Test Drive

SatisFAXtion-On-Demand

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Wildcard's SatisFAXtion-On-Demand system is a comprehensive fax-on-demand product. You can integrate it with your existing fax server over the network, or you can use it as a standalone fax-on-demand server.

Wildcard provides three different flavors for this product, SatisFAXtion-On-Demand Silver, Gold, and Platinum. The Silver version includes 2 voice ports and integrates with your existing fax server to provide fax-on-demand capabilities. The Gold version includes 2 voice ports and 1 fax port, which will allow you to fax and perform voice processing tasks from the same server. The Platinum version includes 4 voice ports plus 2 fax ports. Each version includes the software, and each version can be upgraded.

With SatisFAXtion-On-Demand, you can make documents accessible to customers and field staff 24 hours a day. (Such documents might include catalogues, product specifications, order forms, credit applications, press releases, position papers, and tax and legal forms.) You can also use SatisFAXtion-On-Demand to reduce the cost of technical support by automating access to FAQs (frequently asked questions).

The product can handle international call dialing, and multiple language support is built-in, allowing customers to listen to prompts in their own language. In addition, the product allows you to collect a caller's fax number, which you can then use to fax broadcast your marketing materials.

INSTALLATION

The hardware installations went smoothly. Neither of the cards, which included a Rhetorex voice processing board and a WildCard SatisFAXtion 2000 board, required any jumper settings. We had no memory address or IRQ conflicts.

The software installation was a bit lengthy and slightly complex. Specifically, we had to install several sets of disks in a particular sequence. (We installed the Platinum version for our testing purposes.)

When we installed the CommandFax software, we got to the very last disk (Disk 7) when we got an error message: "Cannot find 301.msg. Skip, Abort, or Retry." We removed the disk and performed a surface scan on it (on another PC). The scan was negative. We put the disk back into the first PC and clicked on "Skip" after several futile "Retry" attempts.

We took this snag as a variation on Murphy's Law. In our case, it stipulates the probability the installation will crash becomes greater with each disk, and exponentially greater once you insert the last disk! Well, after clicking on "Skip," we got the same error message with the very next file on the disk. We thought the disk might be bad, but when we

SatisFAXtion-On Demand Specifications

The technical specifications here pertain to the SatisFAXtion 2000, which was included in the product version we tested (SatisFAXtion-On-Demand Platinum).

Type: Two-line co-processed 16-bit ISA fax data modem. Manages T.30 fax protocol, image conversion and I/O to the host PC on the card.

Number of lines: Two per card. Available in the following configurations: 2000 (2 analog lines plus LocalFax) and 2000DID (1 analog line and 1 DID line).

DAA Type: Analog.

Installation: Automatic. No switches or jumpers.

Telco connectors: 2 RJ11 for telephone line connection; 1 microDIN for LocalFax.

Card processors: 32-bit Motorola 68000 with Rockwell fax modems.

Maximum lines per PC: 32.

Regulatory: UL, CSA, CSA/NRTL, RIR/SOR 475 Class A, FCC Part 15 Class A, FCC Part 68 Class A, DOC CS-03.

Fax speed: Up to 14,400 Bps.

DOS and Windows 3.x APIs: Extended multichannel CAS 1.3, PDXCAS extended CAS 1.3.

Windows 95 32-bit APIs: CAS32(TM), PDPORT port level.

Windows NT 32-bit APIs: CAS32(TM), PDPORT port level.

Compression: MH, MR.

Modes: V.17, V.29, V.27ter, V.21 channel 2.

Image file formats: PCX, DCX, ASCII, TIF supported with CAS 1.3 drivers.

DOS Printer Emulations: Epson FX and HP LaserJet.

Routing support: T.30 Subaddressing, DTMF, distinctive ring and line.

Environmental: Storage temperature, –40 to 70°C (–40 to 158°F); operating temperature, 5 to 50°C (40 to 120°F); humidity, 10 to 90% non-condensing.

Warranty: 3 years.

List price: $1399 for standard version; $1499 for DID version. ∎

brought it over to another PC, we were able to view and copy the 301.msg and all the other files as well. We had to choose "Skip" about 30 times and then copy the files to the correct path after the installation was complete.

We had similar problems in the old days of Windows 3.1 when we used PC Kwik cache, which could be balky when you worked with floppy disks. With PC Kwik cache running, many installations would accept disk after disk only to stop reading after the last disk was inserted. (One such installation problem arose with Microsoft Word, after about 11 disks.) In our review installation, however, we used DOS's Smartdrv caching program. We doubt it was the source of the problem. Still, the caching program could be at fault, or even a bad floppy drive, even though we've never had problems with this floppy drive in the past (nor are we currently).

We also installed Rhetorex drivers, which were contained on separate disks, and the fax drivers for the SatisFAXtion board. These performed flawlessly. Our only complaint: we would have liked to have seen a prompt asking us if we wished to have the Rhetorex and the fax drivers added to the AUTOEXEC.BAT file. The installation omits mention of what modifications are necessary. However, the documentation indicates that you must modify the AUTOEXEC by hand with certain entries to auto-load the necessary drivers.

Lastly, we installed the CommandFax for Windows and the Print-2-Fax (Windows) software programs. Both of these installations went very smoothly. Overall, we gave the installation an average rating (3), which was due more to some documentation flaws (hard-to-follow installation instructions) than anything else.

DOCUMENTATION

Overall, the documentation was excellent. The table of contents was well organized and studded with helpful subheadings. The index was just as good. We were able to look up all the basic keywords we could think of, as well as a few not-so-obvious ones. Step-by-step instructions along with many accompanying screenshots are contained throughout the documentation.
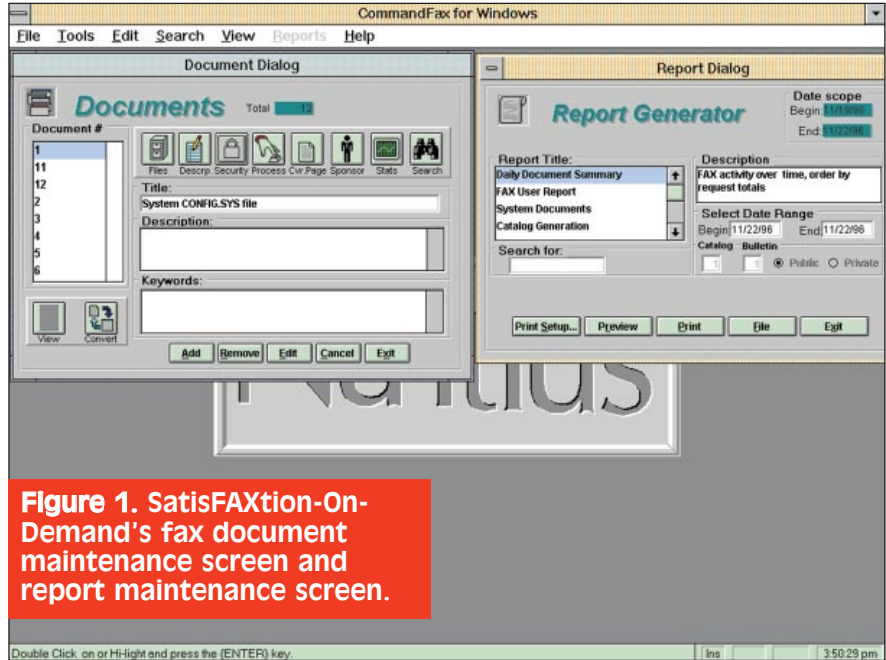
All the same, the installation instruc-

Figure 1. SatisFAXtion-On-Demand's fax document maintenance screen and report maintenance screen.

tions were a bit convoluted. We found ourselves skipping ahead a chapter and then back a few chapters to install the different components (the Rhetorex drivers, fax drivers, print drivers, and the CommandFax software). We would have liked a READ.ME or a quick start guide/addendum containing an overview of the installation steps on one sheet or page, including page numbers and disk labels (Insert Disk 1-Rhetorex Drivers, Insert Disk 1-CommandFax) for reference. There is a quick start page in the documentation, but it is much too high-level.

During the installation of the Rhetorex drivers, we found that a couple of the screenshots in the manual (pages 62 – 63) differed slightly from what we saw on our screen. So, we did some guesswork, which is never a good thing. We suspect that the Rhetorex drivers were updated since the last reprint of the documentation. Fortunately, we guessed well, and the system worked (as you will see in the Operational Testing section).

FEATURES

The bulk of SatisFAXtion-On-Demand's features are listed in the sidebar. However, it should be emphasized that the SatisFAXtion board uses an on-board co-processor. This approach ensures the highest fax performance for multiline servers by managing fax transmissions with dedicated processors. Class 1 and 2 modems, on the other hand, rely on the host PC's processor for fax conversion, compression, and transmission. This impacts performance in standalone and server environments and generally limits processing speed.

For high-volume fax environments, SatisFAXtion scales up to 32 channels per chassis and provides fault tolerance through the use of Auto-Reload and LocalFAX features. Under an error condition, the "WatchDog" timer detects when the host or LAN stops responding and automatically resets the board to re-establish communications. And with LocalFAX your network server can be backed up by a locally attached fax machine, allowing you to continue to send and receive paper faxes, even when your server is down.

OPERATIONAL TESTING

We broke down testing into four areas. These include "hookup" to the phone system; database management; using the fax-on-demand system; and using the reporting features.

Hookup To The Phone System

Hooking up the system is as simple as drawing four analog phone lines from four analog ports on your phone system and plugging them into the Rhetorex voice processing board. Incoming calls sent to the Rhetorex board are picked up after a preset number of rings. Then, an initial greeting is played.

After you choose four ports with phone numbers you wish to reserve for

Figure 2. SatisFAXtion-On-Demand's system configuration options.

the fax-on-demand system, you can add this information to your company's auto-attendant (that is, "Press '1' to access the fax-on-demand system"). You can also tell your customers or clients the direct number to access the system, or you can choose to keep the direct number unpublished and instead transfer calls from your main number to the fax-on-demand system.

We plugged in the four lines for incoming calls and got the system to work the first time we tried it. We also hooked up two analog lines for outgoing faxes. This, too, was a simple setup. Overall, hardware setup was very easy. We encountered no problems whatsoever.

Database Management

SatisFAXtion-On-Demand, which uses the DBF (Dbase) standard for its database, shields you from some of the details of database management. For example, the product provides a DOS program, CFAXEDIT, which allows you to manage fax documents. In addition, the CFAXEDIT program takes care of writing to the DBF file.

You could probably use your favorite database to edit any DBF file. However, this procedure could affect the Microsoft FoxPro CDX indexes, so we wouldn't recommend trying it without backing up the file first.

The screens for maintaining, modifying, and adding fax documents are fairly user-friendly. We were able to familiarize ourselves with the interface without consulting the documentation. In addition, the product's CommandFax program, which runs under Windows, has a
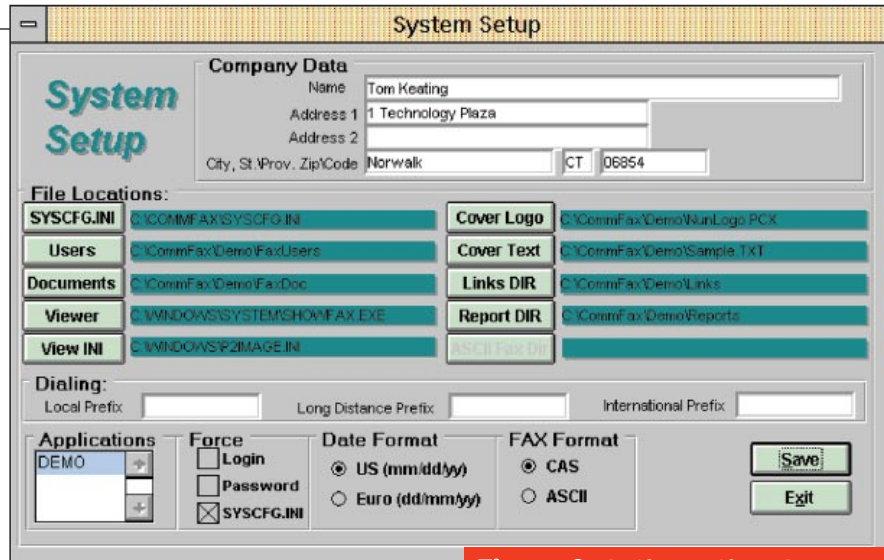
Figure 3. SatisFAXtion-On-Demand's screen for modifying document security and expiration settings.

very user-friendly GUI for modifying and adding fax documents (Figure 1).

Overall, the most impressive feature is the ease with which you can manage the database to add new fax documents and attach either default cover pages or specific custom pages. The database files, including their locations, can be modified via a very simple setup screen (Figure 2).

The database is able to store cover logos and cover text to each individual fax document for customized cover pages. The system stores passwords and institutes security levels for individual fax documents (Figure 3). Also, CommandFax can be configured to support 900 numbers, and the software allows you to observe the pertinent FCC regulations.

CommandFax will also process credit card purchases of faxes that have a cost associated with them within the database. It performs the Modulo 10 algorithm to determine if the number is a true credit card number, but it does not check to see if it is an invalid card (say, stolen or expired). It doesn't actually perform credit verification or payment deductions, but it creates a log file of purchases which can be submitted to a bank for credit deductions.

Another database management feature is the ability to provide documents with expiration dates. This is useful for subscription information, show brochures, product announcements, etc. Finally, it has a database of area codes and local exchanges which will automatically "parse" out any unnecessary information (extraneous area codes or the long-distance prefix) depending on the phone number entered, so your faxes will always be directed to the right number (assuming, of course, the caller entered the phone number correctly).

Using The Fax-On-Demand System

Our tests included mixing text with graphics files, calling in as a super-user and recording voice prompts remotely, requesting documents and bulletins, and leaving voice mail. We also tried the product's print utility, CommandFax Print-2-Image. This utility allowed us to print from any Windows application to create a fax image file (which can then be faxed).

The fax-on-demand software allows you to store up to 81 simple audiotext messages, which you can use to make brief announcements, provide additional instructions to the caller, or relay other information. CommandFax, the main piece of software, comes with a set of pre-recorded demonstration voice messages which work with its demonstration system.

To customize your own recordings, you can easily record them over existing recordings by using a telephone connected to the voice card and by going into sysop mode. You can rerecord the digits in your own voice as well, by entering sysop mode, and then simply pressing the digit on the phone you wish to record, followed by the pound (#) sign. A complete script of CommandFax's default recordings were included in a file called SCRIPT.TXT, which you can view with an ASCII editor. The manual also contains a printout of the script file-names and corresponding descriptions, which is useful for recording your own fax-on-demand voice prompts.

We were able to call into the demon-

stration system and request multiple documents and bulletins quickly and easily. We added a few of our own custom documents and voice prompts, and the system handled these without a hitch. We also included faxes with both text and DCX format files. The system worked flawlessly.

During our test runs we could watch the fax-on-demand server's screen display and see what was going on, such as "playing Digits: 2" or "playing MSG 300." Figure 4 shows a run-time example of the fax-on-demand system playing back the fax number the user entered. The status of each port, total calls today, error calls, and other statistics are shown in Figure 5.

Reporting Features
The reporting features were excellent

RATINGS (1-5)
Installation: 3
Documentation: 4.25
Features: 4.5
GUI: 4.25

(Figure 1). One of the reports included was a document catalog — a simple listing of all documents in the system. A more detailed listing, including all the fields of all the documents, is also available.

Also included is a document diagnostics report. This useful feature checks whether all the PCX/DCX and TIF files are valid. You can also create a report of what documents were requested by day or series of days. User activity reports and other reports are also included. Reports can be output to

an LPT port or to an ASCII text file, which you can then open in a Windows word-processor application for formatting and printing.

The only improvement to the reporting we would suggest concerns report output. We would like to be able to output these reports to quote-comma-delimited or other standard database file formats. Such a feature would have allowed us to perform our own data manipulation, such as sorting within our favorite database program. Of course, you could use the FAXDOC.DBF or FAXLOG.DBF database files (and write your own report using these files), but it would be nice to use the built-in reports, which already parse out extraneous fields.

ROOM FOR IMPROVEMENT
Although you could say it is the

SatisFAXtion On-Demand Features

General Features
Voice
- Customizable voice menus; ability to implement changes remotely.
- Support for up to nine languages at a time (ideal for international applications).
- Individually configurable voice lines for different voice menus, cover and back pages (ideal for service providers).
- Audiotext document descriptions.

Telephony
- Configurable outdial modes (to permit local calls, long-distance calls to specified area codes, calls to all area codes, international calls, any or all of the preceding modes).
- Configurable line modes (callback and simultaneous inbound voice and outbound).
- Support for shared lines (except on the server version — customer must call from the handset of their fax machine).
- Lock out applicable to specific numbers (such as 900, 976, 411, etc.).
- Operates in areas with multiple local area codes (localities with overlay area codes).

Facsimile
- Transmission of mixed file types; ability to combine text (.TXT) and graphics (PCX/DCX/TIF).
- Optional cover page and end page on all fax transmissions.
- High-volume broadcast fax from any DBF database (built-in).
- Choice of low-resolution (100 × 200) and high-resolution (200 × 200) fax transmission.

Document Management
- Document databases in .DBF file format; indexes in Microsoft FoxPro.CDX format.
- Separate cover logo and text for users or documents (or no cover page).
- Configurable up to 81 catalogs/9 bulletins and a nearly unlimited number of documents.
- Expiration, password protection, and embargo dates for documents and users.
- Up to three levels of password protection for documents and users.

Management And Reporting
- Keeps track of account balance restrictions.

- Collects and validates credit card numbers.
- Includes standard reports. (For custom reports, use comma-delimited or .DBF transaction logs.)
- Provides transaction logs for each call. (Records date, time, duration, fax and voice numbers, document(s) ordered.)
- Defines up to three levels of security/access. (Password protection on documents and system configuration.)

Other
- Built-in broadcast fax. (Use your system simultaneously to broadcast faxes and service fax-on-demand requests.)
- Ability to interface to most voice mail systems. (The product can also store voice messages from callers within the system.)

SatisFAXtion-On-Demand Gold
Capable of handling up to 10 calls per hour and of sending up to 80 fax pages per hour, this entry-level standalone information-on-demand server includes a 2 channel Rhetorex Duet voice card, a SatisFAXtion 400 intelligent fax card, and Nuntius CommandFax Information on Demand application software. This system upgrades easily if you require additional fax or voice lines. Handles 30+ calls/hour. Retail price is $1,999.

responsibility of the voice card and fax drivers to modify the CONFIG.SYS and AUTOEXEC.BAT, we would like the CommandFax installation to detect which cards are being used and then make the appropriate changes to the AUTOEXEC.BAT and CONFIG.SYS files automatically. This is particularly true if you are using the standard hardware, which ships with the SatisFAXtion-On-Demand product. The automatic modifications should happen after prompting the user with the changes that are to be made to these files. This would make for a complete, tightly integrated fax-on-demand solution with minimal installation hassles.

We'd like to see support for 32-bit fax and voice processing drivers, which use less conventional memory, and which generally load faster. Also, we would

SatisFAXtion-On-Demand Platinum
Capable of handling up to 30 calls per hour and of sending up to 200 fax pages per hour, this mid-range package includes a 4 channel Rhetorex Quartet voice card, a 2 channel SatisFAXtion 2000 intelligent fax card, and Nuntius CommandFax Information on Demand software. This system also upgrades easily if you require additional fax or voice lines. Retail price is $3339.

SatisFAXtion-On-Demand For Fax Servers
Designed to handle up to 30+ calls per hour, this package is appropriate if you want to connect your Information on Demand system to your existing fax server. The package includes a 4 channel Rhetorex Quartet voice card and Nuntius CommandFax Information on Demand software. Retail price is $1,699. This system can be connected as a user to the following popular fax servers:
•FACSys 3.40a from Optus Software
•FaxPress from Castelle
•FaxServe from Cheyenne Communications
•LanFAX Redirector from Alcom
•NetSatisFAXtion from Delrina or Intel
•ObjectFax from Traffic Software
•RightFax from RightFax ■

like to see the ability to "call/run" the fax management program (CFAXEDIT) from within the run-time CommandFax (CFAX) software. Of course, no outgoing faxes must be in queue or presently transmitting for any changes to the DBF database to take place. This is probably a security precaution, since it's possible to corrupt the database if you modify it while it is in use.

CONCLUSION

We really liked the user-friendliness of SatisFAXtion-On-Demand. We were a bit surprised at the DOS interface's ease of use for fax management and monitoring. The Windows version of CommandFax was also very easy to use and maintain.

The feature set for this system is very good. If you are interested in seeing a demonstration, you can call Wildcard's demonstration system at 800-801-4549, which is available 24 hours a day, 7 days a week.

Figure 4. SatisFAXtion-On-Demand: Run-time example of voice prompts being played. In this case, the fax number entered by the caller is being read back to the caller.

Voice E-Mail 3.0 For Exchange

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E-mail: info@bonzi.com
Web Site: www.bonzi.com

Bonzi's Voice E-Mail, which allows you to combine e-mail and voice mail capabilities, isn't necessarily a means of replacing your existing voice mail system. Rather, by introducing
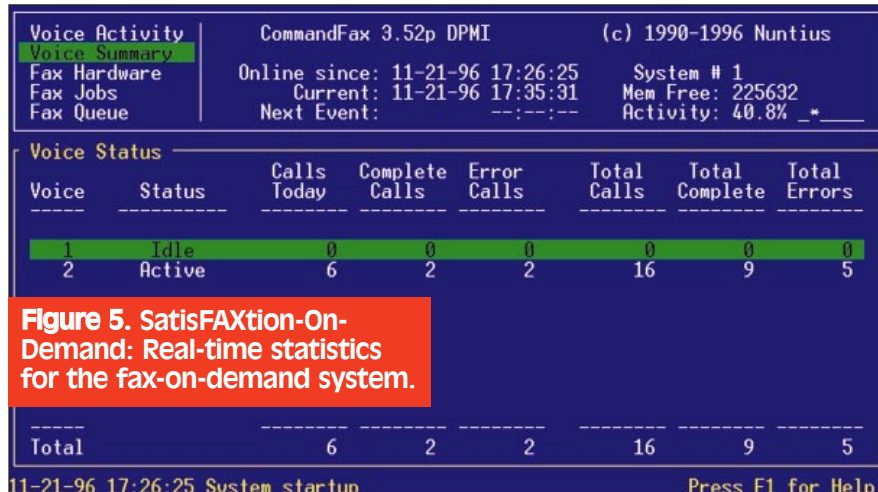
Figure 5. SatisFAXtion-On-Demand: Real-time statistics for the fax-on-demand system.

voice e-mail, the product acts as an "enhancement" to your existing voice mail system. But, in any case, why would you consider Voice E-mail? Two reasons: 1) Adding the ability to clearly convey emotion and/or attitude with your text messages. 2) Increasing productivity by adding content to your messages as quickly as you can speak it.

Voice E-Mail, by giving users the ability to add emotion to messages (whether over internal e-mail or over the Internet), satisfies a basic need for people who are attempting to communicate via text messages. If you doubt this need exists, we invite you to consider why else "emoticons" would have become so popular.

As for the productivity issue, we would like to point out that while most computer users type 20–30 words per minute, human speech averages 200–250 words per minute. Thus, the use of voice over written text increases how much content can be packed into a message in a given period of time, and thus increases productivity.

FEATURES

Voice E-Mail supports the inclusion of pictures and photographs in your messages. Thus, a person's photograph can be accompanied by a voice sample from that person.

The Voice E-Mail Viewer supports all of the following image file formats: Bitmap Files (*.BMP), GIF Files (*.GIF), JPEG Files (*.JPG), TIFF Files (*.TIF), PCX Files (*.PCX), WMF Files (*.WMF), Targa Files (*.TGA), EPS Files (*.EPS), Kodak PhotoCD (*.PCD), MacPaint Files (*.MAC), MS Paint Files (*.MSP), OS/2 Bitmap (*.BMP), JFIF Files (*.JPG), CMP Files (*.CMP), JTIF Files (*.JPG), SUN Raster (*.RAS), CALS Raster (*.CAL), TIFF LZW Files (*.TIF), GEM Image (*.IMG), WordPerfect (*.WPG), Macintosh PICT (*.PCT), and CCITT Files (*.TIF).

Voice E-Mail 3.0 uses a new "lossless" compression technology specifically optimized for digital audio. Most
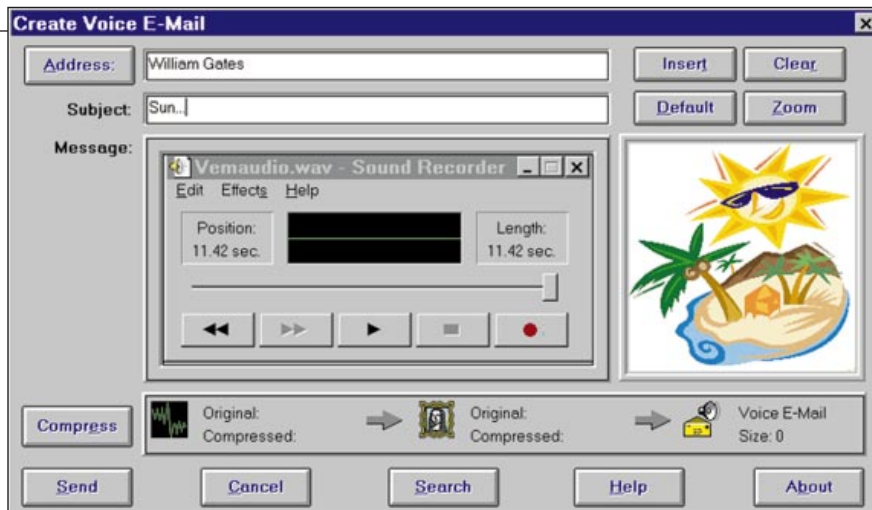

Figure 6. Voice E-Mail: Main screen for creating voice e-mail, including recording a message and inserting a picture.

audio compression algorithms today are "lossy," which means they lose digital waveform data during compression. The more information is lost, the more the quality suffers. And there is no way to get the information back once it's gone, which means an uncompressed recording will never again sound exactly like the original.

"Lossless" compression, on the other hand, doesn't lose any of the original data. The uncompressed audio sounds *exactly* like the original recording because *it is* the original recording. No information is lost. The uncompressed audio and the original recording are identical in size and quality.

To conserve disk space, all of your Voice E-Mail files are stored in compressed format on your hard disk.

Figure 7. Voice E-Mail: The error message we received when we inserted a fairly large TIF file (5 meg).

However, you can save any original .WAV file out of its compressed .VEM file by clicking the Save As button on the Voice E-Mail Player, and then giving it a name other than VEMAUDIO.WAV.

SYSTEM REQUIREMENTS

To use Voice E-Mail, you need:
• a sound card and a microphone.
• Windows 3.1, Windows for Workgroups 3.11, Windows 95, or

Windows NT.
• 4 MB of RAM and 2 MB of free disk space.

Supported platforms include WinCIM, America Online, Microsoft Mail, Microsoft Exchange, Eudora, and Netscape

OPERATIONAL TESTING

We tested Voice E-Mail 3.0 using the Microsoft Exchange version on a machine with multimedia support. We refer readers to Figure 6 to see the main interface for creating a voice e-mail.

To insert an image, graphic, or picture, you simply click on the Insert button on the "Create Voice E-Mail" screen and then select the file you desire. All images, graphics, and pictures are re-sized to fit into this thumbnail. To expand the thumbnail into the full viewer, you just click on the Zoom button, and the picture will zoom out to its full size. To remove an image, graphic, or picture, there is a Clear button. After you click on this button, the thumbnail viewer displays "No Picture." If you find yourself repeatedly inserting the same picture, you can click on the Default button. Then, every time you create a new Voice E-Mail, the Viewer will default to that picture.

Bonzi Software's Voice E-mail 3.0 crashed (Figure 7) when we attached a moderately sized .TIF file to the picture box. The crash would occur when Voice E-Mail was trying to compress the voice. Apparently, inadequate memory caused the error, which then crashed the voice e-mail program. We were forced to redo the voice e-mail. We rebooted and retried a similarly sized .TIF (about 1 meg), and the program crashed again. When we limited
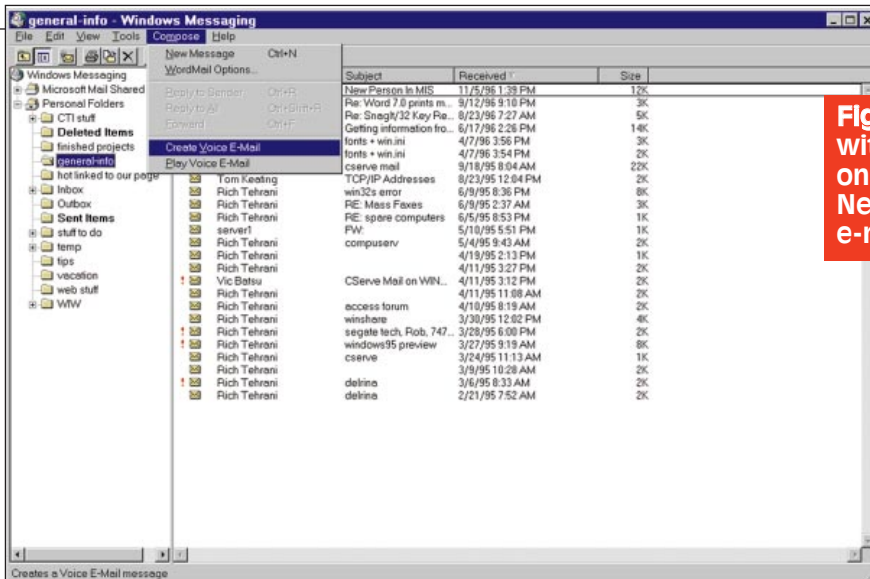
our testing to smaller graphics, the program seemed to work fine.

To play a voice e-mail, you must have Bonzi's player. Thus, you won't be able to send voice e-mails to just anyone. (Before you send anyone a voice e-mail, you must make sure they have the player.) Fortunately, the player can be downloaded for free at Bonzi's Web site. Actually, if you do decide to send a voice e-mail to someone, and you are unsure whether this person has the player, you don't need to worry. Voice E-Mail 3.0 "tags" a message to the bottom of every voice e-mail. The message reads, "This is a Voice E-Mail (.VEM) file, created using Voice E-Mail 3.0 for Microsoft Mail/Exchange. For complete information, go to http://www.bonzi.com."

Thus, anyone who receives this message is alerted to the availability of the Web site, where they can learn about the free download option. Of course, the recipient will need Web access and a bit of computer expertise. Also, the free player permits only the viewing and playing of voice e-mails. To create your own voice e-mails, you will need to purchase the full version.

ROOM FOR IMPROVEMENT

We would like the product to make it easier for users to opt for having the voice e-mail automatically play the voice portion (auto-play) of a message. Ideally, this functionality should be available whenever a user double-clicks on a voice e-mail. At present, you have to click on the play button each time you want to listen to the voice portion of the message.

In the Exchange inbox itself, it would help if Voice E-Mail distinguished voice e-mail messages from regular e-mail messages. Color-coded icons, for example, would let you know at a glance what message types you had.

We were surprised that this product lacked a button on Exchange's toolbar to create a new "voice e-mail." Instead, you must click on Compose and then on Create New Voice E-Mail, which was a bit tedious (Figure 8). Also, in those instances where we already started a new message, we would like to have a button on the new message's toolbar to create a voice e-mail.

We would have also liked to have had the option of omitting the text at the bottom of every message directing the message's recipient to Bonzi's Web site for more information. Finally, we would have liked to have been able to attach other types of files other than picture files. If this feature were added, users would no longer be obliged to send separate e-mails for file attachments.

TeLANophy, a computer-telephony and unified messaging software application, brings total call handling and mail management to the computer desktop. The product uses Microsoft Windows, and works in conjunction with Active Voice's Repartee voice mail/call processor system. The Repartee system has voice mail, automated attendant, audiotext, and facsimile functions, all of which are fully integrated.

TeLANophy, when integrated on your local area network with Repartee's voice processing system, provides fully integrated features, including voice mail, e-mail, faxes, integration with your database, as well as caller-ID and automatic number identification (ANI). TeLANophy offers total call control, including dial out, take an incoming call, request hold, transfer, and other advanced features.

INSTALLATION

A technician from Active Voice visited CTI Labs and installed the Repartee voice mail system and its accompanying software. On the client side, our installation of the TeLANophy modules went without a hitch. Getting the client to connect to the Repartee system was a little tricky, though.

We had difficulty connecting to the Repartee server because the subnet mask was entered incorrectly during the installation on the Repartee server. (It was supposed to be 255.255.255.0, but it was entered 255.0.0.0 instead.) We couldn't find the configuration program to change the subnet mask, so we ended up re-installing over 10 disks.

It did seem odd that the OS/2 server lacked an intuitive means of changing the TCP/IP settings. (Then again, the TCP/IP protocol is a recent addition to the Repartee system.) After we fixed the TCP/IP setting, we were able to have the client software on a Windows 95 machine logon to the Repartee server.

We also had some difficulty hooking up the Repartee server to our Comdial DXP switch. (This problem, however, was in no way the fault of the TeLANophy product.) At first, we were unable to access any phone functionality. After several hours, we decided to call it a day. We figured we would try and call a Comdial technician to aid us in the integration.

A few days later, our team of CTI engineers resumed its installation efforts. We disconnected a couple of our voice mail ports and hooked them

up to the Repartee system. After we customized a few settings in the Comdial DXP software, we saw some functionality between the Repartee system and the Comdial switch. We were able to make an outgoing call from ViewCall (one of TeLANophy's components), which automatically dialed our extension. After we picked up the handset (which was ringing), the Repartee system started sending DTMF digits of the phone number, which we could hear on the receiver.

Unfortunately, there was no dial tone. The system could not dial out. So, we played with some different configuration settings on our Comdial DXP switch, but no sooner would we activate one feature than find we had deactivated another. We consulted a Comdial technician, who told us that unlike intercom ports, the voice mail ports are not call-conference-enabled

by design; therefore, they cannot be used to connect two parties. The technician told us that using Comdial's wideopen.office would allow Active Voice's TeLANophy product to be able to perform dial out, transfers, and other call functionality.

We were a little disappointed that Active Voice lacked this information. So, we were all the more grateful that the Comdial representative took so much time to help us figure out that the Comdial DXP didn't support what we wanted to do with the Active Voice product.

[*Technology Editor's Note:* Complications such as these are common when you attempt to integrate products from different vendors. Certainly, Active Voice is not alone in having less than perfect knowledge about how its products integrate with products from other vendors. We only mention complica-

tions such as these to help make people in the industry aware of the need for continuous efforts to facilitate integration. Discussions of such problems can usually be generalized to the industry as a whole, and how it stands on interoperability issues. We expect that emphasizing the benefits of standardization and conducting open, objective discussions of integration problems will contribute to the industry's efforts to facilitate interoperability.]

Because the integration problem encountered in this installation wasn't fully resolved, our testing of some of the call functionality was limited to looking at how the GUI interface worked and how it would facilitate call handling. Some of our comments are based on a call functionality demonstration by Active Voice. However, we were able to conduct thorough tests of the product's voice mail features.

Adding Unified Messaging To Your Phone System: The Alternatives And What They Mean To You

BY SUSAN WARREN
RHETOREX MARKETING EVANGELIST

One of the best things about unified messaging is that it replaces the time-consuming, sequential interface of your old voice mail system ("Press 5 to listen to the next message…") with an intuitive, visual interface. That's great, but how do the voice messages get there in the first place? And, for that matter, how do they get back out again?

Chances are that your unified messaging server will be connected to your company's telephone system — not directly to the public telephone network. The connection between the messaging server and your company's phone system (PBX or key system) lets callers record a voice message for you when you don't answer your phone and allows users to call from the road and listen to their messages (voice, e-mail, and fax). It likewise enables a very convenient way for desk jockeys to listen to voice messages without a sound board — by

playing them over their office phone.

In effect, the connection between the phone system and messaging server is a gateway for voice traffic between the data network and the public telephone network. In addition to the voice signal, other information about the call (caller ID, etc.) must pass through this gateway.

How is this critical connection made? Therein lies the problem. Unlike the IT (Internet telephony) world, where standards define most hardware and much software, telephone systems are almost always proprietary in design. Most telephone systems sold today provide methods to interconnect with PCs, but at a price. And while many of the methods provided adhere to a standard, no one method is pervasive. Some methods pass only the call information or only the voice signal, so two methods must be used together to provide a complete connection. Worse yet, about half of the legacy telephone systems already installed in North America support proprietary connections only.

TSAPI

One of the standard methods you hear a lot about these days is Novell's Telephony Services Application Programming Interface (TSAPI). TSAPI provides the kind of connection needed for unified messaging (and much more), but at a steep price. First, you must pay the telephone system manufacturer for a TSAPI NLM (NetWare Loadable Module), which can range from $10,000 to $40,000. Then there is the cost of the Novell per-seat license: a Netware Telephony Services 2.1 license is priced from $140 to $260 per user. These numbers assume your current telephone system can use TSAPI at all (manufacturers tend to offer it only on their newest models). Even if you don't buy a new phone system, the price tag for TSAPI can add up to big bucks. Unless your business plans to use its powerful call-control features for a call center, TSAPI is overkill (both technically and financially) for unified messaging.

DOCUMENTATION

The TeLANophy documentation briefly and straightforwardly covered the various TeLANophy modules and described the various icons. Though sketchy, the documentation proved adequate, mostly because the product's modules (ViewCall, ViewMail, ViewFax, and others) had easy-to-understand graphical user interfaces. In any case, more detailed instructions are available via TeLANophy's online help, which is quite good.

Actually using TeLANophy didn't occasion any difficulties as challenging as the product's configuration and setup, particularly with respect to accounts and other information on the Repartee system. Although we are not reviewing the Repartee system itself, the documentation for the Repartee voice mail system was very good (despite being divided among a potentially confusing array of separate manuals). Overall, we gave the documentation a 4.0 rating.

COMPONENTS

TeLANophy is a multi-component application. These components include ViewCall, ViewCall Plus, ViewMail, ViewFax, and E-Mail Notify/Delivery. Each of these is discussed below.

[*Technology Editor's note:* Active Voice also is shipping a third-party software called PhoneMax. It's very similar to the ViewCall Plus product, in that it is a standalone TAPI/TSAPI software program. Connect it to a TSAPI- or TAPI-compatible system, and you have a powerful first-party call control software program right from your desktop. With this setup, you don't need a Repartee server. Some of the features of the PhoneMax product include drag-and-drop conference calls, a call log, and a contact PIM.]

ViewCall

Most people can only handle one incoming call at a time. But with ViewCall, you can manage multiple incoming calls and assist important callers immediately — even when you're already using the telephone. By controlling many calls at once, ViewCall manages callers and messages in ways that would ordinarily require an assistant's attention.

With ViewCall, you can selectively transfer callers to your voice mailbox or another extension, all with the click of a mouse. Whether on or off the phone, you can play a prerecorded greeting which politely tells callers you're unavailable, and then gives them the option of transferring or leaving a message. A neat feature lets you listen to messages as they're

SMDI

Another standard method is SMDI (Simplified Message Desk Interface). With SMDI, call information is passed over a low-speed serial link from the PBX to the messaging server. The voice signal is passed using the analog station emulation method described below. It's up to the unified messaging software to match up the call information with the appropriate call. SMDI is usually cheap or free, and it provides exactly the information the messaging server requires. Since information for all calls is passed over a single link, there can be some delay while the messaging server sorts out the call, especially if the server is answering many calls at once. SMDI is a good choice for unified messaging, but not many telephone systems support it.

ANALOG STATION EMULATION

The method supported by more telephone systems than any other is analog station emulation. In telephony-speak, a station is an office phone or extension attached to a telephone system. Virtually all telephone systems work only with stations from the same manufacturer with only one exception: plain old analog phones, like the ones you use at home. Most telephone systems in use today can support analog phones as stations. Using the analog station emulation method, the messaging server connects through analog voice processing boards to emulate a group of analog stations on the telephone system. The cost of analog station emulation varies greatly between telephone systems, but is typically only a fraction of the cost of TSAPI. Since this method passes the voice signal only, it must be used together with SMDI or in-band signaling to provide the sort of connection needed for unified messaging.

The in-band signaling method passes the call information over the analog line before connecting the voice signal. Like SMDI, this method is cheap or free, and it provides exactly the information the messaging server requires. Unlike SMDI, the call information arrives with the call, reducing the chance for server delays.

For the large percentage of telephone systems that are completely proprietary, only two connection options are available. Analog station emulation can be used but, without SMDI or in-band signaling, the utility of the connection is severely limited.

PROPRIETARY STATION EMULATION

An alternative to analog station emulation is to connect using voice processing cards that emulate the proprietary stations for the telephone system. This approach, known as proprietary station emulation, costs about the same as analog station emulation, and it passes both the voice signal and call information, as required for unified messaging. Cards that emulate proprietary stations are available only for those telephone systems with large market share; nonetheless, such cards can be an attractive option when you need a unified messaging solution.

being recorded, and also lets you pull callers out of voice mail.

ViewCall displays data about each caller from the moment Repartee routes them to your extension (Figure 9). Using caller identification or caller-entered account numbers, ViewCall retrieves records from PIMs (Personal Information Managers) and pops them on-screen automatically. Live, important data is at your fingertips before you pick up the telephone, helping you to reduce time spent on each call and to improve service for every caller.

ViewCall Plus

ViewCall Plus has all the capabilities of ViewCall and more. It controls all calls — both inbound and outbound — from your PC using the power of TAPI and TSAPI telephone systems. Basically, ViewCall Plus lets you manage calls on the PC instead of the telephone.

ViewCall Plus manages several incoming and outgoing calls simultaneously so you can handle more calls in less time with less effort. Three integrated windows control every aspect of your telephone communications. The Telephone Control window shows the flow of calls to and from your extension; the Call Log window records all call activity; and the Contact List manages data about each caller.

You can dial a number by selecting a name from the Call Log or the Contact List and clicking on the dial button. Or, you can "drag and drop" the name to the Telephone Control window. In addition, records from the Contact List or your personal database (when available) pop up automatically to give you important information for each call.

ViewMail

An intuitive Windows interface shows you the sender's name, the subject, and the date and time messages were sent. This information allows you to quickly prioritize and respond to your messages (Figure 10).

Messages are managed with a few mouse clicks. Intuitive buttons let you hear, leave, reply, redirect, archive, and delete messages, and you can rewind, pause, and fast-forward them during playback. On multimedia PCs, ViewMail lets you use a sound device to play and record messages, so you can control them without picking up the telephone. Your hands are free for other
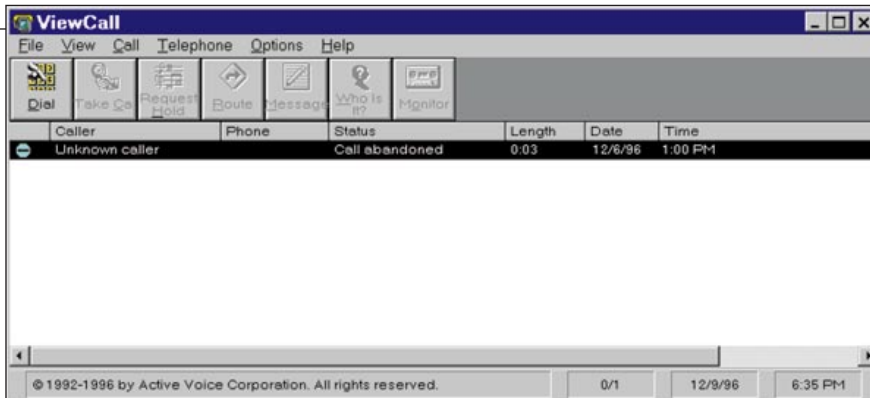

Figure 9. TeLANophy: The main screen for handling your calls, including answering, transferring, sending to voice mail, dialing, and other features.
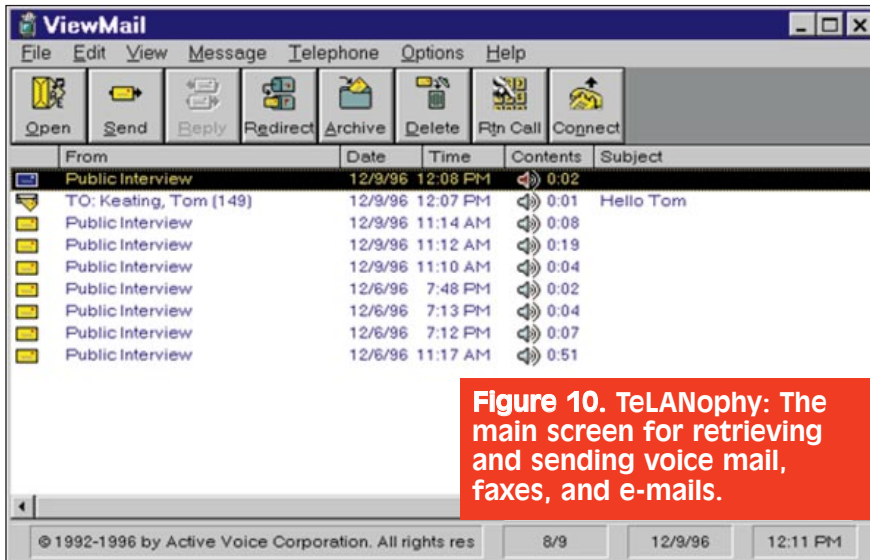

Figure 10. TeLANophy: The main screen for retrieving and sending voice mail, faxes, and e-mails.
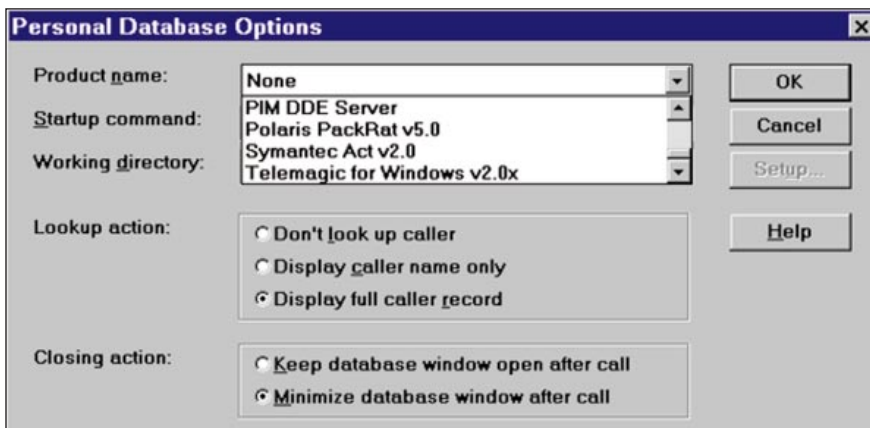

Figure 11. TeLANophy: Screenshot showing some of the built-in contact management (PIM) supports, as well as some other options.

tasks, and the telephone is available for inbound and outbound calls.

ViewFax

ViewFax makes manually sending and receiving faxes obsolete. No more walking to the fax machine, waiting in line, dialing numbers, feeding in pages, or checking every few minutes for impor-

tant documents. It manages both inbound and outbound faxes right from your desktop PC, making fax communications faster, easier, and totally confidential.

Incoming faxes can be sent directly to your universal mailbox using DID, so you can access them via computer or telephone. They can be forwarded to e-mail or sent to a nearby fax machine
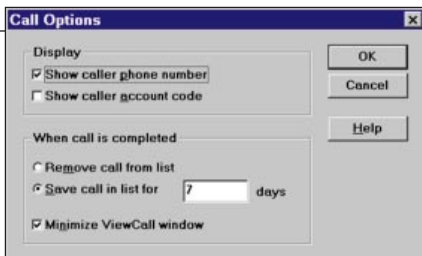
Figure 12. TeLANophy: Screenshot showing display options for calls, as well as feature for setting how long a call may be saved in a list.

Figure 13. TeLANophy: Different notification methods, as well as options for customizing sound files depending on certain events (incoming call, expiring hold, etc.).

Figure 14. TeLANophy: Dialing options.

while you're traveling, or they can be redirected to other Repartee users.

ViewFax also makes it easy to send outbound faxes right from your desktop with Print-to-Fax. Print-to-Fax integrates with many popular personal database applications, so you can deliver a fax to any contact in just a few seconds.

E-Mail Notify/Delivery

The E-mail Integration package gives you 24-hour, two-way access to e-mail messages, without a laptop or modem connection. No matter where you are or what time it is, your e-mail is as close as the nearest telephone or fax machine.

When you check your universal mailbox, the E-Mail Notify/Delivery module includes e-mail with voice and fax messages. Information is provided about each message so you can quickly prioritize them, skip long ones, and listen to attachments when necessary. You also have the option to forward e-mail to the nearest fax machine. With the E-Mail Reader module, you can listen to any e-mail message using text-to-speech conversion. Once you've heard the message, you can record a reply that's sent as a voice mail message or an e-mail with a .WAV file attachment.
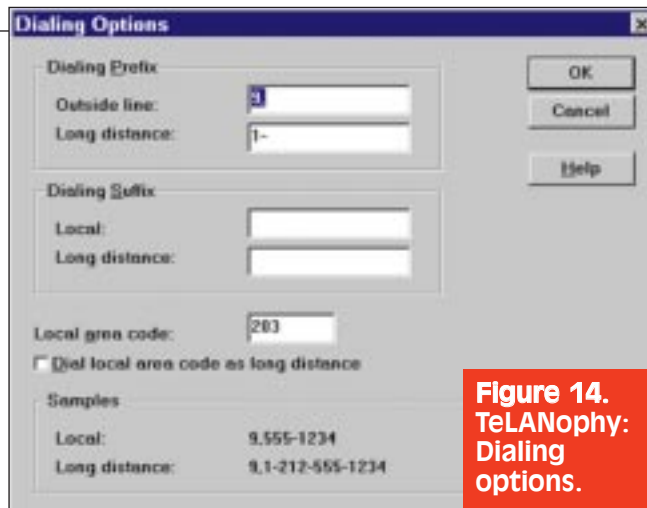
FEATURES

We will briefly discuss TeLANophy's features in the areas of call control, security, and unified messaging.

Call Control

TeLANophy gives you complete control over incoming calls, right from your computer. Calls which are answered by Repartee's automated attendant are displayed on your computer screen within the ViewCall program the instant they are routed to your extension.

Identifying The Caller: TeLANophy provides you with three ways to identify callers:

• *Caller ID or ANI information:* Whenever caller ID or ANI information is available, the system in conjunction with your database will identify a caller by name, number, and other pertinent information. Thus, you will know who is calling before you answer the call.

TeLANophy supports any caller identification information supplied by the public telephone network. For example, TeLANophy automatically displays an incoming caller's telephone number.

• *Account number or telephone number (captured as DTMF digits):* TeLANophy can ask a caller to enter a telephone number, account number, or other identifying number using touchtones. Once this number is collected, TeLANophy displays this information automatically.

Using this information, you can have TeLANophy search your personal database of telephone contacts for a matching record. If TeLANophy finds a match, it will show the caller's name, along with the telephone number. It can even open your database and display the caller's complete record. Some of the databases and PIMS with built-in support include TeleMagic, Act!,

Commence 3.0, GoldMine, and Microsoft Access; the product also supports DDE (Figure 11).

• *Recording (and playback) of information spoken by the caller:* In cases where a caller's telephone number is unknown, TeLANophy records the caller's response to a query (usually a request for the caller's name and/or affiliation). TeLANophy immediately plays the recording back to you at your workstation (if a sound device is present) or over the telephone.

TeLANophy's ViewCall interface has large, easy-to-read icons which allow you to take a call, ask a caller to hold or leave a message, or transfer a call to a different extension with a single mouse click. Some options which are available within ViewCall include setting how many days to keep a call in a save list, showing callers' phone numbers (caller ID), and keeping ViewCall minimized (Figure 12).

Notification Features: On an incoming call, you can flash the ViewCall icon (minimized) or open the ViewCall window, as well as play a specified .WAV file. You can also be informed of when a caller is approaching maximum hold time, is abandoning hold, or is leaving a message. All of these actions are indicated by user-specified .WAV sound files. Finally, you can request that all incoming calls automatically play the screened caller's name as well as have ViewCall automatically monitor the caller's message (similar to call-screening). All of these notification options are shown in Figure 13.

Dialing Options: These include specifying any dial-out prefixes (such as "9") and dialing suffixes. You can also designate your local area code and whether or not a particular area code should be considered long-distance (Figure 14).

This product could be even more powerful if it had more "smart" dialing features, such as those available with Wildcard's SatisFAXtion-On-Demand. As mentioned in our review of this product (see page 34), SatisFAXtion-On-

Demand has a database of area codes and local exchanges which automatically "parse" out any extraneous area codes or the long-distance prefix, depending on the phone number entered.

We would like Active Voice's dialing mechanism to be able to call up its own

database table containing all the local prefixes/exchanges for your area. This table could be user-configurable to add just your local exchanges, and then the Active Voice ViewCall program could call this table, modify the phone number as needed, and then dial the phone

number. The table shouldn't be that large, so it should be fairly easy to implement. Otherwise, you might try to use the Return Call button. Then your system might try to dial a local phone number or a phone number within your state with a "1" prefix, even if using the

AVT's CallXpress3

Applied Voice Technology (AVT) announced that it is releasing version 3.0 of its Desktop Message Manager, a client application that provides a graphical interface for managing voice and fax messages. Version 3.0 incorporates some new functionality and such capabilities as caller ID, ANI (automatic number identification), and DNIS (dialed number identification service). The product is based on AVT's CallXpress3 voice- and call-processing platform, a multi-application CTI product designed to support from 4 to 64 ports while enabling CTI applications, such as unified messaging and interactive voice response (IVR).

AVT asserts there is no single solution for something as complex as unified messaging, particularly considering that:

1) the base of e-mail clients has grown so large.

2) multiple e-mail vendors have established themselves in the market.

Thus, AVT decided it wouldn't just add e-mail to its Desktop product. Instead, AVT chose to make its product's voice and fax messages accessible to the e-mail client.

With the availability of APIs and other mechanisms established by an open computer industry, it became feasible to merge multiple mailbox storage sites into one unified graphical environment. In a recent interview with Joe Staples, vice president of marketing of Applied Voice Technologies, we discussed the unified messaging features of CallXpress3, the integration options that will become available to users of Novell's GroupWise5, and other specifics of the new product.

CTI: What e-mail platforms do

you support?

AVT: We do integrations, and we have different integrations for the TUI (the telephone user interface) and the GUI (the graphical user interface). At the graphical interface, we are shipping an integration with Microsoft Exchange Inbox. So, from the Exchange Inbox you can see a single list and manage e-mail, fax mail, and voice mail messages. We're bringing that same type of integration to Novell's GroupWise5.

CTI: So you support a variety of operating systems?

AVT: Today, CallXpress3 runs on OS/2 as an operating system. As a client, we are Windows-centric, so we support Windows 95, NT client, or Windows 3.1. For e-mail integration from the telephone interface, we have a product, called E-mail Access, that allows you to have your e-mail messages read to you over the telephone. For that we support integrations with cc:Mail, Microsoft Mail, and Notes. From the telephone I can get access to voice messages, fax messages, and e-mail. The commands using the telephone are all the same, so if someone sent me a voice mail message and I wanted to forward it or rewind it or reply to it, I

would press all the same digits on the telephone keypad regardless of whether I was working with an e-mail message or a voice mail message.

CTI: As far as the text-to-speech goes, is that a standard feature, or is that an option?

AVT: It's optional. It's sold as a package. The actual product name is E-Mail Access.

CTI: What makes CallXpress3 unique?

AVT: Live Reply certainly does. It gives you the option of being able to provide responses in real-time mode to whoever left a message (Do you want to respond with a message, or do you want to go out and actually call that person?) This capability is available either internally or externally, via the telephone or the graphical interface.

The product's incorporation of caller ID, ANI, and DNIS information is certainly on the leading edge. (There are more products that lack
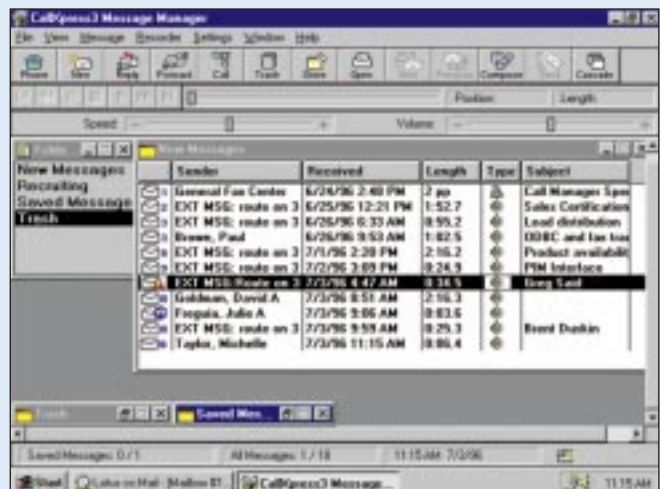
AVT's Call Xpress3: User interface showing new voice and fax messages. The user can listen to any voice message by selecting it and clicking the forward arrow. If the caller is difficult to hear or understand, the user can adjust the speed and volume controls with the mouse.

prefix was inappropriate. This problem could arise if you use caller ID, since this feature always provides the area code in the phone number even if the phone number is considered local.

Thus, it would be great if you could always enter the *entire* phone number, including area codes, and yet have the system automatically correct the phone number without user intervention. Just as an example, our company's location has at least six local exchanges where the prefix 1 and the area code are unnecessary. It also happens that we have several contacts within this dialing area. If we were to use caller ID and Active Voice's "return call" feature, ViewCall would return the number "1-203-838-5555" instead of the correct "838-5555" number ("838" is a local exchange in our area).

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these features than include them.) Other important features are incorporated into the graphical environment of Desktop Message Manager. For example, speed and volume control, return receipt, future delivery — these are all accessible through the graphical interface.

Our integration with the Exchange Inbox is unique. We did not create a custom form as most of our competitors did. We used the Exchange Inbox look and feel and user interface. We think that's the right way to do it because the majority of people who are going to take our product, integrate it with Exchange, and use it, are going to be people who are familiar with the Exchange look and feel. They will want consistency whether they're listening to a voice mail message or viewing an e-mail message.

Our product ships with a CD-ROM called Coach. This addition, which is included at no extra charge, provides multimedia train-ing on the use of our product, both from the graphical interface as well as the telephone interface. If you examine the deployment of unified messaging solutions, one of the big costs associated with these solutions is training all the users. So, we put together this multimedia tutorial that can be loaded either locally on a person's computer or put out on the network.

On the telephone user interface, through E-mail Access, we definitely have the broadest range of e-mail integrations available in the marketplace. From a telephone standpoint, we integrate with cc:Mail, Microsoft Mail, Notes, and (very soon) GroupWise. Many of our competitors integrate with a single e-mail package.

CTI: Does the software run on a server? That is, does it work on your own voice mail server, or can you integrate it with another vendor's voice-mail system?

AVT: CallExpress3 provides the actual voice services. It is the voice server, so that's a required component.

CTI: Are there general hardware specifications or minimum requirements that people should be aware of?

AVT: There's really nothing out of the ordinary. It's pretty standard, available hardware. You can buy a turnkey pack-age, where the server is bundled with the software, or you can buy the software and then do your own integration.

CTI: What kind of boards do you use?

AVT: We use Dialogic cards.

CTI: Does the product have auto-attendant features?

AVT: Yes. In fact, you can set up multiple branches of trees and unlimited call processors to carry out various functions. CallXpress3 is really a multi-application platform. It offers messaging, call processing (from the standpoint of auto-attendant), interactive voice response (where we tie to a whole series of different databases), and call management (where a front-end application is used to manage live-call traffic). So, with incoming calls, you can determine who's calling and why they're calling, and you can route the calls based on different information.

CTI: Does the product do any switching?

AVT: No. We provide an application that allows the user to more intuitively control the switching capability of a PBX or key system.

CTI: How is the product installed? By a reseller? An interconnect?

AVT: We have about 250 resellers, most of whom are interconnects. All must complete a technical certification program before they are able to sell, service, and install our products.

Applied Voice Technology, Inc. (AVT) develops, manufactures, markets, and supports a broad line of open systems-based computer-telephony products, including advanced CTI software, basic call answering systems, and voice messaging systems. For more information, contact AVT at 206-820-6000 or visit their Web site at www.appliedvoice.com. ■
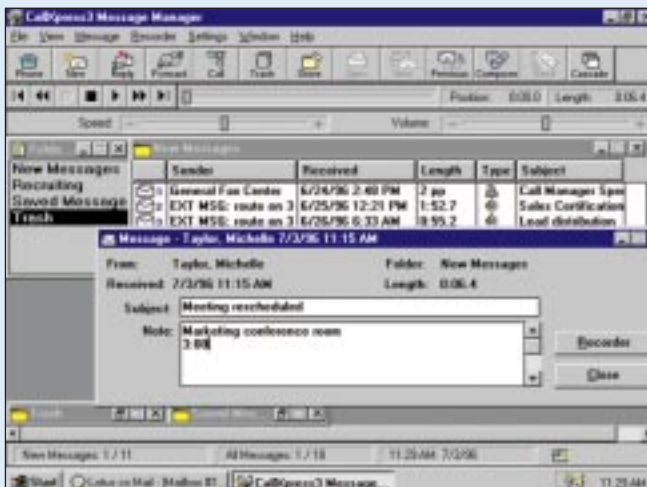
AVT's CallXpress3: Screenshot showing the ability of the user to type notes about the call or fax. With this feature, the user knows what the message is about without having to listen to the message or view the fax again.

Other Call Control Features: These include setting the default route (transfer) extension and the maximum number of minutes for holding on request. If this maximum time is reached, you have the option of having ViewCall automatically route the call to your voice mail or whatever extension you specify (Figure 15). If a caller has already been sent to your voice mail personal greeting, TeLANophy allows you to listen in as the caller leaves a message, as well as the ability to pull the caller out of the greeting and take the call — a remarkable and impressive feature.

Security

TeLANophy features a personal ID and password for security. You can also be away from your desk and logon using your personal ID from another computer connected to your LAN. Thus, you can arrange to have your system permit remote access to your voice mail, fax, and e-mail messages, and yet maintain security.

Unified Messaging

In brief, TeLANophy lets you check all voice mail and fax messages on-screen in one easy-to-use window. This screen-based approach allows you to access messages in any order. In addition, you can access messages much more quickly and easily than on the telephone.

To be more specific, you can use TeLANophy to:

• Check your e-mail messages from any touch-tone telephone and listen to them via text-to-speech conversion.

• Play voice messages over your handset or over your multimedia PC speakers.

Octel's Unified Messaging System

Octel Communications Corporation has indicated that it will soon release a unified messaging application called the Unified Messaging system. The product is designed to integrate voice, fax, and e-mail messaging into an easily accessed, centralized mailbox.

Octel's group marketing manager, Don Nanneman, spoke with us briefly about the new product. The following transcript is a result of that conversation.

CTI: What platforms does Unified Messaging run on?

Octel: The product is a voice messaging system that's built on top of an e-mail system, so it actually utilizes the underlying architecture of the e-mail system to store the messages and serve as a directory. The e-mail system that we're supporting at the initial launch is Microsoft Exchange server. We are also working on an implementation for Lotus Notes server (version 4.0). We're evaluating other e-mail platforms, such as GroupWise and the new open I-MAP architecture.

CTI: Does the product use MAPI calls?

Octel: It uses a software API interface to talk to the Exchange server.

CTI: Are you using an open architecture, or do you provide a turnkey system?

Octel: Unified Messaging is a complete open-architecture product. The software, which was written on NT Server, provides the telephony-user interface (TUI) and the integrations to the PBX. Unified Messaging is also the platform where the text-to-speech software operates.

The text-to-speech is a standard part of the product. Unified Messaging provides three major functions: call answering, voice messaging (where you can send voice messages to other subscribers), and auto-attendant.

CTI: What is the maximum number of ports?

Octel: It's really an infinite number, because you simply add additional servers to the network, with more ports. It's a scaleable architecture since it's built on NT, so it's not confined to how much you can put on one physical server. If you need more capacity than a single server can provide, you just add more servers to the network.

CTI: What steps are you taking to distribute and install the Unified Messaging system?

Octel: We have set up a distribution channel for Unified Messaging that is made up of existing Microsoft solution providers who are certified to implement NT and Exchange. We provide them with training and certification on the Octel components, so the customer will be getting this from the same organization that would have provided their Exchange server or NT server.

CTI: Are there any administration tools?

Octel: The interesting thing about the architecture is that it's built on top of Microsoft Exchange server. All messages are stored in the subscriber's mailbox on Exchange. There is no voice mail system storing messages. There is only one mailbox — the subscriber's mailbox. So, the administration environment at the system level is very elegant. Basically, the system administrator works with Microsoft Exchange server and uses the tab page that we've added. This tab page provides for the administration of voice functions.

CTI: Describe some of the functionality.

Octel: You can reserve extension numbers for different purposes. These include extensions at which you receive messages and what we call the zero-out extensions. You would use a zero-out extension to have a call transferred to another person when you're unavailable.

We emphasize "call class of service," which is a nice way of saying that you can establish templates for the kinds of services that people can access. Then, you can very easily implement a given class of service for a certain group of people, say, all the people in the sales organization or all of the senior executives. They might have different levels of access to the services.

CTI: What is your target audience?

Octel: Because the product is built on Microsoft Exchange, the target audience is anyone who has Microsoft Exchange Server. The target buyers would include IS managers and e-mail system managers.

Figure 15. TeLANophy: Screenshot showing some of the default call handling options for a transfer or hold.

• Reply to e-mail messages with a voice mail or e-mail message.

• Send your e-mail to any fax machine.

• Find out about e-mail attachments and listen to text or .WAV files associated with any e-mail message.

• View faxes on-screen via a fully featured fax message viewer, which includes zoom, rotate, and printing capabilities.

• Fax any Windows document to many people at once right from your PC. Send documents from your fax-on-
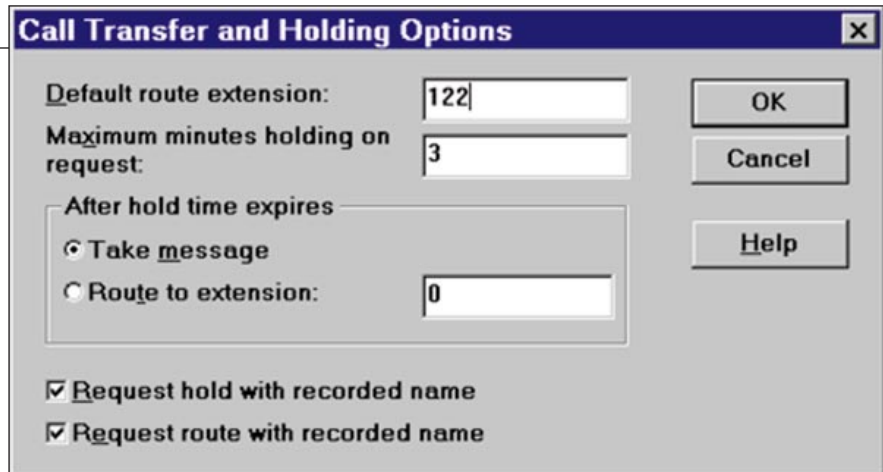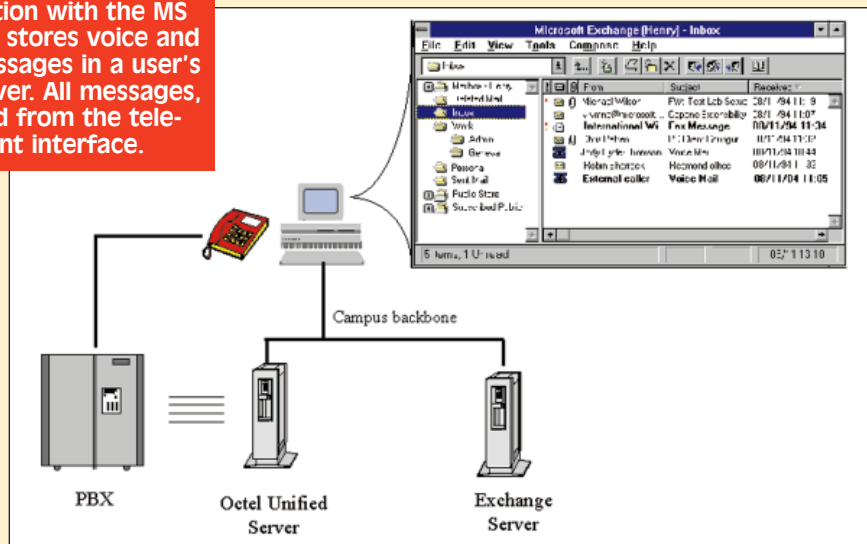

Octel's Unified Architecture: The Unified Messaging system operates as an application running on an NT-based server on the LAN in conjunction with the MS Exchange server. Unified Messaging stores voice and fax messages along with e-mail messages in a user's single mailbox on the Exchange server. All messages, regardless of type, may be accessed from the telephone or through the Exchange client interface.

CTI: Since it's a unified messaging product, how do you handle faxing?

Octel: For the past four years, we have had a compound mailbox on our voice mail systems that is capable of holding fax. We're taking that core technology and implementing it on the Unified Messaging system. The new product will determine whether incoming calls are voice or fax calls and handle them accordingly. Ultimately, they will end up in the subscriber's mailbox.

All of your messages, regardless of media type, will end up in your mailbox. So, if you're looking at your Exchange inbox, you will see an envelope icon for text, a telephone icon for voice, and a document icon

Octel's Unified Server: In this example, both the MS Exchange server software and the unified messaging server software are operating on the same NT-based PC server. MS Exchange server acts as the repository for all subscriber messages and provides the single unified directory. The unified messaging server provides the telephony user interface heard by the caller as well as the PC cards, which provide the interface to the PBX.

for a fax image. You will be able to access any of these at the desktop.

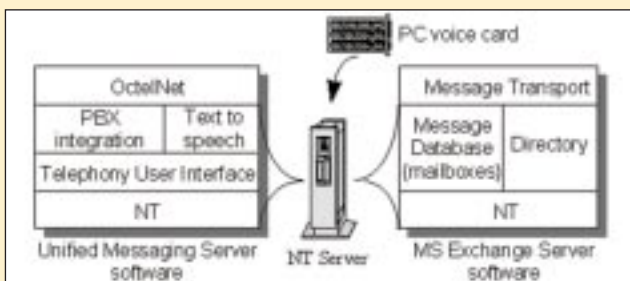**CTI:** What if you're doing any internal voice mail, say, leaving voice mail for someone in your company? Can you can just double-click an e-mail and reply using your sound card or your phone or …

Octel: Yes, the user interface for our Unified Messaging product is very similar to a form that is displayed right within Microsoft Exchange, except it allows you to listen to voice messages or to create voice messages, and you can

even mix media. If someone sent you a text message, and you wanted to reply to it with voice, you can do that. Or if someone sent you a voice message (say they asked you a question about the budget for the next year), well, rather than rattle off all that information as a voice message, it might make more sense to send them a text message. A message is a message is a message — it doesn't matter what medium created it.

CTI: In terms of the proprietary nature of your product, is it necessary to purchase the voice mail player and have it installed? Could you send a voice mail message across the Internet to someone who's not using your software?

Octel: You can send a message to anyone because messages are stored in the e-mail system. The only thing you need to play our voice messages is what's called an ACM, which is a

demand library to any recipient directly from your PC.

• Sort messages in any order you choose.

• Specify groups (such as employees by department) for group e-mails, faxes, or voice messages.

• Take advantage of message properties such as: archiving a message for a specified number of days; indicating whether a message is private or urgent; requesting a return receipt; and scheduling future delivery of a message.

In addition, the product's E-Mail Reader lets you hear and respond to e-mail right over the telephone using text-to-speech conversion. E-mail Reader "reads" the text portion of any e-mail message and will play any attached .WAV files.

The product supports complete integration with several e-mail platforms. These include Microsoft Exchange (Windows Messaging), Novell's GroupWise, and Lotus' Cc: Mail.

TeLANophy offers an extensive range of features. Although we have a few suggestions for improvements (see Room For Improvement), we gave the product an excellent rating (4.9) for its feature set.

OPERATIONAL TESTING

TeLANophy has simple, powerful controls which let you manage messages within a graphical user interface. Intuitive commands let you hear, leave, reply, redirect, archive, and delete messages with one or two mouse clicks. You can hear your messages in any order by simply pointing and clicking to play back any message.

Call Management

How well you handle your telephone traffic is critical to your success, regardless of the size of your company. TeLANophy's call management applications direct this traffic by managing calls on-screen and overcoming the limitations of the typical desktop telephone. With ViewCall and ViewCall Plus, you can control several calls at the same time and identify callers before picking up the telephone. This does more than enhance productivity. It actually decreases the average length of each call and improves service where it counts most — on customer contacts. To be honest, we were absolutely in awe at what this system could do, even if we couldn't get it to work completely with our switch. We did, however, see a demo of some of the call handling of ViewCall at various shows, so we know it works!

Octel's Unified Administration: Here, the MS Exchange server administrative environment is used to accomplish system administration of mailbox features and the management of adds, moves, and changes. Administration may be performed anywhere across the LAN/WAN. The single directory of MS Exchange contains addressing information for all mailboxes and all media.

filter or a sound interpreter. For instance, if you're using a Microsoft-based machine that's using multimedia hardware, there's an ACM for .WAV files, and those come free with the PC when you set it up.

CTI: So you're using .WAV file format?

Octel: It's actually a form of a .WAV file, and our ACM can be downloaded from the Internet. In fact, it's actually being bundled with the Microsoft software that's coming up, all the Office '97 stuff. Anyone who has the current Microsoft voice player that's part of the standard Microsoft Windows set could play our voice messages.
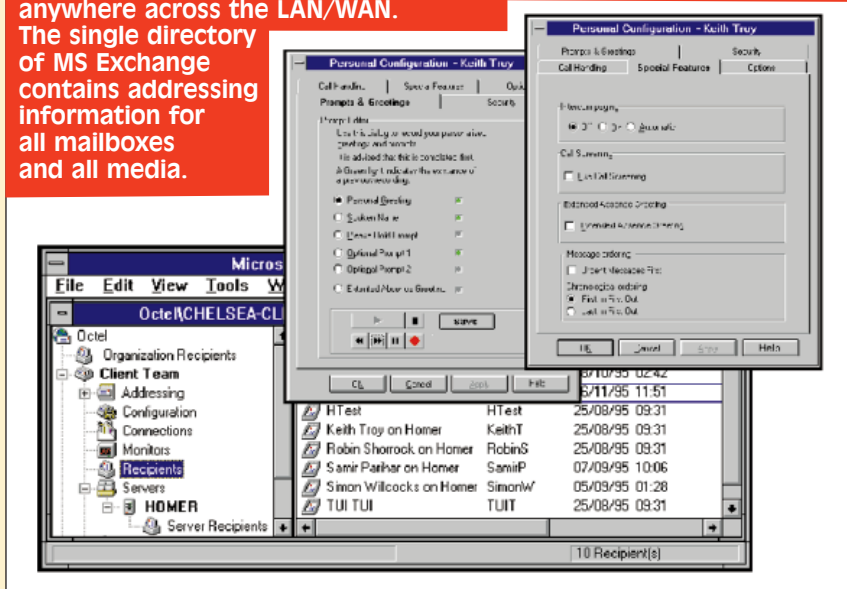
CTI: In other words, the roundabout way would be to use the sound recorder to record it, then attach it, but that's awfully tedious. It's nice that the product essentially does this for you.

Octel: Yes. The beauty, of course, is that if someone sent you a message from an external multimedia-based machine, but you happen to be at a machine that doesn't have multimedia, you can still play it back through the telephone.

CTI: How is that done?

Octel: When using the Unified Messaging client, you tell it whether you want your playback to be through multimedia, or whether you want your

playback to be through your desktop telephone. And in the office, most people prefer to use the telephone, it's faster. It can be more confidential. Also, many people don't have multimedia yet.

CTI: Now, say the user wants the playback on the phone system. How are you integrating to the handset? Do you have a link between the computer and the phone, or is everything based on the server and the server system?

Octel: It's all done through the server and the PBX.

CTI: How does it inform the handset to send the data to a particular line?

Octel: The server, which has the connections to the PBX, has lines much like a typical voice mail system has lines from the PBX coming to it. We just take one of those lines and place a call to the phone at your desk through the PBX.

CTI: So you can handle digital lines then. You don't have to work with just analog.

Because TeLANophy allows you to selectively handle incoming calls, you are able to work without distraction and make more effective use of your time. And because you have information about, and control over, incoming calls, you are better prepared to answer calls and can give callers better service. With TeLANophy, you can handle your calls efficiently and quickly in ways that would ordinarily take a full-time secretary.

We liked being able to be on the phone and see calls coming into the ViewCall program. The ability to send them to voice mail, tell them to hold, or pull them out of voice mail were particularly useful features. Also, being able to select from eight different messages to play to the caller was a real plus. Another nice feature is having the option to have the caller's name

automatically spoken to you. If you opt to leave this feature off, you can always click on the "Who is it?" icon on the toolbar when you want the caller's name spoken to you (Figure 9).

Figure 16. TeLANophy: Message options.

Alternative Access

As previously mentioned, you can use a telephone to access your unified messages, but there is another access method as well. Since TeLANophy can use the TCP/IP protocol (IPX also), we imagine it's possible you can access 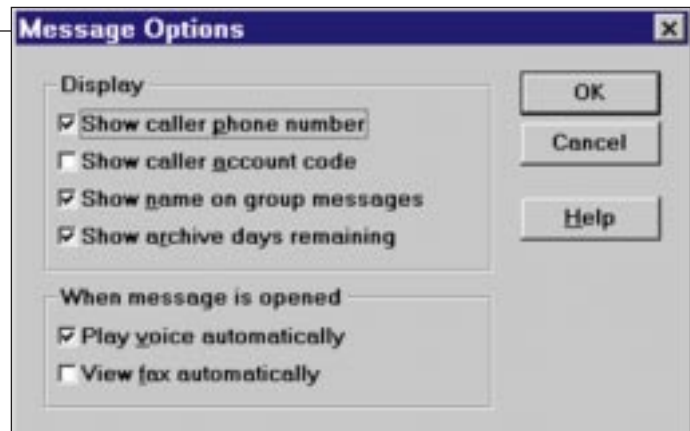the TeLANophy modules using Windows 95 Dial-Up networking, Trumpet Winsock dialer, etc. Then, you would just dial into your LAN to access your messages, using RAS or a secure Internet/Intranet dial-up.

Dealing With "Locks"

While testing the ViewCall and ViewMail modules, one of our testing

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Octel: Actually, it doesn't matter. You don't have to have a brand-new PBX that supports TAPI. The Unified Messaging system will work with any type of PBX, even the old stuff with analog lines. We just pick up a line and place a call.
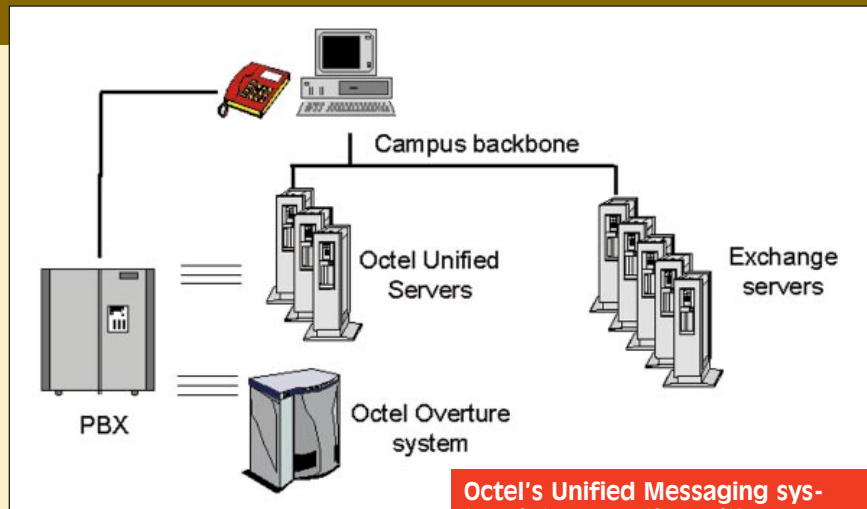
CTI: Do you support the major PBX types?

Octel: We support 128 different PBX types and models, and that's really one of the core competencies that we have here at Octel. Over the past 15 years, we've built our business on PBX integration. It's such a critical part of having a voice messaging system.

CTI: Is there any sort of tie-in with the Internet?

Octel: Yes. First, we facilitate use of the Internet as a transport. All our messages are stored in the e-mail system as messages, so you can route your messages anywhere you want on the Internet, whether it's from one corporate site to another or off the corporate site to anyone else. We can do this because in the Unified Messaging system, voice is just another message in the e-mail system.

Second, we're taking advantage of the technology that Microsoft is implementing with Exchange server. As regards the upcoming release of Exchange server 4.5, Microsoft has been talking about the Web browser

client that will allow users, through a Web browser, to access their Exchange mailbox right over the Internet. So, we really don't do anything in addition to make that work, but we take advantage of all of that underlying technology. The beauty of using an open platform like this is that we can concentrate on the things that we're really good at, and we can take advantage of the things that other people do that they're really good at. We don't have to go out and build some sort of convoluted Web environment. We can take advantage of what the underlying system provides for us.

Octel Communications Corporation offers a wide array of products and services for the delivery, access, and

Octel's Unified Messaging system interoperating with an existing Octel voice mail system. Users are located where they prefer, and migration can occur at the customer's pace. Multiple voice/exchange server architecture eliminates "single point of failure." Voice applications remain on the Overture system as messaging migrates to the unified system.

exchange of voice and fax messages over worldwide communications networks. Octel's customer base includes businesses of all sizes, governments, educational institutions, telephone companies, and cellular service providers. For more information, contact the company at 408-321-2000 or visit Octel's Web site at www.octel.com. ∎

computers hung, although we don't believe any of the TeLANophy modules was the cause. In any event, after rebooting the computer, we couldn't get back into ViewMail. Apparently, the Repartee voice mail system thought we were still logged on. (It gave an error message indicating that that particular user ID was "in use.")

We thought we might have to reboot the Repartee system. We called technical support to see if there was an alternate solution, since bringing down a company's voice mail system can be inconvenient, to say the least. Also, since everyone's computer locks once in awhile, it would not be a smart thing

to have to reboot the voice mail system anytime a computer crashed and "locked" their user ID account.

Technical support at Active Voice told us we could log onto ViewMail as a system administrator, start a "new message," click on the "locked" user name, and then click on the LOGOFF button. We think it would have been better if the ability to log off users could have been accessed from a more convenient position within the software. Resorting to a New Message screen didn't seem very intuitive. We also think that each individual computer user should have the ability to "unlock" their own account without

having to ask an administrator to unlock their account for them.

A Minor Mystery

When we went into ViewMail, we had some messages, each of which was called "Public Interview." We thought they were some test voice messages that were included with TeLANophy, but when we played them, we heard the voices of several of our staff people. Some of these recordings were two minutes long. Strangely, no one remembered making these recordings. We had a mystery on our hands…

Each time we tested the ViewCall program, making an outbound call, we

Ten Four's TFS Electronic Mail Gateway

TenFour's e-mail gateway software connects disparate e-mail platforms. It does so by combining:
- A modular approach.
- Support for the most popular LAN-based e-mail systems.
- A Windows administration interface.

Is the TFS Electronic Gateway appropriate for your company? It may be, especially if your company has acquired new sites that use different e-mail systems. The TFS Gateway could also help you if your company includes departments or sites that deviate from corporate norms in their choice of e-mail solutions. In any case, the TFS Gateway offers a wide range of features for the corporate user.

MODULARITY

E-mail gateways are usually installed between two different e-mail platforms. Such gateways are used to accomplish bi-directional translation between the two different systems. The TFS Gateway, however, first changes the specific format of an e-mail message into a general TFS file format and then into the format of the destination e-mail. It is this approach that accounts for the TSF product's modularity.

The TFS Gateway is actually a

suite of Windows-based modules. You will need one of these modules for every different e-mail system you wish to connect. Thus, expanding your system and enhancing its flexibility is simply a matter of adding modules. (TFS Gateway modules are sold separately.)

CONNECTIVITY

LAN connect software modules support Novell GroupWise, Microsoft Mail, Microsoft Exchange, Lotus cc:Mail, Lotus Notes, and FirstClass. Global connect software modules support Internet mail (bundled UUCP and SMTP) and MCI Mail.

ADMINISTRATION

The Gateway comes with the TFS Administrator application, which is the nerve center of the Gateway. Most functions of the Gateway, including the e-mail modules, can be controlled from the Administrator.

FEATURES

The TFS Gateway includes features such as:
- Support for multiple Internet protocols (selectable options include both UUCP and SMTP).
- Directory synchronization (allows auto enrollment of users).

- MIME compatibility (supports the Internet standard for transmitting file attachments including text, binaries, sounds, and graphics).
- Virus scanning (capable of launching anti-virus utility of your choice to scan attached files).
- Mail forwarding (can route incoming messages to a remote address).
- Support for multiple file attachments (within a single message).
- Automatic detection of character set and attachment type (MIME or uuencode) and automatic decoding.

Additional features include mailback, signature files, automatic reply/receipt, usage statistics, group mailings, and conversion selection.

MINIMUM REQUIREMENTS

System requirements will vary depending on traffic load. However, you will need — at the least — a dedicated 486 machine, 8 MB of RAM, and 10 MB of hard drive space. You will also need to use Windows 3.X or Windows 95 or a Windows NT server or workstation.

IMPROVEMENTS

According to TenFour, the latest version of TFS Gateway (2.23) offers several enhancements. These include dial-up networking support, improved scheduler and directory synchronization, and a better virus scanning interface.

TenFour has announced it will

noticed another new ViewMail message in our inbox. It even had the current date and time, which meant that it was just recorded. At first, we thought it was the microphone hooked up to one of the machines running ViewCall, but when we tested this theory, we determined the microphone wasn't the source of these recordings. We joked that maybe the office was "bugged," and that we were somehow picking up the transmissions.

Then, one of our engineers picked up the handset to a phone hooked up to an AS-4 line simulator, which was also hooked into the Repartee server. He could hear the Repartee's auto-atten-dant asking us to leave a message. At last we found the source of these strange recordings. But now we were curious as to how the Repartee server was able to figure out that we had a handset connected on line 3.

We watched the Repartee server to see what was happening. It started to display "LAN client" on each of the four ports, one at a time, starting with port 4 and working backwards. Then port 3, where we had the simulator, said "OPENING BOX." When we picked up the handset, the auto-attendant started to speak. Apparently, the Repartee system was able to determine where there was a port hooked up.

TenFour's TFS Electronic Mail Gateway.

soon offer a short message service (SMS) module. This enhancement will allow TFS Gateway users to send e-mail messages to digital mobile phones (provided these phones support the SMS standard) as well as alphanumeric pagers.

We would like to recommend a few additional improvements. To start with, future releases should be enhanced to support the addition or removal of gateway modules from the adminstrator. Adding context-sensitive help to setup dialog boxes would make it easier for users to understand some of the more arcane settings "on-the-fly." We would also like to see 32-bit modules across the board (at pre-sent, most modules are 16-bit). Finally, TenFour should add POP e-mail support to the Internet module.

TenFour, a Swedish software development company headquartered in Stockholm, has been working with the integration of electronic mail since 1991. Today, TFS Gateway is used worldwide to connect LAN-based e-mail systems to the Internet, to MCI Mail, and to each other. For more information, contact TenFour at 800-837-0046 or visit the company's Web site at www.tenfour.com. ■

If no DTMF digits are entered in response to the auto-attendant (that is, if there is a time-out), the system, by default, sends the caller to a general voice mail, which Active Voice calls a "Public Interview." Thus, we were being recorded even though the handset to the phone was on-hook. This explained the variable length messages that we got. The system would record longer messages when two people were talking louder than normal or closer to the handset, and shorter messages if the people present were further away. (The Repartee system uses voice-activated recording, so if it doesn't hear anything, it stops recording.)
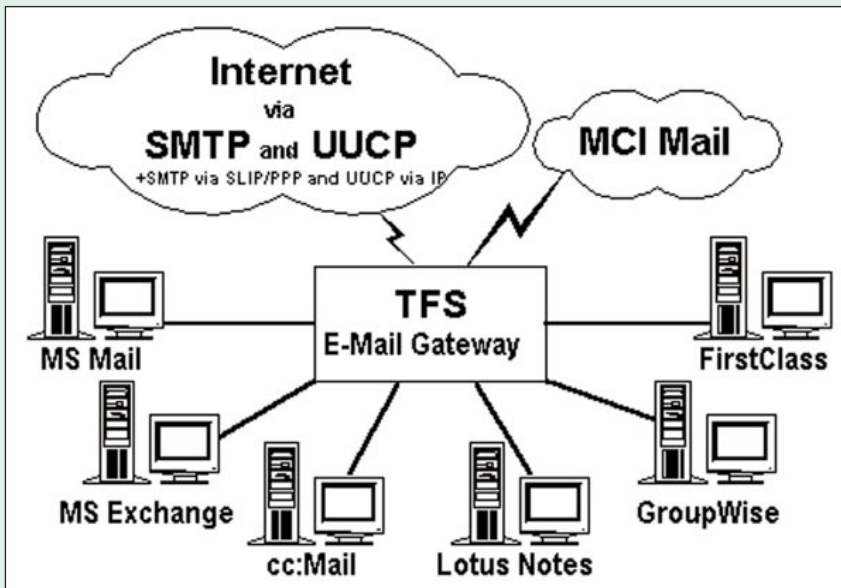
Small, But Welcome Conveniences
We were pleased the product gave us the option of automatically playing a voice mail message (the message would play immediately after we opened it with a double-click). This saved us the trouble of clicking on a Play button. This may seem a minor point, but we've seen many products that oblige you to double-click to open a message and then click once again, on the Play button, to listen to a voice/sound file. TeLANophy spared us this petty annoyance (Figure 16).

Another nice feature is a program called "ViewApps," which automatically loads both ViewCall and ViewMail. This saves you the trouble of having to double-click on two separate icons. You can also put the ViewApps program in your StartUp group. This way, when you reboot your computer, ViewApps will automatically start these applications.

ROOM FOR IMPROVEMENT
Let's start by recapping a couple of points made earlier, and finish with a

couple of additional suggestions. As mentioned previously, we believe that each individual computer should have the ability to "unlock" its own account without having to rely on an administrator. Limiting unlocking capabilities in this way is inherently risky if you have only one or two administrators. A lockout could easily occur while an administrator is unavailable, which means that employees could find that they have no way of accessing their messages.

Another point made earlier concerns the ViewCall program. Basically, we would like the program to interface with a table containing local exchanges. The program should "fix" the phone number to make sure it is always dialed correctly.

As for new suggestions, we'd like Active Voice to make it even more convenient to select a voice message. Currently, the product allows you to hit a message button on the toolbar, which pops up a window. In this window, you can then click on one of eight customizable messages for playback to the caller. However, we'd like to be able to customize the toolbar and add our voice messages (four or so should suffice) as icons to the toolbar. Playing these messages could be accomplished with a single mouse click.

For example, we'd like to be able to customize and add icons/buttons to the toolbar that would correspond to: "Please hold. I'm almost done with this call," "I will call you right back when I am finished with this call," "Call my assistant at extension 100, and she will be able to help you," "I am transferring you to my assistant who will be able to assist you," and others. We'd like to designate these buttons MSG1, MSG2,

etc. We would also like to use "bubble help" to select the appropriate button. A customizable default message button on the toolbar would also be useful.

One last thing we would like to see is an addition to Active Voice's Web site: a page containing information on how to integrate TeLANophy with products from the popular switch vendors (Nortel, AT&T, Siemens Business Communications, Comdial, and others). This page should at least list supported switches. Such information could aid prospective buyers. (Of course, generally speaking, the Repartee system and TeLANophy are sold through resellers, who normally take care of these issues and install the system for you.)

CONCLUSION

Integration problems aside, TeLANophy is a great product with a large feature set. Between its unified messaging and its call control features, this product is making some waves within the CTI industry. We look forward to seeing (and reviewing) the Microsoft Exchange (now called Windows Messaging) version of TeLANophy, which will be available by the time you read this review.
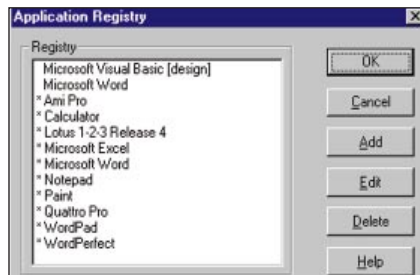

Figure 17. UPStart's Electronic Workbook: Screen for adding applications to the registry.

UPStart

SL Waber
520 Fellowship Road, Suite 306C
Mt. Laurel, NJ 08054
Ph: 800-634-1485
Web Site: www.waber.com

We've all heard the adage that nothing in life is certain, but for death and taxes. Nowadays there is another certainty to add to that list — computer system crashes.

If your computer crashes, chances are the cause is some kind of power disruption (a surge and/or outage). Depending on the state of your computer (for example, writing to the hard disk), a power spike, if sufficiently intense, can severely damage expensive hardware, such as memory, hard disks, processors, or other motherboard components. Of course, you'd like to avoid "frying" sensitive computer components no matter what you're doing with your computer. If you're using desktop CTI applications, however, you have additional risk. That is, you could destroy expensive (and hard to replace) voice processing boards, fax boards, and other computer-telephony hardware.

Running CTI applications raises the stakes in another way. With CTI, power outages, and the resultant data losses, can be particularly troublesome. Currently, many companies implement some sort of backup solution (tapes or other media). These backups, however, do not contain the most recent versions of current documents, or any new documents or files. This weakness is particularly important with respect to desktop CTI, where you might be transferring, conferencing, etc. It isn't good business to have your clients' or customers' calls disrupted. Thus, having a single uninterruptible power supply (UPS) on the PBX, IVR system, fax-

Specifications For The SL Waber UPStart

• Maximum ambient temperature rating: 40 °C
• Dual 250VA power outputs
• Reacts to power failure in less than 4 milliseconds
• Reacts to surges and spikes in less than 1 billionth of a second (The DataGard circuitry is designed to clamp surges and spikes before they can damage computer equipment, even when the master switch is off.)
• Recharge time: 2 hours
• RJ11 phone connector
• Battery life: 3–6 years
• Input and output voltage: 120V
• Input and output frequency: 60Hz (+/– 5 percent)
• Input and output current: 12 Amps

back server, or other server, is no longer adequate. Users of desktop CTI need to have a UPS on each desktop so that live conversations are not interrupted by a power outage.

If you do have UPS at your desktop, then, during a computer-based call control command, if some type of call transfer or other CTI-based transaction needs to be accomplished, you will have enough time to at least inform the other party of the power loss. Then, you can politely end the conversation. You can call the other party back when power is restored.

Typically, a UPS is a battery backup system with a limited power supply. If you are not at your desk to shut your computer down and save your files, it is possible the UPS could exhaust its power supply. If this happens, your documents will not be saved. Hence, a UPS that can act on your behalf is preferable. One such UPS, SL Waber's UPStart, is designed to keep your computer up and running, close active programs, save any unsaved files automatically, and shut down the computer at a preset interval after a power outage.

SL Waber has promoted UPStart as the world's first five-in-one UPS. It allows you to plug in a computer, monitor, modem, and printer, as well as another auxiliary peripheral to the unit. Communication to the computer is accomplished through the serial port, which allows UPStart to tell the computer when to save files and when to shut down if power is disrupted.

DOCUMENTATION AND INSTALLATION

The documentation was fair. One cavil: the technical support contact phone numbers weren't where you would expect to find them, in the contents or the index. Instead, they were located on the back of the manual.

Installation of UPStart was straightforward. Hardware installation consisted of plugging in the power cords to the clearly marked connections in the back of the unit. The software installation was very easy. The software consisted of one disk, and didn't have (or need) any customizable options other than the install-to directory.

During the installation of the Electronic Bookmark software, we noticed that the "splash" screen displayed the version number 1.0; actually,
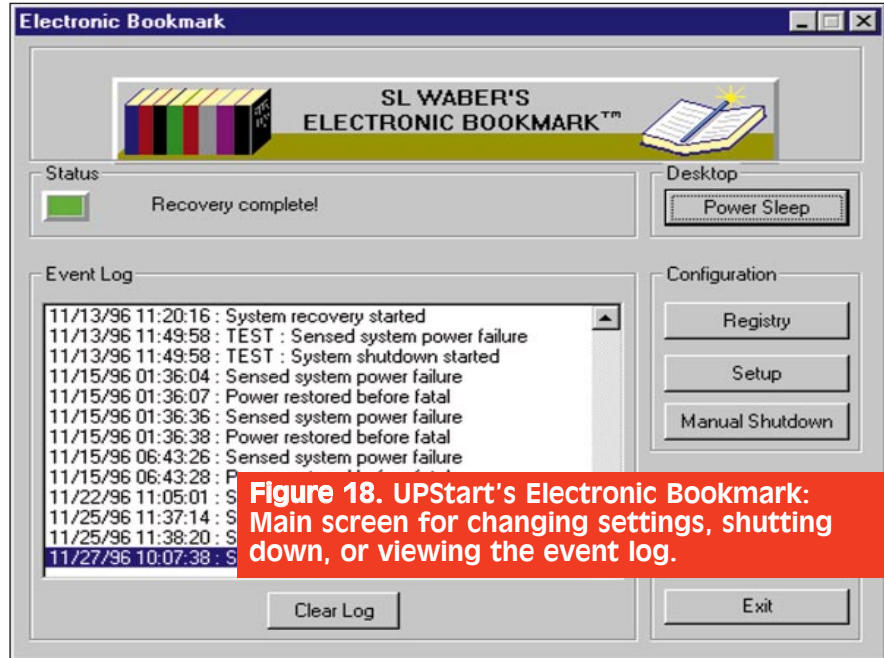

Figure 18. UPStart's Electronic Bookmark: Main screen for changing settings, shutting down, or viewing the event log.

it was version 1.2. The installation also brought up a typical "after-you've-installed, read-me" file, which actually had some pertinent information, which is unusual in these types of read-me files.

FEATURES

SL Waber's UPStart consists of a Power Center, which allows you to power up equipment individually or all at once with a master switch. Switched outlets control computer, monitor, printer, and two other peripherals or accessories. Two auxiliary outlets, which will accept transformers, are also included on the unit. The unit fits inside a flat model casing, thus allowing monitors to be placed on top.

UPStart's status LEDs (light-emitting diodes) and audible alarm indicate when power is interrupted. The unit offers up to five minutes of backup power to several connected devices.

Other features include protection from electromagnetic interference (EMI) and radio frequency interference (RFI). Also, an electrostatic discharge plate safely transfers and dissipates electrostatic charges to ground. Finally, UPStart provides solid-state protection to prevent spikes and surges. SL Waber offers a $25,000 guarantee that your equipment will not be damaged by a power surge.

OPERATIONAL TESTING

When we first turned on the UPStart, we were a bit puzzled. The computer,

monitor, and the external modem all came on, but only for half a second. We pressed the master switch again, but again the equipment would turn on for only an instant, and then shut off. Then we pressed the master switch a little harder and held it there for half a second, and we heard a click. It worked. Apparently, there is a relay mechanism or trip switch in the master switch that requires you to hold the switch in for just a moment. It took only three engineers to figure out how to turn the thing on!

In order for the UPStart to correctly perform its Save feature, each application must have been entered into the UPStart's registry (not the Windows Registry) prior to operation (Figure 17). Actually, the UPStart has its registry stored and maintained by the Electronic Bookmark software (Figure 18), which works in conjunction with the UPStart.

Several applications are preset in the registry to handle automatic saves, including AmiPro, Lotus 1-2-3, Microsoft Excel, Notepad, Paintbrush, Quattro Pro, WordPerfect, Write, and Microsoft Word (Figure 17). However, we did have a problem with the Word entry in the registry. Although it was able to automatically save Word files, it didn't support long filenames at all. All the long filenames got truncated. We went into the Bookmark software and checked the option box for long filename support, but the Electronic

Bookmark software wouldn't allow us to change the settings for the Word entry. It notified us of an error stating "You are not allowed to modify a system entry!" Apparently the preset registry entries *cannot* be modified.

Ultimately, we had to create a new entry, call it Microsoft Word (same name as the system entry), and check the long filename support check box (Figure 19). Even then, the long filename support was limited. For instance, any long filename with a space character in it would be truncated. Thus, "this is a test of longfilenames.doc" would be truncated to "this.doc." But long filenames without spaces, such as "thisisatestoflongfilenames.doc," would work.

Several setup options are available. You a have a choice of serial ports, and you can set the interval between power loss and shutdown. Some of the options available in the Electronic Bookmark software are shown in Figure 20.

ROOM FOR IMPROVEMENT

The Electronic Bookmark could be improved to support long filenames. Also, the path where the software saves and restores is different from the original file. It saves the files under "C:\EB32\PF#," where # is the power failure number. (Accordingly, files saved after the first power failure would be under C:\EB32\PF1.) Thus, after a power failure (and a successful restore by the Electronic Bookmark software), you will have to perform a "Save As" to your original path.

This setup is probably intended to ensure that you have at least two copies of your files, in case of file corruption. We would have preferred the software to use the same path and filename as the original file(s). Alternatively, the software could have allowed us to decide how files are saved.

It is also possible that the UPS battery could die in the middle of saving, which would corrupt your file(s). You could surpass the battery's capacity if the battery is a few years old, or if you have large files open that take more than five
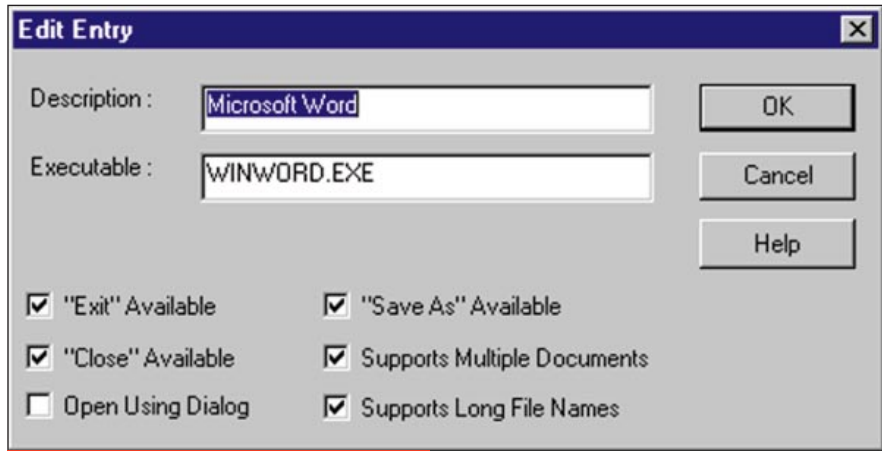

Figure 19. UPStart's Electronic Workbook: Registry settings. This screen displays our entries for Microsoft Word so we could enable long filenames.

minutes to save. This could happen if you are running graphics programs such as Adobe Photoshop or CorelDraw.

According to the documentation, Electronic Bookmark doesn't save unnamed files. Thus, working with files such as "Untitled-1" or "Document1" is unwise. Still, there are always computer users who will step away from their desks without saving their work. So, we decided to test unnamed files anyway. When we "pulled the plug" on unnamed Microsoft Word files, UPStart actually did save them, giving filenames such as "Document1," "Document2," etc. We suppose the Electronic Bookmark programmers designed the software better than they thought!

We could not get the Electronic Bookmark to work with Visual Basic 4.0, a popular CTI development software program. Since this program has multiple save options — Save File, Save Project, Save Project As, and others — you cannot use the generic "Save" call. We were awaiting a call from technical support for a solution that would allow us to work with Visual Basic, but we did not get a reply by the time this article went to print.

The Electronic Bookmark registry could have included more applications. We would like the preset list to include QuarkXpress, Visual Basic, C++, PowerBuilder, Visual Java, Visual C++, ACT, GoldMine, TeleMagic, and Adobe Photoshop, just to mention a few.

One final issue was the volume of the audible alarm. It wasn't as loud as we would have liked, but this was probably part of the design to conserve power. We did like how successive beeps sounded in closer succession as the battery drew close to losing all power. Still, a volume control on the unit would be a nice feature.

CONCLUSION

You can't afford to overlook power protection if you're responsible for maintaining CTI systems. CTI hardware, if damaged because of power spikes, can take a few days or more to replace. And, in mission-critical environments, downtime translates into significant financial losses. Of course, acquiring replacement parts is costly in itself. You could also spend a lot of time troubleshooting a computer that has been "spiked."

If you need a UPS for computer desktops, the SL Waber UPStart is a good choice, since it is a flat model, allowing you to place a monitor on top. For larger systems, which may include servers, PBXs, or equipment with huge
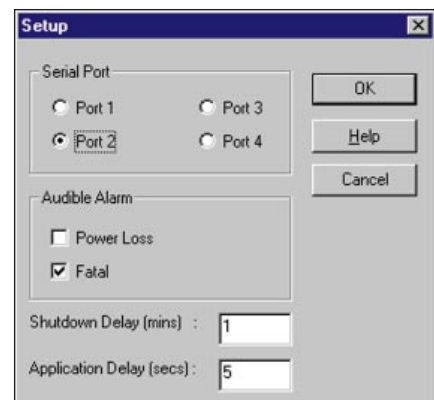

RATINGS (1-5)

Documentation: 3.5
Installation: 4.5
Features: 4
GUI: 4.5

Figure 20. UPStart's Electronic Workbook: Setup screen.

wattage or power requirements, a larger UPS system may be better. But if you're looking for an economical, feature-rich UPS system made for the desktop, this product may be just what you need.

Users who would benefit from UPStart include computer-telephony application developers and programmers, as well as people who cannot afford to lose documents or other files. The UPStart will work on all platforms, but the Electronic Workforce software requires a Windows environment. It is now available in computer stores and retails for $199.

MasterConsole

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With multiple servers becoming commonplace, monitoring them all can become complicated. It isn't unusual for a company to have a fax server, fax-back system, IVR server, backup server, database server, Web server, and CTI development server together in one room, or even scattered across multiple rooms. (Although some companies will risk putting multiple functions on one server, most avoid putting all their eggs in one basket.)

Having a different monitor, keyboard, and mouse for each system is impractical. In any case, many companies like to perform remote monitoring, especially if they are running time-critical applications, such as computer-telephony applications.

If you have to deal with the many management and monitoring issues that arise in systems with multiple servers, you may be interested in Raritan Computer's MasterConsole, a compact computer-switching solution. MasterConsole con-

trols any mix of 2 to 64 PCs. (You could, for example, control Macintoshes, Suns, and PCs all from one terminal.) MasterConsole can be used to manage network file servers, bridges and gateways, Internet servers, burn-in testing for PC production, hardware and software stress testing, systems integration, and access to applications running on multiple workstations, in addition to the other applications already mentioned.

Master Console can control computers running any operating system and any application software by simply plugging cables into the keyboard, mouse, and video port of each computer. Then, using one keyboard, one mouse, and one monitor hooked up to the MasterConsole, you can control all the computers.

DOCUMENTATION

The documentation consisted of several cabling diagrams showing connection schemes for various setups, such as connecting two computers, or daisy-chaining multiple MasterConsoles. The drawings were clear and easy to follow. The cables, which ship with the MasterConsole, are clearly labeled, and the labels can be matched against the cable diagrams to help you through installation. The other piece of important documentation, a sticker on the MasterConsole itself, denotes the hotkey definitions for performing channel switching and other tasks from the keyboard. This was a very handy addition to the unit.

The only drawback to the documentation was that it didn't have the hotkey definitions and instructions on how to use them. We looked at the MasterConsole sticker, which instructed us to press Scroll Lock twice to enter hotkey mode. When we tried this, nothing happened. After several frustrating tries, we discovered that we were not pressing the Scroll Lock key fast enough. We thought the documentation should have warned us to press the Scroll Lock key twice in a fairly rapid succession. The documentation earned an average rating of 3.

INSTALLATION

Installation was fairly easy. MasterConsole uses a PS/2 mouse connector and a PS/2 keyboard connection. Since we were using PC clones, we required adapters to connect our serial mouse and DB-9 keyboard to the MasterConsole. These adapters can be purchased directly from Raritan

Computer. Using the adapters was a bit more complicated than just using a PS/2 type connector, but was still fairly easy. Overall, the installation earned a 4.5 rating.

FEATURES

MasterConsole comes in either a desktop or a rack-mount model that connects 2, 4, 8, or 16 machines. The unit can be daisy-chained to connect up to 64 computers and configured to add optional dual access up to 150 feet away, allowing you to monitor computers that are not in the same room. The ability to expand capacity up to 1,024 computers is available by cascading multiple MasterConsoles. Each connected computer can be remotely accessed from MasterConsole and its front panel or from the keyboard using hotkey commands.

The MasterConsole is "smarter" than a standard A-D keyboard/monitor switch. We have a couple A-D keyboard/monitor switches, but they often cause certain types of computers to crash. The reason is that these types of switches do not keep the keyboard signal continuous to each computer. When you switch from A to B, for example, the keyboard signal is cut from A and supplied to B. This is where some computers "freeze." With MasterConsole, you do not have this problem. You can be switched to any computer, and MasterConsole will provide a continuous keyboard and mouse signal to all the computers.

The continuous keyboard signal is important during reboots. In most instances, a computer BIOS will give you a keyboard error (such as "Keyboard Error. Keyboard Not Present") and fail to reboot until you plug a keyboard in. With "dumb" A-D switches, you must have the switch set to the computer you are rebooting for the keyboard signal to be present, or you will get the keyboard error. MasterConsole does not have this limitation.

The Auto Scan feature allows you to automatically monitor all connected computers at any time interval from 1 to 16 seconds. Auto Skip allows you to automatically bypass inactive ports.

MasterConsole ships with double-shielded coaxial cable for VGA, SVGA, and XGA video. Raritan Computer provides a generous supply of numbered stickers to help you label each of the cables.

Remote monitoring can be per-

formed from the MasterConsole unit or from the keyboard itself. Tasks such as channel switching, bank switching, enabling Auto Scan, setting the delay time for Auto Scan, enabling Auto Skip, and others can all be carried out from the keyboard as well as from the MasterConsole unit.

OPERATIONAL TESTING

We tested 640 × 480 (VGA resolution) as well as 1024 × 768, and both worked flawlessly. The hotkeys, which allowed you to access the computers from the keyboard, worked very well. Some of the functionality from the keyboard included changing channels, changing banks, starting Auto Scan, and selecting channel by number. We liked the "bank number" and "channel number" illuminated indicators (large and easy to read) and the buttons to switch channels and banks from the MasterConsole unit (large and easy to manipulate). We also tested changing the hotkey to activate the MasterConsole and the time interval for the Auto Scan feature. Both performed flawlessly.

To test the Auto Scan feature, we scrolled through all the channel numbers, using MasterConsole's default setting, which let us stay on each channel for about a second. We found that this 1-second interval caused a problem for

monitors that have power-save modes. If you are not using one of the channels, or if the computer is off, then there is no video signal sent to the monitor, which causes a power-save monitor to shut itself down when the MasterConsole switches to this unused/computer-is-off channel. Then, when the MasterConsole switches to another channel, the signal to the monitor is cut off for a brief second, and the monitor has to power up again. By the time the monitor begins to power up, the screen is beginning to display, and then the next channel gets switched. Thus, you are left with a blank screen on every channel.

To get around this, you can increase the delay time. Or, you can turn on the Auto Skip feature, which will prevent the monitor from going into power-save mode. When Auto Skip is enabled, MasterConsole will always switch to a channel with an active computer (video) signal, and channels are changed in such a short interval (a millisecond) that monitors don't have time to go into power-save mode. We particularly liked the Auto Skip feature, since we didn't have

to scroll through "blank" channels to get to the channels actually being used.

In most cases, you will probably want to leave Auto Skip on. The only exception would be if there is a computer failure, such as a power loss to the computer. If you leave Auto Skip off, you will at least see the monitor screen go blank, indicating a problem with one of the machines. Of course, you will need to be using all of MasterConsole's channels to use this method effectively.

Using the keyboard to change channels was pretty straightforward. You press the Scroll Lock key twice in quick succession. This puts the MasterConsole unit into a special hotkey mode. All the keyboard signals are sent through to the MasterConsole before they are passed onto the computer. Putting MasterConsole in this mode allows you to capture and interpret your keyboard responses to perform remote monitoring functions. You can also use the up and down arrow keys to switch channels, and the left and right arrow keys to switch banks.

Other features accessible from the keyboard include: setting the delay between Auto Scan switching, changing the activation key from Scroll Lock to Num Lock or Caps Lock, and selecting channel and bank numbers by entering the appropriate number.

MPG's Technical Support Helps Us Overcome Snag With NotifyMe's Audible Alarm

When we clicked on the button to change the sounds applied to each priority, the menu screen refused to pop up. So, we sent an e-mail about our problem to MPG's technical support. Here's how they responded:

When NotifyMe was written it was designed toward Windows 3.x (the standard at the time). When changing Sounds we called the sound module from the Control Panel instead of writing our own interface. We've seen this work on some Windows 95 machines and not work on others. We are rewriting that portion of the code since Windows 95 has taken over as the

standard. Here are two options in the meantime:

1) If you have a PC with Windows 3.x on it copy control.exe from the Windows directory and snd.cpl from the Windows\System directory to your Windows 95 PC. This should allow NotifyMe to find the program to modify the .WAV files.

2) If you can't do 1) you can edit the WIN.INI file manually to change the sounds. In the [sounds] section you should find the three keywords below followed by the path to the .WAV file you want played. Change the .WAV file to the one you'd like played for each priority message.

For example:
[sounds]
NotifyMe1=c:\windows\chimes.wav, Notify Me (High Priority)
NotifyMe2=c:\windows\ring.wav,Notify Me (Normal Priority)
NotifyMe3=c:\windows\ding.wav,Notify Me (Low Priority)

We chose the second of the two options, and it worked fine. The original settings in the WIN.INI had blank entries where the sound files were supposed to be. So, NotifyMe1 had an entry equal to "NotifyMe1 = Notify Me (High Priority)." It was simple enough to manually add our own .WAV files to these parameters. ■

ROOM FOR IMPROVEMENT

There really is not much to be improved upon with this product. The documentation, however, should specify that you must press the Scroll Lock key very quickly to activate the remote switching from the keyboard. Also, the documentation should tell you that if you use the Auto Scan feature with a power-save monitor, you may need to enable the Auto Skip feature. Auto Skip will prevent the monitor from going into power-save mode, since it will always switch to a channel with an active computer (video) signal. We looked for a method of increasing the switching delay in the documentation, but none of the hotkeys were included. We did, however, find how to increase the delay from a sticker on the MasterConsole unit, which also contained all of the hotkeys used to control MasterConsole.

CONCLUSION

We found MasterConsole to be a great help in our CTI testing lab. We consolidated several monitors, and were able to use just one monitor in one section of our lab. This increased our work area, reduced our power consumption, and made testing and monitoring much easier. For testing computer-telephony equipment or for monitoring multiple servers, using a single console to monitor computer equipment is a must. Raritan Computer's MasterConsole is certainly a good choice. Prices range from $375 for a two-computer unit to $2,070 for a model which connects 16 computers.

NotifyMe

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NotifyMe, a Windows program which emulates an electronic display board, is designed to distribute messages to users across a network. It unobtrusively displays a scrolling marquee at the top or bottom of users' screens and provides a real-time communications link, which is particularly useful in call center environments,
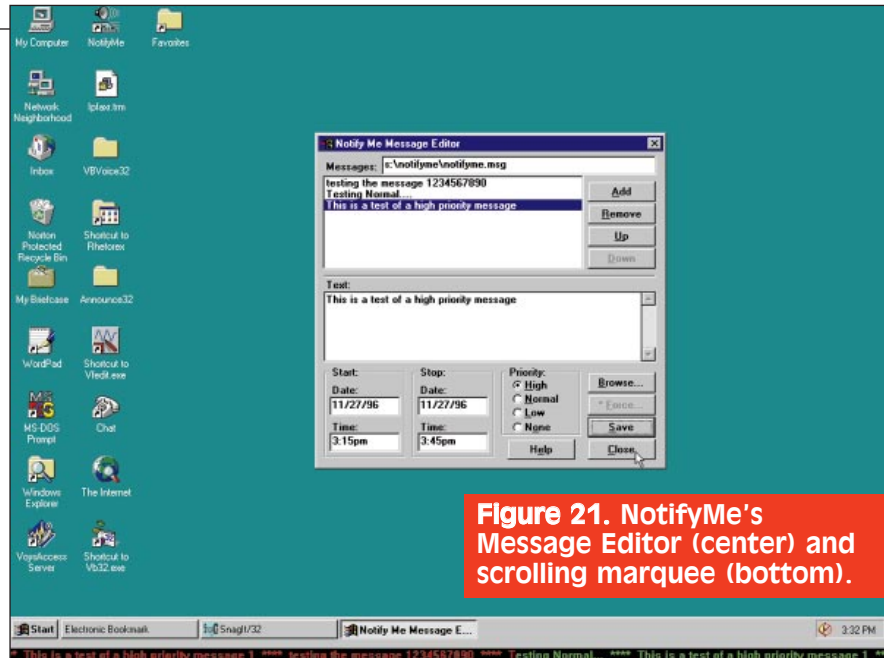
Figure 21. NotifyMe's Message Editor (center) and scrolling marquee (bottom).

where up-to-the-minute statistics and messages are crucial. This functionality applies to other CTI applications as well, such as caller ID information, total hours logged by a particular agent, total hours for all agents, or current wait time. ACD queuing information is also handled by this program. Every operator can be aware of the number of calls in queue and of the average hold time for those calls. The program can even link to a user's voice mail system and display a message notifying the user that a voice mail message has been received.

While most companies encourage employees to communicate via e-mail, this medium does have its limits. Many e-mail packages audibly notify the user only once, when new e-mail arrives. Hence, a notify message is easy to miss. It is also easy to ignore. For example, a user may opt to turn off the notification pop-up message (often, this pop-up message interrupts work in progress). Also, a user may miss messages after logging out of an e-mail program and neglecting to log back on. Finally, a user may be flooded with a multitude of messages, which can cause a user to overlook a message that demands an immediate reply. Wouldn't it be great to announce that a meeting will commence in 15 minutes and have everyone see the message right away? NotifyMe can make it happen.

FEATURES

NotifyMe is network independent and will run on Windows 3.x., Windows 95, and Windows NT. It automatically notifies users when new mes-

sages arrive at their desktops. Users need not continually monitor a display board for additional information.

Messages can be prioritized, so users can determine whether they should address the message immediately or wait until they finish the call they are on. A priority of "None" will update the message but will not notify the user with an audible .WAV file. This feature is especially useful for displaying statistics or other frequently changing messages. Users are notified by two methods: the text of the message changes color (for example, red for high priority), and an audible .WAV file is played. The color scheme, including foreground and background for each priority level, is customizable.

NotifyMe allows you to distinguish between "obligatory" messages and optional messages.

For example, users may be obliged to receive such message types as "hot news," "system availability," and "statistics." In addition, users could opt to receive specific section and team messages, as well as birthday, trivia, or other noncritical messages.

Some other important features include:

• Customizing the audio .WAV file for each priority type.

• Specifying dates and times to start and stop messages.

• Setting the scroll speed of the marquee.

• Setting whether the message window is always on top of other application windows.

• Locating the message window on top or bottom of the screen, and

whether it runs minimized and is only opened when new messages arrive.

• Selecting separator characters between each message, such as "****."

• Setting the number of times the audible notification is played.

• Setting whether the message windows will "jump" in front of the current application when a new message arrives, based on the priority of the message.

• Deciding which users should be able to receive messages, but not send them.

OPERATIONAL TESTING

NotifyMe stores its data in ASCII text files on a network server. Thus, all users with access to the network drive containing the NotifyMe message files can receive messages. In a LAN or WAN environment, any user can view any message files on the company server, based on the network file security.

NotifyMe is gratifyingly unobtrusive. Its notification system doesn't use a screen pop; instead, it uses a scrolling marquee at the bottom (or top) of the screen (Figure 21). NotifyMe does not take control of the user's system when a new message is received, even if it is set to pop to the front of any application the user is working on. Other network messaging systems tend to pop up a message and take control of the system until the user reads the message or clicks the OK button. With NotifyMe, the user can continue working until they are ready to read the message.

We liked seeing the messages change color after we clicked on them. We kept the default color scheme, which displayed all "read" messages in gray. We could tell at a glance if there were any new messages. Unread messages appeared in red (high priority), yellow (normal priority), or green (low priority). This scheme allowed us to gauge the importance of a message instantly.

Users can create messages through the message editor (Figure 21). As mentioned earlier, the receipt of certain messages can be made mandatory; others can be made optional. Mandatory files typically pertain to system outages, critical real-time information, payroll due reminders, or meeting reminders, to name a few. Other files (that is, subscription files) typically include team messages, department messages, individual messages, birth-
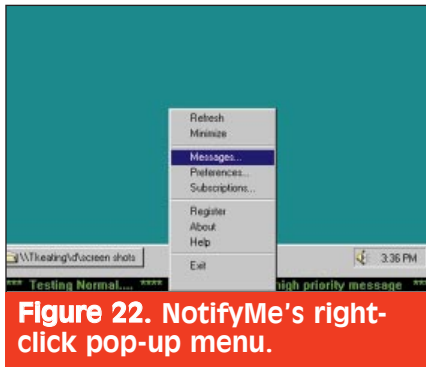

Figure 22. NotifyMe's right-click pop-up menu.

day wishes, morale boosters, trivia questions, and the like.

If you left-click on a scrolling message, you basically notify the program that you have read the new message. The program then changes the text color and stops playing any associated .WAV file. To avoid seeing old messages, you can set the foreground and background to the same color, rendering the old messages invisible. Holding down the left mouse button stops the message from scrolling until the button is released. A double-click on the scrolling message minimizes the window to an icon, and if a new message comes into the system, the marquee will either "flash" or "jump" in front of any current application, depending on the setup. A right click on the scrolling message will display NotifyMe's pop-up menu, where all the configuration and functionality of NotifyMe can be accessed (Figure 22).

To set the preferences, you right-click on the message window and choose "Preferences." You can then set text foreground and background color, size and type of font, speed of scroll,

Figure 23. NotifyMe's dialog box for setting preferences.

and location of scrolling message. Other options pertain to the refresh rate, whether messages should be "always on top," and the audible limit. You can also set notification types (have a window brought up front and/or have an icon flash) according to message priority (Figure 23).

This right-click context menu also lets you access the "Subscribe" option and define individual user subscriptions to message files. Users can subscribe to see messages from any NotifyMe message file, restricted only by the extent of their network access privileges. Files might include status.msg, callerid.msg, hotnews.msg, outages.msg, payroll.msg, and the like.

NotifyMe can also be used as a "reminder" or scheduling program. In lieu of a scheduling program, users can employ NotifyMe's calendar and messaging ability to set up appointments with reminders on a message file local to the user's hard disk. Then, users simply subscribe to this local file.

Some message files (for example, automated messages) needn't be created through the Message Editor. The NotifyMe message files are plain ASCII text files with several control characters to define the priority and time the message is to run. According to MPG Software, some companies set up automated tasks from their ACD and/or other systems to write a file out to the LAN every "x" number of minutes with phone or other statistics, which are then displayed as messages in NotifyMe. Automated messages, which are updated frequently, should be labeled with a priority of "None." This way, the user is not notified when the message is updated. Otherwise, the notification would soon lose its effectiveness, since the user would be notified continually of a new message every time the automated message was updated.

The NotifyMe program gives the user the option of displaying the marquee message at the top or the bottom of the screen. Opting to place the marquee at the bottom works fine with Windows 3.x. However, with Windows 95 (and NT 4.0 or later), the Start button and its accompanying task bar can get in the way. That is, if the task bar is set to "Always on top," which is the default in Windows 95, the marquee message will be hidden underneath the
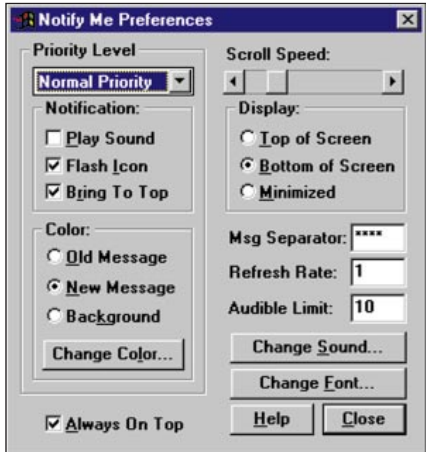
Windows 95 task bar. If the "Always on top" setting for the task bar is turned off, the marquee may obscure the running programs (icons) on the task bar.

This display conflict can be overcome in several ways:
- Make the task bar a little larger, since the marquee has a minimal height. Then, programs will be visible on the task bar.
- Move the task bar to the top or side of the screen, leaving the marquee by itself on the bottom. (Most users prefer the task bar on the bottom, however.)
- Move the marquee to the top. (If the "Always on Top" option was turned on within NotifyMe, this solution can interfere with your ability to minimize and maximize programs. If this option is turned off, however, having the marquee on top is a good choice.)
- Turn on "Always on top" on both the task bar and within the NotifyMe program, and leave both the task bar and the marquee at the bottom of the screen. The marquee will hide underneath the task bar and only pop up in front of the task bar if there is a new message. There will be enough of the task bar showing to click on it to get back to the toolbar. (The user, however, will be unable to create new messages until the task bar is moved, since it is not possible to right-click on the marquee, which is hidden underneath the task bar.)

ROOM FOR IMPROVEMENT

If you neglect to fill in all the time and date fields, NotifyMe will make an announcement that, in effect, never expires. Such an announcement will become "read" when double-clicked, and will then appear in the color you use for read messages. We would have preferred that if the time and date fields were left blank, the program would send out a message with the current date and current time, and an end time of 1 minute later, so the message would expire right away. Such an arrangement would be good for quick announcements or messages, and it would save users the trouble of having to fill in every field.

Other messages are not meant to expire. For these, it would be nice to have the option of having the program automatically insert the current date and time into the date and time fields, which the user could then modify. Such

an option could be implemented by clicking on a Refresh Date/Time button, or it could be implemented automatically, every 30 seconds or so.

Computers often lose time, or have their time set a few minutes apart from what an employee's watch or clock says. Thus, it's possible to send a message that has already expired, that is, a message stamped with a time that has already passed according to the computer (but not according to the user's watch or desktop/wall clock). Of course, such discrepancies aren't a problem if you run a program that displays the time kept by the computer. Nevertheless, we would like the next release to include a button that would allow users to insert the computer's current date and time into the corresponding fields.

CONCLUSION

This is a great product for retrieving and viewing real-time messages. NotifyMe is perfect for call centers, but can be used to advantage in other work environments as well. The open database structure allows for extensive customization options, including tie-ins to

phone systems, CTI applications and products, and company databases. The unobtrusive messaging interface is probably the greatest asset of NotifyMe. This product is certainly worth a look.

NotifyMe will run on any Windows platform (3.x, 95, NT). Memory usage is 47K. Pricing is as follows: $19.95, individual user license; $299.95, single server license; $799.95, site license; $1499.95, corporate license. For evaluation copies, contact MPG software.

Heat 3.0

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Companies can now extend excellent customer service to any corner of the globe, and do so at any time, with Bendata's release of Heat for Windows Professional Edition 3.0 (Figure 24). Heat's "follow the sun" functionality is attributable to a new call ticket transfer feature. With the new feature, users needn't put a customer's problem on hold at the end of the business day. Instead, a service organization can transfer call tickets via e-mail to an open help desk in another time zone.
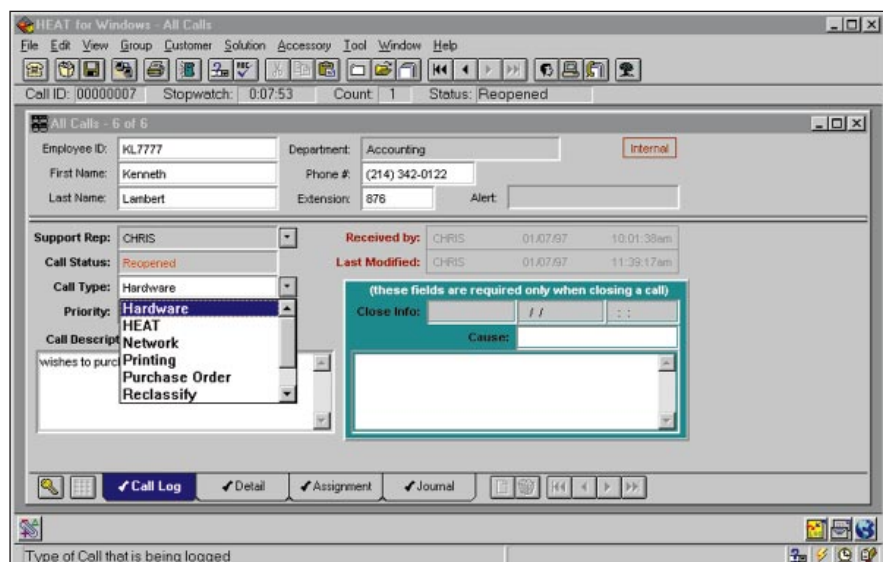

Figure 24. Heat's main screen and call log screen. Note that the call log shows information on a particular customer, as well as support codes in a drop-down box

Thus, the customer's problem can be addressed without delay. Heat 3.0 makes service even more immediate by dispatching service requests to field technicians via mobile communications.

The client/server software delivers true end-to-end operations, from the initial call through problem resolution. In addition, Heat grows more capable with use because it continually (and automatically) adds new problem-solving information to its online knowledge base.

DOCUMENTATION

The manual had separator tabs that broke the text into main sections. An index, however, was conspicuously absent. There was no proper table of contents. Nevertheless, the quality of the documentation was good, and there were plenty of screenshots throughout. Overall, the documentation earned a 3.95 rating.

INSTALLATION

Although most of the installation was easy, we did have a problem with the Crystal Reports module. The documentation recommended installing Crystal Reports under the Heat directory, which in our case was the C:\HFW\CRW directory. Thus, we clicked (in sequence) on "Set Location," the C:\HFW\CRW directory, the "OK" button, and the "Continue" button. As a result, we got a general protection fault in DSHELL in module _MSTEST.EXE at 0004:000033c6. We rebooted, ran SCANDISK, and retried the installation from the beginning. And again we got a
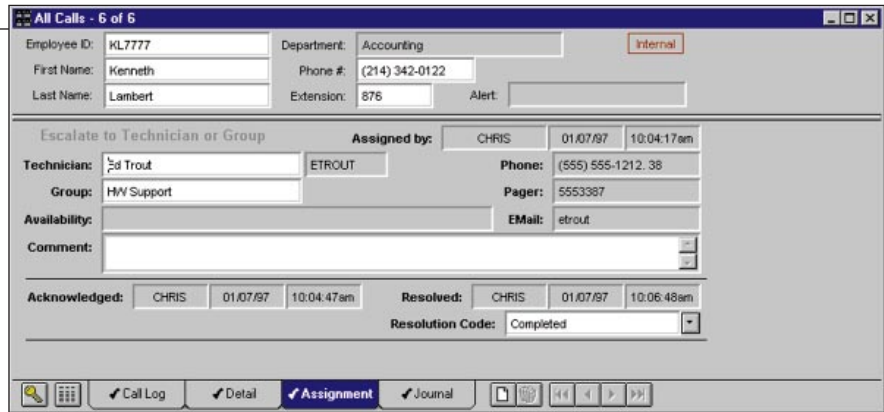
general protection fault (GPF).

On a whim, we typed the path in the text box instead of browsing for the directory. Then, we clicked on "Continue." The installation continued without giving us the GPF error. (This was one of the strangest bugs we had seen in a while. You could type the directory in, but you couldn't "browse" for it.)

The installation proceeded smoothly until we reached the 19th disk (out of 22) on the CD-ROM. The computer froze. We decided the crash was due to a faulty CD-ROM and a buggy 16-bit CD-ROM driver. After four retries, we were able to complete the installation.

Overall, we gave the installation a 3.90 rating. This rating doesn't reflect our problem with the CD-ROM; we cannot fault the software for some system hardware problems. Instead, the rating is due to the bug that caused the system crash, which led us to reboot and reinstall twice.

FEATURES
Remote Access

Mobile Heat, the software's new remote access capability, enables field

Figure 25. Heat's assignment screen. From here, you can assign technicians and groups and apply other relevant information.

service technicians to communicate with the main help desk via laptop computers and modems. With Mobile Heat, technicians can download call tickets from the main help desk, work on the call ticket offline, and upload changes to the main system later. The database is updated automatically. Thus, Heat's remote access capability streamlines the dispatch system, ensures more accurate call tracking, and enables field technicians to resolve problems more quickly.

Database Capabilities

Heat 3.0 has expanded its online knowledge base capabilities by integrating with CasePoint, Inference's case-based reasoning (CBR) product. In addition, the software's built-in knowledge base engine, called First Level Support, is now enhanced with auto-find and auto-populate capabilities. These technologies bring more knowledge to the desktop, enabling service personnel at all levels to easily find answers to customer problems.

Inference's CBR significantly reduces problem resolution time by automatically initiating a solution search based on key words as the call is being logged. When a solution is found in the knowledge base, Heat instantly notifies the user. Clicking on the notification icon pulls up a series of questions the user can ask the customer to find the cause of the problem. This enables even new customer service technicians to find answers quickly, reducing the amount of training needed.

Heat 3.0's auto-find and auto-populate capabilities make it easier to resolve problems. Auto-find searches the knowledge tree for possible solutions while a call is being logged. Auto-populate automatically adds new solu-

Heatlink To The Internet

Bendata's new communications module for Heat, HeatLink to the Internet, provides an interface between Heat and your Windows NT server. Your customers will be able to open, close, and update call tickets and check on the status of a ticket via the Internet. The product promises to reduce the number of phone calls to your help desk, shorten customer on-hold time, and cut down phone bills.

If you deploy this module, your help desk customers will be able to:

• Access their own call tickets. (All other tickets remain secure.)
• View all of their open calls.
• View any updates added by the help desk technicians.
• Enjoy the speed and convenience of opening calls over the Internet.
• Add pertinent information to call tickets by entering a journal entry at their convenience.
• Close calls over the Internet, if they resolve the problems on their own. ■

Figure 26. Heat's screen for implementing user preferences.

tions identified during a call to the knowledge tree, providing on-the-fly knowledge creation.

In addition to the internally created knowledge base, Heat 3.0 can search external knowledge base sources from Microsoft's TechNet, Novell's Network Support Encyclopedia, Micro House's Technical Library, ServiceWare's Knowledge Plus, and Lotus's Knowledge Base. Heat's open architecture and ODBC compliance allow compatibility with SQL databases (such as Oracle, SQL Server, and Watcom) and file/server databases (such as Access). Heat 3.0 ships with Crystal Reports Professional 5.0, a popular reporting package, which includes at least 100 pre-formatted reports.

CTI Features

Bendata is working to integrate its help desk software with Aurora's FastCall and Q.Sys's Phoneware. These enhancements will give Heat several CTI capabilities, including caller ID callup of a customer's call history. If the caller ID doesn't match any record, Q.SyS prompts the user to enter a customer number or call ticket number. Thus, you get the best of both worlds: caller ID record matching and caller-entered identification. If the caller has neither an account number nor a call-ticket number, the system automatically starts recording a new call history.

Heat allows you to monitor hold time. In addition, you can track hold time with Crystal Reports. Monitoring and tracking can be performed in such a way to confirm that service agreements are being met. With Q.SyS's

software functionality in addition to Bendata's Heat, you can monitor extra items, such as number of rings before a call is answered, adding further tracking of performance and improving customer service as well.

Some of these CTI features are available now, and others will be available before the end of the first quarter of 1997. Still other CTI enhancements are planned for Heat 4.0, which will be released in early 1998.

Management And Reporting

Heat provides the Support Center Manager with tools to better track, manage and forecast support center performance and productivity. Heat's Statistics Monitor gives you an up-to-the-minute snapshot of your help desk statistics, such as the total number of open calls and calls not modified within service level agreement requirements, so you can better manage your staffing levels. As previously mentioned, Crystal Reports (the support center industry's leading report writing software) is also included, giving management instant access to vital statistics.

Other Features

With Call Locking, users can indicate to each other that work on a ticket is already in progress. This feature prevents users from making duplicate calls to customers who are

already getting help (Figure 25).

With File Attachments, users can provide more information about a call without resorting to cutting and pasting information. Users simply attach documents, sound files, pictures, etc. to call tickets.

With the Calls On Hold feature, a help desk user can place a call in progress, but not ready to be saved, in a "Calls On Hold" group, storing it locally on the user's disk drive.

OPERATIONAL TESTING

Customizing Heat is easy: you simply enter your preferences via the user-friendly GUI. The menu tabs were particularly convenient (Figure 26). To help you get a head start configuring your system, Heat includes several built-in screen templates compiled from actual help desks and support center systems. These sample templates cover a variety of industries, including finance, software, and education (Figure 27).

We found that Heat sets up an intuitive call flow and makes accessing a customer's profile simple. If your customer's problem requires hands-on intervention, you can easily assign the call to an appropriate technician. You can print the call ticket, send a Heat message to another Heat user, send an e-mail to any VIM- or MAPI-compliant e-mail system, or page a technician directly from Heat. To ensure that your Help Desk is responding within your customer's service level agreement requirements, Auto-Escalation will automatically escalate a call to the next level if necessary.

The Auto-Find feature searches the knowledge bases in the background. Once you have found a solution, you can post it to the call ticket with a push of a button. Also, with Heat's journal features, you can record time- and date-stamped information for each customer
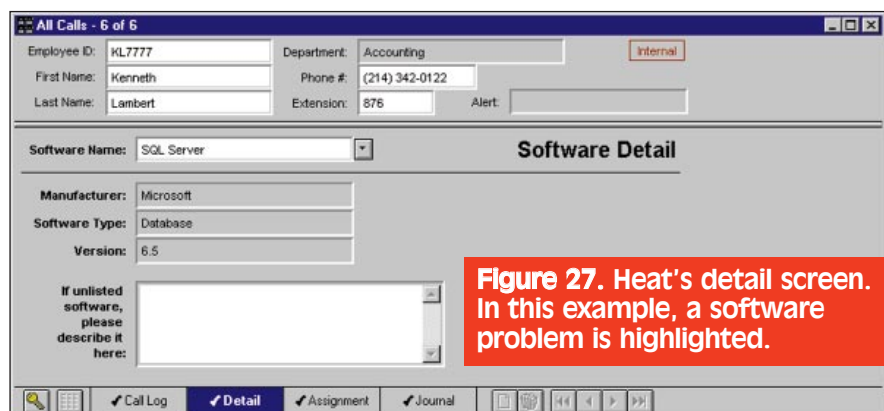

Figure 27. Heat's detail screen. In this example, a software problem is highlighted.

(Figure 28). You can automatically add new solutions into your knowledge base with Auto-Populate.

ROOM FOR IMPROVEMENT

We puzzled over why we had to manually type in the path during installation. We suppose a bug in the software is to blame. If so, we'd like to see that fixed in the next release.

Another suggestion we have is to add a column to the Open Group screen. This column could display the record count for each group, giving you a quick idea of the status of each group.

We liked Heat's support for external knowledge bases, but we were a little surprised the product didn't include one of them. Help desk software packages
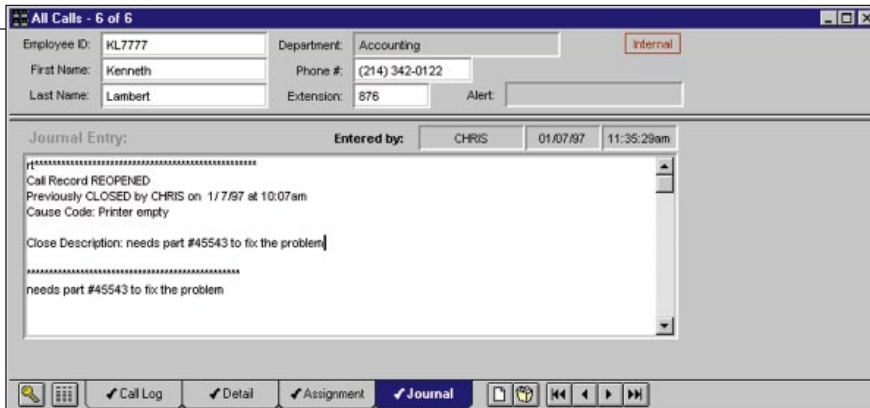

Figure 28. Heat's journal screen, which is used for attaching notes and other important information.

usually include one free knowledge base.

A general limitation is that Heat 3.0 is a 16-bit application and uses 16-bit ODBC drivers. The Crystal Reports software is also 16-bit. Until a 32-bit version of Heat becomes available, performance won't be everything it can be for users with Windows 95 machines.

Finally, a future release might include some of the following features:

• A means of collecting and managing customers' technical support e-mails. (These could be attached to the journal.)

• Support for Web-based forms customers could use to enter and submit a preliminary problem description. (Data gathered from these forms would then be incorporated into a Heat call ticket, which a help desk agent would use when contacting the customer.)

• Integration with Internet telephony, which would allow a help desk agent to call the customer back over the Internet, using the e-mail address entered by the customer as a means to establish the Internet phone connection. (Note: Most Internet telephony packages now support e-mail addresses to establish an Internet call.)

• Complete tutorials to familiarize new users with the product.

CONCLUSION

Heat's main strength is its openness with respect to external databases; that is, Heat doesn't limit you to a specific or proprietary database. The product's open approach is evident in another respect: the software is shipping with the industry-standard Crystal Reports.

Bendata is currently working or partnering with a few CTI vendors to add or enhance computer-telephony features in the Heat 3.0 product. At present, Heat's ODBC-compliant database helps ease the integration process with CTI products, since several CTI products are also ODBC-compliant.

The ease with which users can change and customize screens, in addition to the product's ability to integrate with popular knowledge bases, make this help desk software a good choice. To use Heat, you need a Microsoft Windows NT server (which needn't be the primary server) and an Internet information server (supplied by Microsoft Windows NT Server version 4.0). A browser that supports tables is recommended. Pricing ranges from $3,000 for a single user to $50,000 for an unlimited number of users. ■

RATINGS (1-5)
GUI: 4.30
Documentation: 3.95
Installation: 3.90
Features: 4.75