones in the system are not impacted in any way.

If any issues are detected, Element Manager displays a message with clear instructions to follow.

For more information, refer to [Updating IP phone firmware](#) on page 108.

This migration patch option should be used just prior to migrating the IP phones to IP Office. If you do not have access to the BCM migration patch, and you need to configure IP phone network addressing, refer to [IP phone network addressing](#) on page 112. The BCM migration patch solution is not available via NCM or SBA.

Ensure that the IP Office is on the network and also ensure that the IP phone users have already been created. All supported IP phones must be active and in an idle state.

The following phones and network addressing configurations are supported:

- 1120, 1140 IP phones
- 1220, 1230 IP phones
- IP phones with DHCP enabled, and IP Office serving as the DHCP server
- IP phones with DHCP enabled, and a 3rd party server as the DHCP server
- IP phones with static IP addressing

When you are ready to migrate the IP phones to the IP Office, log into Element Manager and follow the procedure below.

Procedure

1. Access the new tab in the **Internal IP Sets** section labeled **Migrate Sets to IPO**.
2. In the **TFTP Server** field enter the IP address of the IP Office. The address specified must be reachable by the IP phones.
3. When you are ready to convert the IP phones from the BCM to IP Office, take the following actions:
 - a. Turn **OFF** the DHCP server on the BCM.
 - b. Turn **ON** the DHCP server on IP Office.
 - c. Ensure that the **TFTP Server** address is that of the IP Office.
4. Press **Migrate Now**.
The IP phones will reboot and then attempt to connect to the IP Office using the TFTP address. The cfg, setting, and firmware files will be downloaded to the IP phones.

* Note:

In cases where the IP address of the BCM and the IP Office are the same, after you press **Migrate Now**, a message will display that reads “Reset sent to all IP phones. Immediately disconnect the BCM and connect the IP Office.” Without delay, disconnect the BCM and connect the installed and fully functioning IP Office to the network. If some phones fail to migrate, reboot these phones or power Off/On the PoE to which the phones are connected.

If the **Migrate Now** button is not available, you have not installed the latest BCM firmware.

5. Once complete, the IP phones will once again reboot and attempt to connect to the IP Office.
The migration is complete. Proceed to [Button Programming](#) on page 114.

IP phone network addressing

There are three options for network addressing for IP phones described in detail on the following pages. You should only have to perform network addressing on the phones if you haven't updated the BCM firmware, or if you only want to migrate individual or specific phones and not all of them at once. The type of addressing depends on the following:

- **Static Addressing:** Each IP phone has been individually programmed with network specific addressing.
- **DHCP from a 3rd party DHCP server:** The 3rd party DHCP server is providing network addressing to the IP phones.
- **DHCP from the BCM DHCP server:** The BCM is providing network addressing to the IP phones.

Before you begin

Prior to configuring your IP phone network addressing, be sure that you are using a fully-functioning BCM patched with the latest software update. Also, the new IP Office should be on the network and the phone users should already be created.

Static Addressing:

If this is the chosen method, currently the only option is to manually program each phone so that the Provisioning Server IP address is that of the IP Office.



DHCP from a 3rd party DHCP server:

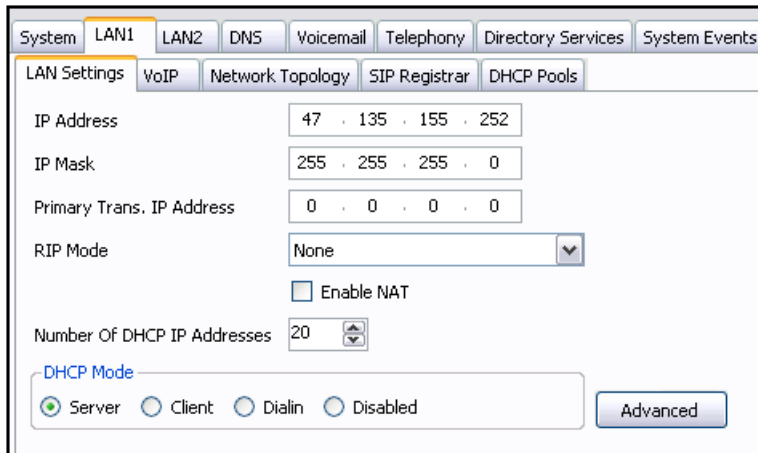
In addition to assigning IP address information to the IP phone, the DHCP server will require option 66 (Provisioning Server) to be configured as the IP address of the IP Office.

You must also ensure that the Provisioning Server configuration has been configured to **Auto**.

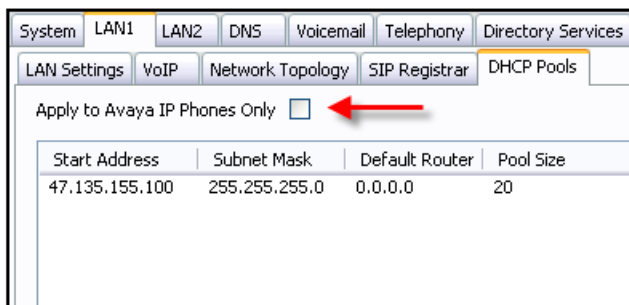


DHCP from the BCM DHCP server:

You will need to program the IP Office LAN settings in IP Office Manager to take over DHCP responsibilities, as illustrated below:



In the **DHCP Pools** section of the **LAN1** tab, ensure that “Apply to Avaya IP Phones Only” is *not* selected. The IP phones will not be recognized as Avaya IP Phones until the SIP firmware has been applied. See below:



Finally, in the **VoIP** section of the **LAN1** tab, ensure that the **SIP Registrar Enable** setting is checked.

Button programming

You can configure button programming once you've configured the IP phone network addressing. The type of programming you create is determined by the phone type that is in use. You should utilize the previously extracted BCM programming record to program the IP Office user's buttons so that button programming is a match.

The tables below identify the default button programming according to each supported phone type.

7000:

Phone Button No.	User Button Programming No.	Action
N/A	1	Appearance
N/A	2	Appearance
N/A	3	Appearance
1 (bottom)	4	Last Number Redial
2	5	Call Forwarding All
3	6	Transfer
4 (top)	7	Conference

7100:

Phone Button No.	User Button Programming No.	Action
N/A	1	Appearance
N/A	2	Appearance
N/A	3	Appearance
1	4	Last Number Redial

7208 (Button 0 is Handsfree):

Phone Button No.	User Button Programming No.	Action
1 (bottom)	N/A	Handsfree
2	1	Appearance
3	2	Appearance

Phone Button No.	User Button Programming No.	Action
4	3	Conference
5	4	Group Paging
6	5	Last Number Redial
7	6	Transfer
8 (top)	7	Call Pickup Group

7316/7310 (Button 0 is Handsfree):

Phone Button No.	User Button Programming No.	Action
1 (bottom)	N/A	Appearance
2	1	Appearance
3	2	Last Number Redial
4	3	Conference
5	4	Group Paging
6	5	Call Pickup Group
7	6	Call Forwarding All
8	7	Transfer
9	8	Do Not Disturb On
10 (top)	9	N/A

7324 (Button 0 is Handsfree):

Phone Button No.	User Button Programming No.	Action
1 (bottom)	N/A	Appearance
2	1	Appearance
3	2	Automatic Intercom
4	3	Call Pickup Group
5	4	Do Not Disturb On
6	5	Transfer
7	6	Conference
8	7	N/A
9	8	Last Number Redial

Phone Button No.	User Button Programming No.	Action
10	9	Speed Dial
11 (top)	10	Call Forwarding All

7316E:

Phone Button No.	User Button Programming No.	Action
1	1	Appearance
2	2	Appearance
3	3	Automatic Intercom
4	4	Last Number Redial
5	5	Conference
6	6	Do Not Disturb On
7	7	Ringback When Free
8	8	N/A
9	9	Voicemail Collect
10	10	N/A
11	11	Transfer
12	12	Group Paging
13	13	Call Pickup Group
14	14	Call Forwarding All
15	15	Call Screening
16	16	Call Park
17	17	Self-Administer
18	18	Time of Day
21	19	Flash Hook
24	20	Speed Dial

1120/40 and 1220/30:

Phone Button No.	User Button Programming No.	Action
1	1	Appearance
2	1	Appearance

Phone Button No.	User Button Programming No.	Action
3	2	Appearance
4	3	N/A

*** Note:**

When programming user buttons, bear in mind that the BCM extracted data page lists button programming differently than IP Office Manager. For example:

- BCM counts top to bottom
- IP Office counts bottom to top and does not include the 'Handsfree' button required by some phone types

The table below illustrates a typical button programming record for a 7208 digital deskphone:

Button No.	Function	Value
01	Feature	Feature: Transfer (F70)
02	Feature	Feature: Call Park (F74)
03	Feature	Feature: Page — Zone (F61)
04	Feature	Feature: Voice mail login (F981)
05	Feature	Feature: Voice Call (F66)
06	Intercom	N/A
07	Intercom	N/A
08	Handsfree	N/A

Confirming user location and button programming

Now that IP Office has been configured and the phones have been migrated to the IP Office system environment, it is imperative that you test the directory configuration. You absolutely must confirm the locations of the users based on the extension. Meanwhile, you can verify that button programming functions as expected. Note that IP phones will require you to log in using the default login code you created during IP Office configuration (the default is 0000) in order to receive the call.

To confirm user location, call the extension configured for each user and determine if the phone receives the call. Even if the extension is correct, you should test *all* other extensions. You should also confirm button programming before making the phone available to the user.

Testing and optimizing the IP Office configuration

Although user location has been verified, voicemail appears to be correct, and button programming is accurate, it is recommended that you further test the phones and optimize the IP Office configuration. Bear in mind that any changes made must be updated to the control unit.

On each phone, attempt to make internal and external calls (naturally or via button programming) and determine any errors. Attempt to access voicemail and determine if the connection works and if the greetings have migrated properly. Check to see that the display reads as expected.

You should also determine whether or not hunt groups have been applied correctly. Likewise with the service groups, incoming call routes, ARS, and short codes.

In order to optimize the IP Office configuration, you should remove the BCM-related applications, such as InTouch Unified Messaging. These are no longer unnecessary and may conflict with IP Office applications.

For more information on optimizing the IP Office configuration, refer to the IP Office Installation Guide and the IP Office Manager manual available at <http://support.avaya.com>.

Chapter 3: Appendices

The appendices provide feature comparisons between the Avaya Business Communications Manager (BCM), Norstar, and the Avaya IP Office. The following pages outline which BCM and Norstar phones, features, and advanced functionality will be supported and is available on IP Office. Differences in configuration, functionality, language support, and usability are also indicated where applicable.

The appendix does not replace the need to understand the IP Office product, its architecture, commercial structure, or functionality. The main intent of the appendix is to outline the key differences that might be of interest to customers migrating from a BCM to an Avaya IP Office.

To the best of our knowledge, the information below is based on the most current information available.

Appendix 1: Norstar and BCM user feature codes

The following table lists the features and feature codes supported by IP Office on BST and 1100/1200 Series phones. Refer to [Feature codes](#) on page 34 for more information.

Symbol	Description
✓	Feature is available. General operation is similar, although there may be minor differences.
✗	Feature not available or supported. Alternatives will be listed if available.

Feature Code	Feature(s)	Support for BST users on IP Office	Support for 1100 or 1200 users on IP Office	IP Office Feature Equivalent / Alternative
F-HOLD	Exclusive Hold	✗	✗	
F*0	Key Inquiry	✓	✓	
F*1	Program External Autodialer	✓	✓	Abbreviated Dial Program
F*2	Program Internal Autodialer	✓	✓	Abbreviated Dial Program
F*3	Program Feature Key	✓	✓	Self-Administration

Feature Code	Feature(s)	Support for BST users on IP Office	Support for 1100 or 1200 users on IP Office	IP Office Feature Equivalent / Alternative
F*4	Program Personal (Set) Speed Dialer	✓	✗	Personal directory of IP Office
F*501-F*504	Select Language	✗	✗	Language is one aspect of user locale.
F*510	Time Zone Offset for IP Phones	✗	✗	
F*520	Park on First Free SWCA	✗	✗	
F*521-F*536	System Wide Call Appearances	✗	✗	Call Park appearance buttons
F*537	Retrieve Oldest SWCA Call	✗	✗	
F*538	Retrieve Newest SWCA Call	✗	✗	
F*550	Silent Monitor	✗	✗	Call Listen
F*6	Select Ring Type	✓	✗	
F*7	Select Display Contrast	✓	✗	
F*80	Select Ring Volume	✓	✗	
F*81	Move Line	✗	✗	
F*82	Select Dialing Option	✓	✗	Enbloc dialing
F*84	Auto Call Logging Mode	✗	✗	
F*85	Set Call Log Password	✗	✗	
F*89	Programmed Release Reach-through Code	✗	✗	

Feature Code	Feature(s)	Support for BST users on IP Office	Support for 1100 or 1200 users on IP Office	IP Office Feature Equivalent / Alternative
F*9	Run/Stop Reach-through Code	✗	✗	
F*9xx	IP Phone External Feature Request	✗	✗	
F0	Invoke Speed Dial	✓	✗	System and Personal directories on some IP Office phones. Entry selection is performed via Dial by Name.
F1	Send Message	✗	✗	
F#1	Cancel Sent Message	✗	✗	
F2	Ring Again	✓	✗	Ring back when free/automatic callback
F#2	Cancel Ring Again	✓	✗	Cancel ringback when free
F3	Conference	✓	✓	Conference
F#3	Split Conference	✗	✗	None. This feature relates to BCM 3-party conference on specific BCM phone models.
F4	Call Forward All Calls	✓	✓	Forward Unconditional
F#4	Cancel Call Forward All Calls	✓	✓	Cancel Call Forward
F5	Last Number Redial	✓	✓	Last number redial
F60	Page General	✓	✓	Page Group

Feature Code	Feature(s)	Support for BST users on IP Office	Support for 1100 or 1200 users on IP Office	IP Office Feature Equivalent / Alternative
F61	Page Internal	✗	✗	Page Group
F62	Page External	✗	✗	
F63	Page Internal and External	✗	✗	
F64	Line Pool Selection	✗	✗	
F65	Reply Message Waiting	✓	✗	Somewhat similar to BCM interface. In IP Office, connects to audio Voice Mail (no visual voice).
F#65	Cancel Received Message	✗	✗	
F66	Voice Call	✓	✓	Dial intercom
F67	Save Number/ Saved Number Redial	✗	✗	
F68	Restriction Override	✗	✗	Authorization codes
F69	Priority Call	✓	✗	Priority call or Call intrude
F70	Transfer	✓	✗	Transfer
F#70	Cancel Transfer	✗	✗	
F71	Link Reach-through Code	✗	✗	Flash hook button
F72	Timed Release Reach-through Code	✗	✗	
F73	Auto Hold On	✗	✗	
F#73	Auto Hold Off	✗	✗	
F74	Call Park	✓	✓	Call Park

Feature Code	Feature(s)	Support for BST users on IP Office	Support for 1100 or 1200 users on IP Office	IP Office Feature Equivalent / Alternative
F#74	Unpark Call (does not exist BCM)	✓	✓	Unpark Call
F75	Group Call Pickup	✓	✓	Group Call Pickup
F76	Directed Call Pickup	✓	✓	Call Pickup Extn
F77	Call Duration Timer	✓	✗	Timer
F78	Pause Reach-through Code	✗	✗	Pause button
F79	Exclusive Hold	✗	✗	
F800	Trunk Answer From Any Station	✗	✗	
F801	Off-hook Call Queuing	✗	✗	Ringling Line Preference
F802	Group Listen	✓	✗	Group Listen
F#802	Cancel Group Listen	✓	✗	Cancel Group Listen
F803	Show Time and Date	✓	✗	Time of Day
F804	Dial Tone Detect	✗	✗	
F805	Station Set Test	✗	✗	
F806	Static Time/Date	✗	✗	
F#806	Cancel Static Time/Date	✗	✗	
F807	Ringling (Signal) Call	✗	✗	
F808	Long Tones	✗	✗	
F809	ATA Tones On	✗	✗	Call Waiting Tones
F#809	ATA Tones Off	✗	✗	Call Waiting Tones
F811	Call Inquiry	✗	✗	

Feature Code	Feature(s)	Support for BST users on IP Office	Support for 1100 or 1200 users on IP Office	IP Office Feature Equivalent / Alternative
F812	Call Log	✓	✗	Centralized Call Log
F813	Log It	✗	✗	
F814	Call Offer Reject	✗	✗	
F815	Call Log Autobumping On	✗	✗	
F#815	Call Log Autobumping Off	✗	✗	
F816	Callback and Auto Redial	✗	✗	
F818	Call Charge Information	✗	✗	Advice of Charge
F819	ONN Blocking	✗	✗	
F#819	Cancel ONN Blocking	✗	✗	
F82	Camp On/Call Waiting	✗	✗	
F83	Privacy Control Toggle	✗	✗	Private Calls
F84	Selective Line Redirection	✗	✗	Short code as destination on an incoming call route
F#84	Cancel Selective Line Redirection	✗	✗	Remove destination short code on incoming route
F85	Do Not Disturb	✓	✓	Do not disturb
F#85	Cancel Do Not Disturb	✓	✓	Cancel do not disturb
F86	Background Music	✗	✗	

Feature Code	Feature(s)	Support for BST users on IP Office	Support for 1100 or 1200 users on IP Office	IP Office Feature Equivalent / Alternative
F#86	Cancel Background Music	×	×	
F870	Display Service Mode	×	×	
F871	Ringing Service	×	×	Time Profiles
F#871	Cancel Ringing Service Manual Override	×	×	Time Profiles
F872	Restriction Service	×	×	Time Profiles
F#872	Cancel Restriction Service Manual Override	×	×	Time Profiles
F873	Routing Service	×	×	Time Profiles
F#873	Cancel Routing Service Manual Override	×	×	Time Profiles
F875	Hospitality Room Alarm	×	×	
F#875	Cancel Hospitality Room Alarm	×	×	
F876	Hospitality Room Condition	×	×	
F877	Hospitality Desk Alarm	×	×	
F878	Hospitality Desk Room Condition	×	×	
F879	Hospitality Desk Room Occupied	×	×	
F88	Voice Call Deny	×	×	
F#88	Cancel Voice Call Deny	×	×	

Feature Code	Feature(s)	Support for BST users on IP Office	Support for 1100 or 1200 users on IP Office	IP Office Feature Equivalent / Alternative
F897	Malicious Call ID	✗	✗	Malicious Call Tracing
F930	MeetMe Conference	✗	✗	This feature allows a user to join a specific conference.
F960	Find Me Follow Me Handoff	✗	✗	Mobile Twinned Call Pickup
F980	Express Messaging	✗	✗	
F981	Voice Mail Login	✓	✓	
F982	Voice Mail Operator Settings	✗	✗	
F983	Voicemail Programming	✗	✗	
F984	Call Forward to Voice Mail	✗	✗	
F985	Display Voice Mail DN or Skillset	✗	✗	
F986	Transfer to mailbox	✗	✗	
F987	Voice Mail Interrupt	✗	✗	
F988	Voice Mail Dial by name or directory	✗	✗	
F989	Record call	✗	✗	Call Record
F9*9	Stamp Log	✓	✓	
F**NNN	Administration and engineering features	✗	✗	

Appendix 2: Voicemail

Symbol	Description
✓	Feature is available. General operation is similar, although there might be minor differences.
✗	Feature not available or supported. Alternatives will be listed if available.
↔	Feature or functionality is available in general, but functionality, operation, or configuration might be completely different.

Feature	BCM50 Release 6.0	BCM450 BCM200/400 Release 6.0	IP Office Preferred Edition VoiceMail Pro	IP Office Essential Edition Embedded Voicemail
Voicemail				
Number of Mailboxes supported	1000	1000	limited by the size of the IP Office configuration & should not exceed a total of 1000 mailboxes	limited by the size of the Memory Card & should not exceed a total of 1000 mailboxes
Maximum No. of Concurrent Calls (ports)	10	63	Up to 40 dependent on license	Up to 6 simultaneous calls IP Office 500V2
Recording Time	120 hours	400 hours	PC dependent (Requires 1MB per minute)	Up to 25 hours
Runs as a service	✓	✓	✓	✗
Multi-lingual support	✓	✓	✓	✓
Voicemail for Individual users	✓	✓	✓	✓
Voicemail for Virtual users	✓	✓	✓	✓
Voicemail for Hunt Groups	✓	✓	✓	✓

Feature	BCM50 Release 6.0	BCM450 BCM200/400 Release 6.0	IP Office Preferred Edition VoiceMail Pro	IP Office Essential Edition Embedded Voicemail
Group Broadcast	✓	✓	✓	✗
Integration with Microsoft Exchange Server 2007	✗	✗	✓	✗
Capable to interact with Blackberry solution	✓	✓	✓ ²	✗
Resilience and Backup	✗	✗	✓	✗
Small Community Network Operation	✗	✗	✓	✗
Centralized Voicemail Services	✓	✓	✓	✗
Distributed Voicemail Servers in an SCN	✗	✗	✓	✗
Voicemail Ringback	✗	✗	Internal and external	Internal only
Voicemail Help TUI	✓	✓	✓	✗
Message Waiting Indication	✓ (up to 5)	✓ (up to 5)	✓	✓
Visual Voice (interactive menu on phone display)	✓	✓	✓	✓

² Requires UMS (enabled through the Power User, Office Worker and the Teleworker licenses) and MS Exchange Server 2007 with a mobility solution (for example a Blackberry) - not provided by Avaya.

Feature	BCM50 Release 6.0	BCM450 BCM200/400 Release 6.0	IP Office Preferred Edition VoiceMail Pro	IP Office Essential Edition Embedded Voicemail
Integration with Phone Manager Pro	✗	✗	✓	✗
Personalized Greeting	✓	✓	✓	✓
Extended personal Greetings	✗	✗	✓ ³	✗
Continuous Loop Greeting	✗	✗	✓	✗
Forward to Email	✗	✗	✓	✓
Copy to Email	✗	✗	✓	✓
Listen To Email (Text To Speech)	✗	✗	✓ ⁴	✗
Send Email notification	✗	✗	✓	✓
Save Message	✓	✓	✓	✓
Delete Message	✓	✓	✓	✓
Forward Message to another Mailbox	✓	✓	✓	✓
Forward to Multiple Mailboxes	✓	✓	✓	✓
Forward with a Header Message	✓	✓	✓	✓
Repeat Message	✓	✓	✓	✓
Rewind Message	✓	✓	✓	✓

³ Intuity mode only.

⁴ Intuity mode only.

Feature	BCM50 Release 6.0	BCM450 BCM200/400 Release 6.0	IP Office Preferred Edition VoiceMail Pro	IP Office Essential Edition Embedded Voicemail
Fast Forward Message	✓	✓	✓	✓
Pause Message	✓	✓	✓	✗
Skip Message	✓	✓	✓	✓
LIFO/FIFO Message Playback Option	✗	✗	✓	✗
Set Message Priority	✓	✓	✓ ⁵	✗
Set Automatic Message Deletion Timeframe	✓	✓	✓	✗
Alphanumeric Data Collection	✗	✗	✓ ⁶	✗
Callers Caller ID, Time and Date Announced	✓	✓	✓	✓
Call Back Sender (if Caller ID available)	✓	✓	✓	✓
Remote Access to Mailbox	✓	✓	✓	✓
User Definable PIN Code	✓	✓	✓	✓
Known Caller ID PIN Code By-Pass	✓	✓	✓	✓
Breakout to Reception	✓	✓	Internal and external.	Internal and external.
Mailbox Park&Page	✓	✓	✗	✗
Fax Messaging	✓	✓	✗	✗

⁵ Intuity mode only.

⁶ Intuity mode only.

Feature	BCM50 Release 6.0	BCM450 BCM200/400 Release 6.0	IP Office Preferred Edition VoiceMail Pro	IP Office Essential Edition Embedded Voicemail
Outbound transfer	✓	✓	✓ (Internal)	✗
Passwords (expiry, length, complexity)	✓	✓	Partial	Partial and Branch only
Broadcast Message	✓	✓	Via distribution list	Via distribution list
Unified Messaging				
Unified Messaging Service (UMS)	✓	✓	✓	✗
Messaging Clients	MS Office Outlook 2010,2007,2003, 2002/XP Lotus Notes 6.0, 6.5, 7.0, 8.0.x, 8.5 Novell GroupWise 6.5, 7.0 and 8.0		IMAP Clients	✗
IMAP4 Unified Messaging interface	✓	✓	✓	✗
Max Unified Messaging Seats	50	300	384	✗
SMTP	✓	✓	✓	✗
Messaging Forwarding				
Forward Voicemail to Email	✓	✓	✓	✓
Audio File Attachment	✓	✓	✓	✓
Forward Fax to Email	✓	✓	✗	✗
Delete Original Email on VM System / Turn Off MWI	✓	✓	✓	✓
Configurable Email Address	✓	✓	↔	↔

Feature	BCM50 Release 6.0	BCM450 BCM200/400 Release 6.0	IP Office Preferred Edition VoiceMail Pro	IP Office Essential Edition Embedded Voicemail
Signature Option for Email	✓	✓	✗	✗
In-Queue Announcements				
Queue Entry Announcement	✗	✗	✓	✓
Queue Update Announcement	✗	✗	✓	✓
Queue Position Announcement	✗	✗	✓	✗
Time in Queue Announcement	✗	✗	✓	✗
Time in System Announcement	✗	✗	✓	✗
Estimated Time to Answer (ETA)	✗	✗	✓	✗
Exit Queue to alternative answer point	✗	✗	✓	✗
Auto-Attendant / Audiotex				
Multi-Level Tree Structure	✓	✓	✓	✓ (up to 40 in R4.1)
Message Announcements	✓	✓	✓	✗
Whisper Announce	✓ (Call Screening)	✓ (Call Screening)	✓	✗
Alarm Calls	✗	✗	✓	✗
Assisted Transfers	✗	✗	✓	✗
Dial by Name	✗	✗	✓	✓
Direct Dial by Number	✓	✓	✓	✓
Park & Page	✓	✓	✗	✗
Holidays	✓	✓	Via Call Flow	✗

Feature	BCM50 Release 6.0	BCM450 BCM200/400 Release 6.0	IP Office Preferred Edition VoiceMail Pro	IP Office Essential Edition Embedded Voicemail
Greeting Table	✓	✓	✓	✓
Other Voicemail Features				
Call Recording	✓	✓	✓	✗
Test Conditions	✗	✗	✓	✗
Personal Numbering	✗	✗	✓	✗
Speaking Clock	✗	✗	✓	✗
Campaign Manager	✗	✗	✓	✗
Customized Voicemail	✗	✗	✓	✗
Intuity TUI emulation mode	CallPilot and Norstar only		✓	✗
Forward Emails to External Systems (VPIM)	✓	✓	✓	✗
Third Party Database Access (IVR)	✗	✗	✓	✗
Text To Speech within Callflows	✗	✗	✓	✗
Cascaded Out-Calling	✗	✗	✓ ⁷	✗
Call Transfer Announcement	✗	✗	✓	✗
Support for Visual Basic Scripts	✗	✗	✓	✗
Fax Overflow	✓	✓	✗	✗
Fax Buffering	✓	✓	✗	✗
Fax On Demand	✓	✓	✗	✗
System ReInit	✓	✓	✗	✗

⁷ Intuity mode only.

Feature	BCM50 Release 6.0	BCM450 BCM200/400 Release 6.0	IP Office Preferred Edition VoiceMail Pro	IP Office Essential Edition Embedded Voicemail
Operator Settings	✓	✓	✗	✗
Analog Networking (AMIS)	✓	✓	✗	✗
Reporting	✓	✓	Partial (via CCR)	✗
Web Voicemail	✗	✗	✓	✗
Web Administration	✓	✓	✗ (Thick Client)	✗ (Thick Client)
Express Line Messaging	✓	✓	Via Call Flow	✗
Voice Services	✓	✓	Via Call Flow	✗

Appendix 3: Unified Communications and other features

Symbol	Description
✓	Feature is available. General operation is similar, although there might be minor differences.
✗	Feature not available or supported. Alternatives will be listed if available.
↔	Feature or functionality is available in general, but functionality, operation, or configuration might be completely different.

BCM Features	BCM50 Release 6.0	BCM450 BCM200/400 Release 6.0	IP Office Release 7.0 +	Equivalent feature in IP Office
Find Me / Follow Me	✓	✓	✓	Mobile Twinning
Max number of FindMe / FollowMe Users	50	300	384	Mobile Twinning

BCM Features	BCM50 Release 6.0	BCM450 BCM200/400 Release 6.0	IP Office Release 7.0 +	Equivalent feature in IP Office
Max number of Virtual Terminals	24	64	N/A	
Max number of programmed external destination (per programmed schedule)	5	5	1	
Max number of user programmed schedules	5	5	1	
FMFM Analog Trunk Support - Answer Supervision	✓	✓	✗	
Option to Disable FMFM for Hunt Group Calls	✓	✓	✓	
Forward restrictions for certain call types	✗	✗	✓	
Handoff from deskphone to remote extension and vice versa (F960)	✓	✓	✓	Mobile Twinned Call Pickup
Option to Disable Handoff option (F960)	✓	✓	NA	
Fixed Mobile Convergence (FMC) on external FMFM destination - Ad-Hoc Conference - Call Transfer - Page/ Park	✓	✓	✓	Mobile Call Control

BCM Features	BCM50 Release 6.0	BCM450 BCM200/400 Release 6.0	IP Office Release 7.0 +	Equivalent feature in IP Office
Cascading - program delay for external FMFM destinations	✓	✓	✗	
Disable/enable FMFM remotely through Call Pilot & Norstar UI	✓	✓	↔	
Configure Remote Location through Deskphone	✗	✗	✓	
Do Not Disturb (DND) on Busy for FMFM	✓	✓	↔	
Support of Internal destinations	✗	✗	✓	
Support of external destinations	✓	✓	✓	
Internal Twinning	✗	✗	✓	Internal Twinning
Contact Centre calls can use FMFM/ Twinning	✗	✗	↔	
BCM InTouch				Advatel InTouch
InTouch Feature	✓	✓	✓	
Max number of InTouch Users	256	256	384	
Telephony presence information	✓	✓	✓	
Outlook calendar presence information	✓	✓	✓	

BCM Features	BCM50 Release 6.0	BCM450 BCM200/400 Release 6.0	IP Office Release 7.0 +	Equivalent feature in IP Office
MSN presence information / Instant Messaging through MSN	✓	✓	✓	
Skype presence information / Instant Messaging through Skype	✓	✓	✓	
Yahoo Presence information	✗	✗	✓	
SMS (along with Skype and MSN)	✗	✗	✓	
Click to call	✓	✓	✓	
Dialing field	✓	✓	✓	
Missed Call Logs	✓	✓	✓	
Click to Email	✓	✓	✓	
Call Recording				
Output call recording to voice mail	✓	✓	✓	
Output call recordings to 3rd Party App	↔	↔	✓	
Output call recordings to Email	✓	✓	✓	
Automated Call Recording based on triggers	✓	✓	✓	
Conference Call Recording	✓	✓	✗	
Record Call with announcement	✓	✓	✓	

BCM Features	BCM50 Release 6.0	BCM450 BCM200/400 Release 6.0	IP Office Release 7.0 +	Equivalent feature in IP Office
Record Call without announcement	✓	✓	✓	
Automated Sample Recording (e.g. 10% of calls are recorded for training purposes)	✗	✗	✓	
MeetMe Conference				
Capacity	18	120	128	
- Voice and Text Control Menu	✓	✓	✓	
- Hosted and accessed locally or remotely	✓	✓	✓	
- Chairperson PIN	✓	✓	↔	
- Optional conference access password	✓	✓	↔	
- List conference participants command	✓	✓	✗	
- Lock conference command	✓	✓	✗	
- Bridge closure options (remains on or closes after host leaves)	✓	✓	✗	
- Conf muting option (1-ways speech path from host to all)	✓	✓	✓	

BCM Features	BCM50 Release 6.0	BCM450 BCM200/400 Release 6.0	IP Office Release 7.0 +	Equivalent feature in IP Office
- Participant muting option	✓	✓	✓	
- Eject participant option	✓	✓	✓	
Meet Me Conferencing Web Portal	✓	✓	↔	One-X Portal

Appendix 4: Supported languages

Symbol	Description
✓	Feature is available. General operation is similar, although there might be minor differences.
✗	Feature not available or supported. Alternatives will be listed if available.

Language Support			
	On BCM	IP Office	
	BST 7000 and M7000 series	BST 7000 and M7000 series	1100/1200 IP phones
	3 pre-configured languages based on country profile	IP Office user locale setting affects both prompts on phone displays and voice prompts in voicemail.	Only 5 languages available on the phone and they are based on the IPO system locale
Arabic	✗	✓	✗
Chinese (Cantonese)	✗	✓	✗
Chinese (Madarin)	✗	✓	✗
Czech	✓	✗	✗
Danish	✓	✓	✗
Dutch	✓	✓	✓

Language Support			
	On BCM	IP Office	
	BST 7000 and M7000 series	BST 7000 and M7000 series	1100/1200 IP phones
English UK	✓	✓	✗
English US	✓	✓	✓
English (Australian)	✓	✗	✗
Finnish	✗	✓	✓
French	✓	✓	✗
French Canadian	✓	✓	✗
German	✓	✓	✓
Greek	✗	✓	✗
Hungarian	✗	✓	✓
Italian	✓	✓	✓
Korean:	✗	✓	✗
Norwegian	✓	✓	✓
Polish	✓	✓	✓
Portuguese	✗	✓	✗
Portuguese Brazilian	✓	✓	✓
Russian	✗	✓	✓
Swedish	✓	✓	✓
Spanish - European	✗	✓	✓
Spanish - Latin America	✓	✓	✗
Turkish	✓	✓	✓

Voicemail Prompt Languages			
Language	BCM Voicemail	IP Office Preferred Edition Voicemail Pro ⁸	IP Office Essential Edition Embedded Voicemail ⁹
Arabic ¹⁰	✓	✓	✓

⁸ By default the prompts installed match the installer language selection plus English. If other languages are required they need to be selected by doing a custom installation. The installable Voicemail Pro prompts are listed in the table above. The availability of a language in voicemail does not necessarily indicate support for IP Office in a country that uses that language. When the IP Office routes a call to the voicemail server it indicates the locale for which matching prompts should be provided if available. Within the IP Office configuration, a locale is always configured for the system. However differing locales can be configured for each user, incoming call route and for short codes in addition to the default system locale.

Voicemail Prompt Languages			
Language	BCM Voicemail	IP Office Preferred Edition Voicemail Pro ⁸	IP Office Essential Edition Embedded Voicemail ⁹
Chinese (Cantonese)	✓	✓	✓
Chinese (Madarin)	✓	✓	✓
Czech	✓	✗	✗
Danish	✓	✓	✓
Dutch	✓	✓	✓
English UK	✓	✓	✓
English US	✓	✓	✓
English (Irish)	✓	✗	✗
English (Australian)	✓	✗	✗
Finnish	✓	✓	✓
French	✓	✓	✓
French Canadian	✓	✓	✓
German	✓	✓	✓
Greek	✗	✓	✗
Hungarian	✗	✓	✗
Italian	✓	✓	✓
Korean:	✓	✓	✓
Norwegian	✓	✓	✓
Polish	✗	✓	✗
Portuguese	✗	✓	✓
Portuguese Brazilian	✓	✓	✓

⁹ The IP Office system Locale setting is used to determine the default language prompts used. A Locale setting is configured for the whole IP Office system. For individual users and incoming call routes the system local can be overridden. For calls to voicemail, the locale used is determined as follows:

- The user locale, if configured, is used if the caller is internal.
- The incoming call route locale, if configured, is used if caller is external.
- If no user or incoming call route locale is applicable, the system locale is used.
- A short code locale, if configured, is used and overrides the options above if the call is routed to voicemail using the short code.

¹⁰ Only available in Norstar/Basic mode.

Voicemail Prompt Languages			
Language	BCM Voicemail	IP Office Preferred Edition Voicemail Pro ⁸	IP Office Essential Edition Embedded Voicemail ⁹
Russian	✓	✓	✓
Swedish	✓	✓	✓
Spanish - European	✓	✓	✗
Spanish - Latin America	✓	✓	✗
Spanish - Mexico	✗	✗	✓
Spanish - Argentina	✗	✗	✓
Turkish	✓	✗	✗

Appendix 5: Loop length differences between BCM and IP Office

Due to different hardware characteristics, the loop length for the Norstar and BCM phones connected to IP Office might be different than when they are connected to a BCM or Norstar.

The following table provides an overview of the loop length values of different phone types on the IP Office including the M7000 and T7000 Series phones:

Telephone Type	Unshielded Twisted-Pair (UTP) - 50nf/Km			CW1308
	AWG22	AWG24	AWG26	
	(0.65mm)	(0.5mm Ø)	(0.4mm)	
ETR Phones	305m/1000'	305m/1000'	122m/400'	122m/400'
2400/5400 Series	1200m - 3937'	1000m - 3280'	670m - 2200'	400m - 1310'
4406D	1000m - 3280'	1000m - 3280'	400m - 1310'	400m - 1310'
4412D	1000m - 3280'	700m - 2295'	400m - 1310'	400m - 1310'
4424D	500m - 1640'	500m - 1640'	400m - 1310'	400m - 1310'

⁸ By default the prompts installed match the installer language selection plus English. If other languages are required they need to be selected by doing a custom installation. The installable Voicemail Pro prompts are listed in the table above. The availability of a language in voicemail does not necessarily indicate support for IP Office in a country that uses that language. When the IP Office routes a call to the voicemail server it indicates the locale for which matching prompts should be provided if available. Within the IP Office configuration, a locale is always configured for the system. However differing locales can be configured for each user, incoming call route and for short codes in addition to the default system locale.

Telephone Type	Unshielded Twisted-Pair (UTP) - 50nf/Km			CW1308
	AWG22	AWG24	AWG26	
	(0.65mm)	(0.5mm Ø)	(0.4mm)	
6400 Series	1000m - 3280'	1000m - 3280'	400m - 1310'	400m - 1310'
T3 Series (Upn)	1000m - 3280'	1000m - 3280'	400m - 1310'	-
Analog Phones	1000m - 3280'	1000m - 3280'	500m - 1640'	800m - 2620'
Avaya M7000 and T7000 Series Phones	400m/1300' without SAP 750m/2450'* with SAP	400m/1300' without SAP 700m/2300' *+ with SAP	400m/1300' without SAP 650m/2100' * with SAP	N/A

View the BCM and Norstar loop length values in the table below in order to identify the current BCM deployment scenario, which might require changes during the upgrade to IP Office:

Telephone Type	Unshielded Twisted-Pair (UTP) - 50nf/Km		
	AWG22	AWG24	AWG26
	(0.65mm)	(0.5mm Ø)	(0.4mm)
Avaya M7000 and T7000 Series	N/A	305m /1000' without SAP 790m/2500' with SAP	N/A

⁸ By default the prompts installed match the installer language selection plus English. If other languages are required they need to be selected by doing a custom installation. The installable Voicemail Pro prompts are listed in the table above. The availability of a language in voicemail does not necessarily indicate support for IP Office in a country that uses that language. When the IP Office routes a call to the voicemail server it indicates the locale for which matching prompts should be provided if available. Within the IP Office configuration, a locale is always configured for the system. However differing locales can be configured for each user, incoming call route and for short codes in addition to the default system locale.

⁹ The IP Office system Locale setting is used to determine the default language prompts used. A Locale setting is configured for the whole IP Office system. For individual users and incoming call routes the system local can be overridden. For calls to voicemail, the locale used is determined as follows:

- The user locale, if configured, is used if the caller is internal.
- The incoming call route locale, if configured, is used if caller is external.
- If no user or incoming call route locale is applicable, the system locale is used.
- A short code locale, if configured, is used and overrides the options above if the call is routed to voicemail using the short code.

⁹ The IP Office system Locale setting is used to determine the default language prompts used. A Locale setting is configured for the whole IP Office system. For individual users and incoming call routes the system local can be overridden. For calls to voicemail, the locale used is determined as follows:

- The user locale, if configured, is used if the caller is internal.
- The incoming call route locale, if configured, is used if caller is external.
- If no user or incoming call route locale is applicable, the system locale is used.
- A short code locale, if configured, is used and overrides the options above if the call is routed to voicemail using the short code.

Telephone Type	Unshielded Twisted-Pair (UTP) - 50nf/Km		
	AWG22	AWG24	AWG26
	(0.65mm)	(0.5mm Ø)	(0.4mm)
Norstar MICS Loop Specifications	N/A		N/A
ATA-2	N/A	7200m - 26000'	N/A
Analog Stations (GASM8, ASM8+, BCM50 On-board GASl)	N/A	1230 m - 4000'	N/A
ASM8	N/A	1530 m - 5000'	N/A

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