Enabling Voice over IP and Unified Communications

Voice over IP (VoIP) and Unified Communications (UC) offer unprecedented opportunities to transform business communication, collaboration, and efficiency. By unifying communication devices on a single platform, forward-looking organizations recognize the power of UC to provide presence, mobility, and contact capabilities. What separates successful UC implementations from costly, time-consuming, and arduous projects is experience in converged service design and implementation of large complex networks.

Fortunately, tools like centralized management services and feature-rich products are on the market, and are designed to simplify network infrastructure operations, increase efficiency, and reduce complexity. These cost-effective tools can be used to manage a successful migration from PBX and key systems to the promise of integrated real-time communication services and unified messaging.

While the move to VoIP and UC may seem like a “silver bullet,” upgrading from traditional telephony can pose organizational and technical challenges.

Delivering the Promise of Convergence
By bringing together a set of products that provides a consistent user-experience across a variety of devices and media, UC is starting to deliver on the promise of convergence. Users can now integrate real-time communication services (e.g., chat, instant messaging (IM), telephone, video conferencing, etc.) with services like unified messaging (e.g., voicemail, email, SMS, and fax) to gain collaborative benefits for a broad scope of organizations.

The cost-effective use of VoIP and UC technologies provides a unique value to all kinds of users, spanning the gamut from individuals (who use VoIP to place inexpensive Skype calls) to enterprises (who see VoIP as a viable alternative to landline-based telephone services).

Benefits to Businesses
In the enterprise environment, recent technological improvements and cost-effective hardware provide a compelling value proposition that supports migration from PBX and key systems. Using VoIP on a data network demonstrates a clear cost reduction, eliminating unnecessary dedicated infrastructure support, equipment, and staffing costs. Companies that switch to VoIP report diminished support contracts, as well, with many seeing cost reductions of up to 20%.

Enhanced Productivity
Enterprises are now finding that they can transform business processes by integrating UC functionality directly into business applications, using readily-available development tools. Many benefits arise from converging applications onto an IP-based system. For example, imagine that a service representative receives a call that requires information beyond his scope or knowledge. Rather than placing the caller on hold or transferring the call, UC functionality enables the service representative to locate and contact the necessary information resource (by IM), then revert back to the original caller to resolve the issue in one call.

As conduits that tie together several business applications, more extensible unified communications and VoIP systems can yield collaborative productivity gains over traditional phone service. Run over the network, VoIP and UC systems provide organizations with the ability to streamline business processes when they are tightly integrated into other tools like Exchange, IM, unified messaging, presence, conferencing, and other collaboration and business efficiency tools.

Challenges
While the move to VoIP and UC may seem like a “silver bullet,” upgrading from traditional telephony can pose organizational and technical challenges. A proactive IT department that can
find innovative ways to manage the deployment of this new networked service is a key asset during this transition.

To encourage user acceptance and confidence, it is critical to ensure that all applications reliably maintain availability at the core. Often times, individual work locations have only a single Ethernet drop, so this can pose convertibility issues for adopting enterprises. Migrating to VoIP phones must also be managed and secured at the network edge. Selecting the correct edge solution can resolve connectivity, traffic prioritization, and security hurdles.

Technologies that demand concise configuration of each network component complicate the secure automatic configuration of VoIP handsets and integration with other applications on the network. By independently configuring components or verifying script execution, the network staff is responsible for ensuring proper configuration. On large and dispersed networks, this may create an undue workload for the network staff. Saving changes on each device for recovery purposes can be time consuming and costly. Failure and replacement of a device can also be difficult to address, particularly if it is in an off-site, or remote, location. These approaches create an environment ripe for failure and misconfiguration.

Centralized management of the entire network from any single device is critical for effective enterprise infrastructure. Tasks that currently involve a network administrator can be made more efficient and less error-prone when automated.

**Convergence Leads to Transformative Control**

For enterprise users, today’s network is based on many individual pieces deployed to support the applications that run over it. The network can become transformative when it is able to be controlled by a single converged infrastructure managed as a single entity, reducing complexity, time, network management expertise, and total cost of ownership (TCO), and enabling efficiencies.

**Design and Implementation of Converged Services**

To integrate network management, enterprises should work with a networking partner that recognizes and understands the complexities of delivering multiple services over a single network. They should seek advice and assistance from experienced partners in converged service design and implementation. Depending on organizational need, the appropriate networking partner might be one with experience supporting voice, video, and data service providers that deliver
to geographically dispersed areas, such as townships, as well as nationally and internationally dispersed enterprises. Experience in design, execution, and maintenance of large complex networks allows the networking partner to design and create efficiencies in network operations, streamlining the network by removing redundant and manually intensive operations.

**Allied Telesis Involvement in Complex Deployments**

As a network solutions manufacturer with a reputation for providing feature-rich components to cost effectively solve complex deployments, Allied Telesis understands that applications are the key to enabling business efficiencies. Allied Telesis products and solutions are designed with features that simplify network infrastructure operations with increased efficiency and reduced complexity.

**Allied Telesis Management Framework**

Allied Telesis Management Framework™ (AMF) is a centralized management service that has been designed to treat the network as a single virtual device. With AMF, the entire network can be managed from any Internet-connected device, through a simple and intuitive command-line interface (CLI). Configuration and firmware files are automatically and regularly backed up and can automatically regenerate failed devices. Configuration changes are made on multiple devices simultaneously. AMF decreases network operating expenses by reducing the need for hands-on network expertise and maintenance.

Ensuring that resilient network topologies provide critical information when it is needed, AMF empowers superior solutions that provide “always-on” access to online resources and applications. This innovative suite of protocols and management tools is available for the following Allied Telesis products (among others), running the advanced AlliedWare Plus™ operating system:

- **Allied Telesis SwitchBlade® x8112** consists of a 6- or 12-slot advanced Layer 3+ chassis switch designed to deliver high availability, wirespeed performance, and a high port count. When resiliency, reliability, and high performance are key requirements, the advanced features of the SwitchBlade x8112 make it the ideal solution for the modern enterprise network. The design includes dual controllers, dual PSUs and dual redundant passive backplane paths for high resilience. An excellent choice for the core of the network, maximum system uptime is ensured by the scalability, flexibility, and the ability to hot-swap additional control cards, line cards, and system or Power over Ethernet (PoE) power supplies. With network resources like servers and Internet routers, as well as downstream access devices connected across line cards, a SwitchBlade x8112 in the core of the network is critically available, with no single point of failure. The device can be used as the AMF master to reduce operational expenses during turn up and maintenance.

- **Allied Telesis x610 Series** high performance Layer 3 Gigabit PoE (802.3at) stackable switches are available in 24- and 48-port models, and targeted at network aggregation due to their high security levels. Varying models from this versatile series include up to four 10 Gigabit ports, with the option to stack up to eight devices. Allied Telesis Virtual Chassis Stacking (VCStack™) provides excellent resilience, ensuring minimal network downtime by re-routing traffic if network failures occur, while allowing the stack of switches to be managed as a single entity. With AMF technology, this series provides a centralized management mechanism, reducing deployment and infrastructure operations costs. Strong security and QoS mechanisms allow for secure and timely transmission of all data needed in the ever-growing world of enterprise traffic.

- **Allied Telesis x510 Series** high performance Layer 2+ Gigabit PoE (802.3at) stackable switches are a feature-rich choice for today’s networks. x510 Series switches are offered in 24- and 48-port models, and provide high levels of security for network aggregation. The x510 Series works well in a variety of environments, from small workgroups to large businesses, and is available in models with 10 Gigabit uplink ports, supported by the power of Allied Telesis VCStack. As a centralized management mechanism that reduces operational and deployment costs, this versatile series of switches includes AMF technology.

**Moving Forward**

As organizations consider converting their communications to Voice over IP and unified communications, factors like reduced equipment and maintenance costs and increased efficiencies bring widespread acceptance to these integrated services. Other considerations, like today’s bring your own device (BYOD) environment, create an imperative for enterprises of all sizes to provide presence, mobility, and contact capabilities by unifying communication devices on a single platform.
About Allied Telesis, Inc.

Founded in 1987 and with offices worldwide, Allied Telesis is a leading provider of networking infrastructure and flexible, interoperable network solutions. The Company provides reliable video, voice, and data network solutions to clients in multiple markets including government, healthcare, defense, education, retail, hospitality, and network service providers.

Allied Telesis is committed to innovating the way in which services and applications are delivered and managed, resulting in increased value and lower operating costs.

Visit us online at alliedtelesis.com.