advanced
network
systems

A RESPONSE TO RFQ – WV STATE AUDITOR'S OFFICE

PREPARED FOR

WV State Auditor's Office

11/13/14 12:36:57PM
West Virginia Purchasing Division

November 12, 2014

Advanced Network Systems, Inc.
801 South College Avenue, Suite 3
Bluefield, Virginia 24605
www.getadvanced.net

advanced
network
systems

Table of Contents

advanced
network
systems

November 12, 2014

Advanced Network Systems appreciates the opportunity to submit this response to the Voice over Internet Protocol Telephone System RFQ issued by the West Virginia Purchasing Division is soliciting bids on behalf of the WV State Auditor's Office (WVSAO).

We understand that the purpose of this RFQ request is for the WVSAO to engage the services of a qualified firm to provide a next generation VoIP telephone/voice solution.

This RFP response provides a powerful and scalable VoIP system solution by ShoreTel that will meet the technical, operational, implementation timetable, and training requirements specified by WVSAO within its RFQ documentation.

Advanced Network Systems is a certified ShoreTel Champion Channel Partner and, as such, is pleased to offer the ShoreTel unified communications solution. We have achieved a Net Promoter Score of 100, indicating the highest level of service satisfaction as reported by our ShoreTel customers through ShoreTel's Customer Experience Program.

ShoreTel | Partners

Partner Dashboard
Advanced Network Systems Inc (51855)
Customer Experience

Advanced Network Systems experience and expertise with the ShoreTel solution as well as competencies in multi-vendor converged voice and data network environments, make us uniquely qualified to deliver all the services required for this project. As described within the body of this response, Advanced Network Systems has fifteen years of proven results and a substantial track record in providing network design, implementation and support services for government entities throughout Virginia and West Virginia. We specialize in the planning and deployment of communication technologies, including secure voice over IP solutions and systems management. As a regionally based supplier of voice and unified communications products and services, we hold many reference accounts with projects similar to the one described in WVSAO's request for quotation.

We look forward to helping the WVSAO take advantage of the technological opportunities and efficiencies that ShoreTel's IP telephony solution can offer. We welcome the prospect of being able to meet with you to discuss, in more detail, the ideas and initial solution we have prepared in this response.

Sincerely,

Lorri Haney, Vice President
Advanced Network Systems, Inc.

GENERAL REQUIREMENTS

SCOPE OF WORK

The scope of this project is to provide all of the hardware components and software licenses listed within the pricing pages of Exhibit A within WVSAO's RFQ, and to provide the necessary installation services, and configuration of the ShoreTel VoIP Phone System, servers and Uninterruptible Power Supplies. The scope also includes the complete cutover from WVSAO's current Nortel phone system to the new ShoreTel VoIP system as well as providing system administrator and system end-user training.

PROPOSED SOLUTION

Advanced Network Systems proposes a distributed unified communications solution that utilizes VoIP IPBX voice technology by ShoreTel. The proposed design will "drop into" the data network infrastructure, efficiently utilizing the Local Area Network (LAN) and Wide Area Network (WAN) infrastructure to provide unified communications to all users. The proposal also incorporates the requirements set forth in this RFQ for features and functionality essential to the WVSAO.

Headquartered in Sunnyvale, California, ShoreTel has been making IP Voice Communications a reality in the enterprise since 1998. Now shipping the thirteenth release of its software, the company has developed and delivered a carefully constructed roadmap designed to meet the evolving needs of modern enterprises.   The company has delivered its award-winning ShoreTel UC System over twenty-four thousand plus customers – represented by multinational deployments as well as single sites and is the fastest growing company in the IP-PBX space. ShoreTel is focused solely on IP-based telephony solutions for the enterprise. The Company was in development stage for about 1 1/2 years building the award winning architecture that is widely accepted as the most reliable and elegant Voice over IP (VoIP) solution on the market.

The ShoreTel IP voice communications system is a completely distributed, modular unified communication solution with no single point of failure that is layered on top of your IP network.   At the heart of the system is the standards-based Distributed IP Voice Architecture (software switching) which uniquely distributes call handling intelligence to distributed voice switches, and voice services (voicemail and automated attendant) to distributed servers across multiple local or remote locations, rather than centralizing it at the network core.   At the same time, the ShoreTel architecture enables a single system view and centralized management of the whole network.   Distributed voice services allow IT managers to host key applications closer to large user groups and more effectively leverage WAN bandwidth. Thus, the Distributed IP Voice Architecture enables a customer to efficiently deploy a ShoreTel system across local and multiple remote sites, and still manage all distributed resources as a single, integrated IP voice

communications system. This greatly simplifies such normally complex configuration and administration tasks as adds, moves, and changes – substantially lowering TCO and eliminating the IT manager's "pain points". The Distributed IP Voice Architecture gives companies a simple, "Lego-like" approach to building a distributed, easily scalable IP voice communications system that has no single point of failure.   Following is a representation of a ShoreTel unified communications system in a multi-site networked enterprise highlighting the Distributed IP Voice Architecture.

The ShoreGear® Voice Switches are stand-alone, hardware devices that work in an isolated fashion but complement each other on a network to provide a seamless, single system image for all users.   All ShoreGear switches run an embedded Operating System that runs from, non-volatile, flash memory and is supported by local DSPs and power supply. The ShoreGear voice switches run either VxWorks or Linux depending on the model. Additionally, all ShoreGear switches run a local copy of the ShoreWare® application that delivers dial-tone to all of its local users, supports the standard PBX features such as hold, conference, transfer, call park and call pick and contains the complete call routing table for all extensions, inbound/outbound call routing and trunk access. The distributed, fully meshed architecture allows each of the voice switches to remain in contact with another, checking to make sure that each switch is "live" and functioning as expected.   Each ShoreGear switch includes an auto-sensing 10/100 Ethernet connection and attaches directly to an industry-standard Ethernet switch.

Distributed IP Voice Architecture

As its name suggests, the Distributed IP Voice Architecture represents a radical departure from traditional PBX architecture.   For example, PBX systems centralize most components into a single cabinet. These components include the TDM bus (the communications path for voice traffic within the PBX), line cards (connection points for each telephone extension), trunk cards (access to external PSTN), and proprietary processors (providing call set up and tear down). In addition, the PBX cabinet may accommodate add-on applications such as voice mail or automated attendant. Unfortunately, these pieces do not work well within a company's distributed IP network infrastructure – which means a separate, proprietary voice network is required.   In contrast, ShoreTel's Distributed IP Voice Architecture literally replaces this centralized model by distributing voice communications intelligence throughout the IP network.

With ShoreTel's Distributed IP Voice Architecture, a switched Ethernet network replaces the TDM bus. Likewise, PBX line cards are replaced by ShoreGear IP voice switches, which can be distributed throughout the network, providing distributed call control and plug-and-play connectivity for all users with IP access, regardless of their physical location.   ShoreGear switches support standard analog phones, as well as ShoreTel IP phones and convert the analog signal to an IP packet for transmission over the IP network. Each switch employs a UNIX operating system to maintain network routing tables and manage real-time call setup and tear down between any two users, replacing the centralized circuit-switching matrix in the PBX.   In addition, ShoreGear switches replace PBX trunk cards by providing analog, T-1 or SIP trunk interfaces to the PSTN.   The result is each ShoreGear IP voice switch functions like a self-contained PBX.

ShoreTel's Distributed IP Voice Architecture also allows software intelligence to be distributed throughout the network. For example, every user on the network is empowered with ShoreTel Call Manager software and unified messaging through a variety of popular messaging products. This combination of capabilities enables users to leverage the PC interface to manage every aspect of their voice and data communications.   In addition to these core productivity applications, ShoreTel's Distributed IP Voice Architecture enables every user to participate in a distributed customer care process by supporting voice-enabled CRM on every desktop.   To ensure optimum performance, the ShoreTel architecture allows application servers to be distributed wherever they are needed on the network. Finally, ShoreTel's Distributed IP Voice Architecture enables IT managers to have a pervasive view of the IP voice network through a single, web-based application for managing all sites, all users, and all voice applications.

This unique architectural approach to distributed voice communications is extremely synergistic with today's architecture for distributed data communications. In fact, ShoreTel's architecture enables voice and data to seamlessly merge and create an enterprise-class communications environment that improves business collaboration and productivity, while reducing unnecessary cost and complexity.

The ShoreTel system allows users to move from desk to desk, or office to office, without having to unplug and carry a phone with them.   The ShoreTel Office Anywhere feature allows users anywhere on or off the network to sit at any phone (office, home, or mobile phone) and have that phone ring when their extension is dialed.

ShoreWare Mobile Call Manager (MCM) improves productivity for the mobile worker by extending the rich functionality of the ShoreTel Call Manager to a variety of mobile devices. MCM improves the mobile phone users' productivity by providing seamless remote access to voicemail, QuickDialer, Call History, Office Anywhere and Call Handling Mode settings. The Mobile Call Manager is built to run on selected Blackberry cell phones, supported by a Blackberry Enterprise Server—or other selected mobile phones from Nokia, HTC, and Motorola using a reverse proxy server.
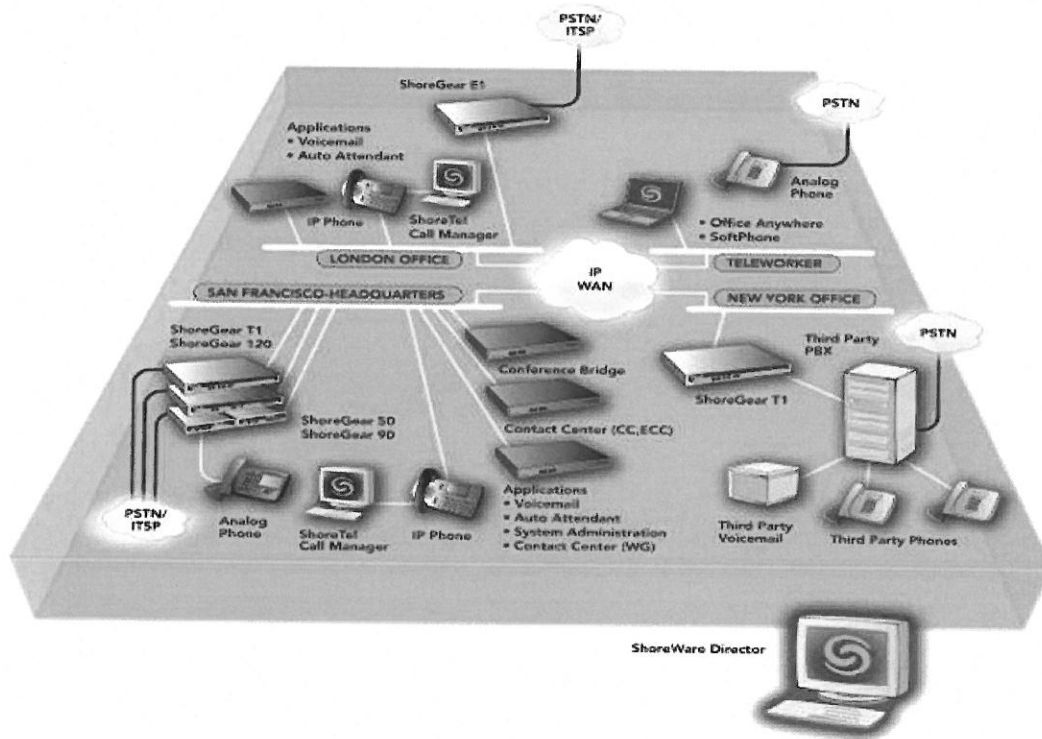
ShoreTel is very committed and passionate about driving and supporting industry standards.   Where accepted industry standards exist, ShoreTel will support them and, where possible, even give customers the option of multiple standards support.

Other standards supported by ShoreTel include RTP (for call handling), G.711 and G.729 (for voice packet compression across the WAN), MAPI (for unified messaging integration), SNMP (management), SQL (for database access), SIP and QSIG (for trunk/tie-line support) and 802.11 (for wireless applications).

advanced
network
systems

Distributed IP Voice Architecture

Integration of Voice Services with the Converged IP Network

ShoreTel is a purpose built system designed to leverage industry standard devices. The system supports standard analog phones, faxes, IP telephones, and modems.   Inherent in the design– the ShoreTel solution leverages industry devices and such, offers the greatest degree of flexibility. Analog ports are available on a variety of switches - capable of supporting the mentioned analog devices as well as analog trunks.   ShoreTel is committed and passionate about driving and supporting industry standards.   Where accepted industry standards exist, ShoreTel will support them and, where possible, even give customers the option of multiple standards support.

Systems Support for Open Standards

ShoreTel is very committed and passionate about driving and supporting industry standards. Where accepted industry standards exist, ShoreTel will support them and, where possible, even give customers the option of multiple standards support.

Other standards supported by ShoreTel include RTP (for call handling), G.711 and G.729 (for voice packet compression across the WAN), MAPI (for unified messaging integration), SNMP (management), SQL (for database access), QSIG and SIP (for trunk/tie-line support) and 802.11 (for wireless applications).

Voicemail Solution Architecture

ShoreTel voicemail resides on a customer supplied Windows Server or a ShoreGear switch with embedded voicemail capabilities connected to the Ethernet network.   Voicemail is available to each user. The ShoreTel voicemail system can accommodate up to 10,000 voicemail users on a single system.
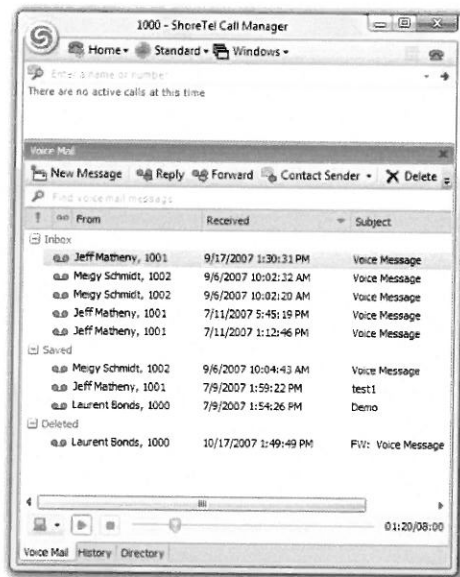
<u>Integrated Voice Mail</u>

The ShoreWare Voice Mail service is provided as a standard for all users (including unified messaging with Outlook). It requires no additional hardware, consumes no telephony ports and storage is limited only by the size of the server hard disk. The system provides 32.5 hours of voice storage per gig of hard disk space – and 254 simultaneous ports of access.

In multi-site configurations, voice mail servers or a ShoreGear switch with embedded voicemail capabilities can be distributed at larger locations to save valuable WAN bandwidth. Users can record personal greetings, as well as manage their mailbox from the ShoreWare Call Manager software or from any telephone. The powerful message notification feature can alert users to new messages by emailing, calling or sending them a page. Voice mail messages are stored in the industry-standard WAV (Audio for Windows) format, allowing users to play them on multimedia PCs, attach them to email messages, or embed them in other documents.

<u>Multi-level Auto-attendant</u>

The ShoreWare Auto-Attendant service provides 24-hour automated call answering and routing to improve service and enhance a company's image for inbound callers. Outgoing prompts can be customized and linked to the time of day and/or day of week. Individual groups, like technical support and sales organizations, can have their own menus with unique greetings and options. Like the ShoreWare Voice Mail service, the ShoreWare Auto-Attendant service also consumes no physical ports and can be distributed at larger locations to save valuable WAN bandwidth.

Maintenance and Administration for System Sites

ShoreWare Director is a powerful web-based tool that enables IT organizations to manage all sites, users, and applications as a single image voice communications network.   There are no command-line scripts to learn, no ponderous reference guides to study. The simple, browser-based, point-and-click interface makes it easy to add or delete trunks, switches, and users in seconds, eliminating the need for expensive training or outside consultants. On-line Help quickly guides the administrator through system installation and configurations using an easy point-and-click interface. ShoreWare Director offers a new paradigm in voice system administration, eliminating the need for multiple management consoles and enabling a single IT administrator to easily manage voice communications for the entire network from a single location anywhere in the enterprise.

Automated Software Update Distribution

ShoreWare Director software automates updates to the ShoreGear voice switches and ShoreWare Call Manager applications. Using an integrated software distribution mechanism, ShoreWare Director maintains an inventory of the firmware running on the ShoreGear voice switches, the ShoreTel IP Phones as well as the version of the ShoreWare Call Manager software, and automatically performs updates to keep the system running optimally.

Anytime, Anywhere Monitoring

ShoreWare Director is a browser-based management interface. System administrators use this graphical management tool to configure and monitor all the functions of the system. ShoreWare Director's point-and-click interface provides quick access to useful information anywhere, anytime. ShoreWare Director's web interface lets any PC on the network be used as the management station, eliminating the requirement for a dedicated management console.

Remote Service Capabilities for Technical Support

Technology to remotely connect to a customer's ShoreTel system allows for performance of remote diagnostics and troubleshoot any technical issues that may arise from the single management interface. This management interface can support all locations.

Flexibility and Scale

The ShoreTel system is modular and scalable. The system is designed with a "growth without disruption philosophy." The ShoreTel solution can scale to up to 20% additional user capacity and additional sites can be easily added to the system. With no single point of failure or chassis upgrades required – the implementation can be achieved during normal business hours.

The process: First define the new site(s), and then add switches where required, assign IP addresses and add users. This can be achieved in minutes. The system scales to 10,000 users on a single system, regardless of physical locations. The system can scale beyond 10,000 users by networking multiple ShoreTel systems together.

Ease of Installation

ShoreTel eliminates the complexity of traditional telecommunications systems by delivering a modular architecture with standards-based software and hardware components, hassle-free installation process,

point-and-click web-based management, and a Windows-based interface that provides personal call handling features and unified messaging with Microsoft Outlook. The ShoreTel Distributed IP Voice Architecture itself, much like Ethernet, is as close to plug-and-play as customers can expect. Like Ethernet switches, ShoreGear voice switches can be deployed anywhere they are needed on the IP backbone.

Solution Reliability

ShoreTel's system architecture has no single point of failure. Their unique distributed model has multiple built-in redundancies at all levels to safeguard voice communications delivering 99.999% availability.

Even in the event of a power failure, ShoreTel provides automatic fail over to the PSTN for continuous dial tone availability. In the event of a server failure, ShoreTel accepts calls without disruption or loss of dial tone – switching and routing is facilitated by the distributed ShoreGear switches. Temporary loss of voice applications (voice mail, automated attendant, etc.) can be avoided by implementing a server clustering strategy for automatic fail over to a redundant back-up server.

The following is a list of potential emergency and disaster conditions that could occur and how the ShoreTel system would handle them:

A. <u>WAN Failure</u>
The ShoreTel system distributes the voice intelligence throughout the network.   All ShoreGear voice switches are capable of supporting their local users regardless of the WAN.   All sites would run independently. System is designed to leverage the WAN when it's available – no dependencies.

B. <u>ShoreWare server failure</u>
Dial tone and call routing runs from the ShoreGear voice switches.   The server supports voice mail, auto attendant and administration applications. Core telephony continues regardless of server status.

Through the use of distributed ShoreWare servers and ShoreGear 50V or 90V switches, voice mail and auto attendant applications can be maintained across the network.   Some customers may choose to use hypervisor software packages like VMware® to provide automatic failover to a redundant server to maintain full management capabilities.

Even though the ShoreTel solution uses a distributed architecture, it functions as a single image system so there is only one database to backup making disaster recovery or replacement of the ShoreWare server very easy.   Again call processing is handled by the ShoreGear switches so core telephony continues regardless of server status.

The ShoreTel system does not provide for an automatic backup of its files. Customer's should implement their own backup process, and include the ShoreTel database files within that process. If restoring from a ShoreTel backup file, customers will lose the following:

- Any "adds, moves, changes" made since the backup
- Any voicemails recorded since the backup.

C. PC Failure

The ShoreTel system runs desktop productivity tools from the PC, core telephony continues regardless of the PC status. The user's telephone is not affected and functions normally.

D. ShoreGear Voice Switch

The ShoreGear voice switches are 100% distributed and do not rely on each other. If a ShoreGear switch goes out of service, only the users on that individual switch are impacted. Assuming no wire, telephone system, or other infrastructure damage, replacement of ShoreGear switch is a simple "plug and play" operation. Simply unplug the cables on the disabled ShoreGear switch, plug them into the replacement ShoreGear switch, and reassign an IP address – and you're ready to go.

E. Complete Power failure, with no UPS backup

Each ShoreGear switch has built in bypass that will connect one analog phone user per ShoreGear switch to one analog trunk.

F. IP Phones

ShoreTel IP Phones are controlled by the ShoreGear Voice Switches. If a ShoreGear Voice Switch is disabled the IP Phones can "auto failover" to another ShoreGear Voice Switch.

advanced
network
systems

MANDATORY REQUIREMENTS

CONTRACT REQUIREMENTS

Items and Services

Advanced Network Systems will provide contract items (goods and services) which will meet the mandatory requirements as defined within the RFQ Sections 3.1.1 through 3.1.72 and which correspond to items found within the Pricing Page identified as Exhibit A:

- Capitol Location - Items #1-#17
- South Charleston Office - Items #18 -#27
- Clarksburg Office - Items #28 -#39
- Maiden Warehouse - Items #40 -50
- Kanawha City Office - Items #51 -#60
- Mobility for Field Users - Items #61 -#65
- Audio Conference Bridge- Items #66 -#67
- Docking Station - Item #68
- Installation & Training Services - Items #69 -#71
- Maintenance & Support - Item #72

System Installation

All equipment and systems will be installed, configured and tested in accordance with the product manufacturer's instructions and in coordination with the requirements of the WV State Auditor's Office, which include:

- Verification of WVSAO dialing plans
- 4-digit dialing between WVSAO offices identified in Section 3
- Voicemail operation
- Migration conversion from existing Nortel system to new system
- System programming
- Coordination with telecommunications provider as needed

The following is a list of key activities required for the installation of the proposed system:

advanced
network
systems

Installation Task List

Voice Communications System Analysis and Ordering

   ShoreTel Software & Hardware

      Receipt of Purchase Order into Operations

      Schedule Delivery

      Ship Hardware and Software (ShoreTel)

      Receive Hardware and Software

      Order Telephones (if separate from ShoreTel PO)

      Deliver Telephones   (if separate from ShoreTel PO)

   Telco

      Call Flow Design

      Inventory and determine trunk requirements

      Order Circuits

Environmental and Infrastructure Analysis and Upgrade

   Power

      Assess Power Requirements

      Order Power and Grounding Upgrades (if needed)

      Purchase UPS for ShoreWare Server

      Purchase UPS for ShoreGear switches

   Racks

      Assess the need for rack space for the ShoreGear Switches at each site.

   Cabling

      Assess cabling needs

      Order cabling & equipment

Installation Task List

Ventilation

> Assess Ventilation requirements for the ShoreGear Switches

> Order Ventilation upgrades (in necessary)

IP Network

> Assess Local Area Network needs

> Order LAN equipment (if needed)

> Assess Wide Area Network needs

> Order WAN equipment (if needed)

Miscellaneous

> Assess Music on Hold needs

> Order MOH equipment

ShoreWare Server

> Assess the need to purchase a Sever

> Order ShoreWare Server

ShoreWare Clients

> Assess the desktop PC's (do they meet Call Manager requirements?)

Resource Scheduling and Tracking

Power

> UPS installed for server

> UPS installed for switches

> UPS installed for PoE switch

> Power installation complete

Installation Task List

Racks

    Install Racks (if necessary)

Cabling

    Install Patch Panels or cross connect blocks

    Install Switch to MDF Patch Panel Cables

    Install Station Cable

    Install ShoreGear Ethernet Cables

    Schedule cable vender for station cutover

Ventilation

    Update Ventilation (if necessary)

IP Network

    Install LAN equipment (if needed)

    Install WAN equipment (if needed)

Miscellaneous

    Install Overhead Paging equipment (if needed)

    Install Music on Hold equipment (if needed)

Training

    Schedule System Admin Training

    Schedule End User / Operator Training

System Load and Configuration

    IP Network

        Assign IP Addresses for ShoreGear switches and ShoreWare server

advanced
network
systems

Installation Task List

Telco

    Circuits Delivered and Tested by Telco

    Schedule Telco vender for Trunk cutover and support

ShoreWare Server

    Configure server (Windows 2003 & Service Pack 2)

    Load ShoreTel software

ShoreWare Clients

    Install desktop PC upgrades (if necessary)

    Install Call Manager software on desktop PC's

ShoreTel Installation

    Rack Mount ShoreGear Switches

    Configure IP addresses to ShoreGear Switches

    Install Telephones in Cubicles

    Connect New Telco Circuits

Configure ShoreTel System

    Define ShoreGear Switches

    Configure Trunk Groups

    Add Users

    Configure Auto-Attendants

    Record and import Auto-Attendant greetings

    Configure Workgroups

    Review Configuration

advanced
network
systems

Installation Task List

Training

    Complete System Admin Training

    Schedule End User / Operator Training

Installation Readiness Review

    Environment and Infrastructure

        Power

        Racks

        Cabling

        Ventilation

        IP Network

        Miscellaneous

            Music on Hold

    Voice Communications System

        ShoreWare Server

    Training

        Complete End User / Operator training

Cut-Over

    System Cutover

        Test Telco circuits

        Cutover Telco circuits

        Test Call Flow

        Test Critical System Features (Workgroups, Menus, Inter-site calls, Paging, MoH)

Installation Task List

Cutover stations

Test Stations

First Day Live

Monitor System to identify any configuration issues

Assist users & Operator with any questions

Transition Administration and Support

Provide additional End User / Operator Training (if necessary)

Project Review

Documentation Delivery

Transition to Service / Maintenance Agreement

Training Services

System Administrators. System administration training will address configuring and deploying ShoreTel Voice over IP in Multi-site networks. This course will give WVSAO's administrators an in-depth understanding and a hands-on learning experience covering all critical aspects of installing, configuring, and supporting a robust, multi-site ShoreTel Voice-over- IP phone system.

This instructor-led training class provides detailed configuration information, deployment strategies, troubleshooting knowledge, design considerations, and numerous hands-on lab projects to expose the student to multiple, challenging LAN & WAN VoIP installation and deployment scenarios.   At the conclusion of this course, the student will be competent in:

- Planning for a successful multi-site ShoreTel deployment
- Configuring and installing all aspects of ShoreTel equipment and software
- Troubleshooting the most common Voice-over-IP problem areas
- Quality of Service (QoS) configuration options and designs
- Understanding the features, benefits and drawbacks of the many different:
- ShoreTel voice switches

- Analog and digital voice trunks

- Analog phones and IP phones

- CODEC voice compression schemes

- Call flow mechanisms

This training is designed to cover the myriad features and deployment questions that all new ShoreTel administrators will face. In addition, Advanced Network Systems can provide more detailed Train-the-Trainer instructor led classes to allow WVSAO personnel to train future hires.

System End Users. In addition, the following is an overview of the training that Advanced Network Systems will provide to WVSAO's system end users (staff/personnel). End user training classes focus on the effective use of the primary user interface applications:

- ShoreWare Communicator (desktop end-user software)

- ShoreWare Operator Communicator (receptionist or Executive Admin)

- ShoreWare Telephones (IP and/or Analog)

- Unified Messaging (Outlook and/or ShoreTel Voice Mail Viewer)

- Mobility

- Conference Bridge

In addition to training services provided by Advanced Network Systems, ShoreTel University, ShoreTel's on-line educational tool, provides a series of self-paced, end-user training courses at no additional cost.

Warranty

Manufactures' Warranty. ShoreTel warrants that their product (hardware/software) will be free from defects in workmanship and materials, under normal use and service, for one year from the date of purchase from the Manufacturer or its authorized reseller. Please refer to ShoreTel's warranty statement (included in this response as a separate document) for additional details. Advanced Network Systems will provide WVSAO with required services to coordinate and process any warranty returns to the Manufacturer during the Manufacturer's warranty period.

Vendor Warranty. Advanced Network System provides a thirty (30) day guarantee on installation services, covering any technical work performed by the company. This warranty period begins on the first day of beneficial use by WVSAO. Advanced Network Systems' service warranty excludes any malfunction

resulting from the malfunction of or defect in any system, equipment or network other than the system installed by Advanced Network Systems, or any malfunction or damage resulting from Acts of God including lightning strikes, or any electrical work external to the installed system. This limited installation warranty will be void if the WVSAO or any person in the employ of or under the control of the WVSAO or other end user modify or reinstall any of the hardware or software sold and installed by Advanced Network Systems.

Maintenance Support

Advanced Network Systems' offers comprehensive maintenance support plans for ShoreTel VoIP solutions. A detailed explanation of our Maintenance Support Plan coverage for this solution is provided within this response in the section entitled "ANS NetWORKs Support."

The effective date of the maintenance support program will commence upon the date of system installation and not upon the expiration of manufacturer warranty(s). The manufacturer's warranty is a limited-time return and repair service for equipment. It does not include the same day service elements included in Advanced Network Systems' annual/renewable NetWORKs maintenance support service such as onsite same day service, maintenance sparing and advance replacement of malfunctioning equipment. Advanced Network Systems' maintenance support programs augment the manufacturer's warranty by providing critical support services not available through a basic hardware warranty.

advanced
network
systems

Advanced Network Systems/Vendor Information

Founded in 1996, Advanced Network Systems is a privately-held, Virginia-based corporation comprised of 24 full-time employees. Advanced Network Systems has a long and substantial track record in successfully providing network design, implementation and IT maintenance/support services. Our client portfolio covers a diverse base of market segments including government agencies, education, healthcare, and financial institutions, as well as other public and private entities throughout Virginia and West Virginia. We specialize in the planning, deployment and support of network technologies, including IP-based voice and video technologies, wireless/mobility, virtualized infrastructure, network security and data storage.

Advanced Network Systems has been delivering data network and IP-based telephony solutions for over fifteen years. The company has a long-term record of financial strength and operational stability with sufficient staffing and financial resources to perform this project—as well as larger projects—and can provide ALL related services proposed within this RFP response. Advanced Network Systems holds the required certifications covering all network technologies we design, install and support, including IP-based video and voice technology and products. Specifically, as part of ShoreTel's Champion Partner Program, Advanced Network System holds sales and technical training credentials in the areas of sales, pre-sales engineering, and installation, as well as advanced design, troubleshooting and support. Advanced Network Systems has a full-service Technical Assistance Center that utilizes planning and allocation tools, as well as scheduling and coordination personnel. The Center is responsible for assigning all required design, installation and other resources to assure timely delivery of the project and/or contractual commitments.

Advanced Network Systems is recognized for its broad base of technical expertise in the area of network technology. Over 40% of Advanced Network Systems' staff is comprised of field and design engineers, with the balance of employees making up a diversified base of sales professionals, customer support and operations infrastructure. Advanced Network Systems will assign technical management and administrative staff that will hold primary responsibility for the planning, ongoing operations and successful outcome of this project. Advanced Network Systems' engineering staff will serve as a professional resource to help resolve any technical issues that may arise over the course of this project.

As a regionally-based supplier with a service office located in Tazewell County, Virginia Advanced Network Systems can be a responsive and reliable provider of any service and support requirements for the proposed VOIP system. Our Bluefield, Virginia location is a full-service office that provides sales and technical service coverage for clients located throughout southwest Virginia and southern West Virginia. This location will be the primary service location for this project, providing responsive management and technical services, and as well as any other support required by the WVSAO.

Advanced Network Systems can provide full certifications of insurance coverage for its operations as well as all required state licenses and documentation required to do business within West Virginia.

advanced
network
systems

Manufacturer's Information

SOLUTION BRIEF

ShoreTel Collaboration

REAL-TIME INSTANT MESSAGING, AUDIO CONFERENCING AND WEB DESKTOP SHARING

In the Age of Information, businesses that keep teams connected with unified communications perform best. Employees need to share knowledge and ideas from any device at any location—whether they work in adjacent cubicles, in offices thousands of miles apart, in a home office, or are travelling somewhere in between.

Organizations that provide their teams with advanced, easy-to-use business communications systems find that information flows faster and more smoothly, with less miscommunication and fewer errors. Distances disappear and productivity skyrockets as companies empower their people to connect with instant messaging, conference calling and Web desktop sharing. Meetings become more effective, response times get faster, team dynamics grow stronger.

Delivered on the ShoreTel Unified Communications Platform, ShoreTel Collaboration combines voice and data over the enterprise phone system to make instant messaging, conference calling and desktop sharing accessible across the entire organization. Whether giving a presentation from an iPad®, collaborating on a document with a PC, or quickly confirming a fact using their smart phone, employees become more effective, cost-effectively.

Easy to implement

Like all of ShoreTel's unified communications solutions, ShoreTel Collaboration is a "plug-and-play" software solution integrated with ShoreTel's core IP Phone System. Simply install the ShoreTel Collaboration application (either embedded in our solid-state Collaboration Service Appliance or installed on your industry-standard x86 server) and your team is ready to go.

Once installed, application administration is a breeze, as it is with all ShoreTel IP phone solutions. Users, features and permissions are managed through ShoreTel Director, our "single-image" control center for all ShoreTel business phone systems. No other UC vendor streamlines and simplifies system administration like ShoreTel. We eliminate the complexity of multiple "solution silos" that require different logins, preferences and protocols for each UC application or location. And the resilience and reliability of our core platform is second to none. We work hard to make your administration easy.

Easy to use

Your employees will find ShoreTel Collaboration's advanced features incredibly intuitive to use. It only takes one click to launch instant messaging and conference calling from within ShoreTel Communicator, the same client software that manages call handling for our IP Phone System. And our integration with Microsoft Outlook® streamlines the process by scheduling phone calls and web collaborations on the calendar and emailing attendees link information with the touch of a button.

For additional convenience, end-users can also use the Web to access conference and desktop share controls, and "on-the-go" employees can use the ShoreTel Collaboration app for full features on mobile devices. Whether on the road or working from home, workers can always stay engaged in meetings right from their computer, iPhone® or iPad.
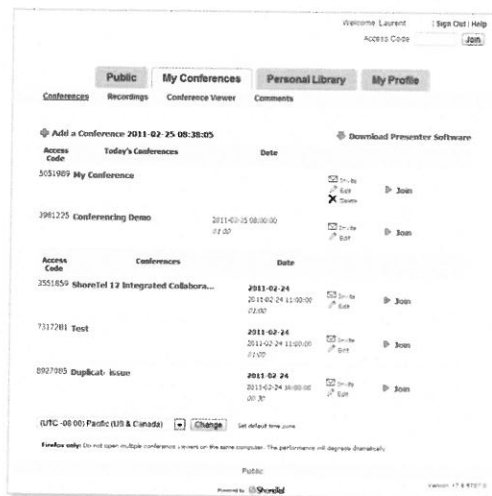
ShoreTel Collaboration Features

Instant Messaging: Simply select a contact from your directory and chat is one click away. Real-time presence information enables users to quickly identify who's available, enabling faster decision-making. Turn a chat into a phone call with the click of a button, and turn that call into a desktop share with another click.

IM recipients get an alert and pop-up message for instant access, and it's easy to save chat threads for future reference.

When coupled with ShoreTel Mobility for smart phone and tablet users, instant messaging functions like regular phone texting, with the familiar user interface of your favorite mobile device.

Audio conferencing: Phone conferences can instantly connect internal and external participants. With no IT supervision or assistance, end-users can create conferences "on the fly", turning a one-on-one call into a conference simply by clicking the names of additional colleagues. Phone meetings scheduled in Outlook automatically generate invitations including dial-in information and web links for computer access.

When the meeting time arrives, internal users can access the call by pressing the "conference" button on their ShoreTel phone or by joining the conference via ShoreTel Communicator; their Call Handling Mode will automatically reflect "In a Meeting." External customers, partners and remote employees join by clicking a Web link that automatically calls them to establish an immediate connection with no time lost dealing with complicated client downloads, long-distance dialing or passcode entry.

Instant recording and superior sound: Both audio conferences and desktop sharing can be fully recorded with a click of a button to archive and enable wider distribution of the information presented. Like all ShoreTel IP PBX systems, ShoreTel Collaboration offers unmatched audio quality. Our support for wide-band codecs provides a higher level of listening comfort so everyone—regardless of location—feels more immersed in the conversation. The ShoreTel IP Phone 655 is an ideal complement to ShoreTel Collaboration, especially when equipped with the microphone extension.

Desktop sharing: ShoreTel's brilliantly simple browser interface enables PC and Mac users alike to share a common desktop for demonstrations and collaboration. With a simple click on the conference web link—and no download—attendees can see the shared desktop within seconds. Sharing control can pass easily between participants for full participation by all. The message window allows concurrent chat and text messaging between individuals or all participants.

Click here to start sharing your desktop.
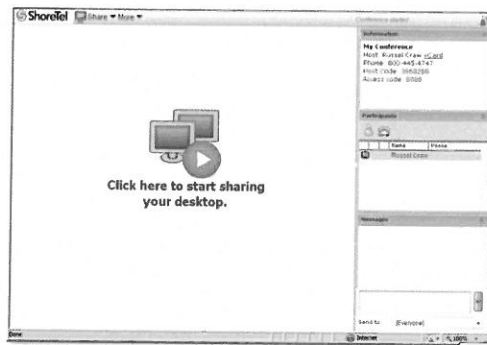
ShoreTel integrates with iPhone and calendar applications, with one-click access to the ShoreTel conferences application.

A built-in library lets users manage documents in both personal and public folders. Documents can also be delivered to participants instantaneously via "send file" or the message window—no need to take the time to open an email to send an attachment. A built-in whiteboard facilitates sharing ideas, which can then be sent out to any recipient. If users have questions about the desktop sharing, a help button brings up contextual support.

ShoreTel Collaboration Software

ShoreTel Collaboration Service Appliances embedded with ShoreTel Collaboration software can be deployed anywhere, including into a corporate DMZ. The appliance has been tested with well-known security tools for potential application and network vulnerabilities. Like all ShoreTel appliances, these solid-state devices have no spinning media that can fail; appliance life is 13-15 years.

ShoreTel Collaboration Software can also be installed on industry-standard x86 servers in a virtualized environment. These deployments capitalize on data center investments, allow for faster software upgrades and can help reduce the number of servers needed, especially for customers that choose a centralized unified communications deployment. Because of our unique single-image architecture, ShoreTel makes virtualized deployments far easier for system integrators to implement and for IT managers to maintain than solutions from other UC vendors.

ShoreTel offers system operators ultimate flexibility in choosing the implementation method that best suits their infrastructure and financial needs. Customers can be confident that both deployment methods offer superior resiliency for mission critical applications due to the outstanding 99.999% ("five nines") reliability of the core ShoreTel Unified Communications Platform.

ShoreTel Collaboration Specifications

Instant messaging
- XMPP-based
- Encrypted communications
- Integrated authentication with ShoreTel Communicator
- Contact list management
- Offline messaging
- Multi-party conversation
- Presence privacy
- Mac iChat support

Conference management
- Reservationless, scheduled and instant conference
- One-click scheduling in Microsoft Outlook
- Advanced settings in Microsoft Outlook
- Conference Web Portal
- Instant conference from ShoreTel Communicator
- Bridge into conference from ShoreTel Communicator or phones
- User-selected host and participant access codes
- Auto-generated access codes
- Host-required option
- Audio and web recordings/playback
- Resilient conferencing
- Overload protection
- Floating licensing

Audio conferencing
- HD audio
- Dial out
- Telephone interface (DTMF)
- Integrated conference button on ShoreTel phones
- Mute one, all parties
- Drop one, all parties
- Dial out to add parties via the Web
- Web-based call back line to join
- Optional entry and exit tones
- Announce names on joining
- Roll call announcements

Telephone interface (DTMF)
- List option
- Mute or un-mute your line
- Mute/un-mute all
- List participants
- Start/stop recording
- Lock/unlock conference
- Disconnect all

Web collaboration
- Zero install for participants
- Zero install for hosts using
- ShoreTel Communicator
- Application and desktop sharing
- Application and desktop sharing recording/playback
- Whiteboard
- File transfer
- Conference chat

Application sharing
- Share entire desktop
- Share individual windows
- Share zones
- Pass presenter controls to participants
- Pointer

Document sharing
- PowerPoint slides
- Flash videos
- Public and personal libraries
- Pictures

Mobile collaboration
- Host and attend conferences from anywhere
- View desktop share
- View shared content with annotations
- View shared files
- See the participants and manage them including mute/unmute and drop
- End lock the conference
- Control your previously uploaded slides
- Full-screen conference view
- Pinch-to-zoom
- Private or group chat
- Call back
- Active Directory Single-sign-on

Security and compliance
- Individual user authentication
- One-time conference access codes
- 7-digit access codes
- Password protected conference
- Encrypted Web conferences (HTTPS)
- Encrypted audio (SRTP)
- Conference locking

Reporting
- Audio CDR in Director
- Web conferencing CDR

Audio codecs
- G.722
- G.711
- DV14/ADPCM
- Linear
- Wideband Linear

Language support
- US English
- UK English
- Australian English
- Spanish (Spain)
- Danish
- German
- French (France)
- Italian
- Dutch
- Norwegian
- Portuguese (Brazilian, Portugal)
- Swedish

ShoreTel Specifications	Collaboration Service Appliance 100	Collaboration Service Appliance 400	Virtual Collaboration Service Appliance
Application capacity			
Audio conferencing	Up to 50 simultaneous audio conferencing ports (including 15 HD calls)	Up to 200 simultaneous audio conferencing ports (including 15 HD calls)	Up to 200 simultaneous audio conferencing ports (including 15 HD calls)
Web conferencing	Up to 50 simultaneous secure Web conferencing ports (HTTPS)	Up to 100 simultaneous secure Web conferencing ports (HTTPS)	Up to 200 simultaneous secure Web conferencing ports (HTTPS)
Instant Messaging	Up to 500 IM clients	Up to 2,000 IM clients	Up to 2,000 IM clients
Number of conferences	Up to 16 conferences	Up to 64 conferences	Up to 100 conferences

Specifications (con't)	Collaboration Service Appliance 100	Collaboration Service Appliance 400
Networking/storage		
Hard Disk	2 x 500 GB	2 x 500 GB
RAID level	Level 1 (Mirror)	Level 1 (Mirror)
Auto-sensing, 10/100/1000 Ethernet interfaces	2	2
Ethernet fail-over	•	•
Maintenance		
Serial connector (DB9)	•	•
Power-on indicator	•	•
Hard drive activity indicator	•	•
Diagnostic indicators	•	•
System status indicator	•	•
Fan status indicator	•	•
System identification button	•	•
USB connectors	2	2
Slide-out system Identification panel	•	
Retention clip	•	•
Mechanical		
19" rack mount	•	•
Dimensions (HxWxD)	1.67 in (4.3 cm) x 17.09 in (43.4cm) x 15.5 in (39.4 cm)	1.7 in (4.3 cm) x 17.2 in (43.7 cm) x 23.5 in (59.7 cm)
Weight	17.8 lb (8.06 kg)	37 lb. (17 kg)
MTBF	53,200 hours	60,500 hours
Power/ Consumption Rates	Power/ Consumption Rates	Power/ Consumption Rates
Power	250 watts	650 watts
Redundant power supplies		•
Input power	108 watts @368.5 btu/h	280 watts @956 btu/h
AC input voltage	100-240 VAC	100-240 VAC
Rated Input Current	3A (115V) to 1.5A (230)	8A (115V) to 4A (230V)
Rated Input Frequency	50-60 Hz	50-60 Hz
Consumption/dissipation	1039 BTU/hour maximum	2218 BTU/hour maximum
Environmental		
Operating temperature	10° to 35° C (50° to 95° F)	10° to 35° C (50° to 95° F)
Operating humidity	8% to 90% (non-condensing)	8% to 90% (non-condensing)
Storage temperature	-40 to 65 degrees C	-40 to 70 degrees C

About ShoreTel

ShoreTel is a provider of business communication solutions whose brilliantly simple unified communications platforms, applications and mobile UC solutions promise a new rhythm of workforce engagement and collaboration. With costly complexity eliminated by design from its award winning, all-in-one IP phone system, UC and contact center solution, and its industry leading hosted business phone system, workers enjoy a freedom and self-reliance that other providers can't match. Users have full control to engage and collaborate, no matter the time, place or device, for the lowest cost and demand on IT resources in the industry. ShoreTel is headquartered in Sunnyvale, California, and has regional offices and partners worldwide. For more information, visit shoretel.com or shoretelsky.com

⑨ ShoreTel

SPECIFICATIONS

ShoreTel IP Phones

ShoreTel offers a wide range of IP phones with the right solution for every user—from busy executives, operators and contact center agents to telecommuters, remote workers and in-building roaming users. ShoreTel IP Phones offer all the advanced features and quality that users demand, and are preconfigured to match the ShoreTel Unified Communications (UC) system for quick and easy installation.

ShoreTel

Specifications	IP Phone 930D	IP Phone 655	IP Phone 560g	IP Phone 485g
Functions				
Call appearance	3 (On-screen indicator)	12 (Tri-color LEDs)	6 (Tri-color LEDs)	8 (Tri-color LEDs)
Feature keys	4 (Transfer, conference redial/history, hold)	5 (Redial, voicemail, directory, call history, applications)	8 (Transfer, conference, hold intercom, redial/history, voicemail, options, directory)	6 (Transfer, conference, hold, history, voicemail, directory)
Soft keys	3		4	5
Display	176 x 220 pixels Backlit, color	640 x 480 pixels (VGA) Backlit, color touchscreen	24 characters x 7 lines 168 x 80 pixels Backlit, grayscale	480 x 272 pixels Backlit, color
Speakerphone (full duplex)	Half-duplex, on-screen indicator	LED indicator/Advanced beam-forming microphone array/Extension microphone option	LED indicator	LED indicator
Mute	On-screen indicator	LED indicator	LED indicator	LED indicator
Volume controls	Handset, speakerphone, headset, alert/rings	Handset, speakerphone, headset, alert/rings	Handset, speakerphone, headset, alert/rings	Handset, speakerphone, headset, alert/rings
Headset compatibility	2.5mm headset jack	RJ-22, LED indicator	RJ-22, LED indicator	RJ-22, LED Indicator
Electronic hook-switch control for wireless headsets		•	•	•
Features				
Call redirect	•	•	•	•
Call timer	•	•	•	•
Caller ID name, number	•	•	•	•
Conference call management	6 party	6 party	6 party	6 party
Directory	Unlimited (system)/ Alphanumeric lookup	Unlimited (system)/Sort by first or last names/Alphanumeric lookup	Unlimited (system)	Unlimited (system)/Sort by first or last names/Alphanumeric lookup
Message waiting (LED)	•	•	•	•
Missed call indicator	•	•	•	•
Redial/history	Unlimited (stored on server)	Unlimited (stored on server)	Last 20 numbers	Unlimited (stored on server)/ Filter by All, To, From, Missed
Ring tone selections	4	4	4	4
System speed dial	Unlimited	Unlimited	Unlimited	Unlimited
Personal speed dial		100	100	100
Time and date	SNTP sync	SNTP sync	SNTP sync	SNTP sync
Transfer to voicemail	•	•	•	•
On hook dialing	•	•	•	•
Built-in VPN client		•	•	•
XML application support		•	•	
Visual voicemail		•	•	•
Option Management				
Call handling mode	•	•	•	•
Call forwarding	•	•	•	•
Handsfree mode	•	•	•	•
Ring tone	•	•	•	•
Agent state	•	•	•	•
IP Telephony				
Protocol	DECT/MGCP	MGCP	MGCP	SIP
Quality of service	802.1pq, DiffServ/ToS	VLAN, DiffServ/ToS, UDP5004	VLAN, DiffServ/ToS, UDP5004	VLAN, DiffServ/ToS
Supported codecs	G.711 uLaw/aLaw G.729a	G.722 G.711 uLaw BV-32 G.729a BV-16	G.722 G.711 uLaw BV-32 G.729a BV-16	G711 uLaw/aLaw G726 G722 G729a G723 iLBC Linear16bit
Power (standard) Power (optional)	Base station: 802.3af PoE Local adapter (optional)	802.3af PoE Local adapter (optional)	802.3af PoE Local adapter (optional)	802.3af PoE Local adapter (optional)
Ethernet speed	Base station: 10/100	10/100/1000 switch	10/100/1000 switch	10/100/1000 Switch
IP addressing	Base station: DHCP, static	DHCP, static	DHCP, static	DHCP, static
Technical Specifications				
Size	Handset: 16.8 x 4.7 x 2.2 cm Base station: 20.8 x 15.0 x 5.8 cm	12.7 x 6.5 x 6.5 in 32.0 x 17.0 x 16.7 cm	11.6 x 7.5 x 5.3 in 29.5 x 19.1 x 13.5 cm	9.6 x 5.3 x 4.8 in 24.4 x 13.5 x 12.2 cm
Weight	Handset (w/battery): 0.29 lb (0.13 kg) Base station: 0.73 lb (0.33 kg)	4.0 lb (1.6 kg)	2.6 lb (1.2 kg)	1.66 lb (0.75 kg)
Power (idle/active/max)	Base station: Class 2 PoE (2.5 W/3 W/4 W) Battery: 3.7V 1100 mAH	Class 3 PoE (5.7 W/7.7 W/9.1 W)	Class 3 PoE (4.1 W/6.1 W/7.5 W)	Class 0 PoE (4.0 W/4.9 W/5.3 W)
Interfaces	DECT wireless to base station /2.5mm headset jack	RJ-45 Ethernet uplink/RJ-45 Ethernet downlink/RJ-22 handset jack/RJ-22 headset jack / Extension microphone jacks (x2) / Diagnostic port	RJ-45 Ethernet uplink RJ-45 Ethernet downlink RJ-22 handset jack RJ-22 headset jack	RJ-45 Ethernet uplink RJ-45 Ethernet downlink RJ-22 handset jack RJ-22 headset jack USB port (for future use)
Loop length		100 meters	100 meters	100 meters
Hearing-aid compatible	•	•	•	•
Environmental				
Operating temperature	0–40°	0–50°	0–50°	0–50°
Humidity	5–90% relative humidity (non-condensing)	5–90% relative humidity (non-condensing)	5–90% relative humidity (non-condensing)	5–90% relative humidity (non-condensing)

* Restricted throughput
† Product availability varies according to geography. Please contact your local ShoreTel Representative for availability in your area.

ShoreTel

Specifications	IP Phone 480g	IP Phone 480	IP Phone 420	IP Phone 265	IP Phone 230g
Functions					
Call appearance	8 (Tri-color LEDs)	8 (Tri-color LEDs)	2 (Single-color LEDs)	6 (Tri-color LEDs)	3 (Tri-color LEDs)
Feature keys	6 (Transfer, conference, hold, history, voicemail, directory)	6 (Transfer, conference, hold, history, voicemail, directory)	6 (Transfer, conference, hold, history, voicemail, directory)	8 (Transfer, conference, hold, intercom, redial/history, voicemail, options, directory)	8 (Transfer, conference, hold, intercom, redial/history, voicemail, options, directory)
Soft keys	5	5		4	4
Display	297 x 160 pixels Backlit	297 x 160 pixels Backlit	130 x 28 pixels Backlit	24 characters x 7 lines 320 x 240 pixels Backlit, color	24 characters x 5 lines 120 x 35 pixels
Speakerphone (full duplex)	LED indicator	LED indicator	Half-duplex, LED indicator	LED indicator	LED indicator
Mute	LED indicator	LED indicator	LED indicator	LED indicator	LED indicator
Volume controls	Handset, speakerphone, headset, alert/rings	Handset, speakerphone, headset, alert/rings	Handset, speakerphone, headset, alert/rings	Handset, speakerphone, headset, alert/rings	Handset, speakerphone, headset, alert/rings
Headset compatibility	RJ-22, LED Indicator	RJ-22, LED Indicator	RJ-22, LED Indicator	RJ-22, LED indicator	RJ-22, LED indicator
Electronic hook-switch control for wireless headsets	•	•	•		•
Features					
Call redirect	•	•	•	•	•
Call timer	•	•	•	•	•
Caller ID name, number	•	•	•	•	•
Conference call management	6 party	6 party	6 party	6 party	6 party
Directory	Unlimited (system)/Sort by first or last names/ Alphanumeric lookup	Unlimited (system)/Sort by first or last names/ Alphanumeric lookup	Unlimited (system)/ Alphanumeric lookup	Unlimited (system)	Unlimited (system)
Message waiting (LED)	•	•		•	•
Missed call indicator	•	•	•	•	•
Redial/history	Unlimited (stored on server)/ Filter by All, To, From, Missed	Unlimited (stored on server)/ Filter by All, To, From, Missed	Unlimited (stored on server)	Last 20 numbers	Last 20 numbers
Ring tone selections	4	4	4	4	4
System speed dial	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
Personal speed dial	100	100		100	100
Time and date	SNTP sync	SNTP sync	SNTP sync	SNTP sync	SNTP sync
Transfer to voicemail	•	•		•	•
On hook dialing	•	•	•	•	•
Built-in VPN client					•
XML application support				•	
Visual voicemail	•			•	
Option Management					
Call handling mode	•	•	•	•	•
Call forwarding	•	•	•	•	•
Handsfree mode	•	•	•	•	•
Ring tone	•	•	•	•	•
Agent state	•	•	•	•	•
IP Telephony					
Protocol	SIP	SIP	SIP	MGCP	MGCP
Quality of service	VLAN, DiffServ/ToS	VLAN, DiffServ/ToS	VLAN, DiffServ/ToS	VLAN, DiffServ/ToS, UDP5004	VLAN, DiffServ/ToS, UDP5004
Supported codecs	G711 uLaw/aLaw G726 G722 G729a G723 iLBC Linear16bit	G711 uLaw/aLaw G726 G722 G729a G723 iLBC Linear16bit	G711 uLaw/aLaw G726 G722 G729a G723 iLBC Linear16bit	G.722 G.711 uLaw BV-32 G.729a BV-16	G.722 G.711 uLaw BV-32 G.729a BV-16
Power (standard) Power (optional)	802.3af PoE Local adapter (optional)	802.3af PoE Local adapter (optional)	802.3af PoE Local adapter (optional)	802.3af PoE Local adapter (optional)	802.3af PoE Local adapter (optional)
Ethernet speed	10/100/1000 Switch	10/100 Switch	10/100 Switch	10/100 switch	10/100/1000 switch
IP addressing	DHCP, static	DHCP, static	DHCP, static	DHCP, static	DHCP, static
Technical Specifications					
Size	9.6 x 5.3 x 4.8 in 24.4 x 13.5 x 12.2 cm	9.6 x 5.3 x 4.8 in 24.4 x 13.5 x 12.2 cm	6.6 x 5.3 x 4.8 in 16.7 x 13.5 x 12.2 cm	9.5 x 6.8 x 5.2 in 24.1 x 17.3 x 13.2 cm	9.5 x 6.8 x 5.2 in 24.1 x 17.3 x 13.2 cm
Weight	1.62 lb (0.74 kg)	1.62 lb (0.74 kg)	1.60 lb (0.73 kg)	2.1 lb (1.0 kg)	2.1 lb (1.0 kg)
Power (idle/active/max)	Class 2 PoE (3.0 W/4.4 W/4.9 W)	Class 2 PoE (3.0 W/4.4 W/4.9 W)	Class 1 PoE (2.4 W/3.2 W/3.5 W)	Class 2 PoE (3.5 W/4.3 W/5.9 W)	Class 2 PoE (4.0 W/5.3 W/5.9 W)
Interfaces	RJ-45 Ethernet uplink RJ-45 Ethernet downlink RJ-22 handset jack RJ-22 headset jack	RJ-45 Ethernet uplink RJ-45 Ethernet downlink RJ-22 handset jack RJ-22 headset jack	RJ-45 Ethernet uplink RJ-45 Ethernet downlink RJ-22 handset jack RJ-22 headset jack	RJ-45 Ethernet uplink RJ-45 Ethernet downlink RJ-22 handset jack RJ-22 headset jack	RJ-45 Ethernet uplink RJ-45 Ethernet downlink RJ-22 handset jack RJ-22 headset jack
Loop length	100 meters	100 meters	100 meters	100 meters	100 meters
Hearing-aid compatible	•	•	•	•	•
Environmental					
Operating temperature	0–50°	0–50°	0–50°	0–50°	0–50°
Humidity	5–90% relative humidity (non-condensing)	5–90% relative humidity (non-condensing)	5–90% relative humidity (non-condensing)	5–90% relative humidity (non-condensing)	5–90% relative humidity (non-condensing)

* Restricted throughput
† Product availability varies according to geography. Please contact your local ShoreTel Representative for availability in your area.

ShoreTel

Specifications	IP Phone 230	IP Phone 212k	IP Phone 115	IP Phone 110	IP Phone BB24
Functions					
Call appearance	3 (Green LEDs)	12 (Tri-color LEDs)	1	1	24 (Tri-color LEDs)
Feature keys	8 (Transfer, conference, hold, intercom, redial/history, voicemail, options, directory)	8 (Transfer, conference, hold, intercom, redial/history, voicemail, options, directory)	6 (Transfer, conference, hold, intercom, redial, voicemail)	6 (Transfer, conference, hold, intercom, redial, voicemail)	
Soft keys	4	2			
Display	24 characters x 5 lines 120 x 35 pixels	13 characters x 8 lines 65 x 56 pixels	16 characters x 1 line 80 x 7 pixels	16 characters x 1 line 80 x 7 pixels	12 characters x 14 line 80 x 168 pixels Backlit, grayscale
Speakerphone (full duplex)	LED indicator	LED indicator	Half-duplex, LED indicator	Speaker only	
Mute	LED indicator	LED indicator	•	•	
Volume controls	Handset, speakerphone, headset, alert/rings	Handset, speakerphone, headset, alert/rings	Handset, speakerphone, alert/rings	Handset, speakerphone, alert/rings	
Headset compatibility	RJ-22, LED indicator	RJ-22, LED indicator	External		
Electronic hook-switch control for wireless headsets	•	•			
Features					
Call redirect	•	•			
Call timer	•	•			
Caller ID name, number	•	•	•	•	
Conference call management	6 party	6 party	3 party	3 party	
Directory	Unlimited (system)	Unlimited (system)			
Message waiting (LED)	•	•	•	•	
Missed call indicator	•	•			
Redial/history	Last 20 numbers	Last 20 numbers	Last number	Last number	
Ring tone selections	4	4	4	4	
System speed dial	Unlimited	Unlimited			
Personal speed dial	100				
Time and date	SNTP sync	SNTP sync	SNTP sync	SNTP sync	
Transfer to voicemail	•	•			
On hook dialing	•	•	•		
Built-in VPN client					
XML application support					
Visual voicemail					
Option Management					
Call handling mode	•	•	Via voicemail	Via voicemail	
Call forwarding	•	•			
Handsfree mode	•	•			
Ring tone	•	•			
Agent state	•	•	Via voicemail	Via voicemail	
IP Telephony					
Protocol	MGCP	MGCP	MGCP	MGCP	MGCP
Quality of service	VLAN, DiffServ/ToS, UDP5004	VLAN, DiffServ/ToS, UDP5004	VLAN, DiffServ/ToS, UDP5004	VLAN, DiffServ/ToS, UDP5004	VLAN, DiffServ/ToS, UDP5004
Supported codecs	G.722 G.711 uLaw BV-32 G.729a BV-16	G.722 G.711 uLaw BV-32 G.729a BV-16	G.722 G.711 uLaw BV-32 G.729a BV-16	G.722 G.711 uLaw BV-32 G.729a BV-16	
Power (standard) Power (optional)	802.3af PoE Local adapter (optional)	802.3af PoE Local adapter (optional)	802.3af PoE Local adapter (optional)	802.3af PoE Local adapter (optional)	802.3af PoE Local adapter (optional) PoE power forwarding
Ethernet speed	10/100 switch	10/100 switch	10/100 switch (software)*	10/100 switch	10/100 switch
IP addressing	DHCP, static	DHCP, static	DHCP, static	DHCP, static	DHCP, static
Technical Specifications					
Size	9.5 x 6.8 x 5.2 in 24.1 x 17.3 x 13.2 cm	9.5 x 6.8 x 5.2 in 24.1 x 17.3 x 13.2 cm	5.9 x 6.8 x 5.1 in 15.0 x 17.3 x 13.0 cm	5.9 x 6.8 x 5.1 in 15.0 x 17.3 x 13.0 cm	5.9 x 5.7 x 4.0 in 15.0 x 14.5 x 10.2 cm
Weight	2.1 lb (1.0 kg)	2.1 lb (1.0 kg)	1.6 lb (0.7 kg)	1.6 lb (0.7 kg)	1.1 lb (0.5 kg)
Power (idle/active/max)	Class 2 PoE (2.9 W/3.6 W/4.4 W)	Class 2 PoE (3.0 W/3.5 W/5.0 W)	Class 2 PoE (2.6 W/2.9 W/4.0 W)	Class 2 PoE (2.8 W/3.1 W/3.9 W)	Class 3 PoE (2.9 W/4.6 W/6.5 W)
Interfaces	RJ-45 Ethernet uplink RJ-45 Ethernet downlink RJ-22 handset jack RJ-22 headset jack	RJ-45 Ethernet uplink RJ-45 Ethernet downlink RJ-22 handset jack RJ-22 headset jack	RJ-45 Ethernet uplink RJ-45 Ethernet downlink RJ-22 handset jack	RJ-45 Ethernet uplink RJ-45 Ethernet downlink RJ-22 handset jack	RJ-45 Ethernet uplink RJ-45 Ethernet downlink
Loop length	100 meters	100 meters	100 meters	100 meters	100 meters
Hearing-aid compatible	•	•	•	•	•
Environmental					
Operating temperature	0–50°	0–50°	0–50°	0–50°	0–50°
Humidity	5–90% relative humidity (non-condensing)	5–90% relative humidity (non-condensing)	5–90% relative humidity (non-condensing)	5–90% relative humidity (non-condensing)	5–90% relative humidity (non-condensing)

* Restricted throughput
† Product availability varies according to geography. Please contact your local ShoreTel Representative for availability in your area.

About ShoreTel

ShoreTel is a provider of business communication solutions whose brilliantly simple unified communications platforms, applications and mobile UC solutions promise a new rhythm of workforce engagement and collaboration. With costly complexity eliminated by design from its award winning, all-in-one IP phone system, UC and contact center solution, and its industry leading hosted business phone system, workers enjoy a freedom and self-reliance that other providers can't match. Users have full control to engage and collaborate, no matter the time, place or device, for the lowest cost and demand on IT resources in the industry. ShoreTel is headquartered in Sunnyvale, California, and has regional offices and partners worldwide. For more information, visit shoretel.com or shoretelsky.com

ShoreTel

SPECIFICATIONS

ShoreTel Dock for Apple® iPhone® and iPad®

The ShoreTel Dock is the first and only business-grade device that transforms the Apple iPhone, iPad and iPad mini into the desk phone for the mobile generation. The ShoreTel Dock merges the benefits of a desk phone (audio quality, always-on power and ergonomic comfort) with the unified communications power of ShoreTel Mobility—instant messaging, directories, buddy presence, extension dialing, web conferencing and more.

There are two models of the ShoreTel Dock available with either an Apple 30 pin connector or an Apple Lightning connector. Each model has an articulating arm that lets users rotate their iPad between portrait and landscape orientations making web browsing as easy as placing a phone call. It works with both Bluetooth and direct connectivity and delivers the best audio quality possible—all while keeping the device charged and ready to go.

The ShoreTel Dock revolutionizes business communications and teleworker phone systems, making it easy for smartphones and tablets to become a user's primary communication device.

BENEFITS:

- Enterprise-grade solution
- Ergonomics of a desk phone extended to mobiles
- High-quality audio through handset, speakerphone or headset
- Charges mobile devices when docked
- Plug-and-play simplicity

Specifications	Apple Lightning model	Apple 30-pin model
Functions		
Speakerphone	Function button, status LED, single microphone	Function button, status LED, single microphone
Mute	Function button, status LED	Function button, status LED
Volume controls	2 Function buttons	2 Function buttons
Headset compatibility	Function button, status LED, RJ-22	Function button, status LED, RJ-22
Hook-switch	•	•
Bluetooth	Function button for pairing/connect operations, status LED	Function button for pairing/connect operations, status LED
Message waiting (LED)	•	•
On hook dialing	•	•
Technical Specifications		
Size	10.1 x 11.5 x 7 in 25.7 x 29.2 x 17.8 cm	10.1 x 11.5 x 7 in 25.7 x 29.2 x 17.8 cm
Weight	3.0 lb (1.4 kg)	3.0 lb (1.4 kg)
Power (idle/active/max)	Universal power adapter with US, EU, UK and AU plugs (0.3W/10W/24W)	Universal power adapter with US, EU, UK and AU plugs (0.3W/10W/24W)
Interfaces	Apple Lightning / RJ-22 handset jack / RJ-22 headset jack / 3.5mm stereo audio output jack	Apple 30-pin connector / RJ-22 handset jack / RJ-22 headset jack / 3.5mm stereo audio output jack
Hearing-aid compatible	•	•
Environmental		
Operating temperature	0-40°C	0-40°C
Humidity	20-85% relative humidity (non-condensing)	20-85% relative humidity (non-condensing)
Compatible Apple Devices		
iPhone 5s	•	
iPhone 5c	•	
iPhone 5	•	
iPad mini	•	
iPad mini with Retina display	•	
iPad	•	
iPod touch	•	
iPhone 4		•
iPhone 4s		•
iPad 2		•
iPad (3rd generation)		•
IPod touch (4th generation)		•

About ShoreTel

ShoreTel is a provider of business communication solutions whose brilliantly simple unified communications platforms, applications and mobile UC solutions promise a new rhythm of workforce engagement and collaboration. With costly complexity eliminated by design from its award winning, all-in-one IP phone system, UC and contact center solution, and its industry leading hosted business phone system, workers enjoy a freedom and self-reliance that other providers can't match. Users have full control to engage and collaborate, no matter the time, place or device, for the lowest cost and demand on IT resources in the industry. ShoreTel is headquartered in Sunnyvale, California, and has regional offices and partners worldwide. For more information, visit shoretel.com or shoretelsky.com

ShoreTel

SOLUTION BRIEF

ShoreTel Mobility Solution

INTEGRATE LEADING SMARTPHONES AND TABLETS WITH EXISTING ENTERPRISE COMMUNICATION APPLICATIONS AND INFRASTRUCTURE – SECURELY, SIMPLY AND COST EFFECTIVELY

With a variety of smartphones and tablets being used for business communications, it has become increasingly important to integrate the devices users love into existing communication infrastructures securely and cost-effectively, while enabling the mobile workforce to be more productive.

BENEFITS:

- Reduce enterprise telecom costs
- Secure enterprise communications for mobile workers
- Enable IT to control enterprise mobile communications while allowing personal device use
- Create a more responsive and accessible workforce
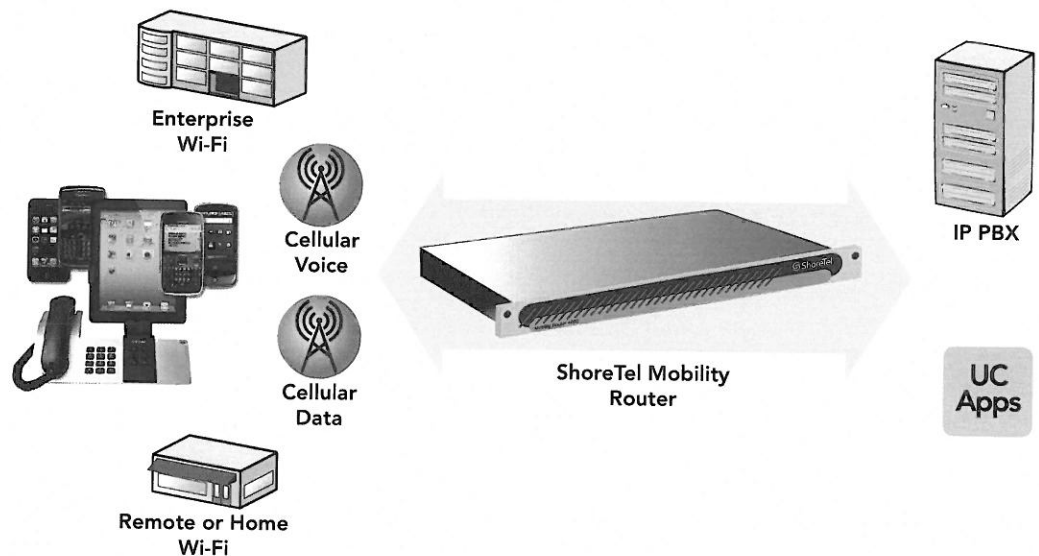- Simplify deployment and management

ShoreTel Mobility extends voice and unified communications (UC) applications to a wide range of mobile platforms including Android, BlackBerry and iPhone, while integrating with major PBX and UC systems – including Cisco, Avaya, Nortel, ShoreTel and Microsoft.

Users can leverage a single converged device for both business and personal communications, and access deskphone and UC capabilities on their devices without having to learn a new interface. Additionally, the solution's fast and automatic selection of the best network (Wi-Fi, cellular, or voice over 3G/4G) allows for optimization of cost, call quality and coverage.

Enterprise Wi-Fi

Cellular Voice

Cellular Data

Remote or Home Wi-Fi

ShoreTel Mobility Router

IP PBX

UC Apps

ShoreTel Mobility integrates leading mobile devices with enterprise communications applications and infrastructure

Reduce enterprise telecom costs

With ShoreTel Mobility, enterprises can reduce international roaming charges by leveraging VoIP over Wi-Fi and cellular data (3G/4G). Selection of the best available network is automatic and dynamic without requiring user intervention. Furthermore, international direct dial charges can be drastically reduced by routing calls through the enterprise PBX to leverage least-cost routing. Eliminating unutilized deskphones and leveraging personal devices that employees want to use for business communications provides additional CAPEX and OPEX reductions.

Secure enterprise communications for mobile workers

With ShoreTel Mobility's use of AES-256 encryption, IT administrators can be assured that their mobile voice communications are secure. Strong device - and user-level authentication with innovative digital certification, along with automatic initiation of application-layer SSL VPN when the users are outside the enterprise firewall, ensures robust security.

Similarly, adaptive location-aware policies and enterprise directory integration make administration brilliantly simple.

## Control enterprise mobile communications while allowing personal device use

With ShoreTel Mobility, IT can allow employees to use their personal smartphones and tablets, and deploy and support them similar to corporate-liable devices making ongoing management simple and cost-effective. This not only gives administrators the control they need to maintain over enterprise communications, but also extends users the flexibility to use the devices they prefer.

Additionally, the solution's ability to enable dual persona lets users maintain separate personal and business identities on a single device, and allows IT to firewall business and personal communications from each other.

When combined with ShoreTel Dock, your workforce can go mobile but still have a home base. The ShoreTel Dock merges the benefits of a desk phone (audio quality, always-on power and ergonomic comfort) with the power of the ShoreTel Mobility application.
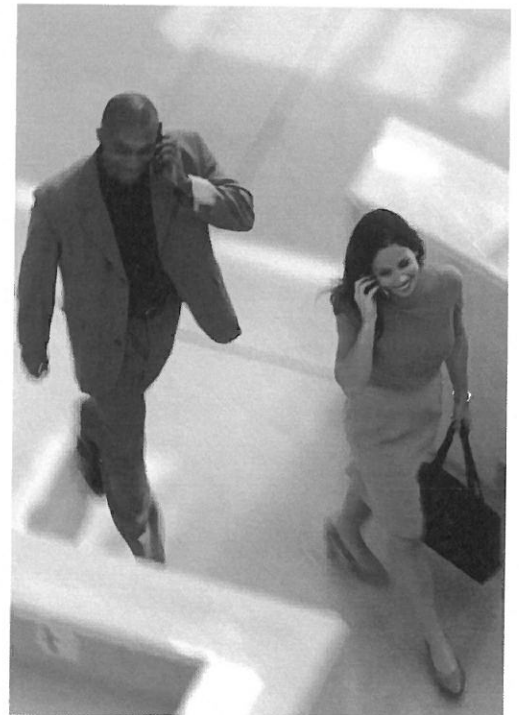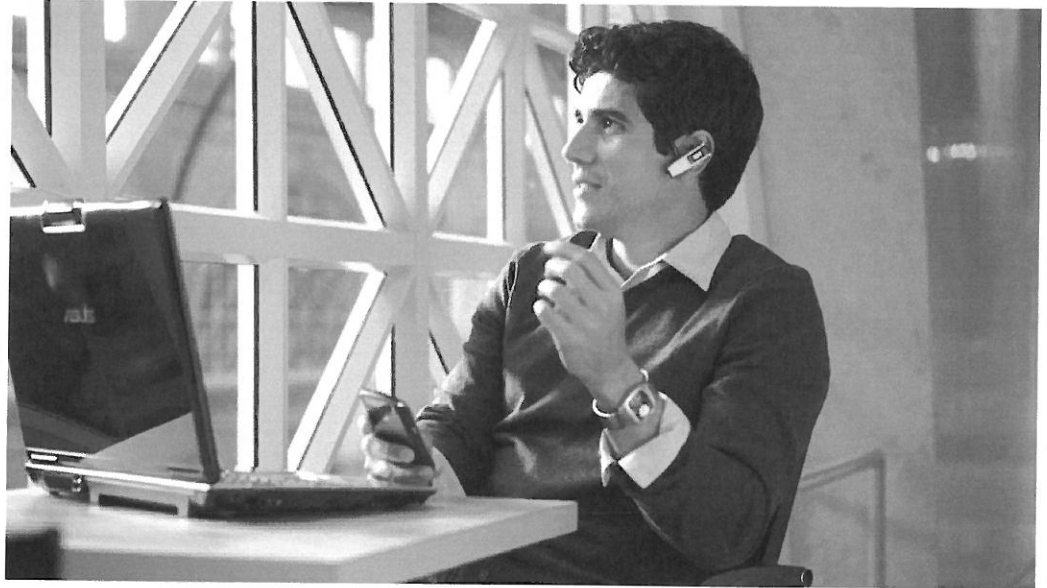
Create a more responsive and accessible workforce

With ShoreTel Mobility, mobile workers get access to desk phone, calendar integration and access, and UC capabilities (presence and IM) on their mobile device from anywhere and any network, putting the power of office communications right at their fingertips, whether they are inside or outside the enterprise.

Solution availability on leading smartphone platforms (Android, Apple iOS and BlackBerry OS) gives both businesses and users an extensive choice of devices. Moreover, integration with the native dialer eliminates the need to learn new calling behavior, making users immediately productive.

Simplify management and deployment

With ShoreTel Mobility, administrators have a single solution to deploy and manage across all PBXs, UC systems and mobile platforms. Additionally, having voice, UC and security included in a single, unified application simplifies deployment. The central client management portal allows for bulk configuration and software updates with a single click across all devices, eliminating the need for manual upgrades and end-user intervention.

ShoreTel Mobility features for mobile communications

- One enterprise number, one enterprise voicemail
- Deskphone features extended to mobile devices
  - Extension dialing
  - Transfer
  - Conference
  - Calendar integration
  - Call hold/retrieve
  - Do Not Disturb
  - Directory query
- Separate business and personal identities on a single mobile device
- Location and context aware enterprise presence and instant messaging
- Secure Remote Voice

About ShoreTel

ShoreTel is a provider of business communication solutions whose brilliantly simple unified communications platforms, applications and mobile UC solutions promise a new rhythm of workforce engagement and collaboration. With costly complexity eliminated by design from its award winning, all-in-one IP phone system, UC and contact center solution, and its industry leading hosted business phone system, workers enjoy a freedom and self-reliance that other providers can't match. Users have full control to engage and collaborate, no matter the time, place or device, for the lowest cost and demand on IT resources in the industry. ShoreTel is headquartered in Sunnyvale, California, and has regional offices and partners worldwide. For more information, visit shoretel.com or shoretelsky.com

Ⓢ ShoreTel®

⟲ ShoreTel®

Brilliantly simple™

ShoreTel Voice Switches

ShoreTel Voice Switches are key building blocks of the ShoreTel Unified Communications (UC) system and deliver UC to organizations of every size —from large enterprises to small and medium businesses. Highly reliable and intelligent, these switches unify communications across multiple enterprise locations, supporting IP phones, analog devices, and a variety of trunk interfaces. ShoreTel Voice Switches manage ShoreTel IP Phones and analog lines, as well as PSTN and ITSP trunks.

![ShoreTel]

Specifications	Voice Switch 90/ Voice Switch 90V	Voice Switch 90BRI/† Voice Switch 90BRIV/†	Voice Switch 50/ Voice Switch 50V	Voice Switch 30	Voice Switch 30BRI/†
Telephones					
IP phones	90	90	50	30	30
Analog phones	4	4	2	2	2
Analog Ports					
Loop start trunks*	8		4	2	
DID trunks*	4		2	2	
Extensions (telephones)	4	4	2	2	2
Digital Trunks					
Digital trunk channels		8 BRI Channels			2 BRI Channels
Integrated CSU					
Line and payload loopbacks					
Facilities data link					
Voicemail					
Voicemail storage	56 hours (90V only)	56 hours (90BRIV only)	22 hours (50V only)		
Mailboxes	90 (90V only)	90 (90BRIV only)	50 (50V only)		
Conference					
Make Me conference ports	12	4	6		
Front Panel					
10M/100M Ethernet (RJ-45)	2	2	2	2	2
Analog	RJ-21X	RJ-21X	RJ-21X	RJ-21X	RJ-21X
Audio input and output (mini)	•	•	•	•	•
T1/E1 (RJ-48C)					
T1/E1 monitor (RJ-48C)					
Maintenance (DB-9)	•	•	•	•	•
Mechanical					
19" rack mount	•	•	•	•	•
Dimensions	8.4 x 1.7 x 14.9 in. 21.3 x 4.3 x 37.8 cm	8.4 x 1.7 x 14.9 in. 21.3 x 4.3 x 37.8 cm	8.4 x 1.7 x 14.9 in. 21.3 x 4.3 x 37.8 cm	8.4 x 1.7 x 14.9 in. 21.3 x 4.3 x 37.8 cm	8.4 x 1.7 x 14.9 in. 21.3 x 4.3 x 37.8 cm
Weight	5.3 lb (2.4 kg)	5.3 lb (2.4 kg)	5.3 lb (2.4 kg)	5.3 lb (2.4 kg)	5.3 lb (2.4 kg)
Power					
Input voltage, frequency	100-240 VAC, 50-60 Hz	100-240 VAC, 50-60 Hz	100-240 VAC, 50-60 Hz	100-240 VAC, 50-60 Hz	100-240 VAC, 50-60 Hz
Input current	1A max.	1A max.	1A max.	1A max.	1A max.
Consumption/dissipation	31/33 W max.	23/25 W max.	23/25 W max.	23 W max.	22 W max.
Environmental					
Operating temperature	0°-50° C	0°-50° C	0°-50° C	0°-50° C	0°-50° C
Operating humidity	0-90% (non-condensing)	0-90% (non-condensing)	0-90% (non-condensing)	0-90% (non-condensing)	0-90% (non-condensing)
Storage temperature	Call -30°-70° C	-30°-70° C	-30°-70° C	-30°-70° C	-30°-70° C

*Loop start trunks on the ShoreTel Voice Switch 120 and DID trunks on all switches are supported in the US and Canada only.
† Product availability varies according to geography. Please contact your local ShoreTel Representative for availability in your area.

Voice Switch 24A	Voice Switch T1k	Voice Switch 220T1/ Voice Switch 220T1A	Voice Switch E1k	Voice Switch 220E1
		220		220
24		4 (220T1A only)		
		2 (220T1A only)		
		4 (220T1A only)		
24		4 (220T1A only)		
	24/23B+D	24/23B+D	30B+D	30B+D
	•	•	•	•
	•	•	•	•
	•	•	•	•
24		6 (220T1A only)		
2	2	2	2	2
RJ-21X		RJ-21X (220T1A only)		
•	•	•	•	•
	•	•	•	•
	•	•	•	•
•	•	•	•	•
•	•		•	•
17.2 x 1.7 x 14.3 in. 43.6 x 4.4 x 36.3cm	8.4 x 1.7 x 14.9 in. 21.3 x 4.3 x 37.8 cm	8.4 x 1.7 x 14.9 in. 21.3 x 4.3 x 37.8 cm	8.4 x 1.7 x 14.9 in. 21.3 x 4.3 x 37.8 cm	8.4 x 1.7 x 14.9 in. 21.3 x 4.3 x 37.8 cm
9 lb (4.1 kg)	5.3 lb (2.4 kg)	5.3 lb (2.4 kg)	5.3 lb (2.4 kg)	5.3 lb (2.4 kg)
100-240 VAC, 50-60 Hz	100-240 VAC, 50-60 Hz	100-240 VAC, 50-60 Hz	100-240 VAC, 50-60 Hz	100-240 VAC, 50-60 Hz
2A max.	1A max.	1A max.	1A max.	1A max.
63 W max.	18 W max.	18/29 W max.	18 W max.	18 W max.
0°-50° C	0°-50° C	0°-50° C	0°-50° C	0°-50° C
0-90% (non-condensing)	0-90% (non-condensing)	0-90% (non-condensing)	0-90% (non-condensing)	0-90% (non-condensing)
-30°-70° C	-30°-70° C	-30°-70° C	-30°-70° C	-30°-70° C

Features*

Telephone features
- 500 switches per system
- Answer
- Bridged call appearance
- Call barge in
- Call forward, busy
- Call forward, external
- Call forward, no answer
- Call hold
- Call join
- Call park/unpark
- Call pickup extension
- Call pickup group
- Call recording
- Call stack (1-16 calls)
- Call redirect
- Call transfer, blind
- Call transfer, consultative
- Call transfer, intercom
- Call transfer, mailbox
- Call transfer whisper
- Call waiting
- Caller ID name
- Caller ID number
- Caller ID blocking
- Conference (6-party)
- Conference blind
- Conference consultative
- Conference intercom
- Dial number (speed dial)
- Directory dialing
- Distinctive dial tone
- Distinctive ringing
- E911
- Group paging
- Handsfree
- Hang up
- Hold
- Hot key pad
- Huntgroups
- InstaDial
- Intercom
- Night bell
- Message waiting

- Missed call
- Multiple emergency numbers
- Multiple line appearance
- Music-on-hold
- Operator ("0")
- On hold reminder ring
- Office Anywhere
- Outbound caller ID
- Paging
- Park and page
- Paging extension in paging group
- Pick up night bell
- Redial
- Ringdown
- Ring tone selection
- Ring tone personalization
- Send digits over call
- Shared call appearance
- Silent monitor
- SIP
- Voicemail ("#")
- Whisper page
- Whisper page mute

Trunk types
- Analog loop start
- Analog wink start
- TBR 21 support
- T1 loop start
- T1 wink start
- T1 PRI
  - NI2
  - 4ESS
  - 5ESS
  - DMS 100
  - QSIG master
  - QSIG slave
  - CAS
- E1 PRI
- EURO-ISDN
  - QSIG
  - Hong Kong Variant
  - QSIG Basic Call
- E1 PRI
  - EURO-ISDN

- New Zealand Telecom
  - QSIG Basic Call
- SIP
  - RFC 3261 - SIP
  - RFC 2976 - SIP INFO
  - RFC 3891- SIP Replace
  - RFC 3515 - SIP Refer
  - RFC 2396 - URI
  - RFC 2388 - DTMF

Trunk features
- ANI
- Automatic trunk maintenance
- Caller ID name
- Caller ID number
- Caller ID blocking
- Centrex flash
- Dial-in prefix
- Dial-out prefix
- DID
- Digit translation
- DNIS
- Network call routing
- Network/User side PRI
- Off-system extensions
- SIP
- Tandem trunking
- Trunk groups

IP phone support
- MGCP
- SIP (RFC 2833)

DSP features
- Dynamic echo cancellation
- Dynamic jitter buffer
- Lost packet handling
- T.38 Fax
- Voice compression
  - BV-16 codec
  - BV-32 codec
  - Linear
  - G.711
  - ADPCM
  - G.722
  - G.729a

System features
- Account codes
- ACD (workgroups)
- Admission control
- AMIS
- Auto attendant
- Backup auto-attendant
- Bridge call appearance
- Call permissions
- Extension length (3-5 digits)
- Fax redirection
- Feature permissions
- Integrated voicemail
- IP phone failover
- Media encryption
- Office Anywhere (on-net)
- Office Anywhere (external assignment)
- On-net dialing (1-7 digits)
- Power fail transfer
- PSTN failover
- SMDI
- SNMP

Hunt groups
- Simultaneous hunt
- Top down hunt
- Single or multiple calls per extension
- Busy out group
- Busy out extension
- 16 extensions max. per switch
- 5 groups max. per switch
- Call forward busy
- Call forward no answer
- Scheduled modes

* Not all features in this list are supported by every switch. Please contact your ShoreTel representative for more details.

---

advanced network systems

800.639.6757
sales@getadvanced.net
www.getadvanced.net

About ShoreTel

ShoreTel is a provider of business communication solutions whose brilliantly simple unified communications platforms, applications and mobile UC solutions promise a new rhythm of workforce engagement and collaboration. With costly complexity eliminated by design from its award winning, all-in-one IP phone system, UC and contact center solution, and its industry leading hosted business phone system, workers enjoy a freedom and self-reliance that other providers can't match. Users have full control to engage and collaborate, no matter the time, place or device, for the lowest cost and demand on IT resources in the industry. ShoreTel is headquartered in Sunnyvale, California, and has regional offices and partners worldwide. For more information, visit shoretel.com or shoretelsky.com

WORLD HEADQUARTERS 960 Stewart Drive, Sunnyvale, CA 94085 USA. shoretel.com and shoretelsky.com

+1 (800) 425-9385 Toll Free +1 (408) 331-3300 Tel. +1 (408) 331-3333 Fax for ShoreTel

+1 (646) 230-5000 Tel. +1 (646) 230-5001 Fax for ShoreTel Sky

EMEA +800 408 33133 Freephone +44 (1628) 826300 Tel.
ASIA PACIFIC +61 (0)2 9959 8000 Tel.

ShoreTel

Maintenance Support

ShoreTel Phone Systems

OUR TECHNICAL ASSISTANCE CENTER

At Advanced Network Systems, delivering the highest level of customer support is our primary objective. As your technology advisor and business partner, we understand that the operation of your phone system is a key component in the success of your organization. To ensure that technology assets operate reliably and at peak performance, we strongly emphasize the importance of maintaining every system. Advanced Network Systems' Technical Assistance Center (TAC) is designed to provide our clients with the technical resources required to effectively support and maintain the products they purchase. Our TAC is a convenient, centralized resource for resolving any technical issues which may arise over the course of ownership of your business phone system.

Should a system failure occur, clients holding a NetWORKS Maintenance Agreement will receive a prioritized response from the Technical Assistance Center (TAC), based on their plan coverage and the severity of their issues.

SERVICES INCLUDED WITH A NEW PHONE SYSTEM

When you purchase a business phone system from Advanced Network Systems, our TAC provides a number of services, at no additional charge, for a limited, initial time period. The following matrix summarizes the services which are offered to you as a new phone system customer:

Services Included with a New Phone System Purchase	
Technical Support Services	30 days of access to the Technical Assistance Center for remote or on-site support for your new system. 30 days begins on the date of installation. Coverage hours: Mon - Fri, 8AM - 5PM ET, excluding published company holidays.
System Admin Services (Moves, Adds & Changes)	30 days of access to the Technical Assistance Center for administrative services for your new system. 30 days begins on the date of installation. Coverage hours: Mon - Fri, 8AM - 5PM ET, excluding published company holidays.
Replacement Parts	Repair or replacement (either new or equivalent) of defective parts covered under the manufacturer's warranty.
Software Replacements*	Media replacement, up to 90 days from installation, is included.

*Software replacements include defective media covered under manufacturer's warranty only. To be eligible for software upgrade/update implementation services, clients must hold a NetWORKS Maintenance Agreement.

NetWORKS MAINTENANCE PROGRAMS

Advanced Network Systems offers a variety of maintenance program options that cover both proactive and remedial technical services. All programs are offered on an annual, contractual basis.

Your choice of a maintenance program option should be based upon how critical your phone system is to the operation of your organization (e.g., the nature of your business, your hours of operation, etc.), as well as the level of internal resources you have to devote to its support.

866.338.0361 Technical Assistance Center

advanced
network
systems

800.639.6757
www.getadvanced.net
sales@getadvanced.net

1

PROGRAM OPTIONS

Choose the right NetWORKS Maintenance Program for your organization by selecting the coverage hours and the advance hardware replacement options that fit your needs.

COVERAGE HOURS OPTIONS

- ### 5x12 NetWORKS Support

  Provides prioritized remedial support for covered services and components between 6AM and 6PM Eastern Time, Monday through Friday. Includes customer access to our Technical Assistance Center (TAC) with an initial response time within four (4) hours for remediation of major issues. Spare parts management and advance hardware replacement on covered equipment is included (see Advance Hardware Replacement Options below). This plan also provides routine, proactive maintenance services — which are scheduled and performed during normal business hours — to sustain reliable system performance.

- ### 7x12 NetWORKS Support

  Includes all of the features of the 5x12 option with prioritized remedial support services available seven (7) days a week between 6AM and 6PM Eastern Time.

- ### 7x24 NetWORKS Support

  Includes all of the features of the 5x12 option with prioritized remedial support services available seven (7) days a week, twenty-four (24) hours a day.

ADVANCE HARDWARE REPLACEMENT OPTIONS

- ### Core Hardware Advance Replacement

  Provides advance hardware replacement (new or equivalent) on core system components and critical parts. Telephone sets are not covered under this option.

- ### Core Hardware Advance Replacement + Telephone Set Return & Repair

  Provides advance hardware replacement (new or equivalent) on core system components and critical parts. Telephone sets are covered on a return and repair basis:

  Telephone Set Return and Repair: How It Works
  A non-functioning or malfunctioning telephone set is returned by the customer to Advanced Network Systems. The set returned by the customer is then sent back to the manufacturer by Advanced Network Systems for repair or replacement. Clients should maintain a supply of spare telephone sets to cover their needs during this interim period. Upon its return, the repaired or replaced set will be shipped back to the customer by Advanced Network Systems.

- ### Core Hardware Advance Replacement + Telephone Set Advance Replacement

  Provides advance hardware replacement (new or equivalent) on core system components and critical parts, and provides advance replacement of non-functioning or malfunctioning telephone sets. Replacement sets are delivered to the client's premise by Advanced Network Systems, and defective sets are retrieved.

NetWORKS MAINTENANCE PROGRAM FEATURES

The following matrix outlines the services available under each NetWORKS option.

Features	NetWORKS Maintenance Programs		
	5x12	**7x12**	**7x24**
Program Cost	As quoted	As quoted	As quoted
Billing Structure	In advance	In advance	In advance
Term	Term is one year from the effective date of the service agreement.	Term is one year from the effective date of the service agreement.	Term is one year from the effective date of the service agreement.
Coverage Hours	6AM-6PM local time, Monday-Friday. Excludes published company holidays.	6AM-6PM local time, Monday-Sunday. Excludes published company holidays.	24 hours per day, Monday-Sunday. Excludes published company holidays.
After Hours Support	After hours and weekend services provided at 1.5 times the standard hourly rate.	After hours services provided at 1.5 times the standard hourly rate.	Included
Response Time *(within Coverage Hours)*	Initial response within 4 hours for major system issues.	Initial response within 4 hours for major system issues.	Initial response within 4 hours for major system issues.
Remedial Support Services	6 incidences included	6 incidences included	6 incidences included
Advance Hardware Replacement: Core Hardware	Included for covered components.	Included for covered components.	Included for covered components.
Advance Hardware Replacement: Telephone Sets	May be selected as a program option, at additional cost.	May be selected as a program option, at additional cost.	May be selected as a program option, at additional cost.
Service Provider Liaison	Included	Included	Included
Preventative Services: System Health Check & Configuration File Backup	Included. Scheduled semi-annually, during normal business hours.	Included. Scheduled semi-annually, during normal business hours.	Included. Scheduled semi-annually, during normal business hours.
Software Upgrades and Updates	Included	Included	Included
System Training	If requested, includes two hours of training.	If requested, includes two hours of training.	If requested, includes two hours of training.
System Admin Services *(Moves, Adds & Changes)*	Not Included. Billable as Time and Materials.	Not Included. Billable as Time and Materials.	Not Included. Billable as Time and Materials.

emote Access Requirement

Clients with a NetWORKS Maintenance Agreement are required to provide Advanced Network Systems with remote access to systems covered under the plan in order to accommodate remediation services.

TAC OPERATIONAL INFORMATION

REQUESTING TECHNICAL SUPPORT

Report all technical support issues directly to our Technical Assistance Center (TAC):

For urgent support requests, call one of the numbers below — <u>DO NOT</u> E-mail.

Contact the TAC Directly:
(866) 338-0361   or   (434) 220-9293

Non-urgent support requests can be reported via e-mail
to techcoordinator@getadvanced.net, as well as by phone.

COMPANY HOLIDAYS

NetWORKS Maintenance Programs do not include coverage on company holidays, which are published on our web site: www.getadvanced.net/company_holidays. Holiday service rates will apply for service required on company holidays. Contact your Account Representative at 800.639.6757 for rate details.

NetWORKS MAINTENANCE PROGRAM DEFINITIONS

The information that follows are general definitions for portions of the NetWORKS Maintenance Program. The specific features of each NetWORKS Maintenance Program can be found in the matrix on page 3.

Response Time

Realizing that your business phone system is a mission-critical part of your business, we offer prioritized service levels with our NetWORKS Maintenance Agreements. Each response level corresponds to the severity of the issue reported.

Advanced Network Systems' TAC offers standard service response to minor (non-emergency) or routine service requests during normal business hours: Monday through Friday, 8:00AM to 5:00PM Eastern Time.

Advanced Network Systems' TAC also provides a prioritized emergency service response —within four hours of notification— both within and outside its normal business hours, excluding published company holidays (see www.getadvanced.net/company_holidays). Emergency service responses are provided when critical technical issues, characterized as "major issues," arise. Services performed outside of the coverage hours that correspond to each NetWORKS Maintenance Program are billed at the standard rates.

Remedial Support Services

Remedial support services include troubleshooting and problem resolution for system hardware. These services are performed either remotely or at the system site.

Advanced Network Systems responds to all service requests within the coverage hours stated for your plan in the matrix on page 3. Upon your report of a system malfunction to our Technical Assistance Center (TAC), you will be asked to describe your technical issue in order for us to gather the required information and prioritize the service order. Highest priority is given to any issue which falls under the category of "major." A major issue is generally defined as one where a system resource has failed or its function is seriously impaired, causing a major disruption of operations. Major issues include:

- The inability to make or receive phone calls from your location;
- The inability of the attendant position console or auto attendant to receive incoming calls;
- The inability to use one or more functions of call center application; or

advanced
network
systems

800.639.6757
www.getadvanced.net
sales@getadvanced.net

- The inability of the majority of station users to use the intercom/station-to-station dialing.

Equipment and/or systems that usually do not qualify as network resources are those that affect a single user or those that support the operation of a single task. Typically, in a well designed network, these systems will not affect the company's mission critical capabilities and can, therefore, usually be serviced during our TAC's standard hours of operation.

Remote Services

Remote (on-line) services are an excellent vehicle for delivering high-quality service, when feasible, with greater efficiency than on-site visits. The ability to access your equipment from an off-site location allows us to analyze and solve problems quickly when they occur; making it an effective method for managing critical network and workstation issues.

Clients with a NetWORKS Maintenance Agreement are required to provide Advanced Network Systems with remote access to covered systems in order to accommodate remediation services.

On-Site Dispatch

Although troubleshooting and problem resolution can, in many instances, be handled solely through remote support, on-site support is sometimes necessary. An on-site response is required when remote troubleshooting and repair is either unsuccessful or is not the best approach to problem resolution. When necessary, remote support may be performed in conjunction with an on-site response to expedite problem resolution.

Advance Hardware Replacement

In the event of a system hardware or component failure, this service delivers a replacement for the hardware covered by your NetWORKS Maintenance Agreement without having to wait for normal repair service turn-around from the manufacturer. Based on the design specifics of your network, a list of component parts will be created for maintenance spares stock. All maintenance spares stock held for advanced replacement will be warehoused in Advanced Network Systems' facilities or at the manufacturer's warranty facility. All material returned to Advanced Network Systems for replacement or repair must be accompanied by an ANS Service Order (SO) number. This number is necessary to ensure proper tracking and handling of returned material. The defective product must be returned to Advanced Network Systems within seven (7) calendar days of receipt of the advance replacement item to avoid additional charges.

Service Provider Liaison

This NetWORKS Maintenance Program provides qualified technical staff who, acting on your behalf, will interface with your telephone service provider to troubleshoot, pinpoint and resolve technical issues. This service is designed to help eliminate the "point-the-finger" style of problem solving that can often plague the resolution process, saving valuable time and money. We may require a Letter of Authorization from your company in order to act on your behalf with your service provider.

Preventative Services: System Health Check & Configuration File Backup

Clients with a NetWORKS Maintenance Agreement will receive semi-annual preventative maintenance services, which consist of services and actions deemed necessary by Advanced Network Systems, to properly maintain your communication system for reliability and peak performance. A schedule of preventative maintenance service will be created based on the specifics of your system and network. This service can sometimes be scheduled and/or performed concurrently with remedial services.

Preventative maintenance services provide for the creation and storage of an additional backup copy of your system configuration files. Designed to augment your own backup and procedures, if required,

advanced
network
systems

800.639.6757
www.getadvanced.net
sales@getadvanced.net

a copy of your configuration files for a covered system will be kept and made available in the case of a complete system failure or disaster. An overall system health check will also be performed to identify any potential issues before they arise. This service is offered as part of our semi-annual preventative services package included with our NetWORKS Maintenance Agreements.

Software Upgrades and Updates

Our NetWORKS Maintenance Agreements include the implementation of manufacturers' current software upgrades and updates as defined below. A NetWORKS Maintenance Agreement will also provide the following services for your business phone system: storage of login/access credentials, downloading of software, preliminary software testing, installation of product software on your system, and troubleshooting (if necessary).

Software Upgrades

Upgrades include the implementation (where recommended) of major software upgrade releases which are defined by the manufacturer as "X." releases. These updates typically include significant feature and/or functionality enhancements.

Software Updates

Updates include the implementation (where recommended) of minor software releases which are defined by the manufacturer as ".x" releases. These updates typically include bug-fixes and other maintenance related updates.

System Training

Our NetWORKS Maintenance Agreements include two (2) total hours of training, if requested. Any training requirements that exceed the two hour annual limit can be purchased separately as billable training hours.

Administrator Training

Advanced Network Systems offers system administration training at our offices or at your place of business. This service is designed to teach your designated representatives the basics of system management and operation.

End-User Training

During the installation process, your organization may want new system users to receive training on how to effectively use your new system. Advanced Network Systems training is designed to guarantee that new users learn how to achieve the maximum benefit from the system. Designated members of your organization receive end-user training specifically designed to address the operations of your system. Maximum class size is fifteen students.

NOTE: ShoreTel offers free, online end-user training to all registered/licensed customers. Visit www.shoretel.com > Support > Training, for instructions and access to ShoreTel University.

advanced
network
systems

800.639.6757
www.getadvanced.net
sales@getadvanced.net

NetWORKS MAINTENANCE PROGRAM EXCLUSIONS

Services which fall outside the scope of a NetWORKS Maintenance Agreement:

System Administration Services (Moves, Adds, Changes)

System moves, adds and changes are not included in the NetWORKS Maintenance Program. These services must be purchased separately either on an as-needed basis or through the purchase of a pre-paid, discounted Remote Administration Support Package. Please contact your Account Executive for pricing and details. System administration services are provided from 8:00AM to 5:00PM Eastern Time, Monday through Friday, excluding published company holidays.

Other Exclusions

- Services provided for a product or part that fails as a result of (a) any misuse or negligent use, (b) any use other than the intended use, (c) use outside the environmental guidelines specified by the manufacturer, or (d) unusual external causes including, but not limited to, power failure/surge, air conditioning failure, water or humidity damage, improper input or output signals to product connections, customer's other software not approved by the manufacturer, accident, fire, lighting damage, or any other Act of God or Nature.

- Instances where there has been customization, modification or installation of products not authorized or performed by Advanced Network Systems.

- No refunds or credits for unused services will be issued by Advanced Network Systems for early termination of a maintenance agreement by the customer.

FOR MORE INFORMATION

For additional information regarding any of Advanced Network Systems' maintenance programs, contact your Account Representative at **800.639.6757** or **434.973.4747**.

866.338.0361 Technical Assistance Center

advanced
network
systems

800.639.6757
www.getadvanced.net
sales@getadvanced.net

NetWORKS Maintenance Program Benefits

When you compare Advanced Network Systems' NetWORKS Maintenance Program to other plans, make sure you are making an "apples to apples" comparison. Plans offered by manufacturers or other service providers rarely offer all the benefits of our NetWORKS plans, which include:

SERVICE	INCLUDED	DESCRIPTION
Expedited Response Time (Remote or On-Site)	✓	We provide an initial service response from our Technical Assistance Center within four hours of a request for help on major system issues. Your issues are prioritized above clients without a maintenance agreement.
Problem Troubleshooting and Identification	✓	Our technical personnel investigate and isolate the source of a failure within the Client's network.
Advance Hardware Replacements	✓	A replacement is available for covered, core hardware, prior to receiving a failed product back from the customer.
Advance Hardware Installation	✓	The service required to properly install and configure the advance replacement equipment.
RMA Processing for Failed Equipment	✓	We return products that have failed (either damaged or defective, and either in- or out-of-warranty) to the manufacturer for repair or replacement.
Preventative Services	✓	We provide semi-annual analysis of your system as well as preventative maintenance support to identify potential issues before they arise.
Software Upgrades and Updates	✓	We test manufacturer software releases, and, when recommended, implement major upgrades and minor updates on your system.
System Training	✓	We provide up to two hours of system training per year for your end-users and/or system administrators.
Service Provider Liaison	✓	When needed, we provide client representation/advocacy and interface with service providers (telephone, Internet, other third parties) to exchange information for expedited problem resolution.

Technical Assistance Center

866.338.0361

advanced
network
systems

800.639.6757
www.getadvanced.net
sales@getadvanced.net

advanced
network
systems

Product Warranty Information

ShoreTel

Brilliantly simple™

Warranty and Limitation of Liability

LIMITED WARRANTY. ShoreTel warrants to the end user ("Customer") that this product will be free from defects in workmanship and materials, under normal use and service, for one year from the date of purchase from ShoreTel or its authorized reseller. ShoreTel's sole obligation under this express warranty shall be, at ShoreTel's option and expense, to repair the defective product or part, deliver to Customer an equivalent product or part to replace the defective item, or if neither of the two foregoing options is reasonably available, ShoreTel may, in its sole discretion, refund to Customer the purchase price paid for the defective product. All products that are replaced will become the property of ShoreTel. Replacement products or parts may be new or reconditioned. ShoreTel warrants any replaced or repaired product or part for ninety (90) days from shipment, or the remainder of the initial warranty period, whichever is longer.

Products returned to ShoreTel must be sent prepaid and packaged appropriately for safe shipment, and it is recommended that they be insured or sent by a method that provides for tracking of the package. Responsibility for loss or damage does not transfer to ShoreTel until the returned item is received by ShoreTel. The repaired or replaced item will be shipped to Customer, at ShoreTel's expense, not later than thirty (30) days after ShoreTel receives the defective product, and ShoreTel will retain risk of loss or damage until the item is delivered to Customer.

EXCLUSIONS. ShoreTel will not be liable under this limited warranty if its testing and examination disclose that the alleged defect or malfunction in the product does not exist or results from:

- Failure to follow ShoreTel's installation, operation, or maintenance instructions.
- Unauthorized product modification or alteration.
- Unauthorized use of common carrier communication services accessed through the product.
- Abuse, misuse, negligent acts, or omissions of Customer and persons under Customer's control or
- Acts of third parties, acts of God, accident, fire, lightning, power surges or outages, or other hazards.

WARRANTY EXCLUSIVE. IF A SHORETEL PRODUCT DOES NOT OPERATE AS WARRANTED ABOVE, CUSTOMER'S SOLE REMEDY FOR BREACH OF THAT WARRANTY SHALL BE REPAIR, REPLACEMENT, OR REFUND OF THE PURCHASE PRICE PAID, AT SHORETEL'S OPTION. TO THE FULL EXTENT ALLOWED BY LAW, THE FOREGOING WARRANTIES AND REMEDIES ARE EXCLUSIVE AND ARE IN LIEU OF ALL OTHER WARRANTIES, TERMS, OR CONDITIONS, EXPRESS OR IMPLIED, EITHER IN FACT OR BY OPERATION OF LAW, STATUTORY OR OTHERWISE, INCLUDING WARRANTIES, TERMS, OR CONDITIONS OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, SATISFACTORY QUALITY, CORRESPONDENCE WITH DESCRIPTION, AND NON-INFRINGEMENT, ALL OF WHICH ARE EXPRESSLY DISCLAIMED. SHORETEL NEITHER ASSUMES NOR AUTHORIZES ANY OTHER PERSON TO ASSUME FOR IT ANY OTHER LIABILITY IN CONNECTION WITH THE SALE, INSTALLATION, MAINTENANCE, OR USE OF ITS PRODUCTS.

SERVICE AGREEMENTS. Please contact your ShoreTel Authorized Reseller for information about service agreements applicable to your product.

LIMITATION OF LIABILITY. TO THE FULL EXTENT ALLOWED BY LAW, SHORETEL EXCLUDES FOR ITSELF AND ITS SUPPLIERS ANY LIABILITY, WHETHER BASED IN CONTRACT OR TORT (INCLUDING NEGLIGENCE), FOR INCIDENTAL, CONSEQUENTIAL, INDIRECT, SPECIAL, OR PUNITIVE DAMAGES OF ANY KIND, OR FOR LOSS OF REVENUE OR PROFITS, LOSS OF BUSINESS, LOSS OF INFORMATION OR DATA, OR OTHER FINANCIAL LOSS ARISING OUT OF OR IN CONNECTION WITH THE SALE, INSTALLATION, MAINTENANCE, USE, PERFORMANCE, FAILURE, OR INTERRUPTION OF ITS PRODUCTS, EVEN IF SHORETEL OR ITS AUTHORIZED RESELLER HAS BEEN

ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, AND LIMITS ITS LIABILITY TO REPAIR, REPLACEMENT, OR REFUND OF THE PURCHASE PRICE PAID, AT SHORETEL'S OPTION. THIS DISCLAIMER OF LIABILITY FOR DAMAGES WILL NOT BE AFFECTED IF ANY REMEDY PROVIDED HEREIN SHALL FAIL OF ITS ESSENTIAL PURPOSE.

DISCLAIMER. Some countries, states, or provinces do not allow the exclusion or limitation of implied warranties or the limitation of incidental or consequential damages for certain products supplied to consumers, or the limitation of liability for personal injury, so the above limitations and exclusions may be limited in their application to you. When the implied warranties are not allowed to be excluded in their entirety, they will be limited to the duration of the applicable written warranty. This warranty gives you specific legal rights, which may vary depending on local law.

GOVERNING LAW. This Limited Warranty and Limitation of Liability shall be governed by the laws of the State of California, U.S.A., and by the laws of the United States, excluding their conflicts of laws principles. The United Nations Convention on Contracts for the International Sale of Goods is hereby excluded in its entirety from application to this Limited Warranty and Limitation of Liability.

advanced
network
systems

Pricing

Exhibit A*
Pricing Page

Scope: *Vendor to provide, install, and configure the ShoreTel VOIP Phone System or equal, including Software Licenses, Servers and UPS's. Vendor will also be responsible for User Training and Complete Cutover.*

Item #	Description	Qty	Unit Price	Extended Price
	WV State Auditor's Office-Capital Complex- West 130, 1900 Kanawha Boulevard, East; Charleston, WV 25305			
1	ShoreTel ShoreGear 220T1A – 1U half width, Max Capacities – 1 T1, 220 IP phones, 4 Analog exts, 2LS trunks or equal	1	$3,945.00	$3,945.00
2	ShoreTel ShoreGear 24A – 1U full width, Max Capacities – 24 Analog extensions. No IP phone or trunk support or equal	1	$1,820.00	$1,820.00
3	ShoreTel Kit, rack mounting tray, for ShoreGear Switch 1U half width, holds two 1U half width switches or equal	1	$79.00	$79.00
4	ShoreTel IP115 IP Phone or equal	5	$97.00	$485.00
5	ShoreTel IP420 IP Phone or equal	28	$115.00	$3,220.00
6	ShoreTel IP480g IP Phone or equal	90	$225.00	$20,250.00
7	ShoreTel IP560g IP Phone or equal	2	$260.00	$520.00
8	ShoreTel ShorePhone IP655, with anti-glare screen or equal	5	$455.00	$2,275.00
9	ShoreTel ShorePhone BB 24 Attendant Console in Black or equal	4	$182.00	$728.00
10	ShoreTel 655 IP Phone Quick Reference Documentation Pack (Quantity 25) or equal	1	$13.00	$13.00
11	ShoreTel Voicemail Quick Reference Documentation Pack (Quantity 25) or equal	6	$13.00	$78.00
12	ShoreTel 14 (Latest Controlled Release) or equal	1	$0.00	$0.00
13	ShoreTel Extension & Mailbox License or equal	130	$122.00	$15,860.00
14	ShoreTel Personal Access License or equal	130	$0.00	$0.00
15	ShoreTel Professional Access License or equal	5	$49.00	$245.00
16	ShoreTel Operator Access License or equal	4	$362.00	$1,448.00
17	Music on Hold Plus Audio System or equal	1	$180.00	$180.00
	South Charleston Office: 90 MacCorkle Ave. SW; Chareston, WV 25301			

PLEASE NOTE: ShoreTel has committed to provide a Volume Purchase Agreement to WVSAO which will allow Advanced Network Systems to maintain the prices quoted within this RFQ for 3 years from the date of first purchase.

Item #	Description	Qty	Unit Price	Extended Price
18	ShoreTel ShoreGear 50V – 1U half width. 50 IP phones, 2 Analog exts, 4 LS trunks, 50 mailboxes, 22 hours of storage or equal	1	$1,515.00	$1,515.00
19	ShoreTel Kit, rack mounting tray, for ShoreGear Switch 1U half width, holds two 1U half width switches or equal	1	$79.00	$79.00
20	ShoreTel IP480 Phone or equal	15	$182.00	$2,730.00

Item #	Description	Qty	Unit Price	Extended Price
21	ShoreTel Voicemail Quick Reference Documentation Pack (Quantity 25) or equal	1	$13.00	$13.00
22	ShoreTel Extension & Mailbox License or equal	15	$122.00	$1,830.00
23	ShoreTel Personal Access License or equal	15	$0.00	$0.00
24	ShoreTel Professional Access License or equal	1	$49.00	$49.00
25	ShoreTel Additional Site License or equal	1	$300.00	$300.00
26	Liebert 1000 VA tower/Rack Mountable UPS (Rack Mount Kit not included) or equal	1	$782.00	$782.00
27	Liebert Rack Mount Kit or equal	1	$76.00	$76.00
Clarksburg Office: 200 West Main Street; Clarksburg, WV 26301				
28	ShoreTel ShoreGear 50V – 1U half width. 50 IP phones, 2 Analog exts, 4 LS trunks, 50 mailboxes, 22 hours of storage or equal	1	$1,515.00	$1,515.00
29	ShoreTel Kit, rack mounting tray, for ShoreGear Switch 1U half width, holds two 1U half width switches or equal	1	$79.00	$79.00
30	ShoreTel IP115 IP Phone or equal	7	$97.00	$679.00
31	ShoreTel IP420 IP Phone or equal	7	$115.00	$805.00
32	ShoreTel IP480g IP Phone or equal	16	$225.00	$3,600.00
33	ShoreTel IP560g IP Phone or equal	2	$260.00	$520.00
34	ShoreTel IP655 IP Phone or equal	1	$455.00	$455.00
35	ShoreTel Voicemail Quick Reference Documentation Pack (Quantity 25) or equal	1	$13.00	$13.00
36	ShoreTel Extension & Mailbox License or equal	32	$122.00	$3,904.00
37	ShoreTel Personal Access License or equal	32	$0.00	$0.00
38	ShoreTel Professional License or equal	1	$49.00	$49.00
39	ShoreTel Additional Site License or equal	1	$300.00	$300.00
Malden Warehouse: 4916 Kanawha Blvd. East; Malden, WV 25306				

PLEASE NOTE: ShoreTel has committed to provide a Volume Purchase Agreement to WVSAO which will allow Advanced Network Systems to maintain the prices quoted within this RFQ for 3 years from the date of first purchase.

Item #	Description	Qty	Unit Price	Extended Price
40	ShoreTel ShoreGear 50 – 1U half width, Max Capacities – 50 IP phones, 2 analog exts, 4LS trunks or equal	1	$1,212.00	$1,212.00
41	ShoreTel Kit, rack mounting tray, for ShoreGear Switch 1U half width, holds two 1U half width switches or equal	1	$79.00	$79.00
42	ShoreTel IP115 IP Phone or equal	4	$97.00	$388.00
43	ShoreTel IP480 IP Phone or equal	1	$182.00	$182.00
Item #	Description	Qty	Unit Price	Extended Price
44	ShoreTel Voicemail Quick Reference Documentation Pack (Quantity 25) or equal	1	$13.00	$13.00
45	ShoreTel Extension & Mailbox License or equal	5	$122.00	$610.00
46	ShoreTel Personal Access License or equal	5	$0.00	$0.00
47	ShoreTel Professional License or equal	1	$49.00	$49.00
48	ShoreTel Additional Site License or equal	1	$300.00	$300.00
49	Liebert 1000 VA tower/Rack Mountable UPS or equal	1	$782.00	$782.00
50	Liebert Rack Mount Kit or equal	1	$76.00	$76.00
Kanawha City Office: 4010 MacCorkle Ave. SE Charleston, WV 25304				
51	ShoreTel ShoreGear 50 – 1U half width, Max Capacities – 50 IP phones, 2 analog exts, 4 LS trunks or equal	1	$1,212.00	$1,212.00
52	ShoreTel Kit, rack mounting tray, for ShoreGear Switch 1U half width, holds two 1U half width switches or equal	1	$79.00	$79.00
53	ShoreTel IP480 IP Phone or equal	13	$182.00	$2,366.00
54	ShoreTel Voicemail Quick Reference Documentation Pack (Quantity 25) or equal	1	$13.00	$13.00
55	ShoreTel Extension & Mailbox License or equal	13	$122.00	$1,586.00
56	ShoreTel Personal Access License or equal	13	$0.00	$0.00
57	ShoreTel Professional Access License or equal	1	$49.00	$49.00
58	ShoreTel Additional Site License or equal	1	$300.00	$300.00
59	Liebert 1000 VA Tower/Rack Mountable UPS or equal	1	$782.00	$782.00
60	Liebert Rack Mount Kit or equal	1	$76.00	$76.00

PLEASE NOTE: ShoreTel has committed to provide a Volume Purchase Agreement to WVSAO which will allow Advanced Network Systems to maintain the prices quoted within this RFQ for 3 years from the date of first purchase.

Item #	Description	Qty	Unit Price	Extended Price
	Mobility for Field Users:			
61	ShoreTel Mobility Router RA2000 Appliance and Software or equal	1	$3,035.00	$3,035.00
62	ShoreTel Roam Anywhere Client Access License (Includes Mobile Call Mgr., SIP Phone & Extension only) or equal	10	$92.00	$920.00
63	SIP Trunk Software License or equal	10	$31.00	$310.00
64	ShoreTel Extension & Mailbox License or equal	10	$122.00	$1,220.00
65	ShoreTel Personal Access license or equal	10	$0.00	$0.00
Item #	Description	Qty	Unit Price	Extended Price
	Audio Conference Bridge:			
66	ShoreTel SA-100 Appliance for host Conferencing and Instant Messaging or equal	1	$1,520.00	$1,520.00
67	10 Concurrent Audio Conferencing Ports or equal	1	$1,065.00	$1,065.00
	Docking Station Options:			
68	ShoreTel Apple Lightning Connector Dock or equal	5	$213.00	$1,065.00
	TOTAL HARDWARE, SOFTWARE & LICENSES			$89,728.00
	Installation & Training Services:			
69	Install and/or Mounting Materials	1	$1,000.00	$1,000.00
70	Flat Installation Services	1	$25,000.00	$25,000.00
71	Training (Hours Required x Hourly Rate) or Flat Fee for 8 people	8	$95.00	$760.00
	TOTAL INSTALLATION & TRAINING SERVICES			$26,760.00
	Maintenance & Support			
72	Annual 5x12 Support Contract (Coverage on Phone System Components Only, No Coverage on Phone Handsets)	1	$7,805.00	$7,805.00
	TOTAL MAINTENANCE & SUPPORT			$7,805.00
	TOTAL PURCHASE PRICE			$124,293.00

PLEASE NOTE: ShoreTel has committed to provide a Volume Purchase Agreement to WVSAO which will allow Advanced Network Systems to maintain the prices quoted within this RFQ for 3 years from the date of first purchase.

advanced
network
systems

Certification Documents

advanced network systems

CERTIFICATION AND SIGNATURE PAGE

By signing below, or submitting documentation through wvOASIS, I certify that I have reviewed this Solicitation in its entirety; understand the requirements, terms and conditions, and other information contained herein; that I am submitting this bid, offer or proposal for review and consideration; that I am authorized by the vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

Advanced Network Systems, Inc.
(Company)

Lorri Haney, V.P.
(Authorized Signature) (Representative Name, Title)

434-973-4747 · 434-973-9322   11/12/2014
(Phone Number) (Fax Number) (Date)

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: AUD1500000001

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

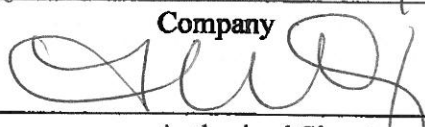**Acknowledgment:** I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:
(Check the box next to each addendum received)

[ ] Addendum No. 1   [ ] Addendum No. 6

[✓] Addendum No. 2   [ ] Addendum No. 7

[ ] Addendum No. 3   [ ] Addendum No. 8

[ ] Addendum No. 4   [ ] Addendum No. 9

[ ] Addendum No. 5   [ ] Addendum No. 10

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Advanced Network Systems, Inc.
_____
Company

_____
Authorized Signature

11/12/2014
_____
Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.
Revised 6/8/2012

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: AUD1500000001

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:
(Check the box next to each addendum received)

[✓] Addendum No. 1   [ ] Addendum No. 6

[ ] Addendum No. 2   [ ] Addendum No. 7

[ ] Addendum No. 3   [ ] Addendum No. 8

[ ] Addendum No. 4   [ ] Addendum No. 9

[ ] Addendum No. 5   [ ] Addendum No. 10

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Advanced Network Systems, Inc.
Company

[signature]
Authorized Signature

_11/12/2014_
Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.
Revised 6/8/2012

RFQ No. *CRFQAUD15000000001*

PURCHASING AFFIDAVIT

MANDATE: Under W. Va. Code §5A-3-10a, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

EXCEPTION: The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. Code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

DEFINITIONS:

"**Debt**" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"**Employer default**" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

"**Related party**" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceed five percent of the total contract amount.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (*W. Va. Code* §61-5-3) that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: _Advanced Network Systems, Inc_

Authorized Signature: _____ Date: _11/12/2014_

State of _Virginia_

County of _Albemarle_ , to-wit:

Taken, subscribed, and sworn to before me this _12th_ day of _November_ , 20_14_.

My Commission expires _December 31_ , 20_16_.

AFFIX SEAL HERE   NOTARY PUBLIC _Sharon Engle_

Purchasing Affidavit (Revised 07/01/2012)