



AltiWare™ OE

Release 4.0

System Administration Manual

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Preface: About This Manual

This guide is designed for dealers, administrators and technicians who are responsible for installation, configuration, and administration of an AltiServ system.

Another manual, the *AltiServ User Guide* covers the AltiServ end user features and functions such as call handling, voice mail, and web interface.

The *Getting Started Manual* covers system specifications, installation, and an overview to navigating the AltiAdmin interface.

This guide contains the following chapters and appendixes:

Chapter 1, Overview: the AltiServ functions, features, and benefits.

Chapter 2, System Configuration: AltiServ system basic configuration, phone numbers, number plans, out-call and in-call settings.

Chapter 3, Board Configuration: the Quantum and Triton boards.

Chapter 4, Trunk Configuration: trunk attributes, including channels.

Chapter 5, Extension and Workgroup Configuration: individual extensions, workgroup numbers, and call handing.

Chapter 6, Out Call Routing Configuration: default outgoing call routes and restrictions

Chapter 7, Auto Attendant Configuration: pre-recorded prompts & menus.

Chapter 8, Additional Setup: audio peripheral configuration, M VIP clock, feature tips.

Chapter 9, System Data Management: back up and restore procedures.

Chapter 10, System Report Management: system management reports on summary, traffic, system log and call detail summary.

Chapter 11, Data and Internet Integration: Setting up email, AltiReach, Exchange integration.

Appendix A, Call Accounting Report Formats: keys to the data in CDR reports.

Appendix B, Registration & Technical Support: technical support, customer service, repair and replacement policies and forms.

Glossary, Index, and Readers' Comment Form.

Related Publications

Related publications include:

- AltiWare OE Getting Started Manual
- AltiServ User Guide
- AltiConsole User Guide
- AltiView User Guide
- Center User Guide

Overview

AltiServ™ is a multi-application computer telephony platform that combines AltiGen's Quantum™ and Triton™ telephony boards with AltiWare™ software in a standard personal computer platform. AltiServ uses Windows 2000™ or Windows NT Server™ operating system to provide advanced features and functionality, including the following:

- PBX
- Voice Mail
- Auto Attendant
- E-mail Server
- CDR (Call Detail Reports)
- Internet Integration
- TAPI (Telephony API) Service Provider
- Voice over IP
- Digital T1 Integration
- Digital PRI Integration
- Tie Trunks with Caller ID
- Out Call Routing
- Web Call Center (web-based calling)
- Data Directed Routing
- IP Extensions

The AltiServ computer telephony platform is built by installing one or more AltiGen Quantum boards into **full-size** ISA slots of a Windows 2000/Windows NT Server and then installing the associated AltiWare software. AltiGen Triton boards may also be added and must be installed into PCI slots. A total of 10 Triton T1/PRI, VoIP, and Resource boards can be installed in one system. Up to 6 Triton VoIP boards can be installed on the same system. Up to 4 Triton T1/PRI boards can be installed on the same system, and the board ID must be in the range of 0 to 3. Up to 2 Triton Resource boards can be used on the same system, and the board ID range is from 0 - 15.

Key AltiServ Characteristics



When you see this New icon, it means that the feature is new to AltiWare Release 4.0 and does not exist in earlier versions.

- **Quantum Board** - a telephony card that uses DSP technology to provide trunks, lines, and voice processing resources.

Quantum is an ISA compatible telephony card, which is designed around open software standards to facilitate implementation of third-party-provided applications in addition to the AltiServ-provided applications.

The Quantum telephony board has 12 analog ports. An average configuration of two boards per system will accommodate up to 24 telephone sets based on the typical configurations of trunks and extensions.

Additional Quantum boards can be added to meet larger system requirements. The maximum number of Quantum boards in one system is up to 16 boards and depends on the number of ISA slots available and the selected computer platform performance characteristics.

Note: AltiWare OE Release 3.0 or higher does not support **Quantum Rev. C/C+** boards. Upgrade Quantum boards to **Rev. D** prior to installing OE 3.0 software or higher.

- **Triton Boards:**

— **Triton VoIP Board** - a PCI bus telephony board that provides voice processing resources. DSP engines reside on the VoIP board to perform voice processing functions needed for H.323 devices. The **Triton VoIP board** supports 8 IP trunk ports.

- 5V PCI slot is required for each Triton board.
- Additional VoIP boards can be added to meet larger system requirements. The maximum number of VoIP boards in one system is up to 6 boards (48 IP ports).
- The VoIP board can also be used individually as a third-party developer application platform.

— **Triton T1/PRI Board** - a PCI bus telephony board that supports either T1 or PRI digital trunks through software configuration. The **Triton T1/PRI board** supports 23 voice processing channels.

- 5V PCI slot is required for each Triton board.

- Additional T1/PRI boards can be added to meet larger system requirements. The maximum number of T1/PRI boards in one system is up to four (4) T1/PRI lines (96 digital trunks).



Triton Analog Station Board - a PCI bus telephony board that supports 12 analog extensions per board.

- Provides adaptive balance and selectable impedance
 - Analog and digital loop back test modes
 - Tip and ring reversal
 - FSK message lamp
 - 5V PCI slot is required for each Triton Analog Station Board.
- **Triton Resource Board** - a PCI bus telephony board that provides monitoring and Barge In system support functions. You can install up to 2 Resource Boards per system.

On-Board Telephony Power Supply - with the Quantum D board (Rev D or later) or Triton board, the telephony power supply is built onto the board itself. There is no need to install a separate power supply.

- **AltiWare System Software** - the AltiServ system telephony application software that provides easy to use graphical user interface. It allows you to configure, administer, and maintain the AltiServ system and can be used as a platform for third-party enhanced application development. AltiWare software components such as Switching Service, Messaging Agent, SMTP Server, POP3 Server, AltiBackup and Exchange integration are NT services that are automatically launched when the AltiServ system starts. You do not have to login and start these applications manually. This provides better security and reliability for these services.



TAPI Gateway Support - AltiServ is an open platform that allows third party telephony developers to develop applications for the AltiServ system. The system supports Telephony Applications Programming Interface (TAPI) 3.0.

AltiServ supports a complete TAPI service provider that accepts first party call control (such as AltiView, AltiAgent and AltiSupervisor) and the third party client-server call control (such as call routing applications).

- **Unique DSP design** - provides full availability, scalability and true linear resource expansion.

PBX Features

The PBX features include telephone switching for making calls, answering calls, and transferring calls. For more sophisticated business applications, AltiWare provides advanced features such as workgroup call routing, multiple trunk and route access codes, scheduled call routing, and flexible call restrictions. For effective system management, AltiWare provides information about system traffic and statistics to help the system administrator understand the dynamics of business communications and adjust resources such as the number of outside lines, accordingly.

For more information on using PBX features, see the *AltiServ User Guide*.

In addition to station-to-station dialing, the PBX features include:

- **Account Codes** - allows the user to assign an account code to each call to track telephone usage in order to bill back to clients or create a record of calls specific to a project and to budget and forecast expenses.
- **Business Hours** - allows for setting morning and afternoon business hours for each day of the week.
- **Busy or Ring-No-Answer Call Handling (enhanced)** - sends calls to voice mail, another extension, or **Auto Attendant** if the called extension or workgroup is busy or does not answer. See “Setting Answering Options” on page 111 for more information on these features.
- **Call Forwarding and Remote Call Forwarding** - sends all calls to another extension or to an external telephone number. This allows users to redirect their calls to another location such as home or a branch office. Call Forwarding can be set up either at the source extension or at the destination extension on the system (Remote Call Forwarding).
- **Caller ID** - fully supports the Bellcore Caller ID standard and displays alpha and numeric caller ID and name on a standard analog telephone with a display. Up to 64 characters are transmitted and displayed. If your local exchange carrier provides enhanced caller ID, such as caller name, this information will also be displayed.
- **AltiSpan™** - (or **Extended Caller ID**) inexpensive caller ID display phones can be used to deliver functionality previously requiring the use of proprietary telephones.
- **Feature Tips** - plays helpful tips and reminders for optimal use of AltiServ.

- **Personal Call Park and Pick Up** - users can park calls at one station to be picked up at another station. Up to 50 calls may be parked at one station simultaneously.
- **System Call Park and Pick Up** - allows you to park and pick up a call at a public “location.” The system allows you to park up to 100 calls at any given time.
- **Individual and System Call Pick Up** - allows users to answer a ringing telephone from another station.
- **Single Call Waiting** - allows users to put an existing call on soft hold and take a second call upon hearing a Call Waiting tone. The user can then alternate between the two calls.
- **Multiple Call Waiting with Personalized Greetings** - a personal queue that allows users to handle multiple incoming calls by letting callers wait in queue until the user answers the call. This allows users to transfer or park calls before answering the next call in queue. Users may also record and use personalized **Initial** and **Subsequent** greetings to be played for callers in queue.



- Flexible **Wrap Up Times** and **InterCall Delays** - can be used to set delays before the system sends the next call to an extension. Further, the user can manually set the extension state to **Ready** or **Not Ready** to receive calls.
- **Centrex Transfer** - allows user to transfer or forward calls to an external telephone number. Once the transfer is complete, the trunk lines are released.
- **Conference Calling** - the system supports conference calls with up to 6 parties. You can speak privately to each person before adding the person to the conference.
- **Dial Last Caller** - allows user to dial the last caller.
- **Hands Free Modes** - allow users to leave handset off-hook without having to hear the dial tone.
- **Direct Inward Dial (DID)** - allows an incoming trunk call to directly access an extension without Attendant intervention.

Note: If your local exchange carrier provides DID service, DID calls will automatically be steered to the appropriate destination.

- **Distinctive Call Waiting Tone** - allows three different call waiting tone cadences to distinguish between internal, external, and operator calls.
- **Distinctive Ringing** - allows three different ringing cadences to distinguish between internal, external, and operator calls.
- **Do Not Disturb** - blocks all calls coming into a specific extension and sends them to preprogrammed destinations such as voice mail or the operator.
- **FSK-based Message Waiting** - allows message waiting that is based on FSK (Frequency Shift Keying), a modulation technique for data transmission. Tone or voltage-based message waiting options can also be selected. Phones with FSK-based message waiting indicator are highly recommended.
- **Hands Free Intercom Mode** - by pressing **#81** on their speaker phone, users can receive calls without having to pick up the handset to answer. **Hands Free Manual Answer Mode**, **#82**, allows another version of this function.
- **Music or Message on Hold** - when the system is connected to an external audio source, this allows callers to hear music or pre-recorded messages while waiting on hold.
- **One Number Access** - is a feature that eliminates “telephone tag” by forwarding important callers to predetermined numbers, according to a pre-designated schedule. Setup is available through the **One Number Access** page of **Extension Configuration** and/or web-based AltiReach and AltiView management.
- **Operator Off-line** - when this feature is enabled, all calls are directed to the Auto Attendant. When the caller dials 0 and the operator is not available, the call is routed to the operator mailbox.
-  **Out Call Routing Configuration** - allows outgoing calls to be directed to particular trunk routes, based on parameters assigned in AltiAdmin, and supporting the new tenant tables.
- **Outside Call Blocking** - when this feature is enabled, access to outside lines is temporarily disallowed.
- **Overhead Paging** - allows the use of voice paging over an internal public address system.

- **Overhead Paging by Trunk** - allows the use of voice paging or broadcasting through a trunk without checking call progress.
- **Station Log In/Log Out** - enables system users to move an extension number from one station to another, or deactivate an extension on a long-term basis.
- **Power Failure Transfer** - upon loss of power, this feature allows the first trunk and first extension on each Quantum board to be automatically connected. Ensures emergency outside line access in case of power failure.
- **Schedule-Based Call Routing** - allows administrators to determine call routing paths by use of Allow and Deny tables (based on cost and usage), on a specific predetermined schedule.
- **System and Station Speed Dial** - allows programming of frequently used telephone numbers for speed dialing. Up to 60 system speed numbers can be programmed. Up to 20 station speed numbers can be programmed for each extension. For easy programming, AltIServ uses friendly voice prompts to guide extension users to program their station speed dial numbers.
- **System Callback from Auto Attendant** - allows the user to instruct AltIServ to call the user at a remote location after the user logs in with extension and password. This is useful for traveling users who don't want to accrue expensive toll charges while traveling, especially from international locations where there is no access to toll-free numbers. See "Planning is Essential" on page 129 for more information.
-  **Hop Off Calls over T1/PRI Tie Trunks** - multiple AltIServ systems at the same or remote locations can be linked through a T1/PRI network. Also, this feature provides toll savings on long distance calls by allowing users to dial a remote.
-  **Call Restrictions** - restricts users from dialing specific long distance area codes and phone numbers. Reduces the risk of toll fraud. Up to 20 digits are allowed to specify area codes and/or phone numbers that are restricted system-wide; up to 10 digits are allowed to specify area codes and/or phone numbers that are restricted on an extension by extension basis. Or, you may block ALL outgoing calls.
- **Transfer to AltIServ Mail System** - allows anyone in the office to send an outside user into AltIServ Mail by pressing **FLASH # 40** while connected to the user.

- **Transfer to Auto Attendant** - allows a user to transfer a call to an Auto Attendant by pressing **FLASH #15** and then the 2- or 3-digit Auto Attendant number.
 - **Trunk Interface:**
 - **Analog** - loop start, ground start, and wink start (DID)
 - **Digital** - PRI-ISDN, T1 E & M, loop start, and ground start
 - **Virtual Extensions** - an extension that is not associated with a physical port, but allows access to AltMail features and telephone sharing. Up to 2,000 total (physical + virtual) extensions can be created on a system. Users of virtual extensions have to log in from a physical extension before accessing the system telephone features assigned to their virtual extension. Access to AltMail features, however, is available through log in both internally and remotely.
-  **IP Extensions** - the IP Extension feature allows an H.323 compliant terminal device to connect to AltServ. IP extensions have the same functionality as an analog station.

Automatic Call Distribution Features

Automatic Call Distribution features include:

- **Call Queuing** - places caller in a queue to wait until an ACD workgroup member becomes available.
-  **Configurable Call Wrap-up Time** - allows a workgroup member some time in between calls to wrap-up on notes, prepare for the next call, or logout of the workgroup. This wrap-up time is configurable on a per member basis.
-  **Ready/Not Ready** - members can also enable a “ready” (#90) or “not ready” (#91) status to inform the system whether or not the agent is able to receive the next call.
- **Multiple Queue Announcements** - allows each workgroup to have its own set of unique audio announcements. Up to five announcements can be configured for each workgroup. The intervals between announcements can also be configured. See “Setting up Workgroups” on page 96 for more information on this feature.

- **Multiple Workgroup Membership**- allows each extension to belong to multiple workgroups. The system can be configured with a maximum of 32 workgroups and 64 members per workgroup. See “Setting up Workgroups” on page 96 for more information on this feature.
- **Workgroup Call Pickup** - allows pickup of calls to a specific workgroup.



Workgroup Monitoring - allows for real-time monitoring of workgroup information - trunk state, workgroup status, call queue status, details of workgroup queue entries and agent status. Limited monitoring is available through a workgroup view window in AltAdmin or remotely through AltReach.



Workgroup Call Routing - for special call handling applications, incoming calls can be routed to a workgroup. For automatic distribution, calls can be distributed to the first available workgroup member, or among workgroup members in a round robin fashion. When all the members in a workgroup are busy, calls can be overflowed to another workgroup or extension, directed to the workgroup voice mail, to workgroup members voice mail, or placed in the call queue for the next available member. When the first called member fails to answer the call within the number of rings configured, the system can direct the call to the next available workgroup member. The system can also ring the longest idle member or ring all available members.

- **Workgroup Member (Agent) Login/Logout** - allows workgroup members to log in and out of a workgroup so that incoming calls bypass the workgroup member (agent) who has logged out and the call is automatically routed to other active workgroup members or ACD agents. This feature is available only to workgroup members and is disabled through workgroup configuration. Logout does not block direct calls to the workgroup member’s extension.



Auto Logout - Optionally, a workgroup extension user can be logged out if a call is not answered.



Workgroup Logoff Reason Codes - allows a workgroup member to enter a reason code when signing off. Up to 20 reason codes may be defined.



Workgroup Silent Monitoring - with the Triton Resource Board, allows a workgroup supervisor to silently monitor calls between workgroup agents and callers.



Workgroup Barge In - with the Triton Resource Board, allows a workgroup supervisor to barge into calls between workgroup agents and callers.



CDR Search - an optional add-on application that allows workgroup supervisors to search CDR files and workgroup CDR statistics for records that match selected criteria.



Service Level Threshold - a time value for callers waiting in queues. The performance statistics show when workgroup calls are queued for longer than a prescribed value.

Automated Attendant Features

The Auto Attendant features provide quick and courteous processing of all incoming calls. An Auto Attendant can be configured to serve as a primary Attendant or as a backup to a receptionist.

Auto Attendant features include:

- **Dial by Name** - allows a caller that does not know your extension number to spell your name using the telephone key pad. The system will search the Directory and make a match on the name to connect the caller to the intended party's extension.
- **Direct Station Transfer** - allows the Auto Attendant to handle all incoming calls in lieu of being answered by an operator. Callers can dial an extension number to reach a specific station or use the name directory to find an extension number.
- **Nine-level Programmable Menus** - allows multiple levels of recorded menu options for specific routing of calls.
-  **Multiple Attendant Support** - allows up to **255** programmable Auto Attendants.
- **Name Directory Service** - allows callers to hear a list of employees and their extension numbers.
- **Programmable Time-Out Handling** - allows the administrator to select the action the system should take if there is no digit detected by the caller within specified seconds.
- **Schedule-Based Call Processing** - routes calls differently for different times of the day.



Web-based Call Processing - allows the Auto Attendant to accept calls placed over the world wide web.



Data-Directed Routing - caller's input (digit or text) can be used to route calls. allows the routing of calls directed by the caller's input (digit or text) to. Third party applications can be used to route incoming calls based on caller information.



Digit Collection - caller can be prompted to enter numbers, which are then collected and used for routing the call.

AltMail Voice Messaging Features

The AltMail™ Voice Messaging System is a sophisticated message management system that provides the calling and the called parties with enhanced communication features. It allows greater accessibility, faster reply time between parties, and reduces the frustration of telephone tag.

The AltMail system is described in the *Altiserv User Guide*. A summary of voice messaging features include the following:

- **AltMail Access from Voice Mail Greeting** - users can log into the AltMail Voice Messaging System by pressing * during the voice mail greeting of any extension.
- **AltMail Quick Features** - allows direct access to a specific AltMail menu without having to login to AltMail.
- **Zoomerang** - allows users to listen to messages in AltMail, prompt the system to automatically call the party who left the message, and then return to AltMail to continue checking messages, all in a single call into AltMail. If the caller ID information is not captured, the user may enter the "call back" number manually.
- **Call Forwarding from Voice Mail** - users can set up Call Forwarding from within AltMail. This allows users to set up Call Forwarding away from the office and without having to access AltReach or AltView.



Voice Mail Distribution List - allows you to use system distribution lists, or create and use personal distribution lists to forward voice mail. Up to 100 distribution lists can be created. Each distribution list can have up to 64 entries, and any entry can be another distribution list.

- **Future Delivery** - allows users to record a message to be delivered at a specific time and date in the future, up to one year in advance.

- **Information Only Mailbox** - a mailbox can be configured to announce customized pre-recorded information when accessed. This mailbox does not allow callers to leave a message, but only to listen to the message announcement (personal greeting) from the mailbox. To repeat the message, callers are instructed to press the # key. See “General window, Extension Configuration” on page 87 for more information on this feature.
- **Making a Call from AltMail** - allows users to make a call from within AltMail by pressing # at the Main Menu and entering the external phone number. This is especially useful while traveling where users can respond to all messages and make *other* calls not associated with a message, all with *one* call into AltMail. This can result in significant savings. The use of this privilege is configurable on a per-user basis.
- **Message Management** - receives, sends, forwards, deletes, and replies to messages.
- **Message Notification of E-mail Messages** - designed to alert you of new voice and/or e-mail messages in your mail box. (At this time, notification of e-mail messages can only be configured by the system administrator.) AltMail will notify you by calling an extension, phone or pager number. A notification schedule can be set for business hours, after business hours, at any time or at a specified time. For voice messages, you have an option of being notified of all messages or only urgent messages. You may enter up to 80 digits for the destination (notification) phone number. Operator-assisted paging is also supported.
- **Personal Greeting** - allows users to record greetings in their own voice to be played when callers reach their voice mail.
- **Priority Delivery** - allows users to determine the priority of message delivery such as normal or urgent.
- **Private Messaging** - allows users to leave a private message in their voice mail for the expected caller.
- **Reminder Calls** - are used to remind yourself of important meetings, things to do or people to call.
- **Remote Access** - allows users to access AltMail from any telephone by dialing into the main system number and pressing # to login.

Internet Integration Features

Internet integration features include:

- **Mail Forwarding** - allows you to forward mail (e-mail and voice mail) to an SMTP-based mail server. The destination server address should be the address of the SMTP server to which all mails should be forwarded. This address can be an IP address such as *100.200.101.201*, a domain name such as *altigen.com*, a fully qualified domain name such as *symphony.altigen.com* or a machine name such as *symphony*.
- **Exchange Integration** - provides unified messaging between the Altiserv and a Microsoft Exchange server on the LAN. The state of both servers will be synchronized. This feature allows for dynamic synchronization of mail between the two servers so that deleted messages from one server get automatically deleted in the other server. Similarly, a new message sent to one server is transmitted to the other server. This way, the message can be accessed or deleted from either server. For example, when a voice mail is deleted from Altiserv, it is automatically deleted from the Exchange server too. The address of the Exchange server must be the name of the machine or the fully qualified domain name. See the “Integrating with Exchange” section (Initial Configuration chapter) of the *Getting Started Manual* for more information on this feature.
- **Mixed-Media Messaging** - allows users to combine multiple forms of communication (such as voice mail, e-mail, data file, etc.) into a single e-mail message. The user can record a voice message using a telephone handset or microphone on a multi-media PC and attach it to an Altimail for delivery to an internal user (LAN) or an external user (internet) who can listen to it from the PC. The recipients of the Altiserv system also have the option of listening to annotated messages from the handset.
- **AltiReach™** - a Web-based management tool that provides a way for users to visually manage their call handling options such as One-Number-Access, CallView, Message Notification, Speed Dial Numbers and other personal phone settings using a standard Web browser. Workgroups can also be monitored and configured over AltiReach. AltiReach is further described in the *Altiserv User Guide*.

- **CallView™** - a Web-based Java application that allows for call control using a standard Web browser to manage multiple incoming calls and view information including Caller ID, calls in queue and extension status.
- **Remote Download of Messages via Internet** - allows users who are traveling and/or working at home to download all new voice and e-mail messages in their AltMail Post Office Box via a local internet access line.
- **Support of Internet E-mail Standards** - allows the user to send and retrieve e-mail using any SMTP/POP3 e-mail client.
- **Built-in E-mail Server** - a complete SMTP/POP3 e-mail server is built into the Altiserv system so that all you need is an SMTP/POP3 e-mail client to send and retrieve Internet e-mail. The system allows use of alpha character-based passwords.

System Administration Features

System Administration features include:

- **Access Restriction** - allows administrators control over system user access to features and trunks.
- **Apply To Feature** - applies changes (only the field that was changed) to multiple extensions, trunks or channels instead of having to change them one at a time.
-  **Call Detail Reporting (CDR)** - the system collects and record information on outgoing and incoming phone calls, such as length of call, time of call, number of calls. This data can be written to an internal database or to an external SQL database. Updated data keys for the CDR reports are shown in “Call Accounting Report Formats” on page 187.
-  **DNIS Routing Tables** - Incoming trunk calls can be routed to trunks to Auto Attendants, extensions, workgroups, etc., based on DNIS digit information configured in system administration routing tables.
- **AltAdmin™ Remote Administration** - a version of the AltWare Administrator GUI application that can be installed on a Windows 2000 or Windows NT 4.0 client computer with Service Pack 6a (or higher) installed and used on the LAN to remotely administer one or more Altiserv systems. If there is no firewall on the LAN where

Altiserv resides, AltAdmin can be installed and used to manage Altiserv over the Internet from a remote site as well. This also allows the AltWare Administrator on the Altiserv to be closed without affecting the telephony functions which continue to run in the background on the server. Refer to the *Getting Started Manual* for more information.



Email and Voice Mail Storage - can be placed on drives other than the Altiserv server.



Monitor List - allows you to select the Physical or IP: extensions you wish to monitor. Monitoring is available within AltView and AltSupervisor.



Out Call Routing Configuration - allows outgoing calls to be directed to particular trunk routes, based on parameters assigned in AltAdmin, and supporting the new tenant tables.

- **Split Area Code Support** - allows you to identify area codes and prefixes that are exceptions to the standards of how area codes and long distance prefixes are normally used. For example, this configuration allows the system to treat calls to certain areas as local calls. See “Setting Area Code Toll Definitions” on page 39 for more information.



Tenant Service - allows certain trunks to be shared among multiple groups. In this manner, for example, an Altiserv system in a large building can be shared among smaller offices, or tenants. A tenant table can be created to list the tenants who share an Altiserv system usage. Each extension can be assigned a tenant entry to which it belongs. Each trunk can be associated with a tenant entry.



Voice Mail Distribution List - allows you to create a group of extensions for forwarding voice mail. Up to 100 distribution lists can be created. Each distribution list can have up to 64 entries, and each entry can be another distribution list.



Voice Mail Alert - An announcement can be sent to Voice Mail when the email server disk is full.

T1/PRI Features

T1/PRI features include:

- **Collecting Caller ID/DID Digits for T1** - allows you to configure the format and sequence of caller ID and DID digits using DTMF for a T1 connection. See “Triton T1/PRI Trunk Properties” on page 78 for more information on this feature.



Hop Off Calls over T1/PRI Tie Trunks - multiple AltiServ systems at the same or remote locations can be linked through a T1/PRI network. Also, this feature provides toll savings on long distance calls by allowing users to dial a remote AltiServ system via a T1/PRI trunk and then the destination phone number through PSTN.



ANI/DNIS Transport over T1/PRI Tie Trunks - ANI (Automatic Number Identification) and DNIS (Dialed Number Identification Service) digits for calls can be forwarded and transmitted between extensions at remote AltiServ systems.

Voice over IP Features

Voice over IP features include:

- **Integrated VoIP Gateway** - because the VoIP gateway is built-in to the system, translation of PSTN calls to IP calls and IP to PSTN calls are smoother and more successful. Also, the Overlap dialing is enabled and the dialing sequence is smoother for end users. Without the need for cable configuration and the purchase of additional analog ports, there can be significant time and cost savings.
- **AltiServ-to-AltiServ Networking Capability** - multiple AltiServ systems at the same or remote locations can be linked through an IP network. Also, this feature provides toll savings on long distance calls by allowing users to dial a remote AltiServ system via an IP trunk and then the destination phone number through PSTN. See ‘VoIP Hop Off Call Support’ feature on page 17.
- **AltiServ Feature Support** - many of the AltiServ features are also available when using IP trunks. See “Voice Over IP Session Support AltiServ Features” on page 18 for more details.



IP Extensions - the IP Extension feature allows an H.323 compliant terminal device to connect to AltiServ. IP extensions have the same functionality as an analog station.

- **Integrated Administration** - calls through both PSTN and IP networks can be managed using a single point of administration
- **H.323 Standard Support** - Altiserv IP is based on the H.323 protocol which is an emerging ITU standard for multimedia communications over IP.
- **G.711 Codec** - toll quality (64K) digital voice encoding which guarantees interoperability for better voice quality.
- **G.723.1 Codec** - a dual rate audio encoding standard which provides near toll quality performance under clean channel conditions. VAD (Voice Activity Detection) capability is also included to suppress silence packets.
-  **IP Port Support** - Altiserv IP port density is increased to 48 ports. The system supports up to six (6) Triton IP boards, with each board supporting eight (8) IP ports.
- **VoIP Hop Off Call Support** - allows an extension to access a T1 or CO trunk on the remote system and ‘hop off’ to dial an outside telephone number. This ‘hop off’ feature can be enabled or disabled on the remote system. Outcall restrictions for hop off calls are configurable.
- **Echo Suppression** - due to bandwidth limitations and device loading, long delays may occur during packet delivery process which worsens the echo effect of recorded and live voice speech. Echo suppression is provided to maintain reasonable voice quality.
- **Ring-Back Tone Generation** - ring back tones can be generated to other analog trunk or extension lines on behalf of the IP trunk.
- **DTMF Remote Carriage** - DTMF tones and/or digits are detected and sent out-of-band, over a reliable TCP/IP channel to the remote Altiserv, to guarantee the delivery.
- **Silence Detection and Suppression** - A silence detection feature enables the following:
 - Silence Suppression - when silence suppression is enabled and silence is detected, Altiserv IP stops sending packets to the other side. The other side does not receive any packets and plays silence.
 - Altiserv IP disconnects the voice mail session when a silence period exceeds 70 seconds during voice mail recording over VoIP.

- **Jitter Removals** - due to various delays in the IP network, audio packet streams may be delivered late or out of order. AltiWare IP is able to buffer incoming packets and re-sequence them by maintaining a queue. This queue is adjustable to accommodate different network environment characteristics.
- **Dialing Prefix Filter** - users may select a PSTN or IP trunk when making outgoing calls by dialing a configurable access code.
- **Board ID Support** - The board ID of the Triton IP board is displayed in the AltiAdmin board window. This can be used to relate a Triton VoIP board to a hardware board.
- **AltiAdmin Remote Administration** - remote AltiServ locations running AltiWare IP can be managed using AltiAdmin.

Voice Over IP Session Support AltiServ Features

The following trunk-related AltiServ features are supported during IP trunk call sessions. Refer to the *AltiServ User Guide* for more details on how these features work over IP trunks.

- Incoming and Outgoing Trunk Calls
- Call Transfer To and From IP Trunk (Blind & Supervised)
- One Number Access
- Message Notification
- Reminder Calls
- Multi-Location Conferencing
- Call Park
- Call Waiting
- Call Forwarding
- Automatic Call Distribution
- Auto Attendant
- System CallBack
- Calling Out from Voice Mail
- Zoomerang
- Dial Last Caller
- Speed Dialing
- Call Accounting
- Caller ID

- Voice Mail
- MS Exchange Integration
- Alticonsole Client Support
- Altireach Support
- Altiview / Altiview IP Extensions

Altiserv Platforms

Altiserv platforms can be built using a standard personal computer or server hardware with sufficient number of full-size ISA and PCI expansion slots. In addition, the platform must be equipped with sufficient cooling processing power, memory, hard drive storage capacity, and power (to support Triton Analog Station boards) and telephony ringing voltage for the total number of cards and extensions ports installed. **This Altiserv platform must be equipped with a Windows 2000 Server or a Windows NT 4.0 (or higher) Server with Service Pack 6a (or higher) installed.**

These minimum requirements for different system port sizes are explained in the *Getting Started Manual*.

Optional Add-On Software



Alticonsole™ - a personal, computer-based Attendant console connected to the Altiserv over a network; emulates a standard, hardware-based Attendant console through software; has the flexibility of adding new features through software without changing the hardware.



Altiview / Altiview IP Extension (new version) - a Windows-based desktop call control and window popup application that interacts with Altiserv through Altalink Plus and provides easy-to-use call control, monitoring and logging capability.



Altiaagent™ (new version) - a workgroup user version of Altiview; in addition to Altiview features, also provides call statistics, call wrap up with data entries, logon/logoff with reason codes and agent ready/not ready status.



Altisupervisor™ (new version) - a supervisor version of Altiview; in addition to Altiview features, also provides workgroup statistics, silent monitoring and barge-in features.



CDR Search - allows administrators to search CDR files for records that meet selected criteria, and allows workgroup supervisors to search both CDR files and workgroup CDR statistics.

System Configuration

The **System Configuration** functions provide for configuring the AltiWare system-wide settings.



You access System Configuration by selecting **System Configuration...** on the **Management** menu, or by clicking the System Configuration icon.

You can then work with the following settings, each of which is accessed by a tab in the System Configuration window.

- **General** setup—system ID, area code and number, operator and manager extensions, country, extension and DID number lengths, distinctive ring, conference call, and system park options.
- **Number plan**—how the system responds to each first digit dialed.
- **Business hours**—used by system functions.
- **System speed dial numbers**.
- **Call restrictions**—prefixes to block, toll call prefixes and call control.
- **Call reports**—CDR logging and data export.
- **Messaging**—basic parameters and settings for voice and email messaging.
- **Area codes** and required prefix setup—for exceptions to toll call standards.
- **IP Dialing Tables**—tables for voice over IP.
- **DNIS**—inbound call routing during different time periods.
- **Tenants**—sharing an AltiServ system among multiple companies.
- **Distribution List**—for voice message forwarding.
- **Logoff Reason Codes**—for workgroups.

Setting General Parameters

The General tab is the default window you see when you open the System Configuration window. You use this window to set the system area code and number, operator extension, country, distinctive ring, conference call, and system park options.

To access the General settings, select **System Configuration...** on the **Management** menu, or click the System Configuration icon. If the System Configuration window is already open, click the **General** tab. Here's an example of the General window.

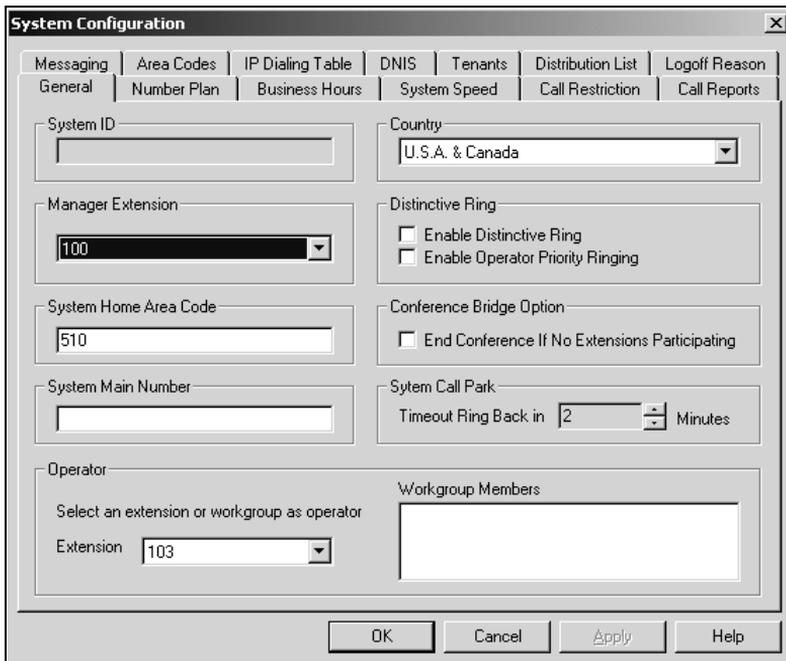


Figure 1. The General tab window, System Configuration.

You can set the following parameters and options:

- **System ID**—reserved for future use.
- **Country**—select a location for the system.
- **Manager Extension**—type in the system manager’s extension number. The system manager has access to system administrator functions. For information on setting up extensions, see the chapter, “Extension and Workgroup Configuration” on page 85.

- **Distinctive Ring**—this enables users to distinguish between internal, external and operator calls by the way the phone rings:
 - **Enable Distinctive Ring.** Select this to establish a short double ring cadence for internal calls and a normal, single ring for external calls. Unselected, both ring are normal.
 - **Enable Operator Priority Ring.** Select this for the system to produce a long single ring between short pauses on calls from the operator.
- **System Home Area Code**—the area code for the system location.
- **System Main Number**—the main system telephone number, which is sent to the pager’s display when a user’s messaging options are configured to call a pager. This is also the number subscribers call to access the AltMail Voice Messaging System.
- **Conference Bridge Option**—Selected, conference calls will end when all internal lines have disconnected from the conference bridge. Not selected, the conference connection can continue between outside parties, even after all internal parties have disconnected.
- **System Call Park Ring Back Timing**—the System Call Park allows the user to park a call, then pick up the call from another extension, forward the call, or take some other action. If the call is forgotten or the forward not picked up, the Ring Back time sets the number of minutes a call remains parked before the user’s extension is rung again. To the caller, the call park sounds like being put on hold.
- **Operator Extension and Workgroup Members.** Select the extension to be used by the system operator. For the extension you select, the workgroup members show up in the Workgroup Members box. For further information on extensions, see “Extension and Workgroup Configuration” on page 85.

Setting a System Number Plan

The System Number Plan defines the extension digit length. You can use from 3 – 6 digits for extensions. You also use the System Number plan to set a DID number length to use, and to define the system response to the first digit dialed—for example, pressing **9** to get a trunk line.

The numbering scheme requires some thoughtful planning. You cannot edit the extension *length* after the first extension is assigned. Further, if a *first digit dialed* is assigned to extensions and you have set up extensions beginning with that digit, you cannot change the digit assignment without first deleting all affected extensions. For example, if **7** is assigned to *Extension* and you're using extensions 7010, 7113, etc., you cannot reassign **7** to say, IP trunk access, without first deleting all the *7nnn* extensions.

Accessing the Number Plan

To access the Numbering plan settings, select **System Configuration...** on the **Management** menu, then click the **Number Plan** tab. Here's an example of the Number Plan window.

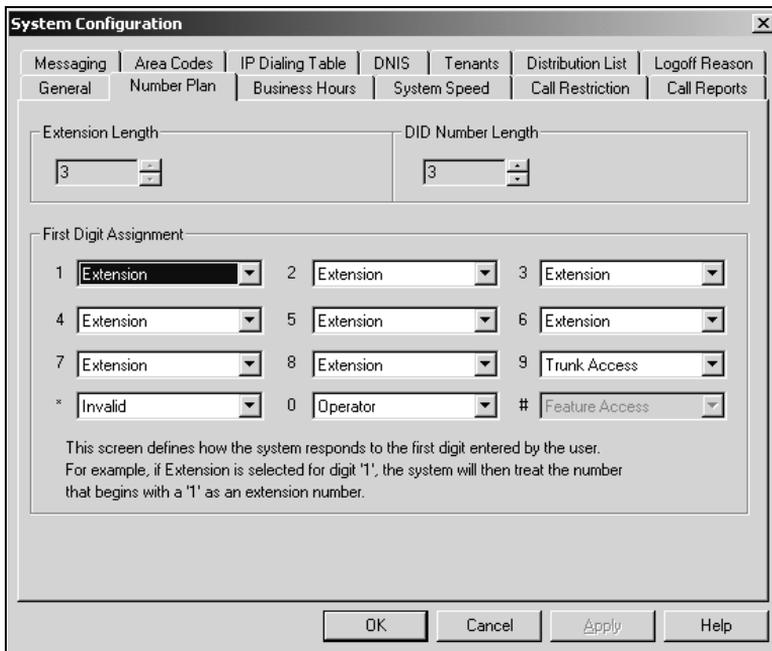


Figure 2. Number Plan window, System Configuration

Use the Number Plan window to specify the following:

- **Extension Length.** The number of digits for your extension numbering system. Valid entries are from 3 – 6. For example, extension 2001 and 4020 are 4-digit extension numbers.



The extension length is not adjustable once the first extension is configured. To be more precise, the length cannot be changed without totally reconfiguring the system or deleting all the extensions already configured.

- **DID Number Length.** The number of digits needed to match a DID (Direct Inward Dialing) number, with a range from 2 – 16.

Each extension can be assigned a DID number. A DID number does not have a fixed length. For example, the DID number length is 4; the extension DID number - 2529299.

Depending on the service contract with the Central Office (CO), the DID trunk can send all 7 digits (2529299) or just the last 4 digits (9299). If this DID Number Length option is set to 4, the system always tries to match the last 4 digits received to the last 4 digits of a DID number, regardless of what is received.



To accommodate future growth and minimize disturbance, it is recommended that the length of the DID numbers assigned to an extension be greater than or equal to this DID Number

Length. However, it is not necessary to use the DID Number length when routing via Tie Trunks.

- **First Digit Assignments.** These define how the system responds to the first digit dialed by the user. If a particular digit is grayed out—not available—that means it cannot be used in the country location selected in the General window.

The drop-down list options for each digit are as follows:

- Extension
- Trunk Access
- Feature Access
- Operator
- Invalid (no action)
- IP Trunk Access
- Route Access

Assigning Trunk, IP Trunk, & Route Access

You can use *trunk*, *IP trunk*, and *route access* outgoing call options alone or in combination when making the number plan assignments.

Trunk Access

Usually, **9** is used as the analog or PSTN trunk access code, and AltiWare uses 9 as the default for trunk access. You can keep that configuration and assign other digits such as **7** or **8** to Route Access and IP trunk access, or you can change it. There are no defaults for IP trunk or Route Access.

IP Trunk Access

Only one IP trunk access option is allowed per AltiWare system. It is highly recommended that the same IP trunk access code (e.g. **8**) is used for all AltiWare systems in the network. To use Voice over IP, you need to set up this access and, in addition, configure the IP Dialing Table as discussed on page 41.

Route Access

The Route Access option can be assigned to one or more digits, to route the call per the out call routing table. Out call routing, which is sometimes called ARS (Automatic Route Selection) or LCR (Lease Cost Routing without carrier rate table), is described in “Out Call Routing Configuration” on page 121.

Out call routing is designed to help 10 digit dialing, zoomerang dialing, digit manipulation, and tie trunk hop-off dialing.



When making or editing these or other number plan assignments, please refer to the considerations on setting and editing discussed on page 24.

Setting Business Hours

The Business Hours tab contains group boxes for setting the business hours and days of the week for which the business or organization is in operation. The business hours schedules are used to set other AltWare settings such as trunk usage or routing DNIS calls to different extensions depending on the time and day.



Because the business hours are used throughout the system, *you or the appropriate administrator must make sure the system time has been set correctly.* The system time can be changed using the Date/Time utility in the Windows or NT Control Panel.

To access the Business Hour settings, select **System Configuration...** on the **Management** menu, then click the **Business Hours** tab. Here's an example of the Business Hours window.

Work Day	AM Schedules	PM Schedules
<input checked="" type="checkbox"/> Monday	08:00 AM to 12:00 PM	01:00 PM to 05:00 PM
<input checked="" type="checkbox"/> Tuesday	08:00 AM to 12:00 PM	01:00 PM to 05:00 PM
<input checked="" type="checkbox"/> Wednesday	08:00 AM to 12:00 PM	01:00 PM to 05:00 PM
<input checked="" type="checkbox"/> Thursday	08:00 AM to 12:00 PM	01:00 PM to 05:00 PM
<input checked="" type="checkbox"/> Friday	08:00 AM to 12:00 PM	01:00 PM to 05:00 PM
<input type="checkbox"/> Saturday	08:00 AM to 12:00 PM	01:00 PM to 05:00 PM
<input type="checkbox"/> Sunday	08:00 AM to 12:00 PM	01:00 PM to 05:00 PM

Buttons: OK, Cancel, Apply, Help

Figure 3. Business Hours Tab Window, System Configuration

System Configuration

Set the business schedule as follows:

- **Work Day.** Select the days of the week on which the company does business. For example, if the company does business Monday – Friday, the check boxes for those days should show check marks.
- **AM and PM Schedules.** For each day of the week, select the time periods during which the company is available for business. The time between the AM and PM times can be used to indicate a lunch break or time between shifts.

If you don't want to set a break between AM and PM schedules, set the PM starting time to be the same as the AM ending time.

Or if you wish to specify 24 hours as standard business hours, select the following hours:

AM Schedules:

From 08:00 AM

To 12:00PM

PM Schedules:

From 12:00 PM

To 08:00 AM

Configuring System Speed Dialing

You can set up to 60 system speed dial numbers. The numbers available are from 00 – 59, used following the system speed dial access code, #88.

Speed dial settings for individual extensions are set in Extension Configuration. See page 101.

To access the Speed Dialing settings, select **System Configuration...** on the **Management** menu, then click the **System Speed** tab. Here's an example:

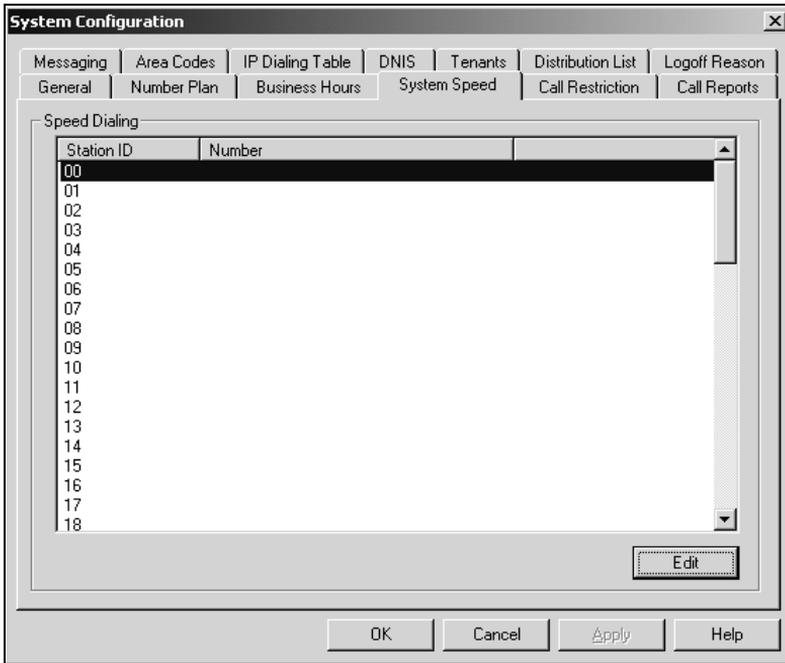
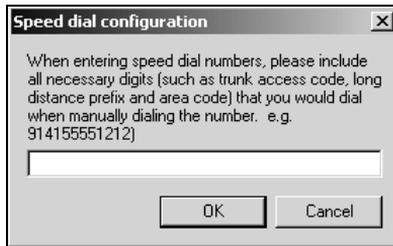


Figure 4. System Speed window, System Configuration

Editing Speed Dial Entries

To add or edit an entry, double-click the **Station ID** number you want to work with, or select the number and click **Edit**. A dialog box appears:



Type in the full number as you would dial it, with a maximum of 20 digits per entry. For example, the phone number 914085551212 comprises of **9** (trunk access code), **1** (long distance prefix), followed by **408** (area code), and finally the seven digit telephone number.

Valid digits include **0** through **9**, **#**, *****, and **(,)** comma. **The comma represents a one (1) second pause.**

Adding Names and Comments

If you want to add names and comments for the users' convenience, use the following steps:

1. Configure the system speed dialing numbers as described in the preceding procedure.
2. Open an Altiview user desktop and define the names and comments for the speed dialing numbers.
3. Save the speed dial setup and Exit Altiview.
4. From the *C:\Program Files\Altigen\Altiview\<ext#>*, copy *sys-speedlist.dat* directory to the same directory for every Altiview user desktop.

Defining System Call Restrictions

Call Restriction allows you to block outgoing calls for up to 20 prefixes. This window also provides for blocking *all* outgoing calls and for enabling hop off to other trunks when that function has been set up.

The restrictions you set up here are global restrictions.



The dialing restrictions set here are one of three ways of blocking calls. See “About Restricting Outgoing Calls” on page 121 for a discussion of the uses of the different functions.

To access call restriction setup, select **System Configuration...** on the **Management** menu, then click the **Call Restriction** tab. Here’s an example of the Call Restriction window

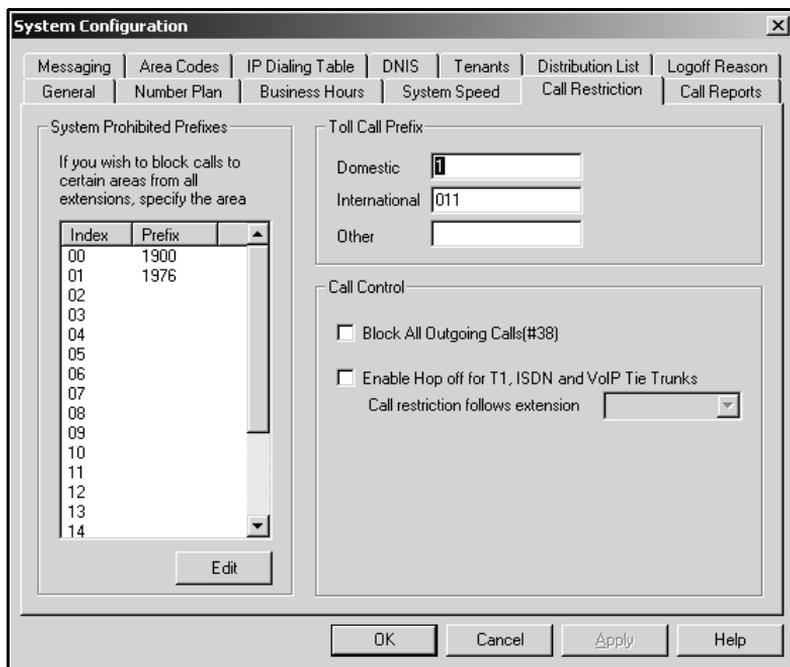


Figure 5. Call Restriction window, System Configuration

Blocking Calls to Area Codes from All Extensions

To add or edit system prohibited area codes:

1. Double-click an index entry in **System Prohibited Prefixes** list, or select the index entry and click **Edit**. This opens a dialog box that allows you to enter a prefix number.
2. Enter a **1** and the dialing prefix to block (e.g. 900, 976). You can enter up to 20 digits maximum for each prefix. For example, to block calls from all extensions to 976 numbers, type 1976.
3. Click **Apply**.

Setting Toll Call Prefixes

AltiWare uses the **Toll Call Prefixes** to determine the type of outside call and imposes restrictions when necessary. For example, if the international toll call prefix is **011** and a user attempts to make an international call from an extension without international call privileges, the call will be terminated as soon as the user dials **011** after the trunk or route access number. The caller hears an error tone.

The toll prefixes set here should match the dialing plan prefixes for the country set in the General window (see page 22). You can set the following toll call prefixes.

- **Domestic.** The dialing plan for your country or region. For example, type in a **1** for 1-plus dialing within the U.S. dialing plan (also known as the North American Numbering Plan).
- **International.** The prefix used for international calls. For example, this is **011** for international calls made in the USA.
- **Other.** Flexible and variable uses such as a string of digits to be considered non-local.

Blocking All Outgoing Calls

To block all outgoing calls—for example, when testing or modifying the system—select the **Block All Outgoing Calls** check box.

Enabling Hop Off for Tie Trunks

When selected, this function allows for calls over T1 Tie Trunks to use PSTN trunks or other servers, when those trunks have been configured to accept tie-trunk calls. For Hop Off to work, it must be enabled on all AltiServ systems on which trunk calls are able to be used as a transit switch.

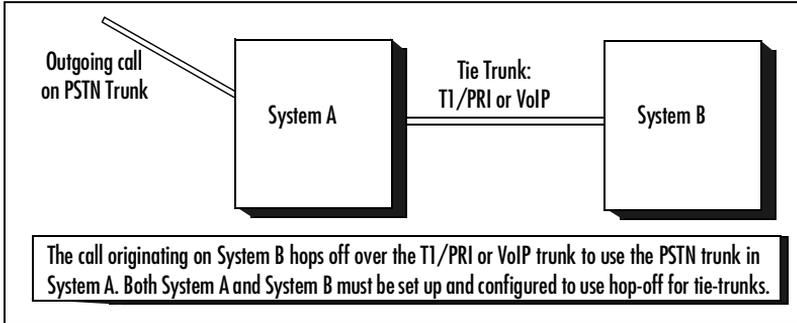


Figure 6. Hop Off for Tie Trunks

The trunk configuration to allow this function is discussed under “Setting General Trunk Attributes” on page 73.

The board must be configured to allow for Tie Trunks, as discussed in “Setting up T1 or PRI Channels on the Triton T1/PRI Board” on page 65.

Restricting Tie Trunk Calls

You can set call restrictions on tie trunk calls by telling the system to use the same restrictions as the ones set up for an extension. Using the **Call restriction follows extension** drop-down list, you can select the extension with the restrictions to use for the tie trunk calls.

Setting up Call Reports

You can set up call reporting to your local drive, to a remote server, and/or exported via a COMM port. The Call Detail Summary Report (CDR) formats are described in Appendix A on page 187.”

Only trunk calls are logged in CDR records. The records are logged after the call ends, if answer supervision was received on the outgoing trunk.

Select **System Configuration...** on the **Management** menu, then click the **Call Reports** tab. Here’s a sample window:

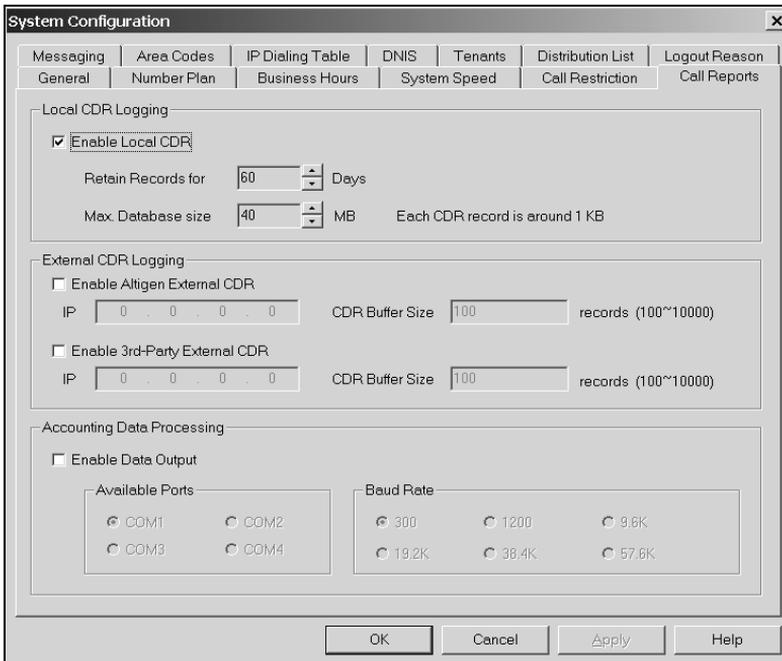


Figure 7. Call Accounting window, System Configuration

Setting Local Logging

To enable CDR collection to the local drive, select the **Enable Local CDR** check box.

Use the **Retain Records** drop-down list to select the number of days to retain records. This can be any number of days from 5 – 365.

Also, set the Max Database size to a value between 0 – 300 MB, noting that each record requires about 1 KB of disk space.

Setting External Logging

AltiWare allows you to output call accounting to a Microsoft SQL 7 database or to a third party external application.

In either case, the database cannot be on the same server as the AltiWare system. A system integrator or database developer will need to write a custom query to extract data from the SQL database.

You can send reports from a number of different AltiServ systems to the same database.



Before you enable external logging using this window, you need to set up and configure the database. It should be ready to receive the reports before you enable the export here.

Enabling the External Log

After setting up the database, run AltiWare Administrator, select System Configuration on the Management menu and open this Call Reports window. Select one of the following:

- **Enable Altigen External CDR** to use AltiGen's implementation of the Microsoft SQL database.
- **Enable 3rd-Party External CDR** to export the data to a third party application.

In either case, type the external server's IP address into the IP box.

Using the **CDR Buffer Size** box, type in a maximum number of records to hold in a buffer while sending out CDR data. The range is from 100 – 10,000, with a default of 500.



AltiGen does not provide any SQL backup and restore utility. We strongly recommend that you use SQL Backup and Maintenance utility to perform daily backup and maintenance jobs; and use a restore utility to restore the database. If you need to reconstruct the SQL server, run the External Logger Setup to create an empty calldb database before restore.

Exporting Through a Local Port

You can send the CDR to a COMM Port to export to, for example, an accounting data processing system.

To do this, select the **Enable Data Output** box. Then select an **Available Port** and the **Baud Rate**.

Managing Messages

The Messaging function provides for setting basic parameters and options for messaging, including message notification retry attempts, deletion confirmation options, the length of time for message storage, message recording length, and email activation and usage.

To access Messaging setup, select **System Configuration...** on the **Management** menu, then click the **Messaging** tab. Here's an example of the Messaging window.

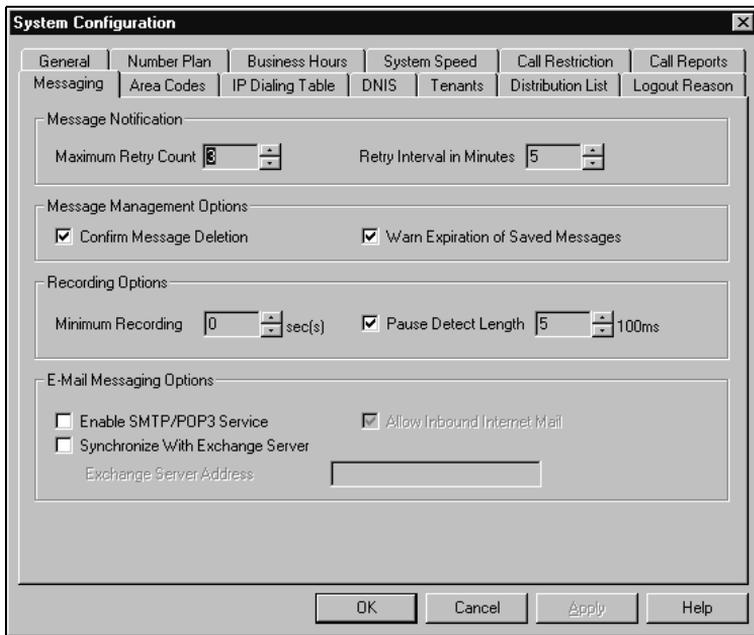


Figure 8. Messaging window, System Configuration

Setting Message Notification Retries

When a message is sent to a user's email in-box or voice mailbox and outcall notification is configured, notification is sent to the user. You can set the re-try setting for the notification as follows:

- **Maximum Retry Count** can be between **0** and **16**. This is the number of times the system will try to deliver a voice message notification *after* the original attempt. For example, **5** retries means five tries after the original, or 6 total attempts.

- **Retry Interval in Minutes** is the number of **minutes** between retry attempts. Five minutes is the minimum and 60 minutes is the maximum interval allowed. The default is 5 minutes.

Setting Message Management Options

Set message confirmations and warnings:

- **Confirm Message Deletion**. If checked, the system plays a voice message instructing user to confirm request for deletion by pressing the # key. This prevents users from accidentally deleting messages with a single key entry.
- **Warn Expiration of Saved Messages**. If checked, the system warns the user that saved messages will be deleted due to their retention time expiring. The message is given the day before the messages are automatically deleted, and the user then has the option to either keep or delete the message. By default, this feature is enabled.



If this feature is disabled, saved messages are deleted automatically without warning when they expire.

Setting Message Recording Options

Set message recording parameters:

- **Minimum Recording** sets the minimum length in seconds for any recording (i.e. incoming voice mail message, personal greeting, system prompts). This can be from 1 – 5 seconds, or 0, which means no minimum.

All recordings that are shorter than the designated Minimum Recording length are deleted. This feature is recommended when users receive many empty voice mail messages on a regular basis and would like them automatically deleted.

- **Pause Detect Length**. Selected, this feature causes the deletion of pauses in messages. The default pause detect length is **500 ms**. The pause detect can be disabled by de-selecting the check box, or the length can be set to a value between **200 – 2000 ms (.2 – 2seconds)**.

Setting E-mail Messaging Options

To use the AltiWare e-mail services, configure the following settings.

- **Enable SMTP/POP3 E-Mail Service.** Selected, this enables incoming and outgoing mail services on AltiServ—Simple Mail Transfer Protocol (SMTP) and Post Office Protocol (POP).
 - **Allow Inbound Internet Mail.** This check box option is activated and selected by default if you enable the SMTP/POP E-Mail Service. You can de-select this option if you don't want to use the AltiWare E-Mail service for inbound mail, for example when you're using another email server on the AltiServ system.
- **Synchronize with Exchange Server.** *Before selecting this option to use an Exchange Server, you should make sure the Exchange Server and Windows / NT configuration is established. See the AltiGen document, Exchange Server Integration in AltiWare OE.*

Select this option if you are using an Exchange Server and want to synchronize it and the AltiServ servers—that is, when emails or voice mails are deleted from one service, they are automatically deleted from the other server as well.

If you choose this option, you must type in the Exchange Server Address. The name must be just the name of the machine or the fully qualified domain name.

Setting Area Code Toll Definitions

The Area Codes window provides for setting exceptions to toll call rule standards regarding area codes and prefixes. To use a common example, the system treats calls that begin with **1** as long distance toll calls. You can use the Area Codes window to specify treatment of 800 and 888 numbers as free calls. This configuration enables the system to properly handle such numbers.

You can set up three types of exceptions, which are explained in more detail in the window itself.

- **Local Call Definition.** Calls that begin with **1** but are free (e.g., 800)
- **10 Digit Dialing.** Local calls that require dialing area codes but do not require dialing **1** first.
- **1 + 10 Digit Dialing.** Calls within the home area code that require 1 + Area Code + Number.

Accessing Area Codes Setup

To access the Area Code window, select **System Configuration...** on the **Management** menu, then click the **Area Codes** tab. Here's an example of the window:

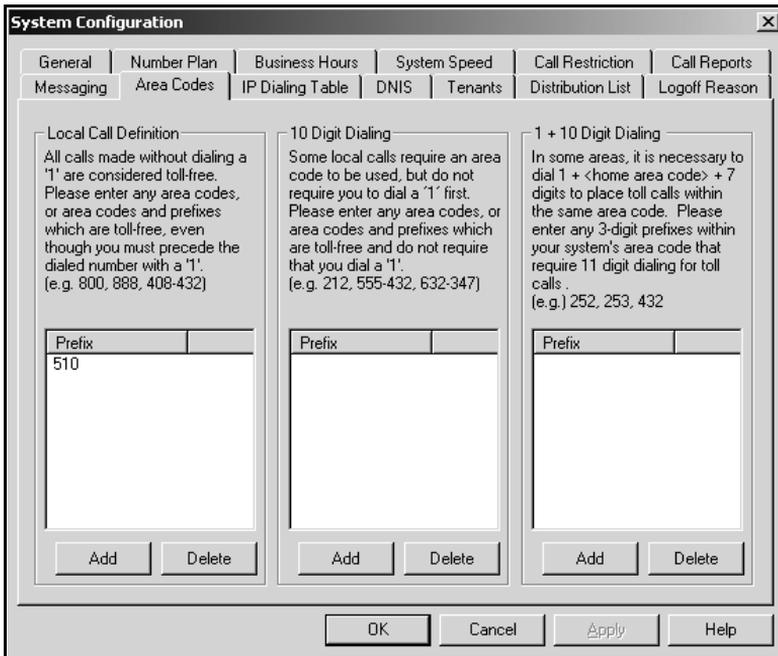


Figure 9. Area Codes window, System Configuration

Adding and Deleting Entries

To add entries to one of the three lists, click the **Add** below the appropriate list box. In the dialog box that appears, type in a number and click **OK**.

To **Delete** an entry, select it and click **Delete**. You can select multiple entries for deletion by using **Ctrl-click**. Click **Apply** to save your changes and **OK** to save and close the window.

You can type in an area code alone, or an area code + prefix if needed. When you type the area code and prefix, optionally you can connect them with a single hyphen—for example, 510-487, or 212-677. The optional hyphen is for your convenience and readability. Using the same examples, 510487 and 212677 are also valid entries.

Defining an IP Dialing Table

To use an AltiServ-to-AltiServ connection for Voice over IP, you need to configure the routing in the IP Dialing Table for each AltiServ system.



To enable voice over IP, you need to have at least one Triton VoIP board installed and configured. (The IP Dialing Table is disabled unless there is at least one VoIP board installed.) You also need to make sure you have assigned an IP Trunk Access code, as discussed on page 26.

About the Location ID Digit Length

In the IP dialing table, you define the addresses of the remote locations and set a **Location ID Digit Length**. The dialing length sets the length of the **Location ID**, the number you define in the dialing table to identify each remote location.

The Location ID is used in dialing: the user dials the IP trunk access, followed by the location ID to identify the remote location, followed by the remote extension. For example, if the *IP trunk access* is **8**, the *location ID* is **27**, and the *extension* to reach is **837**, the user dials **8 27 837**.

The Location ID Digit Length can be set to None, 1, 2, or 3—a seemingly simple choice. However simple it seems, though, it needs to be given some thought before it is set. Location IDs are used system wide, and a coordinated configuration is recommended. It is highly recommended to use the same length for the location ID for all networked AltiServ systems. It may also be advantageous to use the same location IDs at all locations. For example, if the location ID for the Chicago office is 12 when dialed from both San Francisco and New York, users who travel will find it easier to work at multiple locations.

Use Caution Before Changing the Dialing Length

The dialing length can be changed without having to re-install or re-start AltiWare IP. However, if this number is changed, the location IDs are all altered—so that it is advisable to keep the original length if it works well.

If you increase the location ID length, the number 0 is added to the front of the location IDs. For example, if you change the length from 2 to 3, location IDs 02 and 27 will become 002 and 027 respectively.

If you decrease the number of digits in the location ID, the last digit is dropped from location IDs. For example, Location ID 240 becomes 24. There is an exception to this truncation method: if the leading digit is 0, it is dropped. For example, 048 becomes 48.

Defining the IP Dialing Table

To access the IP Dialing Table window, select **System Configuration...** on the **Management** menu, then click the **IP Dialing Table** tab. Here's an example of the window:

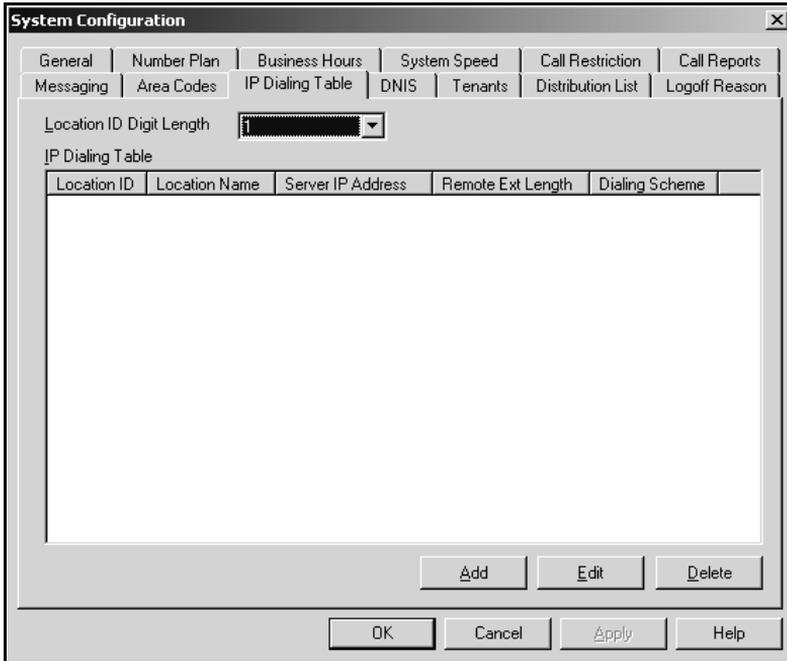


Figure 10. Dialing Table window, System Configuration

Setting the Location ID Digit Length

Set the length in the **Location ID Digit Length** drop-down list, noting the discussion about the length on the previous page.

Defining Remote Locations

To add a location, click the Add button to open a entry dialog box:

Define the attributes for the entry:

- **Location**—a unique dialing number to connect to the remote location. The length of the number is of course the Location ID Digit Length described in “About the Location ID Digit Length” on page 41.
- **Location Name**—a descriptive name of up to 15 characters to identify the location. This name may be used by Caller ID.
- **Server IP Address**—the remote server’s address in one of the following formats:
 - RFC assigned IP address (e.g. 100.100.100.100). IP addresses with prefixes of 10.0.0.0/8, 172.16.0.0/12 or 192.168.0.0/16 can only be used within private networks (Intranets).
 - Fully qualified DNS name (e.g., newyork.altigen.com), of up to 64 characters.

This IP address format is recommended over DNS names, since with the IP address, the application does not need to resolve the name.
- **Remote Ext. Length**—the length of extension digits at the remote location. Valid entries are None - 7, with “None” meaning not specified. Specifying the remote extension length is optional but highly recommended, since this information tells the system how long to wait for another entry before outpulsing (sending the digits).
- **Dialing Scheme. Overlapping (ATGN)** is best used with analog trunks to allow the terminal to omit part of the digits required to complete a call while buffering the remaining digits. **Enbloc**, used with digital (ISDN) trunks, allows the terminal to include all of the digits required to complete a call.

Configuring DNIS Routing

When an incoming call comes through a trunk with DNIS or DID numbers, the system can route the call to the proper extension, Auto Attendant or operator based on the DNIS or DID number collected.



It should be noted that DNIS supports only incoming T1, PRI, and analog DID trunks, and in the case of T1 and PRI DNIS works with incoming trunks that are *not* set up as Tie trunks.

In order to locate an entry in the DNIS table for an incoming call, a full match is required. If there is no match in the **DNIS** routing table set up in this window, the system tries to match the number based on the DID number entered in the **General** page of **Extension Configuration** (See “Setting up Extensions” on page 87). If there is still no match, the system routes the call according to the **In Call Routing** page defined in **Trunk Configuration**.

To access DNIS routing, select **System Configuration...** on the **Management** menu, then click the **DNIS** tab. Here’s a sample window:

System Configuration

General | Number Plan | Business Hours | System Speed | Call Restriction | Call Reports
 Messaging | Area Codes | IP Dialing Table | **DNIS** | Tenants | Distribution List | Logoff Reason

Number	Name
5954099	Express tech su...
5954000	Terch Support Op
5953298	Sales Op

Name: Tech Support Op

Workdays During Business Hours

- Route Incoming Calls to Extension: 103
- Route Incoming Calls to Auto Attendant: 1
- Route Incoming Calls to Operator

Workdays Outside Business Hours

- Route Incoming Calls to Extension: 103
- Route Incoming Calls to Auto Attendant: 1
- Route Incoming Calls to Operator

Non Workdays

- Route Incoming Calls to Extension
- Route Incoming Calls to Auto Attendant: 5
- Route Incoming Calls to Operator

Add Delete

OK Cancel Apply Help

Figure 11. DNIS window, System Configuration

Adding and Deleting DNIS Route Entries

To add entries to the DNIS routing table, click the **Add** button. In the dialog box that appears, type in a **DNIS Number** and a descriptive **DNIS Name**, then click **OK**.

The number and name entries have the following requirements:

- The **DNIS Number** must be devoid of all characters except the numbers 0 – 9 (The hyphen is not accepted in this dialog box). For example, 2529876 is a good entry, but 252-9876 is not.
- The **DNIS Name** is descriptive and optional; it can be used to remind you about the nature of the number and routing. For example, you might give the 2529876 number the name, “Tech Support”.

To delete an entry, select it in the DNIS number list, then click **Delete**.

Defining the Routing

After adding an entry, you define it by first selecting it in the list. When you select an entry, its name and other defined attributes, if any, appear in the options at the right of the window. You can edit any of these attributes.

For each number, you can set routing for three distinct time periods defined in the Business Hours window (page 27):

- During Business Hours.
- Outside Business Hours.
- Non Workdays.

Within each of these three time slots, you have the following routing options for incoming calls:

- Route to a particular extension selected in the drop-down list.
- Route to a particular auto-Attendant number selected in the drop-down list.
- Route to the operator.

Using a Tenant Table

If several small businesses or groups want to share an Altiserv system, specific trunks can be assigned so that each company or group has its own set of extensions for outbound calling. Each business or group can be set up as a *tenant* in Altiserv, where you use the Tenants window to define the tenants, their call restrictions and call tracking.

The tenant IDs are matched on the one hand to extensions and on the other hand to trunks, so that extensions are matched to trunks; or, more precisely, extension tenant IDs are linked to trunk tenant IDs. This configuration eliminates the need to set up separate access codes for each tenant. Instead, all extensions can dial the *Route Access code* for outbound calls.

For information on Route Access, see “Assigning Trunk, IP Trunk, & Route Access” on page 26.

To access the Tenants window, select **System Configuration...** on the **Management** menu, then click the **Tenants** tab. Here’s an example:

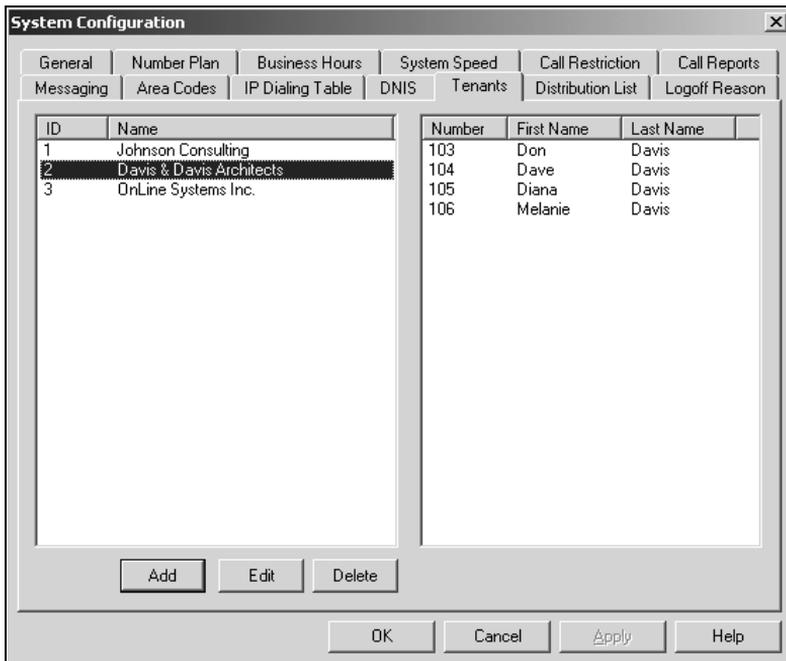


Figure 12. Tenant window, System Configuration

Configuring the Tenant Table

Configuring the tenant table involves first adding entries to the tenant list, then using Extension Configuration and Trunk Configuration to assign extensions and trunks, respectively, to tenant IDs.

Creating Tenant Entries

1. In the Tenant window, click the **Add** button to open a small Tenant Configuration dialog box.
2. In the dialog box, type in the **Tenant Name** and click **OK**. Then click the **Apply** button in the Tenant window. The tenant ID is assigned automatically and sequentially.
3. Repeat the above steps for all the tenants you want to add, then click **OK** to close the System Configuration window.

Assigning Extensions to Tenant IDs

1. Select **Extension Configuration...** on the **Management** menu to open the Extension Configuration General window.
2. For each extension you want to assign to a tenant ID:
 - a. In the Extension list, select and highlight the extension you want to assign to a tenant ID. Each extension can be assigned to only one tenant ID.
 - b. Select a tenant ID in the **Tenant** drop-down list under Personal Information, then click **Apply**.
3. Repeat the previous step for each extension you want to assign. When you're done, click **OK** to close the Extension Configuration window.

Assigning Trunks to Tenant IDs

1. Select **Trunk Configuration...** on the **Management** menu to open the Trunk Configuration General window.
2. For each trunk you want to assign to a tenant ID:
 - a. In the trunk list, select and highlight the trunk you want to assign to a tenant ID.
 - b. Select a tenant ID in the **Tenant Selection** drop-down list, then click **Apply**.
3. Repeat the previous step for each trunk you want to assign. When you're done, click **OK** to close the Trunk Configuration window.

Modifying the Tenant Table

- *To delete a tenant* from the tenant window, simply highlight the ID number and click **Delete**. If you delete a tenant ID that has been assigned to an extension or to a trunk, the extension and trunk assignments are reset to NA (no assignment).
- You can *edit the tenant name* by double-clicking it in the Tenant window (or select the name and click Edit), then changing the name in the dialog box that appears.
- You can *change the extension-to-tenant ID* assignment by opening the Extension Configuration General window, as discussed in the steps on the previous page under “Assigning Extensions to Tenant IDs,” and using the **Tenant** drop-down list to change the tenant ID assigned to any extension. If a tenant ID is already assigned, you must change or remove the assignment from the old extension before you can assign it to a new one.

Note that if an extension is assigned to **N/A** in the **Tenant** drop-down list, the extension is able to access all trunks, even though the trunks have been assigned to tenants.

- You can *change the trunk-to-tenant ID* assignment by opening the Trunk Configuration General window and using the **Tenant Selection** drop-down lists to change the tenant ID assigned to any trunk.

Note that if a trunk is assigned to **N/A** in the **Tenant Selection** drop-down list, the trunk is accessible to all extensions, even though there are tenant assignments.

Creating Distribution Lists

The System Distribution Lists provide for forwarding voice mail messages to multiple recipients defined as list members. To forward a voice mail to all list members, a user need only enter the two-digit ID instead of entering numerous individual extensions.

You can create up to 100 distribution lists, each composed of up to 64 extensions. The extension list member can represent another distribution list.



The *system* distribution lists discussed here are different from the *extension* distribution lists which are configured through the phone sets or the Altiview or AltiaAgent user applications.

To access the Distribution List window, select **System Configuration...** on the **Management** menu, then click the **Distribution List** tab. Here's an example of the window:

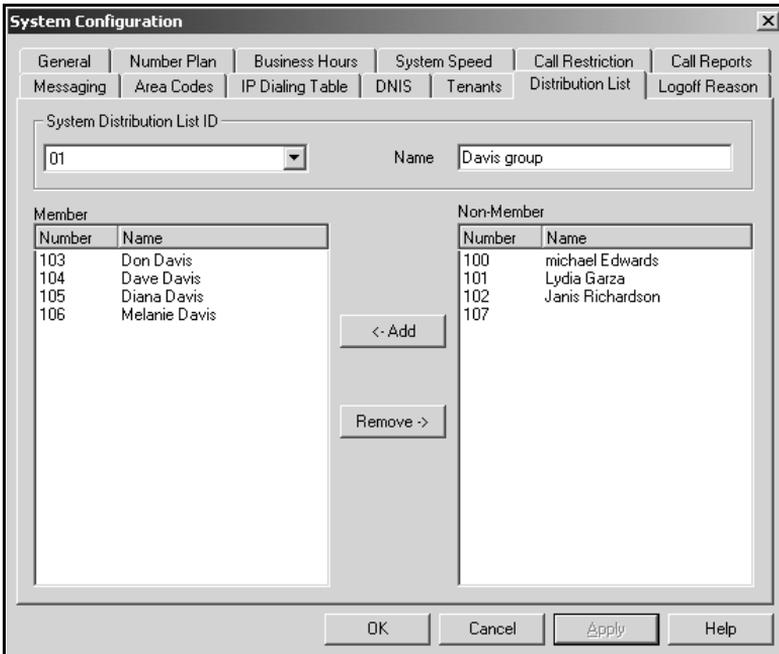


Figure 13. Distribution List window, System Configuration

Defining a Distribution List

1. In the Distribution List window, select an ID (0 – 99) in the **System Distribution List ID** drop-down list.

The list name, if any, now appears in the **Name** box; the members of the list are now displayed in the **Member** box, and other available extensions are displayed in the **Non-Member** box.

2. To give the list a name or change the existing name, type a descriptive name into the **Name** box.
3. To *add* a member, select the name(s) in the **Non-Member** list and click the **Add** button to move it to the **Member** list.

To *remove* a member, select the name(s) in the **Member** list and click the **Remove** button to move it to the **Non-Member** list.

You can select multiple names by using Ctrl-Click.

4. Click **Apply** to save your changes, or click **OK** save and close the System Configuration window.

Setting Logoff Reason Codes

In a workgroup environment, logoff reason codes allow an agent to specify why he is signing off from the workgroup, and the manager can view that information. If logoff reasons are required, the system requests a reason at logoff from the phone set and from the AltAgent application.

The Logoff Reason window allows you to enable or disable the required entry of a logoff reason, and it provides for defining up to 20 reason codes. A logoff history can be tracked and stored for future analysis.

To access the Logoff Reason window, select **System Configuration...** on the **Management** menu, then click the **Logoff Reason** tab. Here's an example of the Logoff Reason window.

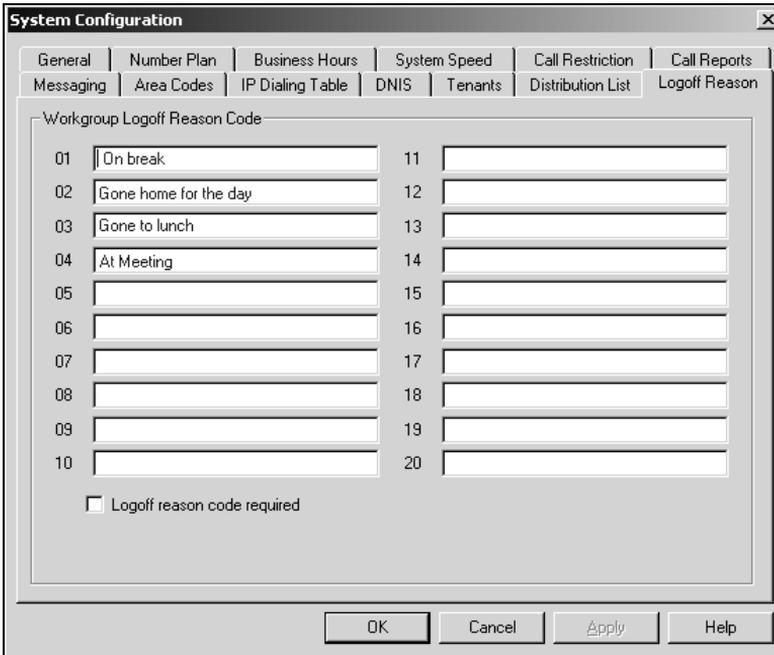


Figure 14. Logoff Reason window, System Configuration

To require logoff reasons, check the **Logoff reason code required** check box. If you want not to require reason codes, deselect the check box.

To define reason codes, type the associated reason into the text box next to the code you want to associate with the reason.

System Configuration

Board Configuration

Board attributes and functions are accessible in the **Boards** Window in the AltiWare desktop.

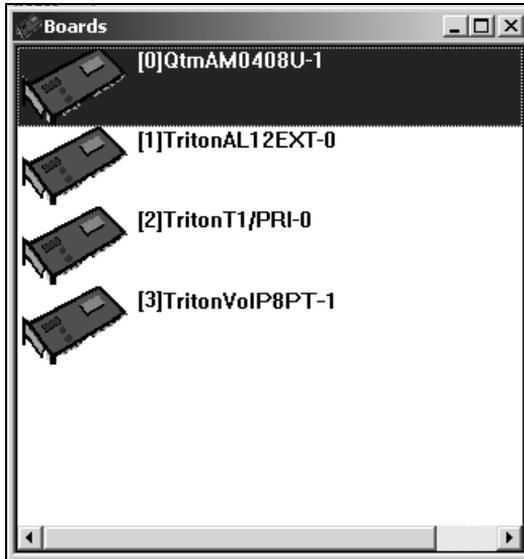


Figure 15. Board Window

For the board you want to configure, double click the board's icon in the **Boards** window to open the **Board Configuration** window.



To implement some board configuration changes, you must shutdown and restart AltiGen Switching Services by first choosing Shutdown Switching on the Services menu, which also closes AltiAdmin, and then re-starting AltiAdmin.

Using the Triton Resource Board

The **Triton Resource Board**, introduced with AltiWare 4.0, is a PCI bus telephony board that provides the ability for one extension to monitor other extensions (as set up in the Extension Configuration Monitor List, discussed on page 119), and the Barge In ability.

The Resource Board requires no complex configuration; you install it and run it. The Board ID must be the range of 0 to 15, and each AltiServ system supports a maximum of 2 boards.

Once installed and the system powered up, the board is displayed in the Board View window on the AltiAdmin desktop, and you can use the barge-in and silent monitoring features without further board configuration.

Without the Resource Board installed, the supervisor will hear an error tone if he tries to perform a monitoring or barge-in operation.

Configuring the Quantum Board

Double click the board's icon in the **Boards** window to open the **Board Configuration** window.

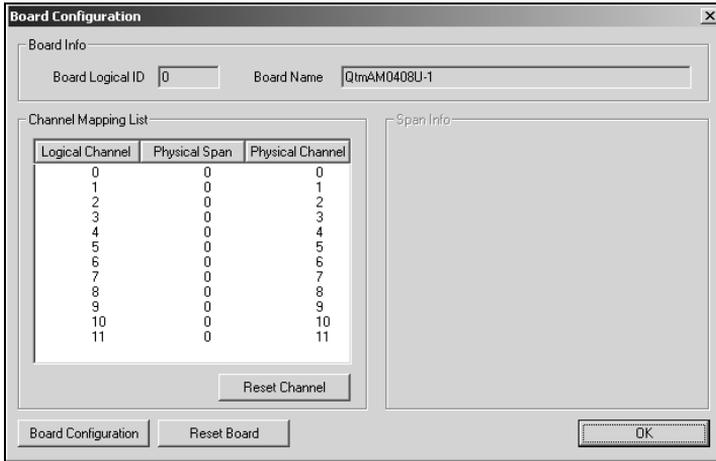


Figure 16. Board Configuration window (Quantum Board)

Use the Board Configuration window for the Quantum board to view the following attributes:

- **Board Info:** the **Board Logical ID** (assigned by Altiserv) and **Board Name** (the type of board installed in the system and board ID).

For Quantum boards in a *Windows 2000 system*, please note:

- the physical board ID 0 is not supported
- the valid physical board IDs are 1-15

- **Channel Mapping List:** the **Logical Channel**, **Physical Span** and **Physical Channel** for the entire board. To reset the channel, select the channel to reset and click the **Reset Channel** button, then click **OK**.



Depending on whether the channel is a line or a trunk line, double clicking a channel in this window invokes either a Pine Properties window (see “Quantum Line Properties” on page 93, or a Trunk Line Properties window see (“Quantum Trunk Properties” on page 74).

- **Span Info:** not available for Quantum boards.

Board Configuration

- **Board Configuration** button: opens a diagnostic dialog box.

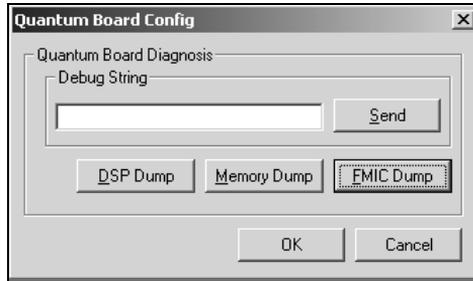


Figure 17. Quantum Board Debug

You can send a debug string to the board, or you can do a DSP Dump, Memory Dump, or FMIC Dump.

- **Reset Board** button - resets the board, after you confirm by accepting a warning that *resetting a board will disconnect all calls in progress on that board*. Be sure to inform all relevant users before resetting.

Configuring the Triton Analog Station Board

Double click the board's icon in the **Boards** window (Figure 15 on page 53) to open the **Board Configuration** window.

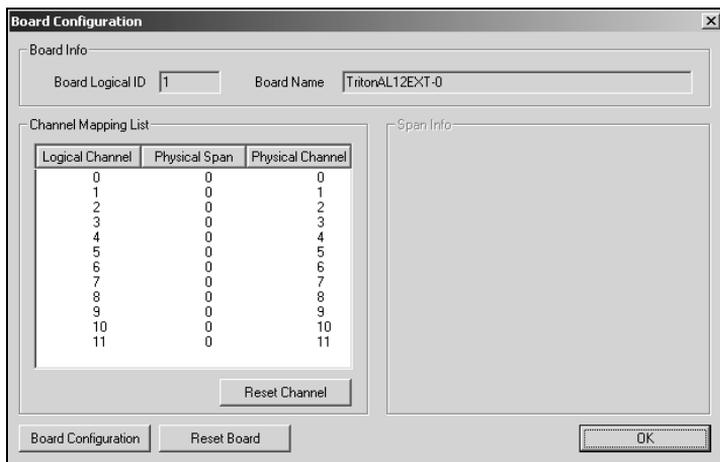


Figure 18. Board Configuration window (Triton Analog)

Use the Board Configuration window to view the following attributes:

- **Board Info:** the **Board Logical ID** (assigned by Altiserv) and **Board Name** (the type of board installed in the system and board ID). *This is informational only and cannot be edited.*
- **Channel Mapping List:** shows the board **Logical Channel**, **Physical Span** and **Physical Channel**. To reinitialize channels, select the channel to reset and click the **Reset Channel** button, then click **OK**. *This is informational only and cannot be edited.*



Double clicking a channel in this window invokes a channel configuration window. Refer to the **Line Properties** button in Extension Configuration. See “Triton Analog Line Properties” on page 94.

- **Span Info:** not available for Triton Analog Station boards.
- **Board Configuration:** displays the board's serial number.
- **Reset Board** button - resets the board, after you confirm by accepting a warning that *resetting a board will disconnect all calls in progress on that board. Be sure to inform all relevant users before resetting.*

Configuring the Triton VoIP Board

Double click the board's icon in the **Boards** window (Figure 15 on page 53) to open the **Board Configuration** window.

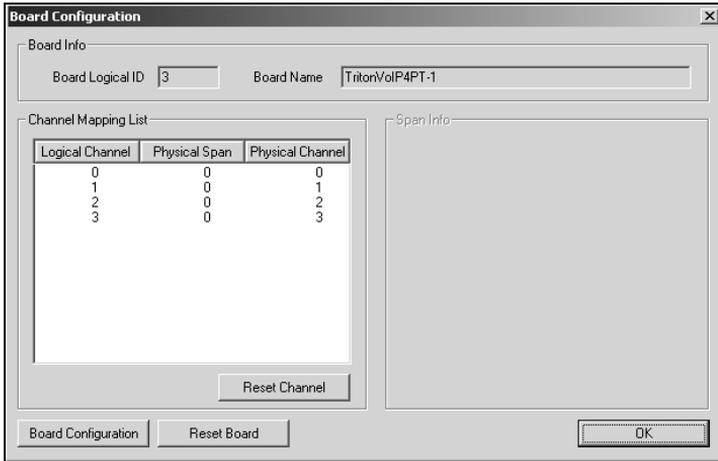


Figure 19. Board Configuration window (VoIP Board)

The **Board Configuration** window for the Triton VoIP board displays the same options as the Quantum board, which are discussed on page 55.

The **Board Configuration** button invokes the **Triton VoIP Trunk Properties** window, which displays the board serial number and displays line settings. Refer to “Triton VoIP Trunk Properties” on page 76 for more detail.

Configuring the Triton T1/PRI Board

Double click the board's icon in the **Boards** window (Figure 15 on page 53) to open the **Board Configuration** window.

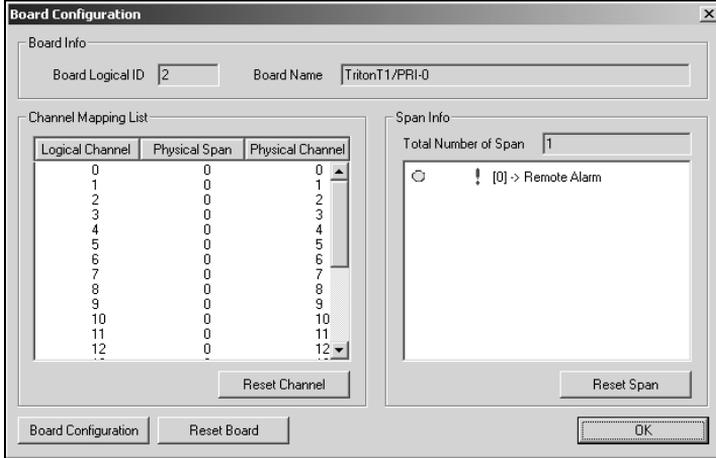


Figure 20. Board Configuration window (Triton T1/PRI Board)

The **Board Configuration** window for the Triton T1/PRI board displays the same options as the Quantum board, which are discussed on page 55, but there are additional options available. The Board ID must be in the range 0 - 3.

- The **Board Configuration** button invokes a configuration dialog box:

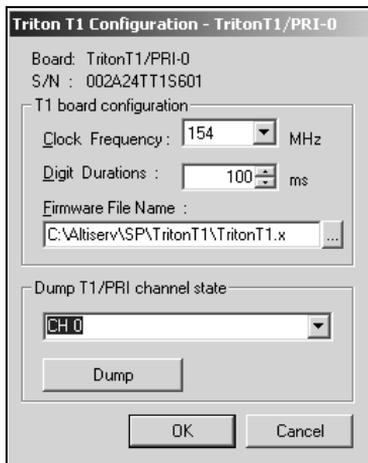


Figure 21. Triton T1 Configuration dialog box

This dialog box displays the board serial number and allows you to reconfigure the **Clock Frequency**, **Digit Duration**, and the **Firmware File Name**. You can also choose to dump a Channel State after selecting the channel in the drop down list.

Span Info: displays the **Total Number of Spans** on the board and the status of the span in the Span Info window. To reset the span, click the **Reset Span** button. Double clicking a span in this window will invoke a configuration window, as discussed in the following section.

See “T1 Clocking” on page 64 and the Status Messages table beginning on the next page.

Triton T1 Configuration - Triton T1/PRI Dialog Box

Double clicking the span line for a Triton T1 board in the **Span Info** window invokes a **Triton T1 Configuration - Triton T1/PRI** dialog box.

The screenshot shows a dialog box titled "Triton T1 Configuration - TritonT1/PRI-0". It contains the following fields and controls:

- Span: 0
- Status: Line failure - NO SIGNAL (ALOS)
- Statistics since: Sun 03/19/00 14:42:29
- Frame Errors: 0
- Line Code Errors: 7
- OOE Errors: 0
- Bit Errors: 0
- Rec Frame Slips: 0
- Xmt Frame Slips: 0
- Clear button
- Frame Type: Radio buttons for SF and ESF (ESF is selected)
- Line Code: Radio buttons for AMI and B8ZS (B8ZS is selected)
- Zero Code Suppression: None (dropdown menu)
- Back-to-back system T1 Clock Master: unchecked checkbox
- T1/PRI Configuration button (double-clickable)
- OK and Cancel buttons

Figure 22. Triton T1 Configuration - Triton T1/PRI dialog box

Reading the Status Messages

If the span is working, the **Status** line displays 'OK.' This status line is updated every 3 seconds. If there is an error, a message is or the types of error messages and the appropriate actions.

Table 1: Span Status Error Messages

Error Message	Meaning	Action
'Hardware Failure - NO ANSWER'	Major hardware problem. Board is not responding to commands.	Set board as MVIP master. Reset Board.
'Hardware Failure - NO CLOCKS'	No clock signal is detected on T1 interface drop.	Reset Board. If this does not work, board must be replaced.
'HDLC Failure - NO HDLC FRAMES'	HDLC = High level Data Link Control. No HDLC framing is detected on the selected D Channel. This is a PRI-specific issue.	Check with CO on D Channel usage for possible mismatch between your selection of D channel and CO's selection. OR CO may have locked D Channel. Contact CO to unlock.
'Line Failure - NO SIGNAL (ALOS)'	ALOS = Analog Loss of Signal	Check T1/PRI cable and change if necessary. If cable is okay, CO is not sending any signal. Contact CO.
'Line Failure - BLUE ALARM (AIS)'	AIS = Alarm Indicator Signal	CO is sending Blue Alarm. Contact CO.
'Line Failure - YELLOW ALARM (RAI)'	RAI = Remote Alarm Indicator	Cable is broken. If there are no frame slips, contact CO. If frame slips exist, set this board as the master.

Table 1: Span Status Error Messages

Error Message	Meaning	Action
'Setup Failure - NO VALID FRAME'	No valid framing is detected.	Possible span mis-configuration (i.e., ESF is selected but the actual framing is SF, or vice versa). Check span configuration.
'Setup Failure - RED ALARM (BPV)	BPV = Bi-Polar Violation	Location condition, equipment problem. For excessive BPV, check AMI/B8ZS setting.
'Setup Failure - RED ALARM (LCV)	LCV = Line Code Violation	Check the MVIP bus master setting. OR Have CO perform a line test to check for a faulty cable or line.
'Setup Failure - RED ALARM (OOF)	OOF = Out of Frame. Excessive frame errors.	Check the MVIP bus master setting. OR Have CO perform a line test to check for a faulty cable or line.
'Clock Sync Failure - FRAME SLIPS'	Conflict between transmit and receive clocks. The MVIP bus master-ship is set improperly.	Check MVIP bus master setting.

- **Reading the Statistics**

The **Statistics** is an informational displays of accumulated statistics (counters) for the errors that have occurred since the last system reboot or statistics clearing. There may be non-zero values when configuring the T1 span for the first time. You can clear these fields with the **Clear** button.

- **Frame Errors** - number of framing bit errors. In T1 mode, a framing bit error is defined as an incorrect FS-bit value. The counter is suppressed when framer loses frame alignment.

- **OOF Errors** - the Out Of Frame counter registers every time the T1 chip is forced to re-frame when receiving a frame with severe errors.
- **Rec Frame Slips** - the Receiver Frame Slips counter shows the number of frame slips for the receiver.
- **Line Code Errors** - Line Code Error is defined as an occurrence of a bi-polar variation or excessive zeroes.
- **Bit Errors** - Bit Errors are defined as a CRC-6 error in ESF, FT-bit error in SLC-96 and F-bit or sync bit error in SF.
- **Xmt Frame Slips** - Transmit Frame Slips counter shows the number of frame slips for the transmitter.
- **Clear** button - use the **Clear** button to reset the statistics counters.



For ideally synchronized systems, **Transmit** and **Receive Frame Slips** counters should be '0.' Continuous update of the frame slips counters means that transmit and receive frequencies are not equal. In this case, you should check the system and MVIP clock setup.

Setting the Configurable Options

- You can set the **Frame Type** to either **SF** or **ESF**
SF (Superframe Format) consists of twelve (12) consecutive frames.
ESF (Extended Superframe Format) consists of twenty-four (24) consecutive frames.
- You can set the **Line Code** to either **AMI** or **B8ZS**
AMI (Alternate Mark Inversion) is the line coding format in T1 transmission systems whereby successive ones (marks) are alternately inverted and sent with opposite polarity of the preceding mark. **B8ZS** (Binary 8 Zero Substitution) sends two violations of the bipolar line encoding technique, rather than inserting a one for every seven consecutive zeros.
- You can set the **Zero Code Suppression** to **None** (default setting), **Jam Bit 8**, **GTE** or **Bell**
Zero Code Suppression inserts a "one" bit to prevent the transmission of eight or more consecutive "zero" bits; **Jam Bit 8** forces every bit 8 to a one; **GTE** Zero Code Suppression replaces bit 8 of an all zero channel byte to a one, except in signaling frames where bit 7 is forced

to a one. **Bell** Zero Code Suppression replaces bit 7 of an all zero channel byte with a one.

- If you click the **T1/PRI Configuration** button you can set channels to either T1 or PRI, as discussed page 65.
- You can set the **Back-to-back T1 Clock Master** *if* you have a back-to-back configuration and you want this span to be the master clock to the system. (Only one clock master should be selected in a back-to-back system.) See the following discussion.

T1 Clocking

Depending on the configuration of the T1 boards and span for your AltiServ system(s), the **Back-to-back T1 Clock Master** setup should be set according to the follow conditions:

- If all of the T1 boards are connected to an FXO (Foreign Exchange Office) or CO, the **Back-to-back T1 Clock Master** check box *must NOT be checked* for *any* of the T1 boards.
- If two AltiServ systems are connected back-to-back with a T1 span, the **Back-to-back T1 Clock Master** check box *must be checked* for only *one* of the T1 boards.
- If two T1 boards in the same AltiServ system are connected back-to-back with a T1 span, the **Back-to-back T1 Clock Master** check box *must be checked* for the T1 board that *has not been designated by the MVIP setting as the system's master clock to drive the MVIP bus*.
- If four T1 boards are in the same AltiServ system, where each pair is connected back-to-back with a T1 span:
 - The **Back-to-back T1 Clock Master** check box *must be checked* for one of the T1 boards from the first pair, that has *not been designated by the MVIP setting as the system's master clock to drive the MVIP bus*.
 - The other two T1 boards of the second pair must have its **Back-to-back Clock Master** check box *unchecked*.

IMPORTANT! In all back-to-back cases, the **MVIP Clock Configuration** should be set to “**Manual**,” and the board *connected to* the board configured as the back-to-back clock master *must be designated* at the MVIP bus master.

Setting up T1 or PRI Channels on the Triton T1/PRI Board

Use the **T1/PRI Configuration** button (Figure 22 on page 60) to invoke the **T1/PRI Configuration** window. The Triton T1/PRI Board can be configured to either T1 or ISDN PRI through the configuration options within the window.

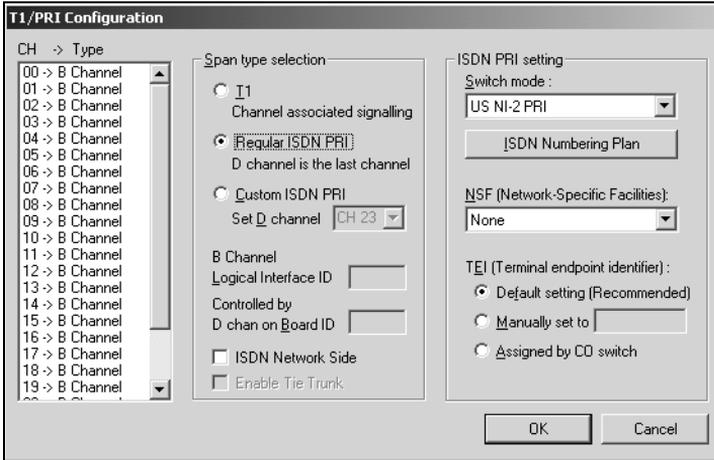


Figure 23. T1/PRI Configuration window

The **CH -> Type** list displays the channel types.

Selecting Span Types

- **T1** - select this option to associate all channels on the span to a T1 Robbed-bit signal.
- **Regular ISDN PRI** - select this option to indicate 23B+D ISDN PRI span and to designate the last channel as the D channel.
- **Custom ISDN PRI** - select this option to set the D channel to the desired location.

For future use: The following two settings will be used in conjunction with the Custom ISDN PRI setting in a future release:

- Set the **D channel** using the drop-down list.
- Type in a **B Channel Logical Interface ID**

- ISDN Network side - if you are connecting two AltiServ PRI spans back-to-back (for example, in a Tie Trunk operation), one span must be configured as **ISDN Network Side**.

- To enable a Tie trunk, select the **Enable Tie Trunk** check box at the bottom. Note that tie trunks must terminate to a system also configured as a tie trunk.

Setting the ISDN PRI Switch Mode

If you select a Regular or Custom ISDN PRI, you can then set the **ISDN PRI Setting**. Select the appropriate **ISDN Switch Mode** from the drop-down list:

- AT&T 4ESS PRI
- AT&T 5ESS PRI
- NT DMS-100 PRI
- N12-PRI (default)

Configuring an ISDN Numbering Plan

The **ISDN Numbering Plan** button invokes the **PRI ISDN Numbering Plan** dialog box. This function allows you to select how Altiserv will identify and code the Called Number for six different types of calls. This coding instructs the CO on how to interpret the number being sent to it.

PRI ISDN Numbering Plan

101CCCC Numbers So-called CIC (Carrier Identification Codes) dialing.
(e.g. 1010288)

Type of Number: Numbering Plan:

011 International Numbers For placing calls outside the U.S.
(e.g. 011 44 500 555-1212)

Type of Number: Numbering Plan:

1 + 10-digit Numbers For local and long distance calls that require 1 to be dialed before the number. (e.g. 1 408 555-1212)

Type of Number: Numbering Plan:

10-digit Numbers For local and long distance calls that do not require 1 to be dialed before the number. (e.g. 408-555-1212)

Type of Number: Numbering Plan:

7-digit Numbers For calls placed within local area that do not require area code or 1 prefix. (e.g. 555-1212)

Type of Number: Numbering Plan:

All other Numbers For calls that do not fall in any category above.
(e.g. 911, 611, 411, 00, 0)

Type of Number: Numbering Plan:

Figure 24. PRI ISDN Numbering Plan dialog box

The **PRI ISDN Numbering Plan** dialog box displays the six *classes* of numbers (call type) that can be sent to a CO:

- 101CCCC Numbers - CIC (Carrier Identification Codes) dialing.
- 011 International Numbers - for placing calls outside the U.S.
- 1+10-digit Numbers - for local and long distance calls that require dialing 1 before the number.
- 10-digit Numbers - for local and long distance calls that do not require 1 before dialing.
- 7-digit Numbers - for calls placed within the local area that do not require an area code or a 1 prefix.
- All Other Numbers - for calls that do not fall into any category above, i.e. 911, 311.

For each class, select the type of *number/numbering plan* from the drop-down list:

- **Type of Number:**
 - Unknown
 - International
 - National
 - Network Specific
 - Subscriber Number
- **Numbering Plan:**
 - Unknown
 - ISDN
 - National
 - Private

The setting ‘Unknown’ is used when the user or network has no knowledge of the numbering plan. In this case, the number digits field is organized according to the network dialing plan.

Setting the NSF

The NSF (**Network-Specific Facilities**) is used with PRI to instruct the CO to route a call to a specific carrier or long distance service. Use the drop-down list to identify the type of carrier service you wish to use for your ISDN PRI lines.

The choices in the list depend on the specific switch and your long distance service provider. An example of such service includes AT&T Megacom.



If your CO requires specific NSF features to be present in the call setup packet, please contact AltiGen's Technical Support department with such information from the CO and they will help you configure it.

Setting a TEI

The **TEI (Terminal Endpoint Identifier)** defines which terminal device is communicating with the CO switch for a given message. PRI messages involve point-to-point configuration in which each side already knows the source of any message received. ISDN messages involve point to multi-point locations in which the source can only be identified by the TEI.

Select one of the following TEI settings:

- **Default setting** - this is the recommended setting
- **Manually set to** - should always be set to 0. Typically, a zero (0) is used for TEI on a PRI connection. In some cases where a shared D channel is used, other TEI values might be required to identify which span will be used for a call.
- **Assigned by CO switch** - do not use this setting unless advised by your CO.

Trunk Configuration

Trunk attributes and parameters are set using the **Trunk Configuration** window. The attributes and options available depend on the type of board / and trunk.

Trunks that are out of service are automatically tested by the system every 15 seconds. Once the situation is corrected, the trunk will be brought back to service automatically. If none of the trunks are available when an outside call is placed, the caller will hear the system prompt: “All outside lines are busy, please try again later”.



There are three ways to access the **Trunk Configuration** window: (1) Select the **Management** menu, then select **Trunk Configuration...**; or, (2) Click the **Trunk Configuration** icon on the Quick Access toolbar; or (3) Double-click a trunk listing in the **Trunk View** window such as the example below, displayed on the AltWare desktop:

Reset		
Location	Type	Status
● 00:00	L5	not ready
● 00:01	L5	not ready
● 00:02	L5	not ready
● 00:03	L5	not ready
● 02:00	T1	not ready
● 02:01	T1	not ready
● 02:02	T1	not ready
● 02:03	T1	not ready
● 02:04	T1	not ready
● 02:05	T1	not ready
● 02:06	T1	not ready
● 02:07	T1	not ready
● 02:08	T1	shutting down
● 02:09	T1	not ready
● 02:10	T1	not ready
● 02:11	T1	not ready
● 02:12	T1	not ready
● 02:13	T1	not ready

Figure 25. Trunk View window

Trunk Configuration

However you open the Trunk Configuration window, the **General** window appears, looking something like this example:

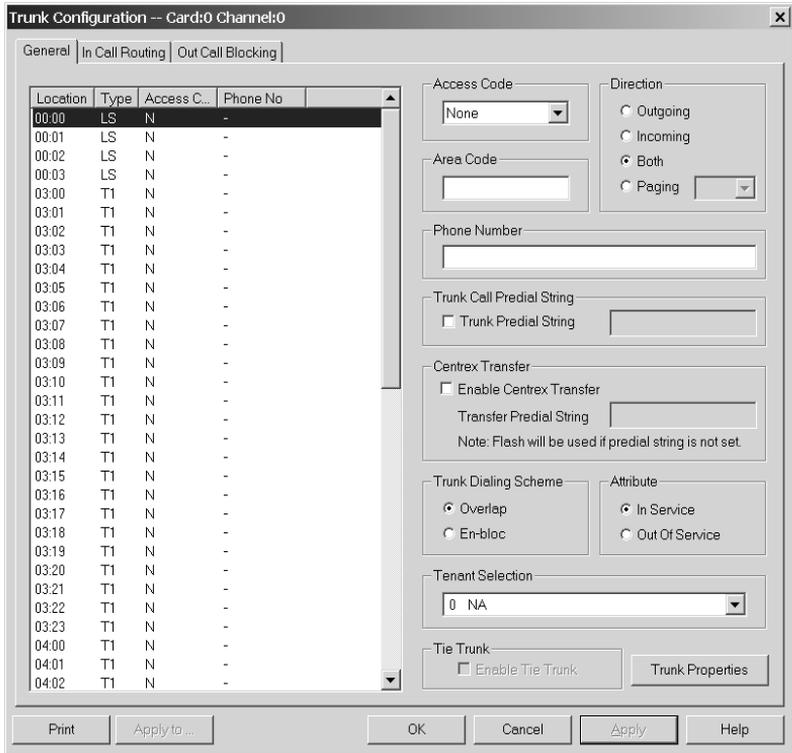


Figure 26. General window, Trunk Configuration

Selecting Trunks to Set Attributes

The title bar of the Trunk Configuration window displays the card and the channel of the selected trunk.

The list on the left shows all the configured trunks. The location format is the same as in the Trunk View window, that is, *slot:channel*—for example, channel 15 on the board in slot 1 is location 01:15.

When you select a trunk in this list, the options and parameters for the trunk appear in the settings in the right of the window.

Configuring One or Multiple Trunks

To customize trunk characteristics, you work on one trunk at a time. To apply the same configuration to multiple trunks, use the **Apply To...** button. This pops up a list of all trunks, with all of the trunks selected by default. De-select the trunks you don't want to apply changes to, then click **OK**. This applies changes to multiple trunks for **only the attribute or option that you changed**.

Setting General Trunk Attributes

Select the channel to view its current attributes, as discussed the previous page. You can then set or change the following attributes. If an option is grayed out, it is not available for that type of trunk:

- **Access Code**—Access code to the selected trunk. If you need to use access codes other than 9, you must first set this up on the **Number Plan** window of **System Configuration** (page 24). This option is not available for a DID trunk.
- **Area Code**—the local area code for each trunk. Enter a three-digit area code. If left blank, the trunk assumes the home area code defined in the **General** window of the System Configuration window. *This configuration is for each trunk in the system and will negatively affect features such as Zoomerang if the area code is not configured properly.* This is not available for a DID trunk.
- **Direction**—the trunk direction can be **Outgoing** only, **Incoming** only, **Both** Outgoing and Incoming, or for **Paging**.

Outgoing and **Both** are not available an analog Quantum DID trunk, which is an **Incoming** trunk. The **Both** option is the system default.

Note that when incoming calls are received on an **Outgoing** only trunk, they are immediately disconnected.

Paging is only available for analog (CO) trunks and is used for paging or broadcasting purposes. This option enables a third party paging device directly to the trunk port.

When this option is selected, the system assigns a default unused paging ID. You can assign a different ID in the drop-down list. The range of paging IDs are from **00** to **99**, which allows AltiServ to be connected to up to 100 paging systems through trunks for multi-zone

paging applications. If the manually selected paging ID is used by another trunk, the current paging ID is not changed.

The trunk paging is accessed using the **Overhead Paging by Trunk** (# 45 Feature Code). For example, a user dials ‘#4508’ to connect to a paging system through the trunk with paging ID of 08.

The **Overhead paging** feature requires paging equipment to provide loop start CO trunk characteristics. This option *is not* supported on ground start trunks.

The **Paging** option and the **Overhead Paging** option (in “Audio Peripheral Configuration” on page 141) are different and independent of one another. The Overhead Paging option is to set up the audio out port of the Quantum board for use with the #44 overhead option built into the system.

- **Phone Number**—the phone number, without the area code, assigned to the location. If the wiring changes and a new phone number is assigned to the location, you must update the information in this field.
- **Trunk Call Predial String**—to have the system automatically dial specified digits whenever the selected trunk is used for outgoing calls. This feature is used to prevent having to dial “9” twice for trunk access when the system is used behind another PBX system. If you select this option, type the predial digit(s) into the text box. This field is not available for analog Quantum DID trunk.
- **Trunk Dialing Scheme**—Overlap or En-bloc dialing.
 - **Overlap** allows the terminal to omit part of the digits required to complete a call, while the remaining digits are buffered. Use **Overlap Dialing** for analog trunks and for T1 (robbed bit) for best results.
 - **En-bloc** allows the terminal to include all of the digits required to complete a call. Use **En-bloc Dialing** for digital (PRI-ISDN) trunks.
- **Centrex Transfer**—applies to analog and T1 trunks if the trunk is supported by Centrex. This option must be selected to forward calls to an outside number through a Centrex switch. If the Centrex provider requires a particular string to be sent before the dialed number, enter the string in the **Transfer Predial String** box. If no string is set as a predial string, **FLASH** is used.

- **Attribute—In Service** makes the trunk available for use. **Out of Service** prevents the trunk from being used (for example, while performing maintenance).
- **Tenant Selection**—the Tenant group assignment for the trunk, configured from the **Tenant Table** window in **System Configuration**, discussed on page 46. *If no tenant is selected, any extension can use this trunk to make an out call.*
- **Enable Tie Trunk**—to allow hop-on and hop-off dialing for a ISDN/PRI, or T1 trunk. When this box is checked, any incoming call to the selected trunk can be sent with ANI/DNIS information. To use this feature, Hop-off must also be enabled under System Configuration Call Restrictions, as discussed on page 33. Also, the board must be configured to allow for Tie Trunks. See “Setting up T1 or PRI Channels on the Triton T1/PRI Board” on page 65.
- **Trunk Properties** button—opens a dialog box that allows you to configure low-level, hardware-specific properties for each trunk. The options vary depending on the type of board and trunk, and this is the topic of subsequent sections in this chapter.

Quantum Trunk Properties

To configure a Quantum channel, select a Quantum channel from the trunk channels list in the Trunk Configuration window, then click the **Trunk Properties** button or double-click the list entry to view the **Quantum Trunk Line Properties** dialog box.

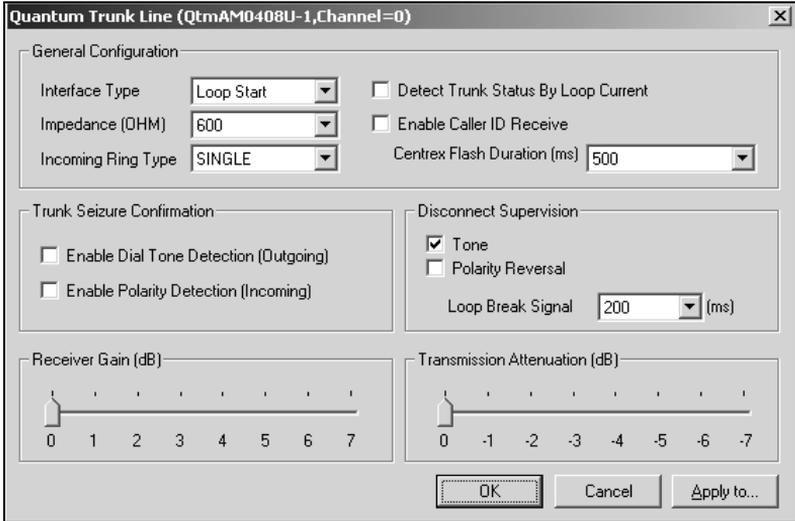


Figure 27. *Quantum Trunk Line Properties window*

Note that you can use **Apply to...** on this dialog box to apply changes to other trunks of the same type. See “Configuring One or Multiple Trunks” on page e71.

Quantum Trunk General Configuration

The **Interface Type** can be one of the following:

- **Loop Start** trunk
- **Ground Start** trunk
- **DID (Wink Start)**—available only if the selected trunk is a DID trunk.

Impedance is the resistance of electrical current to alternating current, measured in **OHMs**. Impedance occurs when power or signal is transferred from one circuit to another. The setting options are:

- 600 OHMs (domestic setting)
- 900 OHMs (international setting, depending on the country)

- External

The **Incoming Ring Type** can be **single** or **double**.

The **Detect Trunk Status By Loop Current** checkbox, if selected, causes detection of the Quantum trunk status using a loop current.

Enable Caller ID Receive needs to be selected to receive caller ID digits.

Centrex Flash Duration (ms) specifies the Flash Duration time in milliseconds, with a range from 50 ms to 1000 ms. This setting complements the Centrex Flash Support option in the General window for the trunk.

Trunk Seizure and Disconnection

Trunk Seizure Confirmation is one of two options:

- **Enable Dial Tone Detection (Outgoing)**—detection of outgoing dial tone.
- **Enable Polarity Detection (Incoming)**—detection of incoming polarity. Polarity detection is used when the CO or the connected PBX provides polarity reversal on the tip and ring.

Similarly, **Disconnect Supervision** is also one of two types:

- **Tone**—busy tone (reorder tone, fast busy tone, error tone, etc.) or dial tone (continuous tone, etc.). This should be used in conjunction with drop in loop current. For COs who cannot guarantee loop break, this may be the only option.
- **Polarity Reversal**—a reversed battery signal. You can set the **Loop Break Signal** to either 200 or 600 ms.

Receiver Gain and Transmission Attenuation

The **Receiver Gain** and **Transmission Attenuation** slide settings adjust the incoming and outgoing volume, respectively, for every Quantum trunk or extension.

The default settings for each of these is 0 dB. *Caution should be used in changing the Receiver Gain or Transmission Attenuation, because, too high a setting causes distortion in the voice quality.*

Incoming and outgoing volume for Quantum trunks or extensions can also be configured through the **Quantum Board Channel Configuration** option in the **Management Menu**. See page 83.

Triton VoIP Trunk Properties

To configure a Triton VoIP channel, select a Triton VoIP channel from the trunk channels list in the Trunk Configuration window, then click the **Trunk Properties** button or double-click the list entry to view the **Triton VoIP Trunk Line Properties** dialog box.

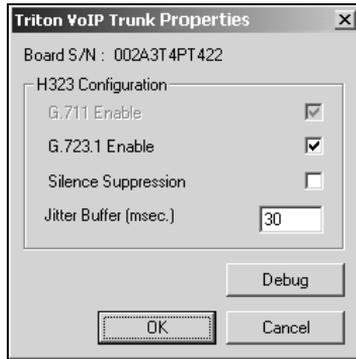


Figure 28. VoIP Trunk Properties window

The primary configuration for the Triton VoIP is the **H.323 Configuration**, with the following settings.

- **G.711 Enable**—provides toll quality digital voice encoding and is not configurable—that is, you cannot de-select it. It guarantees interoperability when other voice compression (e.g. **G.723.1**) is not available or when better voice quality is desired.
- **G.723.1 Enable**—uses low rate audio encoding to provide near toll quality performance under clean channel conditions.
- **Silence Suppression**—suppresses silence packets during VoIP sessions. When silence is detected during a call, AltiWare IP stops sending packets to the other side. When silence is detected during voice mail, the silence period is not recorded.

AltiWare IP disconnects the voice mail session when a silence period exceeds 7 seconds during voice mail recording over VoIP.

- **Jitter Buffer (msec.)**—indicates the delay, in milliseconds, used to buffer voice packets received from the IP network. Voice packets sent over the IP network may incur different delays due to network load or congestion. The Jitter Buffer helps to smooth out the delay variation in the arriving voice packets and maintain voice quality at the receiving end. The default setting is 30 milliseconds.

The Jitter Buffer should be adjusted according to the WAN bandwidth allocated to data traffic. Refer to the Network Configuration Guidelines for VoIP section in the *Getting Started Manual* for more information.

Debugging the Triton VoIP Configuration

Click the **Debug** button in the Triton VoIP Configuration dialog box (see Figure 28) to open a small dialog box that allows you to type in and send a debug string.

Triton T1/PRI Trunk Properties

To configure a Triton T1/PRI channel, select a Triton T1/PRI channel from the trunk channels list in the Trunk Configuration window, then click the **Trunk Properties** button or double-click the list entry to view the **Triton T1/PRI Trunk Line Properties** dialog box.

Figure 29. Triton T1 Configuration dialog box

T1 robbed-bit signaling

You can set the **Protocol** to one of the following **E&M Wink Start** (default), **E&M Immediate Start**, **Ground Start** or **Loop Start**.

For signaling from one board to another, only **FXS** (Foreign Exchange Subscriber) is supported. Loop Start and Ground Start protocols cannot be used for interfacing between two boards.

The **Dialing Delay** specifies the delay, in milliseconds, after trunk seizure and before digit dialing. *Do not change this value unless advised.*

Caller ID and DID Collection

You can select the maximum time-out delays, in seconds and the appropriate sequence of symbols to be collected for Caller ID and DID.

The **Max. seconds before the first digit** setting is the maximum wait time before time-out for the system to identify this digit after either the first *ring* in ground start or loop start or the *wink* in wink start. The range is from 1 – 6 seconds, or *None*, with a default value is 3 seconds. *Do not change this value unless advised.*

‘**None**’ means *no* Caller ID or DID information will be collected. All other options will be grayed out. Use this option to disable Caller ID and DID collection.

The **Max. seconds between digits** - maximum wait time before time-out between two digits. Default value is ‘**None.**’ *Do not change this value unless advised.*

Selecting ‘**None**’ means the system will only wait for the sequence of digits that are collected within the length of time specified in the **Max. seconds before the first digit** field.

Check the **Incoming sequence** check box: and select up to five incoming symbols to collect from the Caller ID or DID digits:

- None
- #
- *
- # or *
- Caller ID
- DID/DNIS

Selecting ‘**None**’ in any field of the sequence will terminate the sequence and automatically disable subsequent entries in the sequence.

The following default sequence is enabled, as shown in Figure 29:

or * (and then) **Caller ID** (and then) **# or *** (and then) **DID/DNIS**

To set up an additional, alternative sequence, check the **Or** check box and select another set of up to five incoming symbols to collect.

Not checking any box is equivalent to checking ‘**None**’ in the first field.

— **If appropriate, you can use the Apply to...** button, as described on page 71, to apply the Caller ID Collection to multiple T1 trunks.

Caller ID and DID Incoming Sequence Example

The following is an **example** of a Caller ID and DID/DNIS incoming sequence window.

How to collect Caller ID and DID

Max. seconds before the first digit: 3 seconds

Max. seconds between digits: 1 second

Incoming sequence :

Caller ID * DID/DNIS None

Or :

DID/DNIS None None None None

Figure 30. Incoming Sequence example

When a call comes in, the system tries to match the incoming sequence to either the first or second Incoming Sequence Digit String sequence. If no match is found, no Caller ID or DID digits will be collected.

- The system waits 3 seconds for the first digit to arrive. If the symbol is a #, it continues with the first sequence. Otherwise, it looks for a match to the first (and only) symbol in the second sequence, the **DID/DNIS** number.
- For the example, let's say the system receives the #. It then waits 1 second between each digit for the next digit until all digits are received. The * symbol is a delimiter between Caller ID and DID digits.

This example the system Altiserv is expecting either the sequence **#CID*DID** or only **DID** digits for incoming calls. If no match is found for either sequence, no Caller ID or DID digits are collected.

Incoming Call Routing

To set incoming call routing for a trunk, select the trunk in the General window, then click the **In Call Routing** tab in the **Trunk Configuration** window to display the **In Call Routing** window. The trunk location appears in the title bar:

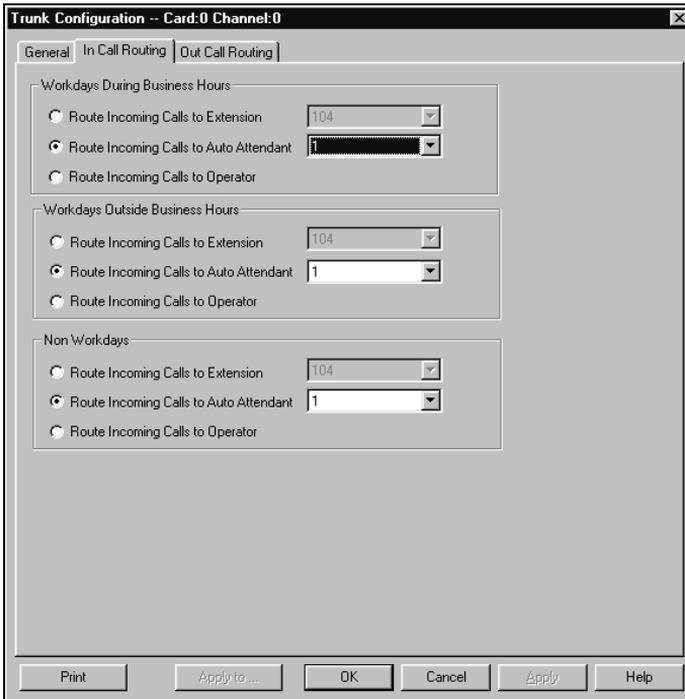


Figure 31. In Call Routing window, Trunk Configuration

For each trunk—or using **Apply to...** to apply the settings to multiple trunks—you can set routing for the three time periods defined in the System Configuration Business Hours window (page 27):

- During Business Hours.
- Outside Business Hours.
- Non Workdays.

Within each of these three time slots, you have the following routing options for incoming calls:

- Route to an extension selected in the drop-down list.
- Route to an auto-Attendant number selected in the drop-down list.
- Route to the operator.

Outgoing Call Blocking

To set outgoing call blocking for a trunk, select the trunk in the General window, then click the **Out Call Blocking** tab in the **Trunk Configuration** window to display the **Out Call Blocking** window with the selected trunk location in the title bar:

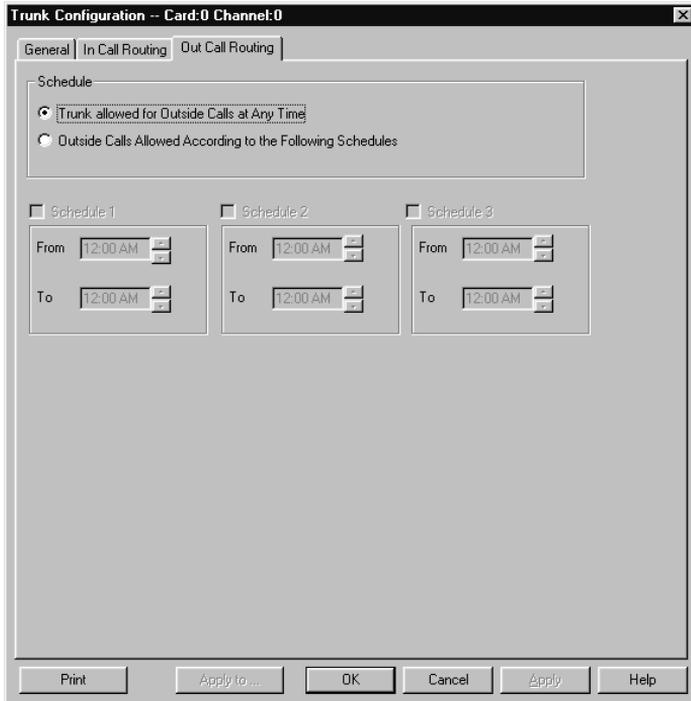


Figure 32. Trunk Configuration window - Out Call Routing Window

If you select **Trunk allowed for Outside Calls at Any Time**, call restrictions set in System Configuration, Outcall Routing, and Extension Configuration still apply to calls made on the trunk.

If you select **Outside Calls Allowed According to The Following Schedules**, you can then use the Schedule 1, 2, and 3 options to set up to three different time periods during which calls are allowed.

You can use **Apply to...** to apply the settings to multiple trunks.

Quantum Board Channel Gain Configuration

The incoming and outgoing volume can be quickly adjusted for Quantum trunks or extensions by selecting the **Quantum Board Channel Gain Configuration...** menu item on the **Management Menu**. Here's an example of the window:

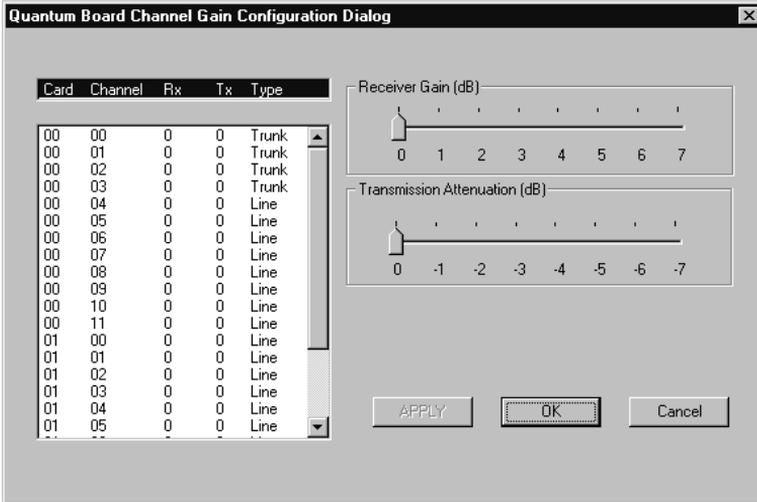


Figure 33. Quantum Board Channel Gain Configuration window

You can also configure incoming and outgoing volume through the board configuration.

The **Receiver Gain** and **Transmission Attenuation** slide settings adjust the incoming and outgoing volume, respectively, for every Quantum channel.

The default settings for each of these is 0 dB. *Caution should be used in changing the Receiver Gain or Transmission Attenuation, because, too high a setting causes distortion in the voice quality.*

Incoming and outgoing volume for Quantum trunks or extensions can also be configured through the physical extension, as discussed under “Setting the Line Properties” on page 92, or when configuring the Quantum board.

Trunk Configuration

Extension and Workgroup Configuration

There are three types of extensions:

- **Physical Extensions** are associated with a physical port and device, usually a telephone set. This is what most users think of as an *extension*.
- **Virtual Extensions**—not associated with a physical port. Virtual extensions can be used as message mailboxes and in telephone sharing environments. Users of a virtual extension can log in on any available station to access physical extension features using Feature Codes.

You can create up to 2,000 total (physical + virtual) extensions.

- **Workgroup pilot numbers.** In AltiWare, the first step in setting up a workgroup is creating a workgroup pilot number, which is a type of logical extension. You assign physical and virtual extensions to the workgroup pilot number, making them members of the workgroup, and when the workgroup extension is dialed, the system hunts for an available member extension to which to route the call. AltiWare allows up to 32 workgroups to be configured. Each workgroup can have up to 64 members, and extensions can be assigned to multiple workgroups.

IP extensions can be configured either as physical or virtual extensions.

After creating the extensions, you then work with the following settings, each of which is accessed by a tab in the Extension Configuration window.

- **General setup**—creating the extension numbers and assigning people to the extensions, creating workgroup pilot numbers, and setting other basic parameters.
- **Workgroup**—adding and removing workgroup members.
- **Station Speed**—extension speed dial numbers.
- **Mailbox Settings**—capacity and features options for extension mailboxes.
- **Notification**—preferences and options for voice mail notifications.
- **Restrictions**—extension out-call restrictions.

- **Answering**—Call forwarding, call waiting, and call handling preferences and options.
- **One Number Access**—special handling for designated VIP calls.
- **Monitor List**—extension rights to monitor other extension calls.

Three Configuration Windows in One

Certain configuration functions apply only to physical extensions—for example, configuring the physical line. Other functions apply only to workgroup pilot numbers—for example, setting up incoming call routing to workgroup members when the workgroup extension is dialed. And some functions, or the lack of function, apply only to virtual extensions—for example, call waiting options do not apply to virtual extensions.

Generally, you work on extension configuration by selecting an extension in the General window, then clicking another tab to work on the settings in some other window. The features and functions available in the Extension Configuration windows vary depending on the type of extension selected.

When you select an extension in the General window—the first window you see when you first launch Extension Configuration—and work on it under other tabs, the extension number appears in the window title bar. For example, if you're setting up phone answering options, the workgroup view of the window shows Workgroup Handling options that do not appear in other views.

You can print the data in any of the windows by clicking the **Print** button.

Apply or Apply To...?

The extension configuration windows often allow you apply changes to a particular extension or workgroup (**Apply**), or to select many extensions or workgroups to which to apply the changes (**Apply To...**).

Clicking the **Apply To...** button pops up a list of all extensions to which the change can apply. All extensions are selected by default. You then de-select the ones you don't want, or de-select all and then select the ones you want.

The **Apply To...** button is disabled unless there is a change that can be applied to multiple extensions, and when you use it to apply changes to multiple extensions, it works on only those changed attributes that can be applied. For example, if you use **Apply To...** on the General window after you changed the person's name, you do not re-assign the same name to others, because the name is not an attribute that uses **Apply to...**

Accessing Extension Configuration



To access Extension Configuration, either select **Extension Configuration...** from the **Management** menu, or click the **Extension Configuration** icon on the Quick Access Toolbar.

Setting up Extensions

The Extension Configuration **General** window provides for creating extensions and establishing their basic attributes.

The General window is the default tab displayed when you open the Extension Configuration window. If you're viewing another Extension Configuration window, you can click the **General** tab to open the General window. Here's an example of the window:

Extension	Slot	Channel (or PS)
100	0	5
101	0	4
102	0	5
103	0	7
104	0	8
105	0	9
106	0	10
107		virtual
333		workgroup
444		workgroup

Personal Information

First Name: Last Name:
 Password: DID Number:
 Tenant: 0 NA Enable Dial-By-Name Service

SMTP/POP3 Setting

Email Name:
 Retrieve Voice Mail By E-mail Client

Mail Forwarding Options

Enable Mail Forwarding Delete Messages After Forward
 Forward Email Address:
 Forward Email Forward Voice Mail

Physical Location

Slot:
 Channel:

Type

Physical Extension
 Virtual Extension
 Workgroup Pilot Number

IP Extension

Enable IP Extension
 Dynamic IP Address
 Static IP Address
 Logon IP Address:

Figure 34. General window, Extension Configuration

Adding New Extensions

To add a new extension:

1. To add an extension, click the **Add** button in the General window. This opens the Add New Extension dialog box.

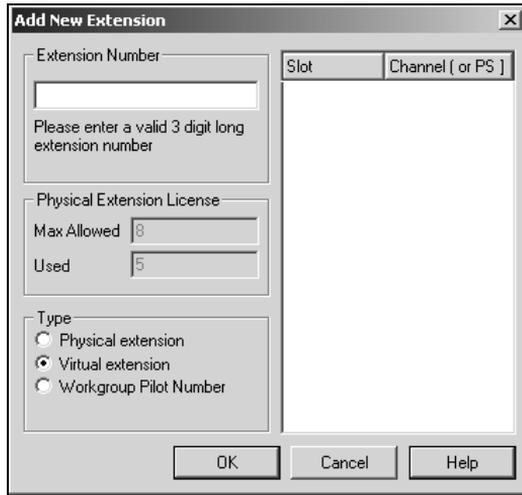


Figure 35. Add New Extension dialog box

2. Type in an **Extension Number**.

The number must begin with a number assigned to be used for extension, and it must be the length assigned to extensions, both of which are set in the Number Plan in System Configuration as described in “Setting a System Number Plan” on page24.

3. Select the **Type** of extension from the three options, **Physical**, **Virtual**, and **Workgroup Pilot**.



See the discussion of the different extension types on page 85. Note also that after the extension is created, you can change Virtual extensions to Physical, and vice versa, but you cannot change Physical or Virtual to Workgroup pilot or vice versa.

The **Physical Extension License** displays the maximum number of physical channels licensed to the user as well as the number of assigned, licensed physical channels. Refer to the Getting Started Manual for more information.

4. Depending on the type of extension you're creating, take one of the following actions.
 - **IF** you're setting a *virtual* or *workgroup pilot number*, you're done. Click **OK**.
 - **IF** you're setting up a physical extension, select an available physical location—*slot* and *channel* for the line—then click **OK**.
The *slots* (the location of the board in the PC) and the *channels* (the ports) are displayed and available if they have not yet been assigned to an extension.

Establishing Basic Extension Attributes

After you create an extension, you can set other basic attributes in the Extension Configuration **General** window:

Setting the Personal Information

Type in the User Name, Password, DID, and Tenant Group:

- **First Name** and **Last Name**—of the extension user, each with a maximum of 32 maximum characters.
- **Password**—a password for the extension user. Valid passwords are from 2 – 8 digits in length and can contain numbers or letters A- Z. The letters map to numbers (on a phone, for example) as follows:

Numbers	Letters
2	A, B, C, a, b, c
3	D, E, F, d, e, f
4	G, H, I, g, h, i
5	J, K, L, j, k, l
6	M, N, O, m, n, o
7	P, R, S, p, r, s
8	T, U, V, t, u, v
9	W, X, Y, w, x, y
1	Q, Z, q, z

- **DID Number**—each extension can be assigned a DID number. This number does not have a fixed length, but the length must be long enough (range 2-16) for the system to match the DID incoming call.

It is recommended to use the full 10 digit DID number, not just the last few digits. This full number guarantees the system can send the correct number as the Caller ID on PRI lines. With fewer digits, the system sends the trunk's *configured phone number* as the Caller ID. If the trunk number is not configured, the system *main number* is sent.

- **Tenant**—a drop-down list of Tenant IDs (groups) to which the extension can be assigned. See “Using a Tenant Table” on page 46 for more information on Tenants.

Note that if an extension is assigned to **N/A** in the **Tenant** drop-down list, *the extension is able to access all trunks, even though the trunks have been assigned to tenants.*

- **Enable Dial-By-Name Service** - select this box to allow callers to search the extension list by employee name for this extension.



The **Tenant** and **Enable Dial-by-Name Service** settings can be applied to multiple extensions by using **Apply To...**, as described on page 86.

Setting Email Options

In the General window you can set the email options for the extension:

- **Email Name**—the user's email name without the @domain. The default email name is *ext[extension number]*, that is, the letters “ext” followed by the extension number. The default email name for extension 2497 would be **ext2497**.
- **Retrieve Voice Mail by Email Client**—selected, this sends voice mail to the user extension as an email attachment. Deselected, voice mail is retrieved as voice mail.
- **Enable Mail Forwarding**—selected, the user's email will be forwarded to email address you specify in the **Forward Email Address** box. The address here should be a full address, including the domain (for example, *jsmith@thecompany.com.*)

If you enable mail forwarding you also specify what you want done with the original messages after they have been forwarded. In the drop down list you can choose to:

- **Delete Messages after Forward**
- **Keep the Messages as New**
- **Keep Messages as Saved**

Further, if you enable mail forwarding you can use the check boxes whether you want to **Forward Email**, **Forward Voice Mail**, or both.

Changing the Extension Location or Type

Changing the Type

The type of extension is set when you create the extension: physical, virtual or workstation pilot, described on page 85. After you create the extension, the type is displayed as a **Type** radio button list in the General window.

You can change a **Virtual** extension to a **Physical** one, and *vice versa*, but you cannot change either to a **Workgroup Pilot Number**, nor can you change a workgroup pilot number to another type after it is created.

If you change the type to physical, you can also set the location and configure the line as discussed in the subsequent paragraphs.

Changing the Location

When you create a physical extension, you assign it a location or you accept an automatically assigned location. If you have available extensions, you can change the location in the General window.

To change the location, select the extension number in the list of extensions, then click the **Previous** or **Next** buttons to change the slot and channel settings until the location you want is displayed. Like other changes, this change isn't finalized until you click **Apply**.

Setting an IP Extension

The IP Extension option allows an H.323 compliant terminal device (IP phone) to connect to AltiServ. IP extensions share the same features as an analog station.

To use the IP Extension option, check the **Enable IP Extension**, then set the IP addressing by choosing either **Dynamic** or **Static IP Addressing**. If you choose Static addressing, you need to type in a Logon IP Address.

The type of addressing you use affects users:

- **Using static IP addressing**, the extension user logs in from the station having the IP address. An advantage for virtual extensions is that the user doesn't have to log in at all; when the user connects to the system, the extensions is immediately recognized as an IP extension. When physical extensions connect, on the other hand, the system prompts the user log in. Static addressing is more convenient for users and may be preferred by users who work primarily at a specific location.

- **Using dynamic IP addressing**, the IP extension can log in from any IP address. However, the IP extensions must always log in via the Auto Attendant and log into voice mail to activate the IP extension. Users who travel may well prefer dynamic addressing.

IP and Physical Extension Login/Logoff Interaction

When IP extension logs in and the IP extension is associated with a physical extension, the physical extension is disabled. When IP extension logs off, the physical extension is automatically enabled.

While IP extension is logged in, the user can activate the physical extension on a phone using the #27 feature code. This logs off the IP extension.

Setting the Line Properties

For a physical extension, you can configure hardware options on the board port used for the extensions. To do so, select the extension number in the list of extensions, then click the **Line Properties** button to open a dialog box that is specific to the board using for the extension.

The Line Properties are somewhat different for **Quantum Board** than for **Triton Analog Station Boards**. The subsequent sections deal first with Quantum, then with Triton Analog Station.

Quantum Line Properties

If you select a Quantum board extension and click Line Properties, you'll see the Quantum Line Properties dialog box. Note that you can use the **Apply to...** button to apply these hardware settings to one, some, or all ports on the board. Using **Apply to...** is discussed on page 86.

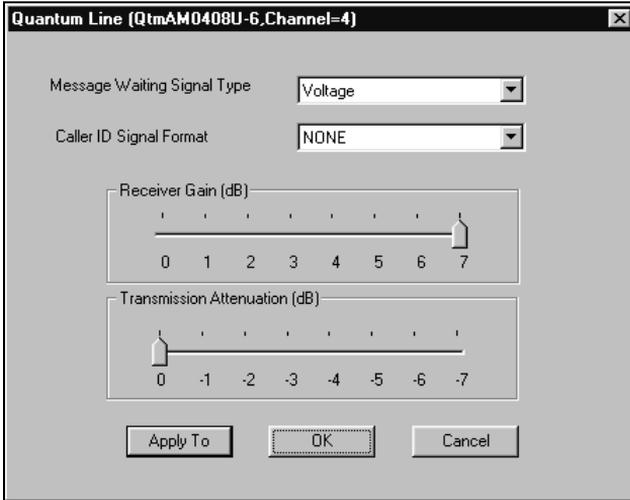


Figure 36. Quantum Line Properties dialog box for extensions

Configure the following hardware extension-specific features:

- **Message Waiting Signal Type**—the type of Message Waiting indicator for the phone set:
 - **None**
 - **Voltage**—voltage-based indicator.
 - **FSK**—Frequency Shift Keying indicator.
 - **Tone**—tone-based indicator.
- **Caller ID Signal Format**—the message format with which to send Caller ID information:
 - **None**
 - **SDMF**—Single Data Message Format for supporting and sending a single data type, such as phone numbers.
 - **MDMF**—Multiple Data Message Format for supporting and sending multiple data types, such as name and number information.

- **Receiver Gain/Transmission Attenuation**—incoming and outgoing volume for every extension.
 - **Receiver Gain**—the gain control for volume *received* in decibels (dB). The default setting **0 dB** gain.
 - **Transmission Attenuation**—the gain control for volume *transmitted* in decibels (dB). The default setting is **0 dB** gain.



Use caution in setting the Receiver Gain or the Transmission Attenuation. If either setting is too high, the result will be distortion in voice quality.

Triton Analog Line Properties

If you select a Triton Analog Station Board extension and click the **Line Properties** button, you'll see the *Whitney Line Properties* dialog box. Note that you can use the **Apply to...** button to apply these hardware settings to one, some, or all ports on the board. Using **Apply to...** is discussed on page 86.

You can also access this window by double-clicking a span in **Channel Mapping List** of the Triton Analog Station Board configuration window.

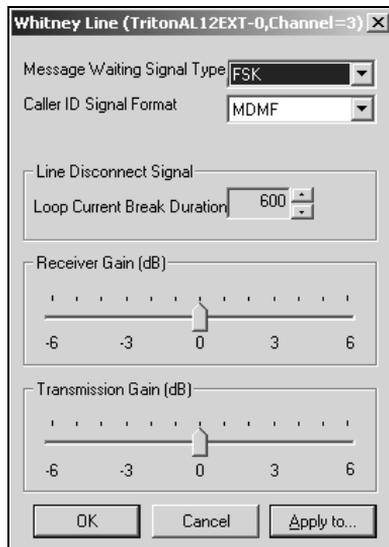


Figure 37. *Whitney Line Properties* window

Configure the following hardware extension-specific features:

- **Message Waiting Signal Type**—FSK or None.
- **Caller ID Signal Format**—SDMF, MDMF or None.
- **Line Disconnect Signal**—the loop break desired for answering supervision, either **200** or **600 ms**.
- **Receiver Gain/Transmission Attenuation** - adjusts the incoming and outgoing volume for every Triton Analog trunk or extension.
- **Receiver Gain/Transmission Attenuation**—incoming and outgoing volume for every extension. Unlike the Quantum board, these slide settings have positive and negative values. Both defaults are 0 dB.
 - **Receiver Gain**—the gain control for decibels *received* (dB).
 - **Transmission Attenuation**—the gain control for volume *transmitted* in decibels (dB).



Use caution in setting the Receiver Gain or the Transmission Attenuation. If either setting is too high, the result will be distortion in voice quality.

Setting up Workgroups

A primary use of a workgroup is as a hunt group—when the workgroup extension is dialed, the system hunts for an available member extension to which to route the call. You can use workgroups for various purposes, for example, in selecting a workgroup as a System Operator.

AltiWare allows up to 32 workgroups to be configured. Each workgroup can have up to 64 members or extensions, and an extension can be a member of multiple workgroups.

There are three sets of Extension Configuration steps to set up workgroups:

- The first step is creating a workgroup pilot number, a type of logical extension, as discussed under “Setting up Extensions” on page 87.
- Once the workgroup pilot number is created, you can use the Answering window of Extension Configuration to establish call answering options—for example, ringing the first available group member, ringing the longest idle member, and so forth—as well as No-Answering and other options.
- Also, once the workgroup pilot number is created, you can use the Workgroup window to assign physical extensions as members of the workgroup, as discussed beginning on the next page.

Establishing Workgroup Membership

There are two different ways to attach extensions to workgroups.

1. If you select a **workgroup** in the Extension Configuration General window, then click the **Workgroup** tab, you open the **Workgroup view of the Workgroup window**, which provides for *adding extensions to the selected workgroup* and setting workgroup queue handling.
2. If you select an **extension** in the Extension Configuration General window, then click the **Workgroup** tab, you open the **Extension view of the Workgroup window**, which provides for *assigning workgroups to the selected extension* and for setting wrap up times.

This section discusses the first way first.

Adding Extensions to Workgroups

To add extensions to a workgroup, select the workgroup pilot number number in the list of extensions in the General window, then click the **Workgroup** tab. The workgroup pilot number appears in the window title bar. Here's an example.

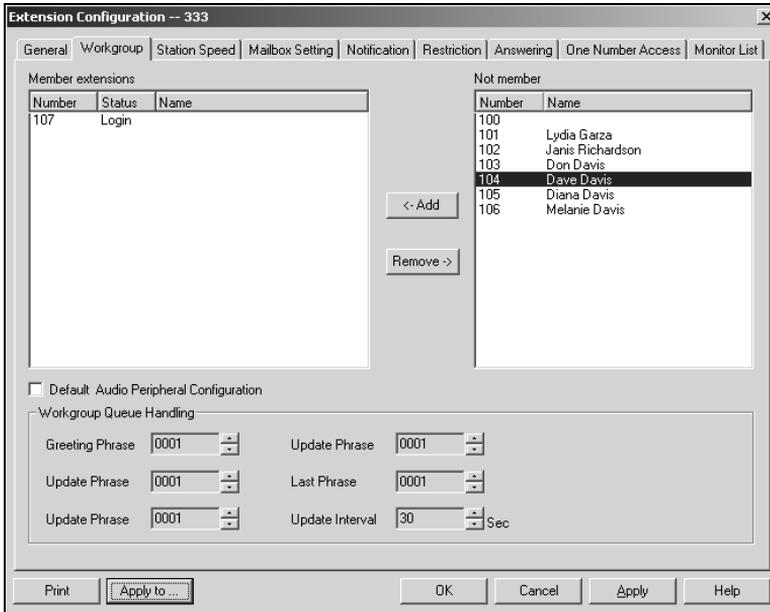


Figure 38. Workgroup view of Workgroup window, Extension Configuration

Adding or Removing Members

In the Workgroup view of the Workgroup window, to add extension(s) to the selected workgroup, click the extension number(s) in the **Not Member** list, then click the **Add** button to move them to the **Member** list.



The order in which you add members to the workgroup can have consequences. For example, one way of handling workgroup incoming calls is to always send the call to the first extension, if available, the second if the first is not available, and so forth.

To remove extension(s) from a workgroup, click the extension number(s) in the **Member** list and click the **Remove** button to move them to the **Not Member** list.

Setting the Audio Peripheral Options

In the Workgroup view of the Workgroup window, you can also set audio peripheral options—which greetings and updates to use, and so forth. For each workgroup you can either use the system default audio peripheral configuration or you can set up a custom configuration.

The default audio peripheral setup is discussed in “Audio Peripheral Configuration” on page 141. Custom configuration involves choosing other phrases—a function set with the Auto Attendant as discussed beginning on page 129.

You can also use **Apply to...** as discussed on page 86. to apply the configuration to one, some or all workgroups.

Assigning Workgroups to Extensions

This is the second of the two ways (see the discussion on page 97) to assign extensions as members of groups.

This method—selecting a physical or virtual extension and then clicking **Workgroup** tab—provides an extension view of workgroups. You can see all the workgroups to which the extension belongs, and you can change those assignments.

Select the Virtual or Physical extension number in the list of extensions in the General window, then click the **Workgroup** tab. This opens the *Extension* view of the Workgroup window, with the extension number appearing in the window title bar.

Here's an example.

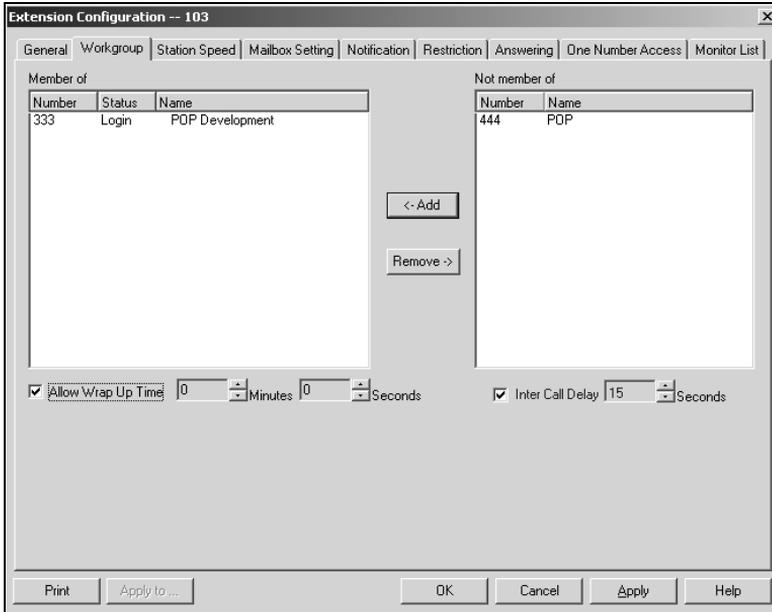


Figure 39. Extension view of Workgroup window, Extension Configuration

Adding or Removing Workgroup Assignments

In the Extension view of the Workgroup window, assign workgroup(s) to the selected physical or virtual extension by clicking the Workgroup pilot number(s) in the **Not Member** list, then clicking the **Add** button to move them to the **Member** list.

To remove workgroup(s) assigned to an physical or virtual extension, click the workgroup pilot number(s) in the **Member** list and click the **Remove** button to move them to the **Not Member** list.

Setting Wrap Up Time

In the Extension View, you can set the Wrap Up Time for the selected physical extension. *This option doesn't appear if you're working on a virtual extension.* Wrap up time is a system delay before routing the next call to the extension, and it gives the member time to finish up with notes, prepare for the next call, or log out of the workgroup.

To give the extension wrap up time, check the **Allow Wrap Up Time** box and use the drop-down lists to select the minutes and seconds for the delay. You can set a wrap up delay of up to 29 minutes, 59 seconds.

Setting InterCall Delay

Like Wrap Up time, InterCall Delay can create time before the next call comes in. It can be set for any extension.

If the system is delaying the next call to a user extension based on the Wrap Up Time setting, the InterCall Delay setting is ignored.

However, if Wrap Up Time does not apply—for example, if it is deselected—then InterCall Delay acts as follows:

- If the extension user hangs up and there are callers waiting in an extension or workgroup queue, the ring is delayed for the number of seconds specified in the InterCall Delay setting.
- If the extension user hangs up, there is no one waiting in a queue and a call comes in within the InterCall Delay period, the call is put through immediately, the InterCall Delay period is ignored.

To give the extension InterCall Delay time, check the **InterCall Delay** box and use the drop-down lists to select the seconds for the delay. The default is 15 seconds.

Setting up Station Speed Dialing

For each physical extension, but not for workgroups or virtual extensions, you can set up to 20 station speed dial numbers. The numbers available are from 00 – 19, used following the extension speed dial access code, #77.

To work with Speed Dialing settings, select the extension number you want to work with from the list in the Extension Configuration General window, then click the **Station Speed** tab. Here's an example:

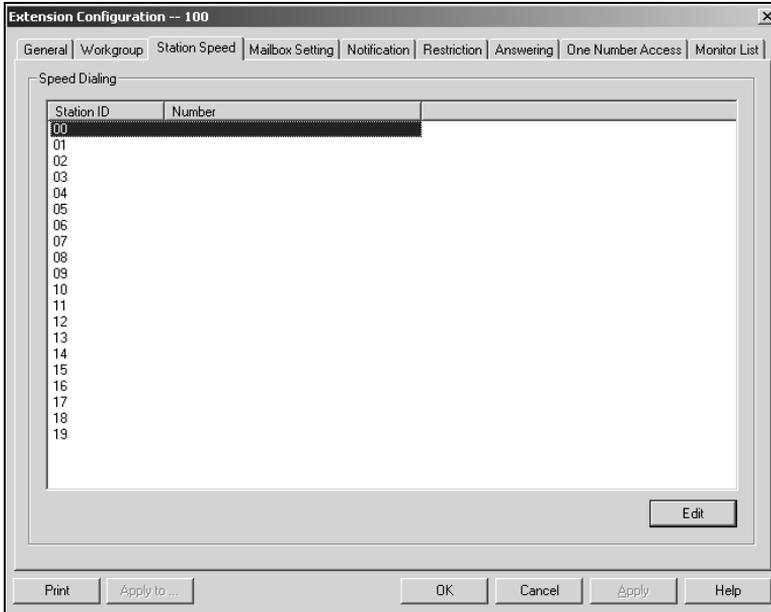
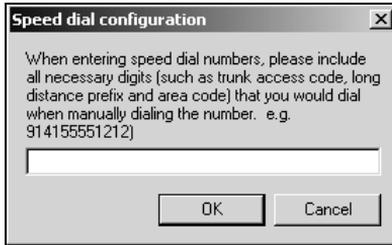


Figure 40. Station Speed Dialing window, Extension Configuration

Editing Speed Dial Entries

To add or edit an entry, double-click the **Station ID** number you want to work with, or select the number and click **Edit**. A dialog box appears:



Type in the full number as you would dial it, with a maximum of 20 digits per entry. For example, the phone number 914085551212 comprises of **9** (trunk access code), **1** (long distance prefix), followed by **408** (area code), and finally the seven digit telephone number.

Valid digits include **0** through **9**, **#**, *****, and **(,)** comma. **The comma represents a one (1) second pause.**



You can use **Apply to...** to apply speed dialing numbers to one, some, or all physical extensions. See page 86 for more information on using **Apply to....**

Setting the Mailbox Options

The Mailbox Settings define how voice messages are handled for an extension: whether the mailbox is information only or is full-featured, how messages are announced and processed, and how much capacity is allotted to message storage.

To work with mailbox settings, select the extension number you want to work with from the list in the Extension Configuration General window, then click the **Mailbox Setting** tab to open the Mailbox Setting window. Here's an example:

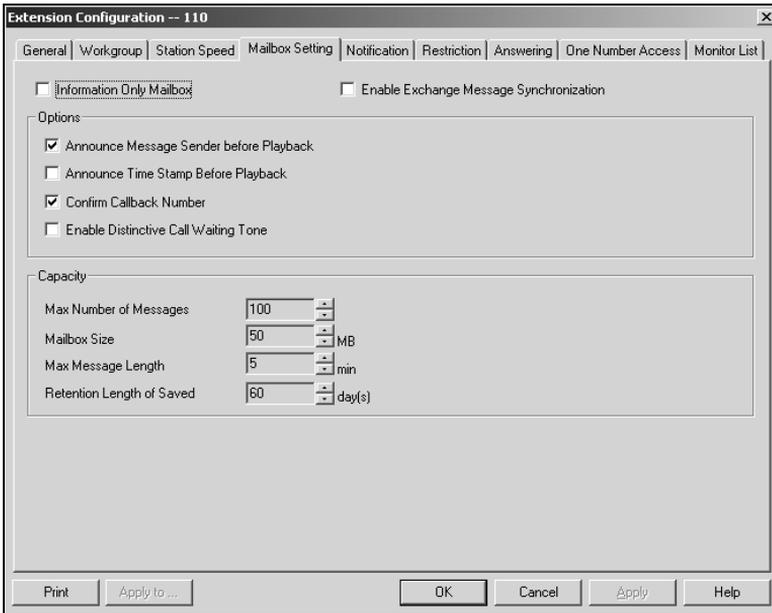


Figure 41. Mailbox Setting window, Extension Configuration



You can use **Apply to...** to apply mailbox settings to one, some, or all extensions. See page 86 for more information on using **Apply to....**

Setting an Information-Only Mailbox

You can select the **Information Only Mailbox** check box to set virtual or physical extension mailboxes to Information Only, then click **Apply** or **Apply to...** to set one or more extension mailboxes.

An Information Only mailbox allows callers to listen to customized recorded announcements but does not provide taking messages from the caller. To repeat the message, callers are instructed to press the # key.

You cannot set a workgroup pilot number mailbox to **Information Only**.

Synchronizing with Exchange Server

If your system is set up to synchronize with an Exchange Server, you can select this check box to enable synchronization for voice mails. See “Setting E-mail Messaging Options” on page 38, and “Setting up an Exchange Server” on page 168.

Setting Mailbox Playback Options

You can use the following checkboxes to turn on or off options for listening to playback of recorded messages. These options apply to both new messages and saved messages, and they can be applied to multiple extensions using **Apply to...**

- **Announce Message Sender Before Playback**—Selected, the user hears the name of the message sender (internal sender only) before listening to recorded AltMail messages.
- **Announce Time Stamp Before Playback**—Selected, the user hears the timestamp (time and date) of each message before playback.
- **Confirm Callback Number**—Selected, the system confirms the accuracy of the caller’s number.
- **Enable Distinctive Call Waiting Tone**—Selected, the user hears three different call waiting tone cadences to distinguish between internal, external, and operator calls (see page 23).

Setting Mailbox Capacities

You can set various mailbox capacities with the following options:

- **Max Number of Messages**—the maximum number of messages stored in the user’s mailbox. The range is **1 – 999**, defaulting to 100.
- **Mailbox Size**—the mailbox size in MBs of stored messages. The range is **1 – 500 MB**, with a default of 50.
- **Max Message Length**—the maximum length of voice messages in minutes. The range is **1 – 30** minutes, with a default 5 minutes.

- **Retention Length of Saved Messages**—the number of days saved messages are archived by the system. The range is **1 – 90** days, with a default of 60.

These options can be applied to multiple extensions using **Apply to...**

Setting Message Notification Options

The Notification tab of Extension Configuration provides for setting notification options on new incoming email as well as voice messages.

To work with notification settings, select the extension number from the list in the Extension Configuration General window, then click the **Notification** tab to open the Notification window. Here's an example:

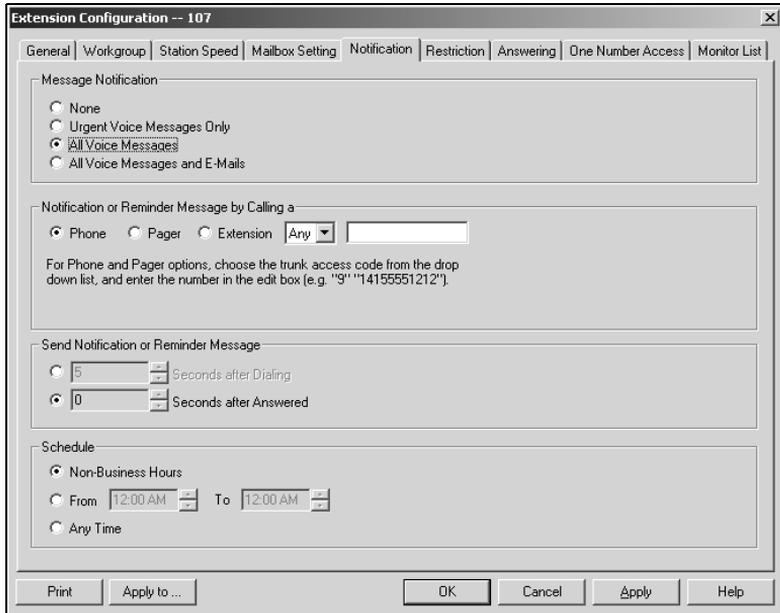
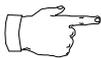


Figure 42. Notification window, Extension Configuration

Individual users can also configure **Message Notification** within AltMail.



You can use **Apply to...** to apply notification settings to one, some, or all extensions. See page 86 for more information on using **Apply to....**

Setting the Message Types for Notification

Select the types of messages for which the extension user is notified:

- **None**—selected, the user is *not* notified with a call regarding newly received messages. Selecting this option does not prevent the user from getting message waiting indicators or stutter dial tone when new messages are received.

- **Urgent Voice Messages Only.**
- **All Voice Messages.**
- **All Voice Messages and E-mails.**

Setting the Type of Notification

There are three options for sending the notification or reminder message: **phone**, **pager**, or **extension**.

To use the **Extension** option, select the **Extension** radio button, then type the extension number into the text box. For the **Phone** and **Pager** options, first specify the trunk or route access code using the drop-down list next to the **Extension** radio button. The **Any** option means to locate any available trunk. Then type in the number with all relevant dialing prefixes other than the trunk code, using a maximum of **80** digits.

Note also the following considerations:

- Using the **Phone** option, see “Outcall to Cellular or PCS Phone Numbers” on page 107.
- For the **Pager** option, the system calls the specified pager number and then dials the system main number (as set in the System Configuration General window), which is then displayed on the user’s pager.

For the operator-assisted paging function, the operator phone number **and** the pager number must be entered in the **<phone number>*<pager number>** format. For example, if the phone number to call the pager operator is **7654321** and the pager number to page the user is **12345678**, the notification outcall number that needs to be entered is **7654321*12345678**. When the pager operator answers the Message Notification call, AltiServ announces the **pager number and the System Main Number** (as configured on the **General** window of **System Configuration**) which will be displayed on the user’s pager. The operator is also given the option to repeat these numbers by pressing ‘#’.

Outcall to Cellular or PCS Phone Numbers

When an outcall is made by the system (for One-Number-Access, Message Notification, Boomerang, Call Forwarding, etc.) to a cellular or PCS phone, it may ring the phone once but not necessarily present the call and make a connection. This will happen if the ringback tone played by the cellular service provider does not confirm to standard ringback tones. To

work around this problem, instruct users to append a few commas (,) to the outcall (cellular) number when entering it. Each comma provides a one second pause.

Setting Notification Timing

You can set the type of delay detection and the duration (from 5 to 30 seconds) before the system sends the return phone number (the System Main Number as set in the System Configuration General window) after the system detects an answer when sending a notification:

- **Seconds after Dialing**—the delay (from 5 to 30 seconds) after *dialing* before the system sends the return phone number.
- **Seconds after Answered**—the delay (from 5 to 30 seconds) after a call is *answered* before the system sends the return phone number.

Setting Notification Business Hours

You can choose one of three options for when the extension user is to be notified of new messages:

- **Non-Business Hours**—notification only during non-business hours. Business hours are set in the System Configuration Business Hours window (page 27).
- **From/To**—notification during a specified time of day. Select the hours in the **From** and **To** time scroll boxes.
- **Any Time**—notification at all times (every day).

Configuring Calling Restrictions

Available restrictions on outgoing calls from extensions range from no restrictions to allowing internal calls only.

System calling restrictions, discussed under “Defining System Call Restrictions” on page 31, specify global restrictions for all extensions, and you cannot override the system settings when you configure extensions. Further, restrictions can be placed on *out call routing* calls, as discussed in “Out Call Routing Configuration” on page 121.

To work with extension call restrictions, select the extension number you want to work with from the list in the Extension Configuration General window, then click the **Restriction** tab to open the Restriction window. Here’s an example:

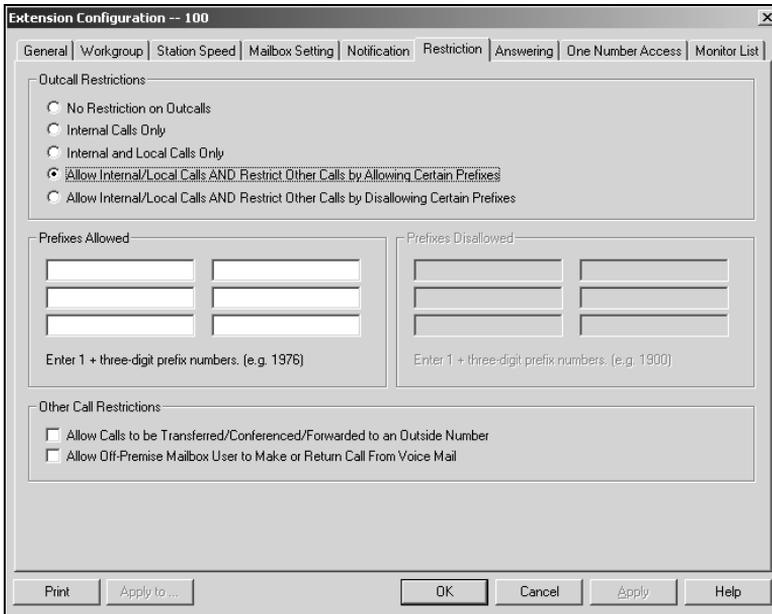


Figure 43. Restriction window, Extension Configuration



You can use **Apply to...** to apply call restriction settings to one, some, or all extensions. See page 86 for more information on using **Apply to...**

Setting Call Restriction Options

You can use one of the following options in setting restrictions on an extension or on multiple extensions using **Apply to...**

- **No Restrictions on Outcalls.**
- **Internal Calls Only**—extension-to-extension.
- **Internal and Local Calls Only**—extension-to-extension and local calls only.
- **Allow Internal/Local Calls AND Restrict Other Calls by Allowing Certain Prefixes**—internal calls, local calls and prefixes you specify in the **Prefixes Allowed** boxes. Include all relevant prefix numbers, for example, starting with **1 + prefix**.
- **Allow Internal/Local Calls AND Restrict Other Calls by Disallowing Certain Prefixes**—*disallows* calls to outside numbers with prefixes you specify in the **Prefixes Disallowed** boxes. Include all relevant prefix numbers, for example, starting with **1 + prefix**.

Setting Other Call Restrictions

You can allow or restrict two other types of calls by using the following check boxes. You must choose to enable these options—the default is set to *unselected*.



Allowing these options may increase the potential for toll fraud if they are not properly administered.

- **Allow Calls to be Transferred/Conferenced/Forwarded to an Outside Number**—selected, the extension user can transfer, conference or forward calls to an outside telephone number.
- **Allow Off-Premise Mailbox User to Make or Return Call From Voice Mail**—selected, the extension user can make or return calls from within voice mail (i.e. Zoomerang).

Setting Answering Options

Answering options include forwarding, handing busy calls, handling no-answers, workgroup call handling, and other options. Which options are available depends on the type of extension. Workgroup pilots, virtual and physical extensions each use somewhat different answering options.



You can use **Apply to...** to apply call restriction settings to one, some, or all extensions. See page 86 for more information on using **Apply to...**. However, since the available options vary with the type of extension, you can only apply the choices to the same type of extension.

For example, if you are working with the settings for a virtual extension, you can use **Apply to...** to apply changes to one, some, or all virtual extensions, but not to physical or workspace pilot numbers.

To work with extension answering options, select the extension number from the list in the Extension Configuration General window, then click the **Answering** tab to open the Answering window. Here's an example of the window with a workgroup view:

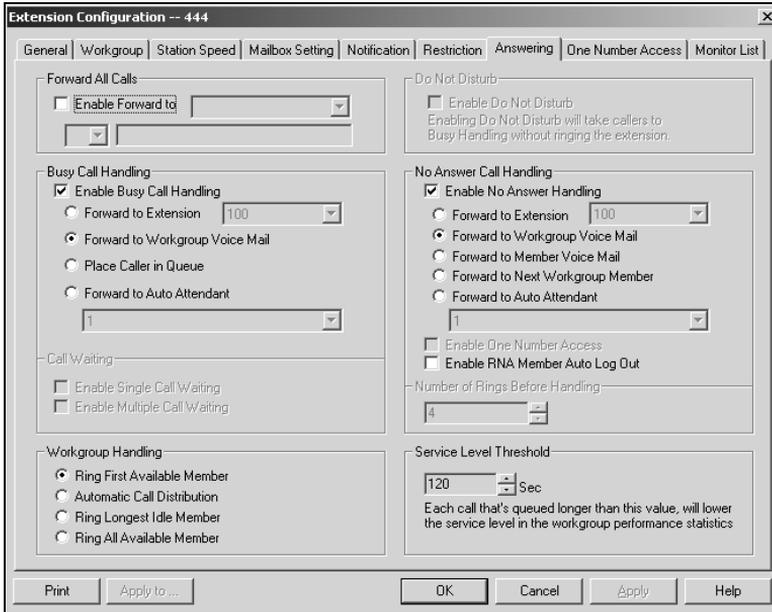


Figure 44. Answering window (Workshop View), Extension Configuration

Forwarding All Calls

Call Forwarding is available to all three types of extensions.

This is the Call Forwarding feature that is also accessible by the extension user by dialing **#36**.

A 1-Hop Limit to Call Forwarding

There is a “1-hop” limit to call forwarding. For example, ext. 101 forwards to ext. 102, and Ext. 102 forwards to ext. 103. A call to ext. 101 will ring ext.102 but will not re-forward to ext. 103 because of the 1-hop limit. Instead, if ext.102 does not answer, the call is sent to ext.101’s voice mail.

To enable call forwarding, select the **Enable Call Forward** to check box, then, using the drop-down list, indicate the forwarding destination. You can use **Apply to...** to act on multiple extensions, with the restrictions discussed on the previous page. The forwarding options are as follows:

- To **Voice Mail**
- To an **Auto Attendant**—select the Auto Attendant number to use in the drop-down list under the option. Auto Attendant settings are established in **Auto Attendant Select...** on the **Management** menu.
- To an **Extension**—select an extension from the drop-down list.
- To an **Outside Number**—this option is available if it is allowed in the **Other Call Restrictions** option in the **Restriction window**, as discussed on page 110. Also, please see “Outcall to Cellular or PCS Phone Numbers” on page 107.

If you choose **Outside Number**, select a trunk or route access code to use in the small drop down list on the left, and type in the full prefix and phone number.

- To the **Operator**.
- To a **Paging Trunk**—forwarding to a pager is *available for virtual extensions only*. Select the trunk to use in the drop down list. The trunk must have been configured as a paging trunk in **Trunk Configuration...** of the **Management** menu.

Forwarding calls to a pager is possible but **not recommended** since callers will only hear what is heard when calling a pager and will not know to enter a return phone number unless instructed.

Handling Busy Calls

You have several options for handling calls while the extension is busy, and again, the options vary depending on the extension type. If you do not enable busy call handling, the caller simply hears a busy signal.

To enable the options, select the **Enable Busy Call Handling** check box, then select from the following options:

- **Forward to Extension**—Select an extension number in the drop-down list. See “A 1-Hop Limit to Call Forwarding” on page 112.
- **Forward to Voice Mail.**
- **Place Caller in Queue**—for workgroup numbers and extensions with Multiple Call Waiting, discussed in the next subsection.
- **Forward to Auto Attendant**—use the drop-down list to select an Auto Attendant to which to route the call. Auto Attendant settings are established in **Auto Attendant Select...** on the **Management** menu.

Setting Call Waiting Options

Call waiting options are available only if the **Enable Busy Call Handling** check box has been selected, and this option is *not available to workgroup pilot numbers*. However, the workgroup pilot number does use the **Place Caller in Queue** option discussed in the preceding subsection.

- **Enable Single Call Waiting**—sets up single call waiting. This feature gives an alert tone (audio beep) to indicate that a call is waiting.
- **Enable Multiple Call Waiting**—enables a “personal queue” of multiple calls waiting. You must also select the **Place Caller In Queue** option under **Busy Call Handling** to enable this option. This allows the user to transfer or park the current call before picking up the next call in queue.

Enabling “Do Not Disturb”

This is not available for workgroup pilot numbers. Select the **Do Not Disturb** checkbox option to send all calls for the selected extension(s) to the extension’s voice mail. This feature is also accessible by the user at the user’s station by dialing **#33**. Note that this overrides any One Number Access settings for the extension.

Handling Unanswered Calls

The **No Answer Call Handling** provide options for handling calls when no one answers the extension within a specified number of rings.

Except for Enabling One Number Access, these options are *not available to virtual extensions*. The *options are somewhat different in the physical and workgroup extensions of the window*.

To enable these options, select **Enable No Answer Handling** box.

Use the **Number of Rings Before Handling** scroll box to select a number between 2 and 20 for the times the telephone rings before the call is handled by the system.

Select one of the following options for no answer call handling:

- **Forward to Extension**—Select an extension number in the drop-down list. See “A 1-Hop Limit to Call Forwarding” on page 112.
- **Forward to Voice Mail** (*physical extensions only*)
- **Forward to Workgroup Voice Mail** (*workgroup extensions only*)
- **Forward to Member Voice Mail** (*workgroup extensions only*)—forwards the call to the voice mail for the extension that didn’t answer the call.
- **Forward to Next Workgroup Member** (*workgroup extensions only*)
- **Forward to Auto Attendant**—use the drop-down list to select an Auto Attendant to which to route the call. Auto Attendant settings are established in **Auto Attendant Select...** on the **Management** menu.

Enabling One Number Access

This check box option is available to all extension types, but with qualifications:

- It is available to physical extensions only when the **Forward to Voice Mail** option is selected.
- It is available to workgroup pilot numbers when the **Forward to Workgroup Voice Mail, Forward to Member Voice Mail, or Forward to Next Workgroup Member** is selected.
- It is *not* available when **Forward to Auto Attendant** or **Forward to Extension** is selected.

Enabling RNA Log Out

This “Ring No Answer” check box option is available only to workgroups, and only when **Enable No Answer Handling** is selected. When a workgroup member's extension is rung and there is no answer, that member extension is automatically logged out of the workgroup.

Setting Workgroup Handling

For workgroups pilot numbers, the Extension Configuration Answering window lets you set the handling of normal inbound calls: how to route the incoming call to a extensions, using one of the following options:

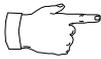
- **Ring First Available Member**—first *available* extension in a workgroup. For example, if there are three member extensions in a workgroup, the call is always sent to the *first* member configured in the workgroup. If this member is busy, the call goes to the *second* member configured and so forth.
- **Automatic Call Distribution**—a round-robin method that attempts to evenly distribute calls among the workgroup members. This method sends the call to the *next* member configured in the workgroup (regardless of whether the previous member is busy or not).
- **Ring Longest Idle Member**—the agent who has been off the phone the longest.
- **Ring All Available Members**—all extensions in a workgroup.

Setting a Service Level Threshold

For workgroup numbers only, you can use the **Service Level Threshold** scroll box to select the length of time in seconds that a call can be in queue before the call is logged in workgroup performance statistics as having exceeded the allowable service level limits. You can set the value to any number to between 1 – 1200 seconds.

Configuring One Number Access

One Number Access (ONA) allows you to identify specified callers to be connected to the user without having to dial more than one number. The system searches for the caller and, if a match is found, searches for the user through specified forwarding numbers and connects the call if possible. If the system is unable to connect the call, it is sent to the extension user's voice mail.



*Options in the window are disabled unless One Number Access has been enabled as a **No Answer** option in the Answering window as discussed on page 114. Furthermore, if the **Enable Do Not Disturb** option is selected in the Answering window, the call is forwarded to voice mail regardless of ONA settings.*

To configure ONA, select the extension number from the list in the Extension Configuration General window, then click the **One Number Access** tab. Here's an example of the One Number Access window:

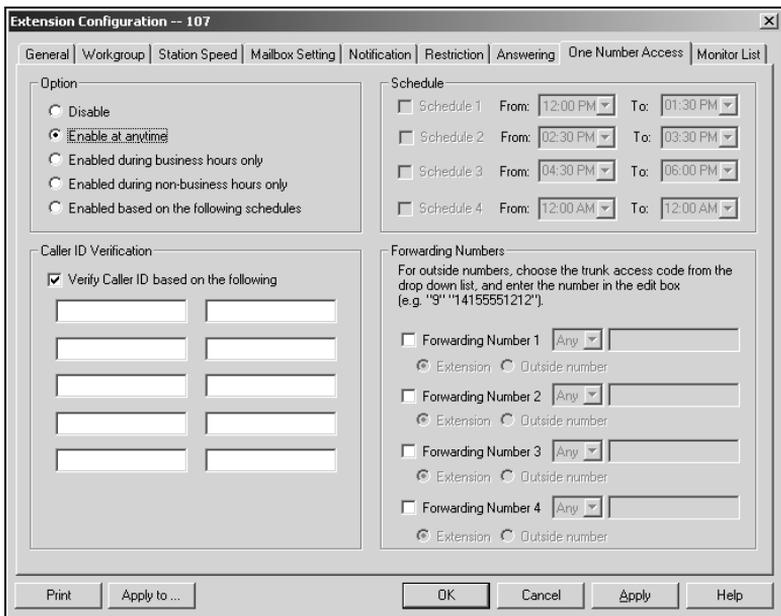


Figure 45. One Number Access window, Extension Configuration



You can use **Apply to...** to apply some ONA settings to one, some, or all extensions of the same type—physical to physical, workgroup to workgroup, etc., but only if the extensions are ONA enabled in the Answering window. See page 86 for more information on using **Apply to...**

Enabling One Number Access

In the One Number Access window, you enable the function by selecting one of the following options:

- **Enabled at any time**
- **Enabled during business hours only**
- **Enabled during non-business hours only**
- **Enabled based on the following schedules**

If you select this last option, **Enabled based on the following schedules**, you can then select and set up to four different time periods—Schedules 1 through 4—using the **From** and **To** time drop-down lists.

After choosing any of the enabling options, you set the **Verify Caller ID** and **Forwarding** choices, and these are discussed below.



You can also enable and set up One Number Access remotely through AltiReach.

Disabling One Number Access

You can disable ONA for the extension by clicking the **Disable** option. Disabling access in this window does not destroy the data you might have entered. For example, if you entered a group of Caller IDs to use to identify the caller, these will be available if you enable access at a future time.

Setting Caller ID Verification

You can select the **Verify Caller ID based on the following** checkbox and then type in up to 10 phone numbers in the text boxes. Whenever the system detects a call from one of the numbers entered here during the selected schedule, the system search for you by dialing the numbers configured in the Forwarding Number fields.



***Caution!** If ONA is enabled and no numbers are entered for Caller ID Verification, ONA is available to all callers.*

Caller ID verification entries should be complete phone numbers.

- **Domestic long distance** should be the area code + a seven digit number.
- **Local** numbers should be the seven digit number alone.

Using a Password Verification

You can also enter a random “password” number such as “5555” so that any caller who knows this password can use ONA to find you, regardless of where they are calling from. Once you’ve set this up, you need to instruct the caller to dial 1 during your personal greeting then enter the “password” to use ONA.

Specifying Forwarding Numbers

The **Forwarding Numbers** are used by the system to find you when ONA is active. You can set up to four different numbers. When ONA is active, the system dials the forwarding number(s) in the order from Forwarding Number 1 through Forwarding Number 4. (The Forwarding Number order does *not* correspond to the Schedule order—Forward Number 4 is *not* used first during Schedule Number 4.)

You can forward to another extension, or to an outside number. You can use an outside number *only if* the extension is set to allow for **Transferred/Conferenced/Forwarded** calls, an **Other Call Restrictions** option in the Extension Configuration **Restriction** window.

When you use the outside number option, select a trunk or route access code in the drop-down list and type in the phone number as it would be dialed after keying the access code.

Setting Monitor Lists

The **Monitoring List** window provides for setting up lists of extensions for which call processing events can be monitored by the user at a selected extension. Once this monitoring list is established, the application logging into an extension can receive AltiLink Plus events for the monitored extensions. The monitored list is available in the AltiView monitor selection panel. This function is available to *physical* extensions only.

To set up a monitoring list, select the extension number to receive the monitoring rights from the list in the Extension Configuration General window, then click the **Monitor List** tab. Here's an example window:

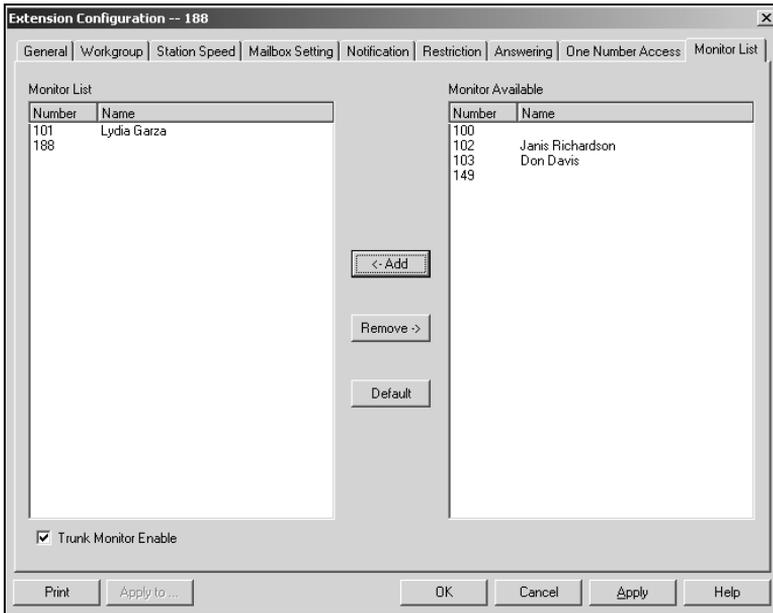


Figure 46. Monitor List window, Extension Configuration

Configuring a Monitor List

To **add** members to the list, select the extensions in the **Monitor Available** list and click the **Add** button to move the extensions to the **Monitor List**. To **remove** members, select the extensions in the **Monitor List** and click the **Remove** button.

Select the **Trunk Monitor Enable** check box to allow monitoring of the AltiLink Plus trunk events at the selected extension.

Click the **Default** button to return the settings to the default—the extension can monitor its own calls.

Extension and Workgroup Configuration

Out Call Routing Configuration

Out Call Routing Configuration allows you to define default routes for outgoing calls as well as special routing for specific prefixes.

A *route definition* consists essentially of a name and a group of trunks, listed in the order accessed for outgoing calls. You can assign different routing configurations—lists of route definitions—to local, national, international, and 911 outgoing calls. Access to the call routing trunks is set up through the System Configuration Numbering Plan, discussed beginning on page 24.

If you intend to use Out Call Routing for 911 calls, see the note, “About Call Routing and 911 Calls” on page e126.

Further, you can use the Out Call Routing Configuration window to create and assign exceptions to the normal routes for particular dialing patterns. That is, you can assign or restrict routing to specified dialing patterns.

About Restricting Outgoing Calls

Before using Out Call Routing to restrict outgoing calls, note that there are three AltiWare functions dealing with restricting outgoing calls.

- The **Dialing Pattern** function, discussed in this section on page 127, is used to set up blocks with specific exceptions. It also provides the ability to easily turn restrictions on or off.
- The **Call Restriction** function of System Configuration, described on “Defining System Call Restrictions” on page 31, provides for setting up global blocks to outgoing calls and global parameters, such as toll call prefixes, used for other restrictions.
- **Outcall restriction by extension** is discussed in “Configuring Calling Restrictions” on page 109.

The global restrictions established in the Call Restriction window take precedence over Dialing Pattern settings. You can’t set allow calling a number in the Dialing Pattern window if it is blocked in the Call Restriction window of System Configuration.

Accessing Out Call Routing Configuration

To access Out Call Routing Configuration, select **Out Call Routing Configuration...** on the **Management Menu**.

Working with Route Definitions

The **Route Definition** tab is the default view on the **Out Call Routing Configuration** window. Here's an example of the window.

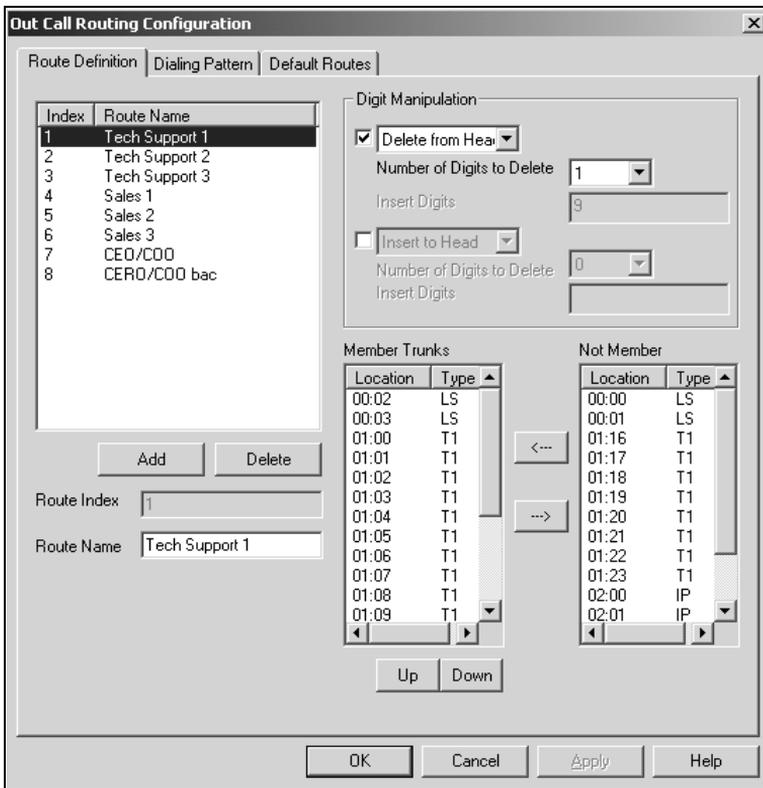


Figure 47. Route Definition, Out Call Routing Configuration

Adding Route Definitions

To add a route definition, click the **Add** button under the route definition list. A dialog box appears:

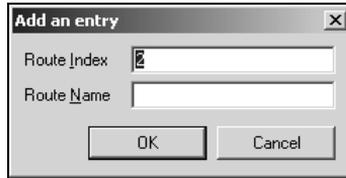


Figure 48. The Add an entry dialog box

Type in a name and index number:

- The **Route Index** determines the position of the definition in the index list of the Route Definition window.
- The **Route Name** can be descriptive.

After adding the route, you then define it as described in the discussion that follows.

Editing a Route Definition

To define a route definition, select and highlight the route in the definition list, make changes to the definition attributes, then click **Apply**.

You can change the following attributes:

- **Name**

You can change the name but not the index number.

- **Digit Manipulation**

For each route, you can insert extra digits or remove prefix digits from the number dialed by the user. The number sent to the trunk will then have these digits added or removed.

- **Insert to Head** inserts a string of digits to the number before it is sent to the trunk. Type the digits into the **String to Insert** box.
- **Delete from Head** removes prefix digits from the number before it is sent to the trunk. Select the number of digits to remove in the **Number of Digits to Delete** box.

- **Member and Non Member Trunks**

Use this to define the trunks and trunk order for the route.

The **Member Trunks** list displays the trunks assigned to the selected route. The order in which member trunks are added determines the order in which the trunks are accessed. (i.e. the first trunk listed is used first, the second trunk is used next, and so forth).

The **Not Member** list displays the trunks, along with trunk location and type, that are not assigned to the selected route.

To add trunks to a route definition group, highlight the trunks you wish to add in the **Non Member** list, then click the left arrow to move the trunks to the **Member Trunks** list. Similarly you can move trunks to the Non Member list to remove them from the definition.

Use the **Up and Down** buttons to set the order in which the trunks are accessed. Highlight the member trunk you wish to move, then click **Up** or **Down** to place the trunk in the desired position.

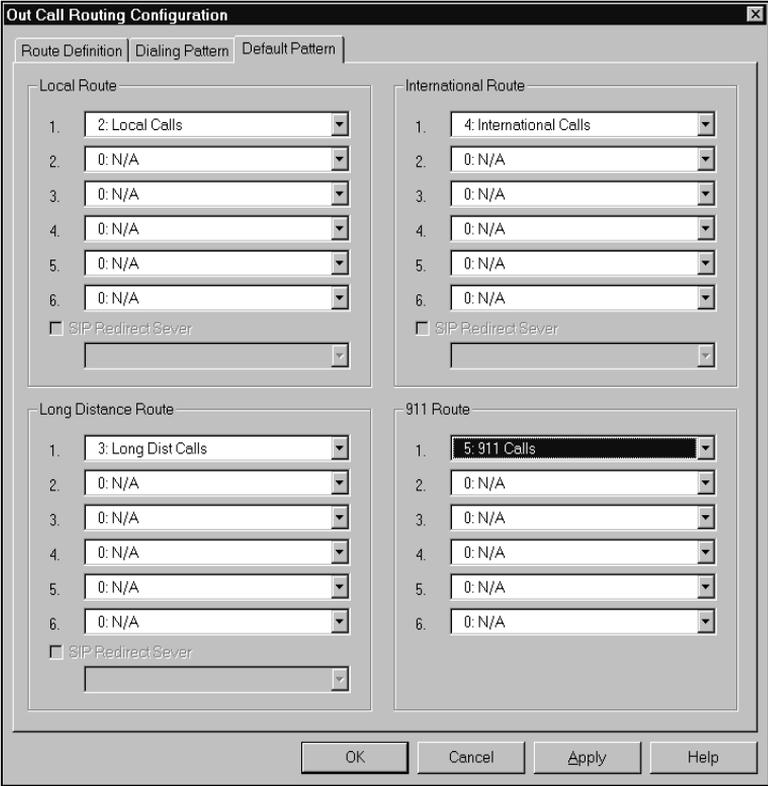
Deleting a Definition

To delete a route definition, highlight definition you want to delete in the route definition list, then click the **Delete** button beneath the list.

Setting Default Routes

The **Default Routes** function allows you to create default routes for four types of outgoing calls: *local*, *long distance*, *international*, and *911*. The default routes are used for all Out Call Routing dialing except for special routing defined on the Dialing Pattern window described later in this chapter.

Click the **Default Routes** tab in the **Out Call Routing Configuration** window to display the **Default Routes** window. Here's an example:



Out Call Routing

Figure 49. Default Routes, Out Call Routing Configuration

For each of the four types of calls, you can use the drop-down lists to select up to six route definitions. The order you set, from 1 to 6, is the order used by the system when placing the call.

About Call Routing and 911 Calls



If you use Call Routing for 911, make sure that the default 911 route is configured to the route that can accept 911 calling capability. Failing to do so may cause 911 direct dialing failure. You can leave 911 default not configured, in which case you need to let all extension users know that they need to dial 9+911 to call 911. It might be a good idea to have them sign a 911 dialing disclaimer which state that they understand and accept the 9+911 configuration.

Setting Dialing Pattern Routing

You can use the Dialing Pattern window to create or disallow routing for specific dialing patterns.

As noted in the discussion on page 121, there are three AltiWare functions to restrict outcalls, of which the Call Restriction setup of System Configuration takes precedence.

The Dialing Pattern window provides for setting up blocks with specific exceptions. For example, you could use this tab window to block calls that begin with 767, but to accept and route calls to 767-2676, by disallowing a “767” entry while setting up and providing routing for a separate “767-2676” entry.

Click the **Dialing Pattern** tab on the **Out Call Routing Configuration** window to display a Dialing Pattern window.

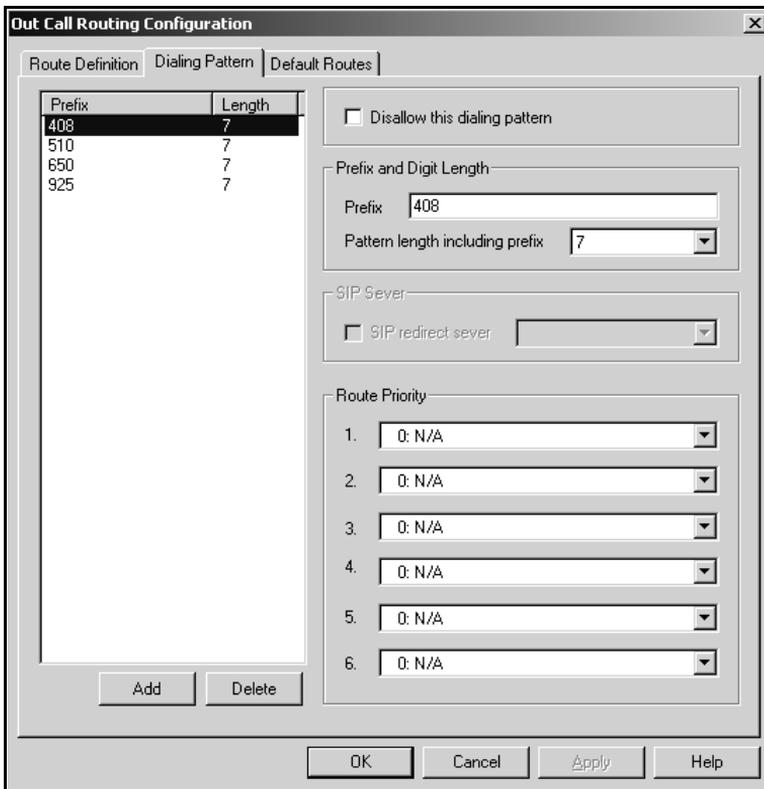


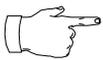
Figure 50. Dialing Pattern, Out Call Routing Configuration

Adding a Dialing Pattern Definition

1. Click **Add** to open the Add an entry dialog box.



2. Type in a **Prefix** number, select the **pattern length**, then click **OK**.



The pattern length tells the system to wait for n number of digits to be dialed before executing the route or disallowing the call. Selecting N/A creates a '?' symbol in place of number of the digits, and this indicates an unspecified number of digits.

After a route is added, you can edit to further define it as described in the following discussion.

Editing a Dialing Pattern

To edit, or define, a pattern, select and highlight the route in the prefix list, make changes to the attributes, then click **Apply**.

You can change the following attributes:

- **Prefix and Pattern length.** If desired, you can change the prefix number and pattern length for a prefix.
- **Disallow this dialing pattern** check box. Select this to block calls that match the dialing pattern.
- **Route Priority** boxes. These specify the trunk route(s) and the order of routes assigned to the prefix. Use the drop-down list to select the desired route used when the selected dialing pattern is found. Up to six routes can be assigned, and they are accessed in order from 1–6.

Note: The SIP Redirect Server fields are reserved for future use.

Deleting a Pattern

To delete a pattern, highlight the one you want to delete in the prefix list, then click **Delete**.

Auto Attendant Configuration

Auto Attendants perform simple call processing tasks such as transferring calls to extensions to AltiMail or the operator, or giving information and secondary options. It can also provide general information that is frequently asked such as company address. Auto Attendants allow multiple incoming calls to be answered simultaneously. In a call-heavy environment the Auto Attendant can greatly reduce the number of calls that need to be handled by the operator. Calls that do not require an operator's assistance can be handled effectively and appropriately.

In AltiWare OE 4.0 and higher, the Auto Attendant can handle more complex call processing tasks such as handling web-based calls (in addition to PSTN calls).

It can also accept text or digits input by the user. For example, if the Auto Attendant prompts the caller to enter an account number, the call and associated data can be quickly forwarded to an agent's desktop using a third party application.

You can set up to 255 different Auto Attendants, each using all the number keys as well as the * and # key and a timeout option. Each of the Auto Attendants provides for expanding and nesting—a menu choice leading to another menu—up to any number of levels.

Planning is Essential

Follow the steps below before you set up an Auto Attendant.

1. Before you configure tasks for one or more Auto Attendants, you should plan the entire setup. Decide how many options you will provide at each menu and how many menu levels you will use. Based on the action choices in each menu, write down the appropriate prompts or phrases that are to be played at each menu level.
2. Record phrases for each menu level or use the pre-recorded phrases that are available to you. See “Phrase Management” on page 137 for more details on how to record custom phrases, use pre-recorded phrases and use professionally recorded phrases.

Example: Auto Attendant Planning

Auto Attendant ID: 100, Phrase 10
Main Menu for XYZ Office

Digit	Meaning	Action
1	Reserved for Extensions (no prompts)	Collect Extension
2		Collect Extension
3		Collect Extension
4	Express Support	Expand Tree (No. 110)
5	Sales	Expand Tree (No. 120)
6	Technical Support	Expand Tree (No. 130)
7	Phone FAQs	Expand Tree (No. 140)
8		
9		
0	Operator	To Operator
*	Repeat Menu	Repeat Level
#		

Auto Attendant ID: 110, Phrase 20
Express Support

Digit	Meaning	Action
1	Installation	Call Extension (Workgroup 350)
2	Board Support	Call Extension (Workgroup 360)
3	Version 5 Support	Call Extension (Workgroup 370)
4	Version 6 Support	Call Extension (Workgroup 380)
5		
6		
7		
8		
9		
0	Operator	To Operator
*	Repeat Menu	Repeat Level
#	Main Menu	GoTo Top Level

Auto Attendant ID: 120, Phrase 30
Sales

Digit	Meaning	Action
1	Hardware	Call Extension (Workgroup 310)
2	Applications	Call Extension (Workgroup 320)
3	Check Order Status	GoTo Item 127 (Collect Order #)
4	Other: Questions, etc.	Call Extension (Workgroup 311)
5		
6		
7		
8		
9		
0		
*	Repeat Menu	Repeat Level
#	Main Menu	GoTo Top Level

Planning is essential in organizing an Auto Attendant menu structure that makes sense. Planning also helps you to identify needs for custom prompts.

This simple example, using sample work forms for each menu, shows a beginning structure: a main menu and two of the four expansions.

When callers are routed to workgroup extensions, the workgroups have their own call handling settings for greetings, update phrases, rules for sending to voice mail, etc.

Timeout (not shown on forms): after 7 seconds on first level, call the operator; on any other level, go to top level by default.

Adding Auto Attendants

The first 16 Auto Attendants are provided by default with the menus blank. You can edit these as described under “Editing Auto Attendants” beginning on the next page. You don’t need to add a new Auto Attendant if you’re going to use 16 or fewer.



To add an Auto Attendant beyond the first 16: Select **Auto Attendant Select...** from the **Management** menu, or select **Auto Attendant Select** from the Quick Access Toolbar.

Here’s an example of the Auto Attendant Select window:

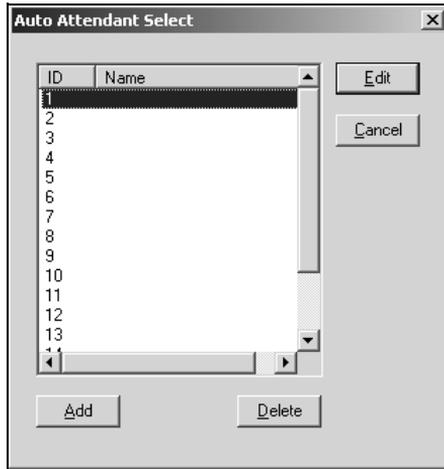


Figure 51. Auto Attendant Select window

Click the **Add** button to open a small Add Auto Attendant dialog box.

In that dialog box, select an **ID** in the drop-down list and type in a descriptive **Name** for Auto Attendant, then click **OK**.

After you add the Auto Attendant, you can edit it as described in the remainder of this chapter.

Editing Auto Attendants

To edit an Auto Attendant, select **Auto Attendant Select...** from the **Management** menu, or select **Auto Attendant Select** from the Quick Access Toolbar.

When the Auto Attendant Select window appears, select an Auto Attendant in the list and click the **Edit** button.

This opens the Auto Attendant window with the Auto Attendant you selected in the title bar. In this example, the Actions drop-down list is open to show some of the available options.

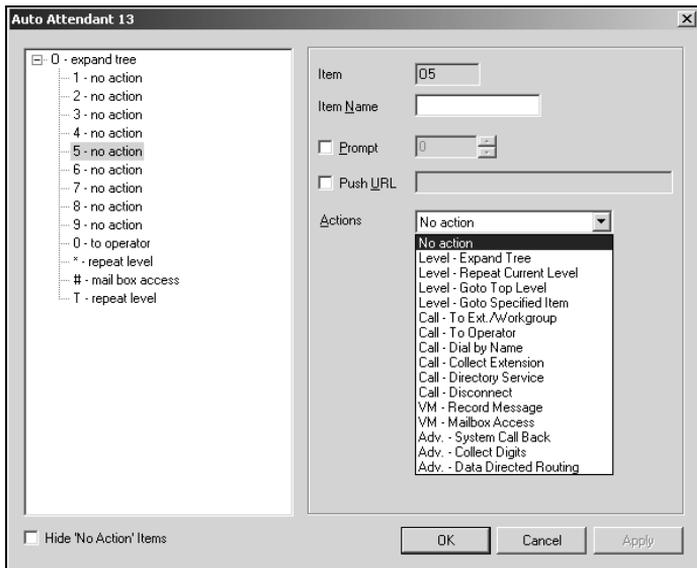


Figure 52. Auto Attendant window

- **Note that you can use the Hide 'No Action' Items** check box to hide items that are set to 'no action.' This can give you a cleaner view of your various action items.

Configuring Menu Items

For any menu item you want to use, you make an action assignment. If you want the assignment to expand the menu to the next level, choose the assignment, **Level — Expand Tree**.

To make an assignment, select a menu item in the menu tree at the left, then configure it using the entries at the right.

- **The Item**—an informational display of the level and item you're working with. The number gives the following information:

Digit Position	Meaning	Example
First	Root level, always 0	0n – root level. It is followed by a digit if a menu item on the menu is selected. If it is not followed by a digit, there is no expanded menu tree, only a single prompt and a single action such as routing to the operator.
Last	Currently Selected menu item	06 – Menu item 6 is selected at the root level
Inside	Item & Level	058 – Menu Item 5 at the root level is expanded, and Menu Item 8 is selected on the expanded menu.

This key is easier to read when you're also viewing the expanding menu tree in the display at the left. To use a longer example: **09375** would mean that at the root level (0), menu item 9 is expanded, and on the expanded menu, item 3 is selected. In turn item 3 is expanded and on that expanded menu, item 7 is selected. Item 7 is selected and on that expansion, item 8 is selected.

- **Item Name**—the name you wish to assign to the menu item.

- **Prompt**—select the prompt number that is to be played for incoming calls. Prompts are numbered in the range of 0 – 300. The default prompt is **1**, a generic greeting. See “Using Pre-Recorded Prompts” on page 137 to see the script of this prompt and other AltiGen-supplied pre-recorded prompts. Discussions on using customized- and professionally-recorded prompts follow the section on using the AltiGen-supplied greetings.
- **Push URL**—a URL associated with the menu item. When this entry is selected, the web page and data is pushed to the web client and the web client browser displays the page. Type a web address in the **Push URL** text box if you wish to prompt a URL to the user.
- **Actions**—the event triggered by the caller pressing the digit for the menu item. This drop-down list contains the available actions, which are as follows:

Table 7-1. Auto Attendant Actions

Action	Description
No Action	An “invalid” message plays and the menu is repeated.
Level - Expand Tree	Plays the prompt for the next menu level down.
Level - Repeat Current Level	Repeats the current prompt.
Level - Goto Top Level	Repeats the first prompt at the root level and returns the options to the root level options.
Level - Goto Specified Item	Goes to selected menu item at any level. A drop-down appears from which you select the item.
Call - To Ext./Workgroup	Goes to the extension or workgroup number you select in the drop-down list that appears.
Call - To Operator	Routes the call to the operator
Call - Dial by Name	Prompts the caller to enter the name (last, then first) of the person they wish to speak with and dials the extension that matches the name. Callers may enter just the first letter of the last name to hear a list of all users with last names that begin with the letters entered.

Table 7-1. Auto Attendant Actions

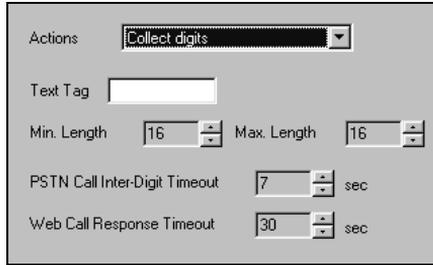
Action	Description
Call - Collect Extension	Call the extension entered by the user.
Call - Directory Service	Lists the system users and their extensions to the caller. For this to work properly, users need to record their directory names.
Call - Disconnect	Disconnects the call.
VM - Record Message	Records the caller's message. A drop-down list appears from which you select the extension to which to route the voice message.
VM - Mailbox Access	Routes the call to the AltMail voice mailbox after successful login. This is normally assigned to the # digit.
Adv. - System Call Back	Calls the user at a remote location, <i>only after the caller logs in with extension and password</i> . The caller should enter a 1 and the area code if it is a long distance number or 011 and the country code if it is an international number. You must be using a Centrex system to use this feature.
Adv. - Collect Digits	See the discussion below, "Collecting Digits."
Adv. - Data Directed Routing	Prompts the caller to input digits or text and use the data entry to route the call. This allows third party applications to route incoming calls based on caller information.

Collecting Digits

When you select the Collect Digits action, the caller is prompted to enter more digits. Once a minimum number of digits are entered, the system proceeds to open a single item expansion of the Collect Digits action. In the item tree at the left, you can see a "& -" appear as an expanded item action.

To use the Collect Digits action, proceed as follows:

1. Selecting the Collect Digit action, you first set the following additional parameters:



The screenshot shows a configuration window for the 'Collect digits' action. It includes the following fields and values:

Actions	Collect digits		
Text Tag			
Min. Length	16	Max. Length	16
PSTN Call Inter-Digit Timeout	7	sec	
Web Call Response Timeout	30	sec	

Figure 53. Collect digits

- **Text Tag**—a name for this set of options.
 - **Min. Length**—the *minimum* length of digits to be collected.
 - **Max. Length**—the *maximum* length of digits to be collected.
 - **PSTN Call Inter-Digit Timeout**—the length of time the system will wait between collecting of digits before timing out.
 - **Web Call Response Timeout**—the length of time the system will wait for digits after responding to a web-based call before timeout.
2. Next click the expanded & - menu item in the item tree and treat it as a normal item—that is, you give it a name, a prompt, a push URL if appropriate, and an action to take.

Making Auto Attendant Assignments

Once the Auto Attendants are set up, you can use them in various in-call routing situations—trunk configuration, answering for extensions or workgroups, and so forth.

For example, for trunk /Auto Attendant assignments, see “In Call Routing window, Trunk Configuration” on page 81. For extension or workgroup assignments, see “Setting Answering Options” on page 111.

Phrase Management

You may want to record unique phrases to customize an Auto Attendant or a workgroup. When the system is configured to answer incoming calls by the Auto Attendant, callers hear a customized greeting. For example:

“Thank you for calling ABC Company.
Enter the extension number of the person you wish to speak with.
Press 1 for sales,
Press 2 for technical support,
Press 3 for accounts payable,
Press 0 to reach the operator,
To repeat this menu, press star (*).”

An example of a workgroup greeting phrase:

“Please hold; someone will be with you shortly.”

This section covers information using pre-recorded phrases, recording custom phrases and using professionally recorded phrases.

Using Pre-Recorded Prompts

AltiWare provides ready-to-use pre-recorded phrases. Phrase 0001 is the default Auto Attendant greeting at the root menu level. Phrases 0291 through 0297 are phrases used for workgroup queue prompts.

Phrase #	Phrase
0001 (default)	Thank you for calling. If you know the extension of the person you wish to speak with, please enter it now. To reach the operator, press 0 or simply stay on the line.
0291 (default)	Please hold; someone will be with you shortly. For your convenience, you may leave a message if you wish by pressing the # key on your telephone and we will get right back to you.
0292	Please hold; someone will be with you shortly.
0293	We appreciate your call and will be with you as quickly as possible.
0294	Thank you for your patience. We should be with you soon.

Phrase #	Phrase
0295	Thank you for your patience. We should be with you soon. For your convenience, you may leave a message if you wish by pressing the # key on your telephone and we will get right back to you.
0296	We apologize for the extended delay, but our current call load is abnormally high. Remember, you may leave a message by pressing the # key on your telephone and we will get right back to you.
0297	You may still wait if you prefer, but we suggest you leave a message by pressing the # key on your telephone and we will get right back to you.

Recording Custom Phrases

When you create custom phrases, you should keep a record of phrase numbers and the corresponding phrases so that if a phrase needs to be changed, the correct phrase number is readily available.

To record a custom phrase:

1. Log in from any telephone on the system with the system manager's extension and password.
This brings you to the AltMail Main Menu.
2. Press **6** for the Phrase Management option.
3. Press **2** to record a phrase.
4. Enter a four-digit phrase number between 0001 and 0999.
5. Record the phrase after the tone. Press # at the end of the recording.
6. The system will replay the recorded phrase. Press # if the recording is acceptable.
7. At the Phrase Management menu, press **2** to record additional prompts or star (*) to exit Phrase Management.

Using Professionally Recorded Phrases

Recording studios such as Worldly Voices (see AltiGen's Support Page at <http://www.altigen.com/support/home.html> for more information) provide professionally recorded prompts as electronic files that can be installed and used on AltiServ.

AltiGen provides a utility to convert these files into the proper AltiServ format. Some recording studios provide the conversion service for an additional fee. The converted file can then be used for Auto Attendant or Workgroup setup.

To install professionally recorded phrases or prompts:

1. Assign a prompt number (between 0001 to 0999) to each prompt you would like recorded.
2. Submit your prompt script and prompt number to the recording studio.
3. Instruct the recording studio to record prompts in either 8KHz or 11.025KHz mono in the WAVE format.
4. Ask the studio to convert the WAVE file(s) into the proper AltiWare format.
 - If using Worldly Voices, this conversion is done for you.
 - If you are using a studio other than Worldly Voices, the conversion utility is available on AltiGen's Support Web site at http://www.altigen.com/support/html/download_area.html. This utility allows you to convert an audio file recorded at either 8KHz or 11.025KHz in the WAVE format to an AltiWare playable audio file.
5. The prompt should be saved in the following file name format:
 - **0001.wav** for phrase #0001
 - **0002.wav** for phrase #0002, etc.
6. Once you receive the prompts in the AltiWare format, place them in the **altiserv\phrases\LangCustom** directory on the AltiServ.

Your prompts are now ready to be used in Auto Attendant or Workgroup setup.

Additional Setup

The following areas are additional system features that need to be configured through the **Management** menu.

Audio Peripheral Configuration

The Audio Peripheral Configuration window, shown in Figure 54, is used to set up:

- Music-On-Hold
- System Default Beginning and Update Prompts for Callers in Queue
- Overhead Paging

You can access **Audio Peripheral Configuration** by selecting it from the **Management** menu.

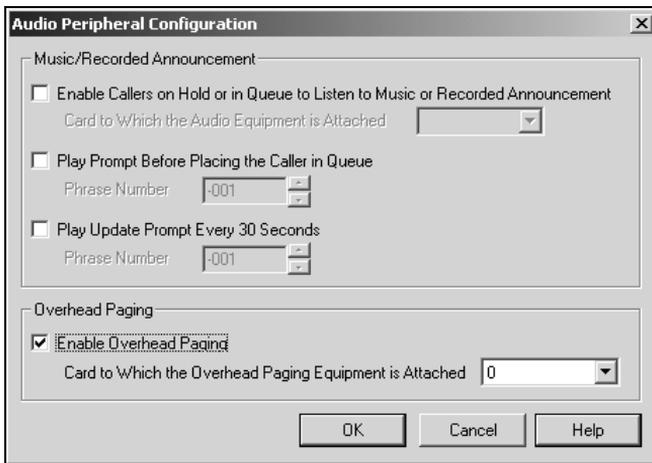


Figure 54. Audio Peripheral Configuration window

Configuring Music On Hold and Recorded Announcements

Callers will hear the music or recorded announcement configured in Audio Peripheral Configuration **only** if the user places the caller on hold by pressing the **FLASH** or **LINK** button. If the user presses the **HOLD** button, the caller hears nothing.

To configure music on hold, open the Audio Peripheral Configuration window as discussed on the previous page. Select the check box, **Enable Callers on Hold or in Queue to Listen to Music or Recorded Announcement**. Then select the Quantum or Triton Analog Station board number to which the audio equipment is attached.

Setting Greeting and Update Prompts

If you want to play a prompt before placing the caller into a hold queue, select the **Play Prompt Before...** checkbox, then use the drop-down list to select the prompt number you want to use for the greeting message. Creating prompts is discussed in previous sections of this chapter.

Similarly, if you want to play an update prompt every thirty seconds, select the **Play Update Prompt ...** checkbox, then use the drop-down list to select the prompt number you want to use for the greeting message.

Configuring Overhead Paging

To configure overhead paging, follow these steps:

1. Connect overhead paging equipment to a Quantum or Triton Analog Station board audio out jack.
2. Access the Audio Peripheral Configuration window select Enable Overhead Paging. Then use the drop-down list to select the Quantum or Triton Analog Station board to which the overhead paging is attached.

MVIP Clock Configuration

The **MVIP Clock Configuration** option in the **Management menu** allows you to manually set the master clock for the system. By default, the system is set on “**Auto**”, which means that the board provides the most stable clock reference (by the system’s own parameters) is automatically designated as the master clock by which all other boards set their clock to.

Figure 55 shows the **Clock Configuration** dialog box which allows the system administrator to automatically or manually choose the master board.

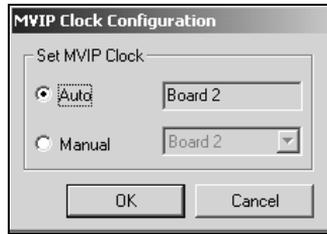


Figure 55. Clock Configuration dialog box

By default, the setting of the clock configuration is set to **Auto**. This means that the system automatically checks all the boards for the most stable clock and designates that board as the master reference clock by which all other boards reference their clocks.



It is recommended that you use the *Auto* setting. Do not select *Manual* unless one of your digital spans is connected to equipment other than the PSTN (your regular phone network). It is also recommended that you select the **Auto** setting if there is only one T1/PRI board present in the system.

You can select **Manual** to choose the board to serve as the master clock for the other boards in the system. Click on the arrow to scroll down through the list of boards. It is recommended that you select the **Manual** setting when there are two or more T1/PRI boards present in the system

Feature Tips

Each time a user logs into AltMail, the user will hear a **Feature Tip**, helpful tips and reminders of the most useful features for optimal use of AltServ. There are a total of eleven tips and a different tip is played each time AltMail is accessed. Another way to listen to Feature Tips is by pressing **#55** on the telephone. You can listen to just one tip at a time or listen to all the tips at once.

Individual users may turn this feature off (stop AltServ from playing Feature Tips at the beginning of AltMail login) by pressing **6** at the Personal Options menu. This is a toggle feature so pressing **6** at the Personal Options menu will turn it back on if it is off.

You may, however, want to completely disable this feature for all users. To disable Feature Tips system-wide, follow the steps below:

1. Select **Run** from the **Start** menu and enter **regedit** to open the **Registry Editor**.



***Caution** should be used when working with the Windows Registry! Changing the registry can affect the configuration of your system. AltiGen recommends making a backup copy of the registry before making any changes.*

2. Go to the following location:

```
\HKEY_LOCAL_MACHINE\SOFTWARE\AltiGen  
Communications, Inc.\AltiWare\
```

3. Create a new **DWORD Value** (select **DWORD Value** from the **New** option under the **Edit** menu) called **FeatureTipEnabled**.
4. Set the **Value data** to **0** to disable Features Tips. (Set the **Value data** back to **1** to enable Feature Tips again.)
5. Open the **System Configuration** window of AltiWare and click **OK** without making any changes in the data fields. It is not necessary to restart AltiWare.

You have completed disabling **Feature Tips**.

System Data Management

Using Backup and Restore

AltiWare System Data Management provides for backing up data to, and restoring files from, a system hard disk drive or a network drive. This option can only be accessed at the AltiServ system; it is *not* available from a remote AltiAdmin client.

You can also access this feature by selecting the **AltiWare OE Backup and Restore Utility** program from the AltiWare folder accessible from the Start menu.

To access the feature, click **System Data Management** on the Service Menu. Here's an example of the window.

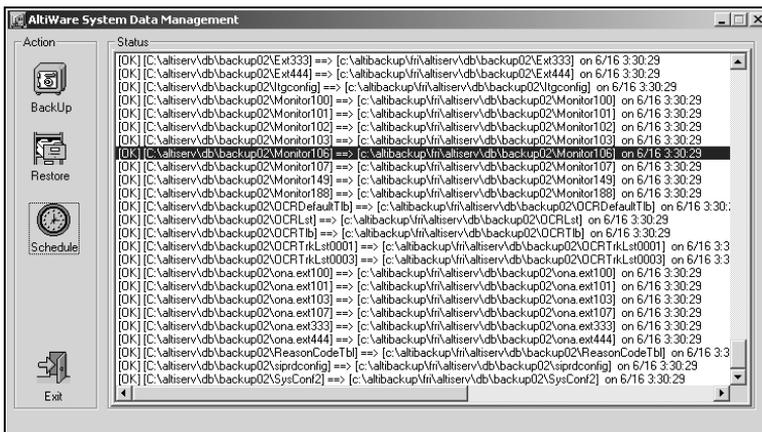


Figure 56. System Data Management window

Backing up Files

To backup files immediately:

1. Open the System Data Management window as described on the preceding page, then select the **Backup** icon to view the **Backup Configuration** dialog box.

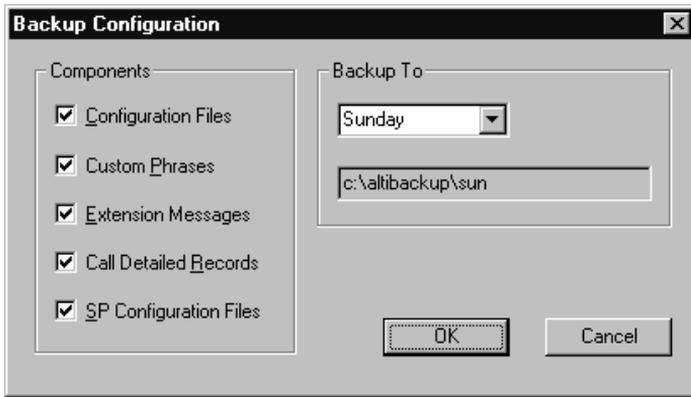


Figure 57. Backup Configuration dialog box

2. In the **Components** box, select the files you want to back up.
3. In the **Backup To** drop-down list, select *the day of the week* you want to use as the starting date for back up files, or select **Advanced**.

Advanced means that you select the folder or drive to back up. Selecting **Advanced** displays a folder icon. Click the folder icon to pop up a browse dialog box that lets you select the folder to backup.

When you click **OK** to close the dialog box, the selected drive or directory is displayed in the box below the **Backup To** drop-down list.



You cannot select **Advanced** to choose a directory and at the same time select a starting day. You need to use one or the other for a particular backup operation.

4. Once you are satisfied with the selection of files to back up, and with the date and target location, click **OK** to start the backup. This closes the dialog box.

In the AltiWare System Data Management window, the progress and status of the file backup is displayed.

Scheduling Backups

You can set up automated backup on a schedule, and you can select the days, the times, and the target drives and folders for the backup.

To set backup schedules:

1. Open the System Data Management window as described on the preceding page, then select the **Schedule** icon to view the **Backup Schedules** dialog box. Here's an example:



Figure 58. Backup Schedules window

2. Set the options:
 - Select the checkbox for each day of the week you want run the backup.
 - For each day, use the drop-down lists to specify the time. These time settings use a 24-hour clock.
 - You can accept the default target directories, or you can click the **Folder** to open the **Browse for Folder** to select the destination or the backup files.
 - Under **Backup Selection**, select the file components you want to back up: Configuration files, Custom Phrases, Extension Messages, Call Detail Records, and / or SP Configuration files.
3. Click the **OK** button.

Restoring Backed up Files

To restore the backed up files:

1. Open the System Data Management window as described on the preceding page, then select the **Restore** icon to view the **Restore Configuration** dialog box. Here's an example:

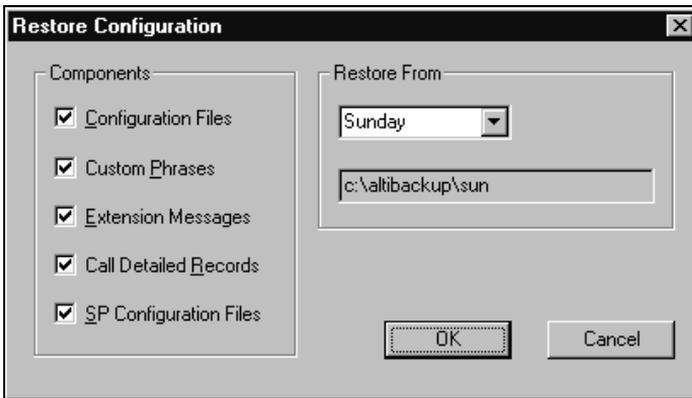


Figure 59. Restore Configuration window

2. Under **Components**, select the file groups you want to restore.
3. Using the **Restore From** drop-down list, elect the day you want to restore from, or select **Advance** to choose the restore folder.

Clicking **Advance** displays a folder icon that you can click to open a dialog box that allows you to select the directory you want to restore from.

Selecting a day of the week or manually choosing the restore directory, the directory specification appears in the text box below the drop-down list.



Note that the Components you select for restore must have been backed up into the directory you selected. For example, if you didn't back up Configuration files on Thursday, you won't be able to restore them from the Thursday directory.

4. Click the **OK** button to start the restore process.

CHAPTER 10

System Report Management

Altiserv provides system management reports that contain information on system configuration summary, traffic, system log, call detail summary and IP cumulative traffic statistics.

System Summary Report

The System Summary report provides summary information on extensions, trunks, and workgroups configured in the system.



To open the System Summary report window, select the **Report** menu from the Main Menu Bar and then select **System Summary** from the drop-down list, or select the **System Summary** icon from the Quick Access Toolbar.

System Summary						
Extension						
Extension	Last Name	First Name	E-Mail Name	Slot	Channel	
100			ext100	0	6	
101	Garza	Lydia	ext101	0	4	
102	Richardson	Janis	ext102	0	9	
103	Davis	Don	ext103	0	7	
106	Davis	Melanie	ext106			
107			ext107			
Total Number of Extensions :				9		
Workgroup				Trunk		
WorkGroup	Last Name	First Name	Members	Location	Access Code	
333		POP Dev...	106	00:00	N	
444		POP	107	00:01	9	
Total Number of Workgroups :				2		
				Total Number of Trunks :		
				32		
Messaging Usage						
Extension	New Msg	Saved Msg	Private Msg	Reminder	Total Size(KB)	
100	0	0	0	0	0	
101	0	0	0	0	0	
102	0	0	0	0	0	
103	0	0	0	0	0	
106	0	0	0	0	0	
107	0	0	0	0	0	
149	0	0	0	0	0	
Print		OK			Help	

Figure 60. System Summary window

System Report Management

The system configuration summary data includes basic attributes on Extensions, workgroups and workgroup members (click a workgroup to display the workgroup's members), trunk location and access, and messaging usage by extension.

You can Print this report using the **Print** button.

System Log

The System Log window displays information on system operating status. This window is designed for use by system engineers and certified personnel only.

To view the System Log, select the **Report** menu from the Main Menu bar, and then select **System Log** from the drop-down list, or select the **System Log** icon from the Quick Access Toolbar. You can also view the system log by running the **LogViewer.exe** program in the `\altiserv\exe` folder.

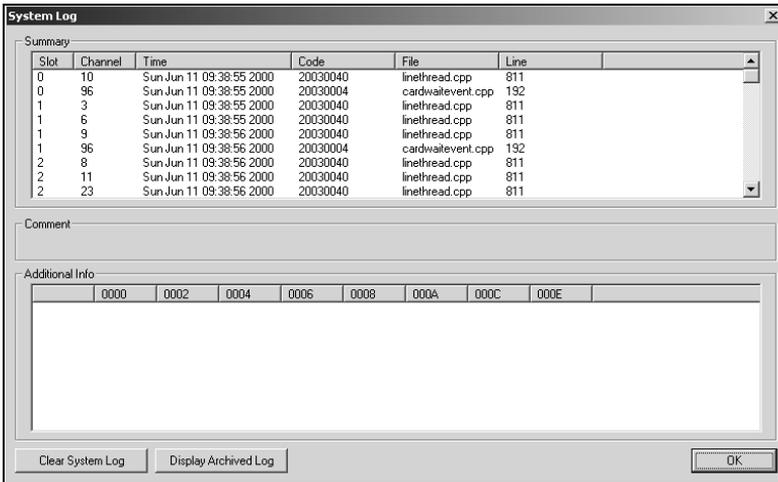


Figure 61. System Log window

The **Summary** box displays information on each channel for each card. Select a channel in the Summary box to see data about the channel in the **Comment** area and additional technical data in the **Additional Information** box.

Click the **Clear System Log** button to clear the information in all the windows.

Click the Display Archived Log / Display Current Log to toggle the view between the current and the most recently cleared system log.

IP Cumulative Traffic Statistics

To view a report of all cumulative IP traffic, click **AltiWare IP Traffic Statistics** from the **Reports** menu. The **IP Cumulative Traffic Statistics** window displays the following IP trunk traffic information for **all** calls.

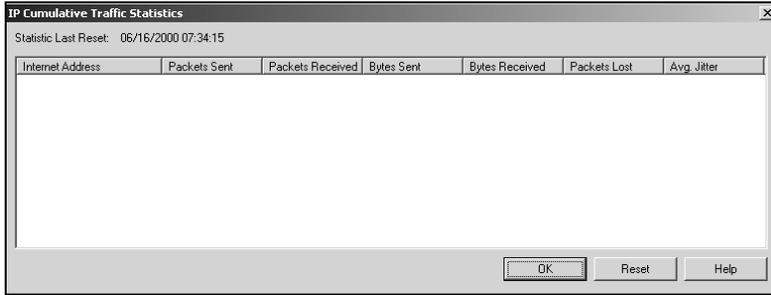


Figure 62. IP Cumulative Traffic Statistics window

This window displays the following data:

- **Internet Address** - displays the IP address or fully qualified DNS name of the remote location.
- **Packets Sent** - displays the number of voice packets sent to other AltiServ systems over the public or private IP network
- **Packets Received** - displays the number of voice packets received from other AltiServ systems over the public or private IP network
- **Bytes Sent** - displays the total size (in bytes) of all voice packets sent to other AltiServ systems over the public or private IP network
- **Bytes Received** - displays the total size (in bytes) of all voice packets received from other AltiServ systems over the public or private IP network.
- **Packets Lost** - displays the number of voice packets that have been lost due to prolonged delays, network congestion or routing failure.
- **Average Jitter** - displays the average length of delay per voice packet in milliseconds. This figure should stay under 100 milliseconds. A higher figure indicates a longer average delay. This number can be used to measure the quality of service on the network that connects the source and destination sites.

The difference between the **IP Trunk Current Traffic Statistics** window and the **IP Cumulative Traffic Statistics** window (referred to in Chapter 3 of the *Getting Started Manual*) is that the former shows figures only for the *active* call (Current Traffic) on a particular IP trunk of the local AltiServ system while the other window shows figures for *all* calls combined (Cumulative Traffic) to and from remote AltiServ locations.

Resetting Cumulative Statistics

You can reset the **AltiWare IP Cumulative Traffic Statistics** by clicking the **Reset** button. Also, this window automatically resets all fields to **0** when the AltiServ system is shut down and restarted. Statistics gathered before the reset are not saved.

CHAPTER 11

Data and Internet Integration

This chapter describes how to integrate AltiServ with the Internet and data communications. It will cover the following areas:

- E-mail
- Mail forwarding
- Exchange integration
- AltiReach Setup

Network Protocol and Addressing

The AltiServ system integrates telephony functions with the LAN and Internet to provide a state-of-the-art communication facility with local and remote access to email mixed-media messaging.

Before you begin, you should be familiar with the following LAN and Internet protocol and addressing information.

Network

A network is a distributed interconnection of multiple voice and data communication devices utilizing network protocol software to communicate and exchange information.

Protocol

A protocol is a set of rules and methods by which telephone equipment and computers exchange information across a network. Networking software generally implements multiple levels of protocols in the process of interconnecting two or more devices on the network and enabling them to exchange information.

Transport Protocols

Among the various transport protocols available, AltiServ uses the **TCP/IP** transport protocol.

TCP/IP - Transmission Control Protocol/Internet Protocol (TCP/IP) is the protocol used on the Internet.

A *protocol stack* is a collection of actual protocol layers used to establish a connection across the network that allows dissimilar network devices to exchange information.

SMTP/POP3

SMTP - Simple Mail Transfer Protocol. *As seen by the client side* of the network, is an Internet email *sending* protocol software format.

POP3 - Post Office Protocol Version 3. *As seen by the client side* of the network, POP3 is an Internet email *retrieving* protocol software format that allows users to retrieve mail from its stored location.

IMAP4 - Internet Message Protocol Version 4. An enhanced version of POP3 that, among other things, allows the user to view message headers of each message before retrieving the complete message.

Network Address

A network address is an identifier for a node, station, or unit of equipment in a network. There are many methods of accessing the network, such as email or Hyper Text Transport Protocol (HTTP), Gopher, etc.

Altiserv uses the email client/server access method.

A sample email client/server network address might look something like the following example:

jsmith@earth.science.berkeley.edu

This address tells the routers and the Internet Service Provider (ISP) where to deliver this message. This is an extended address. The address is read from the right to the left:

edu = first level domain

berkeley = second level domain

science = third level domain

earth = fourth level domain

@ = at

jsmith = user name

Or it might be as simple (and short) as:

altigen.com

com = first level domain name

altigen = second level domain name

Local Address

When you are sending messages among users in a LAN, the local address is used in place of the extended network address. Local addressing is used in a peripheral node or station and is transformed to or from an extended address for delivery purposes. Often, within a LAN the domain is assumed to be the local domain if no *@domain* is added to the address.

Mixed-Media Messaging

Messaging includes many options other than just text. Messages might include all of the following types of information or any combination thereof:

- Text - (includes word processing files, spreadsheets, database listing)
- Voice
- Fax
- Video

If you include more than one attachment or media type in your email messages (such as graphics, video or sound), you must employ a method called **MIME** (Multipurpose Internet/Mail Extensions). **MIME** is a technique designed to bundle attachments within individual email messages.

When a **MIME** file with attachments arrives at your workstation, additional processing begins immediately. As the various attachments arrive, the client or browser identifies these attachments by file type or by description information in the attachment tag (as specified by the **MIME** format). After the client or browser identifies a file, it can handle the file playback or display. Sometimes the client or browser itself handles playback or display (including .GIF and .JPG files).

When other kinds of files show up and need special handling capabilities (beyond the scope of most client/browsers), the client hands off the files to other **Helper Applications** for playback or display. Helper Applications are designed to read and process the files and to present the file contents on demand.

AltiWare provides users with the ability to record a voice annotation and attach it to an email mixed-media message. This voice recording must be done before the user sends the email in order to send the voice annotation as an attachment to the email. After the voice recording is complete, the user can send the email. AltiWare then combines the voice message and the email into a single MIME message and sends it to the recipient. The ability to send and receive MIME messages is included as part of AltiWare email capabilities.

Setting Up Email Service

There are some basic requirements that must be met in order to access Mixed-Media Messaging using email over the AltiServ system.

Before You Begin

To set up email for the AltiServ system, you need to have the following installed on the AltiServ:

- Windows NT network interface card installed and Windows NT network capability enabled
- Network TCP/IP installed and configured
- Internet connection (if sending and receiving emails over the internet)
- Multi-media stations/PCs as clients

Setting Up LAN and Internet Email on the Server

To set up the server side of the network, follow the steps below:

Step 1: Selecting Your ISP and IP Addresses

You will need to obtain the following to setup Internet email:

1. Select your **Internet Service Provider (ISP)**. There are numerous ISPs to choose from. There is a fee associated with these services. Please contact an ISP that serves your area for details.
2. From your ISP:
 - Obtain a **Domain Name Server (DNS) Address**. AltiServ address should be added to the DNS database by your ISP.
 - Select and give your ISP a unique **Domain Name** - each domain must have a unique name associated with it, such as the address for AltiGen, which is “altigen.com”.
 - Obtain a **Block of IP Addresses** - and assign a unique IP address to each client on the LAN.
 - Obtain the **Subnet Mask** - you will need to enter this address later in the TCP/IP configuration setup for both the server and client stations.

Step 2: Setup the Router

Install the router on the LAN. The router is the gateway to another LAN or to the Internet.

1. Specify a router that is on the same LAN as the AltiServ server, such as ISDN or T1.
2. Assign an IP address (one of the block of IP addresses obtained from the ISP to the router). This becomes the **gateway** router address.

Step 3: Configure TCP/IP Properties

Configure the TCP/IP protocol parameters.

1. Select the TCP/IP Protocol from the Installed Network Software.

Open the **Control Panel** and select the **Network** icon. This will display the **Network Setting** window, as illustrated in Figure 63. On the **Protocols** tab, double click on **TCP/IP Protocol** from the drop-down list box.

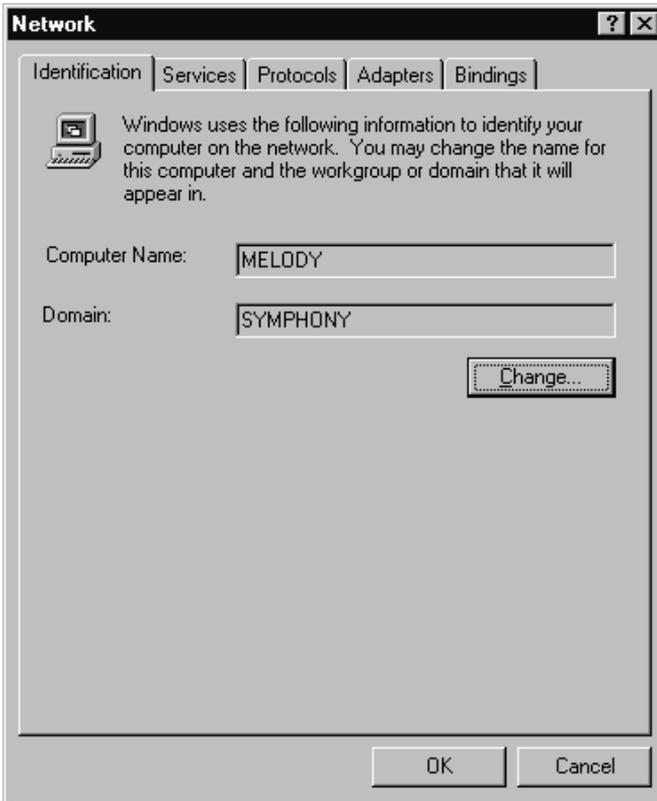


Figure 63. Network Setting Window

2. Display the TCP/IP Properties window to define TCP/IP parameters.

By double-clicking on the **TCP/IP Protocol** selection, you will display the window shown in Figure 64, where you configure the IP Address, Subnet Mask, and Default Gateway (router).

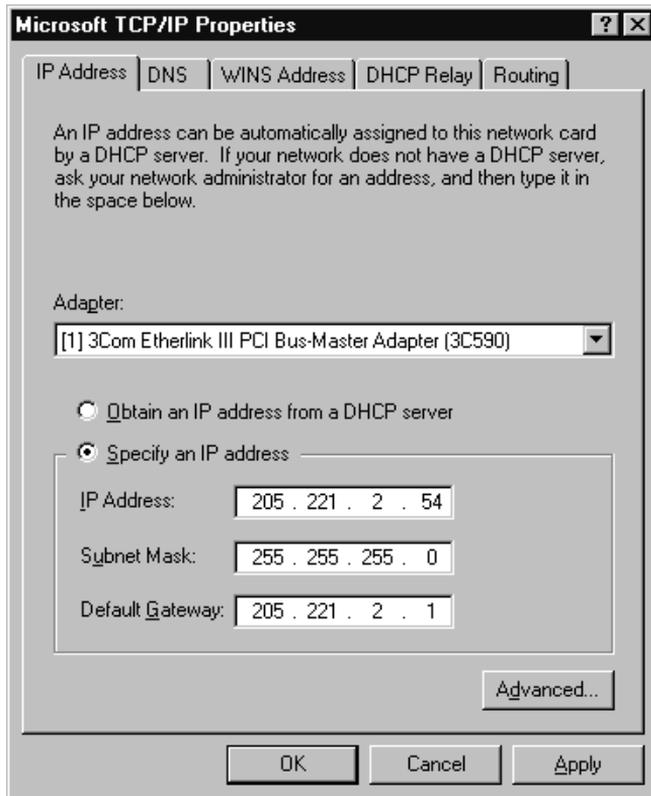


Figure 64. TCP/IP Configuration

- **IP address** - enter the assigned IP address (from the block of IP addresses obtained from your ISP) to the AltiServ.
- **Subnet Mask** - enter the Subnet Mask obtained from your ISP.
- **Default Gateway** - enter the Email Gateway (the router address).

3. **Domain Name System** - select the **DNS** tab at the top of the TCP/IP Properties window, as shown in Figure 65. **You must configure the DNS tab if you want to exchange email through the Internet.** Configure the following:
 - **Host Name** - enter the name of the server (example: melody)
 - **Domain** - enter the domain name (example: altigen.com)
 - **DNS Service Search Order** - enter the IP address of either your own or your ISP's Domain Name Server.
 - Select the **OK** button.

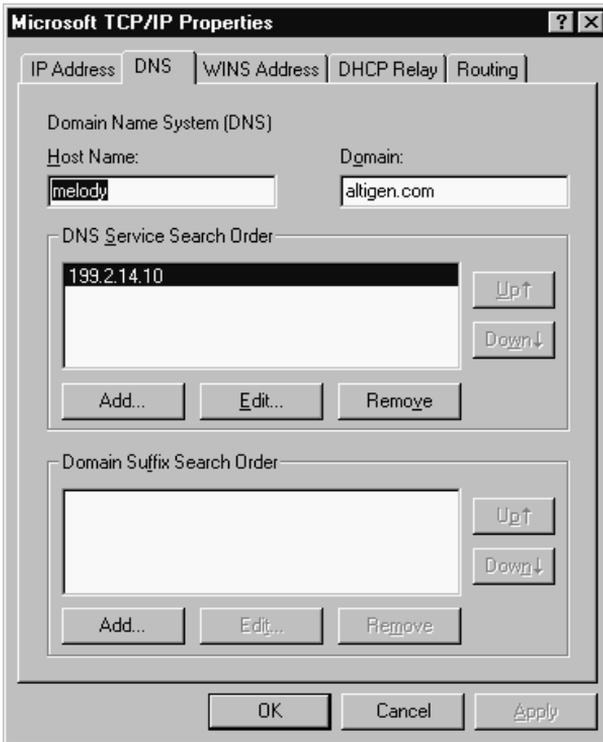


Figure 65. DNS Configuration window

4. Refer to Microsoft Windows NT configuration documentation to complete the TCP/IP network setup.

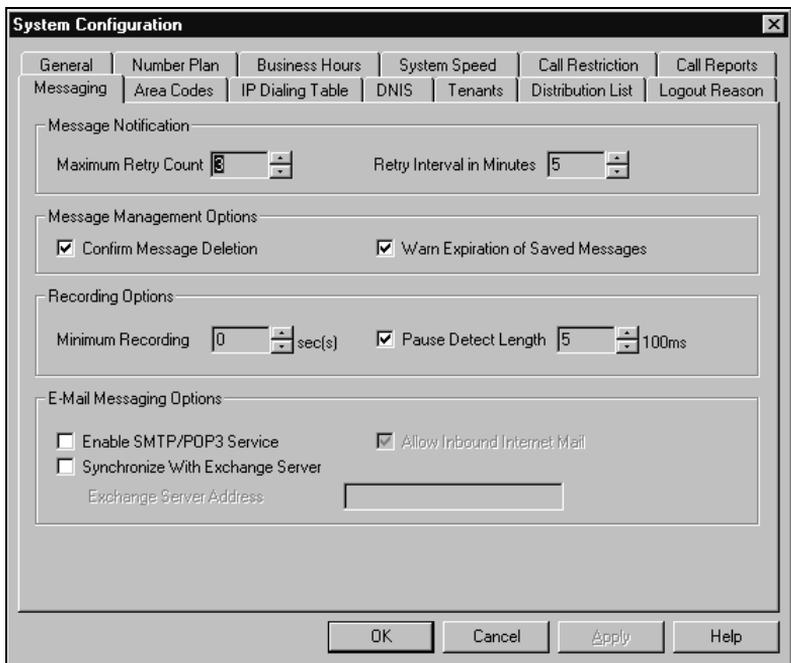
Step 4: Notify Your ISP of the Following:

1. Your AltiServ Host Name (host name of the server or server name) - your AltiServ is the server that actually receives the mail or messages. For example, AltiGen has named its server “global_cti”. This tells the DNS to route all mail or messages for altigen.com to the global_cti server.
2. Your AltiServ’s IP address - e.g. 200.133.204.2

Step 5: Configure Email in AltiWare Administrator

To configure the AltiServ for email service:

1. On the Management menu, select **System Configuration...** and the click the **Messaging** tab to open the Messaging window:



2. Configure the **E-Mail Messaging Options** at the bottom:
 - Select the **Enable SMTP/POP3 Service** box to enable email and Mixed-Media Messaging on the AltiServ system.

- Select the **Allow Inbound Internet Mail** box if Altiserv is the only mail server running on the system. If you are running another SMTP server on the same system (such as Exchange) and you do not want Altiserv to receive inbound Internet mail, you should leave this box unchecked.
3. Assign a unique **Email Name** to extension users in the **General** window of **Extension Configuration**.

First, select the extension number (or select **Add Extension** and then enter the extension number in the field provided if this is a new extension). Then enter the email name in the **E-mail Name** data entry field. Refer to Figure 34, “General window, Extension Configuration,” on page 87.

4. Allocate the system storage capacity for extensions in the **Mailbox Setting** window of **Extension Configuration**.

Each user’s needs may be different. The default is 50 MB of storage, which on the average, will give each user room for 100 messages. Refer to “Setting the Mailbox Options” on page 103 for more details.

Setting Up LAN and Internet Email on the Client

To set up the client side of the LAN:

1. Configure the following client **TCP/IP Properties** (see Figure 64 on page 162):
 - IP Address
 - Subnet Mask
 - Default Gateway
2. On the **DNS** tab of TCP/IP Properties, enter the following (see Figure 65 on page 163):
 - Host Name
 - Domain
 - DNS Service Search Order
3. Configure the following mail server parameters of the email client application:
 - Enter the **Mail Server (POP3) User Name**. (This is the same name entered as the email name on the AltiServ **General** page of **Extension Configuration**).
 - Enter the **Incoming Mail (POP3) Server** address.
 - Enter the **Outgoing Mail (SMTP) Server** address.

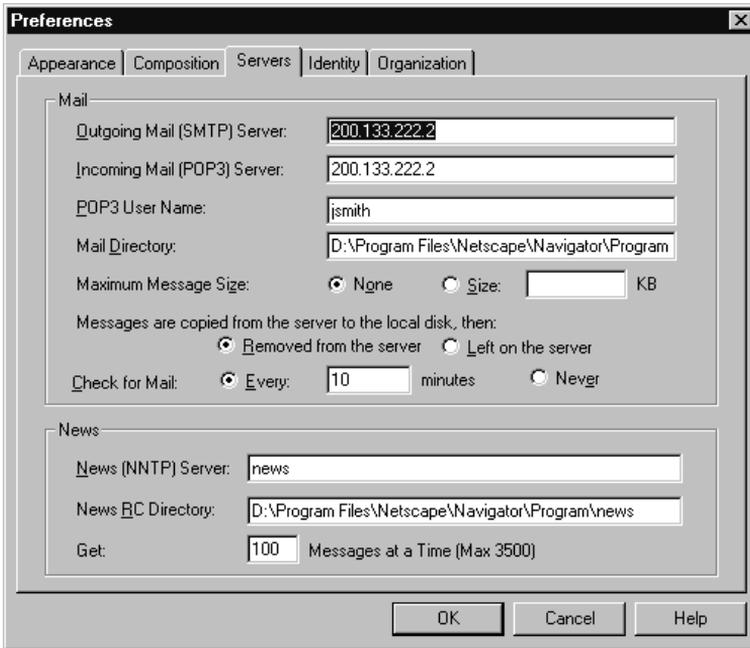


Figure 66. Netscape Mail Server Setup

4. Set up helper applications and general preferences for the email client application (i.e. associates the.WAV files with sound recorder application).

LAN and Internet email setup is complete.

Setting up an Exchange Server

This section provides you with step-by-step instructions to configure the Exchange Integration feature in AltiWare OE.

In the example that follows, the AltiServ system is called **TELESYSTEM**, and the Exchange Server is called **MAILSERVER**, and both systems belong to the NT domain called **ALTICHINA**.

EIAssist Aids Exchange Server Integration

AltiWare Exchange Integration Assistant (EIAssist) is designed to help customers synchronize AltiWare messaging services with Microsoft Exchange Server. Basic functions include:

- Retrieving relevant configuration information from Altiserv.
- Viewing and configuring Altiserv messaging and messaging services.
- Adding and editing physical extensions in Altiserv.
- Modifying Altiserv extension user names as needed for synchronization with Exchange Server.
- Retrieving mailbox information from Microsoft Exchange Server.
- Associating Altiserv extension users with Exchange mailboxes, and associating Exchange mailboxes with Altiserv extensions.
- Checking the Microsoft Exchange messaging system.
- Viewing and modifying Microsoft Exchange services.

EIAssist should run on Windows NT 4.0 (or higher). It connects with Altiserv via DCOM. In Windows NT 4.0, DCOM is a default function. EIAssist connects with Microsoft Exchange Server via MAPI. For it to work, make sure your computer has installed Microsoft messaging system. Installing Outlook from Microsoft Office 97 makes the messaging system available.

If EIAssist is not already installed and available, you can install EIAssist by TBD. Use the **Help** menu if you have questions on using this utility application.

Prerequisites

It is assumed that you already have prepared two NT servers—one with the AltiWare OE software and the other with Exchange Server software.

On the AltiServ System

You need to have Windows NT 4.0 with Service Pack 6a or higher. Check the version of NT by clicking the **Start** button, select **Run**, and type **winver** in the Run dialog box.

This action should bring up a About Windows NT dialog box that displays the version of NT running on your system. It should say Version 4.0 (Build 1381: Service Pack 6)...Revised Service Pack 6a.

If you have an older version of NT, upgrade to the latest version. Check <http://www.microsoft.com/ntserver> to get the latest service pack for Windows NT.

The AltiWare OE software version should be OE 3.5 or higher. Check the version of OE software by selecting **About** from the **Help** menu of AltiWare Administrator. The version displayed should be AltiWare OE 3.5 or higher. If you have an older version, contact AltiGen Technical Support to find out how to upgrade to the latest version of AltiWare.

The AltiServ system and the Exchange server system must belong to the same NT domain. You can check the domain to which your system belongs by doing the following: On the AltiServ system, go to **Start** → **Settings** → **Control Panel** → **Network**. In the Identification tab of the Network dialog box, verify that you see two text boxes, **Computer Name** and **Domain**. Note down the value in the Domain field.

Now, repeat the same steps on the Exchange server system and make sure the domain names are the same.

AltiGen Services should be started with the user account `<Domainname>\AltiGen_<AltiserveSystemName>`. For example, `ALTICHINA\AltiGen_TELESYSTEM`.

To verify this, select **Start → Control Panel → Services**. A Windows Services dialog box will be shown, as in this example.

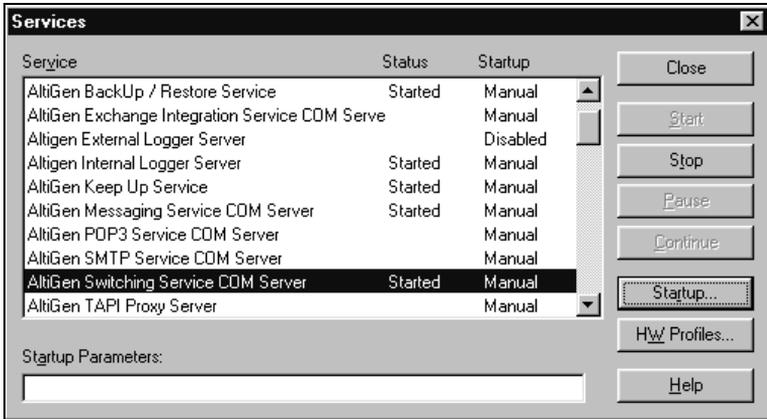


Figure 67. Windows Service window

Select **AltiGen Switching Service COM Server** from the control panel of Altiserv. Highlight the AltiGen Switching Service Com Server and click the **Startup** button. A Service startup options dialog box will popup:

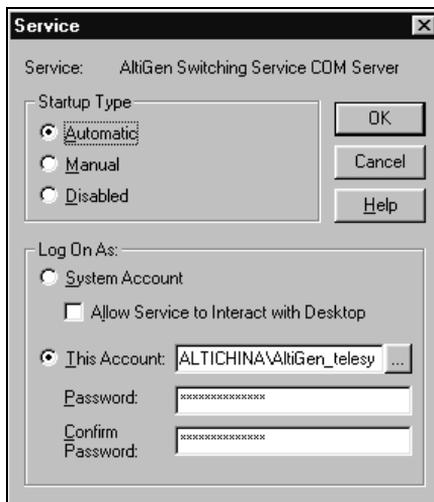


Figure 68. Service Startup options dialog box

Complete the entries in this dialog box as follows:

- In the **Log On As** group, **This Account** should be checked and `<DomainName>\AltiGen_<ServerName>` should be set as the account. In this example, it is `ALTICHINA\AltiGen_telesystem`. If this is not the case, you need to re-install AltiWare while logged in as a domain administrator with local administrator privileges.
- Repeat the previous step, but this time, check the **Log On As** account for **AltiGen Exchange Integration Service COM Server**.

On the Exchange Server

Check the version of NT by clicking the **Start** button, select **Run**, and type **winver** in the Run dialog box.

You need to have Exchange Server 5.5 with Service Pack 3. Check the version of Exchange Server by clicking the **About** button in the Exchange Administrator.

You should be able to ping the Exchange Server from AltiServ and *vice versa*. From the AltiServ system, open a MS-DOS window, and type `ping <exchange server name> <Enter>`.

For example, you will type `ping mailserver`. You should see **Reply from...** as the response. If you see **Request timed out**, there is something wrong with your network settings or connectivity. Similarly, ping the AltiServ system from the Exchange server. For example, you will type `ping telesystem <Enter>` from the command prompt in Exchange Server. You should get proper reply.

Exchange Server Services Must be Started

Check that all Exchange Server Services have started by opening the Control Panel and clicking the **Services** icon to view the Services window.

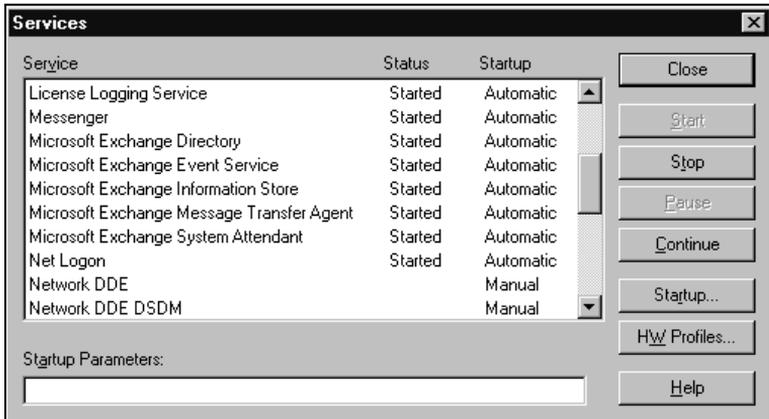


Figure 69. Exchange Server Services Window

Check the status of the following services to see if they are started:

- Microsoft Exchange Directory
- Microsoft Exchange Event Service
- Microsoft Exchange Information Store
- Microsoft Exchange Message Transfer Agent
- Microsoft Exchange System Attendant

If any of these services is not started, select it and click the **Start** button in the Services window to start it. If can not be started, please contact Microsoft technical support.

Exchange Server Configuration

Now that we have verified that the AltiServ and the Exchange Server systems are properly installed, we can start configuring the two systems to enable the Exchange Integration feature. In this section, we describe the configurations to be performed in the Exchange Server.

For testing purposes, create an Exchange mailbox for NT account `<Domain>\AltiGen_<AltiservSystemName>` (e.g. `ALTICHINA\AltiGen_TELESYSTEM`)

Open the **Exchange Administrator** on the Exchange Server. (Open Microsoft Exchange Administrator and do the following):

1. Select **New Mailbox** from the **File** menu.
2. Input a mailbox name, for example, first name **AltiGen**, last name **Assist**, display name **AltiGen Assist** and alias name **AltiGenA**.
3. Click the **Primary Windows NT Account** button and in the dialog box, select **<Domain>\AltiGen_<AltiservSystemName>** (e.g. **AltiGen_teleystem**). After setting the primary NT account, your dialog box should look the example that follows. Click the **Apply** button to create the mailbox.

Figure 70. Adding a mailbox to Exchange Server

Click the primary NT account and select **Use Existing Account**. This account can then be added from the user manager window. Remember that this can only be achieved if AltiGen has an account in the same domain as the Exchange Server or a trusted domain.

Give **Service Account Admin** Rights to AltiServ service account in the Exchange server. See Note 3 on page 185.

Microsoft Exchange Administrator Configuration

In Microsoft Exchange Administrator, highlight the Organization container. (Organization is the top item in the hierarchy on the left of the Exchange Admin window).



Figure 71. Microsoft Exchange Administrator

Select **Properties** on the **File** menu, then click **Permissions** to get a window such as the following:

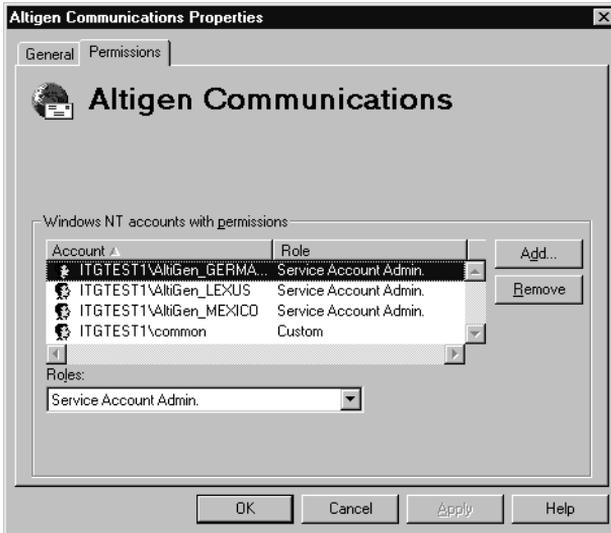


Figure 72. Properties window, Exchange object

Do the following:

1. Add <Domain>\AltiGen_<AltiServSystemName> (e.g. **AltiGen_telessystem**) account to the account list.
2. Change the accounts role to Service Account Admin by selecting **Service Account Admin** from the **Roles** combo box.(see figure 1).

Repeat the above two steps to is process for the **Domain** and **Configuration** containers. The name of Site is **ITGTEST1**. The name of Configuration is **Configuration**.

Finally, stop and restart all the services of Exchange Server, or reboot the Exchange server.

Installing Outlook 2000 Client on the AltiServ System

Outlook 2000 has two modes: **Internet Only** mode and **Corporate or Workgroup** mode. To enable the Exchange Integration feature, you **MUST** configure it to use **Corporate or Workgroup** mode.

If you have already installed Outlook 2000 in the AltiServ system, make sure that you have installed it in the **Corporate or Workgroup** mode. This is discussed on page 177.

Install Outlook 2000 to Corporate or Workgroup mode.

Install Outlook 2000 from the Outlook 2000 or Office 2000 CD. During installation, you will be prompted to choose a mode (**Internet Only** vs. **Corporate or Workgroup**), Make sure you choose the **Corporate or Workgroup** mode.

After installation is complete, start Outlook 2000 from **Start → Programs**. In the Microsoft Installer wizard, select **Microsoft Exchange Server** to install, then click **Next** to move to the next window.



Figure 73. Outlook setup, Exchange Server Name and Mailbox

In the above dialog box type in values for the **Microsoft Exchange Server** and **Mailbox**. Enter the name of the Exchange server, and enter the test mailbox we created (*Altigen Assist*) in the Mailbox field.

Click the **Next** button to bring up the next dialog box, which asks a Travel question, to which you should answer **No**, then click **Next**.

Once you have completed the Setup Wizard, a final dialog box appears, indicating that the information services that have been added to your profile. Then a **Done!** dialog box appears, and you click the **Finish** button to end this part of configuration.

If the values you entered for **Microsoft Exchange Server** and **Mailbox** are correct, you will be able to use Outlook 2000 now. If they are not correct, you'll be asked to re-enter the **Microsoft Exchange Server** and **Mailbox** names. Make sure you enter the correct values. You can verify your input by clicking the **Check name** button.

Check to see that Outlook 2000 is in the mode of Corporate or Workgroup

Start Outlook 2000. Choose **Select Tools** from the menu options.

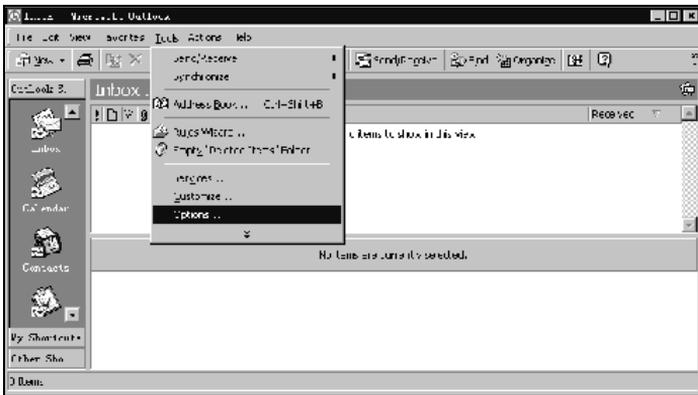


Figure 74. Outlook Tools menu

If there is a menu item **Service**, it means Outlook 2000 is in the mode of **Corporate or Workgroup**. You can move on to the next set of steps. If there is a menu item **Accounts**, it means Outlook 2000 is in the mode of **Internet Only**. You need to do following steps to change Outlook 2000 to the mode of **Corporate or Workgroup**.

Click **Options...** to open the Options dialog box, and select **Mail Delivery** if under **Internet Only** mode (or **Mail Services** if under **Corporate or Workgroup** mode).

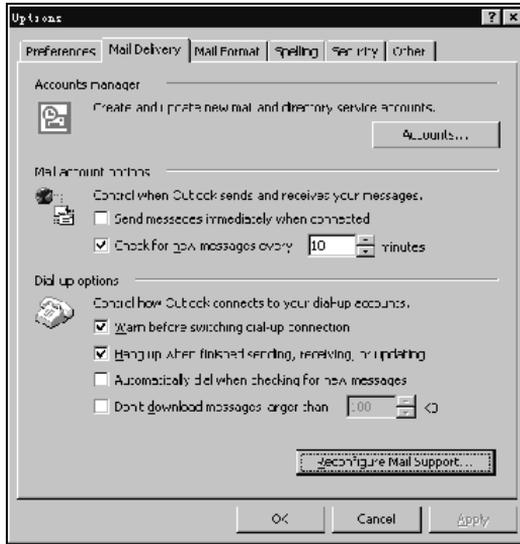


Figure 75. Outlook Options

Click button **Reconfigure Mail Support...** to open the E-mail Service Options dialog.



Figure 76. Email Service Options

You can see there are two options you can choose. Please select **Corporate or Workgroup** and click **Next**. When a dialog box pop up, click **Yes**.

Configuring an Outlook 2000 Profile

Start Outlook 2000. Select **Services...** on the **Tools** menu to open the Services dialog box.



Figure 77. Outlook Services

If **Microsoft Exchange Server** is in the list of services in this profile, you can go skip to the next set of steps.

If **Microsoft Exchange Server** is *not* in the list of services, proceed as follows:

1. Click **Add** to open Add Service to Profile dialog box. Then you can add **Microsoft Exchange Server**, **Outlook Address book** and **Personal Folders** to profile.



Figure 78. Add Services to Profile

In the Microsoft Exchange Server dialog box that opens, type the Exchange Server name in the **Microsoft Exchange Server** field and the test mailbox name (e.g. **AltiGen Assist**) in the **Mailbox** field. Click the **Check Name** button. If you entered valid values, the names will be underlined and the **Check Name** button will be grayed out. Click the **Apply** and then **OK**.

You will see **Microsoft Exchange Server** in the list in the Services window.

Optional: Select **Microsoft Exchange Server** in the list box, and click **Properties** button to see its configurations. The dialog box **Microsoft Exchange Server** will pop up. If you need to, you can use this Properties dialog box to change the name of **Microsoft Exchange Server** and **Mailbox**.

Testing the Configuration

Restart Outlook 2000 at least once. Test the configuration by sending an email and check to see if you receive it.

When the re-boot is complete log on using the AltiGen service account. Open Outlook and from the **Tools** menu select **Services**. Click **Add** and select **Exchange Server**. The Mailbox field should already be populated with the *Name* entered above. Enter the Exchange Servers hostname and click the **Check Name** button. Both the Mailbox and Exchange Server should now be underlined.

This completes AltiServ and Exchange server systems properly and we are ready to enable the Exchange Integration feature. *Please remember you MUST have completed the previous steps before moving ahead.*

Enabling the Exchange Server

Delete obsolete files from `\altiserv\exe` directory: From Windows NT Explorer, go to the `\altiserv\exe` folder. If `mapi32.dll` and / or `gapi32.dll` remain in this folder, delete them.

In AltiWare Administrator (**AltiAdmin**), configure the extensions that are to be synchronized with their corresponding mailboxes in Exchange server:

From the **Extension Configuration General window** (example below), select an extension that needs to be synchronized with Exchange. Type in the **First Name** and **Last Name** exactly as they appear in the corresponding Exchange mailbox in the **Global Address List of the Exchange Server**.

The screenshot shows the 'Extension Configuration -- 100' window with the following details:

Extensoin	Slot	Channel (or PS)
100	0	6
101	0	4
102	0	5
103	0	7
104	0	8
105	0	9
106	0	10
107		virtual
333		workgroup
444		workgroup

Personal Information

First Name: [] Last Name: []
 Password: [] DID Number: []
 Tenant: 0 NA Enable Dial-By-Name Service

SMTP/PDP3 Setting

Email Name: ext100
 Retrieve Voice Mail By E-mail Client

Mail Forwarding Options

Enable Mail Forwarding Delete Messages After Forward []
 Forward Email Address: []
 Forward Email Forward Voice Mail

Physical Location

Slot: 0 Previous []
 Channel: 6 Next []

Type

Physical Extension
 Virtual Extension
 Workgroup Pilot Number

IP Extension

Enable IP Extension
 Dynamic IP Address
 Static IP Address
 Logon IP Address: 0 . 0 . 0 . 0

Buttons: Add, Delete, Line Properties, Print, Apply to ..., OK, Cancel, Apply, Help

Figure 79. General Window, Extension Configuration

Make sure that the **E-mail Name** field contains alphanumeric characters only and does not contain other characters such as spaces () or periods ().

In Exchange Administrator, ensure that for each mailbox in Microsoft Exchange Server to be synchronized, the **First Name** and **Last Name** are exactly as they appear in their corresponding extensions in AltAdmin.

Important: The **Middle Initial** field should be *empty* for Exchange Server mail accounts in order for Exchange Integration to work properly.

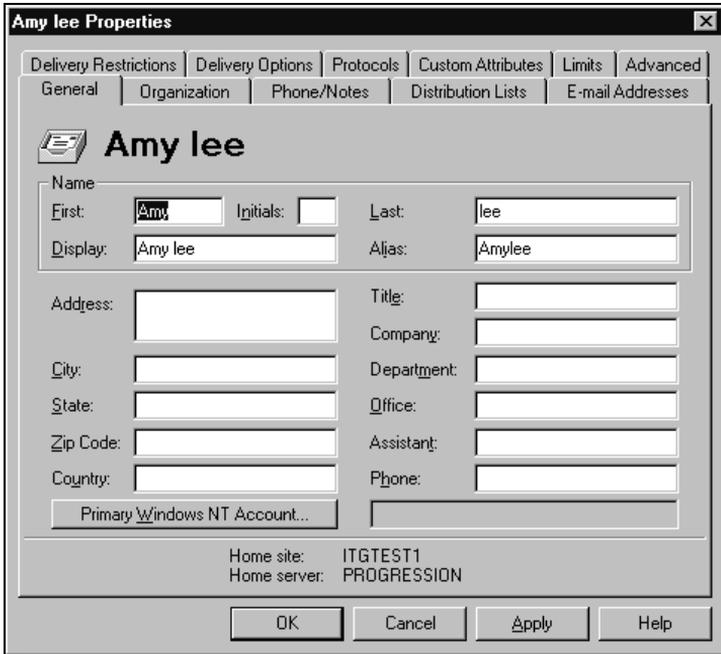


Figure 80. Mail account configuration in Exchange Administrator

You should use these preceding steps to double check the synchronization of all mailbox names used jointly by Altiserv and Exchange Server.

Enable the Exchange Integration feature in AltiAdmin

In AltiAdmin select **System Configuration** from the **System Management** menu.

Select the **Messaging** tab and under the **E-mail Messaging Options**, check the **Synchronize with Exchange Server** box only.

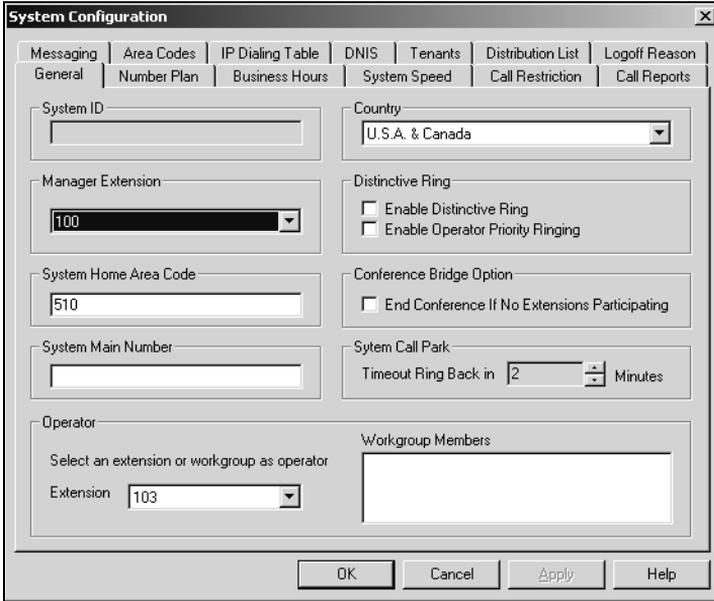


Figure 81. Messaging window, System Configuration

Enter the *name* of the Exchange Server (e.g. **MAILSERVER**) in the space provided and click **Apply**.

This completes the configuration for the Exchange Integration feature is complete!

Testing the Exchange Server Setup

You can use some simple procedures to make sure that the Exchange Integration feature is working correctly.

To test the integration, you need to set up an extension in AltiServ (e.g. 100) and its corresponding mailbox in Exchange server. You will also need to set up a PC with Outlook 2000 configured for this user.

Test Message Delivery to Exchange:

Leave a voice mail for extension 100. The message light should illuminate. Log on to the Exchange Mailbox from Outlook and check for the message in the inbox. The message should be titled **VoiceMail from xxx** and include the voice mail as a.WAV attachment.

Message State Change Notification

Log in to extension 100s voice mail from a phone. The message you left in in the preceding step should be there as a new message. Save this message by pressing 3. Within approximately a minute, the message in Outlook will become a saved message as well—it will no longer appear in **bold face**.

Listen to VM in Outlook

Open this message in Outlook, and open the.WAV attachment. It should be the same message.

Deletion Notification

Delete this message from Outlook. Wait for a couple of minutes, and then log on to extension 100s voice mail from a phone. The voice mail should no longer be there.

If any of these tests fail, please consult the next section.

Troubleshooting Tips

Check Profiles

Log on to the AltiServ system as the AltiGen service account (e.g. **AltiGen_telesystem**). Select the **Mail Icon** from the Control Panel. Click **Show Profiles**. For the test mailbox there should be profiles named like **AltiExch<ServerName><FirstName><LastName>** (e.g. **AltiExchMAILSERVERAmyLee**). If you don't see any such profile, make sure that \altiserv\exe folder does not contain the files *mapi32.dll* or *gapi32.dll*. If these files exist, delete them, stop and start the Exchange Integration Service.

Delete old profiles

If an error occurred while AltiWare was creating mail profiles, the damaged profiles would remain there unless or until someone removes them manually. After the re-configuration, the new profiles can't be created since the old ones still exist.

You can remedy this as follows:

1. Logon as AltiGen Service Account
2. Shutdown Altigen Exchange Integration Service from Control Panel \ Services, then open the **Control Panel\Mail** (or Mail and Fax) and click **Show Profiles**. Remove all the profiles like **AltiExch<ServerName><FirstName><LastName>** (e.g. **AltiExchMAILSERVERAmyLee**).
3. Delete all the files under **\Altiserv\db\SynchStorage*** (e.g. **SynchStorageExt100**)
4. Start the **AltiGen Exchange Integration Service** from Control Panel \ Services.

If this doesn't work, call Altigen Tech Support.

Notes

1. Email clients confirmed to work on the AltiServ system is Outlook 2000 (using **Corporate or Workgroup** mode). Note that this is the client installed on AltiServ host. The client running on the end- user computer is irrelevant.
2. Prevent attempts by the Exchange Administrator to use the existing service account for the AltiGen Exchange Integration Service. Using the AltiGen service account will provide you an audit trail that is invaluable while troubleshooting.
3. Depending on the number of emails you have on the Exchange server, the initial mailbox synchronization may take a long time. For example, if you have 10GB emails on the Exchange server and are enabling Exchange Integration for all the mailboxes, it may take up to 24 hours to initialize the Exchange Integration service. On the other hand, if you have less than 100MB of email on the Exchange server, the initialization will take less than 5 minutes.
4. When checking the profiles using the mail icon in the control panel of AltiServ, you should see one account for each mailbox. You will see these profiles only if you are logged on as the AltiGen service account (e.g. **AltiGen_telesystem**).

About AltiReach Configuration

The AltiReach Call Management system allows AltiServ to provide remote and local desktop call management to users using the Intranet or Internet via a standard Web browser.

AltiReach is installed and configured automatically when you install AltiWare. The configuration settings differ depending on the version of the Microsoft Internet Services Manager you are running and whether AltiServ is running on Windows NT or Windows 2000. If you need to troubleshoot or double-check the server configuration, it should be as follows:

- **Internet Services Manager (IIS) 2.0 and 3.0:** In the Microsoft **Internet Services Manager → ,WWW (Running)** settings the **Home** directory is set to `c:\altiserv\webmgmt` (where `c:\` is the local drive on which AltiWare is installed). In the **Properties** for this directory, the access privileges allow **Read** and **Execute**.
- **Internet Services Manager (IIS) 4.0 and higher:** In **Internet Services Manager → ,Default Web Site → ,Properties → ,Web Site** tab, the **IP Address** is set to the address of the AltiWare server.

Under the **Properties → ,Home Directory** tab, the following configuration is established:

— The **Local Path** shows `c:\altiserv\webmgmt` (where `c:\` is the local drive where AltiWare is installed). On this local path, **Read** and **Directory Browsing** (NT) or **Directory Browsing Allowed** (Windows 2000) are both selected.

— In the **Application Settings** group:

- In *Windows NT*, under **Permissions**, the **Execute (including script)** radio button is selected. On the **Execute** is selected.
- In *Windows 2000*, **Scripts and Executables** is selected in the **Execute Permissions** drop-down list.

Using AltiReach

For instructions on how to use AltiReach and descriptions of all the functions within AltiReach, please refer to the *AltiServ User Guide*.

APPENDIX A

Call Accounting Report Formats

This appendix identifies the field codes for AltiGen's **CDR (Call Detail Reporting)** records and the formats for the **Station Message Detail Reporting (SMDR)** specification support by AltiGen. The first table describes CDR format database elements, the remainder of the chapter describes the SMDR format.

CDR Format Elements

CDR Data Keys

Database Element	Definition	Length	Specification
Node ID	Unique server node ID	ULONG	
Session ID Number	Unique session ID on the source Node	ULONG	
Link Session Node ID	Reserved	ULONG	
Link Session ID Num	Reserved	ULONG	
MoreThan2WG	Indicates that a call handled by more than 2 workgroups	UBYTE	1 – more than two agent 0 – only one agent
Transfer Trunk Number	If the call is transferred out of the system, this field shows destination number; otherwise, it is empty	UCHAR (41)	
Trunks Section			
Trunk Direction	Whether this record is for an inbound or outbound call	UBYTE	0 – None (logon / off) 2 – Incoming 4 – Outgoing
Remote System Trunk ID	Reserved	UCHAR (16)	

CDR Data Keys

Trunk Remote Number	Trunk destination number for outgoing call Caller ID (ANI) for incoming call IP address of far-end system for both incoming and outgoing call	UCHAR (41)	
Trunk Remote Extension Number	Far-end extension number for an IP call	UCHAR (21)	
Trunk DNIS Number	DNIS number user dialed	UCHAR (41)	
Trunk Type	Type of trunk	UBYTE	0x01 – ANALOG 0x02 – T1 0x04 – IP 0x08 – PRI
Trunk Route	Out call route table name an outgoing call has taken	UCHAR (31)	
Trunk Overflow Route 1	Overflow out call route	UCHAR (31)	
Trunk Overflow Route 2	Overflow out call route	UCHAR (31)	
Trunk Tenant	Trunk’s tenant name	UCHAR (31)	
Account Code Dialed by Internal Caller	Account code of outgoing call	UCHAR (11)	
Auto Attendant Table Name	Auto Attendant table name	UCHAR (33)	
Trunk PAD	Physical Address of the trk device.	UCHAR (5)	“0102”
First Answering Party			
Party1Reserved1	Reserved	UCHAR (16)	
Party1Number	Extension Number	UCHAR (21)	

CDR Data Keys

Party1Reserved2	Reserved	UCHAR (21)	
Party1Type	Identifies type of extension	UBYTE	0x01 – Analog 0x02 – IP 0x04 – Wireless
Party1Pad	Physical address of the extension	UCHAR (5)	“0004”
Party1WGNumber	Workgroup number the caller reached	UCHAR (21)	
Party1WGQueuing Time	Timestamp as to when call entered a queue for this workgroup number	ULONG	
Party1WGAnswerTime	Timestamp as to when an agent answered the call	ULONG	
Party1WGEndServiceTime	Timestamp as to when a call has been disconnected from an incoming or outgoing trunk.	ULONG	
Party1WGWaitDuration	Duration (in seconds) of a call in the queuing state	ULONG	
Party1WGHandleDuration	Duration (in seconds) of the time a call has been connected to an agent	ULONG	
Party1Tenant	Extension’s tenant name	UCHAR (31)	
Party1LogoffReasonCode	Logoff reason code if this is an agent logoff record. See ExitState	UBYTE	
Party1Reserve3	Reserved	UBYTE	
Party1Reserve4	Reserved	UBYTE	

CDR Data Keys

Second Answering Party			
Party2Reserve1	Reserved	UCHAR (16)	
Party2Number	Extension number	UCHAR (21)	
Party2Reserve2	Reserved	UCHAR (21)	
Party2Type	Identifies type of extension	UBYTE	0x01 – Analog 0x02 – IP 0x04 – Wireless
Party2Pad	Physical address of the extension	UCHAR (5)	
Party2WGNumber	Workgroup number that the call being transferred	UCHAR (21)	
Party2WGQueuing Time	Timestamp when call entered a queue for this workgroup number	ULONG	
Party2WGAnswerTime	Timestamp as to when an agent answered the call	ULONG	
Party2WGEndServiceTime	Timestamp as to when a call has been disconnected from an incoming or outgoing trunk.	ULONG	
Party2WGWaitDuration	Duration (in seconds) of a call in queue	ULONG	
Party2WGHandleDuration	Duration (in seconds) a call has been connected to an agent	ULONG	
Party2Tenant	Extension's tenant name	UCHAR (31)	
Party2Reserve3	Reserved	UBYTE	
Party2Reserve4	Reserved	UBYTE	

CDR Data Keys

Other Time Stamps			
Start Time	TimeStamp when the trunk was seized by an incoming or outgoing call	ULONG	
End Time (of call; start time of wrap up)	TimeStamp when the trunk was released by an incoming or outgoing call, and If an agent has wrap up setting, it is the starting time of wrap up state for an incoming call	ULONG	
WG Wrap Up Time	TimeStamp when an agent extension within a workgroup goes out of wrap up state	ULONG	
VM Start Time	TimeStamp indicating when a caller left a voice message as a result of being transferred out of queue or by an extension to VM.	ULONG	
Attendant Duration	Duration (in seconds) of a call is connected to Auto Attendant	ULONG	
WG Wrap Up Duration	Duration (in seconds) of wrap-up phase of an agent handling a call	ULONG	
V Msg Duration	Duration (in seconds) of the message left by the caller. This shows how long voice messaging contributed to call length and trunk billing.	ULONG	
Call Duration	Duration (in seconds) of the total call from StartTime to EndTime	ULONG	

CDR Data Keys

Exit State	Under what condition was the call terminated	ULONG	0x0001 – All 0x0002 – Auto Atdn 0x0004 – RNA 0x0008 – WG Queue 0x0010 – VM No Rec.) 0x0020 – VM Record 0x0040 – Connect 0x0080 – Logon 0x0100 – Logoff 0x0200 – All Trunks Busy 0x0400 – No Session 0x0800 – Other
URL	URL when 'call' is initiated by a web user clicking the make-call button	UCHAR (129)	
User Data	Data input provided by the caller in response to an auto-Attendant prompt, or data supplied by an agent desktop application over AltiLink Plus.	UCHAR (129)	Agent data &var1=value1&var2=value2...(not comma delimited)

SMDR Reporting Format

Besides the CDR format, AltiServ reports telephone information in the **Station Message Detail Reporting (SMDR) format** to an application through the COM port. The SMDR format and sample entries for the specification are described below.

In AltiWare's reports, internal extension-to-extension calls are not logged; neither are outbound calls of less than 15 seconds duration.

Trunk Calls In Format:

09/01 07:04P 00:00:25 0200 5102526354 109 12345678 :

(Start, Length)	Field	Format	Notes
(0, 1)	space		
(1, 5)	date	mm/dd	
(6, 1)	space		
(7, 6)	start time	hh:mmP	P = pm, A = am
(13, 1)	space		
(14, 8)	duration	hh:mm:ss	
(22, 1)	space		
(23, 4)	trunk PAD number	xxyy	x = board numb. y = channel numb.
(27, 34)	calling party		
(61, 4)	called party		
(65, 7)	space		
(72, 8)	account code		1 to 8 digits
(80, 1)	delimiter	line feed	

Extension Calls Out Format:

09/01 08:12P 00:00:33 109 2526352 0411 12345678:

(Start, Length)	Field	Format	Notes
(0, 1)	space		
(1, 5)	date	mm/dd	
(6, 1)	space		
(7, 6)	start time	hh:mmP	P = pm, A = am
(13, 1)	space		
(14, 8)	duration	hh:mm:ss	
(22, 1)	space		
(23, 4)	calling party		
(27, 6)	space		
(33, 26)	called number		
(59, 2)	space		
(61, 4)	trunk PAD number	xyyy	x = board numb. y = channel numb.
(72, 8)	account code		1 to 8 digits
(80, 1)	delimiter	line feed	

From Extension A

Extension A: 100

Extension B: 111

Outside #: 3210002:

Calls Initiated by Extension A (Column A)					
1	Dial out	11/18 05:53P 00:00:28 100	3210002	0100	
2	Ext B fwd to Trk Y	11/18 05:55P 00:00:21 100	3210002	0001	
3	Ext B ONA to Trk Y	11/18 05:57P 00:00:17 100	3210002	0100	
4	VM make call to Trk Y	1/18 05:58P 00:00:15 100	3210002	0001	
5	### to Ext B (WG B, Virtual B) and VM make call	11/18 05:59P 00:00:23 111	3210002	0100	
6	Ext B S-transfer to Trk Y* (see examples)	11/18 06:00P 00:00:22 111	3210002	0001	
7	Ext B B-transfer to Trk Y* (see examples)	11/18 06:01P 00:00:18 100 11/18 06:01P 00:00:05 0001100	3210002	0100 100	
8	To Trk Y then transfer to Ext B	11/18 06:02P 00:00:27 100	3210002	0001	
9	Outcall	Log time only, no lines logged			
10	Zoomerang	11/18 06:06P 00:00:27 100	3210002	0100	
11	System Speed Dial	11/18 06:07P 00:00:18 100	3210002	0001	
12	Ext Speed Dial	11/18 06:08P 00:00:25 100	3210002	0100	
13	#35 privilege overwrite to Ext B (WG B, virtual B)	11/18 06:09P 00:00:31 100	3210002	0001	
14	B is WG B	N/A			
15	Ext B transfer to WG C	N/A			
16	Conference with Trunk	11/18 06:10P 00:00:25 100	3210002	0100	

From Trunk B

Extension B: 100

Trunk X: 3210001

Trunk Y: 3210002:

Calls Initiated by Trunk X to Extension B (Column B)					
1	Dial in	11/18 06:11P 00:00:07 0100	3210001	100	
2	Ext B fwd to Trk Y	11/18 06:13P 00:00:35 0100 11/18 06:13P 00:00:25 TRK0	3210001 3210002	100 0001	
3	Ext B ONA to Trk Y	11/18 06:15P 00:00:12 0100 11/18 06:16P 00:00:00 0100	3210001 3210001	100	
4	VM make call to Trk Y	11/18 06:18P 00:00:29 100 11/18 06:18P 00:00:58 0100	3210001 3210001	100 100	
5	### to Ext B (WG B, Virtual B) and VM make call	N/A			
6	Ext B S-transfer to Trk Y* (see examples)	11/18 06:19P 00:00:21 0100 11/18 06:20P 00:00:41 0100 11/18 06:20P 00:00:23 3210	3210001 3210001 3210002	100 TRK0 0001	
7	Ext B B-transfer to Trk Y* (see examples)	11/18 06:22P 00:00:24 3210 11/18 06:22P 00:00:40 0100	3210002 3210001	0001 3210	
8	To Trk Y then transfer to Ext B	N/A			
9	Outcall	Log time only, no lines logged			
10	Zoomerang	11/18 06:24P 00:00:38 100 11/18 06:24P 00:01:08 0001	3210002 3210001	0100 100	
11	System Speed Dial	N/A			
12	Ext Speed Dial	N/A			
13	#35 privilege overwrite to Ext B (WG B, virtual B)	N/A			
14	B is WG B	11/18 06:25P 00:00:09 0100	3210001	100	
15	Ext B transfer to WG C	1/18 06:26P 00:00:17 100 11/18 06:26P 00:00:24 0100	100 3210001	0100 111	
16	Conference with Trunk	11/18 06:27P 00:00:15 0001	3210001	100	

APPENDIX B

Registration & Technical Support

This appendix describes AltiServ technical support policy and procedures. It also covers repair and replacement procedures that the user should follow when returning or replacing defective equipment.

At the end of this appendix, you'll find the following forms to aid you in getting support and in registering the product:

- Request for RMA Number
- Request for Technical Support
- Product Registration

Registration

Register your product to receive software updates and new product announcements.

To register your AltiGen product, fill out the "Product Registration Form" on page 203 and return the form to AltiGen Communications, Inc. by fax to 510-252-9738.

Technical Support

Before contacting Technical Support, always have the following information on hand:

- Your name
- Company name
- Product serial number
- AltiWare version number
- Number of boards in the system
- Server brand and model
- The telephone number where you can be reached
- A brief description of the problem and the procedure to reproduce the problem.

Having this information ready will allow us to better assist you.

Eligibility

AltiGen provides technical support to Authorized AltiGen Dealers and Distributors only.

End User customers, please contact your Authorized AltiGen Dealer for technical support. **Direct AltiGen support is available to End User customers through E-mail only, when addressing problems that cannot be resolved by referring to the instruction manuals or by your Authorized AltiGen Dealer.**

Technical Support Hours

During AltiGen's business hours (7:00 A.M. to 5:30 P.M., Pacific Standard Time, Monday through Friday except holidays), your call will be returned in the order it was received (on a first come, first serve basis), within two (2) hours under normal circumstances. Outside AltiGen business hours, only emergency calls will be returned within eight (8) hours. All other calls are returned on the next business day.

How To Reach Altigen Technical Support

Contact Altigen technical support by any of the following methods:

- **CALL 510-252-9712 and follow the prompts. This is available to Authorized Altigen Dealers and Distributors only.** Your call will be answered by one of Altigen's Technical Support Representatives or routed to the Technical Support Message Center if no one is available to answer your call. Your call will be returned promptly, within two (2) hours under normal circumstances. Please see "Tech Support on Altigen's Web site."
- **SEND E-MAIL TO: support@altigen.com.** Messages are checked on a daily basis.
- **SEND A FAX TO 510-252-9738, ATTENTION: Technical Support.** Use the Technical Support Request Fax Form (see "Request for Technical Support" on page 202).

Tech Support on Altigen's Web Site

Altigen's web site is located at <http://www.altigen.com>. It is a great resource that offers the latest information and is available 24 hours a day.

Unresolved Problems Escalation Procedure

The following escalation steps should be followed to report unresolved problems. Please contact the following parties in the order listed:

1. Local Authorized Dealers Service Department
2. Altigen's Technical Support Manager at support@altigen.com.
3. For remaining unresolved problems or complaints, send an email to Altigen's CEO at ceo@altigen.com, or call 510-252-9712 x 120.

Repair and Replacement

This policy addresses the procedure for return of any materials to Altigen from Authorized Altigen Dealers only. It covers materials returned for any and all reasons.

All materials being returned to AltiGen must have an associated RMA number. RMA numbers are issued by AltiGen Customer Service and can be obtained by calling 1-888-ALTIGEN (258-4436) or faxing an RMA form (See Appendix D) to 510-252-9738, attention to Customer Service. AltiGen reserves the right to refuse return of any material that does not have an RMA number. The RMA number should be clearly marked on the outside of the box in which the material is being returned. For example:

Attn.: RMA # 123
AltiGen Communications, Inc.
47427 Fremont Blvd.
Fremont, CA 94538

Upon authorization of return, AltiGen will decide whether the malfunctioning product will be repaired or replaced.

Replacements

If the defective product is to be used until replaced, AltiGen will ship the replacement product with an invoice. If the defective product is received by AltiGen within 30 days of shipment by AltiGen, the amount of the returned product will be credited to the account.

RMA Fax Form

Request For RMA Number

DATE: _____

TO: AltiGen Communications Customer Support

FAX: 510-252-9738

FROM: _____

COMPANY: _____

PHONE NUMBER: _____

FAX NUMBER: _____

PRODUCT SERIAL NUMBER: _____

(Please use one form per requested unit)

DESCRIPTION OF PROBLEM AND REASON FOR RETURN

FOR ALTIGEN USE ONLY	
RMA # ISSUED:	DATE:
AUTHORIZED SIGNATURE:	

B. Technical Support

Technical Support Fax Form

Request for Technical Support

DATE: _____

TO: AltiGen Technical Support

FAX: 510-252-9738

FROM: _____

COMPANY: _____

PHONE NUMBER: _____

PRODUCT SERIAL NUMBER: _____

Included is \$200 fee per incident. <input type="checkbox"/> VISA <input type="checkbox"/> MasterCard
Name of Cardholder: _____
Card #: _____ Exp. _____
Signature: _____ Date: _____

DESCRIPTION OF PROBLEM

FOR ALTIGEN USE ONLY	
RECEIVED BY:	RECEIVED:
	RESOLVED:

Registration Fax Form

Product Registration Form

DATE: _____

TO: AltiGen Customer Service

FAX: 510-252-9738

NAME: _____

COMPANY: _____

ADDRESS: _____

PHONE NUMBER: _____

COMPANY TYPE/INDUSTRY: _____

ALTIWARE (OE) PRODUCT SERIAL #: _____

DATE OF PURCHASE: _____

PURCHASED FROM: _____

B. Technical Support

FOR ALTIGEN USE ONLY	
RECEIVED BY:	DATE:

Glossary

A

AC - Alternating Current.

ADPCM - Adaptive Differential Pulse Code Modulation. A sophisticated compression algorithm for digitizing audio that stores the differences between successive samples rather than the absolute value of each sample. This method of digitization also reduces storage requirements from 64K bits/second to as low as 24K bits/second.

AltiConsole - a personal computer-based Attendant console connected to the AltiServ over the network that emulates a standard hardware-based Attendant console through software and has the flexibility of adding new features through software without changing the hardware.

AltiSpan - link from the AltiServ base to the system extension that allows for passing Caller ID.

AltiWare - the system software that is used by AltiGen's Quantum products.

AltiServ - an advanced, highly integrated business and computer telephony platform that consists of a Quantum card and AltiWare software working in a PC/Server running under Windows NT.

analog - a method of telephony transmission in which the information from the source (for example, speech in a human conversation) is converted into an electrical signal that varies continuously over a range of amplitude values.

API - Applications Programming Interface. A set of routines that an application program uses to request and carry out lower-level services performed by an operating system.

ASCII - American Standard Code for Information Interchange.

B

blocked calls - calls that cannot be immediately connected to the number dialed. A call is defined as blocked when access paths to the called station are unavailable. This is not applicable to AltiServ.

BPS - Bits Per Second. The number of bits transmitted per second.

C

card - printed circuit assembly.

CCIS - Common Channel Interoffice Signaling. A method of carrying telephone signalling information along a path different to the path used to carry voice.

Central Office (CO) - a switching system that connects lines to lines, lines to trunks, and trunks to trunks. These systems are operated by local telephone companies. The term sometimes refers to a telephone company building in which a switching system is located and sometimes includes other equipment (such as transmission system terminals).

Centrex (CTX) - a business telephone service offered by a local telephone company from a local central office. Centrex is a single line telephone service, delivered to individual desks or telephones with added features such as intercom, call forwarding, call transfer, toll restriction, out call routing, and hold on single line telephones. These features are provided by the local phone company's central office. Centrex is a leased business service serving as an option to owning a PBX or key telephone system.

channel - the smallest subdivision of a circuit capable of carrying communication service.

circuit - the physical connection of channels, conductors and equipment between two given points. Includes both transmitting and receiving capabilities.

client - a process whose threads call services provided by either a local or remote server process. In Windows NT, communication between a client and server occurs through the local procedure call (LPC) or remote procedure call (RPC) facilities.

CO - Central Office.

conference call - a call in which two or more persons speak together. Stations may be internal or external.

configure - to determine and assign the equipment cabinet or chassis contents and location of each card, as well as software parameters.

configuration databases - those databases which represent unique customer specifications relating to system and station features.

console phone - emulates a standard Attendant Console through software. It provides all the call handling features provided by a standard hardware-based console and has the flexibility of adding new features through software without changing the hardware (i.e. AltiConsole).

conversation path - the route from originating port to terminating port of a two-way communication. A conversation requires two such port-to-port paths. Transmit and receive.

CTI - Computer Telephone Integration. Or in the case of an AltiServ, Computer Telephony Internet.

D

database - a collection of related data which can be immediately accessed and operated upon by a data processing system for a specific purpose.

DC - direct current. The flow of free electrons in one direction with an electrical conductor, such as wire.

Default - the preset value from the factory or the software writer that the program or equipment comes with. In the absence of any other command from the user - it will work with default values.

DID - Direct Inward Dialing

digit - a single whole number between 0 and 9.

disk duplexing - the procedure of copying data onto two hard drives, each using its *own* hard drive controller. If any component (hard drive controller card, cable, boot hard drive) on the first channel fails, then the second channel will boot and operate normally.

disk mirroring - the procedure of duplicating data written to two identical hard drives, where both hard drives are connected to *one* disk controller card. If one hard drive fails, then the data can be retrieved from the second hard drive.

DNIS (Dialed Number Identification Service) - is a telephone service that identifies for the receiver of a call the number that the caller dialed. It's a common feature of 800 and 900 lines. If you have multiple 800 or 900 numbers to the same destination, DNIS tells which number was called. DNIS works by passing the touch tone digits (DTMF or MF digits) to the destination where a special facility can read and display them or make them available for call center programming.

Do Not Disturb (DND) - when this feature is selected, all incoming calls to the user's extension are denied. If the station has system forwarding instructions, the calls will be automatically redirected to another extension, Attendant, or operator.

DTMF - Dual Tone Multi Frequency are the low and high frequency tones that comprise touch tone signals.

drop-down menu - a list of options that display below a menu option.

DSP - Digital Signal Processor. A microprocessor with an architecture that is particularly optimized to perform mathematical algorithms that manipulate digital signals.

Dual Tone Multi Frequency - see: DTMF.

E

en-bloc dialing - dialing scheme that allows the terminal to include all the digits required to complete a call.

environmental subsystem - A protected subsystem (server) that provides an application programming interface (API) and environment - such as Win32, MS-DOS, POSIX, or OS/2 - on Windows NT.

escalation - to expand step-by-step from a limited or local issue to higher level.

Ethernet - a communications protocol used in local area networks to connect computers, terminals, printers, etc., typically located within the same building. Ethernet operates over twisted wire and over coaxial cable at speeds up to 10 megabits per second. Ethernet is the a physical link and data link protocol reflecting the two lowest layers of the DNA/OSI model.

Exchange Server Integration - provides unified messaging by synchronizing the mailboxes in an AltiServ and Exchange Server, so that a user can access messages in either server. If a message is added to one server, it is automatically sent to the other server, similarly, if a message is deleted in one server it is automatically deleted from the other server.

extension number - an arbitrary number of two to five digits that matches a station to a particular user.

F

FCC - Federal Communications Commission.

feature - a special or specific capability.

field - a unit of data in a record or message and designated for a particular purpose.

file - an organized collection of related information treated as a unit.

file server -an integral part of a multi-user computer network such as a local area network (LAN). It typically is a combination of a computer, data management software, and large capacity hard disk drive. A file server directs all movement of files and data on a multi-user communications network and gives each user on the network access to files stored on the file server. It allows the user to store information, leave electronic mail messages for other users on the system and access application software on the file server such as word processors or spreadsheets.

FLASH - a sudden brief signal. Activated by depressing the flash key on the telephone pad if one has been configured, or by a quick press and release of the receiver button (switch hook).

FSK - Frequency Shift Keying. A modulation technique for data transmission.

function - a specific purpose of an entity, or its characteristic action. In computer programming, a synonym for procedure.

FXS - Foreign Exchange Subscriber. An analog interface for direct connection of a telephone set to a digital multiplexer.

G

GMT - Greenwich Mean Time. Mean solar time of the meridian at Greenwich, England, used as the basis for standard time throughout the world.

ground start - a type of start signaling on a subscriber's trunks in which the ring (minus side) is grounded (ground start) to get dial tone.

GUI - Graphical User Interface.

H

hard disk - a sealed mass storage unit used for storing large amounts of data.

hardware - a term used to describe the physical components of a machine, particularly computer equipment, and devices containing logic elements used in data processing or communication equipment.

Hertz - cycles per second. Abbreviated as Hz.

http or HTTP - Hypertext Transfer Protocol. The Internet protocol used to manage communications between Web clients (browsers) and servers.

Hunt group - see Workgroups.

Hz - see definition for Hertz.

I

Impedance - occurs when power or signal is transferred from one circuit to another. This is known as the resistance of electrical current to alternating current and it is measured in OHMs.

IMAP4 - Internet Message Access Protocol - Version 4.

interface - the interconnections between two separate systems or pieces of equipment.

ISA - Industry Standard Architecture.

ISO - International Standards Organization.

ISP - Internet Service Provider.

J

jack - the mate for a plug. Used to connect two pieces of equipment together.

K

keyboard - system interface for communication. A group of numeric keys, alphabetic keys, or function keys used for entering information into a terminal and into the system. Usually patterned after the QWERTY keyboard layout. This term is derived from the sequence of the first six keys in the first row of alphabetic keys.

L

Language Server - allows the ability to record and play phrases in different foreign languages without requiring any software changes.

Local address - an address used in a peripheral node or station in place of a network address and transformed to or from a network address for delivery purposes.

Logoff - the procedure by which a user disconnects from a program or session.

Logon - the procedure by which a user begins a program or terminal session and gains access to the Altiserv or Quantum system.

Loop Start - a type of start signaling. A closed path or circuit over which a signal can circulate. When used on a telephone line, it tests the line, the circuit is closed and reflects received signals to the sender.

M

maintenance - any activity intended to retain a functional unit in, or to restore it to, a state in which it can perform its required function. Maintenance includes keeping a functional unit in a specified state by performing activities such as test, measurements, replacements, adjustments, and repairs.

MAPI (Messaging API) - a Component Object Model (COM)-based API that supports message-related components such as message stores, address book, and message transport.

MDFM - Multiple Data Message Format

menu - a display of a list of available machine functions for selection by the user.

MHz - Megahertz.

MIME - Multipurpose Internet Mail Extension. A technique designed to bundle attachments within individual e-mail files. Microsoft e-mail protocol software format.

module - a compact assembly that is a component of a larger unit in electronics. A detachable section, compartment or unit with a specific purpose or function.

mounting panel - the panel used to mount the connection panels to a wall.

ms - millisecond.

MVIP - Multi-Vendor Integration Protocol.

N

network - A configuration of data processing and/or telecommunication devices and software connected for information exchange.

network address - An identifier for a node, station, or unit of equipment in a network.

network domain - a set of workstations and servers that share a security account manager database and can be administered as a group. A user with an account in a particular network domain can log onto and access his or her account from any system in the domain.

network server - networking software that responds to I/O or computes requests from a client machine. Windows NT network servers can be implemented either as server processes or as drivers.

numbering plan - the method of assigning NNX codes to provide a unique telephone address for each subscriber, special line, or trunk destination. In AltWare the method of assigning extension numbers and trunk designations to local premises.

North American Numbering Plan - also known as **NPA**. Refers to the assignment and management of the area code system for North America. Administered by Bellcore, presently being expanded due to high demand for new numbers and services, requiring new area codes. Numbering sequence being changed from traditional N 1/0 X area code (center digit a 1 or a 0) to NNX, where N = numbers 1 to 9 and X = any number.

O

offhook - refers to a telephone set when the receiver is not resting in the base. This usually initiates a dial tone from the receiver.

One Number Access - a feature of AltWare that allows users to create a list of phone numbers that the system can use to track users and connect them with an incoming call if they are not at their extension desk.

onhook - the term used to describe a telephone in the idle state or with the receiver still resting in the base.

option - a selection from several possibilities.

OSI - Open Systems Interconnection. A software model defined by the International Standards Organization that standardizes levels of service and types of interaction for networked computers. The OSI reference model defines seven layers of computer communication and what each layer is responsible for.

overlap dialing - dialing scheme that allows the terminal to omit part of the digits required to complete a call, while the remaining digits are buffered.

P

PABX - Private Automatic Branch Exchange. A private branch exchange (PBX) that provides access to and from the public telephone network without operator intervention.

PBX - Private Branch Exchange. A switching system providing telephone communications between internal stations and external networks.

PCM - Pulse Code Modulation.

physical extension - is associated with a physical port and device. An extension is created, by default, as a physical extension (as opposed to a virtual or workgroup extension) unless there are no more physical ports available.

pilot number - the extension number that identifies a workgroup or distribution group.

POP3 - Post Office Protocol version 3. Protocol for retrieving e-mail by remote client.

port - a communication channel through which a client process communicates with a protected subsystem.

POSIX - an acronym defined as "a portable operating system interface based on UNIX", refers to a collection of international standards for UNIX-style operating system interfaces. In the mid-to-late 1980's, government agencies began specifying POSIX as a procurement standard for government computing contracts.

Power Failure Backup - If your AC power fails, your telephone system can still operate by switching to a backup battery power supply, often called an (Uninterrupted Power Supply) UPS.

Power Failure Transfer - A telephone system feature. When the commercial AC power fails and there is no backup power source such as a battery or a generator, this feature switches some of the trunks connected to the telephone system to several single line phones that do not need external power and can draw their power from the telephone lines.

Power Supply - the part of the telephone system or a computer that converts the normal 120 or 240 volts AC power to AC and DC at the various voltages and frequencies as needed by various components and circuits of the system.

Private Network - A series of offices connected together by leased and non-leased telephone lines, with switching facilities and transmission equipment owned and operated by the user or by the carrier and leased to the user.

process - a logical division of labor in an operating system. In Windows NT, it comprises a virtual address space, an executable program, one or more threads of execution, some portion of the user's resource quotas, and the systems resources that the operating system has allocated to the process threads. It is implemented as an object.

Protected subsystems - integral subsystems that perform important operating system functions, such as security subsystems among others.

protocol - A set of rules and conventions by which two computers pass messages across a network medium. Networking software generally implements multiple levels of protocols layered one on top of the other.

Q

Quantum - an ISA standard computer telephony board of AltiGen's AltiServ product line. It is an all-in-one platform designed with open software standards to facilitate use of enhanced applications.

queue - a collection of calls waiting to be served. Queued calls in AltiWare are handled on a first-in, first-out basis.

R

RAM - Random Access Memory. The primary memory in a computer that can be written over with new information. The contents of RAM memory are lost when the electrical power to the PC is switched off.

RAS - Remote Access Service.

retry - to resend data a prescribed number of times or until the data is finally delivered.

RJ-11 - The "common" telephone jack. Usually wired with four wires, the red and green signify the tip and ring circuits.

RJ-45 - The "common" telephone jack. Usually wired with eight wires, the red and green signify the tip and ring circuits.

ROM - Read Only Memory.

root directory - in an IBM or compatible PC, the directory that is created when the user formats a diskette which may contain subdirectories. Synonymous with system directory.

S

save - to retain data by placing it in memory or by copying it from one storage device to another.

SDMF - Single Data Message Format

server - a process with one or more threads that accepts requests from client processes. It implements a set of services that it makes available to clients running either on the same computer or possibly on various computers in a distributed network.

slot - a numbered division of a computer in which a printed circuit card is located.

SMTP - Simple Mail Transfer Protocol. Protocol for sending Internet e-mail.

station - any location wired to accept a telephone, sometimes referred to as an extension. Also another name for a place where a call can be answered. It may be a telephone, an Attendant console, a PC or any other device.

subscriber - a user or connection. The line from a telephone to a switch.

System Speed Dialing - this feature allows the user to access a system wide directory of commonly called numbers which have been "condensed" into a two- or three-digit code on the telephone dial pad.

T

TAPI - Telephone Application Programming Interface. A call-processing software that allows developers to implement telephony applications that control switches from different vendors.

TCP/IP - Transfer Control Protocol/Internet Protocol. A full set of protocols used on the Internet.

TDM - Time Division Multiplexing.

telecommunications - any transmission, emission, or reception of signals, writing, images, or other information by wire, radio, or any other electromagnetic system.

Tip and Ring - the traditional telephony indication of plus and minus in electrical circuits. (See Ground start and Loop start)

toll call - a call to a point outside of the local service calling area. Identified by greater distance and increased rates or by 1 plus dialing requirements.

toll restriction - a feature that allows the user to restrict certain station users from placing toll calls, or other non-business related locations.

traffic - a measure of the demand or use of facilities, circuits, or trunks. Measured by converting seconds and minutes into CCSs (Centum Call Seconds) and Erlangs (hours of use per hour).

transfer - this feature redirects a call to another extension, AltMail, or operator.

trunk - one of the cables which contain numerous shared telephone circuits used to interconnect telephone switching centers.

trunk access code - the prefix digit (i.e. 9) dialed to access a trunk line and dial an external phone number.

trunk group - trunks of a common type, given an identity to distinguish between different types of connecting facilities.

U

UCA - Universal Communication Architecture.

UPS - Uninterrupted Power Supply. A backup battery module attached to a computer that allows memory contents to remain in tact long enough for the operating system to perform an orderly system shutdown if a power outage occurs.

USB - Universal Serial Bus.

user(s) - identifies the person or persons accessing the features and functions of the AltWare product.

V

virtual extension - an extension not associated with a physical port that allows for guest access to AltMail features and telephone sharing environments. Users of a virtual extension have to log in before accessing the system features assigned to it.

W

WATS - Wide Area Telephone Service. A leased service for direct long distance dialing.

Wink - a single supervisory pulse.

Windows NT (New Technology) - the high-end Windows operating system in a family of Windows operating systems.

workgroup - telephones arranged in groups within a particular organizational function (for example, marketing, sales, service, etc.). Each workgroup is assigned a pilot number. When the pilot number is dialed, the system scans the list of extensions comprising the workgroup and connects the call to the first available idle extension number. If no extensions are available, the call is placed in that workgroup's queue.

Glossary

workgroup pilot number - an extension designated to a workgroup that is not associated with a physical port and may consist of up to 64 members. When the pilot number is dialed, the call is distributed to the workgroup members.

World Wide Web - A network of Internet servers that can provide browser information in the form of “web pages” to web clients such as Netscape Navigator.

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