

## The Mobile Edge for Healthcare

Doctors and nurses spend much of their time on their feet working in teams to ensure the health and safety of patients. The ability to quickly communicate with staff and obtain medical information from any location within the hospital is mission critical. A shortage of nurses has amplified the need for increased productivity. 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 the Aruba Mobile Edge, hospitals now have a solution that can be utilized to support all of their mobile clinical data and voice needs on a single network.

## Why Aruba?

- Best in class HIPAA with identity based security and intrusion prevention
- Superior solution for converged voice and data network
- High Availability Solution for the most critical of applications

### Key Requirements

#### **HIPAA & Patient Confidentiality**

HIPAA and similar regulations around the world require that healthcare providers ensure the confidentiality of patient information. The Aruba Networks solution gives IT staff powerful tools for ensuring patient confidentiality throughout the healthcare system (i.e. hospital, clinics, doctors' offices):

#### **Policy Enforcement Firewall (PEF):**

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 Prevention (WIP):**

The ability to detect and prevent rogue APs and over the air attacks is critical to maintaining patient confidentiality. 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. Medical professionals must be able to access patient medical records from anywhere in the hospital, 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)**

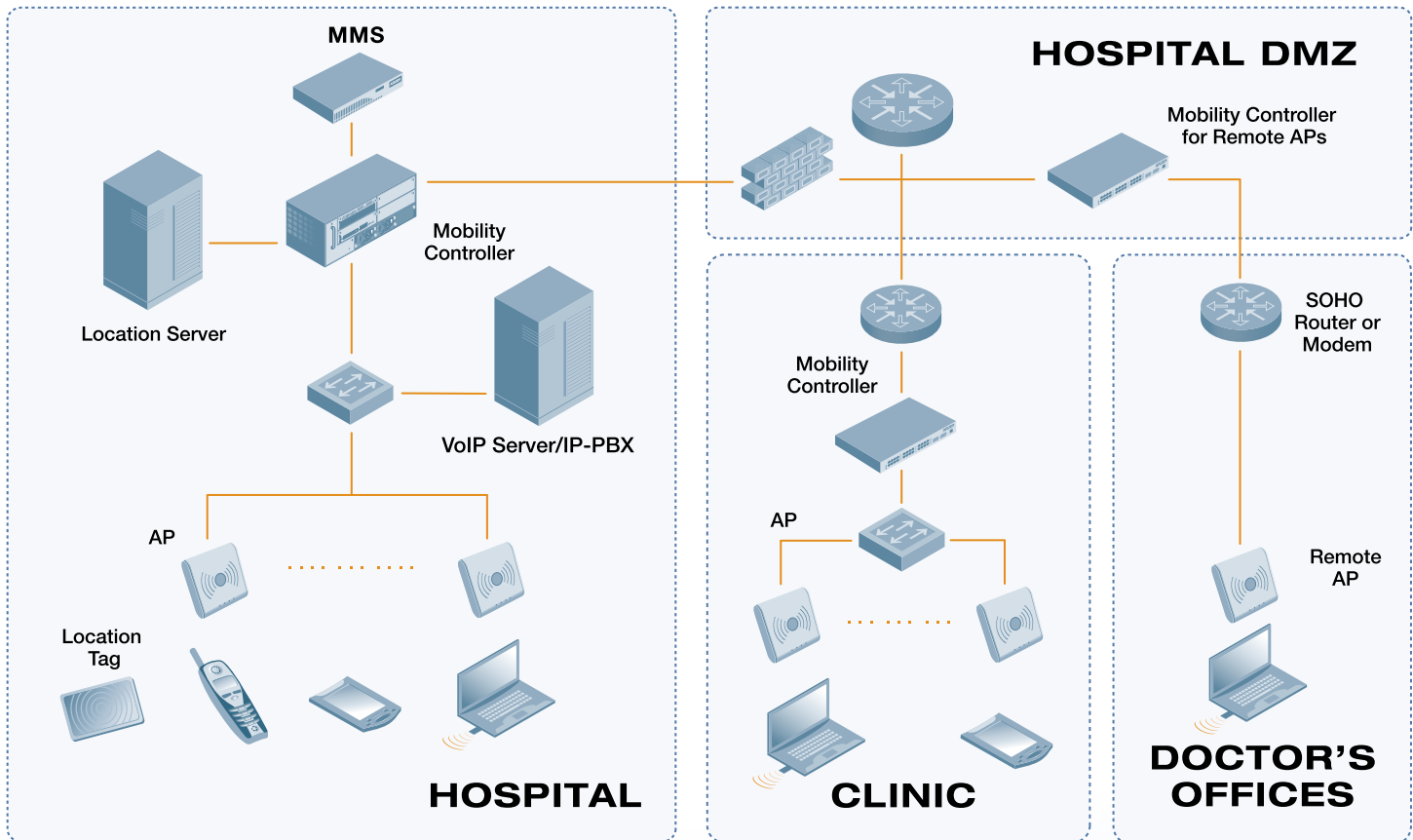
Aruba Networks provides the ideal solution for converged networks that support both Voice over WLAN (i.e. VoWLAN) and mobile clinical applications. QoS over the wireless link is performed using standard 802.11e/WMM or vendor specific protocols (e.g. SpectraLink SVP). Aruba's "Application Awareness" capability 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. The Aruba Mobile Edge delivers 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.

#### **Guest Access**

Patients, medical students and technicians require access to the internet to access their workplace resources and stay in touch with friends and family. The Mobile Edge has an integrated guest access portal and can manage bandwidth to ensure priority for clinical applications used by medical staff.



## The 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 PanGo and Ekahau, both of which develop asset tags and location servers, to deliver asset tracking solutions to the healthcare industry.

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