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## Voice/Unified Messaging System

### General Description



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## Introduction

Ever-increasing customer service expectations and an exploding number of daily communications characterize today's business environments. Many companies are looking to Unified Messaging to meet such growing demands. Kinesis, with "True Unified Messaging," offers an ideal solution for addressing the communications requirements of your business, today and tomorrow.

## Product Overview

Kinesis is a Microsoft® Exchange®-based communications server that delivers voice mail, unified messaging, and fax functionality. Kinesis gives users the ability to access and manage their voice, fax, and e-mail from the desktop PC, through a touch-tone telephone, or over the Internet.

Considerable effort has been invested in designing the Kinesis server architecture, with all the benefits of Microsoft Windows NT®/2000 in mind. Through superior Windows NT/2000 performance, extensive use of critical BackOffice® components, an intuitive Web browser-style interface, and the use of streaming media, the Kinesis architecture minimizes installation, administration, and maintenance costs—making life easier for the people who install and support your system while lowering your organization's total cost of ownership.

Kinesis is for companies that are looking for Windows NT/2000-based unified messaging system that will fit into their Exchange environment. At Active Voice, we understand that our customers do not want one more disparate groupware system to manage. Because Kinesis is built using Windows NT/ 2000 and Exchange, it leverages what system administrators already know about their networks.

The modular design of Kinesis allows organizations to choose the components that best fit their needs and create their own customized communication solution. At the core of Kinesis is its powerful voice messaging module, which integrates advanced voice mail, automated attendant, and audiotext in a complete solution.

The Kinesis server's Unified Messaging module takes you one step further by providing access and management of your voice, fax, and e-mail messages from your desktop PC or touch-tone telephone. Kinesis gives you the ability to exchange your messages internally and across the Internet, and its seamless integration to the Microsoft Outlook® client supports such critical features as remote access, message foldering, and rules-based message management. In addition, the Kinesis Text-To-Speech module gives you the ability to listen to your e-mails over a touch-tone telephone and allows the user to forward and reply to those e-mails with a voice annotation. Kinesis supports all the top fax servers, which allows you to easily send and receive faxes from your desktop PC.

Kinesis integrates with a wide variety of telephone systems and is available in 4- to 72-port configurations on a single Kinesis server, or up to 360 ports on a cluster of up to five servers. You can order Kinesis as a complete system solution or as a combination of Kinesis software, voice boards and third-party software.

## Architectural Overview

Kinesis can be configured in several ways—from a stand-alone voice-messaging server to a unified messaging server connected to an Exchange network. Up to five Kinesis servers can be clustered to provide a high-capacity redundant system that can continue to operate even if a particular server fails. The Kinesis system achieves an excellent balance between tight integration with Exchange and the rapid performance of a SQL database. All configurations of Kinesis, including the stand-alone voice-messaging server, use Exchange for address directory information and for message storage. Kinesis uses LDAP (Lightweight Directory Access Protocol) to access address information from the Exchange directory; this information is then cached in an SQL-server database to provide rapid access to directory information. Additionally, settings for subscribers, call handlers, interview handlers, location objects, and other Kinesis entities are all stored in the SQL-server database. Kinesis uses MAPI (Mail Application Programming Interface) to access voice and fax messages in the Exchange message store. By using Exchange, Kinesis has access to the same address directory and message store used by e-mail clients. By using SQL Server, Kinesis provides excellent performance. By using LDAP, Kinesis keeps Exchange and SQL data synchronized, without requiring any additional administrative effort.

Kinesis integrates with Exchange 5.5, Exchange 2000, or with an Exchange Organization combining both Exchange 5.5 and Exchange 2000 systems.

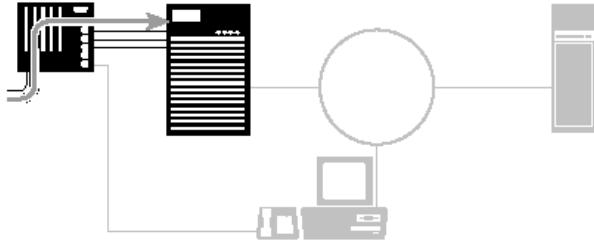
### ***Message Routing and Streaming***

Kinesis uses the information store in Microsoft Exchange for voice message storage. Voice messages are stored with e-mail and fax messages, and are handled by Exchange in much the same way. This means voice messages are transferred over the network between Exchange servers and to desktop clients. Kinesis uses the Exchange Message Transfer Agent (MTA) to route messages between servers and uses a proprietary streaming process to reduce network traffic when messages are played to subscribers.

- **Routing** - When a caller leaves a voice message on the Kinesis server, the MTA sends it from the Kinesis server to the recipient's Exchange home server. Typically, in an Exchange network, Kinesis subscribers have a home server other than the Kinesis server, so all voice messages are routed to other servers.
- **Streaming** - When a subscriber listens to a voice message, it is sent as a message stream from the subscriber's Exchange home server either to the subscriber's desktop—from which it can be played using ViewMail® for Microsoft Outlook—or to the Kinesis server—from which it can be played over the phone. Streaming sends the message as small parts, rather than as one large file, minimizing the effect on network performance. Streaming also allows a message to begin playing before the entire message has been received. The following steps show a typical message flow:

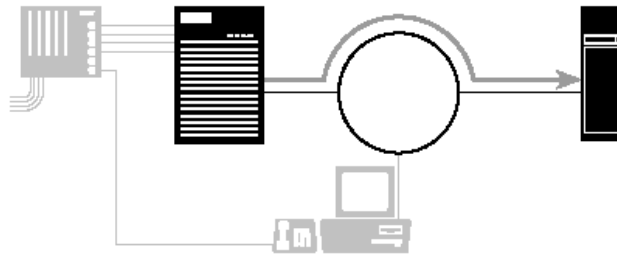
- **First, a message is stored on the Kinesis server...**

When a caller leaves a message, the message is temporarily stored on the Kinesis server. If the Kinesis server is configured as a stand-alone voice messaging server or as a stand-alone unified messaging server (that is, the Kinesis server is not networked to other Exchange servers), the message is delivered to the subscriber's mailbox (which is on the Kinesis server).



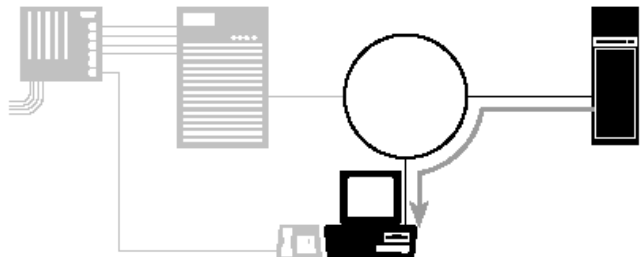
- **Then, the message is routed to the home server...**

If the recipient's mailbox is located on another Exchange server, when network traffic permits, the MTA routes the message from the Kinesis server to the recipient's Exchange home server.



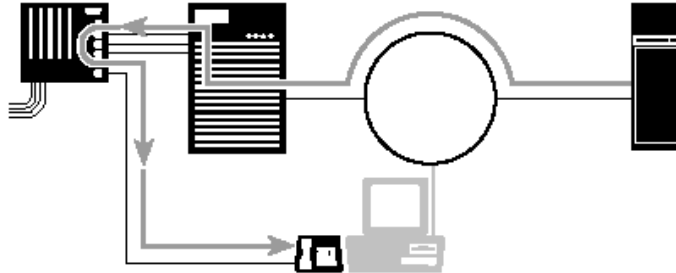
- **Then, the message is streamed to the desktop...**

When the recipient accesses the message from the desktop by using ViewMail for Microsoft Outlook, the message is streamed from the home server. Streaming occurs on demand, regardless of network traffic. If the recipient does not have ViewMail, the message cannot be streamed. Instead, it is sent to the desktop as an e-mail with a WAV attachment.



- **Or is streamed to the phone...**

When the recipient listens to the message over the telephone, the message is streamed from the Exchange home server to the Kinesis server so that it can be played over the telephone. This streaming also occurs on demand.



- **Undeliverable Messages**

Sometimes an unidentified caller leaves a message for a subscriber whose Exchange home server is unavailable (such as when the server is down or a network hub is broken). In the case of such undeliverable messages, the MTA holds the message and attempts delivery every ten minutes for 24 hours. This Exchange default setting can be changed. If after 24 hours the message is still undeliverable, it is delivered to the Unaddressed Messages public distribution list. Additionally, undeliverable messages sent by subscribers are returned to the sending subscriber's mailbox. If a subscriber's mailbox is full, the message immediately fails and is forwarded to the Unaddressed Messages distribution list. **NOTE:** *As long as the Kinesis server is up and running, it can continue to answer calls, play greetings, and record messages regardless of the network's, or Exchange servers' availability.*

### **Impact of Kinesis on an Exchange Network**

When Kinesis is added to an existing Exchange network, you should expect an increase in the number of messages, the average message size, and mailbox size. The impact of Kinesis on your network depends on many factors, such as your network topology. In general, if you have a fast connection and Exchange runs across that connection with no performance problems, then the additional message traffic should not adversely affect network performance.

### **Network Performance**

Network topology is an important factor in how a network handles message traffic. Many performance problems can be eliminated if multiple Exchange servers are connected on their own network segment by using a switch or a router. The Kinesis server's streaming process during message playback reduces the impact on network performance. When a subscriber listens to a message by using the telephone, the message is always streamed from the recipient's home server to the Kinesis server. However, when a recipient uses the computer to play messages, streaming occurs only when ViewMail has been installed. Without ViewMail, the message is sent as an e-mail with a WAV attachment. So, to take advantage of the Kinesis server's streaming (and thus reduce the impact on the network), you should make sure that all subscribers install ViewMail. There is no easy formula for figuring out the bandwidth used while streaming a voice message, because it depends on how a site is using the network and Kinesis. In general, a message listened to over the network streams at 64 KB per second by using the 8

KB/second Mu-law sound file format. This translates to about 0.06 percent of the bandwidth of a shared 100MB Ethernet network.

■ **Message and Mailbox Size**

With the addition of voice messages to the Exchange message store, you should expect an increase in the size of subscribers' mailboxes. By default, Kinesis uses the Mu-law format for its voice messages because it provides the best sound quality. Therefore, at 8 KB per second, a typical voice message of 60 seconds takes up about 480 KB of disk space. Although this is a sizeable increase over the size of a typical e-mail message, the impact on a subscriber's mailbox size depends on the number of messages received, and how many of these messages the subscriber saves. This depends on the culture and nature of your organization.

***Kinesis in a Multi-Site Exchange Network***

Exchange servers in the same site automatically route messages and replicate directories. For message routing and directory replication to occur among Exchange servers at different sites, messaging and directory replication connectors must be set up. If you are introducing Kinesis into a multi-site Exchange network in which messaging and directory replication connectors have been set up, the MTA will route voice messages automatically, according to the settings for e-mail. Additionally, Exchange directories containing subscriber addressing information also replicate. If you plan to install additional Kinesis servers in the future, the Kinesis servers can be installed in the same Exchange site or in different sites. Routing and replication between two stand-alone Kinesis servers can also be set up, as can connectors to other e-mail systems.

**Feature Descriptions**

***Intelligent Voice Mail***

Intelligent Voice Mail reflects the latest research on how users interact with the voice mail system. With its Voice Mail User Interface Forum (VMUIF) compliant interface, streamlined system conversation, and multiple menu options, the Kinesis server's Intelligent Voice Mail allows internal subscribers and outside callers to reach employees, leave messages, receive information, and handle voice mail faster and more efficiently than ever before.

The streamlined system conversation and advanced menu options mean that you can always choose the most suitable method of communication from moment to moment. For example, studies show that approximately 65 percent of all communications are one-way. For the most part, people want to convey information that does not require an immediate response. So, for example, Kinesis lets you leave a message in a co-worker's voice mailbox without unnecessarily ringing his or her telephone extension, or interrupting your own workflow. And if you are an experienced voice mail user, the intuitive, easy-to-use interface of Kinesis lets you make use of the system's powerful features while simultaneously minimizing your interaction with the system itself.

The automated attendant functions give Kinesis the ability to act as an electronic receptionist, answering and routing incoming calls automatically. Callers hear an opening greeting that gives them instructions, information, and options. They can then reach a subscriber directly by dialing the extension number at any time during the opening greeting. Callers who do not know the extension number of the party they are trying to reach can access a directory. By pressing digits corresponding to the letters of the person's name, Kinesis can identify the subscriber and

transfer the caller to the subscriber's extension—either immediately or after giving the caller the subscriber's extension number for future reference.

Kinesis can answer multiple calls at once, place callers on hold, inform them of their position in the holding queue, and periodically update this information. It can also screen calls, announce the name of the caller, and wait for confirmation from the called party before putting the call through. The automated attendant functions of Kinesis can handle a high volume of routine incoming calls faster and more efficiently than a live operator. Moreover, the operator is free to provide personalized customer service to those who need it most.

For companies that prefer a limited use of an automated attendant, Kinesis can be easily configured to answer only after-hours calls or calls that come in on specified telephone numbers. If desired, Kinesis can function as a secondary attendant, taking calls after a designated number of rings and providing backup for a receptionist during exceptionally busy hours. Kinesis allows your company to maintain its unique image while providing the flexibility you need to meet changing business demands.

- **Address at Beginning or End of Message** - for maximum flexibility and convenience, the subscriber can address a voice message either before or after recording their message.
- **Alpha Directory** – Kinesis can search the directory by a person's first or last name. A caller who doesn't know the extension number can enter up to the first 24 letters of a subscriber's name, and the system will route the call appropriately. The system administrator can configure Kinesis to either transfer the caller directly to the extension or tell the caller the extension number for future reference. If the extension is not answered or is busy, Kinesis automatically routes the caller to the subscriber's voice mailbox.
  - **List Subscribers by First or Last Name** - subscribers can be listed by both their first and last names in separate directories, so if a caller only knows one and not the other, they will still be able to locate the correct extension.
  - **Spell Name up to 24 Characters** - when searching for names listed in the directory using the telephone's touch-tone keypad, Kinesis lets you narrow your search by entering up to 24 letters.
- **Announcement of Number, Type, and Priority of Message Received** - Kinesis tells subscribers how many messages they have received, broken down by type (voice, fax, or e-mail) and priority (urgent, normal). Individual subscribers can use the Kinesis web assistant—the browser-based personal administration console to select which categories of messages they want Kinesis to announce. For example, a subscriber with three new voice messages and five new e-mail messages might hear, "You have three new voice messages, one urgent." In this case, the subscriber has instructed Kinesis to omit the announcement of e-mail messages, which can be handled later from the office. However, the subscriber knows the number and priority of voice messages so he or she can hear and respond to messages in the most expedient manner. (See also, "*Message Stack, Special Delivery Options, Urgent*")
- **Answer Call on First Ring** - Kinesis can be programmed to answer calls on the first ring so incoming calls are handled as quickly as possible. (See also, "*Primary or Secondary Answering*")
- **Bypass Personal Greeting** - the subscriber specifies whether an incoming caller can bypass a personal greeting and leave a voice message directly, or must first listen to the entire greeting.

- **Call Handlers** - are audiotext applications that constitute the heart of the voice mail system. When a person dials into the system—either as an outside caller or as a subscriber—the system presents the caller with a series of menu options in the form of recorded prompts. The caller may respond to the prompts by pressing touch-tones. With each caller response, Kinesis can perform a function, present further options at the next level of the call-handler hierarchy, or route the caller to another application. Each call handler presents a unique set of menu options, enabling the caller to navigate through and take advantage of many features and functions.

Call handlers can be as simple or complex as you wish, and can perform a variety of functions. Some organizations use call handlers to route callers to different departments, or to provide morning, afternoon, and evening greetings. Others use them to play detailed informational messages, provide the system conversation in another language, or route callers to another type of call handler, such as Interview Handler. (See also, “*Interview Handler*” and “*Schedules*”)

- **Call Holding** - after placing a call on hold, Kinesis provides excellent customer service by informing callers of their position in the holding queue. At specified intervals, the first caller on hold is offered the options of continuing to hold, dialing another extension, or stop holding and leave a voice mail message. Callers on hold that are second in queue and above can dial another extension at any time or press “1” to leave a message.
- **Call Screening** - Kinesis has the ability to screen calls. Callers are asked to state their name, which is then played back to subscribers through their telephone. After hearing the caller’s name, the subscriber can press “1” to accept the call or “2” to transfer the call to voice mail. This enables busy employees to receive crucial information without interrupting their workflow. Subscribers can turn call screening on and off for their extension via the Kinesis web assistant.
- **Context-Sensitive Help** - from within the subscriber conversation, subscribers can press “0” on their touch-tone telephone to receive context-sensitive help. For example, if they are listening to the special delivery options, subscribers press “0” to have Kinesis provide additional information about those options. This feature gives subscribers a quick way to access real-time, context-sensitive help without losing their place within the conversation.
- **Day, Date and Time Stamp** - Kinesis conveys accurate information about subscribers’ telephone, e-mail and fax activities via a date-and-time-stamp message addendum. Subscribers can configure the date and time stamp to play at the beginning or end of the message. The subscriber can also turn this feature off.

Kinesis provides the day, date, and time when the message was sent; for example, “This message was sent Friday, May 25th at 7:30 P.M.” The most recent messages are stamped with “today” and “yesterday” instead of the calendar date, giving subscribers information about their messages in the format that is most useful to them. (See also, “*Time Zone Support*”)

- **Daylight Savings Time** - automatically sets the system clock forward or backward one hour to accommodate daylight savings time.
- **Deleted Items Access** – allows subscribers telephone access to messages in their Deleted Items folder. The subscriber can retrieve, play, reply to, forward, or permanently delete these messages.
- **Distribution Lists** - is a list of a specified group of subscribers. When a message is addressed to a distribution list—as opposed to an individual subscriber—the message is

sent, simultaneously, to everyone on the list. This saves time, since senders do not have to recreate a list every time they send a message to a commonly used group of recipients. Any subscriber can be a member of any distribution list. (See also, “*Multiple Message Addressing*”)

- **Public Distribution List** - are available to all subscribers whose Class Of Service permits access. A public distribution list allows single-address messaging to everyone in the company, or a commonly used subset of employees. For example, one public distribution list may include all sales personnel, while another consists of all employees in a particular branch office. Call handlers can route outside callers to public distribution lists to leave a message. Public distribution lists can be imported from Exchange or created by the system administrator. Kinesis supports an unlimited number of Public Distribution lists with an unlimited number of subscribers. “Nesting” of other Public Lists within another Public List is possible, thus eliminating the need to re-enter duplicate information within a larger list.
- **Private Distribution List** - allows only its owner to send a message to the others on the list. By creating a private distribution list, a subscriber establishes a customized list of recipients, facilitating the particular work he or she does. For example, a contracts manager might create a private distribution list that includes the organization’s legal counsel, chief financial officer, and the sales and credit supervisors. Private distribution lists can be created and edited through the Kinesis web assistant or over a touch-tone telephone. Each subscriber may have up to 20 Private Lists, with a maximum of 25 members per list.
- **ID** - this number, typically the extension number, identifies subscribers to the voice mail system when they call to access their mailbox. To sign into the voice mail system, the subscriber presses the star key (\*), their ID, and then their password on a touch-tone telephone.
- **Inter-Digit Timeouts** - this feature, configurable for each Call Handler, allows an organization to have variable-length extension numbers. Kinesis detects the variability in the time between DTMF tones so that, for example, if a caller dials “5” then “3” then pauses, the system will route the call to extension 53. If, however, the caller presses “5” then “3” and then “4” before the inter-digit timeout passes, Kinesis routes the call to extension 534. The length of the inter-digit timeout can be modified by the system administrator, if necessary, to compensate for dialing errors.
- **Interview Handler** - a type of Call Handler that collects information by asking a caller for responses to specific questions. The Interview Handler is an extremely efficient way to gather information.

The Interview Handler can ask a caller up to 20 questions, all customizable by the system administrator. When a call is routed into an Interview Handler, it plays each prerecorded question, beeps, and records the caller’s response. The recording terminates when the caller reaches the maximum reply time, presses the “\*” or “#” key, or stops speaking. The system administrator can specify the response time for each question. After recording each response, the Interview Handler asks the next question. When finished, Kinesis bundles the responses into one comprehensive voice message, and sends it to an individual subscriber or a Distribution List. This method ensures a higher quality of data collection than having the caller respond to a general, or open-ended, single question.
- **Menu after Message** - when checking voice mail, the subscriber can choose from a variety of options for dealing with new messages: Repeat, Reply, Forward, Delete, Save, Mark as

New, hear Date/Time Stamp, or Skip to the next message. This comprehensive list of options gives subscribers individual and efficient administration for their messages.

- **Message Notification (Delivery) Options** - Kinesis can call and deliver messages to subscribers at designated telephone numbers—e.g., home, cellular telephone, beeper, text pager or phones, remote office—based on subscriber-defined notification parameters. Each subscriber may have up to 12 distinct devices configured following their own criteria for message type, time of day schedule, retry period and count settings. For example, subscribers can configure Kinesis to deliver a notification of new messages every hour on the hour Monday through Friday or each time a message arrives in their inbox. Kinesis message delivery options are sufficiently broad and flexible to ensure that employees receive critical information regardless of their location or business schedule. Message notification to long-distance telephone numbers can be restricted by the system administrator, based on a subscriber's class of service. (See also, "*Restriction Tables*")
- **Message Forward** - a subscriber can forward a voice, fax or e-mail message to other subscribers or to distribution lists by pressing touch-tones. Kinesis asks subscribers if they would like to record a voice annotation before forwarding the message.
- **Message Playback Options** – allows subscribers to control the way they listen to messages, adapting message handling for their immediate work environment.
  - **Reverse/Pause/Fast Forward** - while listening to a message, subscribers press "7" to move backward or "9" to move forward in the message in three-second increments. Press "8" once to pause and again to resume playback.
  - **Volume Control** - subscribers can press "5" during message playback to adjust the volume up or down. The "5" key serves as a toggle switch: press once and the volume goes up, press again and the volume returns to normal, press again and the volume goes down, etc.
- **Message Record** - while recording a message, subscribers can press "8" to pause and then "8" again to resume recording. Even novice voice mail users can send voice mail confidently, since Kinesis allows them to take their time when leaving messages.
- **Message Record Length** – defines the maximum length of time a subscriber or outside caller is allowed when leaving a message. Kinesis provides two independent settings, one that defines the outside callers maximum recording time and another, controlled by Class of Service, which defines subscriber-to-subscriber recording time.
- **Message Stack** - is the order in which messages are played back to the subscriber. Kinesis messages are stacked according to priority (urgent/normal), status (new or unheard vs. saved or heard), and can be stacked by date and time (First In/First Out or Last In/First Out) or by type (voice-, fax- and e-mail).
- **Message Summary** – provides information about the message. The subscriber hears the date and time the message was recorded. If Automatic Number Identification (Caller ID) was available, the telephone number from which the message was left is also offered.
- **Message Waiting Indicator** - Kinesis can notify subscribers of new voice messages by activating the telephone's message waiting indicator: a Message Waiting Lamp, or stutter dial tone. Such notification helps ensure that messages are listened to more quickly.
- **Multilingual Support** - is an optional feature that provides system prompts in other foreign languages. Each subscriber mailbox maybe assigned to a default language and may

change their language from their Kinesis web assistant or via touch-tone telephone. Kinesis supports English (Australian and American), and Dutch.

- **Multiple Message Addressing** - when creating a new message, the subscriber may address the message to many different subscribers at the same time without having to create a distribution list. (See also, “*Distribution Lists*”)
- **Multiple Message Action** - after receiving a message, subscribers can reply to or redirect it several times. While listening to a message, a subscriber can interrupt playback to send a reply. At any point, the subscriber can forward the message with or without a voice addendum to other subscribers.
- **Multiple User Interfaces** - subscribers have a choice for their telephone menu-options interface using either full or brief menus.
  - **Full Menus** - The standard Kinesis telephone interface. This standard prompt set allows users to navigate all of the Kinesis server’s advanced functions.
  - **Brief Menus** - provide shortened versions of the Kinesis menu-option prompts, so experienced users can navigate more quickly through the system.
- **Music for Callers Holding in Queue** - the first caller in the queue hears music provided by the PBX system. All other callers on hold hear the Kinesis on-hold prompt.
- **One-Key Connection** - this feature allows a caller to press a single key instead of a series of touch-tones to access a specific extension or action. Each subscriber mailbox maybe individually configured with their own specific one-key assignments. For example, the system administrator can configure Kinesis so that, while listening to a subscriber’s personal greeting, outside callers can press a single key to be connected to the subscriber’s personal assistant or an alternate extension.
- **Opening Greeting** - Kinesis typically gives the organization’s name, how to reach an extension, the operator, or the directory, how to send a fax, and more. Callers can exercise any of these options at any time during the opening greeting. (See also, “*Schedules*”)
- **Operator Assistance** - for optimum customer service, callers with touch-tone telephones can press “0” to reach an operator at any time. Callers using rotary telephones are transferred automatically to an operator.
- **Optional Conversation #1 & #2** – provides alternative system-wide telephone menu interfaces.
- **Outside Caller Message Editing** - if the system administrator activates this option, outside callers can review, amend, or re-record their message. This assures that incoming messages will convey the correct information and tone of voice.
- **Personal Greetings** - subscribers can record five separate personal greetings, allowing them to customize and control the greeting heard by callers from inside or outside the organization. Callers hear the greeting before they are given an opportunity to leave a message. (See also, “*Bypass Personal Greeting*”)

Kinesis ships with the pre-recorded Standard, Alternate and Closed greetings. The Standard and Closed greetings are activated according to schedules; both can be overridden by the Alternate greeting. Subscribers can record and change these personal greetings from any touch-tone telephone or via the Kinesis web assistant at any time to reflect changes in their schedules or plans. The Internal and Busy greetings can be activated and recorded using the Kinesis web assistant. (See also, “*Schedules*”).

- **Alternate Greeting** - a greeting that overrides all others. The alternate greeting may be used to inform both outside and internal callers that the subscriber is away on business, is on vacation, the name and extension of the person to call in the subscriber's absence, etc.
  - **Busy Greeting** - both outside and internal callers hear this greeting when the subscriber's extension is busy.
  - **Internal Greeting** - this greeting is heard by other people within the same telephone system.
  - **Closed Greeting** - this greeting is heard by outside callers during non-business hours.
  - **Standard Greeting** - this greeting is heard by outside callers during normal business hours.
- **Primary or Secondary Answering** – Kinesis can be programmed to answer all incoming calls or calls that are not answered by an operator after a pre-set number of rings. Also, Kinesis can answer all or only selected incoming lines. (See also, "*Answer Call on First Ring*")
  - **Reply with Original Message** – optionally includes the original message when a subscriber replies over the telephone. This allows the recipient of the reply to reference their original message for clarification.
  - **Restriction Tables** - which are associated with a Class of Service, allow the system administrator to control which telephone numbers can be used when Kinesis transfers a call, delivers a message, or delivers a fax. Administrators can dictate, for instance, that subscribers can only deliver messages to local telephone numbers and block the use of long distance numbers.  
  
Three restriction tables apply to each subscriber, depending on the subscriber's designated class of service: one for message delivery, one for fax delivery, and one for call transfer destinations. (See also, "*Class of Service*")
  - **Rules-Based Call Routing** - Kinesis can route calls based on port or trunk information and schedules.
    - **Port Routing** - Kinesis can route calls to specific locations based on the port they came in on. For example, the system administrator can dedicate ports to handle specific area codes. Kinesis can then use this information to route calls to the correct operator, extension, or call handler.
    - **Trunk Routing** - the same as port routing, but based on trunk ID from the telephone system.
  - **Saved Messages** - subscribers can save messages for an unlimited period of time or as determined by Exchange-based parameters.
  - **Schedules** - Kinesis plays a different greeting depending upon whether the call is received during regular (or standard) business hours or during non-business hours (or closed hours). In some cases, the schedule also affects how calls are transferred.
    - **Holidays** - these dates are programmed into Kinesis each year so callers hear the appropriate opening greeting during holiday periods.

- **Multiple Schedules** - To accommodate organizations with operating hours that vary from day to day, employees who work flexible schedules, or companies that have multiple shifts, Kinesis can store up to 64 schedules that can be assigned to different subscribers, call handlers, etc. This provides flexibility and accuracy, and assures comprehensive coverage of all of your organization's operating activities.
- **Self-Enrollment** - is so simple that subscribers can begin using their Kinesis mailbox immediately. Through an easy-to-use, touch-tone telephone conversation, subscribers personalize their mailboxes with their recorded name, greetings, password, and directory listing.
- **Special Delivery Options** - when sending messages, Kinesis gives subscribers different message delivery options.
  - **Future Delivery** - a subscriber can record a message and specify a future time and date for message delivery. This is particularly useful for time- or context-sensitive communications.
  - **Private** - the recipient of a private message cannot forward the message to anyone else via the telephone interface.
  - **Return Receipt** - the sender is told when a recipient hears any part of the body of a message (after the header information), or if the recipient deletes the message without opening it. Subscribers can request return receipts for messages sent to individual subscribers or distribution lists. This feature makes it easier to track the flow of information, particularly when collaborating on time-sensitive projects with many employees.
  - **Urgent** - subscribers can flag messages that are high priority. When subscribers log into the voice mail system to retrieve messages, they hear their urgent messages played before regular messages. This makes it possible to attend to critical communications ahead of routine tasks.
- **VMUIF Compliant** - Kinesis uses the Voice Mail User Interface Forum's (VMUIF) standards for voice message menus. If a company's employees are accustomed to using a VMUIF-compliant system, such as those from Octel or Centigram, the familiar menu structure will ensure an easy learning curve when switching to Kinesis.

### ***Unified Messaging***

Kinesis delivers true unified messaging via **ViewMail for Microsoft Outlook** for better access to, and management of, all of a subscriber's messages—voice, fax, and e-mail. Integrating with the Microsoft desktop clients—including the Exchange Inbox, Outlook 97, 98, 2000 and 2002—Kinesis provides an intuitive graphical user interface accessible from any networked PC, and advanced text-to-speech features from any touch-tone telephone.

With just a click of the mouse, subscribers access voice, fax, and e-mail messages, and reply, forward, and save them in public or personal folders within Exchange/Outlook. The icons accompanying those messages make it easy to distinguish between voice, fax, and e-mail communications, saved and new messages, and the priority (normal, urgent, private) with which they were sent. Faxes can be viewed on screen and printed from any networked PC, or forwarded to any fax machine from a touch-tone telephone. Subscribers can download all types of messages and work with them off line, and apply Inbox/Outlook Assistant rules to streamline

communications management. Kinesis unifies traditionally disparate communications methods so employees can work more efficiently.

- **Mixed-Media Messaging** - Kinesis allows subscribers to reply to, or forward voice, fax, or e-mail messages in the manner most convenient to them. For example, instead of typing a response to an e-mail, simply record a voice response over the telephone or multimedia sound device, and let Kinesis send it via the Internet as a WAV file attachment. This is not only faster than responding by e-mail, but it saves the cost of a long-distance telephone call and allows recipients without voice mail to hear your response. Kinesis also allows subscribers via telephone to redirect or forward faxes as TIF file attachments to e-mail, or to append voice annotations to voice, fax, or e-mail messages.
- **Microsoft Outlook** - Kinesis integrates with the Microsoft Outlook client to take advantage of these powerful features:
  - **Compound Messages** - are voice, fax, or e-mail messages that contain attachments from either or both of the other media. For example, it is possible to bundle a voice annotation and a fax attachment with an e-mail message.
  - **Rules-based Messaging** - subscribers can execute Exchange Inbox Assistant and Outlook rules-based messaging. For example, while on vacation a sales support technician can have all voice messages automatically forwarded to a colleague who can then respond promptly to new situations.
  - **Calendar Access** – an optional feature using Text-to-Speech functionality whereby subscribers can respond over the telephone to meeting requests, or listen to their schedule for a particular day. Subscribers can accept, tentatively accept, or decline meeting requests, as well as canceling a meeting that they have previously scheduled using Outlook.
- **New message Indication** - Kinesis puts notification of new messages on the PC screen with a message, sound event, or blinking cursor so that subscribers know immediately that new messages have been received.
- **Streaming Media** - Kinesis provides streaming (real-time voice) media communications between components in order to provide highly efficient, real-time delivery of audio between applications. Streaming media minimizes the impact of audio messages on the Local Area Network (LAN). Moreover, streaming media ensures instantaneous and smooth message playback and recording at desktop workstations.
- **Text-to-Speech (TTS)** – an optional feature that reads text messages to subscribers over the telephone. With TTS, subscribers can attend to their e-mail over the telephone from anywhere in the world. Kinesis offers two choices for TTS engines (standard and premium) and supports up to six simultaneous sessions.
- **E-mail** - Kinesis will read the text portion of an e-mail message. Kinesis also provides information about the e-mail message, including message length, sender's name, subject, time and date the message was sent, and attachments. Subscribers can send a voice reply to an e-mail message over the telephone. Subscribers can also have their e-mail faxed to them.
- **VCR-Style Controls** - Use the intuitive VCR-style controls to rewind, pause, or skip ahead in messages with a few mouse clicks.

- **Visual Message Management** - Kinesis subscribers have the speed and convenience of visual desktop messaging. By displaying all voice, fax, and e-mail messages in one universal Inbox, subscribers can prioritize, access, manage and respond to messages in the way that best suits their business needs.

### ***Fax Server Integration***

As mentioned previously, Kinesis uses Exchange for address directory information and for message storage, whether locally or on networked Exchange servers. Kinesis does not provide an internal fax module, but Kinesis can work with most external third party fax servers. Integrating a fax server with Kinesis allows subscribers to manage their fax messages in much the same way that they manage other types of messages.

The Kinesis server's optional Third-Party Fax Integration provides subscribers:

- **Access** - Subscribers can hear new fax messages announced with other messages when they call and log in to their Kinesis mailbox. During message playback for a fax message, subscribers hear the message summary and any voice annotation but not the contents of the fax message. Subscribers can have a fax message delivered to a fax machine, forward it to another subscriber, or reply with a voice message if the fax message is from another subscriber. As with other message settings, subscribers use Kinesis telephone conversation or the Kinesis web assistant, if available, to set their fax message settings.
- **Notification** - Subscribers can receive notification of new fax messages, along with other types of messages, by telephone or pager.
- **E-mail Delivery** - Subscribers can have their e-mail messages delivered to a fax machine. Kinesis renders e-mail attachments with the file extensions .TXT, .TIF, and .DCX only. Other types of files are removed, and Kinesis lists the file names at the end of the fax message. The Text-to-Speech option is required for subscribers who will use e-mail delivery to a fax machine.

### ***Personal Web Assistant***

Kinesis gives unified messaging subscribers the ability to customize their personal mailbox settings from Microsoft's Internet Explorer using the **Kinesis web assistant**, a dynamic browser-based interface. Subscribers can quickly and easily establish or change personal settings such as their voice mail options, security code, private distribution lists, and message delivery options. The Kinesis web assistant also reduces the workload for system administrators, giving subscribers additional flexibility to customize Kinesis to suit changing demands in their work environment.

- **Administer Private Distribution List** - subscribers oversee their private distribution lists, adding or deleting recipients as necessary.
- **Change Bypass Greeting Status** – individual subscribers can control whether or not a caller can skip listening to their greeting before leaving a message.
- **Change Directory Listing Status** - individual subscribers can control whether or not they want to be listed in the directory.
- **Change Message Playback Options** – subscribers have a variety of options to configure message playback. Messages can be offered in strict First In/First Out or Last In/First Out order, or messages can be offered by type (voice-, fax- and e-mail) with each type of

message offered in either First In/First Out or Last In/First Out order. If accessing messages by type, old messages can be played in a different order than new messages.

- **Change Telephone Password** - subscribers can change their telephone password from within the Kinesis web assistant.
- **Change Transfer Options** - subscribers can turn call transfer on or off, and change the extension or telephone number to which incoming calls are transferred. When call transfer is turned off, incoming calls are sent directly to the subscriber's mailbox. This feature is particularly useful for employees who have offices in multiple facilities, frequently work at home, or work as part of a team that requires them to spend a significant amount of time in a colleague's office. By using the Kinesis web assistant to change call transfer options, callers and subscribers are connected quickly to provide good customer service and efficient personal administration of telephone traffic.
- **Record/Edit** - from a PC or telephone, subscribers can record their directory name, and record and edit their personal greetings which Kinesis plays to incoming callers. (See also, "*Personal greetings*")
- **Set Conversation Options** - subscribers can specify whether or not they want full or brief menus, whether they want to hear the day and time stamp before or after a message, or if they want the voice mail system to greet them by name when they call in to retrieve their messages. (See also, "*Multiple User Interfaces*" and "*Day, Date and Time stamp*")
- **Set Digital Paging Options** - subscribers can establish rules governing digital paging options for the type and urgency of message, and whether message counts are displayed. For example, a subscriber can set the paging options so that he or she is paged only for urgent voice messages but, when paged, also sees the count of new e-mail messages.
- **Set Fax Default Delivery Options** - subscribers can have their incoming faxes or e-mail delivered to a fax machine anywhere in the world. This feature gives subscribers access to their faxes or e-mail, whether they are in the office or on the road.
- **Set Message Delivery Options** - subscribers can establish rules governing message delivery options for the type and urgency of message or frequency of delivery. For example, a subscriber can set the message delivery options so that, when he or she receives urgent voice messages on Wednesday, Kinesis will call the subscriber's home or cellular telephone to deliver them.

### ***Digital Networking***

Digital networking transmits voice messages as digital files, making it up to five times faster than AMIS analog networking, which transmits the recorded voice. This also means better sound quality and significant cost savings. The sound quality of messages transmitted digitally does not deteriorate as messages are forwarded on the network. In addition, because digital messages can be sent across the Internet, the cost is less than transmitting analog messages over telephone lines. Digital networking streamlines communications and produces significant cost savings.

The Kinesis server's digital networking software, **ActiveNet® Digital Networking**, enables Kinesis to connect with other Kinesis servers at the same site via the LAN, or remote sites using a dedicated site connector (WAN) or the Internet. This gives multiple Kinesis servers connected on the Exchange network the ability to synchronize Kinesis directory information automatically. When those servers are located at remote sites and connected via the WAN, the Exchange administrator controls the frequency of synchronization and the size of files, ensuring the

smooth flow of data between servers. System administrators can also choose not to synchronize remote servers and communicate using blind addressing when they prefer not to share directories between sites.

Kinesis can be configured so that subscribers can address messages to other users easily—even if the recipient is not located on the Exchange network or resides on a different server, a remote site, or even a different voice mail system. Subscribers can address messages for remote recipients by name, site, or ID. Each method of addressing has different implications regarding the impact on the subscriber, the system administrator, and Kinesis. The number of subscribers and locations will determine, for the most part, which addressing option best suits an organization. Multiple addressing options capitalize on a company's resources, streamline the communications process, and reduce the total cost of ownership.

### ***Desktop Call Control***

**ViewCall**<sup>®</sup> lets you manage incoming and outgoing calls from your desktop PC using a Windows graphical user interface. ViewCall lets you manage live telephone calls in the same way that unified messaging lets you control your messages.

Using the Telephone Control window, you can see the flow of calls to your extension and interact with multiple callers simultaneously, without interrupting your conversation. The graphical user interface makes dialing, answering, transferring, holding, and screening calls as simple as clicking and dragging a mouse. While you are speaking on the telephone, you can invite an incoming caller to hold, transfer them to another extension, or politely forward them to your voice mailbox.

## **Support**

### ***System Installation and Administration***

Kinesis simplifies the way you access and manage your system because all of its components share an embedded Microsoft Exchange 5.5 server. Working in concert with Exchange's message store and LDAP directory services, Kinesis unifies your system administration by giving you a single point of access—the **Kinesis Administrator**. This eliminates the redundancy of user account information maintained by various applications on the network and ensures the integrity of the data.

The administration of Kinesis is further simplified by embedding Microsoft's Internet Information Server (IIS) and providing a Web browser-style console. The Web-browser interface allows Kinesis to be configured and monitored from anywhere on the Internet using Microsoft's Internet Explorer. Active Server Pages provide a dynamic interface so that the system administrator can make real-time modifications to Kinesis through the Kinesis System Administrator console. The System Administrator console minimizes the complexity of Windows NT/2000 and Exchange so you do not have to be a Microsoft Certified Systems Engineer (MCSE) to administer the system.

Kinesis takes full advantage of the system and networking tools within Windows NT/2000 to provide you with a powerful yet easy way to install, monitor, update, and administer system resources. These include critical administrative tools, such as event logging, performance monitoring, RAID level 1-5 software, and robust security.

The system administrator installs Kinesis with ActiveImport. The utility that enables you to import subscribers directly from Exchange sites or comma-delimited file information sources,

such as Repartee® or Replay® Plus databases. ActiveImport saves time and ensures greater accuracy of data since not all subscriber information has to be re-entered manually.

- **Advanced Security Features** - Kinesis ensures the safety and integrity of the unified communications environment by offering many advanced security features, such as the ability to detect hackers, lock accounts, set password policy, and force password reset on the next login.
  - **Hacker Detect and Lock Accounts** - Kinesis monitors the number of attempts made to log on to an account via the telephone and can lock accounts if incorrect passwords are entered repeatedly. The system administrator can specify the number of invalid log-on attempts allowed and the number of minutes before the system resets the account lockout. Locked accounts can be unlocked manually by the system administrator or automatically by Kinesis after a specified number of minutes.
  - **Passwords** - the system administrator can define the number of characters for passwords, historical password tracking and how often Kinesis requires a password to be changed. By determining the rules for subscriber account policy, the system administrator customizes Kinesis for an organization's specific needs.
- **Class of Service** - all subscriber mailboxes follow an assigned set of features, configurations and restrictions known as Class-of-Service, or COS. Kinesis supports up to 64 separate COS which controls feature settings (like access to unified messaging, fax mail, or text-to-speech), system access (administrator access, technician access, etc.), preferences (maximum message length and whether a sub-scriber can create distribution lists), and permissions to perform specific administration functions. COS makes the administrator's job easier by allowing them to assign or change system features to groups of people, instead of having to do it individually.
- **Configurable Voice Compression Rate** - to prevent large files from blocking the smooth transfer of data on file and print networks, and to conserve hard drive space, the system administrator can determine the size of Kinesis files to be transmitted over the network. You can set different compression rates for greetings, prompts, and messages. By default, Kinesis supports the 8KB/sec Mu-Law format. A one-minute message in this format is approximately 480 KB.
- **Extended Automated Attendant** – allows a system administrator to designate ranges of extensions to which callers can be transferred, without requiring the administrator to configure mailboxes for each extension. Kinesis can supervise the transfer, if desired, and retrieve the caller if the extension they are attempting is busy or ring-no-answer.
- **MediaMaster™** - the system administrator can listen to prompts and record new ones using either a microphone with a multimedia PC, or from a telephone. Accessible from both the Kinesis System Administrator and the Kinesis web assistant, the MediaMaster makes it easy to customize voice names, and greetings.
- **Message Length** - the system administrator sets the maximum message length for subscriber-to-subscriber messaging and subscriber greetings according to a subscriber's designated class of service. At the subscriber template, the system administrator can modify the maximum message length an outside caller can leave. By providing separate customization of inbound and outbound message length, Kinesis meets the needs of individual subscribers and departments while maintaining control over the system's overall message-storage space.

- **Online Help** - three types of context-sensitive online help are accessible from the Kinesis System Administrator.
  - **Field Help** - provides definitions of, and information about, on-screen fields. Simply click on the question mark icon in the upper right corner of the window and smaller question-mark icons appear by each field. If the system administrator then clicks on one of the smaller question-mark icons, Kinesis displays information about that field in a separate window of Internet Explorer 5.0 or higher.
  - **Online Documentation** - conceptual and procedural online documentation provides extensive information on specific Kinesis functions. For example, while configuring the Kinesis server's password policies, the system administrator can click on the online documentation icon, opening a separate Internet Explorer window with information about password configuration options. Online documentation eliminates paper-based manuals and the need to search pages of text in order to find the pertinent information.
  - **Tool Tips** - simply suspend the mouse pointer over an active button in the System Administrator and Kinesis provides a concise definition of that function.
- **Public Distribution Lists** - the system administrator can add, delete, or modify public distribution lists from within the System Administrator.
- **Status Monitor** - this gives the system administrator important information including real-time status of the voice ports, software seat licenses, reports that are in progress, and system configuration.
- **Subscriber Lists** - from the Subscriber Menu page, the system administrator can create, edit, or delete subscribers. Kinesis automatically creates a Windows NT/2000 and/or Exchange subscriber account when the system administrator adds a subscriber. Since the system administrator does not have to use the Exchange Administrator or Windows NT/2000's user manager, the subscriber-creation process is streamlined and simplified.
- **Subscriber Templates** - when new subscribers are added to Kinesis, default settings are automatically assigned by using templates. Templates save the system administrator time by automatically configuring subscribers' settings and assigning them to distribution lists. Unlike changes to a class of service—which effect all subscribers already assigned to that class of service—changes made to a template only effect the settings for subscribers added after the change was made. By default, every template assigns subscribers to the “All Voice Mail Users” distribution list.
- **TCP/IP and SPX/IPX Support** - although Kinesis uses the Windows NT/2000 operating system, it can communicate with clients using the TCP/IP and SPX/IPX protocols, allowing Kinesis to communicate with a Novell® network.
- **Time Zone Support** – allows the system administrator to set time zone information per subscriber. This capability inherits the Windows Time Zone settings to offset message time and date, message notification and schedule information for subscribers that may work remotely from the Kinesis server. For example, a remote Sales rep in Los Angeles can have their mailbox set for their Pacific Time Zone, as opposed to the Kinesis server residing in New York on Eastern Time. When the Sales rep receives a message from a local New York subscriber, the time will be offset by three hours thereby identifying the receipt time to match their local (Pacific) time. Administrators no longer need to calculate offset times and subscribers do not need to worry about compensating for message notification times.

## **Maintenance**

Kinesis capitalizes on the exceptional reliability of Windows NT/2000, ensuring years of continuous, fault-tolerant operation with minimal maintenance and downtime. Comprehensive maintenance utilities are included with Kinesis to help the system administrator establish a backup routine to protect and restore system data, and troubleshoot and repair any software or hardware problems, should they arise.

- **Event log** - all Kinesis events are recorded in the Windows NT/2000 event log in order to expedite troubleshooting by the system administrator.
- **Redundant Array of Independent Disks (RAID)** - The Kinesis server's optional RAID drive delivers fault-tolerant data storage. In case of a problem, Kinesis notifies the system administrator. The failed disk can be replaced and the information it contained recovered without loss or interruption of Kinesis service.
- **Remote maintenance** - can be done via modem or over the network. With the Kinesis server's remote maintenance feature, support and problem solving can be provided by a trained technician without an on-site visit. Kinesis uses Symantec™ pcAnywhere™ remote maintenance software to link an off-site PC to a customer's Kinesis server. This allows an off-site technician to monitor or make changes to Kinesis.

The remote maintenance software records session statistics in the activity log, prints files, executes performance tests, and automatically transfers files or folders. The pcAnywhere software uses Windows NT/2000 security protocols to ensure the safety and security of Kinesis data. Host security options include limiting log-on attempts, limiting time to complete log on, recording failed connection attempts, and data encryption.

- **Reports** - Kinesis provides a comprehensive list of reporting options that enables the system administrator to retrieve and organize information stored in the Kinesis databases. System administrators can use these reports to help them make decisions about the organization's communications environment. Crystal Reports®, a third-party application, generates the Kinesis reports and lets system administrators view, print, or save reports to a file using Internet Explorer 5.0 or above.

The Kinesis System Administrator offers two report categories: Subscriber reports and System reports. Subscriber reports make managing subscriber accounts easier while System reports provide crucial information to assist in Kinesis troubleshooting and resource management.

- **Subscriber Reports** - allow system administrators to manage Kinesis accounts. They provide information about subscribers registered on the system, the classes of service to which they have been assigned, and the distribution lists to which they belong.
- **System Reports** - help system administrators manage system resources and troubleshoot Kinesis. The resource management reports cover topics such as call handlers, fax usage, port usage, storage usage, and system configuration. Troubleshooting aids include the administrator access audit trail, event log, message traffic, network, and system activity.

## **Telephone System Integration**

The process by which Kinesis and the telephone system work together to handle calls is called an integration. When integrated, both the telephone system and the Kinesis communications system share information on the origin and destination of calls. The integration ensures that callers are routed to the correct subscriber voice mailbox when a subscriber is not available. It

also notifies subscribers when new messages have arrived and allows them to retrieve messages

- **Immediate Disconnect** - Kinesis disconnects as soon as callers hang up, so ports are freed up immediately to take the next call. This keeps ports available during peak business hours.
- **Integration Features** - Kinesis is capable of delivering the following major features. However, due to the limitations of the PBX, Telco service or network configuration, one or more of these features may be unavailable.
  - **ANI/Caller ID** When available, the Automatic Number Identification (ANI) or Caller ID (CLID) integration displays the telephone number of the outside caller on a desktop PC using ViewMail for Microsoft Outlook, and plays it in the message summary.
  - **Call Forward to Personal Greeting** - this feature makes it easy for callers to leave messages for subscribers who are busy or away from their desks. Incoming calls routed to an unanswered or busy extension are automatically forwarded directly to a subscriber's voice mailbox. There, the caller can leave a personal message.
  - **Easy Message Access** - with this feature, subscribers simply press one button on their telephone set to retrieve new messages from their voice mailboxes without entering an ID number. However, to prevent unauthorized message access, the system administrator should require that a password be entered before Kinesis plays the messages.
  - **Message Waiting Indication** - Kinesis will light a message waiting lamp, activate a display, or provide a stutter dial tone on the subscriber's extension when new messages have been received.
- **Integration Methods** – Kinesis integrates with the telephone system in one of four ways: Analog, Digital, IP, or Serial. The integration method dictates how the telephone system provides call information when forwarding a call to a subscriber's personal greeting, and how it receives message waiting indication from Kinesis. When integrated, both the telephone and the Kinesis system share information on the origin and destination of calls. The integration ensures that callers are routed to the correct subscriber voice mailbox, when a subscriber is not available. It also notifies subscribers when new messages are pending. Kinesis may be configured for Analog, Digital, Serial, IP, or a combination of IP and either analog, digital or serial. The method chosen is dependant upon the customers specific switch environment.
  - **Analog Integration** – Also known as in-band DTMF integration. The voice messaging system and telephone system share information by exchanging touch-tones.
  - **Digital Integration** – The voice processing system emulates a feature telephone, appearing to the telephone system as a digital telephone station set.
  - **IP Integration** – Information between the telephone system and the voice processing system is communicated over a LAN connection. Kinesis currently uses the TAPI protocol for this communication.
  - **Serial Integration**
    - **Message Center Integration (MCI)** - A serial data link between an NEC NEAX<sup>®</sup> PBX and Kinesis is used to pass data about each call. Message waiting lamp

status is sent from the voice messaging system to the telephone system, saving port usage to handle incoming calls.

- **SMDI Integration** – A serial data link between Kinesis and a telephone system or central office. Message waiting lamp information, incoming call data, and call forwarding packets are provided, allowing ports to handle greater call traffic.
- **Line Resource Management Controls Out Dialing** - during periods of heavy telephone traffic, Kinesis gives priority to incoming calls over automatic out dialing so that important outside calls reach their destination within the business.
- **Telephone System Setup** - The Kinesis server's telephone system setup makes integration easy. When the installer selects the desired telephone system from the Administrator console, Kinesis automatically configures itself for optimum performance.

## **Feature Summary**

### ***General System Features***

- 72 Analog ports
- CD-ROM installation
- Number of mailboxes, Exchange dependent
- System key

### ***Product Configuration***

- Available as complete system in two platform choices
- Available as components

### ***Upgrades/Migration***

- Upgrades from Repartee and Replay Plus
- Competitive upgrades
- Upgrade within Kinesis product line

### ***System Software & Hardware***

- Operating system, [Windows 2000 Server]
- Messaging architecture, Exchange 5.5 or Exchange 2000 (Voicemail Runtime Edition or Standard Edition)
- Directory cache, MSDE or SQL Server 2000 Standard Runtime Edition
- Color Monitor, optional
- Keyboard
- Modem, 56Kbps (Internal or External)
- PCI voice boards supported: Intel Dialogic D/4PCI, D/4JCT-LS PCI, D/82JCT-U Rev. 2, D/120JCT-LS Rev. 2, D/240JCT-T1 Rev. 2 (shipped with new systems) and D/41E PCI, D/41ESC PCI, D/120JCT PCI, D/120JCT-LS PCI, D/240JCT PCI (legacy support only)
- 7 PCI slot Expansion Chassis, optional on Level II Platform
- Integrated RAID, optional on Level II Platform
- Tape backup, optional
- Rack Mount, optional on Level II Platform

### ***Level I Platform (max. port capacity 24)***

- Pentium 4 1.7 GHz
- Minimum RAM, 512MB
- Hours of storage, on-board approx. 300
- IDE hard drive
- PCI Slots, 4 (up to 11 with PCI expansion chassis)

### ***Level II Platform (max. port capacity 72)***

- Xeon™ 2.4 GHz
- Minimum RAM, 1GB
- Hours of storage, on-board approx. 1600
- Dual 36GB SCSI hard drives
- PCI card slots available, 7 (up to 13 with PCI expansion chassis)

## ***System Administration***

- Web browser-style console
- Internet and Intranet console access
- Dial up console access, pcAnywhere
- Local connect via MediaMaster in Internet Explorer
- TCP/IP support
- SPX/IPX support
- TAPI/WAV support
- Windows NT/2000-based password policy
- Ability to require passwords
- Ability to mandate password length, change frequency
- Ability to lock accounts, force password reset on the next log in
- Ability to track previous password history to prevent reuse of old passwords
- Hacker detect (after three failed passwords, box is locked and administrator notified)
- Configurable voice compression rate, 8KB/sec Mu-law by default
- Limit message store size, via Exchange
- Configurable message storage location, via Exchange
- Class of Service restrictions and permissions

## ***Telephone System Integration features***

- Call forward no answer to user's standard personal greeting
- Call forward busy to user's busy greeting
- Message waiting indication
- Direct mailbox login - easy message access
- Subscriber-to-subscriber messaging
- ANI/caller ID captured with voice message

*Note: Not all integration features are available on all telephone systems.*

## ***Fax Server Integration Features***

- Fax notification
- E-mail-to-fax supported over the telephone
- Forward Fax to another subscriber with or without voice annotation
- Fax delivery through a touch-tone telephone

## ***Reports***

- All reports exportable in standard CSV format
- HTML output report
- Busy report (enhanced in port usage report)
- Directory report (enhanced in general subscriber report)
- Error log report (enhanced in event log report)
- Extension list report (enhanced in general subscriber report)
- Message groups report (enhanced in distribution list report)
- Subscriber report (enhanced in general subscriber report)
- Usage report (enhanced in port usage report)
- Administrative access
- Port usage
- Event log

- General subscriber report
- Distribution lists report
- System configuration
- Message traffic report
- Storage usage report
- Call statistics report
- Unresolved references report
- Billing Report

### ***Unified Messaging***

- Custom forms support for Outlook 97/98/2000/2002
- Compound forms
- Subscribers can leave messages to remote sites via desktop PC interface
- Rules-based messaging, execute Exchange/Outlook rules to automatically forward messages based upon time of day, caller number, etc.
- Read e-mail over telephone user interface, via Exchange Message Store
- Access calendar over telephone user interface, via Exchange Message Store
- Internet E-mail Reader
- Message undelete, via Outlook 97/98/2000 or over telephone user interface

### ***Optional Feature Packages***

- Desktop call control
- Digital networking
- Text-to-speech
- Multiple languages
- Third-party fax integration

### ***Automated Attendant Features***

- Number of schedules supported, 64
- Rules-based call routing
  - Port routing
  - Trunk routing
- Single-digit connection
- Bypass greeting, subscriber controlled
- Call screening, subscriber controlled
- Call holding, subscriber controlled
- Alpha directory
- Spell name up to 24 characters
- Interview handlers
- Call handlers
- List subscribers in the directory by first or last name
- Port independence

### ***Kinesis Web Assistant, via Internet Explorer***

- Record/edit voice name
- Record/edit all greetings
- Change telephone password
- Change transfer options (extension, call holding, call screen, announce, confirm)

- Change directory listing status
- Set fax notification/delivery option (default delivery)
- Set enhanced message notification/delivery options (delivery options for specific media type or specific users)
- Set conversation options (full vs. brief, time stamp before/after, FIFO/LIFO, greet by name, announce sender, announce message number, announce distribution list, volume level)
- Set Digital Paging options (page for specific media type, display current message count by type)
- Administer personal distribution list

### ***Voice Mail Features***

- Network dial by name
- Network name confirmations
- Time-sensitive greeting
- VMUIF-compliant menu
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- Address at the beginning or end of messages
- Multiple address message
- Menu after message

## Glossary of Telecommunication Terms

**audiotext** - a pre-recorded message heard by system users.

**automated attendant** - the function of Intelligent Voice Mail that allows Kinesis to answer and direct calls by playing greetings and responding to touch-tones. Callers listen to prompts and direct themselves to the person, voice mailbox, or recorded information they need by pressing touch-tones. The automated attendant functions are:

- call handler
- call holding
- call screening
- inter-digit timeouts
- one-key connection from automated attendant subscriber list
- opening greeting
- operator assistance
- outside caller message editing
- primary or secondary answering
- rules-based call routing
- schedules

**DTMF** - Dual Tone Multi-Frequency, the technical name of the tones generated by a touch-tone telephone.

**event** - all Kinesis system operations, including errors.

**extension number** - this number can represent a physical telephone and/or an electronic mailbox.

**greeting** - the call handlers to which all incoming calls are routed. The greeting gives the caller options and then routes the call appropriately.

**groups** - when sending a message to multiple recipients, the recipient list constitutes a group. The term applies both to distribution lists and when multiple messaging is employed.

**OLE** - Object Linking and Embedding, a Microsoft technology that allows the transfer of information between applications.

**PIM** - Personal Information Manager, an address and telephone directory database.

**prompt** - a pre-recorded message or instruction heard by a caller when interacting with Kinesis.

**prompt set** - a group of prompts that function together to provide information or instructions to callers. For example, "Dutch system prompt set" denotes all the prompts that are part of the system conversation allowing users to interact with Kinesis in Dutch.

**subscriber** - a person who accesses the Kinesis system using an ID number. In most cases, an employee will be assigned an extension number and ID number.

**subscriber conversation** - the prompts and/or call handler heard when a caller is connected to a subscriber's extension or voice mailbox.

**system administrator** - an employee of the organization, usually a member of the IS department, who is responsible for administering and maintaining Kinesis.

**system conversation** - the prompts and/or call handlers heard when a caller is interacting with Kinesis.

**touch-tone telephone** - a telephone that dials by producing DTMF tones; some telephones have the option of tone dialing (through DTMF) or pulse dialing (mimicking rotary telephones).

**touch-tone(s)** - 1. common name for the DTMF tones that can be produced by a touch-tone telephone; 2. the buttons on a touch-tone telephone.

**user** - anyone accessing the Kinesis system; this includes both subscribers and callers.

**VMUIF** - the Voice Mail User Interface Forum determines the industry-standard menus for controlling voice mail with touch-tone keystrokes.

## **Standard Protocols and Applications**

**ADSI** - A set of open interfaces that abstracts the capabilities of directory services from different network providers to present a single view for accessing and managing network resources. Administrators and developers can use ADSI services to enumerate and manage resources in a directory service, no matter which network environment contains the resource.

ADSI enables single log on for client desktop to multiple directories. This makes it possible to write applications to an API but work with multiple directories, makes it easier for subscribers to find information with rich querying of directories, and makes it easier to manage multiple directories.

**COM** - Component Object Model. COM is the cornerstone of Microsoft's ActiveX platform. COM is a language-independent component architecture (not a programming language). It is meant to be a general purpose, object-oriented means to encapsulate commonly used functions and services. The COM architecture provides a platform independent and distributed platform for multi-threaded applications.

**DCOM** - Distributed Component Object Model. Microsoft's distributed version of its COM, a language-independent component architecture (not a programming language) meant to be a general purpose, object-oriented means to encapsulate commonly used functions and services.

**HTTP** - HyperText Transfer Protocol. HTTP is the protocol used by the Web server and the client browser for moving documents around the Internet.

**IMAP** - Internet Messaging Access Protocol is an e-mail protocol for Internet mail servers. IMAP allows users to create and manage mail folders over the WAN, as well as to scan message headers and then download only selected messages.

**LDAP** - The Lightweight Directory Access Protocol (LDAP) is a protocol for clients to query and manage information in a directory service over a TCP connection. The LDAP protocol was designed by the University of Michigan to provide access to the X.500 Directory while not incurring the resource requirements of the Directory Access Protocol (DAP). This makes it very suitable for use on the Internet.

Active Directory<sup>®</sup> is a Directory Service integrated with the Microsoft Windows NT Server operating system that offers the hierarchical view, extensibility, scalability, and distributed security required by all customers. Microsoft has provided support for LDAP in Active Directory and enabled it to be integrated with the Internet. With this LDAP support, customers can deploy Active Directory in a corporate computing environment and interoperate with LDAP clients from multiple vendors.

By supporting the LDAP protocol in Active Directory, Microsoft provides the infrastructure within its operating systems to provide user-empowering interoperability within a heterogeneous computing environment.

**MAPI** - Kinesis uses extended MAPI (sometimes called MAPI 2.0) to communicate with the message database application.

MAPI is a set of API functions, and an OLE interface that lets messaging clients, such as Microsoft Outlook, interact with various message service providers, such as Microsoft Exchange Server and various computer telephony servers running under Windows NT server.

**MIME** - Multipurpose Internet Mail Extension. This protocol is designed for transmitting mixed-media files across TCP/IP networks. The MIME protocol, which is actually an extension of SMTP, covers binary, audio, and video data.

**MSDE** – Microsoft SQL Server 2000 Desktop Edition. A data engine built on Microsoft SQL Server technology used as a relational database.

**ODBC** - Open Database Connectivity is a standard that allows databases created by various relational and non-relational database programs—such as dBASE, Microsoft Access, Microsoft FoxPro, and Oracle—to be accessed by a common interface.

**OLE** - Object Linking and Embedding. A software technology that allows Windows programs to exchange information and work together. For instance, a word processing document with OLE capabilities could contain a link to a chart created in a spreadsheet.

**POP3** - Post Office Protocol. An e-mail server protocol used by the Internet. You use POP3 to get your mail and download it to your PC using SMTP.

**RPC** - Remote Procedure Call. A protocol governing the method with which an application activates processes on other nodes and retrieves the results.

**SMTP** - Simple Mail Transfer Protocol. An application-level protocol which runs over TCP/IP, supporting text-oriented e-mail between devices supporting Message Handling Service (MHS). MIME is an SMTP extension supporting compound mail, which is integrated mail, including perhaps e-mail, image, voice, and video mail.

**SNMP** - Simple Network Management Protocol. SNMP is the most common method by which network management applications can query a management agent using a supported MIB (Management Information Base).

**SQL** - Structured Query Language. The industry standard for access to relational databases.

**Streaming** - Transmission over a data network. The client side buffers a few seconds of audio data before sending it to the speakers, compensating momentary delays in packet delivery. Streaming audio also lessens the impact on an organization's LAN.

**TAPI** - Kinesis uses Microsoft's Telephony API as its primary telephony signaling interface. With TAPI, Microsoft has defined function calls for features common to most telephone systems.

**TAPI 3.0** - TAPI 3.0 is an evolutionary API providing convergence of both traditional PSTN telephony and IP Telephony. IP Telephony is an emerging set of technologies which enables voice, data, and video collaboration over existing LANs, WANs, and the Internet.

**TCP/IP** - Transmission Control Protocol/Internet Protocol is the Internet's networking protocol that provides communication across interconnected networks, between computers with diverse hardware architectures and various operating systems.

**VPIM** - Voice Profile for Internet Messaging, a proposed Internet messaging protocol to allow disparate voice messaging systems to automatically exchange voice mail over the Internet.

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