

Tested & Reviewed: the Vertical Communications TeleVantage IP PBX



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Wednesday, 12 April 2006

Ideally suited for the medium-sized business, the Vertical Communications TeleVantage IP PBX has a rich set of features and a full set of ACD. After putting it through a battery of tests, our lab found the system to be a capable performer that can integrate seamlessly with a variety of telephone devices.

The TeleVantage IP PBX is easy to install and is supported by well-organized and clearly written administration and user guides -- something often missing in other products. The integrated help provides thorough topic coverage and the TeleVantage ViewPoint client GUI even boasts a Quick Tour hosted by "Vertical Man," who is always available to train a new user.

Our lab's manual tests of the TeleVantage system detected no problems. The TeleVantage IP PBX successfully interoperated with a variety of desktop SIP phones as well as with an Xten eyeBeam softphone and external analog phones, all with high voice quality. Lab automated tests also demonstrated that the TeleVantage system can perform extremely well under heavy call loads.

Review Results

Product Evaluation Score (each rated out of a possible 10)	Product Score	Relative Weight (%)	Weighted Score
Ease of installation and configuration	9.0	10	0.90
Features evaluation	9.1	10	0.91
Product documentation, online help	9.3	10	0.93
Graphical user interfaces (admin and end-user)	9.6	20	1.92
Manual product exercise	9.8	25	2.45
Automated call-handling load test (no VM)	9.0	20	1.80
Technical support	9.2	5	0.46
Total	9.37	100	9.37

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HARDWARE, PHONES AND LINES

The TeleVantage system can be installed on a PC platform with either Intel Dialogic hardware voice boards or Intel HMP (Host Media Processing) software. The unit we tested came with the following components:

- One Dell PowerEdge SC 420 server with HMP resources and the TeleVantage IP PBX software;
- One Quintum AS Series Tenor Gateway to provide a SIP to PSTN interface;

- One Linksys Broadband Firewall Router to provide protected access to the Internet;
- One Aastra 480i SIP desktop phone;
- One Aastra 9112i SIP desktop phone;
- One licensed copy of the Xten eyeBeam softphone software.

EASE OF INSTALLATION

The TeleVantage system came pre-installed with Intel HMP (Host Media Processing) software. Ten users were configured for the manual tests, and 100 users were defined for the automated tests. Our lab testers modified settings for the ten manual users, associating two of them with the two desktop phones and another with the Xten eyeBeam softphone.

The system was easy to install and to modify. We were pleased to discover that the system supported user templates, allowing changes to be made once and applied globally to as many users as needed. It was easy to navigate the administrative GUI and to customize the operation of modules such as the auto-attendant and ACD.

FEATURES

The TeleVantage IP PBX employs a modular design using either Intel HMP software or Intel Dialog cards and software license keys. This allows the product to service multiple-sized businesses, from small to large. It enables users to easily scale their phone system as their needs expand -- without having to throw away their prior investment.

SIP, loop start analog lines, T1, E1, and BRI trunking are all supported by the TeleVantage system. This includes support for Caller ID and DID functions. VoIP trunking can also be used for remote connections between systems -- or to remote employees with VoIP connections.

TeleVantage supports a range of handsets, from basic analog sets optionally with Caller ID and Message Waiting light to fuller analog feature phones with large soft-key screen displays, digital phones, and SIP phones.

PBX Features: The TeleVantage IP PBX can be configured so that multiple corporate entities can use the same phone system. Outside callers can be segregated based on number dialed, and inside users can be set to have access to one set of trunks versus another. Reports can be run to show activity for each organization, department or tenant grouping. TeleVantage IP PBX also provides a very flexible interface for conferencing. Calls can be conferenced whether the internal phone user initiates or receives the calls. Conferences can be as simple as three parties or they can grow to seven, nine, 16, or even 30 or 60 parties, depending on which Intel hardware is in the system. Remote or traveling users can call into the system, log in, and get a system dial tone to place internal or external calls.

Auto Attendant: Trunks into the system can be set to have calls handled by either automated attendant or receptionists. Rich multi-level menus can be created by cascading calls from one auto attendant to another. Callers have the option of dialing users by name rather than extension. The TeleVantage auto attendant can also listen to inbound calls and detect and route faxes to physical fax machines or to fax software.

Messaging: Users can run TeleVantage ViewPoint on a desktop PC to graphically see all messages, point and click to play them back in any order, drag and drop to organize messages in

folders, point and click on messages to return calls, take notes on voice mail, and bookmark important sections of messages for later playback. Users can also choose to pull callers out of voice mail and speak with them directly. TeleVantage can email voice mails as WAV file attachments to email accounts, allowing users to unify their messaging. Additionally TeleVantage can call you at an external number, page you, or email you when you receive a new voice mail.

System Administration: Administrators can log onto the system from their desktop, or remotely via a WAN, VPN, RAS connection, Terminal Server or other remote desktop technologies. The TeleVantage device monitor displays real time trunk and station status, and which trunks are connected to stations or outside numbers. Administrators can set the routing of calls, the collection of DID data and all PSTN properties such as ISDN and T1 signaling via a graphical interface. TeleVantage trunks can be also configured to route calls to specific trunks or with certain prefix/suffixes based on number dialed, the time of day or who placed the call. This enables least-cost routing, toll bypass over VoIP, and system dialing security features.

Users can be organized into groups and given permissions based on their group membership. All users are created by pointing and clicking in the graphical, Windows-based, TeleVantage Administrator. User settings, locations, permissions, etc., can also be easily changed.

Administrators can control which numbers can be dialed and which cannot. Blocks of numbers can be restricted but certain numbers can be excepted from any rule. This allows administrators to block paid-for service numbers or international calling in general, while allowing calling to one country or to a specific number of importance.

Adding the TeleVantage Reporter license additionally allows users to run reports on user activity, response time to answer calls, trunk utilization, tenant/organization group usage, account code usage, or full call log data. The system provides online views of all incoming and outbound calls, including who handled the call on which device, when and for how long. TeleVantage allows this data to be exported into other tools for further analysis.

Call Monitoring: Users can be given permission to whisper into the ear of another user who is on a call. Additionally, with the right permissions, someone can join a call in progress. Administrators can point and click to restart a trunk or station remotely without having to be onsite to unplug and reconnect any wires.

Standards Support: TeleVantage supports SIP and H.323 standards for VoIP connectivity for both trunks and stations. It can integrate with mail products like Microsoft Outlook and Exchange, Lotus Notes, or any SMTP-compliant mail system. TeleVantage also provides point and click integration that enables dialing from any TAPI-compliant contact management or CRM application such as Outlook, ACT!, Goldmine, Microsoft CRM, etc. Artisoft publishes an open API that exposes MS COM objects for all TeleVantage functions including IVR, data, and an extensible ViewPoint Add-On API to extend the graphical ViewPoint applications. TeleVantage also supports a variety of PBX formats of standard SMDR via serial port interface.

Diagnostic and Troubleshooting Features: The connection panel used for analog trunks and stations monitors system power and a heartbeat signal from the server. If power fails or a loss of server heartbeat is detected, the connection panel will direct outside trunks to desktop handsets. The system also automatically emails any administrators or designated individuals when system issues arise.

User Device Interface: TeleVantage ViewPoint is a graphical Windows desktop application that

provides rich call control, voice mail, contact management and advanced user settings.

The user can point and click to take and record calls, set up conferencing, and put calls on hold. The user can also highlight a number in another application, such as a phone number in an email or on a web page, and drag and drop it to TeleVantage ViewPoint to have the system place the call. Users can run TeleVantage ViewPoint on their desktop PCs to graphically see all messages, point and click on messages to play them back in any order, and drag and drop messages for organization into folders.

ACD Features: Permissions can be customized for supervisors and agents, and call routings can be customized to agents in order, round robin through the agent list, to the agent who has had the fewest calls or the least talk time, or even simultaneously to all agents. Users can define how to handle calls if the queue has too many calls or too few agents, and can mix agents handling inbound and outbound calls within a single queue. Both real-time queue and agent statistics can be viewed on supervisor screens. Calls can be routed to multiple tiers of overflow agents when all primary agents are not available and certain defined overflow conditions are met, and supervisors can silently listen in on agent calls, whisper to an agent without the outside caller hearing, or even "barge-in" to join the call completely. Calls can also be distributed to agents with the best matching skills.

GUI: The TeleVantage GUIs are easy to learn and use, with logical grouping and labeling of functions. The Administrator GUI is Windows-based and can be installed on a wide variety of PC platforms. It includes all of the administrative functions for the TeleVantage system – from initial configuration to user, auto-attendant, and queue maintenance, and monitoring of the system. It has descriptive function icons in the left-hand pane and displays the chosen function screens in the right-hand pane. When a particular item is selected (usually by double-clicking), a separate content window opens. Our lab found this GUI easy to navigate and to use – with functions grouped logically and options clearly labeled. The "previous" and "next" buttons in the user configuration window were found to be particularly helpful. We could easily move from one user to another without exiting the user window.

MANUAL CALL TESTING

Our lab tested the TeleAdvantage IP PBX for perceived voice quality, features, connectivity, resource monitoring and troubleshooting. Testing was performed with the Aastra 9112i phone, the eyeBeam softphone, and an external analog phone.

We exercised as many system features and options as possible with the different variety of phone devices and call types. During each test call, lab analysts noted the perceived voice quality and any problems that were encountered. All calls placed in this test were completed successfully with high perceived voice quality.

AUTOMATED CALL TESTING

Our lab performed both station-to-station and trunk-to-station automated SIP call handling tests to evaluate the ability of the TeleVantage IP PBX to handle multi-line call loads.

The station-to-station test was performed with a single Empirix Hammer FX-IP call generator system, which generated calls into 100 stations on the TeleVantage system. The Hammer FX-IP placed short calls to 30 other stations that also terminated on the same Hammer FX-IP. After

going on-hook, the originating station waited between three and seven seconds before placing another call.

The trunk-to-station test was performed with the Empirix Hammer FX-IP call generator system placing 16 simultaneous trunk calls into the TeleVantage system. The TeleVantage auto-attendant answered, and the Hammer FX-IP placed a call to a station extension. The TeleVantage system then routed the calls directly to the appropriate extension, each of which was answered by the Hammer FX-IP. After completing a short call and disconnecting, the originating trunk channel again waited between three and seven seconds before placing another call.

The TeleVantage IP PBX achieved 100 percent call completion, with very good call answer performance -- demonstrating its high reliability throughout the automated tests.

TECHNICAL SUPPORT

Throughout the evaluation process, our lab tracked all questions posed to the vendor's technical support department, and when a callback or email response was received. The status of each reported bug or product defect, if any, was maintained in a log. The relative responsiveness of the vendor as well as the quality of the answers received was also noted. TeleVantage also furnished an onsite support representative to help install and configure the system. This was the person responsible for fielding questions throughout the testing process.

During this test, our testers were able to pose most of the questions about the system and features to the onsite support representative. Thus, there was little need for further follow-up. The TeleVantage support representative was very knowledgeable. Our testers found only one question that initially stumped our representative: when we needed to configure the 100 extensions to work with the Hammer FX-IP for the automated tests. A brief call to TeleVantage quickly resolved the configuration issue and got the automated test running.

CONCLUSION

On a 10-point scale, our testers rated the TeleVantage IP PBX with a 9.0 for ease of use and configuration, a 9.1 for depth of features, a 9.3 for documentation and online help, and a 9.6 for user and administrator GUIs. The TeleVantage IP PBX was awarded a 9.0 on the rigorous automated call handling test and an excellent score of 9.8 on the manual tests. TeleVantage technical support received a grade of 9.2.

In summary, the TeleVantage IP PBX is highly reliable, richly functioned and featured, and a capable performer that can integrate seamlessly with a variety of telephony devices. It is well-suited to the needs of a medium-sized business.

ABOUT CT LABS

Established in 1998, **CT Labs** is a recognized pioneer in the development and execution of VoIP and TDM-based tests to validate performance of next-generation network elements for enterprise and carrier-grade equipment manufacturers. CT Labs conducts numerous private and public tests. CT Labs is an independent operation unit of Empirix, Inc.