

Why Voice Still Matters

Service providers can become critical partners for companies looking to ensure availability of their voice network

Communication is the cornerstone of commerce. Companies today enjoy a wide range of communication options. Face-to-face meetings are still the most powerful, but are too expensive in terms of time and money for all but the most important interaction. Electronic communication, such as email and instant messaging, remains the most convenient and cost-effective, but lacks intimacy.

Yet, despite all of our technological advances, the best balance of efficiency and intimacy is still the telephone. This is why companies place so much importance on the voice network.

However, several factors make managing voice network reliability more difficult than ever.

Most importantly, the network is more complex. In addition to the legacy POTS, companies now have VoIP and wireless voice networks. Simple voicemail has evolved into complex integrated messaging platforms. The generic black handset has been replaced by a plethora of devices including IP phones, cell phones, smart phones and even personal computers.

Further, the availability demands for the voice network are higher than in the past. Users expect the network to work without interruptions. The cost of losing phone service is so expensive that companies require five nines reliability around the clock. Thus, service level agreements (SLAs) are as demanding as ever before.

And, finally, despite increased network complexity and higher SLAs, staffing of network support personnel has remained flat or even declined.



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As a result, one of the most pressing issues companies face today is how to effectively manage their voice network. Within this challenge lies a golden opportunity for service providers. Equipped with the proper tools they can become critical partners for companies looking to ensure availability of their voice network.

The Challenge of IP

Whether in-house or out-sourced, managing telecom equipment at remote locations can be costly. Even the simplest problem – for example, cycling the power on a remote PBX – could involve hours of time by a technician dispatched to the site. In order to keep site management costs under control, service providers must have reliable and cost-effective remote management tools to remotely manage telecom equipment.

Not surprisingly, remote management tools for supporting voice networks are nothing new. For decades service providers have managed voice networks using a variety of special-purpose remote monitoring devices. Typically these systems provided a way for technicians to remotely monitor equipment and provide access to the vendor's management software on the remote equipment when necessary.

What is new is the voice network itself. Traditional voice networks were primarily analog phone lines, and remote access was accomplished using serial modems. Today's networks, however, are often built on open, network-based architectures. This is good news since networks provide much faster, more robust access to equipment. However, it also opens the door to some significant challenges.

Some of these challenges are straightforward – communicating using IP instead of serial modems, for example. The biggest challenge of remotely managing open IP-based networks is security. It can be difficult



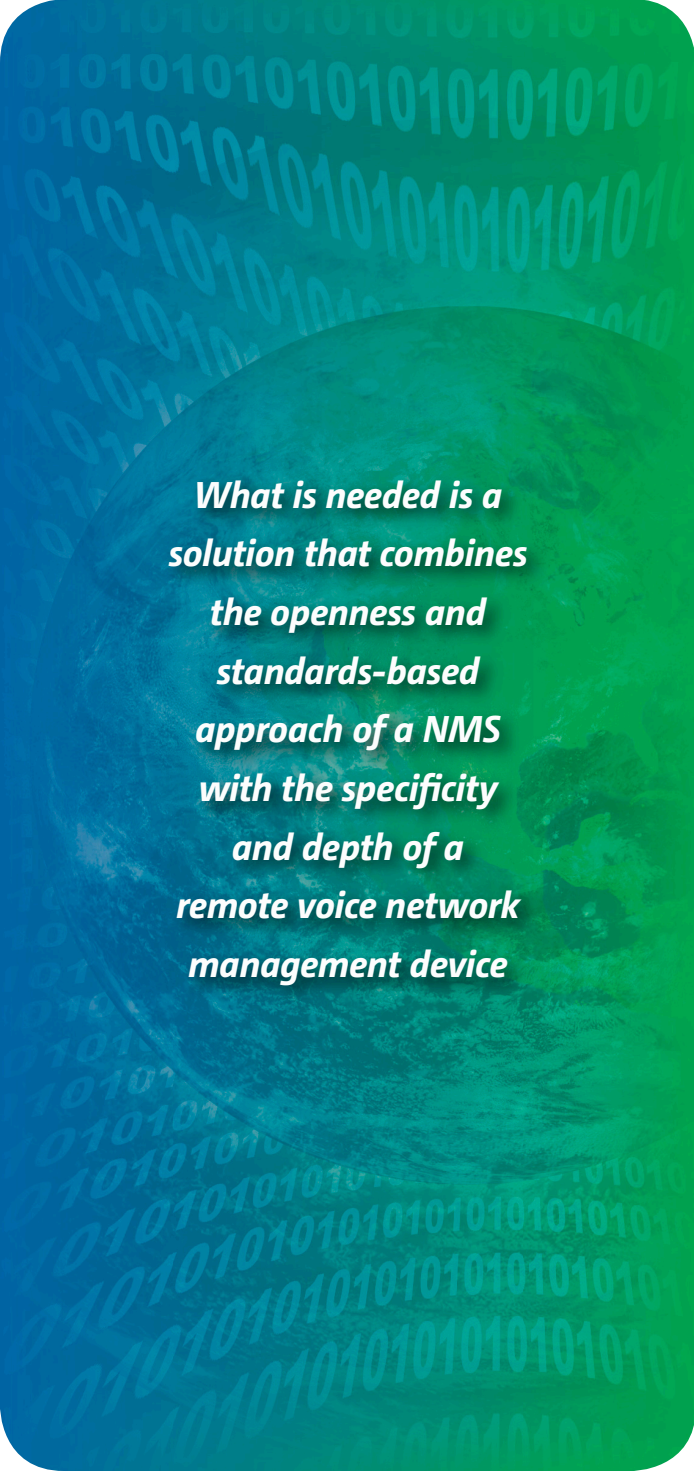
for enterprises to open their network enough that 3rd-party technicians can access the remote equipment they need, yet not so much that they have access to other sensitive network resources. Providing connectivity across LANs and firewalls and routers without compromising security and/or getting bogged down with overly restrictive network security policies is the first challenge.

Next, most remote voice network management devices were designed specifically for the legacy voice network. They provide basic support for specific voice equipment such as PBX and other similar equipment. However, these devices provide weak or no support for new protocols and IP-based methods necessary to access, monitor and troubleshoot IP-based equipment found in today's telecom environments.

Further, since many of these legacy remote management devices were designed primarily for dialup modem connectivity, they may provide limited or no support for standardized IP-based alarm and status reporting protocols, or that support may be 'shoe-horned' in to a product which was not designed to support these protocols from the start.

By contrast, there are a variety of robust network management systems (NMS) companies use to manage data networks. IBM's Tivoli and HP's OpenView support industry standard protocols. These NMS platforms consist of a management console and a wide range of agents that monitor specific network devices (such as routers and switches). NMS are highly capable, but were designed with data networks in mind, and lack the depth of traditional remote voice network management devices when it comes to voice equipment (such as telephone switches and voicemail systems).

For example, a legacy PBX can easily alarm when a trunk goes down, but getting OpenView to see this is a challenge requiring significant upgrades to the PBX.



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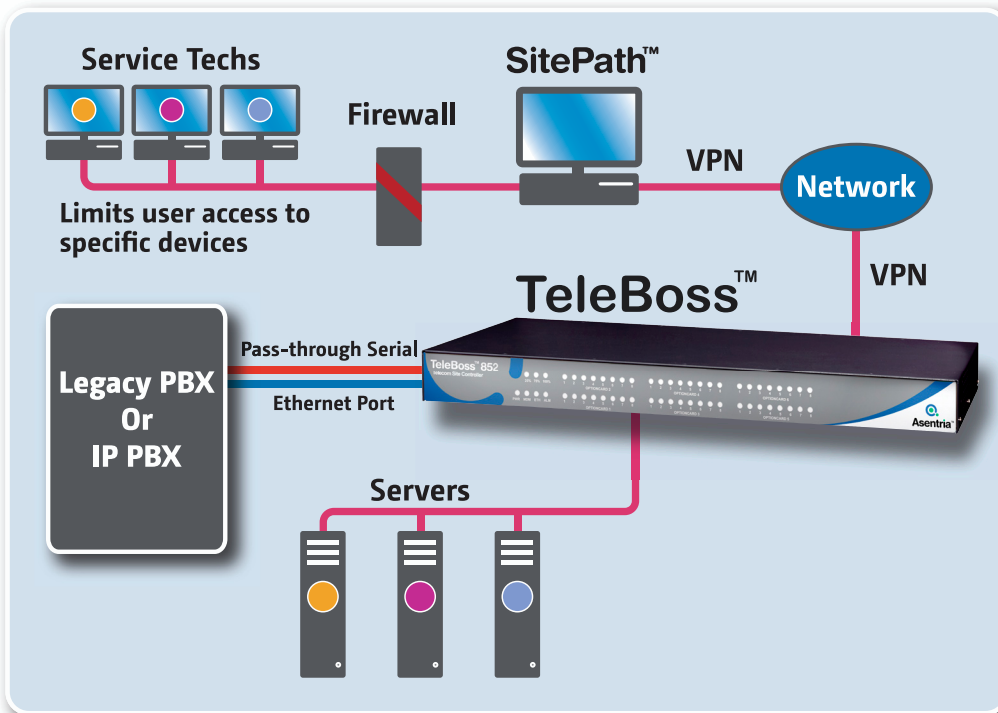
What is needed is a solution that combines the openness and standards-based approach of a NMS with the specificity and depth of a remote voice network management device.

Asentria's solution (comprised of the TeleBoss™ Series and the SitePath™ Management Platform) is an example of just such a product. It provides deep support for voice equipment, while adhering to industry standards and providing enterprise security. Yet, because it is tuned specifically for voice networks it is less expensive to purchase and simpler to install than an entire PBX upgrade.

Asentria designed the TeleBoss Series of Telecom Site Controllers to address the monitoring challenges presented by this new generation of remote voice and data systems. The TeleBoss product line provides powerful, flexible, and cost-effective choices for PBX Vendors, Call Accounting Service Bureaus, Managed Service Providers and enterprise managers who need

to securely monitor, access, control, and collect data from their voice and data infrastructure located within remote customer premises.

The TeleBoss product line meets these new challenges through a series of low-end to high-end stand-alone monitoring hardware devices that can be deployed at the remote sites where monitoring and management is required. The TeleBoss Controllers are scalable and economical, easy to setup and use, provide a variety of secure options for in-band and out-of-band remote access, and offer a powerful set of versatile and intelligent monitoring and control features that allow you to immediately detect and react



to potential threats at your remote sites in order to prevent downtime.

Collect CDR and records over serial or TCP/IP

The TeleBoss products collect and store text-based event records from telecom devices such as a PBX, Voicemail systems, ACDs and other similar devices. Typically these records are collected via the device serial port, but Asentria provides the industry's first support for IP Record Collection™ (IPRC) - the ability to query your IP PBX for data via a network connection.

Depending upon the TeleBoss you choose, you can collect records via the multiple varied protocols of most IP-based PBX models, including Cisco Call Manager, Nortel BCM, Avaya, Mitel, Alcatel, Intecom and Siemens PBXs.

TeleBoss products interface with all popular Call Accounting and Telemanagement billing applications, so integration and operation with these systems is seamless. Retrieving the stored information using industry-standard protocols such as FTP Push and Telnet is another option.

If the network goes down, the TeleBoss offers an optional internal 33.6Kbps modem that enables backup out-of-band polling methods.

Thus, service providers can implement a single device to manage both RS-232 and IP port PBXs — without software development. You can also use PPP dial-out to save money by retrieving data from distant PBXs via the Internet at local phone rates, and call accounting software vendors can continue to offer their software for new IP-based switches, as the software will obtain CDR from the TeleBoss Controllers.

Monitor the health of voice-based systems

The TeleBoss products support monitoring of alarm and event records; alerting your operations center when events occur. You can also capture and alert on

switch management and toll fraud conditions, as well as other types of fault conditions, or loss of expected data.

Alarms can be reported via email, SMS, SNMP traps, and to the Asentria AlarmManager™ or SitePath™ management software. Advanced TeleBoss products can also capture and forward SNMP traps from your remote networks into your alarm management application.

Monitor power and environmental factors

TeleBoss products monitor environmental conditions such as intrusion, temperature, water, battery conditions and much more. The TeleBoss product line includes the ability to support a host of external sensor devices to monitor environmental factors, contact closures, analog voltages, etc. The TeleBoss Controller simplifies the task of monitoring diverse equipment and forwarding alarms to your email, SMS, and network management system.

Monitor co-located devices

TeleBoss products can monitor co-located network and communication devices using SNMP, SQL, Syslog and other various networking protocols via their local network connection and built-in scripting capabilities.

Users can evaluate web interfaces, SNMP devices, Syslog records, SQL records and more, to monitor the health and alarm status of these devices. The powerful scripting language of the TeleBoss line provides built-in protocols, or you can create your own customized interface to interrogate a variety of other protocols.

Access

The TeleBoss product line brings service providers into the 21st century by replacing traditional dial-up access in favor of high bandwidth connectivity such as Ethernet, GSM, CDMA, EDGE cellular and/or an on-board internal ADSL interface. These options provide a fast, reliable, cost-effective connection into the

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customer network, with the dialup modem reserved for low-bandwidth or backup access usage. Using this connectivity, the TeleBoss products can facilitate a pass-through session for serial devices connected directly to the TeleBoss Controller, or you can connect directly to other devices on the same remote network via the Remote Access and Routing feature. The TeleBoss products provide bi-directional, 24/7, real-time remote customer premise visibility with proactive secure access and control of equipment at the customer site from the Service Provider NOC.

Secure remote access to your telecom closet

Connectivity is a liability without corresponding security; particularly if you are managing a connection into your customer's network. While basic TeleBoss products provide standard password access security, advanced TeleBoss products provide security options to prevent unauthorized access or snooping into the remote TeleBoss devices, including modem callbacks and caller ID filtering for dialup applications, as well as two-factor authentication (challenge/response) and customized VPN capabilities to provide secure point-to-point connection options.

With Asentria's TeleBoss products, service providers can offer new revenue generating services previously not possible because of security concerns. Out-of-band management is particularly useful for Call accounting service bureaus, which may maintain access to the phone system behind a customer's firewall. A single TeleBoss Controller located within a customer network is all that is required.

Control

Minimizing or even eliminating truck rolls saves time and money, while keeping customers satisfied. Advanced TeleBoss Controllers give you the ability to correct problems by power control and rebooting of transceivers, servers, routers, A/C power, and more. Using the pass-through connectivity, the TeleBoss products allow service providers to remotely send

commands to enable or disable power systems or manage devices, change equipment configuration parameters, connect remote users to restricted ports, and much more.

SitePath Integration

The TeleBoss product line integrates with the Asentria SitePath Administration Portal to provide a unified single point of access and management of the TeleBoss Controllers deployed throughout the enterprise. When using the SitePath VPN Gateway, a secure point-to-point connection can be made between your service managers and the remote devices they are managing, without exposing any passwords or access information to mid-level staff. Once connectivity is initiated, the TeleBoss Controller automatically maintains a secure connection between your technician and the remote TeleBoss device. All routing and NAT traversal is transparently handled by TeleBoss, enabling easy and secure access and delivery of alarm information. Setup and implementation time is next to nothing.

Versatility to meet your specific needs

Depending upon the TeleBoss platform you choose, you can manage up to 26 serial ports. Additionally, expansion cards are available to expand TeleBoss products for relays, contact closures, analog voltage inputs, or other environmental sensors. Options also include a dialup modem, wireless cell modem, or onboard ADSL modem.

Non-volatile memory sizes from 512K to 60MB provide adequate capacity to store the collected data records from your Telecom system. The 100Base-T interface provides TCP/IP access for configuration and data polling operations. Dialup access via an optional 33.6Kbps internal modem provides connectivity in non-networked locations. Some TeleBoss Controllers

can also support optional configuration for - 48VDC or +24VDC power input and rack mounting.


Summary

Asentria's TeleBoss series provides versatile management of text-based alarms, plus environmental and contact closure alarms at remote customer sites. By consolidating diverse alarm types into a single device, and applying business rules through TeleBoss' flexible scripting capability, service providers are able to rapidly identify and fix critical issues before they become problems.

The Company

Asentria develops remote site monitoring and telemanagement solutions that enable providers of critical communications infrastructure to more efficiently and reliably run their networks. Asentria's products help ensure quality of service and lower operational costs, while making it easier to provision, maintain and support remote equipment. Our strategic solutions fit both large and small communication networks and provide high-value, cost-effective and competitive differentiators to our customers.

Asentria helps administrators cost-effectively manage their call reporting data and remote site infrastructure, while extending confidence and security to ensure availability, integrity and performance. Asentria enables administrators to avoid failures from poorly performing equipment that threaten end-user service expectations, while providing better control to predict the performance of remote infrastructure. These new levels of protection shield end-users from remote site equipment failure. Our service provider and enterprise customers trust their remote equipment sites to Asentria. The company is headquartered in Seattle, Washington.

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