AIRHEADS
LAS VEGAS 2012

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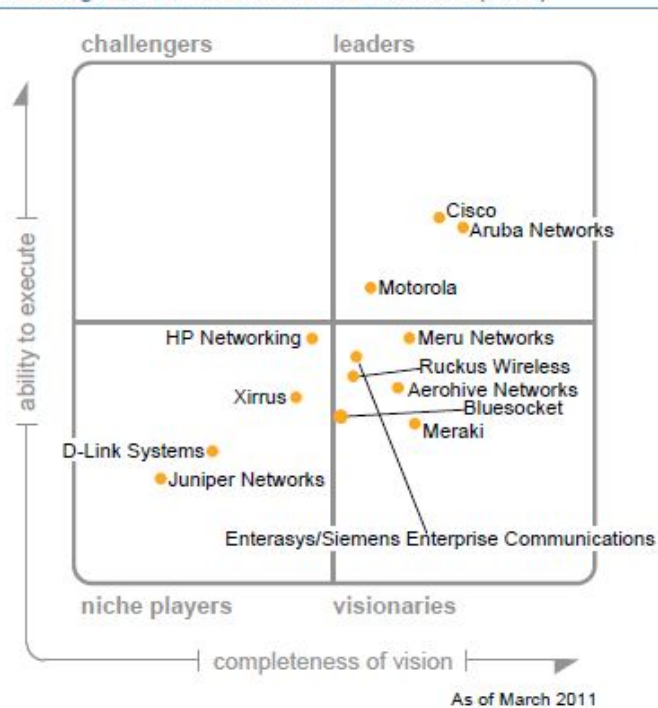
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Gartner Magic Quadrant

2011 Wireless LAN

Figure 1. Magic Quadrant for Wireless LAN Infrastructure (Global)

2012

UNIFIED
ACCESS

Gartner

Rethinking LAN Switching Architectures

...application architectures for much of the history ...change to the

The trends of server and data center consolidation, hosted virtual desktops (HVDs), and cloud computing have altered the requirements for network services and how the LAN could be architected.

- The center...each other through the history of IT.

- The trends of server and data center consolidation, hosted virtual...and how the LAN cloud computing have altered the requirements for network services and how the LAN could be architected.

- There are limited examples of current solutions that would allow a completely new campus LAN architecture at this stage of the market; however, network architects can re-evaluate how to deploy capabilities in their networks.

Recommendations

- Network architects should migrate spending to technologies that have a more direct impact on user productivity and performance. Consider adding new functionality as centralized overlays, rather than updating large portions of the infrastructure.
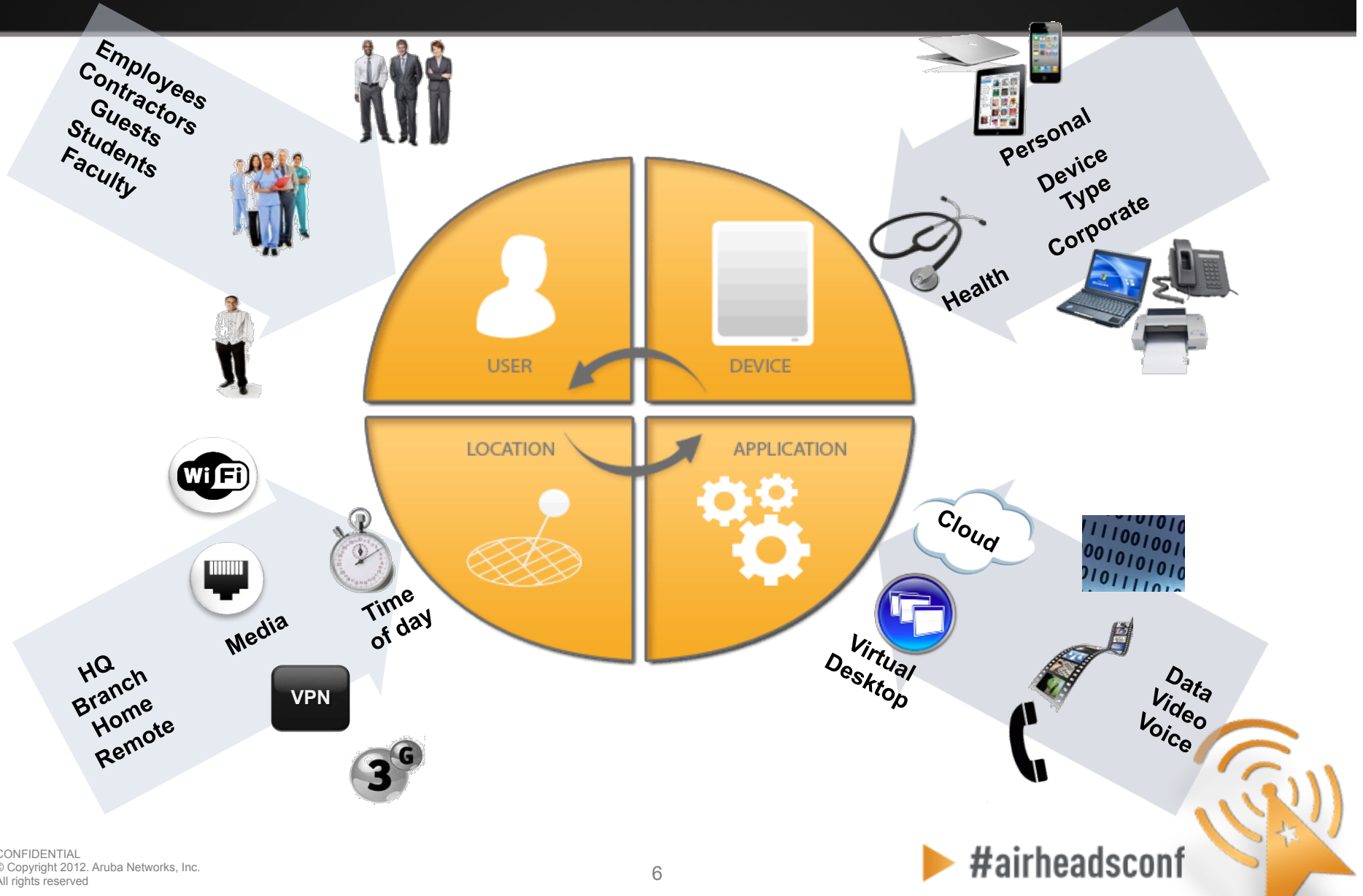
nemertes
INDEPENDENCE INTEGRITY INSIGHT

issue paper

Access vs. Core: Requirements

As noted earlier, the notion of a "one-size-fits-all" campus LAN is now obsolete. With wildly different requirements for the data center and branch offices, IT organizations are increasingly deploying two separate and very distinct types of LANS: Data center networks and access networks. And even though they're both ...se networks are different in almost every respect, from the most critical ...e to the types of workloads they support. (See Figure 3:
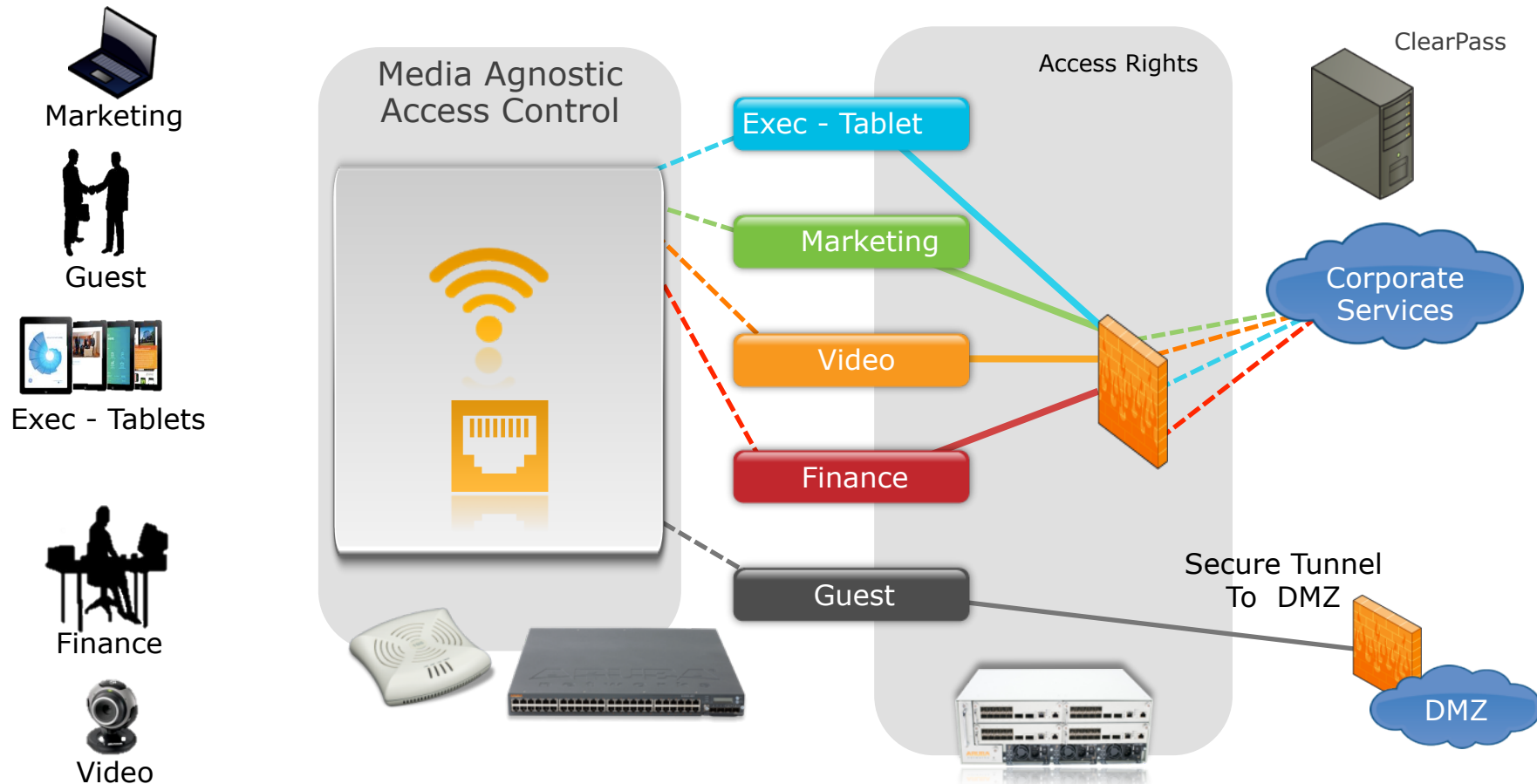
Consistent policy and management increases security by making sure the same standards can be enforced for a user no matter how they try to get in.

of (relatively) ...

- **Convergence.** The driv... convergence of Ethernet and Fibr... infrastructure. Within access networks, it's the co... wireless and wireline.

- **Device Characteristics.** As noted, data center LANs interconnect hardware such as servers and storage subsystems. Access LANs interconnect users (and connect those users to data center resources).

- **Access control.** When it comes to protecting resources, access control in the data center focuses on ensuring that users have access to the right suite of applications. In the access network, the challenge is about ensuring that the right users are permitted on the network.

- **Physical media.** The predominant physical media in the data center are 10 Gbit/s (and in future, 100 Gbit/s) Ethernet and Fibre Channel. In the access network, they're WiFi (increasingly, 802.11n) and wired

Unified Role-based Access
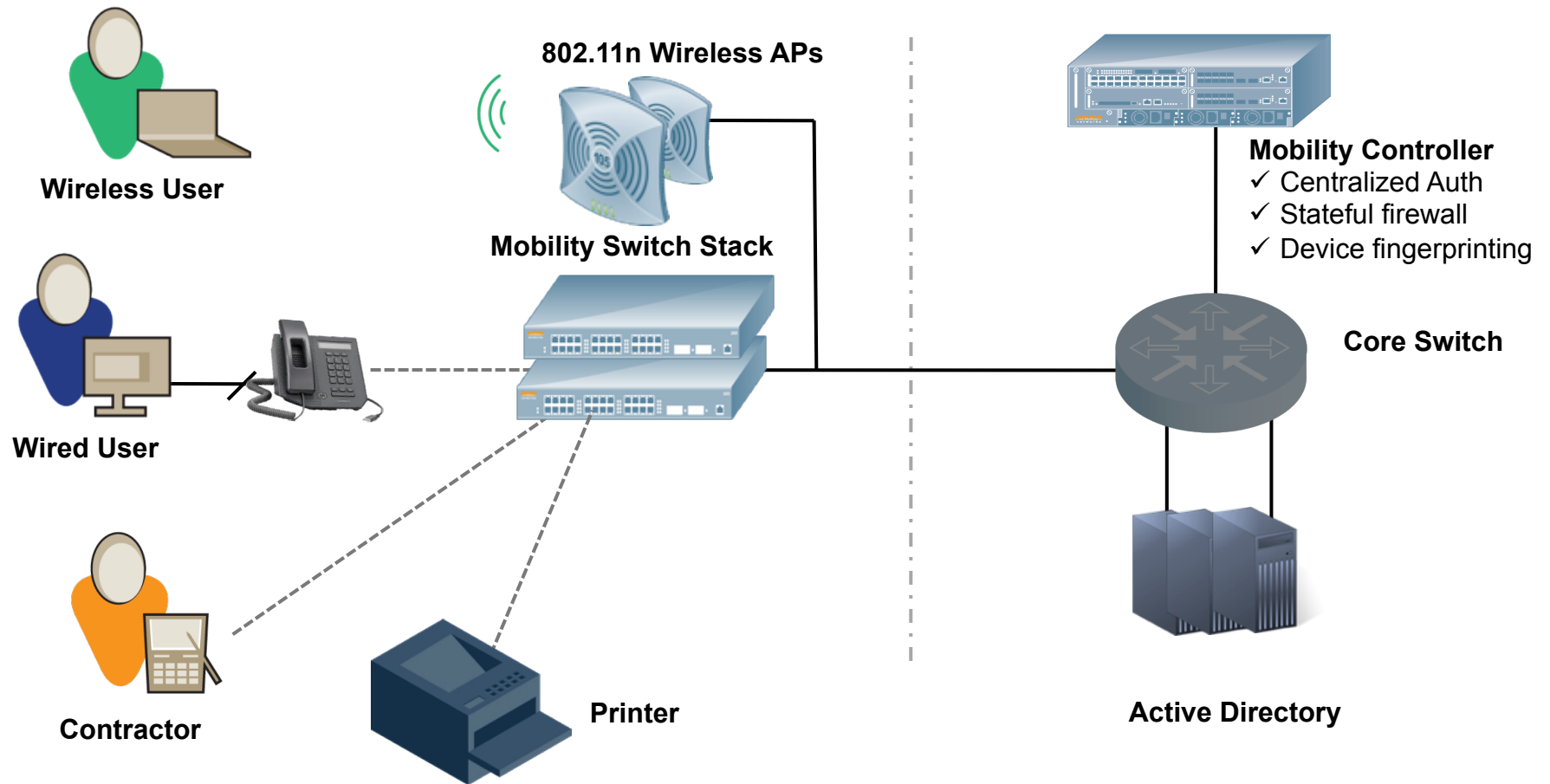
Employees
Contractors
Guests
Students
Faculty

Personal
Device
Type
Corporate

Health

USER

DEVICE

LOCATION

APPLICATION

Wi Fi

Media

Time
of day

HQ
Branch
Home
Remote

VPN

3G

Cloud

Virtual
Desktop

Data
Video
Voice

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Roles & Policies in Action

Marketing

Guest

Exec - Tablets

Finance

Video

Media Agnostic Access Control

Access Rights

ClearPass

Exec - Tablet

Marketing

Video

Finance

Guest

Corporate Services

Secure Tunnel To DMZ

DMZ

- Single Infrastructure
- Differentiated Access
- By User, Device, App
- By Time, Location

- Policies determine Access Privileges
- Policies define performance (bandwidth contract, QoS)
- Policies define traffic forwarding options

What Customers Are Doing?

Wireless User

Wired User

Contractor

802.11n Wireless APs

Mobility Switch Stack

Printer

Mobility Controller
- ✓ Centralized Auth
- ✓ Stateful firewall
- ✓ Device fingerprinting

Core Switch

Active Directory

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Centralized Management

Expanded MOVE Architecture

Mobility Controller

AirWave Network Management

ClearPass Access Management

DATA CENTER

Thin Access On-Ramps

WIRELESS	WIRED	VPN	REMOTE OFFICE	OUTDOOR

Any Device

Central configuration
- ✓ Unified Policies
- ✓ Single Management Pane
- ✓ Template-based configuration
- ✓ Define once, Assign many
- ✓ Secure Config push

Remote Node
- ✓ Auto Discovery / RAP-like
- ✓ Resilient – Error Recovery

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Remote Node Configuration

- Whitelist Remote Nodes
- Secure IPSec VPN
- Redundancy Model

ARUBA networks | Remote Node Provisioning

Enter the IP address of the
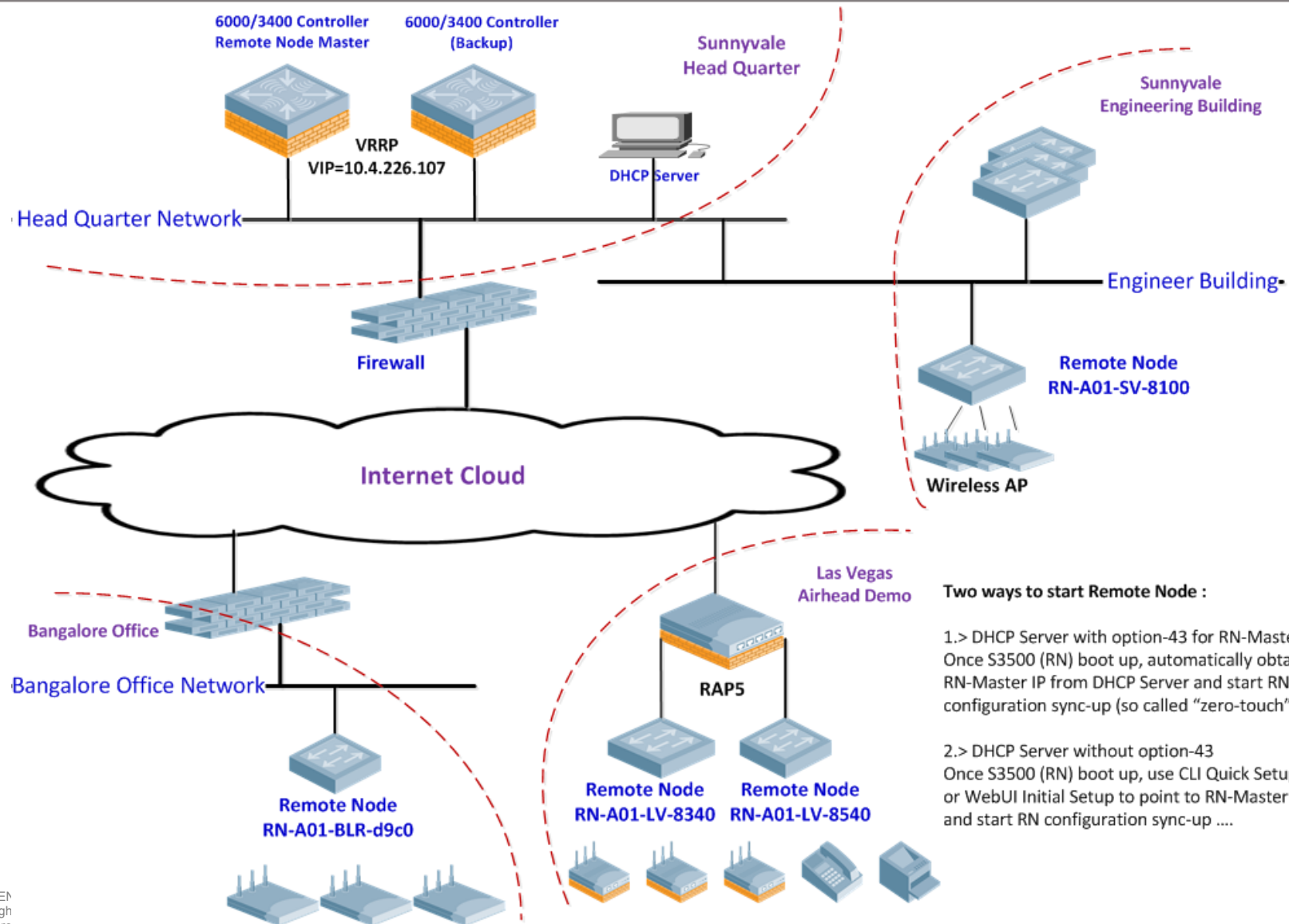Aruba Master Controller for this Remote Node:

Settings

Country code:	US
Timezone:	GMT -12:00 IDLW
Remote-Node VLAN Type:	Static
IP address:	
Netmask:	
Default gateway:	

Back   Continue

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Remote Node Network Diagram

6000/3400 Controller
Remote Node Master

6000/3400 Controller
(Backup)

Sunnyvale
Head Quarter

Sunnyvale
Engineering Building

VRRP
VIP=10.4.226.107

DHCP Server

Head Quarter Network

Engineer Building

Firewall

Remote Node
RN-A01-SV-8100

Internet Cloud

Wireless AP

Las Vegas
Airhead Demo

Two ways to start Remote Node :

1.> DHCP Server with option-43 for RN-Master:
Once S3500 (RN) boot up, automatically obtain
RN-Master IP from DHCP Server and start RN
configuration sync-up (so called "zero-touch").

Bangalore Office

RAP5

2.> DHCP Server without option-43
Once S3500 (RN) boot up, use CLI Quick Setup
or WebUI Initial Setup to point to RN-Master
and start RN configuration sync-up ....

Bangalore Office Network

Remote Node
RN-A01-BLR-d9c0

Remote Node
RN-A01-LV-8340

Remote Node
RN-A01-LV-8540

Aruba S2500 Mobility Switch

Integrated Fans
- Built in fans for quiet operation
- Ideal for branch deployments

Integrated Power Supply
- Fixed power supply
- 400W of PoE budget available

High Performance
- Line-rate non-blocki
- 64-bit Dual Core CP
- 1G DRAM
- L2 GRE Tunneling

Management
- USB and mini-USB interface
- Console Interface
- Out of band Ethernet Management

✔ • Secure Wired Role-based Access

✔ • Centralized Configuration

✔ • Enterprise-Grade L2/L3

✔ • Wired & Wireless Visibility

✔ • Wi-Fi Aware Switching – IAP Integration

Gigabit Ethernet
- 10/100/1000Base-T
- Supports 802.3af &
- MACSec capable

Compact
- Small form factor
- 12" deep

LIFETIME WARRANTY

with SFP/SFP support
Stacks up to 8 devices
- Stacks with Aruba S3500

LCD Interface
- User-friendly LCD Interface
- Diagnostics & Management Tasks

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Mobility Switch Options

- ## Aruba S3500

  ① Highly Available: redundant, modular power supplies, and fan

  ② Complete PoE budget – up to 1440W (802.3at; 30W / port)

  ③ Modular uplink provides path to additional Mobility Services

- ## Aruba S2500

  ① Cost-effective platform with integrated 10G uplinks

  ② Compact form factor – 12" depth

  ③ Optimized for quiet operation – Ideal for branch deployments

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Enterprise-Grade Mobility Switching

Platform / Layer 2 Features
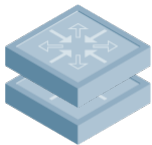
- Tunneling to Mobility Controller
- Multiple Spanning Tree (MSTP)
- Link Aggregation / Port Channel
- Voice VLAN / LLDP & LLDP-MED
- Cisco Phone Support (CDP)
- Multicast support
- Quality of Service (granular QoS)

Stacking

- Up to 8 devices per stack
- Resiliency / failover support
- Single IP management
- Automatic insertion & removal
- Optimizing data forwarding
- Chassis-like characteristics
- S2500 & S3500 inter-stacking
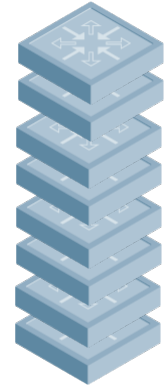
Security / Authentication

- Role derivation & policies
- ACLs – 5 Options: Standard, Extended, Stateless, MAC, EtherType
- Authentication – 802.1X & MAC
- AAA profiles – port, VLAN, user/roles
- External Authentication Servers

Routing / Layer 3

- Routed VLAN interface
- Static Routing
- Dynamic Routing – OSPFv2
- Multicast Routing – PIM-SM
- OSPF (MD5)

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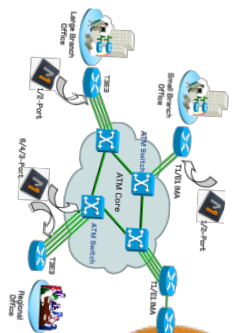
AirWave: Visibility & Compliance

AirWave

Zero-touch deployments

WLAN

Wired

Remote

Visibility

RF

Client

Device

App

Network

Compliance

PCi DSS COMPLIANT

DRM

FIPS 140-2 FIPS CRYPTOGRAPHY

GLBA

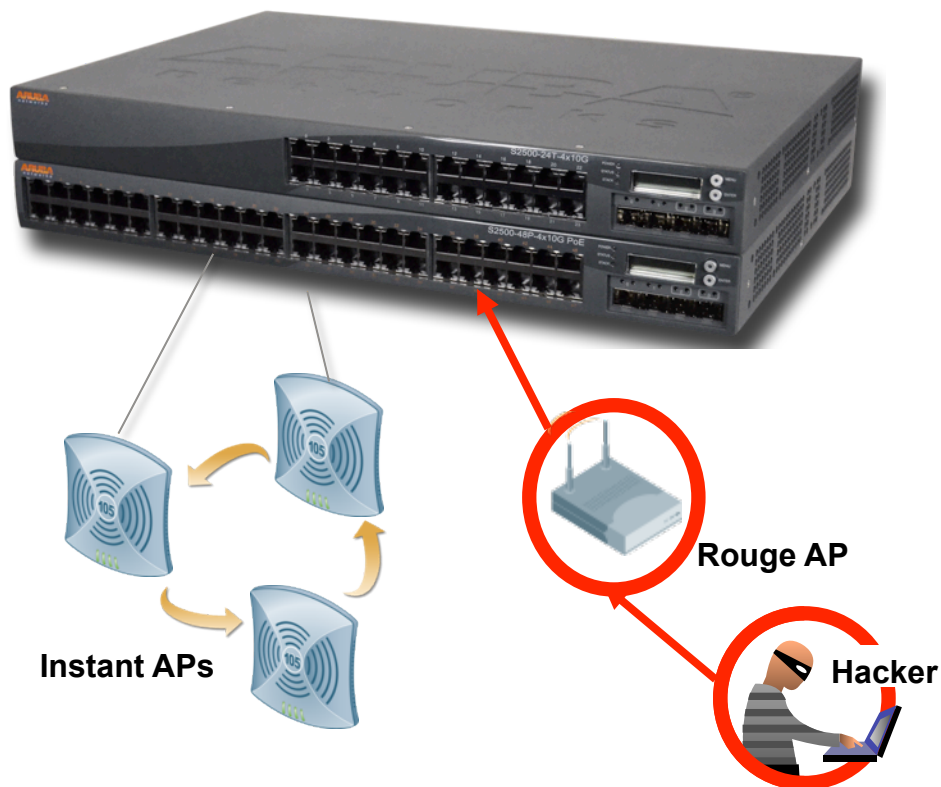▶ #airheadsconf

AirWave & Mobility Switching

Standard operations
monitoring

User Tracking:

- Interface monitoring:
  - Physical & virtual

Compliance:

- Syslog & Trap logging
- Device config tracking
- Firmware tracking/upgrades
- E-mail triggers on traps

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Wifi Aware Switching – Rouge AP Containment

Instant APs

Rouge AP

Hacker

- **Rouge AP Containment**
  - PCI Requirements in Retail
  - Secure cardholder data from Rouge APs

- **IAP & Mobility Switch Integration**
  - Rouge AP detection & classification
  - Messaging of Rouge AP MAC to MAS

- **Wired Containment of Rouge AP**
  - Detection of compromised port on switch
  - ✓ Disable port to which Rouge is attached
  - ✓ Disable PoE on port for Rouge

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