AVAYA

IP Office Technical Bulletin

Bulletin No: **0016**

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Region: **USA/CALA**

General Availability (GA) of IP Office 2.0 Software

Avaya is delighted to announce the launch and availability of IP Office 2.0 software. IP Office is Avaya's Small Medium Enterprise (SME) solution designed as a global solution for customers with up to 360 extensions and 120 lines. Two major components of this release are the introduction of the Installation Wizards and the Small Office Edition, a new smaller compact member of the highly successful IP Office family of products.

1   Product Overview

The Avaya IP Office 2.0 software is the latest advancement in converged voice and data technology from Avaya. IP Office combines high-end voice and data applications, allowing the smallest of businesses to deliver cutting edge customer service.

IP Office 2.0 is the entry-level software to support the following new hardware:

- IP Office - Small Office Edition
- 4620 IP Handset
- VCM 30 Module
- Avaya wireless VoIP Telephones

As well as increased system performance and reliability through improvements to the core system software, IP Office 2.0 also supports the following new features:

- IP 412 number of supported extensions increased
- Installation Wizards
- CSV File Import/Export
- User Restrictions

- Encryption of Manager Ops files

- New Manager working directories

- BOOTP Enhancements

- Automatic backup of last configuration

- SNMP

- Alarm Logs

- V32 Modem Support

- Phone Manager user rights

- Call Recording enhancements

- Transfer Return Time

- Incoming Call Priorities

- Incoming Call Route Enhancements

- RIP support

- Logical LAN

- VPN Support (Extended Field Trial)

- Frame Relay Excess Burst Mode

- System Monitor Enhancements

- Power Conferencing (Extended Field Trial)

- New look Phone Manager

- Soft Console

- User Applications CD 2.0

- VoiceMail Pro 2.0

2   IP Office Hardware

The following new hardware is only supported with IP Office 2.0 software:

2.1   IP Office - Small Office Edition

The IP Office - Small Office Edition is the latest addition to Avaya's award-winning IP Office product family. The system supports all of the applications and functionality of the IP Office product range. The IP Office - Small Office Edition is available in six variants**,** which provide a different mix of Analog Trunks, Analog extensions, Digital Extensions and Voice Over IP capacity. Depending on the model chosen, up to a maximum of 28 extensions can be supported (4 Analog, 8 Digital and 16 IP).

IP Office – Small Office Edition

The six pre-defined configurations are detailed in the following table:

IP Office - Small Office Edition	Analog Trunks	Analog Extensions	Digital Terminal (20 series)	Digital Station (64,44 & 24 series)	Voice Over IP Codecs
2T + 4A (3 VoIP)	2	4	0	0	3
4T + 8A (3 VoIP)	4	8	0	0	3
4T + 4A + 8DT (3 VoIP)*	4	4	8	0	3
4T + 4A + 8DS (3 VoIP)	4	4	0	8	3
4T + 4A + 8DT (16 VoIP)*	4	4	8	0	16
4T + 4A + 8DS (16 VoIP)	4	4	0	8	16

   *   Not available in all territories, please see below.

The IP Office – Small Office Edition comes in two analog trunk variants, one is "US" (United States) and the other is "INTL" (International). The US variant is available in North America, CALA, China, Korea and Russia. The INTL variant is available in all other territories. The Digital

Terminal variants of the system are only available in those territories using the International trunk variants of the system.

All versions have an in-built four port Layer 2 switch, 10/100M Auto-sensing. An additional 10/100M Ethernet port is provided for WAN access, making the system ideal for connection to broadband services such as ADSL and Cable. This operates at Layer 3 and requires a specific routing entry to pass traffic. With Voice over IP as standard and optional IPSec security*, the system can be quickly configured to provide secure voice and data networking back to a head office over a broadband connection. The system can be further expanded by adding a BRI-8 card, a T1 card (supporting Clear Channel 64K or Switched 56K data only) or a WAN (X21, V24, V35) module.

*** Note: IPSec functionality is in an extended Field Trial phase and is not a supported part of this release.**

At the rear of the unit are 2 PCMCIA slots to accommodate an 802.11b wireless card*, which enables the Small Office Edition to act as an Access Point, and a compact flash memory card for Embedded Voicemail and file storage, such as the operating software required for IP handsets.

All of the IP Office - Small Office Edition platforms can be configured to become Wireless LAN access points. An Access Point acts as a Hub in a wireless network, providing connectivity between devices in the vicinity. In ideal conditions a range of up to 550m (1750 ft) is achievable although this range will be decreased if walls and other obstacles are present.

The IP Office - Small Office Edition wireless network can be secured against intruders using either WEP (Wired Equivalent Privacy) or RC4 (Rivest Cipher 4) encryption. WEP uses a 64-bit encryption key and RC4 uses a 128-bit encryption key. Only devices with a matching security key can participate in the network. IP Office - Small Office Edition complies with the IEEE 802.11 and IEEE 802.11b standards meeting the Wireless Ethernet Compatibility Alliance (WECA) Wireless Fidelity Wi-Fi™ requirements for interoperability.

*** Note: Wireless operation is only supported using the Avaya supplied wireless card. An additional license key is also required.**

Summary

- 2.4 GHz to 2.5 GHz band

- Automatic fallback 11Mbits/s, 5.5Mbits/s, 2Mbits/s or 1Mbits/s

- IEEE 802.11 and IEEE 802.11b Compliance

- Wireless Fidelity Wi-Fi™ Compliance

- Interoperable with other 802.11b compliant devices

- WEP or RC4 security

- Range up to 550M (1750ft) - In Ideal Conditions

| RANGE (METERS/FT)	11 MBIT/S	5.5 MBIT/S	2 MBIT/S	1 MBIT/S
Open	160m (525ft)	270m (885 ft)	400m (1300 ft)	550m (1750 ft)
Semi-open	50m (165 ft)	70m (230 ft)	90m (300 ft)	115m (375 ft)
Closed	25m (80 ft)	35m (115 ft)	40m (130 ft)	50m (165 ft)
Receiver Sensitivity dBm	-82	-87	-91	-94
Delay Spread (at FER of <1%)	65ns	225ns	400ns	500ns

Embedded Voicemail and Auto-Attendant is provided on a pre-loaded 64Mb PCMCIA Memory card supplied by Avaya. Up to four independent Auto-Attendants can be configured on the platform.

Note: The Embedded Voicemail supports up to 15 Hrs of storage. The amount of Voice Compression channels that are available limits the number of simultaneous calls. The maximum message length is fixed at 45 seconds.

The Auto Attendant uses Short Codes to configure the Voicemail greetings and manage the greeting options.
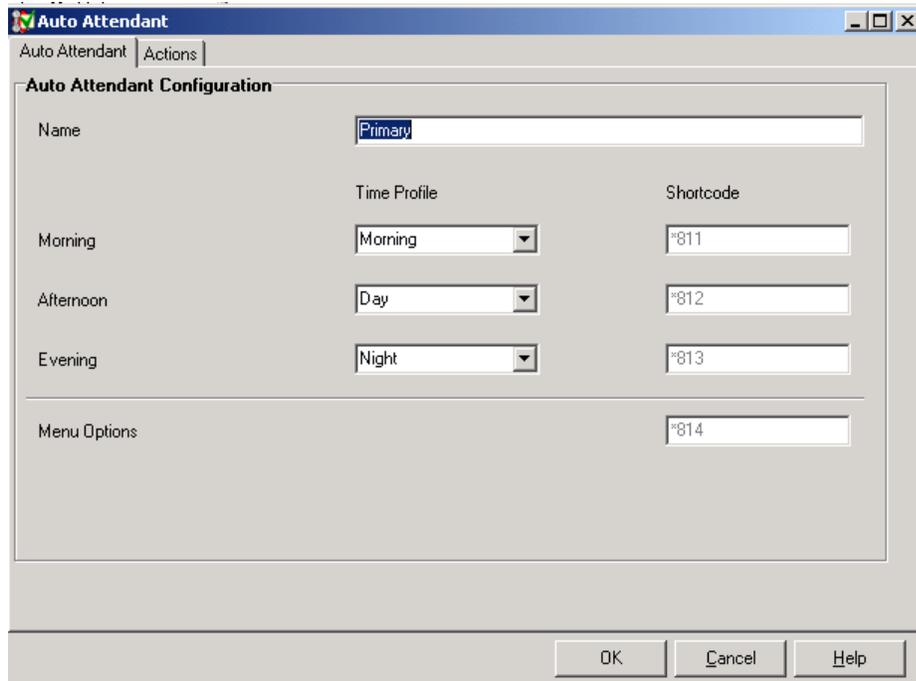
The choice of which Auto-Attendant is to answer a call can be made on any of the criteria on the Incoming Call Routing form, such as called number, calling numbers and time of day. Each Auto-Attendant has a single menu of 12 items (0…9,*,#) that a caller can select from to either be transferred to a predefined number or replay the greeting. The greeting for the menu is controlled by time profiles to allow three alternative messages to be played, i.e. Morning, Afternoon and Evening.
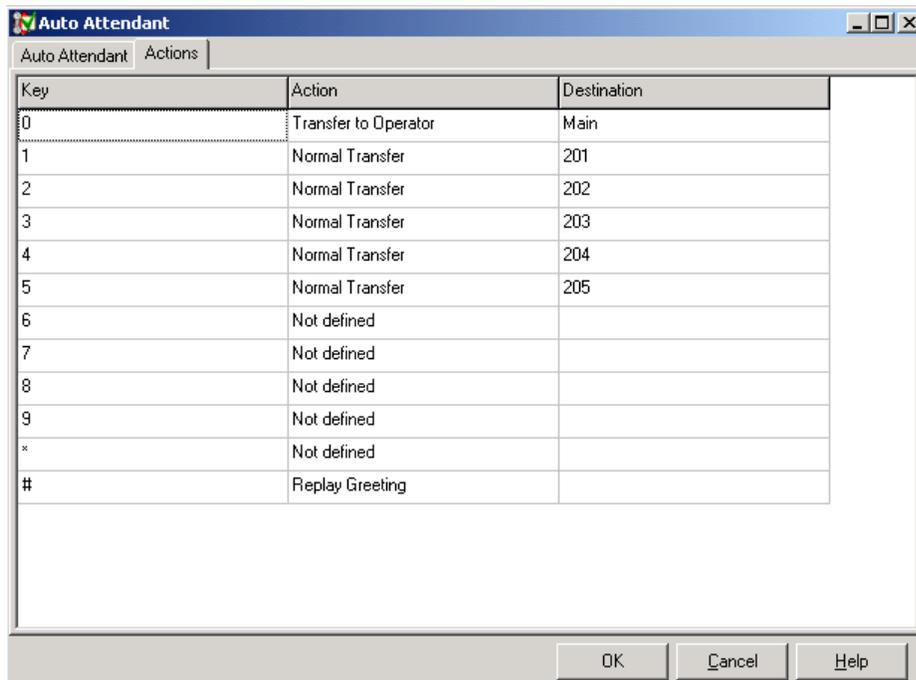
As well as supporting the external license key server for licensed applications, IP Office - Small Office Edition also supports a 9-pin serial port dongle*. This can be plugged directly into the unit, removing the need for an external PC for license verification.

IP Office – Small Office Edition – Rear View

* Note: If using the serial port dongle the "License Server IP Address" found in the System configuration form should be left blank.

2.2 **4620 IP Handset**

The 4620 IP Handset is the latest addition to the 46xx series of IP Telephones and has the equivalent telephony functionality to existing 4602, 4606, 4612 and 4624 IP handsets, as well as incorporating a built in WML browser supporting XML.

In addition to the features of the 4602/4602SW the 4620 supports the following:

- 24 Programmable Feature Keys (Presented in 2 pages of 12)

- Automatically labeled from the system (no paper labels)

- 6 Fixed Feature Keys: Speaker, Mute, Hold, Headset, Volume Up, Volume Down

- Large Graphical grey-scale display (168 x 132 pixels)

- 4 Fixed Call Handling Keys: Conference, Transfer, Drop and Redial

- 4 embedded applications; Speed Dial, Call Log, Web Browser, Options

- Full Duplex Speakerphone with acoustic cavity for improved sound quality

- 7-position adjustable desk stand/wall mount stand

- Infrared (IrDA) Port

- Built-in Headset Jack

- Multiple language support built-in: English, French, Italian, Spanish, & Katakana.

- 8 Personalized Ring Patterns

Note: To ensure the correct operation of the feature keys a minimum of three keys should be assigned as call coverage keys.

The 4620 IP Handset can act as a WAP (Wireless Access Protocol) browser. This allows it to view WML (Wireless Markup Language) pages. WML is a page coding language similar to HTML but intended for telephone devices with small screens and no full keyboard. To enable WAP browsing the 4620 phones on a system need to be configured to access a home page. That home page can contain links and information appropriate to the customer installation. A job aid detailing the setup required is available from the support section of the Avaya website.

*Note: The 4620 IP Handset supports WML 1.2. Your default WAP web site may contain a page where you can select or enter the URL of external WAP websites. If this is the case, you should be aware that some websites might contain information that the 4620 is not able to display. If the WAP web page uses WML features that the 4620 does not support, those features will not be shown. If the WAP web page uses features that the 4620 does not recognize as valid WML 1.2, the 4620 will display "Not a valid WML page".

2.3   VCM 30 Module

A new integral 30-channel Voice Compression module is now available for the IP 412 only. A maximum of two VCM 30 modules can be fitted to the IP 412. VCMs are mandatory for all VoIP applications.

2.4   Avaya Wireless VoIP Telephones

Avaya has an OEM agreement with SpectraLink, a leader in wireless voice solutions for the workplace. The Avaya IP Wireless Solution offers an advanced voice over IP client for wireless networks.

Both the 3616 and 3626 phones are optimized for Avaya IP telephony and emulate the wired 4606 IP Telephone. They work in conjunction with the Avaya Voice Priority Processor to ensure voice quality over Wireless LANs. To enhance voice quality over the wireless network, SpectraLink has developed a Quality of Service (QoS) mechanism that is implemented in the wireless telephone and access points. The handsets are field-upgradeable through an integrated TFTP client, so they can be updated with new protocols, features, and capabilities as they become available.

Note: The Avaya Wireless VoIP Telephones are not supported on IP Office without the use of the Avaya Wireless Voice Priority Processor.
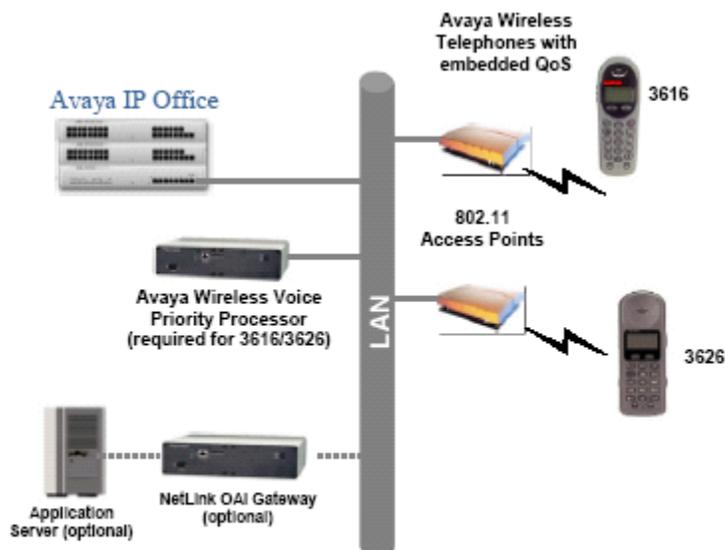
Based on global standards for wireless LANs, the Avaya IP Wireless Telephone Solution simplifies network infrastructure by enabling voice traffic to be carried along with data traffic over the same wireless network. Both the 3616 and 3626 telephones are available for this solution and support both direct sequence and frequency hopping 802.11 technologies. The SpectraLink Voice Priority (SVP) Quality of Service protocol is simple to implement and reduces packet queuing delays for voice traffic. SpectraLink Voice Priority-enabled access points are available from the leading providers of enterprise wireless networks.

Compatible 802.11b Access Point (AP) Manufacturers

- Avaya
- Agere Systems
- Alvarion
- Cisco Systems
- Enterasys Networks
- Intermec Technologies
- Psion Teklogix
- Proxim
- Symbol Technologies

The NetLink OAI (Open Application Interface) Gateway enables third-party software applications to communicate with the Avaya IP Wireless Telephones. This serves as a two-way messaging device. Many companies provide applications that interface to your in-house paging systems, email, and client-server messaging. Other vendors with complementary systems such as nurse

call, telemetry, alarm, and control system manufacturers are currently developing applications to interface with the Avaya IP Wireless Telephone solution.

Users can have a choice of an executive (3616) or rugged (3626) workplace telephone and many of the productivity benefits of their desk telephone in this next generation of wireless telephone solutions.

3616   **3626**

The Avaya 3616 IP Wireless Telephone is designed for more general enterprise applications and uses a compact, cell phone-like form factor. The 3616 supports the following features:

- Perfect for busy office environments

- Lightweight innovative design

- Simple to use

- 802.11b standard-compatible

- Radio Frequency 2.4000 – 2.835 GHz

- Transmission type Direct Sequence Spread Spectrum (DSSS)

- FCC certification Part 15.247

- Management of handsets via DCHP and TFTP

- Voice encoding G711

- Transmit Power 100mW peak, <10mW average

- Wired Equivalent Privacy (WEP), 40-bit and 128-bit

- 2x16 character alphanumeric, plus status indicators

- 4 hours talk time and 80 hours standby

The Avaya 3626 Wireless Telephone is designed specifically for use in commercial workplace applications. It is extremely durable and has no moving parts, no external antenna, and no complex configuration menus. The handset has a rugged, monolithic design that gives users a

large earpiece to provide comfort and seal out background noise. The 3626 supports all of the features of 3616 with the following differences:

- Designed for industrial environments

- Rugged, durable design

- Push to- talk (walkie-talkie) feature for broadcast communications between employees.

3 IP Office 2.0 Software Enhancements

3.1 IP 412 number of supported extensions increased

The IP 412 will now support a maximum of 360 extensions of any type (Analog, Digital, IP). This is an increase from the previous limit of 256 extensions.

3.2 Installation Wizards

IP Office 2.0 software introduces a new Installation Wizard, which simplifies the installation and configuration of the IP Office and Voicemail. The Wizard will reduce the total installation time of the IP Office system and reduce configuration errors that can generate additional site visits.

Using the Wizard it is possible to work with an IP Office configuration in the following ways

1. You can work directly with an IP Office system on your network.

2. You can use the Wizard to work with an existing configuration file.

3. You can build a new system and generate the configuration without having to have the hardware available to generate the initial configuration file.
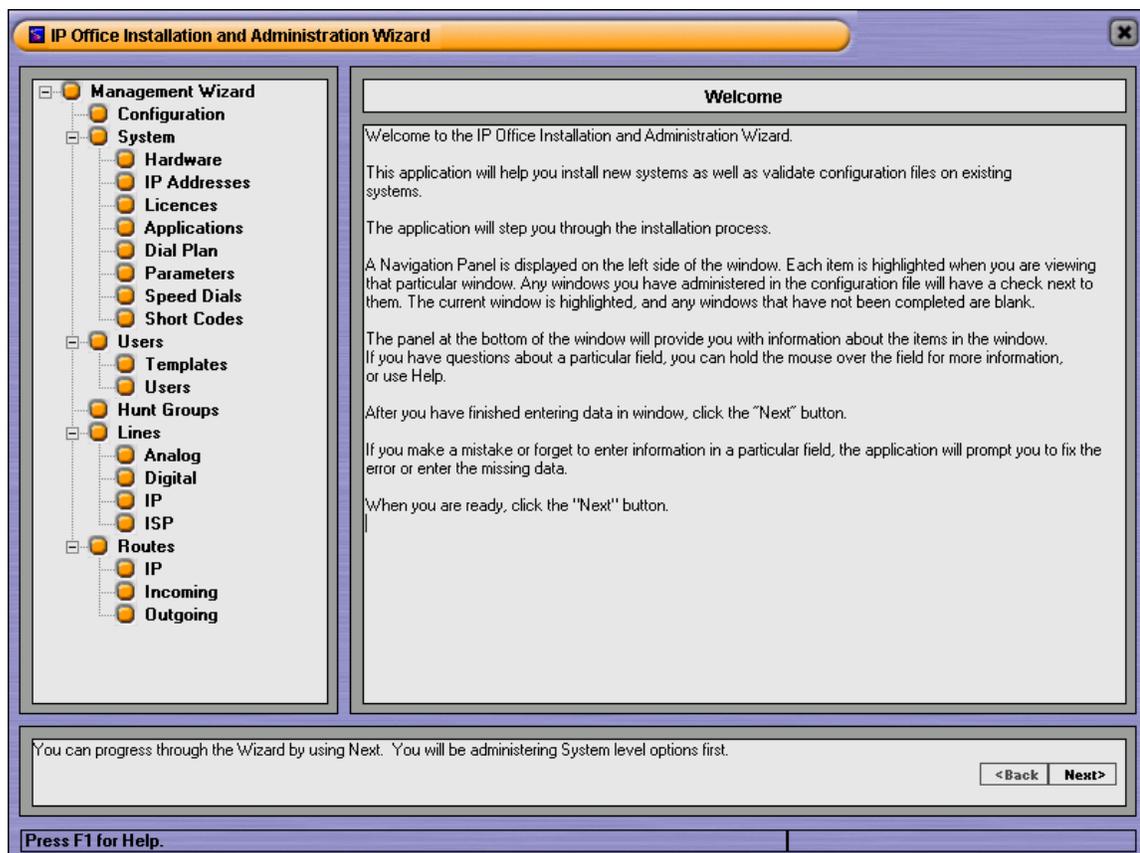
The IP Office Installation and Administration Wizard

The Wizard makes provision for error checking, this includes errors that are made while using the application and also errors that are in a file that has been read in. The Wizard will provide a warning message for a file that has errors.

The Wizard also provides the following functionality:

- Using predefined templates, which can be modified, for telephones and users (including both properties and button programming) it is possible to apply those settings to the relevant users (with and without telephones) by simply ticking a box. The button programming that can be setup applies to: 2420/4406/4412/4424/6402/6416/6424.

- You are able to print your system configuration to a file and view it using Internet Explorer (Version 6 and above).

- The user is able to import CSV files that contain system information. The following items can be imported into the Wizard:

    - **Licenses** –The information in the .CSV file must be in the following format: license Name, license Key.
    - **System Speed Dial Numbers** – The information in the .CSV file must be in the following format: name, speed dial number, telephone number.
    - **Short Codes** – The information in the .CVS file must be in the following format: short code, telephone number, feature name.
    - **Users** – The information in the .CSV file must be in the following format: full name, extension number, template to be applied, hunt group 1, hunt group 2, hunt group 3, hunt group 4, hunt group 5.
    - **Hunt Groups** – The information in the .CSV file must be in the following format: hunt group name, hunt group number, hunt group type.
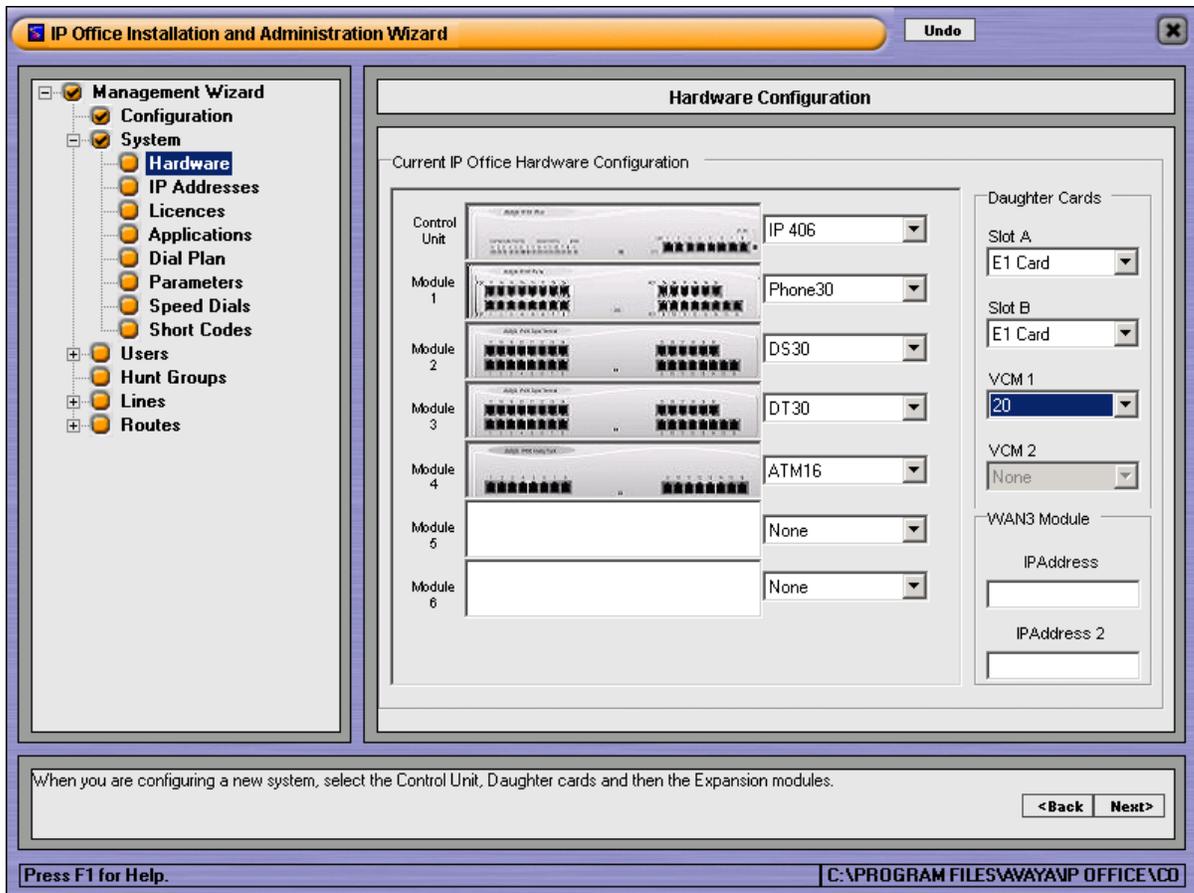
A new system configuration being built

The Wizard also integrates with VoiceMail Pro (version 2.0 and above). When administering Incoming Routes, the Short Code Start Points that are in VoiceMail Pro are listed in the Wizard.

If you wish to create a new entry, the appropriate short code and route will be added on the switch and a default Automated Attendant that allows transfers to all extensions and Hunt Groups on the system is created in VoiceMail Pro. You can then use the VoiceMail Pro GUI administration to make any custom modifications that you require.

Note: The IP Office Installation and Administration Wizard can be found on the Administration CD.

3.3   CSV File Import/Export

There is the ability within Manager to import and/or export the configuration as a CSV file. The title of the column will indicate which parameter(s) are being imported. The CSV column titles must match those expected by the switch. The user will be able to export a CSV file to obtain the syntactically correct title.

Note: The complete configuration must be imported/exported as a CSV file. You cannot merge CSV data with an existing configuration open in Manager.

3.4   User Restrictions

A new Manager form has been added for User Restrictions. The User Restriction form allows named groups of dialing short codes to be created. These short codes can then be applied to a user by associating them with the User Restriction name, rather than having to recreate the short codes for each user.

Example: We can create a new Group called "International". To this group we would add the short code for barring numbers beginning with 00:

> • Short Code: 00N
> • Telephone: 00N
> • Feature: Busy

To apply this barring, select each User that you want to apply this to and, using the Restrictions drop-down list, under the User tab, select the option called "International". This feature can save a considerable amount of programming time when you have multiple Short Codes to apply to a group of Users.

3.5   Encryption of Manager .Ops files

There are four operators defined within Manager (Administrator, Conference, Manager, and Operator). Each operator can be given the rights to view different types of forms, edit those forms, create new entries and delete entries. Once an operator has logged on to Manager, they can open configuration files held on the PC or received from the Control Unit. In previous software releases (1.x) it has been possible to delete the files (.ops files in the Manager directory) that controlled these access levels, giving full administration access to all users without needing to logon. It is now not possible to gain full administration access by deleting these files.

3.6   New Manager working directories

There are now three different directories that can be configured within Manager.

1) Working Directory (.cfg files)
2) Binary Directory (.bin files)
3) Upgrade Directory (UpgradeWiz.exe)

Note: The upgrade directory should contain the bin.cfg file that describes the relationship between unit name and binary file.

3.7   BOOTP Enhancements

The BOOTP form within Manager will now allow BOOTP entries to be disabled to prevent the manager from servicing particular units. This is useful in an environment where there may be multiple IP Offices.

3.8 Automatic backup of last configuration

The Preferences options found within the file menu of Manager now allows you to create a backup copy of the original configuration when changes have been made. Before a configuration file is saved, a copy of the unaltered configuration is saved with a .BAK extension, so that, should anything go wrong, the user can go back to a known good configuration.

Also within the preferences form is the "Enable port for serial communication" option, which can be unchecked to prevent the manager requesting a Com port when it is started. Two further options within preferences are: "Close configuration after send", which gives the user the ability to decide if the configuration tree is closed after sending a configuration to the unit; and "Save configuration file before send", which controls whether a local copy of the configuration is saved to the working directory.

3.9 SNMP

IP Office 2.0 allows IP Office Control Units to act as read-only SNMP v1 agents. It can support the sending of event traps to up to two different SNMP manager addresses.

SNMP (Simple Network Management Protocol) is a standard network protocol that allows the monitoring and management of data devices across a network. An SNMP agent can be built into network devices such as routers and hubs. An SNMP manager application can then communicate with those devices.

This communication can be:

Polling: Supported by IP Office 2.0. Some SNMP manager applications send out polling messages to the network. They then record the responses of any SNMP enabled devices (agents). This allows the manager to create a network map and to raise an alarm when devices previously present do not respond.

Most SNMP manager applications can also do simple IP address polling to locate non-SNMP enabled devices. However this method of polling does not identify the device type or other information.

SNMP polling includes details about the responding device. For example an IP Office control unit's response includes the control unit type, level of software, routing table information, up time, etc.

Traps: Supported by IP Office 2.0. When certain events occur, a device's SNMP agent can send details of the event to the SNMP manager. This is called an SNMP 'trap'. These appear in the event log of the SNMP manager. Most SMNP managers can be configured to give additional alerts in response to particular traps.

Management: Not supported by IP Office 2.0. Some SNMP agents support device management and configuration changes through the SNMP manager interface.
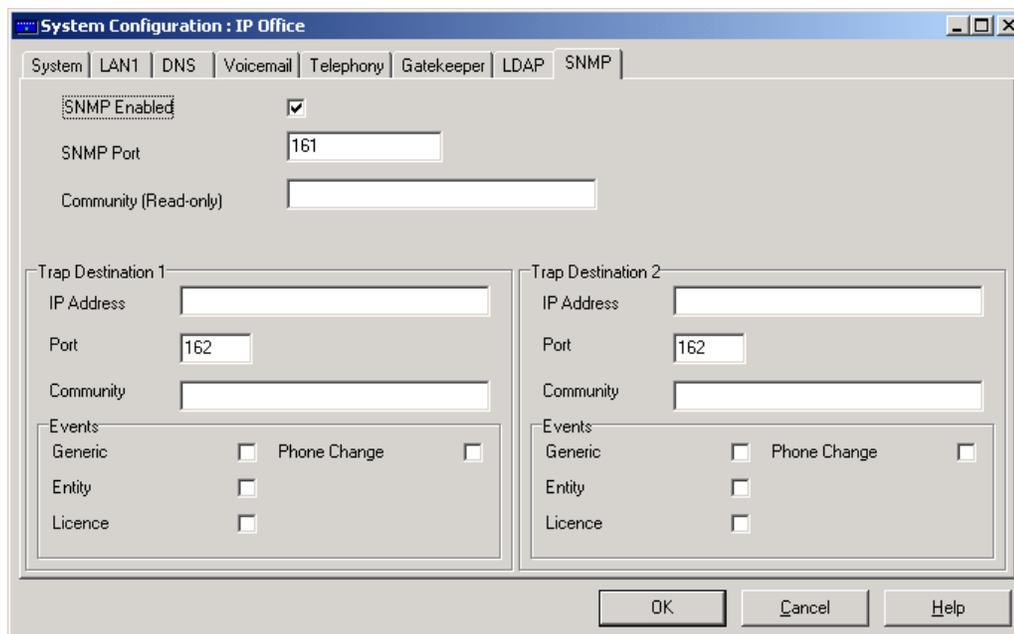
Note: IP Office SNMP operation has only been tested against Castle Rock SNMPc-EE 5.1.6c and HP OpenView Network Node Manager 6.41

MIBs Support

Definition: A **MIB** (Management Information Base) is a formal description of a set of network objects that can be managed using the Simple Network Management Protocol (SNMP). The information that SNMP can obtain from a device is defined by the MIB. MIBs are structured like trees. At the top of the tree is the most general information available about a device. Each branch provides more details about specific areas. The leaf, or end nodes, provides the most detailed information about the device.

The IP Office SNMP Agent supports the following MIBs:

- IETF RFC1213 mib-2 (RFC1213-MIB)
    - Provides statistics for LAN, WLAN and WAN interfaces
    - Groups supported: system, interfaces, at, ip, icmp, tcp, udp and snmp

- IETF RFC1215
    - Provides definitions of generic SNMP traps
    - Traps supported: warmStart, coldStart, linkDown, LinkUp and authenticationFailure

- IETF RFC2737 ENTITY-MIB
    - Provides architectural representation
    - Groups supported: entityPhysical and entityGeneral

- Avaya IPO-PROD-MIB
    - Provides device/entity identification OIDs

- Avaya IPO-MIB
    - Provides root OIDs for functional MIBs
    - Provides system wide notifications for events relating to functional entities
        - ipoGenLKSCommsFailureEvent and ipoGenLKSCommsOperationalEvent for License Key Server communication events

- Avaya IPO-PHONES-MIB
    - Provides extension/user/phone-port map.
        - Phone-port mapping via cross-reference to entPhysicalEntry for port with entPhysicalIndex value
    - Provides notifications of phone change event.
        - IpoPhonesChangeEvent

MIB Loading

In order for SNMP to manage an IP Office system, that is browse its MIBs and fully interpret the traps it sends out, the MIBs supported by IP Office must be loaded and compiled for use with your Network Management System. The supported standard and proprietary MIBs together with the MIB files relied upon for definitions are provided on the IP Office Administration CD, in the directory snmp_mibs.

Detailed below are instructions for installing the appropriate MIBs with a number of Network Management Systems.

CastleRock SNMPc 5.1.6c and earlier

For MIBs to be used with SNMPc they must first be copied into its mibfiles directory, which is normally C:\Program Files\SNMPc Network Manager\mibfiles. MIBs are installed by selecting *Config* and *MIB Database* from the SNMPc menu and then using the *Add* option and selecting the MIB file from the list presented to load and compile it. The following MIBs must be installed in the order listed to fully SNMP manage an IP Office system:

MIB file	Source
ENTITY-MIB	snmp_mibs\Standard on IP Office Admin CD
AVAYAGEN-MIB.mib	snmp_mibs\IPOffice on IP Office Admin CD
IPO-PROD-MIB.mib	snmp_mibs\IPOffice on IP Office Admin CD
IPO-MIB.mib	snmp_mibs\IPOffice on IP Office Admin CD
INET-ADDRESS-MIB.mib	snmp_mibs\Standard on IP Office Admin CD
INTEGRATED-SERVICES-MIB	snmp_mibs\Standard on IP Office Admin CD
DIFFSERV-DSCP-TC.mib	snmp_mibs\Standard on IP Office Admin CD
DIFFSERV-MIB.mib	snmp_mibs\Standard on IP Office Admin CD
IPO-PHONES-MIB.mib	snmp_mibs\IPOffice on IP Office Admin CD

HP OpenView Network Node Manager 6.41 and earlier

MIBs are installed in Network Node Manager by selecting *Options* and *Load/Unload MIBs: SNMP* from the menu and then using the *Load…* option and browsing for MIB files to load and compile. The following MIBs must be installed in the order listed to fully SNMP manage an IP Office system:

MIB file	Source
RFC2737-ENTITY-MIB	snmp_mibs\standard on OpenView install CD
AVAYAGEN-MIB.mib	snmp_mibs\IPOffice on IP Office Admin CD
IPO-PROD-MIB.mib	snmp_mibs\IPOffice on IP Office Admin CD
IPO-MIB.mib	snmp_mibs\IPOffice on IP Office Admin CD
INET-ADDRESS-MIB.mib	snmp_mibs\Standard on IP Office Admin CD
RFC2213-INTEGRATED-SERVICES-MIB	snmp_mibs\standard on OpenView install CD
DIFFSERV-DSCP-TC.mib	snmp_mibs\Standard on IP Office Admin CD
DIFFSERV-MIB-HPOV.mib	snmp_mibs\Standard on IP Office Admin CD
IPO-PHONES-MIB.mib	snmp_mibs\IPOffice on IP Office Admin CD

3.10 Alarm Logs

The IP Office will hold a buffer of twenty records in non-volatile memory to allow investigation of critical errors causing resets or other catastrophic failure. This buffer is sent to the System Monitor application when it is started and will look like the following:

********** SysMonitor [Version 4.0 (11)] **********

********** contact made with 192.168.42.1 at 11:42 24/11/2003 **********

********** System (192.168.42.1) has been up and running for 2days, 17hrs, 38mins and 35secs(236315017mS) **********

```
   0mS PRN: Monitor Started IP=192.168.42.5 IP 401 NG DS 2.0(16) Office_System
   1mS  PRN: LAW=A  PRI=0,  BRI=4,  ALOG=4,  ADSL=0  VCOMP=16,  MDM=0,  WAN=0,  MODU=0 LANM=0  CkSRC=0
VMAIL=1(VER=0 TYP=3) CALLS=0(TOT=0)
 3027mS PRN: +++ START OF ALARM LOG DUMP +++
 3027mS PRN: ALARM: 21/08/2003 14:28:42  Small Office DS 2.0(5)  <TLB Data Error>  CRIT  RAISED  addr=00000080 d=5
pc=ff5c0ec0 ff610ad0 ff5c060c ff5bf904 ff506cd0 ff5d02d8
 3030mS PRN: +++  END OF ALARM LOG DUMP +++
```

3.11 V32 Modem Support

The first analog trunk channel on IP Office - Small Office Edition control units and on ATM4 trunk modules can be set to modem operation (V32 with V42 error correction). Access to the modem is facilitated by ticking the Modem Enable box on the trunk settings form. This allows the receipt of incoming modem calls for system maintenance operation.

Note: Once the modem has been enabled on the trunk, all incoming calls on that trunk will be routed to the modem. Outgoing calls will still be possible as normal.

3.12 Phone Manager user rights

Within the Telephony tab of the User form is an option to select what mode Phone Manager should run in, Lite, Pro or VoIP (iPhoneManager). A warning is given in Manager, when merging the configuration, if more users than licensed are enabled. If the license has been exceeded users will be enabled on a numeric basis, from the lowest user number to the limit.

Note: This setting is only used if a Per Seat Phone Manager license has been purchased. If a Site license has been purchased this setting is ignored and Phone Manager will run in Pro or VoIP mode.

3.13 Call Recording enhancements

It is now possible on a user basis to choose different mailboxes for the recording of calls: one for manually recorded calls (a call recording triggered by the user), and the second for automatically recorded calls.

3.14 Transfer Return Time

A new option on the Telephony tab of the User form sets the delay after which any call transferred by the user, but which remains unanswered, should return to the user. This value can be set in the range 0 to 180 seconds.

3.15 Incoming Call Priorities

Via the Incoming Call Route form, IP Office can provide the capability to set a priority against an incoming call ranging 1 through to 3. Calls with priority 2 will jump ahead of priority 1 calls but not in front of priority 3 calls. By default all calls will be marked with the lowest priority, Priority 1.

3.16 Incoming Call Route Enhancements

There is a new option within the Incoming Call Route form that allows a Fallback Destination to be set. The alternate destination is used if the primary destination cannot be reached, for example if the primary destination is a busy group without queuing or if Voicemail is unavailable or congested.
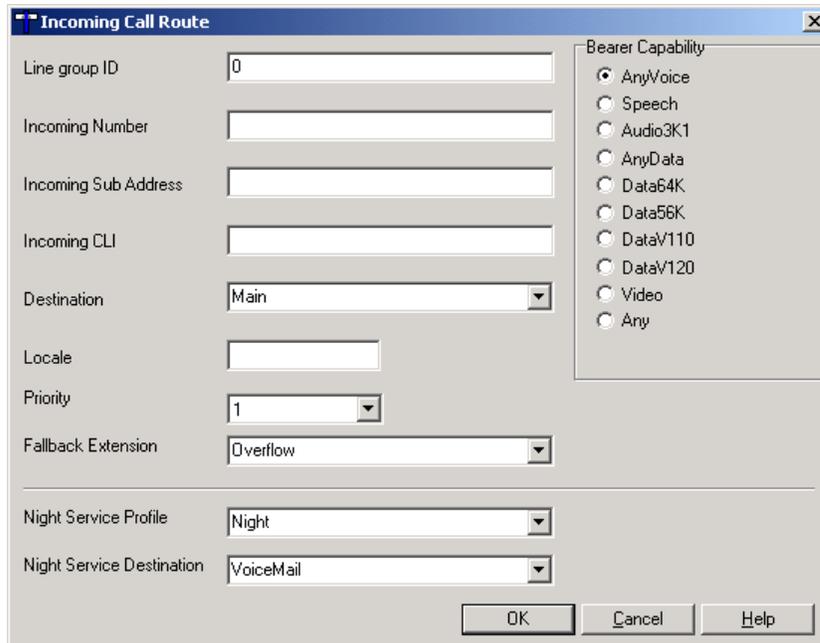
It is also possible to assign a Night Service time profile to the Incoming Call Route and specify where the call should go when in Night Service.

3.17 RIP support

IP Office 2.0 software allows dynamic IP route configuration using RIP (Routing Information Protocol). RIP is a distance vector protocol that allows routers to determine the shortest route to a destination network. It does this by measuring the number of intermediary routers that need to be traversed to reach the destination network. If more that one route exists to the same destination the shortest route is used. If a fault occurs on the shortest route it will be marked as being unavailable and an alternative route will become the new shortest route.

This behavior can be used to add resilience into a data network. Where a customer has an existing data network comprising of third-party routers, IP Office added to the network can provide back-up using its routing and dial-up capability. RIP-enabled routers share their knowledge of the network with each other by advertising and listening to routing table changes. IP Office Supports both the RIP 1 and RIP 2 standards.

The following are the RIP modes available.
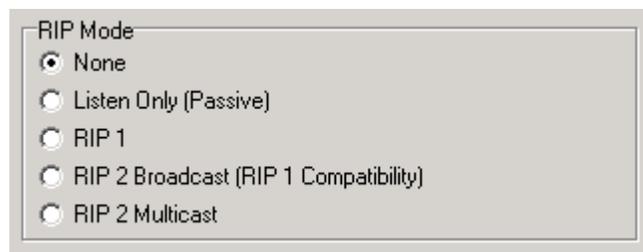
- **None**: Off – Not listening to or sending RIP packets.

- **Listen Only (Passive)**: Acting as just a listener to RIP-1/RIP-2 response/update messages. Allows the IP Office to learn the RIP routes on the network.

- **RIP 1**: Accepting both RIP-1/RIP-2 responses and sending RIP-1 responses to the sub-network broadcast.

- **RIP 2 Broadcast (RIP 1 Compatibility)**: Accepting both RIP-1/RIP-2 responses and sending RIP-2 responses to the sub-network broadcast (RIP-1 Compatibility). This is not sent to 255.255.255.255 addresses.

- **RIP 2 Multicast**: Accepting both RIP-1/RIP-2 responses and sending RIP-2 responses to RIP-2 Routers Multicast Address.

Split Horizon with Poison Reverse is employed in the broadcast of routes in response messages.

Definition: Split Horizon - Split horizon is a scheme for avoiding problems caused by including routes in updates sent to the router from which the route was learned. Split horizon omits routes learned from a neighbor in updates sent to that neighbor.

Definition: Poison Reverse - Like split horizon, poison reverse is a scheme for eliminating the possibility of loops in the routed topology. In this case, a router advertises a route over the same interface that supplied the route, but the route uses a hop count of 16, defining it as unreachable.

RIP support is available on both LAN1 and LAN2 (where available) and on the IP tab of the Services forms. By default RIP is disabled. The setting applied to the IP Office is dependant on the RIP routers deployed on your network.

When configuring RIP over a WAN link it is important to note that only numbered links are supported and that they have to be used in order for the routing to work correctly. To do this a WAN service should be created and populated in the same way as with a static route network, with the exception of the IP tab.

In the IP tab for the service you will see the radio buttons that control if and how RIP should act over this link. Select the variant of RIP that is required, e.g. RIP 2 Broadcast (RIP 1 compatibility) and then enter an IP address into the space provided. The IP address that is to be entered is not to conflict with any existing addresses / subnets on the network.

The following is an example of how the IP tab should look.
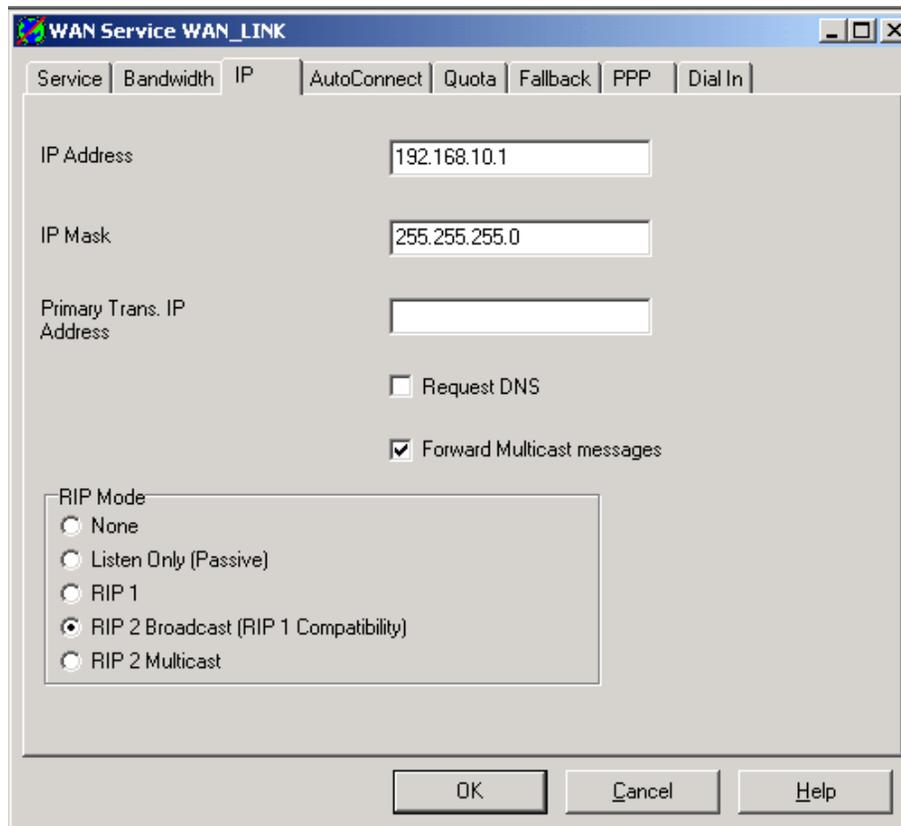
If the remote end of the link is also an IP Office then the IP address entered into the IP tab for its service should be on the same subnet as the host end. For example, 192.168.10.1 and 192.168.10.10. This will create a virtual subnet and allow RIP to route correctly.

When the service has been edited to reflect the above changes, continue configuring the WAN link as in previous versions and then save the config file to the unit.

Note: There is no need to enter any routes within the IP routes table unless static routing is also required over the network. This may be the case if a default route of 0.0.0.0 is required to route any unknown address to a specific router.

It is important to know that the only way to view the RIP routes is via the System Monitor application. The Manager will however still continue to show the static routes that have been inserted into the IP routing table manually.

To set-up the System Monitor to show the routing table you will need to select Trace options and then Routing Table in the IP Routing tab.
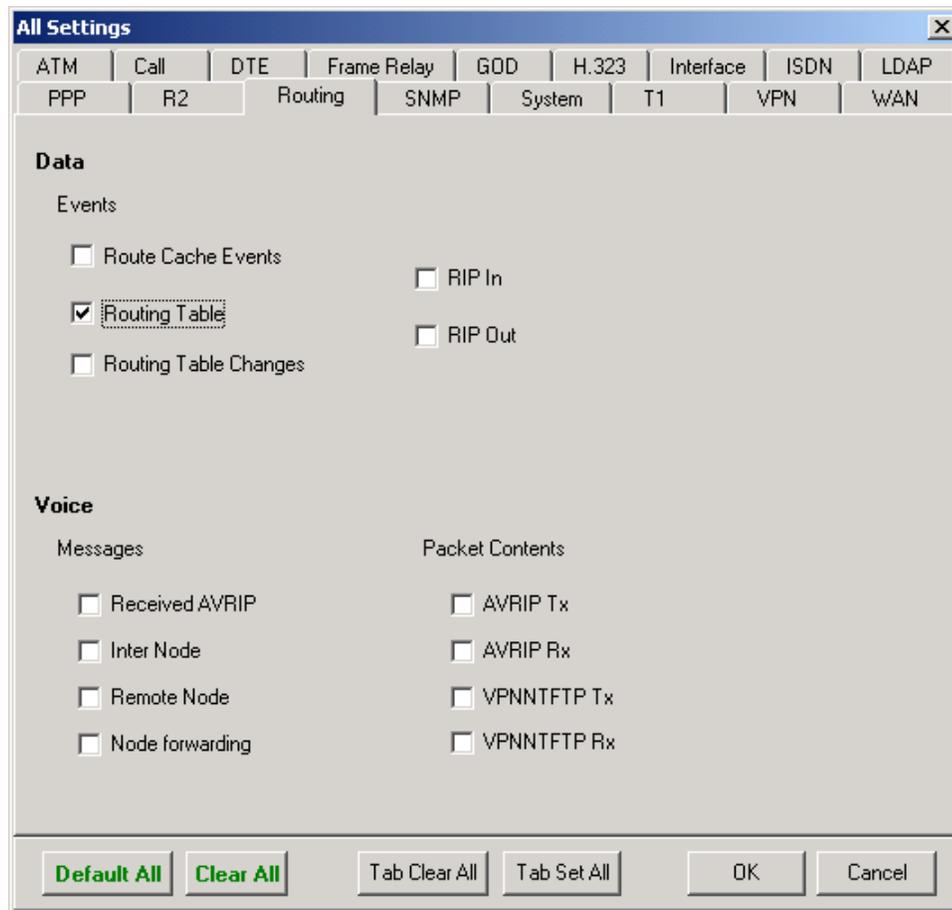
When this option has been selected, click OK, and then the routing table will be displayed via the System Monitor every minute, although the routing table will actually be updated every 30 seconds. The following is what you should see when the routing table is displayed:
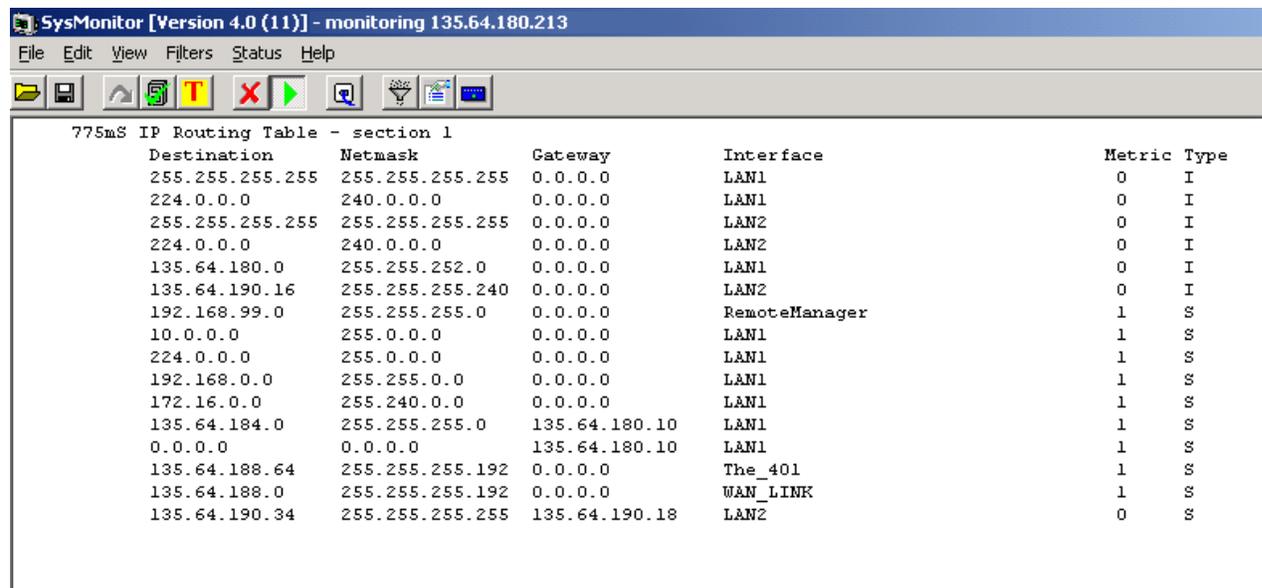
The "type" field contains the information needed to see if a route has been statically created or if it has been learned via RIP. If the route has been received via a RIP response then the type field will have an "R" in it. If, however, the route was statically created there will be an "S" in the field. "T" in the type field will show the virtual subnet that was created in the IP tab under the service and indicates that this is a temporary (unroutable) entry. "I" indicates that this is an Internal route, for example the subnet that the IP Office resides on.

3.18 Logical LAN

The use of a Logical LAN allows the configuration of Virtual Connections on the IP Office LAN ports. This in effect creates a second LAN port with its own IP subnet, although the physical connection is still on LAN1. Typically this would be used where an xDSL connection is required on an IP 403/406 (the IP 412 and Small Office Edition have a second physical LAN port already) and allows a firewall to be applied between the routing on this LAN and the physical LAN.

*Note: The use of Logical LAN is only supported on IP 403/406*

3.19 VPN Support

VPN functionality is in an extended Field Trial phase and is not a supported part of this release. If you have any VPN applications that may be suitable for Field Trial please email new.product.intro@ecs.avaya.com in the first instance with full details of the proposed application.

IP Office 2.0 software now offers IP Virtual Private Network (VPN) support using two industry standard tunneling mechanisms, IPSec and Layer 2 Tunneling Protocol (L2TP), enabling strong encryption, data integrity and authentication. The new VPN capability in Avaya's IP Office gives small and medium sized businesses a cost effective alternative to private leased line or Frame Relay services for interconnecting sites. It also allows SMBs to avoid the high costs associated with teleworkers and the mobile workforce using Remote Access Servers (RAS). Instead they can leverage the low cost of the public Internet.

IP Office VPN capability is implemented as a customer-premises-based VPN, by far the most common method adopted amongst SMBs. VPN capability is integrated into the IP Office server delivering a single box solution, with the ease of common management and a lower total cost of ownership than a multi box solution.

IPSec Tunnelling
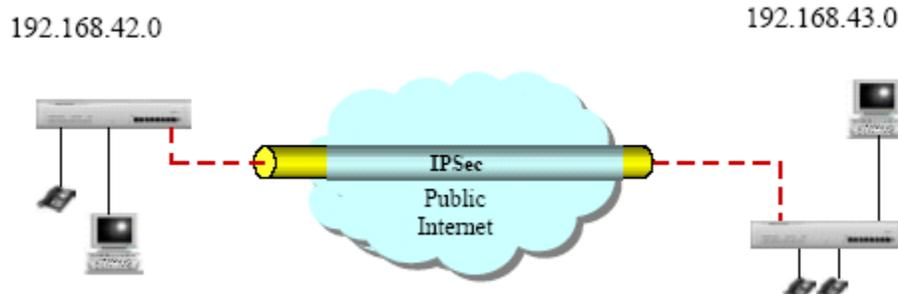
IPSec tunnels allow a company to pass data between locations over unsecured IP networks such as the public internet. The corporate data is secured using 3DES encryption making it unintelligible to other parties that might be 'eavesdropping' on the traffic. Tunneling can be applied to link offices together or provide workers access to the office over the Internet.

Note: IPSec is enabled on IP Office through a License Key.

Layer 2 Tunneling Protocol
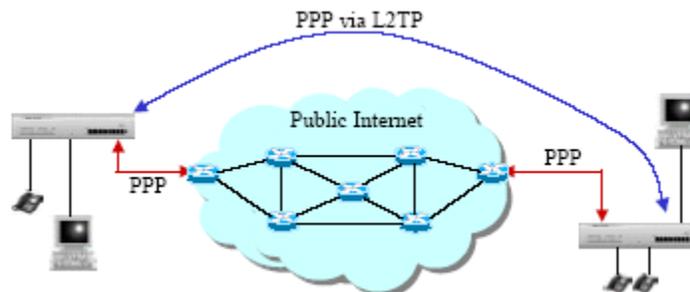
PPP authentication using PAP or CHAP takes place between directly connected routers only. When using a public IP Network to connect sites this authentication takes place between the customer's router and the service provide router that it is connected to. In some circumstances it is desirable to authenticate between the customer owned routers, jumping over all the intermediary routers of the service provide network. Layer 2 Tunneling Protocol allows this to happen by facilitating a two-stage authentication, firstly with the service provider router and then the customer router on the remote network.

VPN Functionality Restrictions

- VPN Tunneling bandwidth on supported platforms is limited to prevent the control unit being overrun by traffic that requires encryption. Although a large number of tunnels can be configured, only a few can be used simultaneously before the available bandwidth is fully used up. The bandwidth utilized very much depends on the type of traffic being passed. For all supported systems except for the IP Office 412 a maximum of four calls

can be encrypted and passed through VPN tunnels. These can either be all calls in a single tunnel, each call in a separate tunnel, or a combination of both. For an IP 412 based system, the maximum number of calls that are supported in VPN tunnels is 10.

3.20 **Frame Relay Excess Burst Mode**

IP Office running 2.0 software supports Frame Relay Excess Burst mode. The new feature augments and enhances existing IP Office 1.4 Frame Relay functionality by supporting Excess Information Rate (EIR). IP Office Frame Relay Traffic Shaping features force IP traffic to conform to specific Frame Relay parameters and accurately guarantees the availability of bandwidth for VoIP traffic. It is the means by which outbound traffic to a Frame Relay DLCI is "throttled" to the rate of the configured CIR. To implement this in IP Office 2.0 a new field has been added to the WAN Port DLCI form to facilitate the EIR configuration.

3.21 **System Monitor Enhancements**

Major changes have been made in the latest version of System Monitor provided on the IP Office 2.0 Admin CD.

The main aim of these enhancements is to reduce the amount of information displayed on screen/logged to file and to allow specific problems to be identified more easily.

New features and functionality are as follows:

- Trace Options are now listed in one tabbed form, making option selection easier and quicker.
- Filter Options are now merged with Interface Options.
- New Interface Options added - Payload Size, WAN3 Chat, ARP and Multicast. (Note: the Payload Size option does not apply to IGMP and VPN/Small Community Networking Packets.)
- Both the UDP and TCP header of IP packets now have enhanced decoding.
- All UDP and TCP decode options that provide Hex values are preceded with "0x".

- All UDP and TCP IP address decodes are now shown as dotted decimal notation.
- Common "Well Known" Protocols and UDP/TCP Ports now display their common names as well as their Protocol/Port numbers (in decimal). For example, "pcol = 1" is now decoded as "pcol = 1 (ICMP)".
- ICMP decoding has been enhanced.
- ARP decoding has been enhanced.
- IP Route Event decoding has been enhanced.
- Ability to select colored on-screen tracing for Call, System and H323 options either on an individual basis or as a whole. Tab color (i.e. all options in tab) is set by the tab "Trace Color" button; individual trace option color is set by right-clicking on the trace option.
- "Hint" text has been added to the Call, System and H323 tab options/buttons. The Hint Text is displayed when you hover the mouse over the option/button.
- New Log to File Option allows logging to screen only, or logging to File and Screen.
- New Icons have been added to the Toolbar. These are File Logging Mode (Text or Binary), File Logging Status (selected or unselected), Select Unit, Log Preferences, and Filter Options.
- The configuration of the "Main Window" background color has been removed. It is always white.
- All the toolbar icons can be selected (and toggled when appropriate) via the keyboard.
- All menu items have an associated icon where possible/appropriate.
- The keystroke "Ctl+F" now invokes "Find"; this used to be F3.
- All menu options can be uniquely invoked via the keyboard.
- More options are enabled when "Default Options" is selected and on initial application installation.
- The Default Options Button now also defaults any trace colors set in the Call, System and H323 tabs.
- Filter Options always opens up with the Call tab showing when first selected, and thereafter opens up displaying last tab viewed.
- VPN tab added/enhanced. These options are invoked when looking into VPN/Small Community Networking problems. (These options are supported in Version 2 core/module software only).
- IP Routing tab enhanced. New options have been added which should be invoked when looking into RIP/IP Routing problems. (These options are supported in Version 2 core/module software only).
- Trace options which were displayed in previous versions of SysMon which were for future use or did not produce any tracing have either been removed or grayed out.
- Trace options have been regrouped under Event or Packet where appropriate. They are also now listed in alphabetical order.
- The hourglass is now displayed when the F4 command is invoked and when Opening/Loading in previously saved SysMon Binary/Text Log File.
- System Up time used to be reported in mS, this is now displayed in Days:Hrs:Min:Sec as well as mS.
- Enhancements have been to information displayed in the application title bar. (It now displays SysMon software version and build number, and also displays "Trying to connect to [IP Address]" when not connected to a unit.)
- MonIVR option has been added.
- Full decode of MonIVR option added.
- Support for new corporate Avaya Help About box has been added.
- "Filter" option (F4) now works much faster.

- "Filter Log" can now be saved to a file.
- You can now have multiple "Filter Log" windows.
- "Blank" Payload entry is now displayed as [0].
- The VPN tab is now fully functional for the tracing of "Voice RIP" packets.
- The number of blank lines displayed between "Logging to Screen Stopped/Started" messages has been reduced.
- The "RIP In", "RIP Out", "Routing Table" and "Routing Table Changes" options have been added to IPRouting tab.
- The PPP and Interface tabs now have drop-down lists for "Interface".
- The "Tab Clear All" option now clears combo boxes.
- All options that cannot have their font color set now use the "View/Font" color selected.

4   Power Conferencing

Power Conferencing is in an extended Field Trial phase and is not a supported part of this release. If you have any Power Conferencing applications that may be suitable for Field Trial please email new.product.intro@ecs.avaya.com in the first instance with full details of the proposed application.

The integrated conferencing functionality of IP Office can be greatly enhanced by adding Power Conferencing. This optional application is a web-based software package that consists of two parts: A "Power Conferencing Scheduler" (to book and reserve conferences) and a "Power Conferencing Web client" (to complement an audio conference with a web interface). The scheduler can be used independently of the web client. Power Conferencing also interacts with SoftConsole and Phone Manager.

4.1   Power Conferencing Scheduler

The Web Scheduler allows registered users to create and book conferences online using a web client interface. The scheduler offers secure conferencing while being very easy to set up. Users simply enter the date, time, duration, and number of delegates required. The conference is then created if the resources are available for that specific time. Once reserved, the conference resources are allocated to that conference call for the specified number of delegates at the selected time and date. Additionally, Music On Hold (if available) can be played while waiting for a conference to start.


Access to the web scheduler requires a user to be set up by the administrator and have Internet Explorer (6.0 or above) installed on their PC. No other software is required. An unlimited number of registered users can be set up on the Power Conferencing application. Once registered, users can review the system resources before booking a new conference, book a conference, and list pending conferences they have previously set up.

The user setting up the conference can then add delegate details including their email address and their telephone number. This allows email notification to all participants to confirm the conference call details, including the conference name, description, bridge number, conference ID, and their unique participant PIN code (if PIN checking has been selected). Voice Conferencing Notification (VCN) can also be activated for selected participants. This allows VoiceMail Pro to dial out to delegates when the conference is about to start and bring them to the conference bridge if they are available.
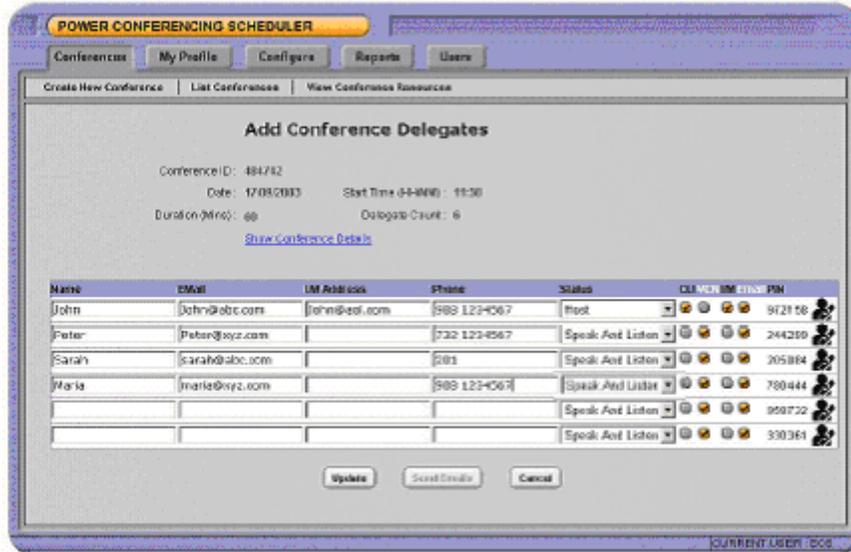
Notification via Instant Messaging is planned for a future release. Participants' details can be amended prior to the start of the conference. Advanced security is available by generating a unique PIN for every participant, allowing them to be recognized by the system and displayed on the Power Conferencing Web client (if selected – see below). If announcements are required, VoiceMail Pro will announce each participant by playing their name (if internal user) or asking them for their name (if external participant). At the end of the conference, each participant leaving the conference will be announced.

Users with administrator privilege can generate reports regarding conference usage and individual conference reports. This will detail the conference name and ID, the start date and time, duration, and number of participants. Individual reports can also be run listing delegate details and when they joined/left the conference. Additionally, if voting was being used using the Power Conferencing Web Client, voting results for each delegate would be shown for each question asked during the conference call.
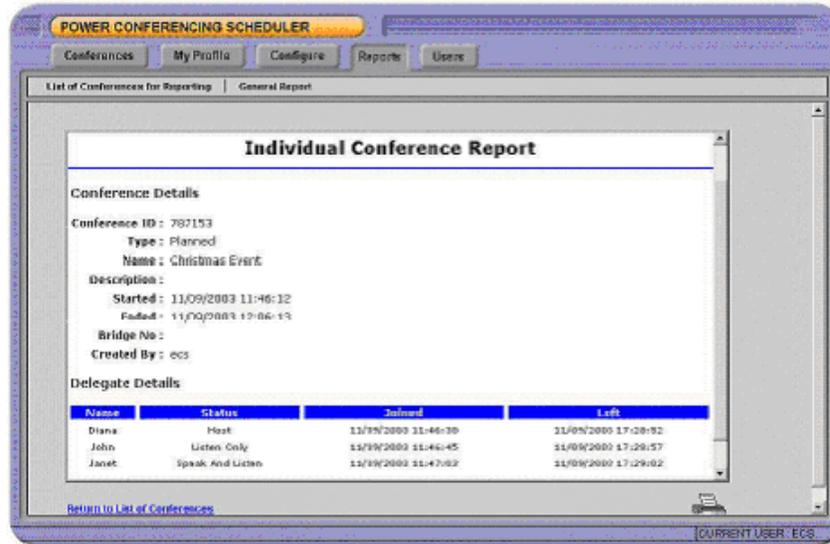
4.2 Power Conferencing Web Client

To complement the audio-conference, the host has the ability to set up web support. This offers a web interface where the host and delegates can see which participants have joined the conference and whether they joined as audio-only, or both audio and web. Privileges for a web client are limited to voting purposes only. A host to the conference has the ability to pose questions, modify delegate contact details, and "whisper" to a single participant connected into the conference.

The host can also publish a document for review on the web client. This would need to be a document saved in html format (such as a PowerPoint presentation or an Excel spreadsheet) or may simply be a website URL. When presenting the document, the host has the ability to synchronize the document to all participants (e.g. change slide) as long as he resides within the same domain as the Power Conferencing server (this is a Microsoft limitation). Delegates can be located anywhere on the Internet or across an Extranet.

Access to the Power Conferencing Web Client simply requires the participant to have Internet Explorer (6.0 or above) installed on their PC. No download is required. There can be as many web clients as there are participants on the conference call (i.e. 64 maximum). Access to the Web Client requires the participant to logon using the Conference ID and their unique PIN. This offers security and allows the system to recognize who joined the conference and display the correct name on the right-hand side of the screen.

4.3   SoftConsole Integration

An operator equipped with the SoftConsole PC-based application can set up ad-hoc conferences via drag and drop if the delegates are internal, using the Busy Lamp Field (BLF). VoiceMail Pro will then contact the delegates and bring them to the conference. External delegates are called by the operator and transferred to the conference. The operator can also transfer a call to a simple or Power Conference via the SoftConsole application.

4.4   Phone Manager Integration

Phone Manager users can join a Power Conference and book a Power Conference simply by clicking on the relevant icons within Phone Manager. This will launch the Power Conferencing Web Client and the Power Conferencing Scheduler respectively.

Note: This feature is only available if permission is specified by your system administrator and if the Power Conferencing system is available. This is set via the user's telephony settings within the IP Office Manager application.

4.5   System Requirements

• IP Office version 2.0 or higher

• VoiceMail Pro version 2.0 or higher

• Power Conferencing Server:

  o Pentium 450MHz (1.4GHz recommended) or above with 256MB RAM (512MB + recommended) running Windows 2000 Server or Windows 2003 Server (Windows XP Professional, Windows 2000 Professional could be used but would typically support a maximum of 10 web clients)
  o Microsoft Internet Information Service (IIS) installed, capable of supporting as many web clients as required (please refer to Microsoft for licensing)
  o 80MB of free disk space

• Power Conferencing Web Client:

  o Internet Explorer 6.0 or higher
  o Phone Manager version 2.0 or higher (optional)
  o SoftConsole version 2.0 or higher (optional)

5 IP Office 2.0 User Applications

The IP Office 2.0 software release also includes a new User Applications CD (2.0.13). New features added in this release are:

5.1 Phone Manager 2.0

- New Look and Feel
- Intuity Support
- Additional Screen Pop Support
- Pop on DDI
- Post Connect Dial
- Recording Control
- Forced Account Code
- Automatic Loading of User Names
- iPhoneManager QoS
- Power Conferencing Integration
- Phone Manager Personal Files
- Phone Manager Licensing

5.1.1 New Look and Feel

Phone Manager 2.0 has a completely new look and feel to previous versions of the software.

5.1.2 Intuity Support

Support for VoiceMail Pro Intuity TUI mode. It has not previously been possible to control your Voicemail messages from Phone Manager if you are running the Voicemail system in Intuity mode. Phone Manager 2.0 provides a set of controls within the Voicemail tab that allow you to control your messages from Phone Manager when you are connected to the Voicemail system.

The controls that appear within Phone Manager

- |◄ - Message Back
- ◄◄ - Skip Back
- ► - Play / Un-pause selected message
- ►► - Skip Forward
- ►| - Message Forward
- II - Pause selected message
- ✕ - Delete selected message
- ▤ - Save selected message
- ▣ - Play saved messages

A list of the new, old and saved messages contained within your mailbox will be displayed, simply highlight the relevant message and use the controls to play/delete/save that message.

5.1.3 Additional Screen-Pop Support

Screen-pop support has been added in Phone Manager 2.0 for ACT! 6.0, Goldmine 6.0, Maximizer 7.5 Enterprise and Microsoft Outlook. A new configuration tab has been added within the configure preferences screen which allows you to set which application will be used for the screen-pop. The options can only be selected if Phone Manager detects the installation of one of the supported programs.

Phone Manager uses the following screen-pop order if more than one application is selected in the screen pop tab: (1) Act!, (2) Goldmine, (3) Maximizer, (4) Outlook.

This means that if both Act! and Goldmine are selected, only Act! will be used for screen pop.

Note: When using the screen pop functionality the corresponding application must be started and opened with the required database for this function to operate correctly.

5.1.4 Pop On DDI

It is possible to have screen popping controlled by the DDI number that the call arrives on, as opposed to the CLI being presented. To enable this you must add the registry key 'PopOnDDI' into the Phone Manager registry area and set the value to 1 to pop on DDI instead of CLI.

5.1.5 Post Connect Dial

Phone Manager 2.0 allows you to enter DTMF digits from your PC keyboard whilst connected to another party such as an IVR system.

5.1.6 Recording Control

With previous versions of Phone Manager you had the ability to record a call (F5) but you had no way to stop the recording without hanging up the call. Phone Manager 2.0 provides a Start and Stop button to control the recording of a call.

Call Recording Controls

Note: These buttons are only visible on the toolbar if you are running Phone Manager in Agent Mode. If not in Agent mode you can access these features from the Functions menu.

5.1.7 Forced Account Code

It is now possible to use the forced account code feature when running Phone Manager in iPhoneManager mode.

5.1.8 Automatic Loading of User Names

Phone Manager 2.0 automatically loads the user name list from the switch and displays them in the PBX configuration dialog box. If the user name drop down list is empty, re-enter the PBX IP address and Phone Manager will retrieve the user list from the switch again.

5.1.9 iPhoneManager QoS

iPhoneManager QoS is supported in Phone Manager 2.0 in the form of Diff Serv. Voice packets are marked with the Diff Serv Code Point of '40' and network equipment should be configured to work with this value. This value is currently hard coded into Phone Manager and cannot be changed.

Note: iPhoneManager QoS works on Windows XP only. To use QoS make sure the network card used in the PC supports 802.1p and QoS Packet Scheduler is installed. There is currently no option available for the user to switch off iPhoneManager QoS. To disable QoS disable the QoS Scheduler under the network tab.

5.1.10 Power Conferencing Integration

The Power Conferencing toolbar is automatically displayed when a Power Conferencing license is detected on the switch and the Power Conferencing URL is specified (within the System form in Manager). There is no option to hide the Power Conferencing toolbar.

Book a Power Conference   Join a Power Conference

Note: To be able to book a Power Conference from Phone Manager the "Book a Power Conference in Phone Manager" option needs to be ticked in the relevant user's Telephony settings in Manager. If you do not have this option selected the "Book a Power Conference" button will be grayed out.

5.1.11 Phone Manager Personal Files

Phone Manager 2.0 no longer creates personal files in the "Program Files" directory. Phone Manager creates the directory My Documents\Avaya\IP 400\Phone Manager and stores all personal files in this directory. The local directory file, PhoneManagerDirectory.txt, is now created in this directory. When upgrading from previous releases this local directory file should be copied from the "Program Files\Avaya\IP Office\Phone Manager" directory to the "My Documents" directory.

Note: When Phone Manager starts it will open the directory file in both the "program files" directory and "My Documents" directory. Entries from the "program files" directory are read only and cannot be modified.

5.1.12 Phone Manager Licensing

The way in which you set the mode in which Phone Manager runs (Pro or Lite) is now controlled by the type of Phone Manager license that is installed and the Users Telephony settings in Manager. If you have a Per Seat license for Phone Manager, that is one, which defines a certain number of users, then you must set the mode of operation in the Users Telephony tab in Manager. This allows you to set them to run as Lite, Pro or VoIP(iPhoneManager). If you have a site license installed, that is one which is unlimited, then these settings are ignored and Phone Manager will always run as Pro or VoIP.

5.1.13 System Requirements

Phone Manager Pro & Lite:

- o Pentium 266Mhz or above with 64MB RAM running Windows95, 98, NT4SP6 or Win2000
- o Sound card if audio features required
- o 50 MB of free disk space

iPhoneManager:

- o Pentium 400MHz (700MHz recommended) or above with 128MB RAM running Windows98, NT4SP6 or Win2000
- o Sound card and microphone installed
- o 50 MB of free disk space

5.2 SoftConsole 2.0

SoftConsole 2.0 is the latest PC-based Windows Operator Console application for IP Office and replaces the current eConsole and eBLF offerings. Key Features of SoftConsole are:

- PC based operator console.

- Simple keyboard operation.

- Large display for incoming calls and extension status information.

- Bar graphs give a visual display of queued calls.

- Visual display of the status of extensions.

- Up to 16 call parking areas.
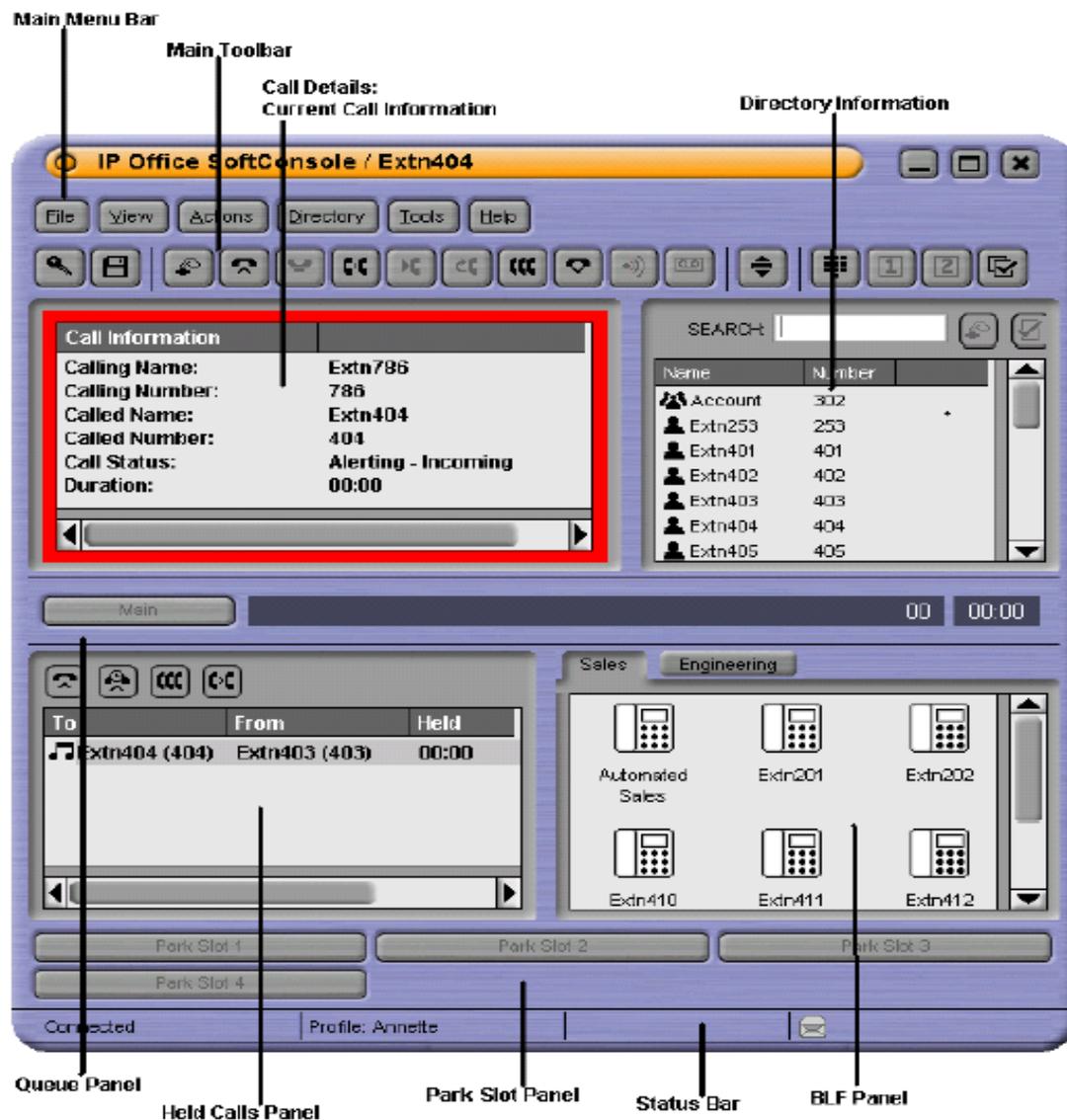
SoftConsole has been specifically designed to benefit businesses through improved operator service. Deployment of the SoftConsole provides the operator with the correct information to prioritize call handling and give the appropriate response to the caller. At the same time, the operator can maintain visibility of the number and type of calls waiting and so ensure that clients are greeted in a professional manner, enhancing the image of the company.
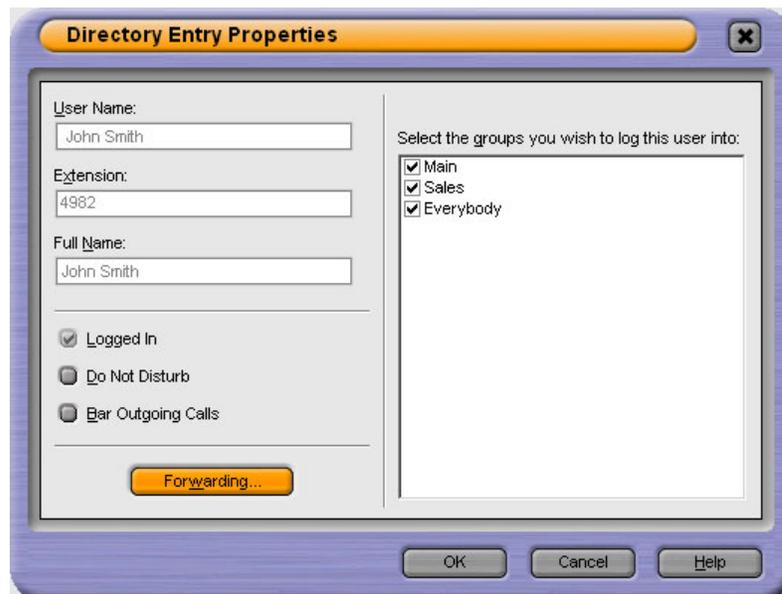
When a SoftConsole session is first started a Login Form showing operator profiles is displayed. Each Operator is able to create their own profile, which contains information on configuration preferences and connection to the telephone system.

5.2.1 <u>Directory Entries</u>

The properties of an IP Office user can be viewed by the operator, who is also able to change certain settings associated with that user. By clicking on a user displayed in the directory panel the following information is presented:


The operator can drill down further on these settings and is able to modify the following:

- **Do Not Disturb**: The operator can toggle the DND status of the user

- **Bar Outgoing Calls**: This check box allows the operator to control whether the user can make outgoing calls.

- **Group Status**: A list of the Hunt groups that the user belongs to is displayed. If the group is checked then the user is 'in group'. The operator can alter the group status of a group member from being 'in group' to 'out of group'

By clicking on the "Forwarding" button the following screen appears:
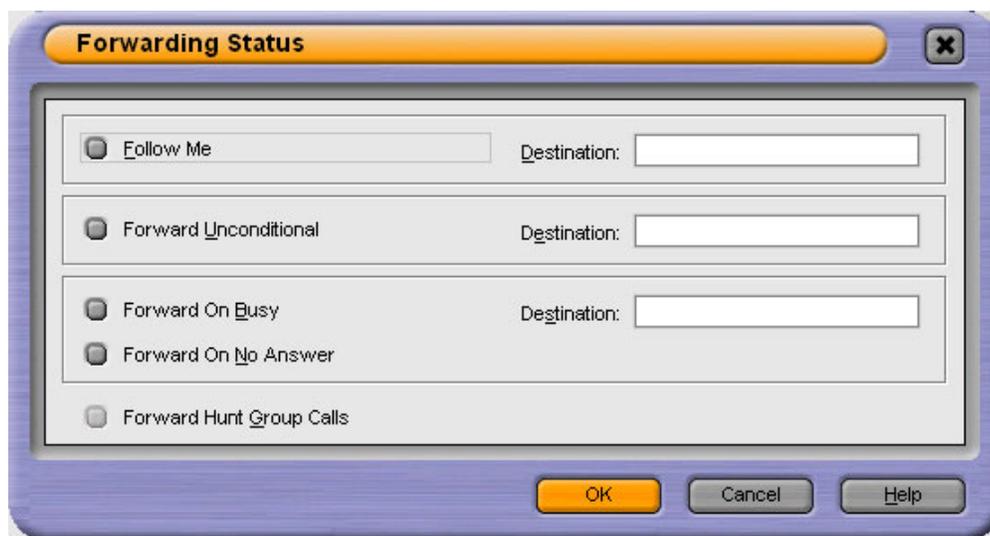
- **Forwarding Status**: The operator is able to change all of the users forwarding settings.

5.2.2 BLF Panel

The Busy Lamp Field (BLF) provides Extension/User Status Information at a glance, color-coded for ease of use. Operators can also create BLF groups (for example by department or location) to logically view the status of a group.
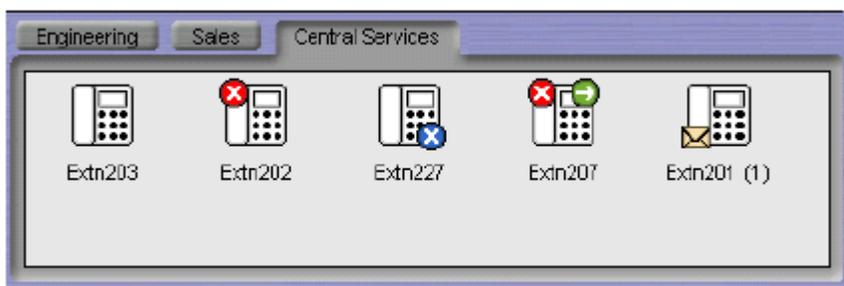
The BLF panel provides the following information:

* The user has **Unread Voicemail Messages** if there is a yellow envelope in the left corner of the icon. The number of messages appear in brackets after the BLF name, in this case there is 1 unread message.

Smith (1)

* The user is **Busy** if there is a red circle with a white cross in the upper left corner of the icon.

* The user has **Forward Unconditional** active if there is a green circle with a white arrow in the upper right corner of the icon. If the mouse cursor is positioned over the icon details of the forward destination will show.

* The user has **Do Not Disturb** active if there is a blue circle with a white cross in the lower right corner of the icon.

If the cursor is placed over an icon the status information will show. The details shown are the users name, extension number, current status and the number of new messages. If the user is not logged in then the status will show as Logged Out. If the user is Logged In then the extension/user status will be shown, e.g. idle.

5.2.3 Call Scripts

A script file can be associated with an incoming calling number. The script gives the operator information relevant to the calling number such as the company name and specific instructions. When an operator handles calls for more than one company the ability to answer incoming calls with the correct company name is essential. The use of a script will help the operator to do this.
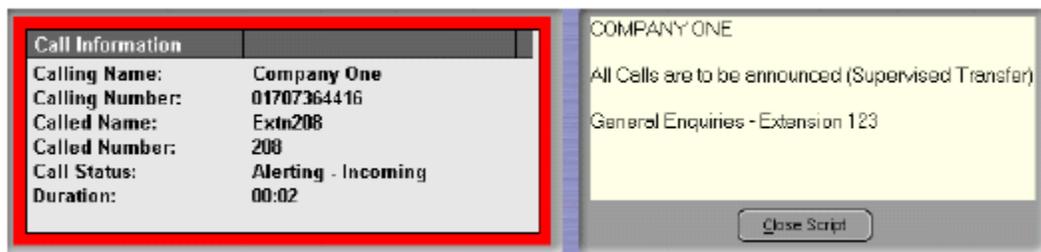
A script is text saved as a .TXT or .RTF file and associated with the incoming calling number from the Incoming Call Handling configuration form.

Note: The SoftConsole utilizes the existing eConsole license so those users who already have this may upgrade to SoftConsole at no additional cost. IP Office will support a maximum of 4 concurrent SoftConsole sessions.

5.2.4 <u>System Requirements</u>

- o Pentium II 400MHz or above with 64MB RAM running Windows 98, NT4, 2000 or XP
- o 1GB Hard disk
- o 800 x 600 display, 256 colors
- o Sound card if audio features required

6   IP Office VoiceMail Pro 2.0

The IP Office 2.0 software release also includes a new version of VoiceMail Pro CD (2.0.16)

New features in this release are:

- New Default Settings

- Fax Detection within Callflows

- Third-party IVR Database Support, including Text-To-Speech

- Text-to-Speech Email Reading

- VB Scripting

- VPIM (Extended Field Trial)

- Extended Number of Personal Greetings

- Wave Editor

- New Telephony Callflow Actions

- Forwarding Email via SMTP

- Housekeeping Preferences

6.1   New Default Settings

Intuity emulation and "Play Advice on Call Recording" is enabled by default on all new installations of VoiceMail Pro 2.0.

6.2   Fax Detection within Callflows

Through use of the Menu Action it is now possible to use the letter "F" as a touch-tone to allow for automatic fax detection. If this is used the VoiceMail can detect the incoming fax call and route it to another number.
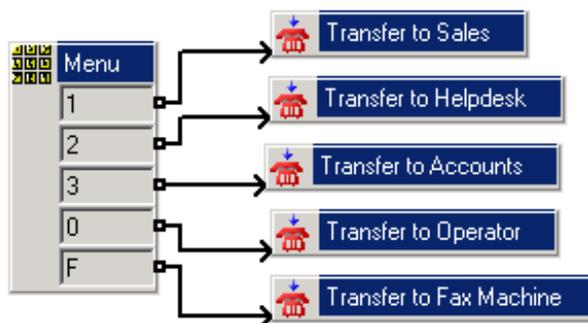
6.3 Third-Party IVR Database Support including Text-to-Speech

VoiceMail Pro 2.0 provides the ability to construct powerful interactive systems based on DTMF telephone key entry. This is achieved by using the flexibility provided by the built in Callflow actions. As a caller passes through any part of a defined Callflow the system is capable of interacting with most third party databases through the use of the standards based ADO interface (ActiveX data objects).
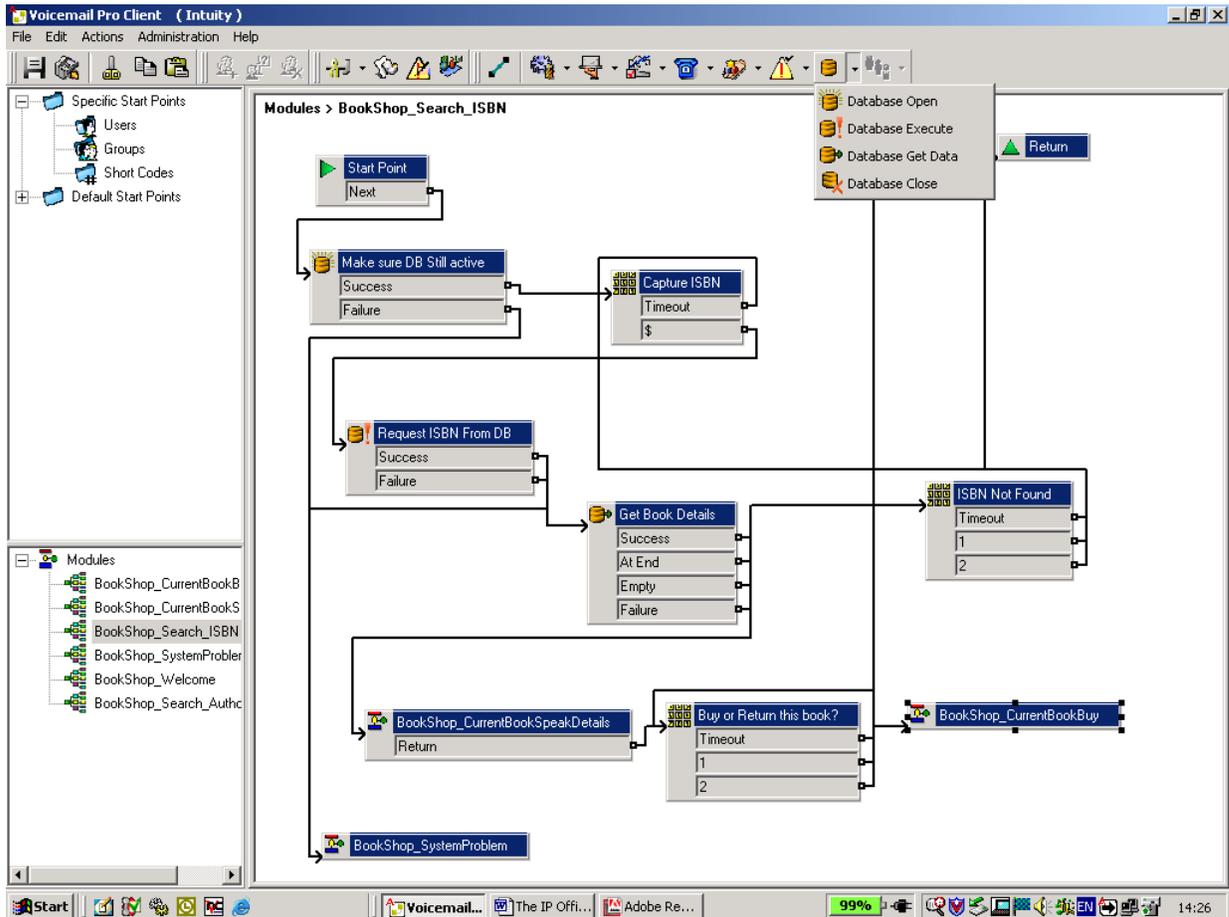
Example Callflow Utilizing Database Actions

The system is capable of retrieving information from a database and writing information into a database., enabling powerful Interactive Voice Response systems (IVR) to be designed to specifically meet the requirements of the business.

Example interactive systems that can be built as a result of these facilities include Information Bulletin Boards, order taking and order processing systems, front-end systems to Help Desks/Support Desks, Contact Centers, secure access to information through PIN checking, survey systems, etc.

Note: The ability to interact with Database information is enabled through the purchase of a license key. The entry of this key will enable the operation of four new Database Action Icons within the VoiceMail Pro Manager GUI.

The new database actions that are provided through the VoiceMail Pro GUI are:

Database Open – Opens a link to the required database. Multiple databases can be accessed during a call but only one database can be opened at one time.

Database Execute – Provides the ability to enter a query on the opened database. The query can 'Select' data from the open database or can 'Insert' data into the database.

Database Get Data – Provides access to the data that has been retrieved from a database through the Database Execute action. The user can retrieve the next item, previous item, first item in the list or the last item in the list.

Database Close – This action will close the current database. If the database is open when a call terminates then the database will be automatically closed.

As with other VoiceMail Pro Callflow actions the new database actions include the ability to communicate with the Avaya Compact Contact Center for reporting purposes.

Access to ADO compliant databases is achieved through the use of database drivers. As standard, the installation of the VoiceMail Pro software will include the installation of the Microsoft Data Access Components (MDAC) version 2.5 service pack 3 to provide access to most database systems. Any database not included within this list can be added to the system.

Interaction with the opened database is achieved through the use of Structured Query Language scripts (SQL). An administrator can enter SQL script directly into the 'specific' section of the Database Execute action. For administrators that are not familiar with SQL scripts, a script can be created automatically through the use of a SQL Query Builder Wizard. The wizard will allow the administrator to create the SQL script by selecting options from drop down menus.

Example: When 'Selecting' information from a database:
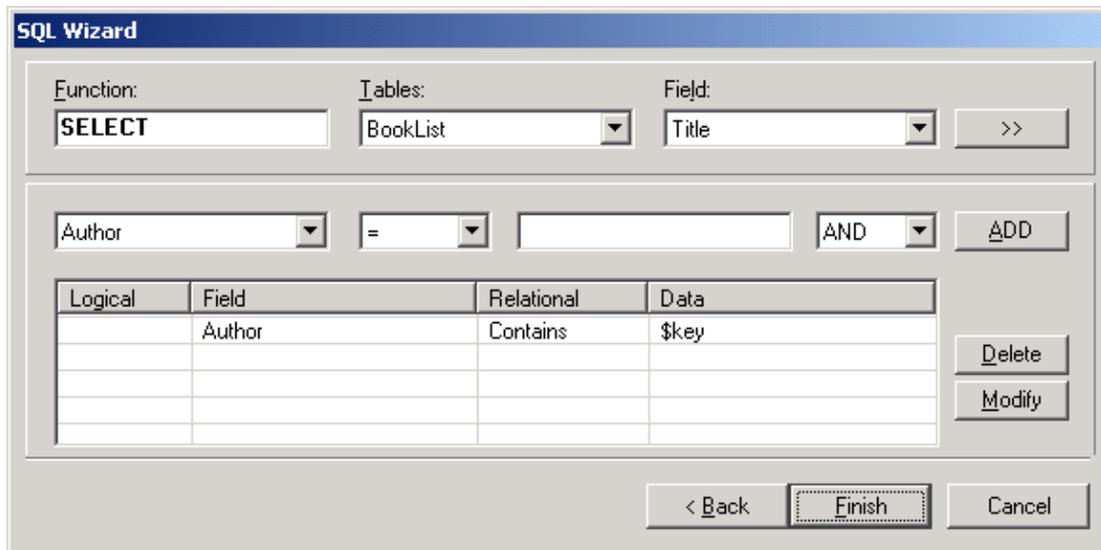
In the example above the system will find the 'Title' field entries within the 'Booklist' table where the 'Author' field contains the string held within the $key field ($key is the last DTMF entry made by the caller through their telephone handset). Up to six fields can be retrieved from the database using the system defined variables $DBD[0] to $DBD[5]. Using the appropriate Callflow action, DTMF entries can be numeric or alphanumeric through multi presses of the telephone keypad.

Alternatively, information can be 'Inserted' into a database, for example:
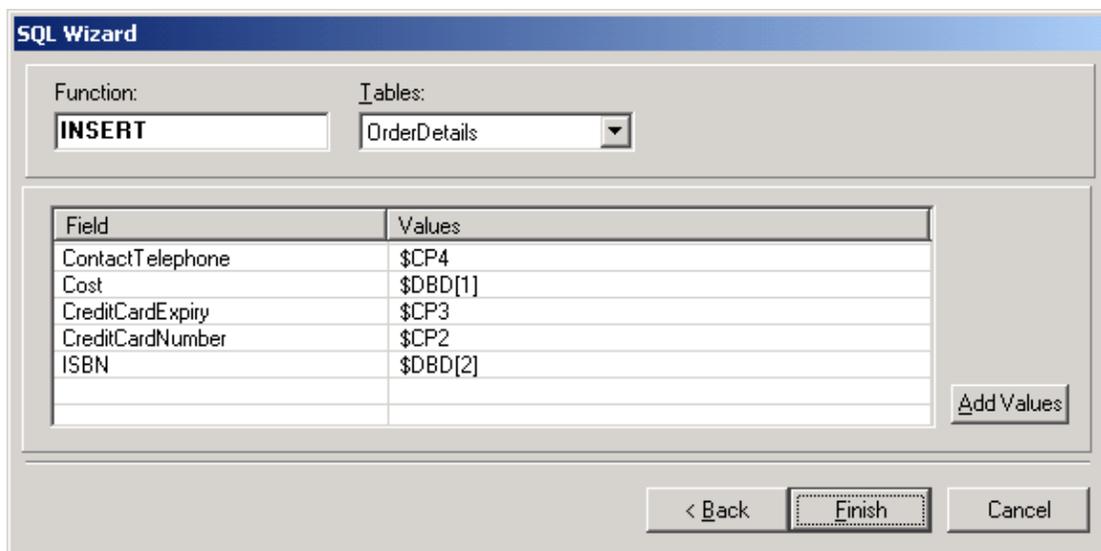
In the example above the fields within the 'OrderDetails' table will be updated with the information held within the defined system variables.

For example, ContactTelephone will be updated with the current contents of the $CP4 variable, Cost will be updated with the current contents of the $DBD[1] variable, and so on. The information retrieved from a database can be assigned to any system- or user-defined variable and can be used at other points within a Callflow.

6.4   Text-to-Speech

There are two TTS engines that can be used with VoiceMail Pro. The first is a third-party SAPI 5 compliant TTS engine and the second is a TTS engine provided by Avaya.

When using a third-party TTS engine the VoiceMail Pro will look for a pre-installed SAPI 5 compliant TTS engine on the VoiceMail Pro server PC and utilize this for the delivery of TTS facilities. All Microsoft Server Operating systems are shipped with the Microsoft TTS engine included as part of the system. As a result this engine should be available for use by a customer as default. Alternatively customers can specify another third-party TTS engine.

The TTS feature is licensed by IP Office on a per-channel basis. Each license purchased provides a single use of a TTS engine, multiple engines can be licensed on each VoiceMail Pro system. For example, a four port Voicemail may have two TTS licenses enabled, these two TTS engines will be used by all four Voicemail ports on a first-come-first-served basis. At any instance in time only two callers can use the TTS facility in this example. Purchasing additional licenses will increase the number of TTS engines available.

6.4.1   Text-To-Speech within Callflows

TTS facilities can enhance the callers experience by allowing the system to read back to them textual / numeric information that has been captured from a database. In the examples above, a Book Shop system, the caller dials into the system and is asked for an ISBN number or for the Author's name of the book they require. The caller enters an Authors name through the telephone keypad and the system locates the title of the book from the database. As well as finding the title, as in the wizard above, the system could also look up the Author of the book and whether there were any books in stock.

By using TTS, the system could now respond to the call:

" The book, Lord Of The Rings, costing $6.99, written by J R R Tolkien is in stock".

Offering the caller the ability to order this book by entering contact and credit card details could now enhance this system further.

To further enhance the new database facilities two additional actions have been added to the VoiceMail Pro 2.0 GUI. These actions are:
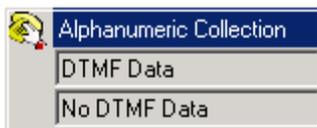
The Alphanumeric Collection action allows the system to collect characters as well as numbers through the telephone handset. A user can select the character they require through multiple presses of a key on the keypad.

This is a similar operation to text entry on a mobile phone or the letter collection facility on Intuity Audix,. For example, the letter K is generated from pressing the 5 key twice. As a key is pressed the system will read back the letter that is selected

The Speak action allows the use of Text To Speech facilities to play information back to a caller.

6.4.2 Text-to-Speech (TTS) Email Reading

VoiceMail Pro 2.0 provides the user with the ability to retrieve their Voicemail and email messages through the telephone. When accessing messages through the telephone all new Voicemail messages will be presented to the mailbox owner before any new email messages. When accessing an email message the system refers to the message as "message with text".

To use the email reading feature the user's Voicemail email setting in the Voicemail tab of the User form in Manager should be prefixed with a "+".

Voicemail Email	+jsmith@avaya.com

Note: TTS email reading is only available when VoiceMail Pro is running in Intuity mode and the relevant licenses reside on the IP Office.

The differences between the third-party TTS engine and the Avaya TTS engine are the language support and a difference in the Email reading capability. With the Avaya TTS license a TTS engine is included with support for a minimum of 14 languages*. All languages supported are included as part of the license charge. Furthermore, when reading Emails the Avaya TTS engine will analyze (parse) the Email contents and only play out information that is appropriate. With the third-party TTS license the whole textual content of the email will be played to the caller, resulting in the caller spending longer on the telephone whilst retrieving messages.

*Supported Avaya TTS Engine languages are: Chinese, Dutch, English (UK), English (US), French, German, Italian, Japanese, Korean, Norwegian, Portuguese (Brazilian), Russian, Spanish, Spanish (Latin).

6.5 VB Scripting

The VoiceMail Pro 2.0 Client Callflow interface has been extended to allow an administrator to provide Visual Basic (VB) scripted logic that can be interpreted by the VoiceMail Pro server. This ability allows system administrators to program the voice system via VB Scripts thus providing additional choice and flexibility in providing IVR applications.

The new VB script action contains a VB-Scripting parser (Syntax checker) to ensure the legitimacy of the administrator-derived VB Script before its incorporation.

Each VB script action used within a Callflow can contain a maximum of 1000 characters. A Callflow may contain multiple VB script actions within it.
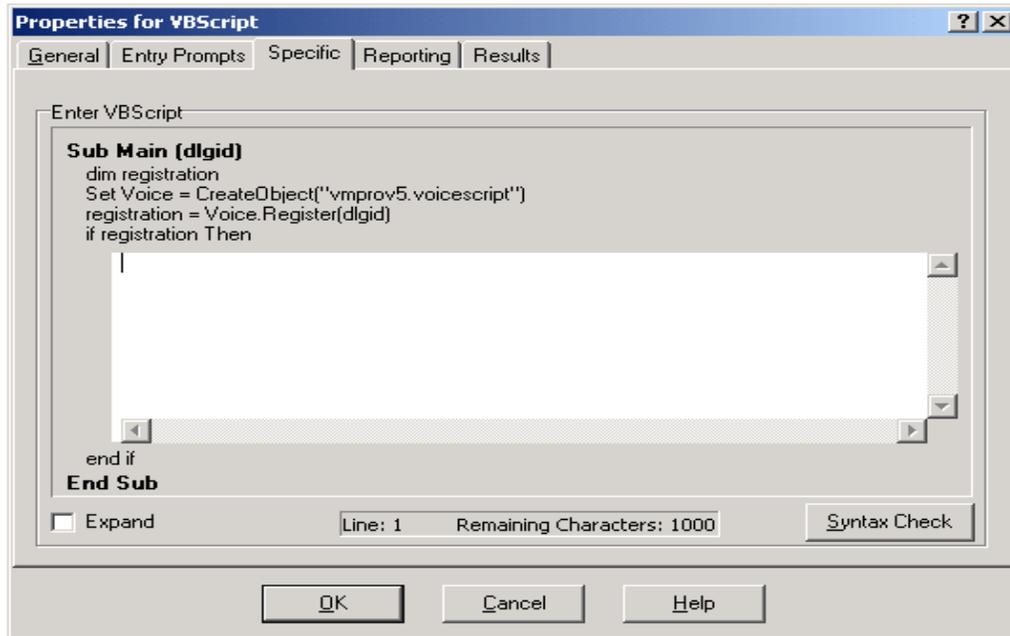
6.6 VPIM

VPIM is in an extended Field Trial phase and is not a supported part of this release. If you have any VPIM applications that may be suitable for Field Trial please email new.product.intro@ecs.avaya.com in the first instance with full details of the proposed application.

Increasingly organizations are operating a number of different Voicemail systems across a number of sites. In this situation it is important to be able to provide integrated operation between Voicemails so that messages can be passed between systems and seamlessly delivered to the user's mailbox. This is achieved by each Voicemail system supporting the standards based protocol VPIM 2.0 (Voice Profile For Internet Mail).

The VPIM 2.0 specification defines a common set of features to allow inter-working between compliant systems. In Intuity mode, when listening to or having listened to a message, the user can select the option to forward the message to another mailbox; the mailbox entered can be any mailbox number on the local system or any mailbox on a remote VPIM-compliant system.

Note: To be able to copy a message to a mailbox on a remote VPIM-compliant system, the mailbox must be specified on the local VPIM server.
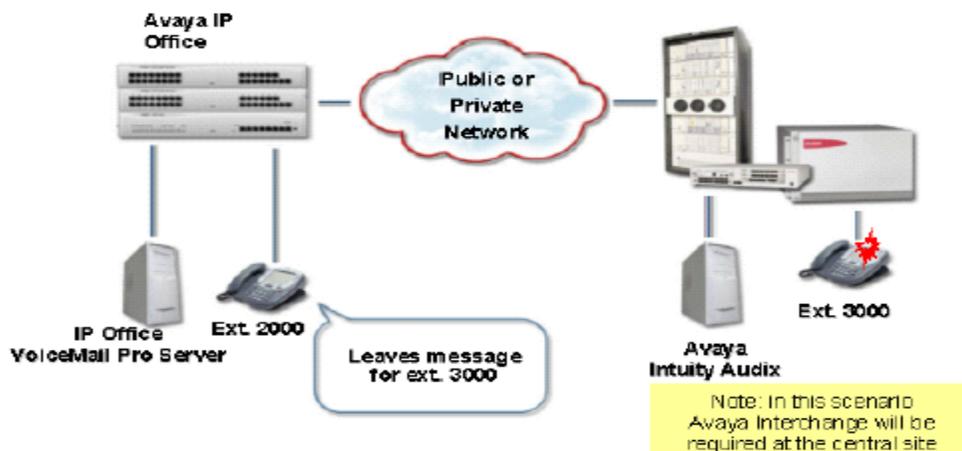
6.7   Extended Number of Personal Greetings

In Intuity mode the VoiceMail Pro system has the ability to hold a number of greetings within each User or Group mailbox that can be played to a caller. This provides the ability to present the caller with a greeting that reflects where the call has come from (internal or external) or why the called party is unable to take the call. A mailbox can configure the responses that are played back to the caller, based upon the reason the caller was routed to the Voicemail.

The supported call states are:

> • Busy/Engaged – The user is currently on a call and unable to accept a second call

> • No Reply – The user is away from the desk and unable to take a call

> • Internal – A greeting to be played to internal calls

> • External – The greeting to be played to external callers

> • Out Of Hours – The greeting played when the system is operating 'out of hours'.

Note: Out of hours only works for Group VoiceMail, there is no way to place a User into an "out of hours" state. Out of Hours is used when the target group is Out of Service.

A greeting can be recorded for each of the above conditions through the Telephone User Interface (TUI). If a recording is made for each condition, the order of playback to a caller will be: (1) - Out of hours, (2) - Busy/Engaged, (3) - Internal/External greeting, (4) - No reply. A mailbox owner will need to record greetings against these conditions to deliver the greeting that they wish to present to a caller.

6.8 Wave Editor

The Wave Editor is used by VoiceMail Pro to select, record and play prompts. It can be used to select existing prompts or to record new prompts. It is now possible to use either PC Multimedia or a Telephony Handset to administer the prompts.
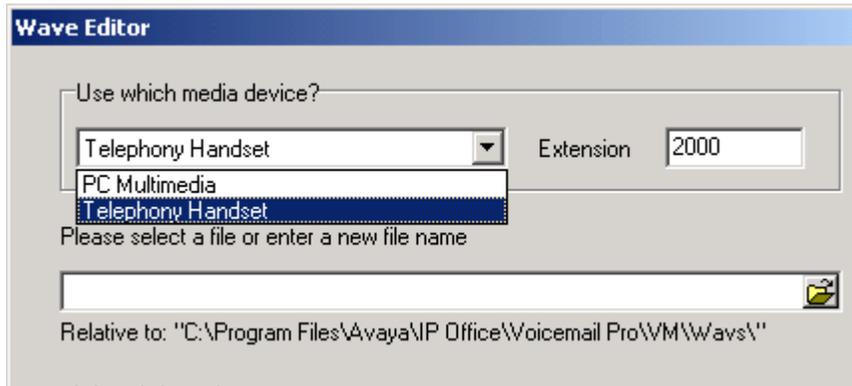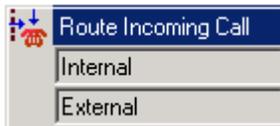

6.9 New Telephony Callflow Actions

VoiceMail Pro 2.0 also provides the following new callflow actions:

The Route Incoming Call action allows calls to be routed to different actions depending on the call type, internal or external.
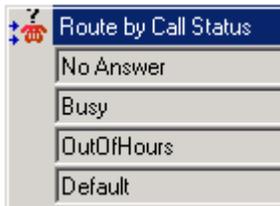
The Route by Call Status action has four results for which connections to the following can be made: No Answer, Busy, Out of Hours and Default. When used together with the Route Incoming Call action this will allow a similar feature to the extended amount of personal greetings that are available to Intuity Voicemail users to be offered to users running VoiceMail Pro in IP Office mode.
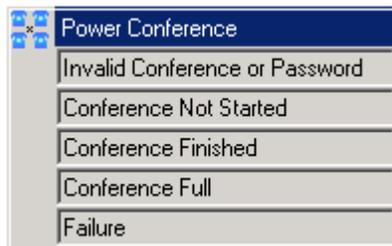
This action acts as a failure route for callers trying to access a conference. If the caller is unsuccessful in entering the conference, there are five possible results, which are Invalid Conference or Password, Conference Not Started, Conference Finished, Conference Full, and Failure. If the caller enters the correct conference information & PIN they are transferred into the conference.

The "Specific" tab settings of this action can be set to gather conference and PIN information before validation. If this option is selected, the caller will be asked for the conference ID and then the PIN. The results are collected and then verified.

If either entry is invalid the caller is notified but not told which entry is incorrect. If this option is not selected then the entries are validated as they are entered.

It is also possible to limit the number of attempts a delegate can try and enter the conference ID. Up to 10 re-tries can be set. If the ID is entered incorrectly the result Failure is returned.
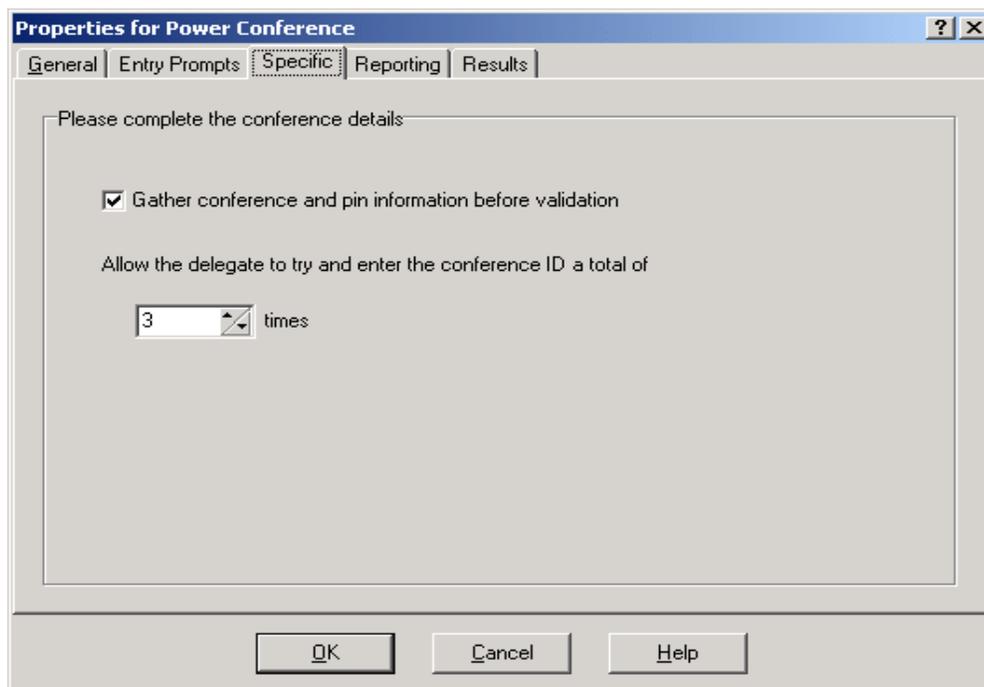
6.10 Forwarding Email via SMTP

It is now possible with VoiceMail Pro 2.0 to forward Voicemail as email to non MS Exchange email servers via SMTP.

6.11 Housekeeping Preferences

A new tab has added to the System Preferences options. This tab is used to control the automatic deletion of messages. All of the settings can be changed to suit user preferences.

The default settings are:
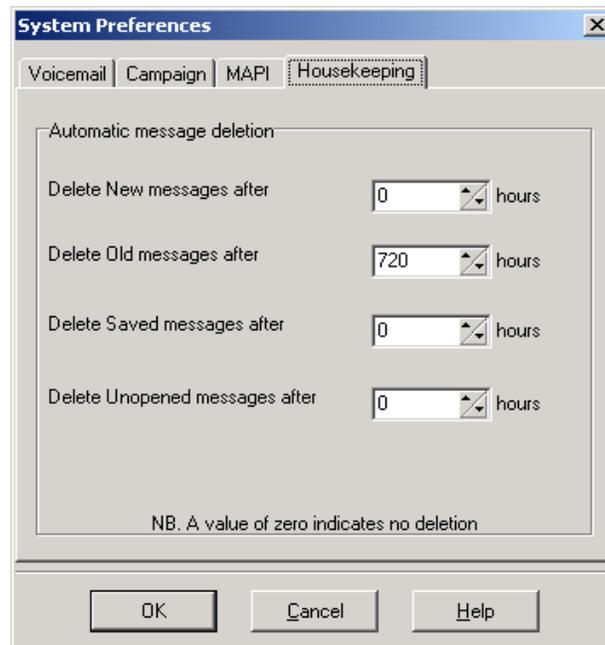
6.12 System Requirements

System Requirements for VoiceMail Pro:

The minimum PC specification for VoiceMail Pro and up to 8 Channels of TTS is:

- o Pentium PIII 800 MHz or above with 256MB RAM (98,NT) or 512MB RAM (Windows 2000/XP).
- o HDD Min 20GB (preferably 7200rpm for better performance), 2GB for Operating System and VoiceMail Pro, plus free space for Voicemail storage.

Note: When using third-party databases, the size, location, and database used may also impact the minimum specification.

7 Issues Resolved in IP Office 2.0 Software

The following issues have been resolved in this release of IP Office 2.0 software:

7.1 Core Software

- Occasionally the IP Office would allocate a DHCP IP Address that is outside of its DHCP pool of addresses.
- If the IP Office DHCP Server allocates an address from its DHCP pool of addresses that is subsequently declined it would never try to reallocate that IP address on future requests.
- If running VoiceMail Pro on an IP 403 with a 4-port VoiceMail license you could make 5 calls into VoiceMail.
- In certain scenarios Music-On-Hold was mapped into a Conference call.
- Incorrect ETA value when more than 5 calls were queuing.
- Incoming Hunt Group calls, which are being diverted off-switch to certain numbers, had no speech path.
- If a user who had Phone Manager Pro had two calls on hold and parked them both, when trying to get a call back by clicking on the Park slot the call could disappear. The call was still on hold and could be seen in the Call Status window.
- If using VMPro to do an assisted transfer to an eConsole user and presenting some TAG information, this would be presented correctly whilst the call was ringing but an additional character would be added to the TAG on answer.
- It was not possible to ping a service with a numbered link from a local PC.
- If the Gatekeeper form DSCP and Sig DSCP values were set to 0 the IP Office would crash when the configuration was sent to it.
- When using VMPro Dial by Name feature to perform an assisted transfer of an external call, the call was presented as an internal call.
- If you had Administrator privileges for Manager but your Operator name was not Administrator, the CPE/CO option on the T1/E1R2 Advanced form was not displayed.
- An incoming call to a POT extension that was answered and then transferred never returned to the transferring extension if VoiceMail was not enabled.
- When an external call was transferred by an analog phone to another analog phone, internal ring tone was presented.
- The IP Office could reboot if a service without a name was created.
- If a POT user was on a call and had a call waiting, pressing the Hold button placed the original caller on hold and at the same time answered the waiting call. This behavior can now be controlled by a new user Telephony setting called "Answer Call Waiting on Hold (Analog)".

7.2 VoiceMail Pro

- When using Centralized VoiceMail, if a remote site added any new Users or Groups the Users were created on the VoiceMail but the Hunt Groups were not added until the VoiceMail service was restarted.
- When running VoiceMail Pro in Intuity mode and listening to the greeting options you would be presented with option 4 which would allow you to administer call types. Selecting this option would return an "Invalid entry" prompt.
- VoiceMail help options played in Intuity mode were incorrect.

- IMS did not properly create a user profile on IMS server.
- If setting the IMS client to play messages through the handset the setting reverted to playing the messages through the multimedia speakers the next time a message was played.

7.3 User Applications

Phone Manager

- If using Phone Manager to record a call there was no option to stop the recording.
- Unable to configure language preferences in Phone Manager. A new option has been added in Phone Manager 2.0 to enable this.
- Unable to send digits from Phone Manager once connected to a call.
- Phone Manager would pop when receiving a page call.
- Unable to hang up one party when in a conference call.
- Not able to configure shortcut keys.
- If a user double clicked on a speed dial just as an incoming call was presented the incoming call was transferred to the speed dial.
- If using iPhoneManager and multiple calls were presented the speech path was present only for every other call.

eConsole

- If using the eConsole to transfer a call to a user who was logged-off, the eConsole would show the user as available. The correct status of the user will be shown if using SoftConsole.

7.4 System Monitor

- Binary logging now works.
- Problem saving IP Address index to Registry when exiting Select Unit form via Cancel Button has been fixed.
- Indication that a negative number of packets had been missed has been fixed.
- Can now Open/Load back previously saved SysMon .txt or .mon files. (Please note that the Main Window only displays the last 1000 lines of text.)
- Ctl+C used to invoke Reconnect and Copy. Reconnect is now Ctl+E and Copy is Ctl+C.
- SysMon Status Prints now come out correctly. They are preceded by "RES".
- Fixed port of RIP monitoring options and added control of IP routing table monitoring.
- Truncated "Call/Extension Receive" field when color set has been fixed.
- Registry Access Violation messages - "onhour", "onsize", "fileinterval" & "statusinterval" registry settings are now checked to see if they exist.
- Crashing caused by the clearing of a destructed ComboBox List has been fixed.
- Fixed a problem whereby it was not possible to select the "IP Office" option on the Unit Preferences form.
- Fixed bug in "Up Time" conversion display.
- Default print color problem has been fixed - used to use System/Print color and not the color configured in View/Font.
- "Registry changed" message box, which caused Access Violation, has been removed.

8 Known Issues

8.1 Core Software

- IP Office 2.0 supports the configuration of a fallback extension or group within the Incoming Call Routing form. This allows the system to route the call to the configured fallback if the primary target is busy and does not have voicemail configured. If you select a group for the fallback destination and then merge the configuration back into the system there is the possibility that the system may reboot. To overcome this when you want to select a group as the fallback destination you should manually enter the group number into this field.

- The alarm log, which can be viewed in the System Monitor, will only hold the first 20 alarm records, it does not overwrite the oldest alarm message when the log is full.

- The time offset in the BOOTP manager form does not function.

- If using 4620 IP Handsets connected to an IP 412 on LAN2 you must specify the Call Server address on the phone as the IP address of the IP 412's LAN1 port.

- If you have enabled hold music, either via the HoldMusic.wav file or via the external Music on Hold port, and you dial *34 via a speed-dial from either an IP Hardphone or an IP Softphone, you do NOT get connected to Music-On-Hold. However if you dial *34 via the keypad on an IP Hardphone (not possible on an IP Softphone) it works.

- If you are using RIP to learn an IP route and you also enter this same route using a static routing entry the static route will always override the RIP route. This applies even if the RIP route has a lower metric than the static one.

- If using centralized VoiceMail and Small Community Networking it is not possible to invoke the "Call Record" feature from a Phone Manager that is associated with an IP Handset that is not located at the same site as the VoiceMail Server. Although the VoiceMail tries to record the call there is no speech path established so the message only contains silence. Using an IP Handset on the same site as the VoiceMail Server works correctly.

- A new version of software for the 46xx IP Handsets, 1.8.1, is installed with the IP Office 2.0 Admin suite. To enable Direct Media to function correctly you must change the 802.1Q setting from Auto to Off.

  This is achieved as follows:

  On the handset keypad press the Hold Button (the red one) and the using the keys type in A.D.D.R (the key sequence for this is 2337). Then press the # key to step through the settings on the phone. When you get to the 802.1Q setting use the * key to change this setting to OFF and then use the # key again to finish stepping through the settings. The phone will then need to be restarted for the new setting to take effect.

- Embedded VoiceMail Voice Recording – Voice Recording is not supported when you are using the Embedded VoiceMail although you are still able to set this up for Users and Groups.

- When using Embedded VoiceMail the maximum message time is limited to approximately 45 seconds.

- IP Office – Small Office Edition Wireless Network. If you are using an Avaya or Agere supplied wireless card in your PC to connect to the Small Office Edition Wireless network you must make sure that you have the latest driver available for the card or there is the possibility of locking up the Wireless network.

  The driver that you have should, as a minimum, be as follows:

  > Provider: Agere System
  > Date: 09/01/2003
  > Version 7.82.0.323

8.2 <u>VoiceMail Pro</u>

- It is no longer possible to send emails from the VoiceMail Server using MAPI, the VoiceMail Server will always use SMTP to send messages. This can cause an issue if the customer's SMTP Server has been secured so that no SMTP mail is allowed from inside their own network.

- When using IVR integration your query can fail if requesting data from a TEXT field in an Access 2000 database.

  Example: The Access table has 3 fields:

  Name : Text Field, 50 chrs
  ID   : Text Field, 4 chrs
  Pass : Text Field, 4 chrs

  Record 1 =   Name:Joe Bloggs
                         ID:1234
                         Pass:4321

  The database is opened and is queried with a 4 digit string that a caller has entered, this string is stored as the variable $KEY. The query fails to find the record in the database.

  Workarounds : The following workarounds can be used, any of these will allow the query to return 1 record successfully.

  Change the ID field in the Access database to be a Numeric (Integer) type **or**

  Change the Where ID = $(KEY) query string to Where ID = VAL($KEY) **or**

  Change the Where ID = $(KEY) query string to Where ID = '$KEY'

- VoiceMail Pro running in the Chinese locale plays incorrect prompts for extensions in the 700 and 7000 number ranges.

8.3   <u>User Applications</u>

Phone Manager

- When using version 2.0.13 of Phone Manager associated with a DT handset, Phone Manager is unable to answer the "call on hold reminder" ringback. When attempting to answer the call on Phone Manager the call appears as answered but the handset continues to ring. The handset must be lifted to answer the call and Phone Manager will continue to function normally. This problem does not affect the iPhoneManager Pro or the DS handsets.

- When using iPhoneManager you may not hear ringing/ringback tone. To overcome this make sure the following settings are applied:

    o   IP Office Extension form: VoIP/Local Tones – Disabled
                                         VoIP/FastStart – Enabled

    o   iPhoneManager Preferences: AudioCodec/FastStart – Enabled
                                         Phone Manager/Play Sounds – Enabled
                                         Phone Manager/Enable VoIP – Enabled

- There may be an interoperability issue with Cisco Firewalls when the Phone Manager is set to utilize the Microsoft QoS Packet Scheduler functionality. It is recommended that the Microsoft QoS Packet Scheduler functionality is turned off if using a Cisco firewall.

SoftConsole

- If all BLF groups are removed it is not possible to add new BLF groups using the GUI right click menu option. The BLF panel becomes a gray box. To workaround this use the menu Tools | Options | BLF Groups to add new BLF groups.

9   Technical Notes

9.1   Upgrade Installation Notes for IP Office 403/406/412

When upgrading from a version of software prior to 2.0 the following procedures must be observed and the instructions followed to achieve a successful upgrade.

Note: It is recommended that any units not running 1.4 software should be upgraded to this version first before upgrading to 2.0. If this process is not followed Avaya cannot guarantee that the configuration will be upgraded as intended.

Before any upgrade commences the old Admin suite must be removed and the 2.0 Admin suite must be installed. The IP Office 2.0 Admin CD is now fronted by the Microsoft installer, which behaves differently to the InstallShield package used on previous releases. The following points on this should be noted:

- In all cases the old version of the Admin suite must be uninstalled using add/remove programs before the 2.0 Admin suite is installed. The install will not occur unless the previous software has been removed. The same applies if moving between versions of the 2.0 Admin suite.

- Microsoft .NET is required to support some of the new applications. It is recommended that .NET is installed. This may take several minutes to complete.

- If installing on a PC with .NET Framework version 1.0 installed, this **must** be un-installed before installing 1.1. This can be done by going into Control Panel, selecting Add/Remove Programs and then selecting the 1.0 Microsoft .NET Framework.

Note: If upgrading the system software from a Windows 2000 PC directly connected to the IP Office, ensure that the IP address is set as static for the duration of the upgrade. When in client mode, Windows 2000 can lose its IP address settings immediately if it detects a disconnection from the LAN (this occurs as the unit reboots during the upgrade process). This can cause the upgrade to fail and the unit to be left with no software.

■■

Important Information – IP 403 Upgrade Only

There are two IP 403 binaries in this release: one for updating the loader, version 1.99(1003) and the real binary, version 2.0(16). The loader upgrade must be done first and is required to create additional space in the area of Flash memory used for storing the operating software. These binaries exist in subdirectories of the main Manager directories. The loader version can be found in the Manager\IP403V1_99 directory and the real binary is in the Manager\IP403V2_0 directory. When upgrading an IP 403, copy the required binary file into the Manager or Binary working directories. Failure to follow these instructions will result in a failure of the upgrade to your system.

■■

9.1.1 <u>IP 406/412 Upgrade Instructions</u>

To upgrade the Control and Expansion units do the following:

1. Ensure that you have received and made a backup copy of the latest IP Office configuration. If for any reason the upgrade fails the current configuration may be erased, so a backup copy is essential.

2. In Manager select File | Advanced | Upgrade. This will start the UpgradeWiz application.

3. After a few seconds the upgrade wizard should show the Control and Expansion units found.

4. If no units are found using the broadcast address 255.255.255.255 this implies that the Manager PC is not on the same LAN as the IP Office. You should not continue in this case until you identify a Manager PC on the same LAN as the IP Office.

5. A window similar to the following is displayed. The list shows the current software levels of the units and the level of the appropriate bin file that is available in the Manager/Binary working directories.
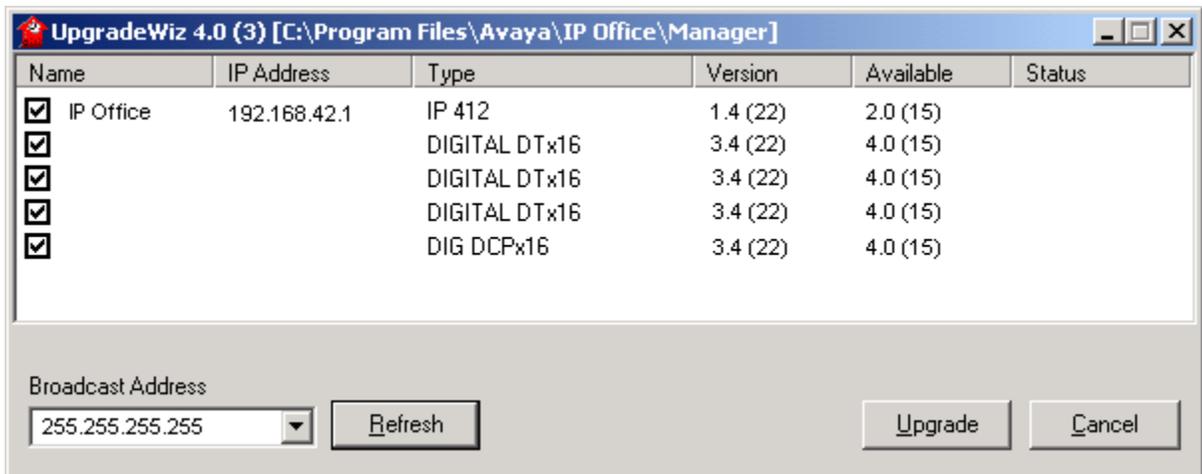
6. The current Version and Available versions are displayed. Tick the check box under Name if it is not already ticked then click on Upgrade.

7. Enter the password of the existing configuration (not the default). Click OK and IP Office will reboot and undergo the upgrade cycle. This takes around a minute to complete. Click OK to finish once the upgrade has completed. This will close the UpgradeWiz window

9.1.2 <u>IP 403 Upgrade Instructions</u>

*** Please read all of the following instructions before upgrading an IP 403 ***

The following procedure is applicable to the IP 403 only. All other CPU's can be upgraded from 1.4 to 2.0 using the standard upgrade procedure described in the previous section.

Upgrading the 403 from 1.4 to 2.0 requires an upgrade of the loader software to version 0.81. The upgrade procedure is as follows:

1. Install the Admin Suite as normal. Do not open the Manager application.

2. Using the Explorer on your PC open up the Program Files | Avaya | IP Office | Manager | IP403V1_99 folder. This will contain a file called ip403.bin. This file is level 1.99 of the IP Office 403 firmware and contains the loader that is necessary to be able to upgrade from 1.4 to 2.0 and must be used in place of the existing ip403.bin file. Copy this file to the Manager folder within the IP Office suite on your PC, that is, Program Files | Avaya | IP Office | Manager, to overwrite the existing ip403.bin file.

3. Open the Manager and ensure that you have received and made a backup copy of the latest IP Office configuration. If for any reason the upgrade fails the current configuration may be erased, so a backup copy is essential.

4. In Manager select File | Advanced | Upgrade. This will start the UpgradeWiz application.

5. After a few seconds the upgrade wizard should show the Control and Expansion units found.

6. If no units are found using the broadcast address 255.255.255.255 this implies that the Manager PC is not on the same LAN as the IP Office. You should not continue in this case until you identify a Manager PC on the same LAN as the IP Office.

7. A window similar to the following is displayed. The list shows the current software levels of the units and the level of the appropriate bin file that is available in the Manager/Binary working directories.
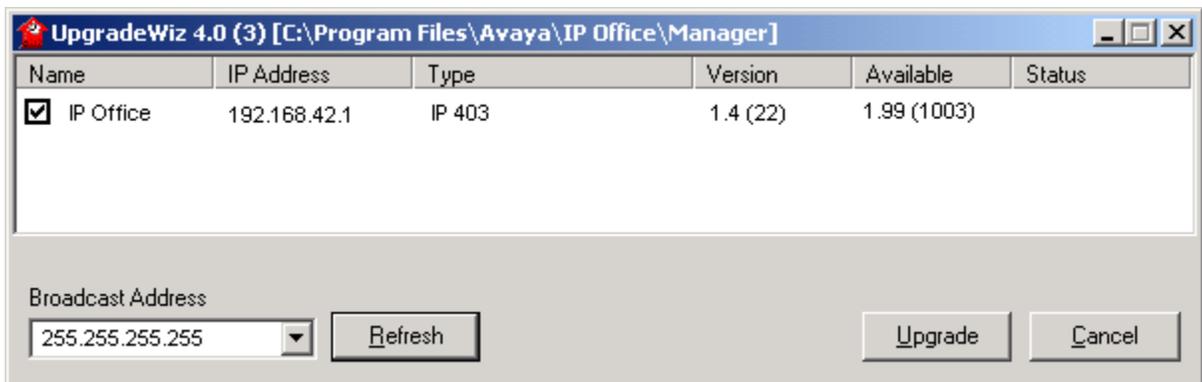
8. The current Version and Available versions are displayed. Tick the check box under Name if it is not already ticked then click on Upgrade.

9. Enter the password of the existing configuration (not the default). Click OK and IP Office will reboot and undergo the upgrade cycle. This takes around a minute to complete. Click OK to finish once the upgrade has completed. This will close the UpgradeWiz window.

10. When version 1.99 firmware is installed in the IP Office 403 system the front panel LED's will flash a pattern indefinitely indicating that another version of the IP Office firmware must be loaded into the IP Office 403 base unit in order to make it fully functional.

    When version 1.99 firmware is installed, the functionality of the IP Office system is very much reduced, there is no trunk support, there is no telephone handset support, there is no support for VoIP functionality, etc. There is also no support for expansion units, consequently these will not be visible in the upgrade wizard when the CPU is running 1.99

11. Using the Explorer on your PC open up the Program Files | Avaya | IP Office | Manager | IP403V2_0 folder. This will contain a file called ip403.bin. This is the 2.0 IP Office firmware. Copy this file to the Manager folder within the IP Office suite on your PC, that is, Program Files | Avaya | IP Office | Manager, to overwrite the existing ip403.bin file.

12. Repeat steps 4 – 9 of the above procedure.

13. The IP Office 403 system should now be at version 2.0.

14. Now that version 2.0 is on the CPU the expansion units can be upgraded in the normal way using the upgrade wizard.

Note: If you attempt to put 2.0 software directly onto the IP 403 without installing the new loader version first the upgrade will fail and the system will have to be recovered via the DTE maintenance port. Full details of this procedure can be found in the IP Office Job Aid "DTE Port Maintenance", which is available from the Job Aids section at the following website:

https://support.avaya.com/

Note: The above procedure does not need to be performed if the IP Office 403 base unit was delivered from the factory already containing version 2.0 or later firmware.

- The above procedure need only ever be completed once.

- Once the above procedure has been completed all previous versions of IP Office 403 firmware may be freely loaded into the system.

- Inadvertently repeating the above procedure will do no harm. Version 1.99 firmware for the IP Office 403 system detects whether or not the loader needs upgrading automatically and will only ever perform the modification once.

- Confirmation of the activities outlined above may be obtained by connecting a PC serial port terminal to the DTE port on the back of the IP Office 403 and monitoring the session. An indication that the loader has been upgraded is provided.

- The AT-X4 command has been added to the new IP 403 loader to erase the extra configuration space now available. This should be used in conjunction with AT-X2 and AT-X3 when defaulting an IP 403 unit via the DTE port.

9.1.3 Unit Compatibility

Expansion unit interoperability

All expansion units must be upgraded or downgraded to match the CPU software.

System Interoperability

When connecting 2 systems of differing software levels together via PPP the following rules apply:

	System 2						
System 1	1.0(60)	1.1(25)	1.1(27)	1.2(14)	1.3(16)	1.4(22)	2.0(x)
1.0(60)	✓	✓	✓ see note 1	✓ see note 1	✓ see note 1	✓ see note 1	✓ see note 1
1.1(25)	✓	✓	✓ see note 1	✓ see note 1	✓ see note 1	✓ see note 1	✓ see note 1
1.1(27)	✓ see note 1	✓ see note 1	✓	✓	✓	✓	✓
1.2(14)	✓ see note 1	✓ see note 1	✓	✓	✓	✓	✓
1.3(16)	✓ see note 1	✓ see note 1	✓	✓	✓	✓	✓
1.4(22)	✓ see note 1	✓ see note 1	✓	✓	✓	✓	✓
2.0(x)	✓ see note 1	✓ see note 1	✓	✓	✓	✓	✓

Note 1: When this combination is used IP Header compression and Multilink must be disabled on the link. These options are not supported between these software revisions.

9.2 Upgrade Installation Notes for VoiceMail Pro

When upgrading from one software level to another the original software needs to be uninstalled. The uninstallation process only removes those files installed during the application's original installation. Any other files added since are not removed, such as VoiceMail messages. Any callflows that have been created will still operate, but they will not be editable after the

upgrade. To make sure that the callflows can be edited they need to be exported before the upgrade process and then imported into the new software version.

Note: After uninstalling any existing VoiceMail server, always reboot the PC. Uninstalling does not remove any existing messages and greetings.

Backing Up the VoiceMail Pro Database

Before removing VoiceMail Pro, you should create a backup copy of the callflow database. This will contain any customizations made to the default callflow.

Note: The Root.vmp file contains the compiled callflow (created using Save & Make Live). This type of file cannot be loaded back into the VoiceMail Pro Client for editing. The editable version of the callflow is stored in the file VMData.mdb.

1. Start the VoiceMail Pro Client.

2. From the File menu select the option Import or Export.

3. Select the option Export callflows and click Next.

4. Enter a file path and file name ending in .mdb, for example C:\temp\backup.mdb. Click Next.

5. Click Finish to start the export then click Close to complete the export procedure.

6. Close the program.

Uninstall VoiceMail Pro

1. Open the Windows Control Panel.

2. Select Add/Remove Programs.

3. Select IP Office VoiceMail Pro and click Change/Remove.

4. From the options offered select Remove and click Next.

5. Follow any prompts given during the removal process.

6. When the process has been completed select the option "Yes, I want to restart my computer now" and click Finish.

Upgrade Installation

1. Insert the VoiceMail Pro CD. The Installation wizard should auto-start.

2. Select the language to be used during the installation. Click OK.

3. At the Welcome screen click Next.

4. At the customer information screen accept the defaults and click Next.

5. Select the type of installation required:

   Note: On Windows NT/2000/XP, the VoiceMail Pro Server is automatically installed as a service.

- **Typical Install**: Installs all the components of VoiceMail Pro including campaigns and the Campaign Web component.

- **Compact Install**: Installs all the components of VoiceMail Pro including campaigns.

- **Custom Install**: Allows selection of which components to install. The default selection before any changes is the same as the Typical selection.

6. At the Choose Destination Location screen accept the default locations, click Next to continue.

7. Depending on the type of installation some or all of the following options will appear.

• If the Campaign Web Component is being installed, the Web Server type, location of the web server's HTML root, and the CGI bin directories will be prompted for.

• On Windows NT/2000/XP, if installing the VoiceMail Pro Server, the user account that the VoiceMail Pro service should use needs to be entered.

8. Unless there are specific reasons to do otherwise accept the displayed program folder.

9. A summary of those items about to be installed is displayed. You can use Back to return to the previous screens and alter the selection if required. Click Next to begin the installation.

10. When the installation is complete select the option "Yes, I want to restart my computer now" and click Finish.

Restoring the VoiceMail Pro Database

1. Start the VoiceMail Pro Client.

2. From the File menu select the option Import or Export.

3. Select the option Import Call Flows and click Next.

4. Use the Browse button to locate the backup file then click Next.

5. 5. Click Finish to start the import then click Close to complete the import procedure.

Note: After upgrading to VoiceMail Pro 2.0 the system will default to Intuity mode and Advice of Call Recording will be enabled. To change these options start the VoiceMail Pro Client and change these settings from Administration | Preferences | General.

Users of VoiceMail Pro running in IP Office mode will be asked to record their name when they first dial into VoiceMail Pro after the upgrade.

9.3 Upgrade Installation Notes for User Applications

When upgrading from one software level to another the original software needs to be uninstalled first. The un-installation process only removes those files installed during the application's original installation. Any other files added since are not removed, such as PhoneManagerDirectory.txt (the file in which directory entries are stored). The settings for PBX configuration, Speed Dials, Calls In/Out/Missed tabs etc., are stored in the registry and will also remain.

To upgrade to any of the 2.0 User applications do the following:

Uninstall User Applications

1. Open the Windows Control Panel.

2. Select Add/Remove Programs.

3. Select IP Office User Suite and click Change/Remove.

4. From the options offered select Remove and click Next.

5. Follow any prompts given during the removal process.

Upgrade Installation

1. Insert the User CD. The installation wizard should auto-start.

2. At the Welcome screen click Next.

3. At the next screen select the User name from the list that this installation is associated with.

4. Click on Next and then Finish.

5. At the InstallShield Wizard Welcome screen click on Next.

6. At the Choose Destination Location screen accept the default locations, or choose a different installation directory, click Next to continue.

7. At the Select Components screen select the applications you want to install and click Next to continue.

8. If you are using Phone Manager in Agent Mode enter the Agent number at the next screen, or leave this blank and click Next.

9. Click Next to accept the Program Folder.

10. When the installation is complete click on Finish.

Keeping eConsole and eBLF Applications

As the eConsole and eBLF have been replaced by the SoftConsole, some users may wish to upgrade their Phone Manager installation but still continue to run either of these applications.

This can be accomplished by following these instructions:

Uninstall User Applications

1. To make sure that the eConsole and eBLF are not removed you **MUST** rename the directory in which the programs reside before uninstalling any applications. By default the programs can be found at C:\Program Files\Avaya\IP Office\eConsole.

2. After you have renamed the directory open the Windows Control Panel.

3. Select Add/Remove Programs.

4. Select IP Office User Suite and click Change/Remove.

5. From the options offered select Remove and click Next.

6. Click on OK to confirm that you want to remove all applications.

7. When the removal process is complete click on Finish.

8. Once the old applications have been removed Insert the 2.0 User CD. The installation wizard should auto-start.

9. At the Welcome screen click Next**.**

10. At the next screen select from the list the User name with which this installation is associated.

11. Click on Next and then Finish.

12. At the InstallShield Wizard Welcome screen click on Next.

13. At the Choose Destination Location screen accept the default locations, or choose a different installation directory, click Next to continue.

14. At the Select Components screen select the applications you want to install and click Next to continue.

15. If you are using Phone Manager in Agent Mode enter the Agent number at the next screen or leave this blank and click Next.

16. Click Next to accept the Program Folder.

17. When the installation is complete click on Finish.

18. The program shortcuts for eConsole and eBLF will have been removed but the programs will not. Set these shortcuts up again and you will be able to run the eConsole and eBLF applications as before.

9.4 <u>Upgrade Installation Notes for SMDR</u>

The existing standalone SMDR application is not compatible with IP Office version 2.0 and from this release will no longer be available in its present format. CCC version 4 incorporated the SMDR output into its Delta Server and it is a version of this that will be used going forward.

First of all uninstall the existing SMDR application. Once this has been done using the Admin CD explore the CD and go to the CBC directory and then into the Delta Server directory. From here run the setup.exe program to install the Delta Server. Once installed this program can be found from the start menu at Programs | CCC | Delta Server, not Programs | IP Office | IP Office SMDR as it was before.

From the start menu select Programs | CCC | Delta Server and run this program, if required to do so in the "Select Server" screen tick the check box next to the IP Office system that you want to connect to.

From the event viewer screen click on the SMDR icon, the output file location should be the same as it was when the standalone SMDR application was installed (C\:Program Files\Avaya\IP Office\SMDR\SMDR_Output\SMDR.csv). If it is not the same then you can either change the location or leave it as it is. If you do make a change to this location make sure that the application reading the SMDR output file is changed to point to the new file location. Select the check box next to the output file location; SMDR output is now running again.

Note: If SMDR was not installed before the default output file location will be:

C\:Program Files\Avaya\IP Office\CCC\DeltaServer\SMDR_Output\SMDR.csv

9.5 Miscellaneous Upgrade Notes

Loading Software onto the PCMCIA Memory Card

The PCMCIA memory card used to run the Embedded Voicemail in IP Office – Small Office Edition is able to hold the operating software required for Avaya 46xx IP telephones. The following procedure outlines how the software can be transferred onto the memory card using TFTP:

1. In the System form in Manager set the "File Writer" address to the PC sending the file by TFTP.
2. A typical example of the command from the CMD prompt is:

    o C:\TFTP -i 192.168.42.1 PUT C:\holdmusic.wav

    This will write the file, in this example a Music On Hold file, to the memory card. If wanting to load the software for 46xx IP Handsets onto the flash card follow the same procedure, substituting "C:\holdmusic.wav" with the location and filename of each of the files required for the IP Handsets.

3. Once you have loaded all of the required files to the flash card go back into the System form in Manager and set the TFTP Server address to the unit's own IP address. E.g: 192.168.42.1 – This will then allow the download of the files from the memory card.

10 Manuals & CD's

The latest IP Office manuals and CD's can be downloaded from:

http://support.avaya.com

From the list of options presented on the left hand side of the web page click on "Systems for Small and Medium Businesses" and then from the "Media Gateways and Media Servers" heading select IP Office | R2.0 English.

10.1 Job Aids

A number of Job Aids are now available to complement the technical manuals and offer a step-by-step "how to do" approach. These Job Aids can be found at:

http://support.avaya.com

From the list of options presented on the left hand side of the web page click on "Systems for Small and Medium Businesses" and then from the "Media Gateways and Media Servers" heading select IP Office | General Info.

11 IP Office Technical Training

Avaya University training courses have been updated to reflect the new features offered with the IP Office 2.0 release. Details of the courses and their availability can be found at the Avaya Learning Center http://www.avaya-learning.com.