



Total Enterprise Access and Mobility (TEAM) Solution Appliance Architecture: Wireless Services Manager (WSM), Release 1.72, and Network Services Manager (NSM)

Simplify converged solutions with a single architecture for voice and data communications

Until now, office communications typically required standalone point solutions for voice and data, creating extra work for IT and users alike. Users often needed to manage two or more devices — one for voice and one for enterprise data. IT was required to manage and secure several stand-alone systems, as well as multiple devices per worker. Motorola has elegantly addressed this issue with a common highly scalable and highly secure appliance architecture for integrated voice and data mobility solutions. Following best practices in networking, the TEAM Solution architecture integrates as a non-intrusive overlay into existing IT infrastructure, including the WLAN and PBX, creating a single common platform for the delivery of integrated voice and data services.

The advantages of an appliance-based architecture

The TEAM Solution's appliance-based architecture delivers superior interoperability, superior mobile device battery cycle times, improved network performance, improved security and expanded access to PBX features. The appliance becomes the translators between TEAM VoWLAN smartphones and the PBX, enabling interoperability with a broad range of PBXs and IP-PBXs — allowing enterprises to leverage and integrate the current telephony infrastructure investment. The appliance handles the bulk of the processing required to maintain connections, preserving battery power for a full workday and extending overall battery life. Efficient one-to-one push-to-talk (PTT) services dramatically reduce traffic over the wireless LAN, improving network efficiency and performance. And additional security features improve security between VoWLAN smartphones, corporate networks and business applications.

The Wireless Services Manager (WSM): comprehensive voice feature appliance

The Wireless Services Manager (WSM) provides control over voice and text messaging features for the TEAM integrated solutions. Residing between the mobile device and the PBX, the WSM simplifies the delivery of voice services in converged solutions by brokering the connection between the mobile device and the PBX. This architecture enables interoperability with a range of PBXs and provides support for numerous features that enhance the voice traffic performance and security:

Improved battery life

The WSM handles the majority of the processing required to maintain connections, eliminating much of the burden from the mobile device. The resulting substantial extension of battery life ensures ample power for even an extended shift.

Reduced network traffic

By acting as a proxy server for the PBX, the WSM effectively reduces a significant amount of PBX-related traffic. Wireless LAN bandwidth is preserved, protecting network performance.

Increased security

The WSM provides an additional layer of security by requiring a two-factor authentication to enable usage of the WSM services — a username and password in addition to a TLS certificate exchange — between the user, device and WSM. This is the same authentication required for the user to gain access to the WLAN network. Additionally, the WSM provides secure connections to the PBX, AAA Radius server and line of business (LOB) applications, protecting information during transmission.

Simplified management

In order to provide the flexibility required to administer TEAM solution features to different types of employees with different jobs and different communications requirements, the WSM provides granular control of features at the user device level including PTT and text messaging.

Improved scalability

The WSM enables easy scaling to meet the needs of an expanding workforce. The solution can provide services for a handful of users up to 4,500 users with a single WSM appliance — providing investment protection and a foundation for future growth.

Improved performance

The WSM provides features that improve the overall performance of voice services as well as the WLAN. The reuse of a single connection between the handset and the WSM improves general network efficiency. The highly efficient encoding of voice packets reduces network traffic and protects available bandwidth.

High reliability

The high reliability of the WSM software and hardware delivers 99.99 percent reliability today. And the TEAM architecture enables future enhancements that will include support for redundancy as well as clustered PBX architectures, enabling five nines availability.

Highly efficient push-to-talk services

The WSM enables a very robust and efficient deployment of push-to-talk (PTT) services. Unicast broadcasting enables voice packets to be sent only to the intended recipients. The elimination of multicast broadcasting reduces a massive amount of traffic that would needlessly consume wireless network bandwidth and could potentially ripple into the need to expand wireless network infrastructure — adding capital and operational costs. In addition, low latency provides call setup in less than one second for a superior user experience. The WSM supports up to 255 talk groups to meet broad enterprise needs. And since the PTT Caller ID is included in the call history of the mobile handset, users can quickly and easily return a PTT call as simply as a regular phone call.

Network Services Manager (NSM): comprehensive management services

The Network Services Manager (NSM) provides centralized management, monitoring and provisioning of the TEAM integrated voice and data solution. A centrally located NSM can manage up to 10 WSM appliances in different locations.

Management of the Wireless Services Manager (WSM) appliance

The NSM monitors the functionality of the WSM, from the operating system to the appliance itself as

well as voice applications, such as push-to-talk. In the event of a system level fault, an email alert is immediately issued. The instant visibility into any major issues on the WSM enables the rapid response necessary to minimize downtime and protect the continuity of voice services. Fault operations include visibility into the current state of the WSM, the ability to send SNMP notifications to a central manager, viewing and clearing active alarms, alarm filtering and the storage of active alarms and alarm history for proactive analysis of system faults.

System configuration management

General configuration for the entire TEAM solution is managed on the NSM, including the WSM configuration and configuration history as well as the activation of licenses and updating of system software.

Solution performance monitoring

The NSM provides access to a wealth of real-time and historical performance statistics for the TEAM solution. Armed with this data, IT can perform the trend analysis required to identify and resolve performance issues — before service levels and service quality are threatened. Performance data includes WSM traffic loading metrics, performance monitoring alarms, alarm categorization and reporting of failed call attempts and dropped calls. The NSM also provides various levels of record generation, including event logs of alarms, service logs and user action logs for system administration and monitoring.

Centralized user provisioning

Provisioning of new users on the WSM appliance is handled by the NSM. The Subscriber (user) Provisioning Client enables the administrator to manage all of the subscribers associated with the WSM. Provisioning operations for individual users and talk groups include add, modify and delete. The NSM also provides a bulk provisioning capability, enabling the addition, update and deletion of multiple subscribers at one time.

End-to-end services keep your TEAM solution up and running at peak performance

Motorola offers a complete suite of Enterprise Mobility Services to get and keep your TEAM solution up and running at peak performance. Motorola's Advanced Services incorporate an integrated lifecycle approach — from WLAN VoIP assessment and server integration to handset staging — into a single streamlined program. And seamless integration with Motorola's Customer Services gives you the support you need, including around-the-clock access to technical support resources and rights to download entitled software releases to help ensure that all elements of your solution work at peak performance levels.

To find out more about Motorola's next generation TEAM integrated voice and data solutions and how they can benefit your enterprise, please visit us on the web at www.motorola.com/team,

contact us at TotalMobility@motorola.com or access our global directory at www.motorola.com/enterprisemobility/contactus

Wireless Services Manager

FEATURES	BENEFITS
Push-to-Talk Application Server	Provides one-to-one and one-to-many instant communications within the enterprise
SIP Proxy	Main interface to all IP-PBX or TDM PBX gateway infrastructure; provides location of all subscriber units to the IP-PBX during call set-up
SIP Registrar	Stores mobile registrations and participates in the authentication and authorization of each subscriber unit
Subscriber Access Configuration Server	Enables mobile access to the system every time it detects the presence of the enterprise WLAN; provides device and user authentication, association and over-the-air configuration of system and subscriber specific parameters
Interface to Enterprise PBX	Supports an interface to multiple manufacturers of PBX equipment to enable wireless handsets to access PBX calling features
Security Management	Validates each network element that interacts with the WSM
Subscriber Unit Link Management	Controls device link to network to enhance performance and security
WSM Release 1.72 Specifications	
Users Supported:	Up to 4,500
Hardware:	1U Chassis; no Rails; 1 RS-232 serial port (DE-9); 2 USB ports; 2 Ethernet ports (RJ-45) (port 2 is not used); requires external USB DVD-ROM for installs and upgrades (not supplied) Note: Hardware is sold with WSM R1.72 software loaded
Software:	Motorola Wireless Services Manager (WSM) Release 1.72 application; Red Hat Linux operating system
Fault Reporting:	Standards-based SNMP for network element monitoring

Network Services Manager

FEATURES	BENEFITS
Centralized Management	The ability to manage up to 10 WSM appliances from a single location helps to maximize efficiency and lower operational expenditures
Fault Management	Provides features that enable easy troubleshooting of the TEAM solution, including real-time alarms and alarm management, event logging, diagnostics and availability reporting
Configuration Management	Reduces operating expenses through an easy-to-use graphical user interface that simplifies and helps error-proof the initial and ongoing configuration of services
Performance Management	Helps guarantee service availability through granular trend analysis, which helps IT spot and resolve issues before service levels and service quality are threatened
Security Management	Protects against unauthorized network access; reduces the risk typically associated with wireless services; helps meet compliance mandates for regulations such as HIPAA and PCI
Provisioning Management	Provides a user-friendly graphical user interface for simple, rapid and cost-effective provisioning of subscribers and talk groups
Network Services Manager (NSM) Specifications	
Hardware:	2.8GHz Pentium® 4; 60 GB hard drive; 1.0 GB RAM; 10/100 Base T network card; DVD-ROM drive; SVGA or better video card (hardware sold separately)
Software:	Microsoft Windows® XP w/SP2 as operating system Microsoft Internet Explorer® 6 or later (no firewall) or Mozilla Firefox 3.0 or later Motorola Network Services Manager (NSM) application; (including Java™ Runtime Environment (JRE): 1.5.0_11 and Apache: 2.0.54)
Optional Software:	Microsoft Windows 2003 Server as alternative operating system
Fault Reporting:	Standards-based SNMP for network element monitoring and reporting

Warranty:

The WSM and NSM software is warranted against defects for a period of 90 days from the date of shipment. The WSM R1.72 appliance hardware is warranted against defects in workmanship and materials for a period of 12 months from date of shipment, provided that the product remains unmodified and is operated under normal and proper conditions.

SPECIFICATION SHEET

TOTAL ENTERPRISE ACCESS AND MOBILITY (TEAM) SOLUTION APPLIANCE ARCHITECTURE:
Wireless Services Manager (WSM), Release 1.72, and Network Services Manager (NSM)



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