



Aruba's User-centric Network for Government Healthcare

Medical professionals who support the US Government have to meet some of the most stringent requirements in the industry. The ability to securely access patient information, communicate with colleagues, and locate life saving equipment isn't optional, it's mission critical. In addition to productivity enhancements, wireless capability is viewed as a critical component of an overall strategy to reduce medical errors and save lives. With Aruba's user centric wireless networks, DOD hospitals and medical personnel now have a solution that can be utilized to support all of their mobile clinical data and voice needs on a single network, while meeting FIPS 140-2 level 2 certification, and the Department of Defense Directive (DoDD) 8100.2 requirements.

Key Requirements

CENTRALIZED ARCHITECTURE

Aruba's centralized network and policy management is designed for ease of deployment and operation. With Aruba's centralized management, configuration data are automatically and securely propagated throughout the network, across access points and Controllers, both locally and remotely. A single interface is provided for IT to implement and protect the underlying policies that ensure the integrity, security, and operation of the entire network. The centralized control function also includes performance profiles that are used by Aruba access points to optimize their operation and reliably support mission critical applications.

POLICY ENFORCEMENT FIREWALL

Aruba's Policy Enforcement Firewall (PEF) enables identity-based security policies that follow users as they move from the hospital, to clinics, and even to the office/home. Legacy WLAN solutions tie policies to specific SSID/VLANs making network designs

unnecessarily complex. With identity-based security, hospitals can place nurses, doctors, operations, and management on a single SSID/VLAN while having separate access privileges for each functional group or user. Furthermore, PEF can provide access to less secure legacy devices (e.g., old VoWLAN handsets, bar code scanners) without compromising HIPAA.

WIRELESS INTRUSION PROTECTION (WIP)

The ability to detect and prevent rogue APs and over-the-air attacks is critical to maintaining overall network security. Aruba Networks APs can simultaneously function as a WIP sensor and an AP, eliminating the need for 3rd-party dedicated security sensors.

MOBILE CLINICAL APPLICATIONS

Enabling mobility for clinical applications (e.g., EMR/EHR, CPOE) is a critical healthcare requirement for the DOD and the VA. Medical professionals

The Aruba Advantage:

- **Meets DOD certifications and requirements:** Single network support for data, voice and video meeting FIPS 140-2 level 2 certification and DODD 8100.2
- **Follow-me connectivity:** Provides ubiquitous access in hospitals, clinics, physician and home offices
- **Follow-me security:** Identity-based security follows users and enhances security on legacy devices
- **Wireless Intrusion Protection:** Protects the "air" by detecting, classifying and shutting down rogue APs and over-the-air attacks
- **Application continuity:** Uninterrupted services for the mission-critical healthcare environment

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must be able to access patient medical records from field stations, hospitals, remote clinics, and home offices using mobile computing devices (e.g. tablet PCs, Computers on Wheels, PDAs). Access must be secure and application persistence must be maintained during handoff between APs. Many hospitals choose to deploy mobile clinical applications in a thin client environment (e.g., Citrix) to avoid locally storing patient information that can be compromised if a computing device is stolen. Thin clients require Aruba's low latency fast handoff capability.

VOICE OVER WLAN (VOWLAN)

Aruba Networks provides the ideal solution for converged networks that support both Voice over WLAN (i.e., VoWLAN) and mobile clinical applications. QoS over the wireless link is performed using standard 802.11e/WMM or vendor specific protocols (e.g. SpectraLink SVP). Aruba's "Application Awareness" capability enables "Voice Flow Classification (VFC)", the ability to recognize common voice protocols (e.g., SIP) and give strict priority to voice over data traffic. VFC delivers superior support for converged devices that generate both voice and data traffic (e.g. computing devices with "softphones"). Aruba

supports fast roaming (i.e., <10 ms) for all standard Wi-Fi certified clients. Low latency handoff is critical to maintaining good voice quality.

HIGH AVAILABILITY

Healthcare applications demand a highly available WLAN. Aruba's networks deliver superior availability by offering client load balancing, Mobility Controllers with redundant fan/power subsystems, fast roaming (<10 ms) for application persistence, and automatic detection and correction of coverage holes.

USER-CENTRIC NETWORKS

Because the centralized architecture of the Aruba platform is user centric, user privilege can be assigned various levels of access or security based on specific departments or groups, security clearance, or the actual position of a user. This drastically improves network security by eliminating excess privilege on the network while providing identity-based auditing. This identity based solution can also provide guest access, or restrict it depending on individual location policies. If guest access is provided, the integrated guest access portal and can manage bandwidth to ensure priority for clinical applications used by medical staff.

The Aruba Networks End-to-End Solution

The Aruba solution uses APs to provide network access. APs need not be directly connected to a mobility controller. Instead, they can form a GRE tunnel back to a designated mobility controller, which handles all wireless intelligence including user authentication, RF monitoring, wireless IDS, policy enforcement, encryption, location services, VPN termination, etc. A mobility controller can be configured as a stand alone device or as a member of a hierarchical setup with a master controller communicating with local controllers.

The Mobility Management System (MMS) resides on a dedicated appliance offering the same benefits of ArubaOS integrated management, but with added capabilities such as greater scalability, rolled up displays, scheduling and long-term data storage. In healthcare systems, mobility

controllers may be deployed in the hospital data center (distribution layer), the DMZ and at primary care/specialty clinics. Deploying a controller at a remote clinic allows all clients at that site to pass traffic locally, alleviating backhaul latency issues for client authentication and AP management. When deployed in the DMZ, the controller can support remote AP termination for telecommuting doctors and site-to-site VPN.

Aruba Networks has partnered with industry leaders to deliver a complete solution for clinical care environments:

Mobile Clinical Data

Any computing platform with a standard Wi-Fi interface may be used in a hospital environment to support mobile Electronic Medical Record (EMR) applications. While Aruba is client agnostic, it has



partnered with solution providers like Intellidot, a developer of wireless handhelds for drug administration, to deliver compelling applications to medical professionals.

VoWLAN

The VoWLAN solution consists of voice clients and call servers. Aruba has partnered with SpectraLink, Avaya and Ascom, each of which develops both VoWLAN handsets and VoIP server/IP-PBX platforms for use in healthcare. Aruba has partnered with Vocera to deliver a “handsfree” wearable voice badge and VoIP server. All of these voice partners have the capability to integrate with circuit PBX and nurse call systems that notify medical staff when a patient issues a distress alert from their bedside console.

Location

Aruba Networks offers the integrated ability to locate 802.11 enabled devices (e.g. VoWLAN phones, laptops, tablet PCs, PDAs). Third party location servers can be used to track thousands of assets fitted with 802.11 location tags (e.g. IV pumps, wheelchairs, beds). Aruba has partnered with AeroScout and Ekahau, both of which develop asset tags and location servers, to deliver asset tracking solutions to the healthcare industry.

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