Presented by
Andy Logan
Feb 2012

NETWORK DESIGN FUNDAMENTALS

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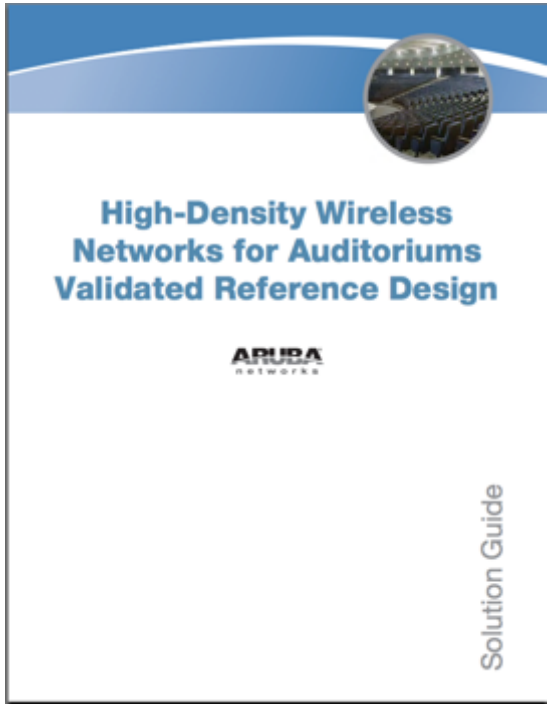
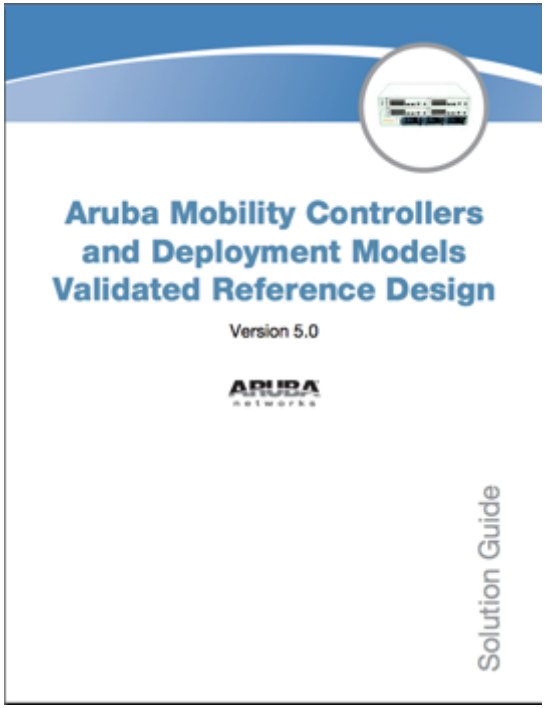
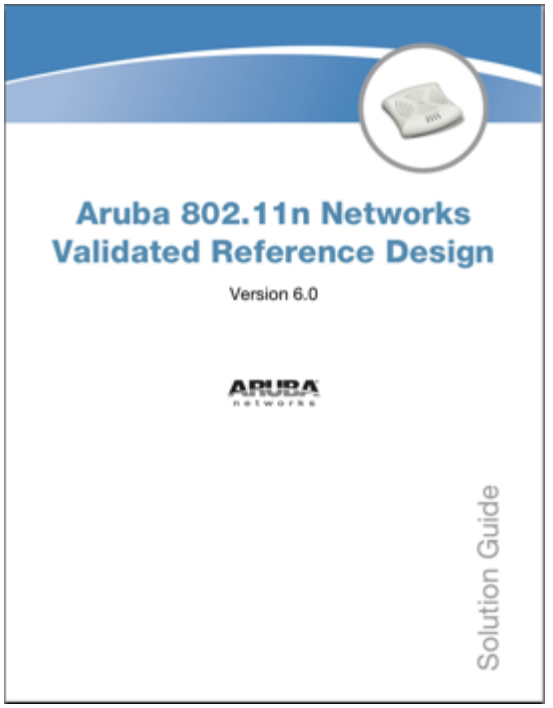
Validated Reference Designs (VRD)







http://www.arubanetworks.com/vrd

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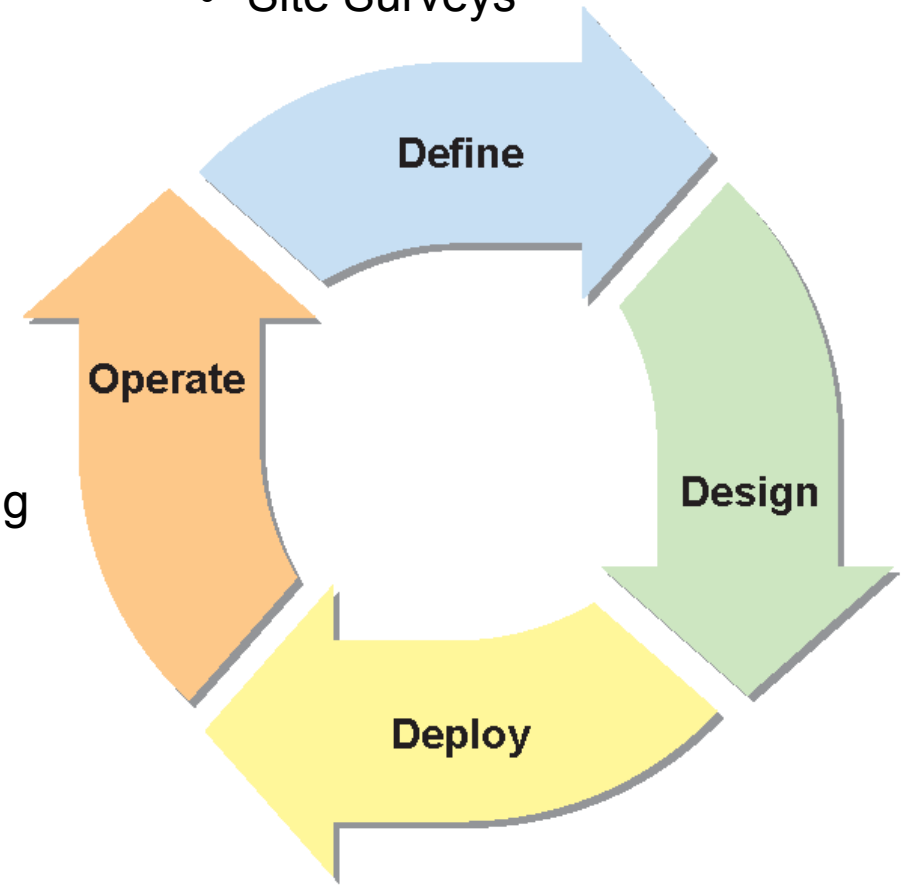
The WLAN Lifecycle

- Requirements Definition
- Site Surveys



- Network Design
- RF Design
- Security Design
- QoS Design

- Staging & Provisioning
- Installation & Validation

- Administration
- Monitoring
- Troubleshooting

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Define

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Understand Mobility Requirements

Multimedia

Collaboration

Virtual Desktops

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Site Surveys

	Virtual Survey	Passive Survey	Active Survey	Spectrum Clearing Survey
Description	Uses customer-supplied building drawings in JPG, PDF, or DWG format to place APs.	Involves passive data collection of the ambient RF environment to validate coverage or identify interference.	Involves active testing of real APs throughout a facility (indoor or outdoor) to determine the actual AP coverage footprint and throughput levels.	Same as Active Survey, but also includes a spectrum analysis (using a portable or handheld spectrum analyzer) at each active test location to locate and measure interference sources.
Location	Remote	Onsite	Onsite	Onsite
Deliverables	• Marked-up JPG file indicating AP locations and controller location codes. • Site bill of materials	• Heat maps of existing 2.4 GHz and 5 GHz RF environment. • Marked-up JPG file showing AP locations. • Summary narrative analysis.	• Heat maps of test APs with actual measured coverage. • Marked-up JPG file showing AP locations. • Detailed data analysis.	• Same as Active Survey but including 2.4 GHz and 5 GHz noise and interference sources, locations and duty cycles.
Cost	Low	Moderate	High	Highest

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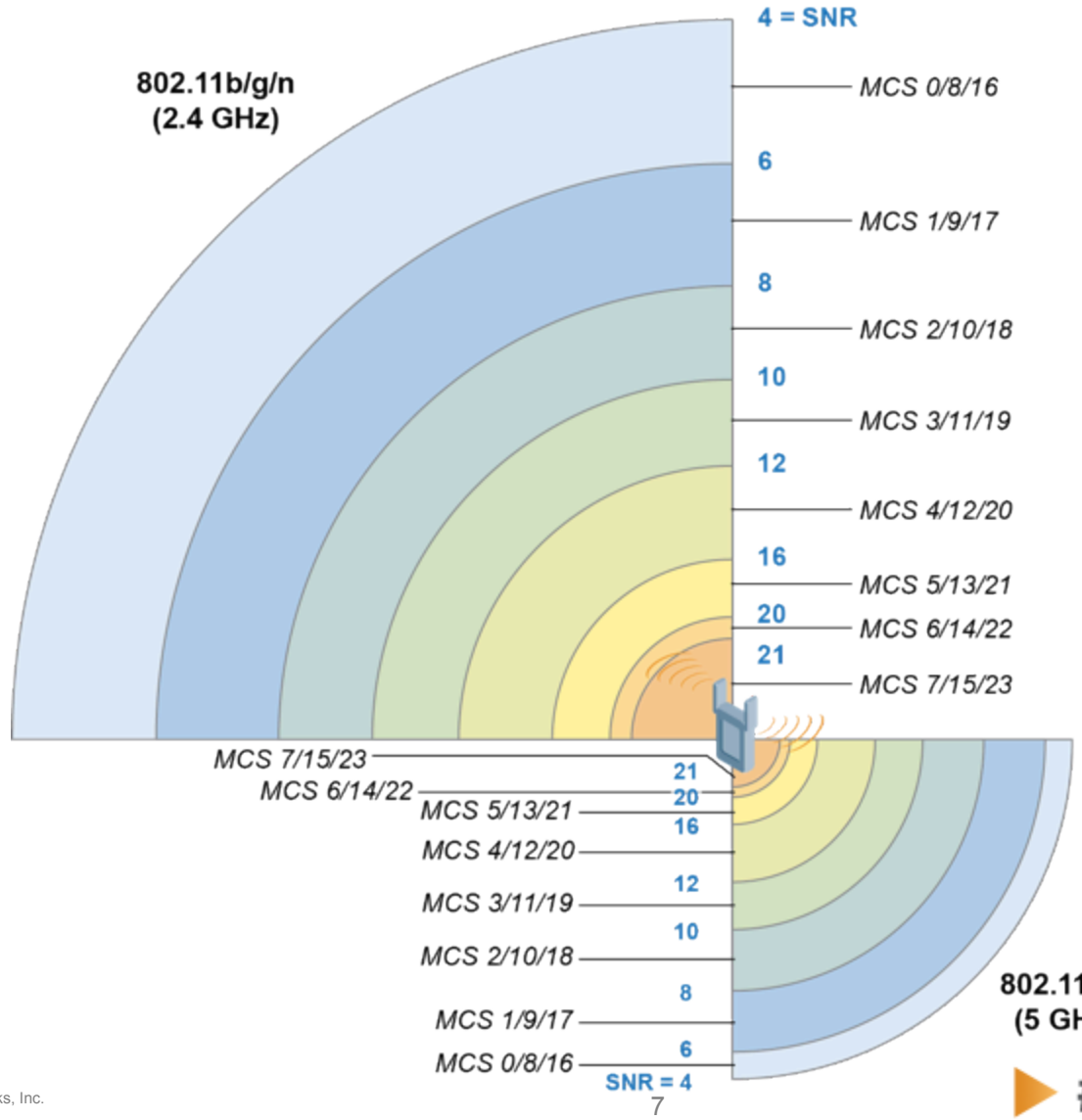
AP Coverage



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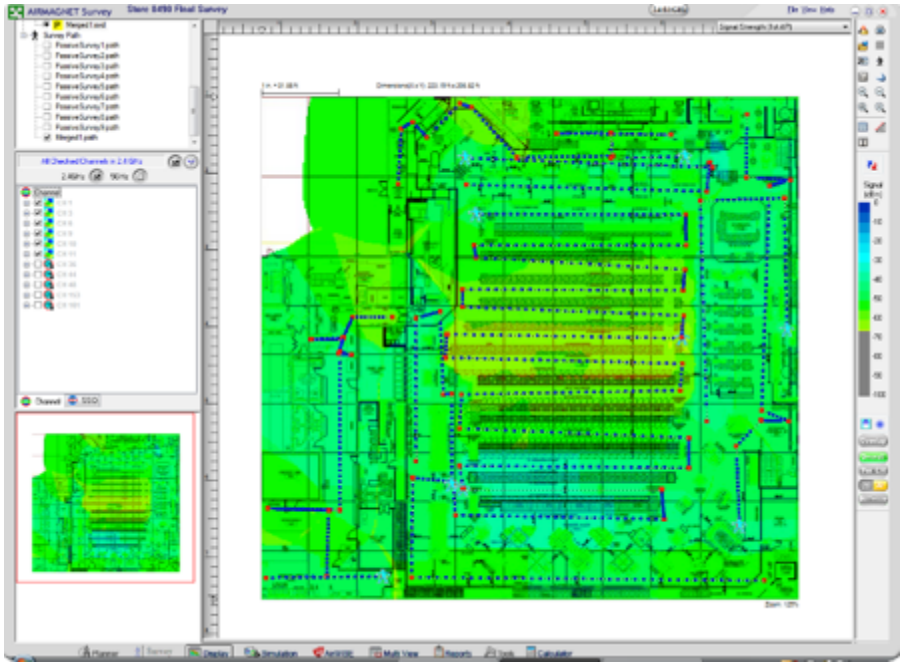
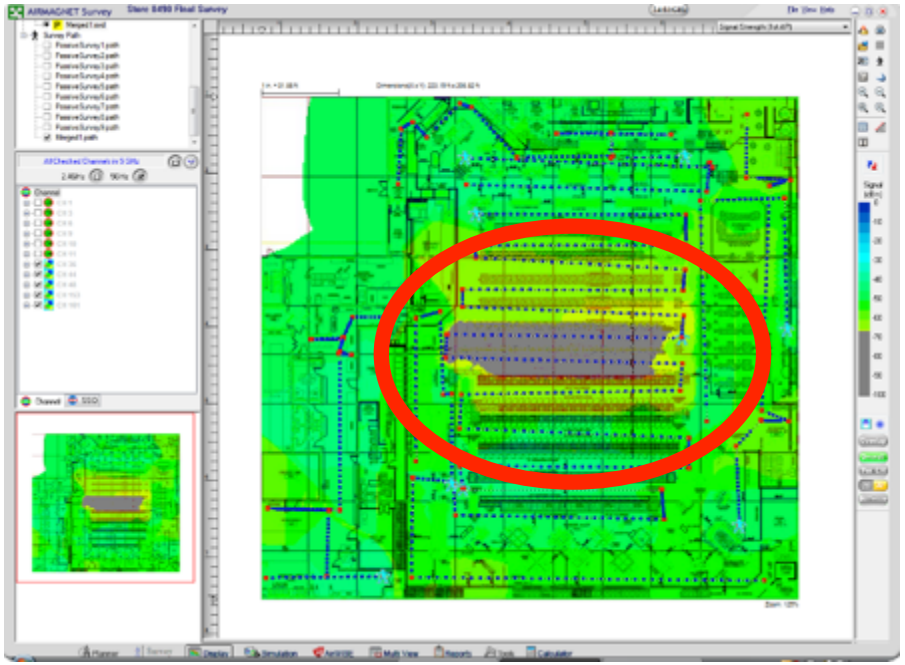
5 GHz Coverage in a 2.4 GHz Plan





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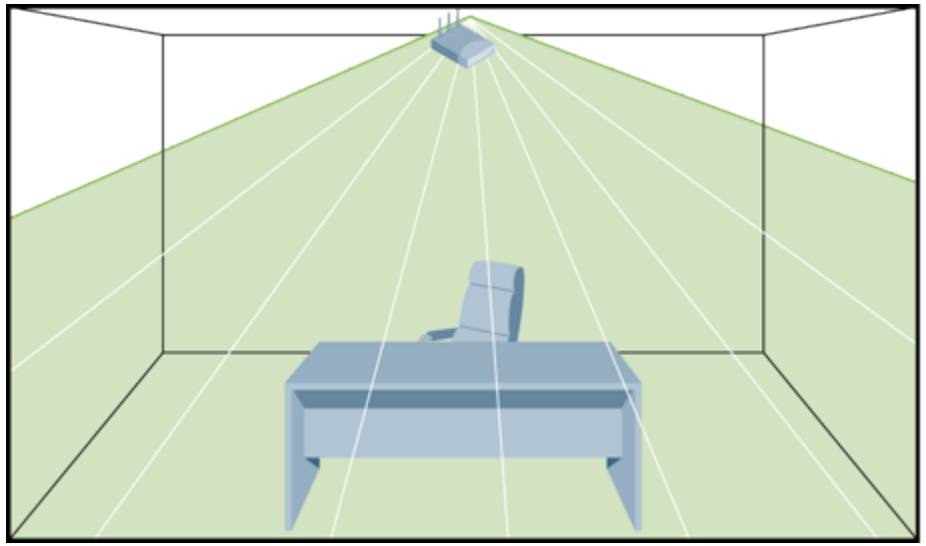
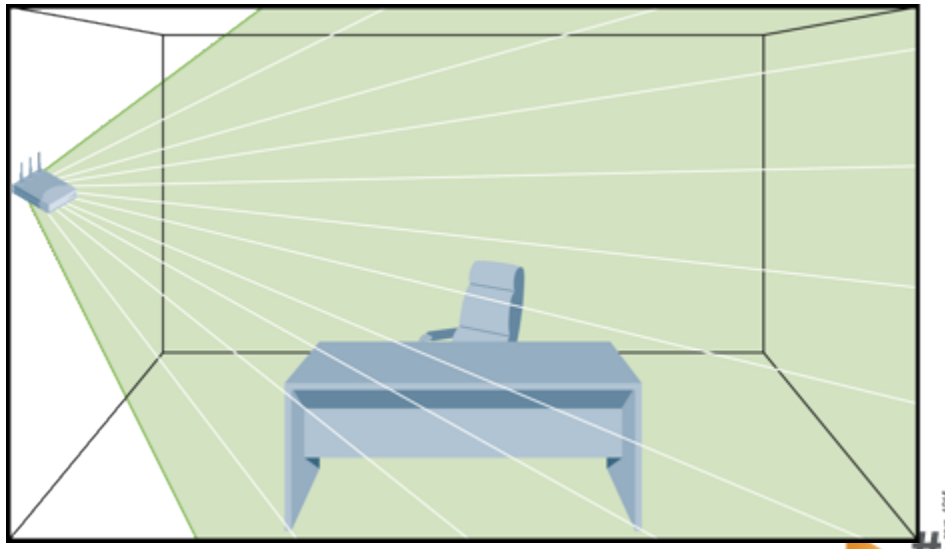
Mounting APs

Ceiling



Wall



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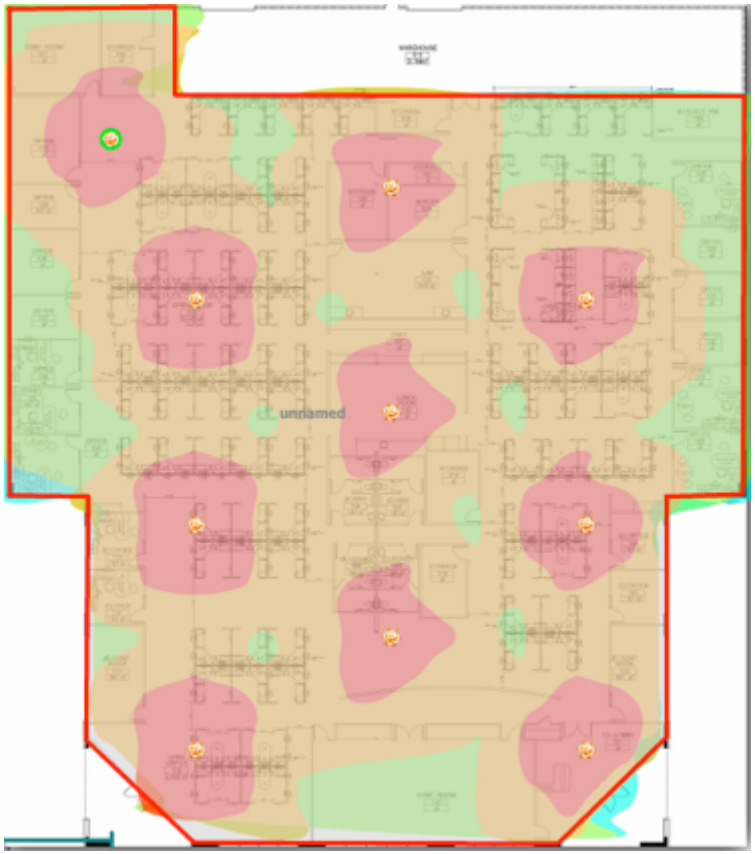
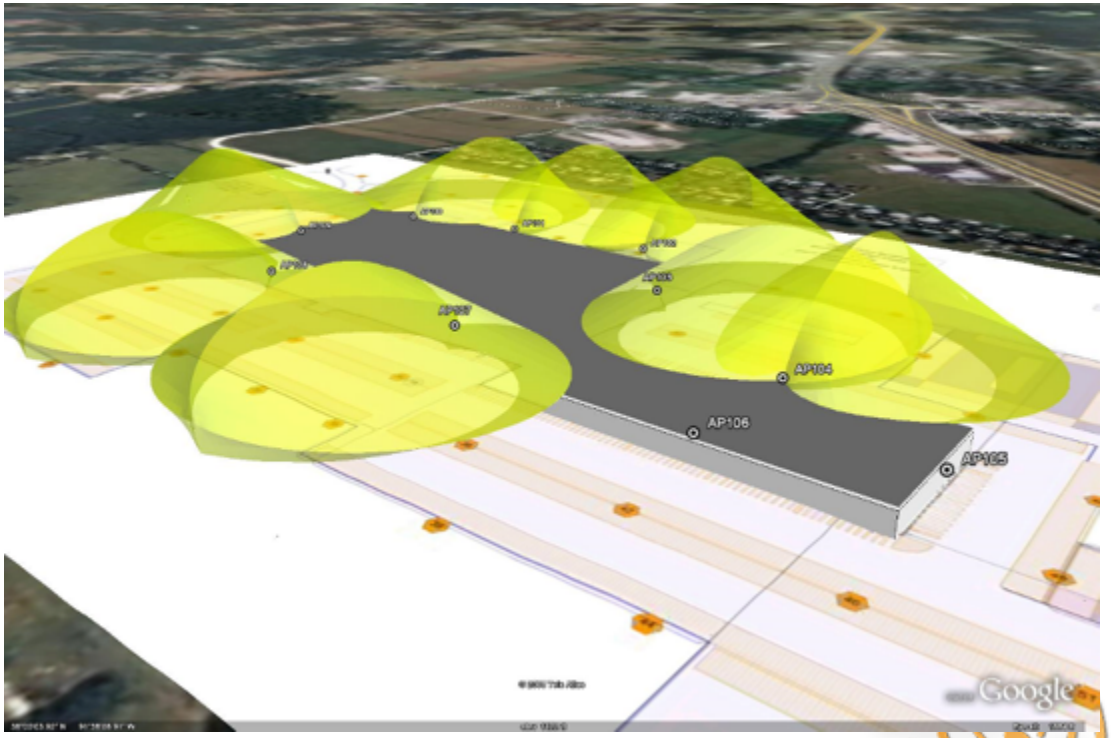
Virtual Survey Tools

VisualRF Plan



Outdoor 3D Planner



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Design

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Aruba Controller vs. Aruba Instant

	Aruba Campus Solution	Aruba Instant
Relative cost	$$$	$
Scalability	Thousands of APs Hundreds of thousands of users/ devices	16 APs 256 users/ devices
Policy management	Centralized policy store	Autonomous WLAN Can centralize policies via AirWave
User security	Context-aware security by role, device, location	User based
Mobility	Voice ready Layer 3	Voice ready single subnet
Provisioning and software upgrades	Controller	Virtual Controller, cloud-based image server, or AirWave
Onsite IT required?	Yes, at installation and periodically during operations	No
Operations management	AirWave	AirWave

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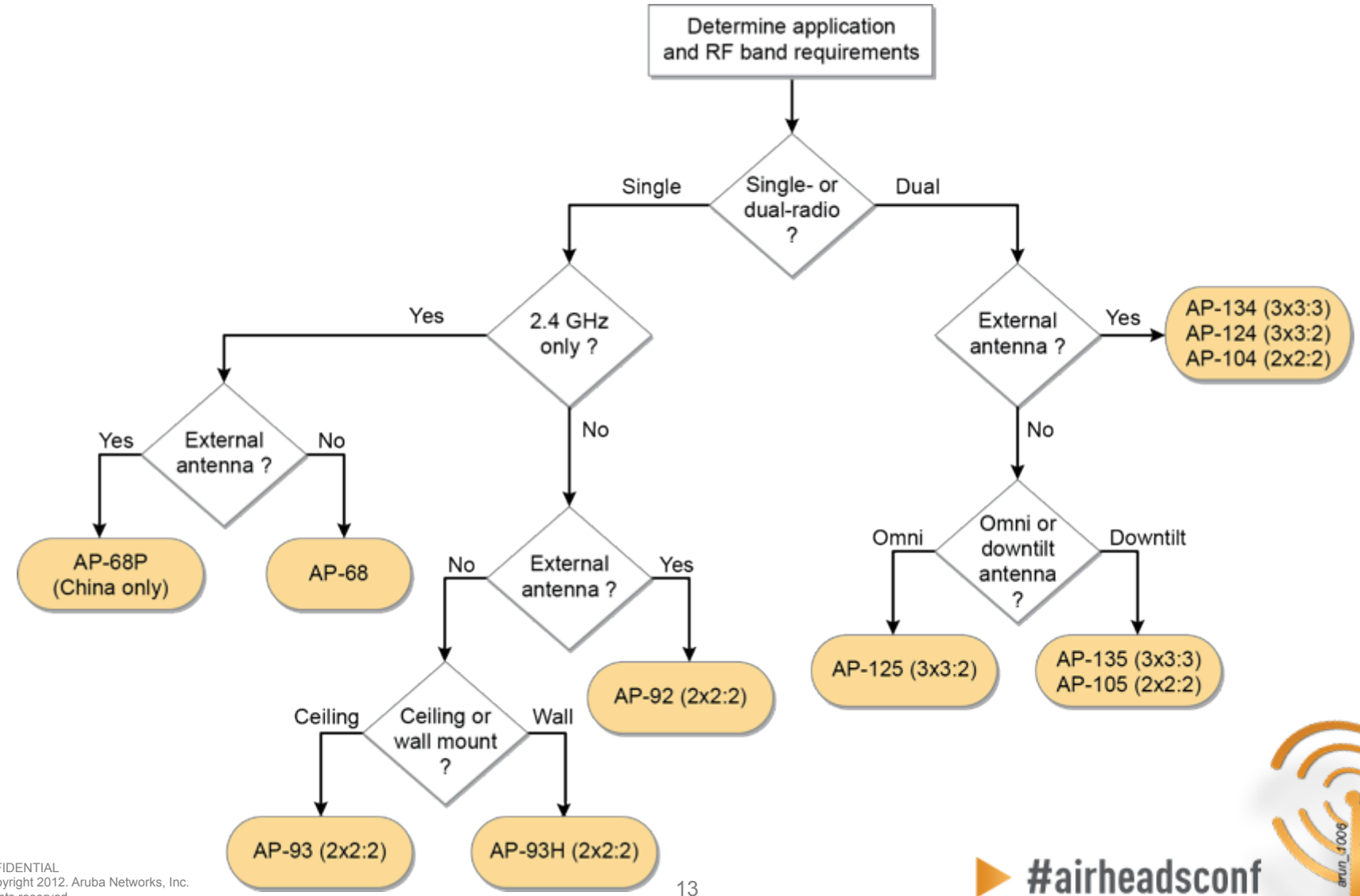
AP Decision Tree



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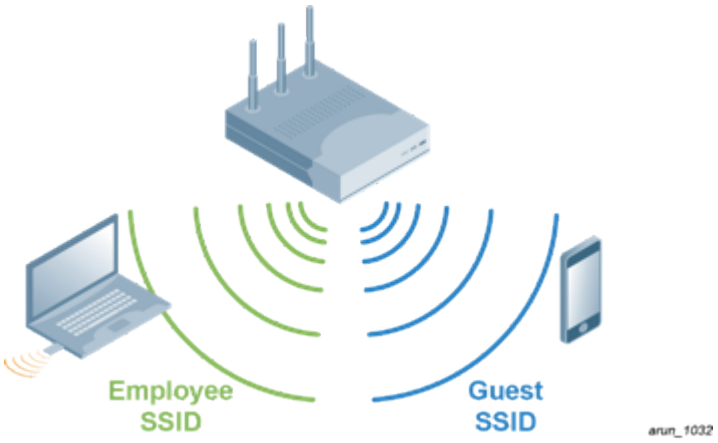
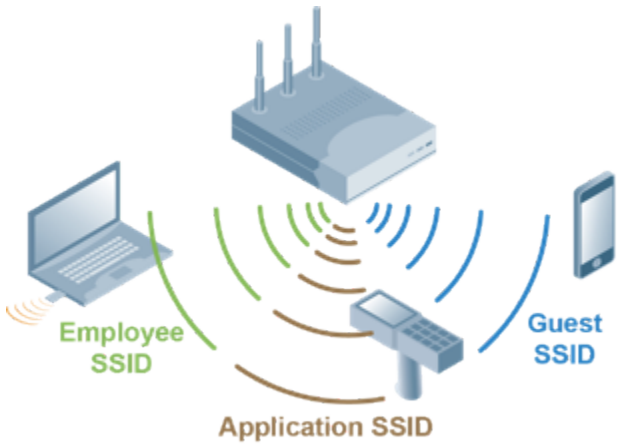
SSID Design

Most common SSID design for enterprise organizations includes 2-3 different SSIDs

- Employee users – strong authentication and encryption suite
- Application – devices not capable of strong authentication and encryption levels
- Guest access – will not run any encryption; requires authentication





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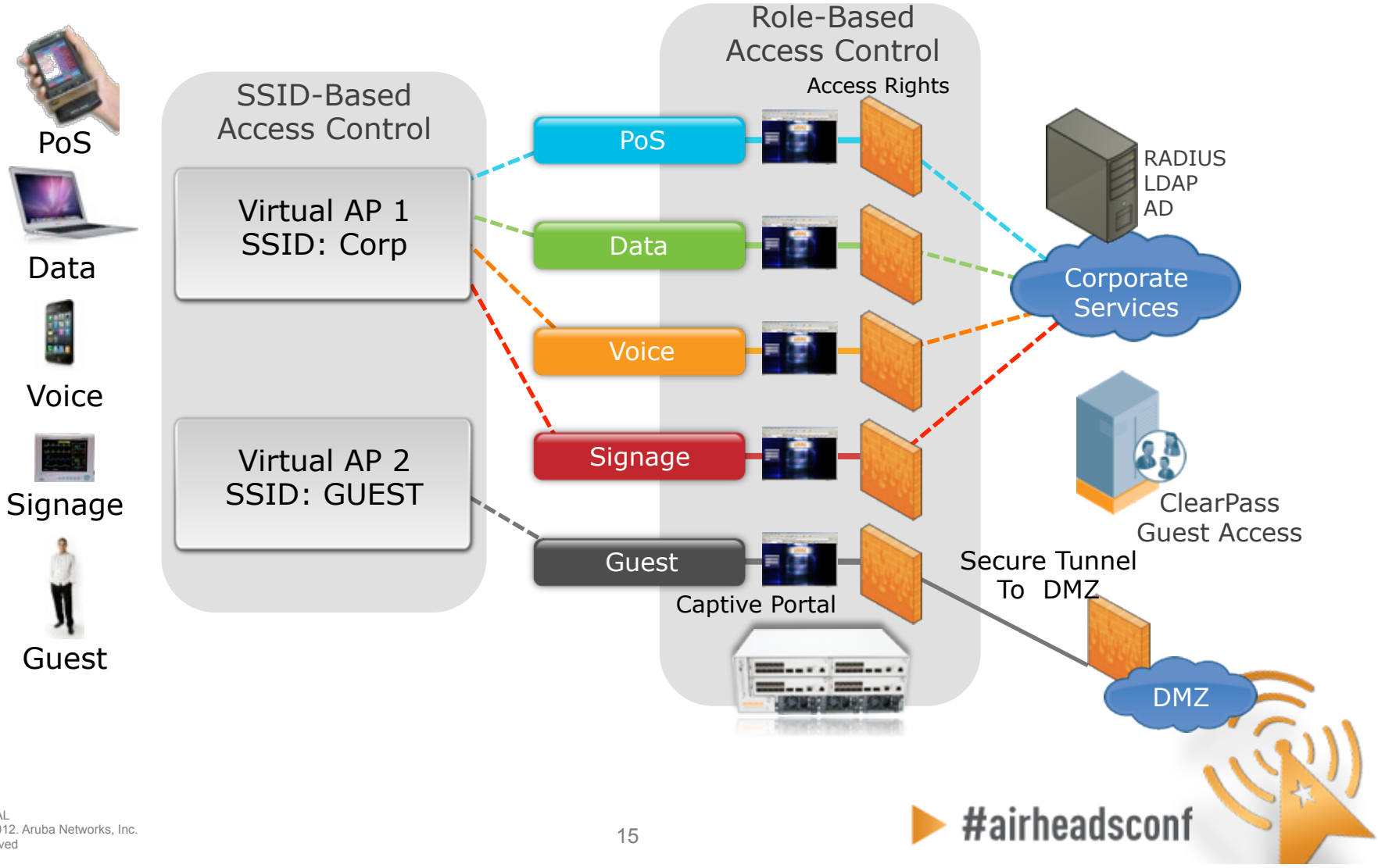
Role-Based Security Architecture



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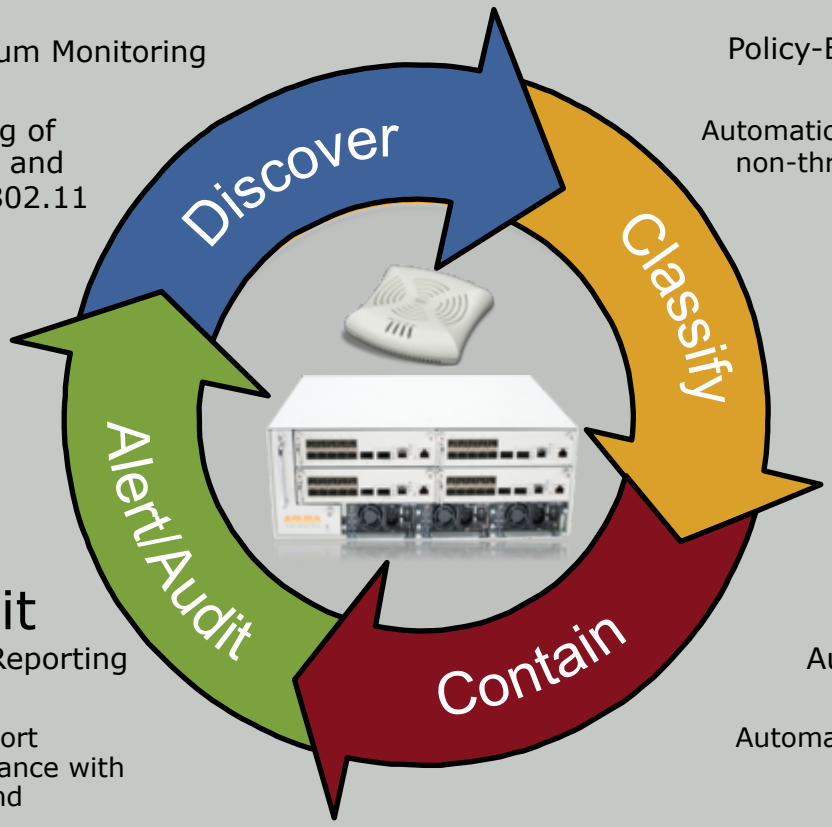
Wireless Threat Protection Framework

Discover
Complete 802.11 Spectrum Monitoring

Continuous RF monitoring of wireless devices, activity and configuration across all 802.11 channels

Classify
Policy-Based Threat Prioritization

Automatic classification of threats and non-threats is critical to RF security



Alert and Audit
Automated Compliance Reporting

Automated logging and report distribution ensures compliance with wireless security policies and regulations

Contain
Automated Threat Mitigation

Automated containment to block any rogue or intruder

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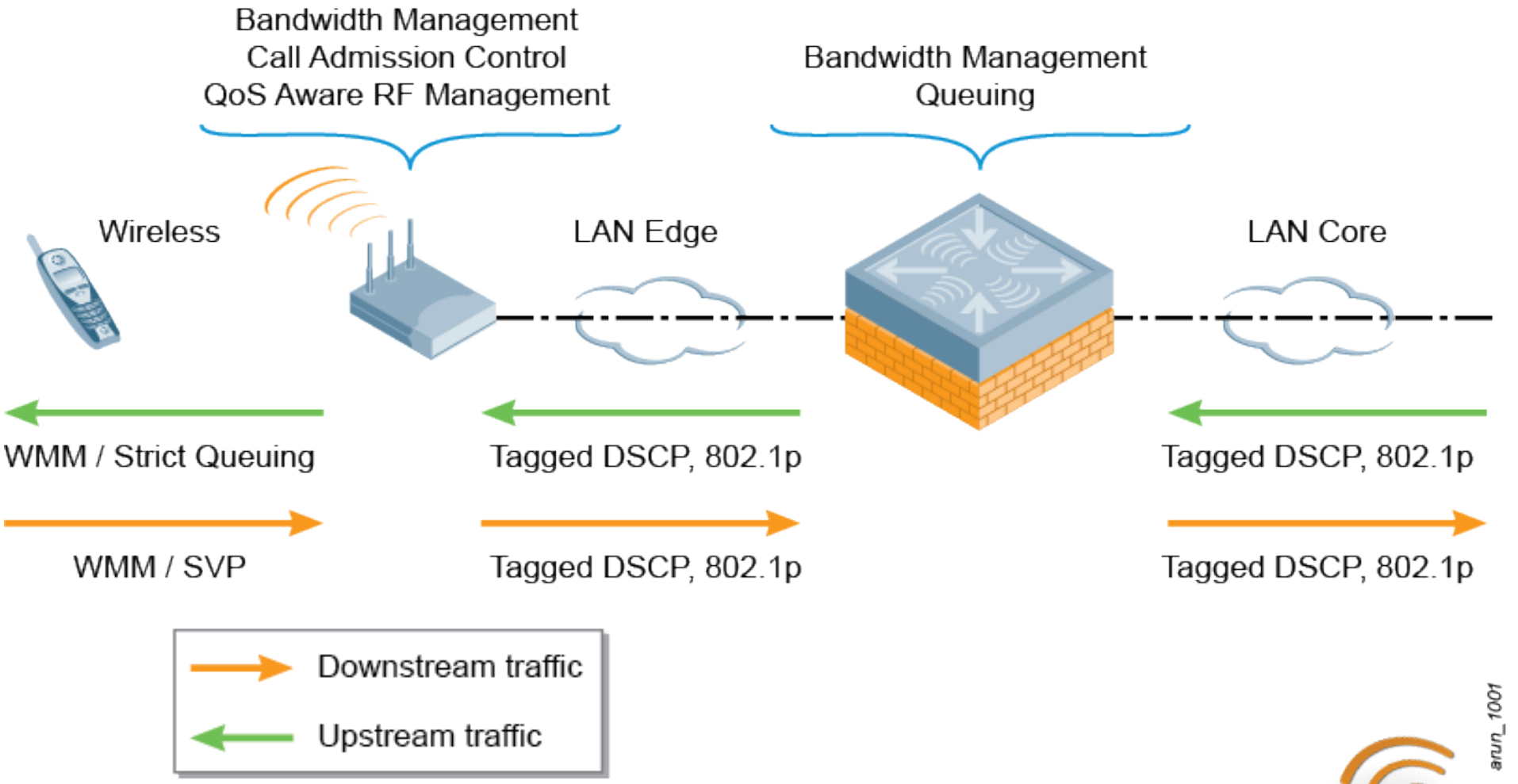
Quality of Service (QoS)



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Deploy

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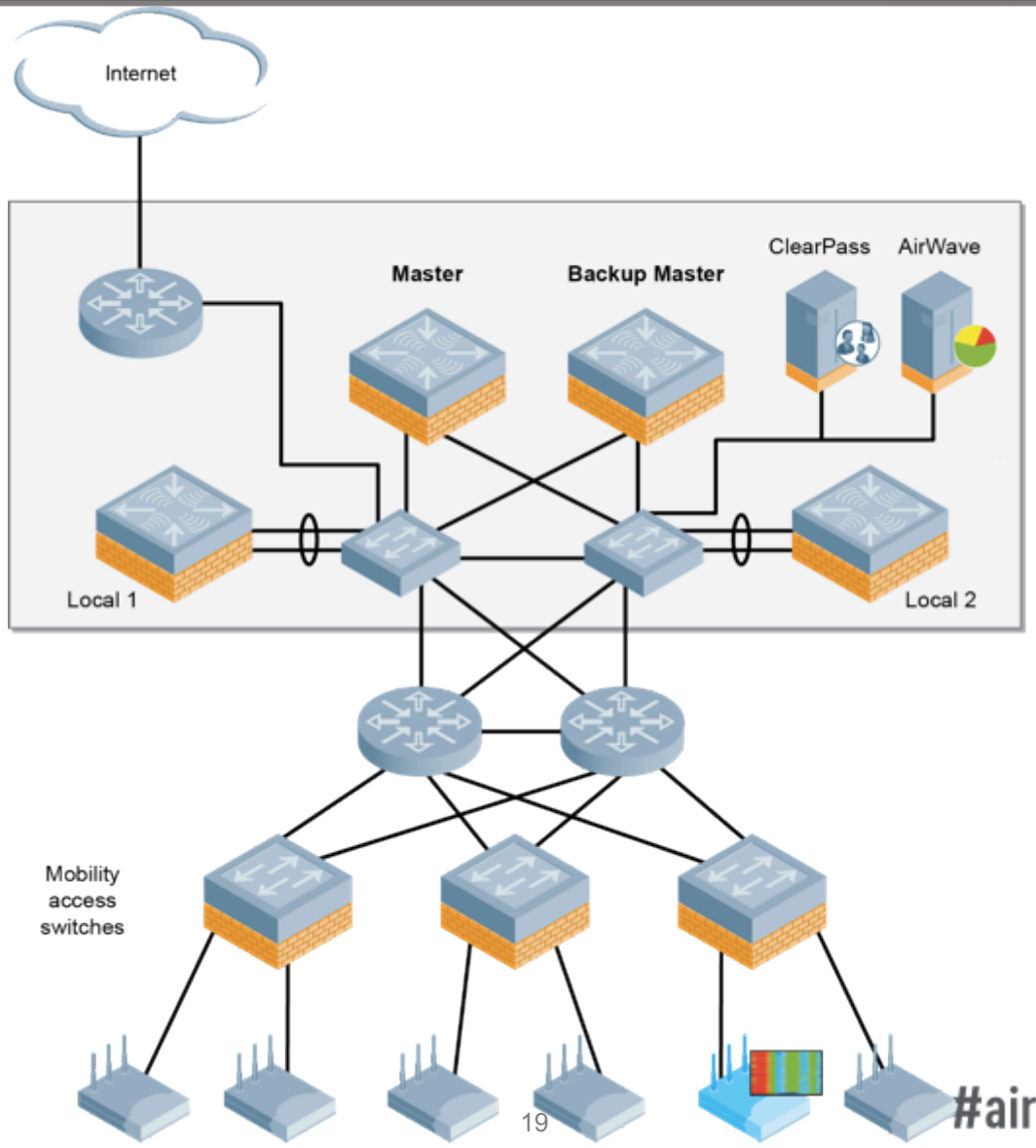
Mobility Controller Deployment



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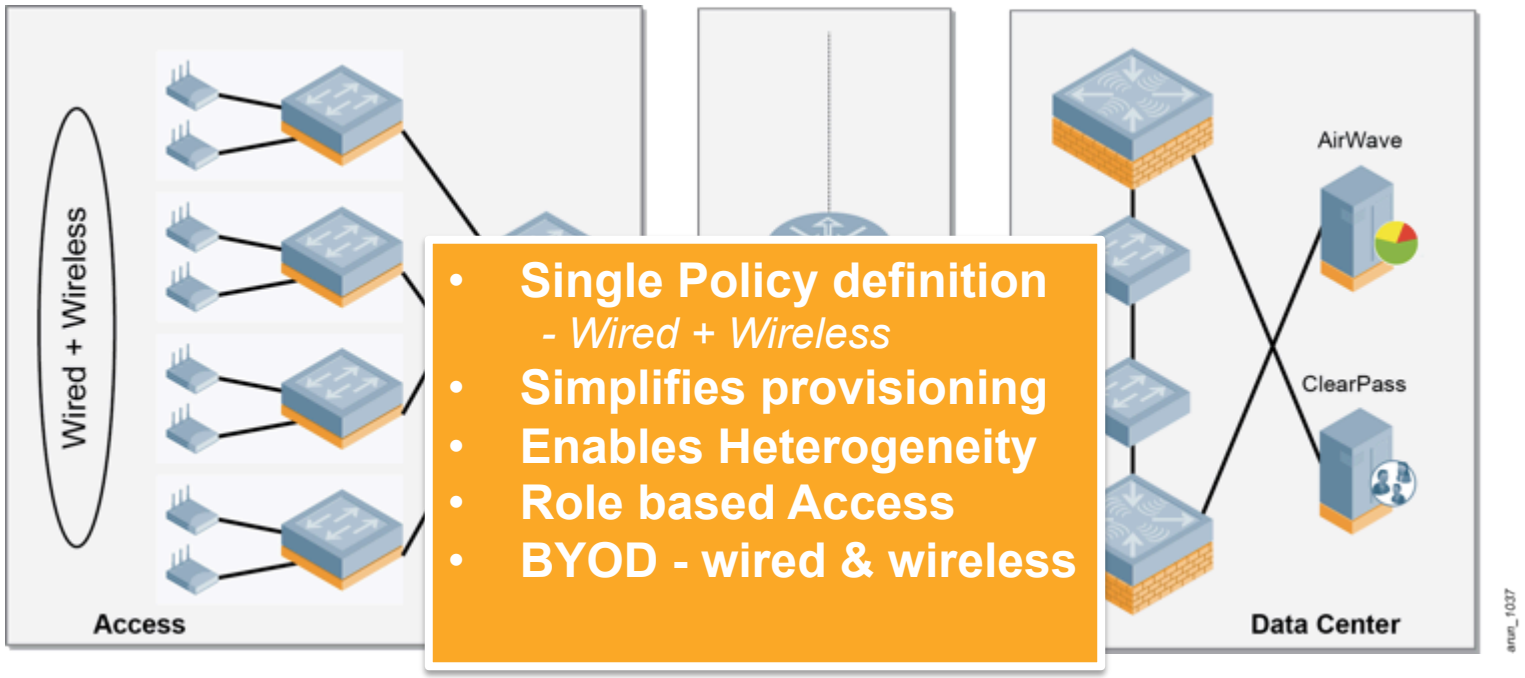
Wired + Wireless Access



- **Single Policy definition**
  - *Wired + Wireless*
- **Simplifies provisioning**
- **Enables Heterogeneity**
- **Role based Access**
- **BYOD - wired & wireless**

Dynamic Policies	Authentication	Policy Definition Point
• Simplified Access Provisioning • Eliminate policy definition on mobility switch & controller • Users authenticate against ClearPass Policy Manager	• Authentication result returns role via RADIUS • Associated role's policy dynamic pushed to switch / controller	• Single portal for policy definition – wired or wireless • Role and policy association definition • Supports Heterogeneous Networks

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Mobility Controllers

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Access Points

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Mobility Access Switch

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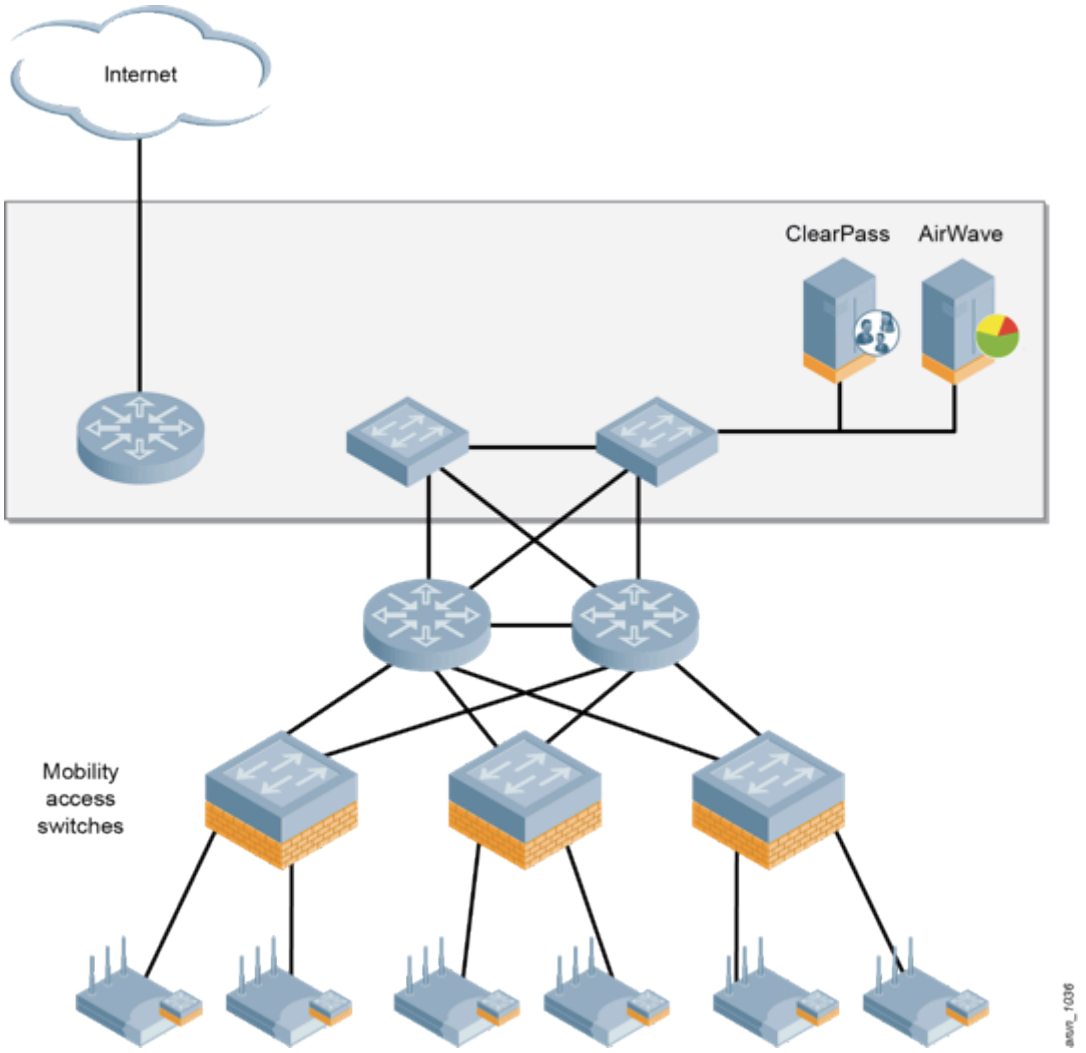
Instant Deployment



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Instant Access Points

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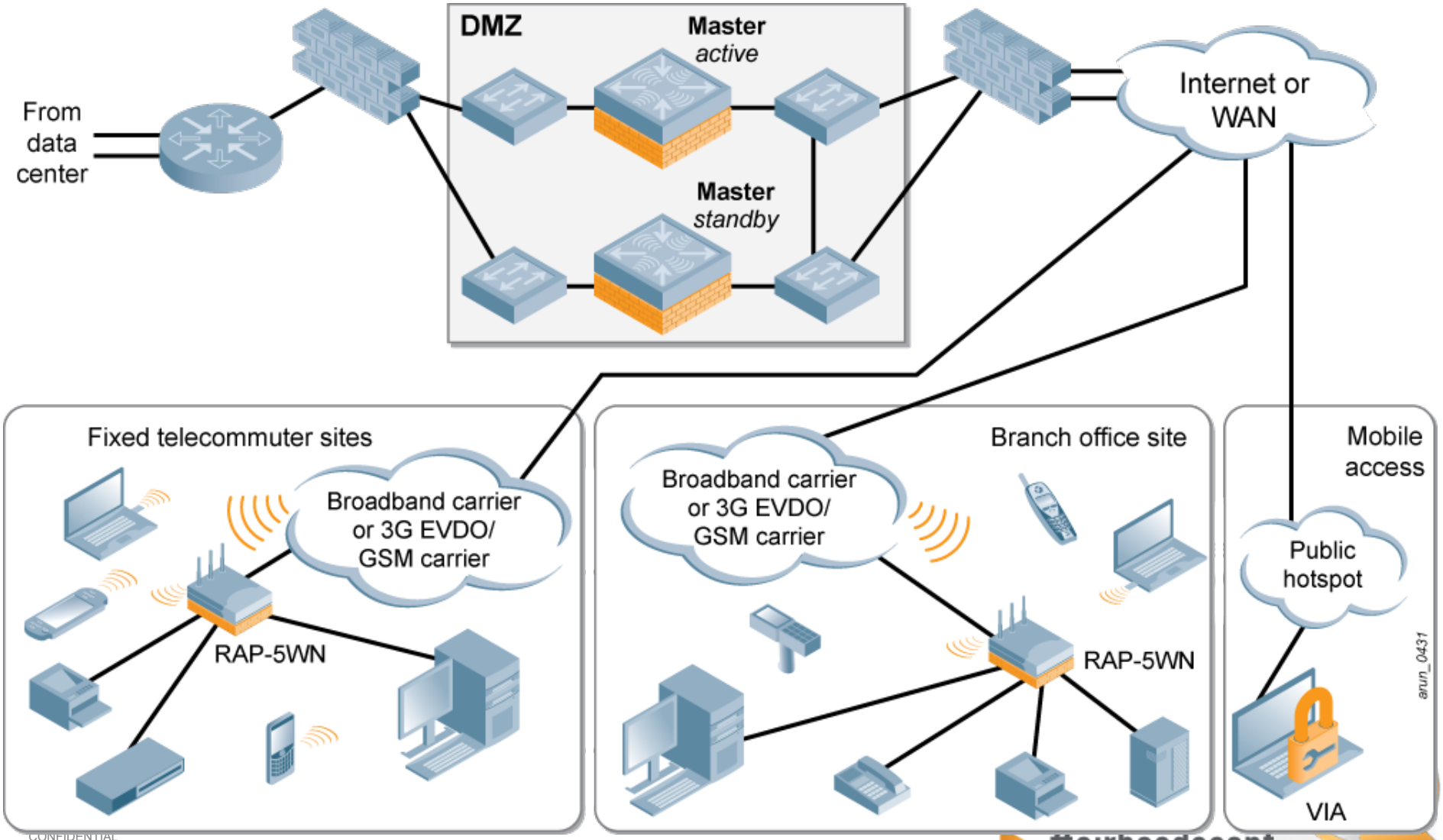
Remote Access



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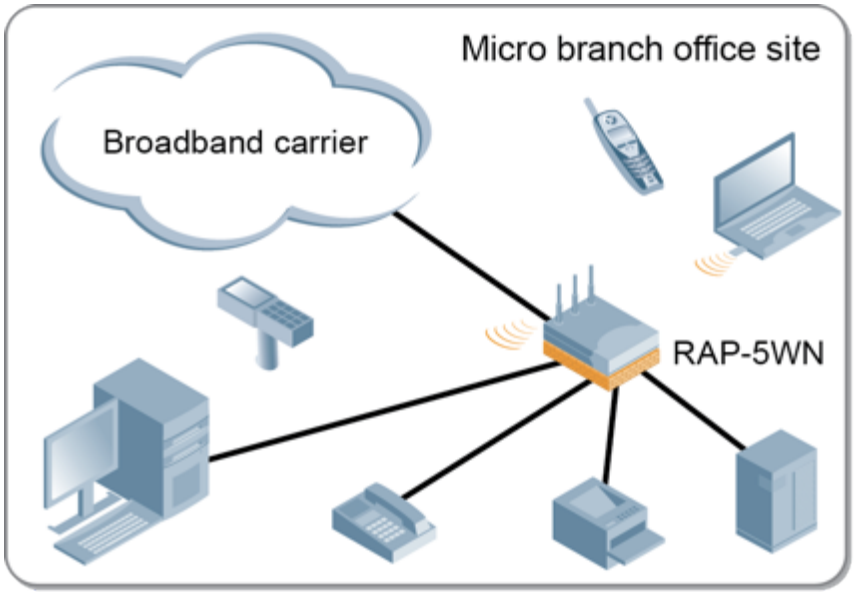
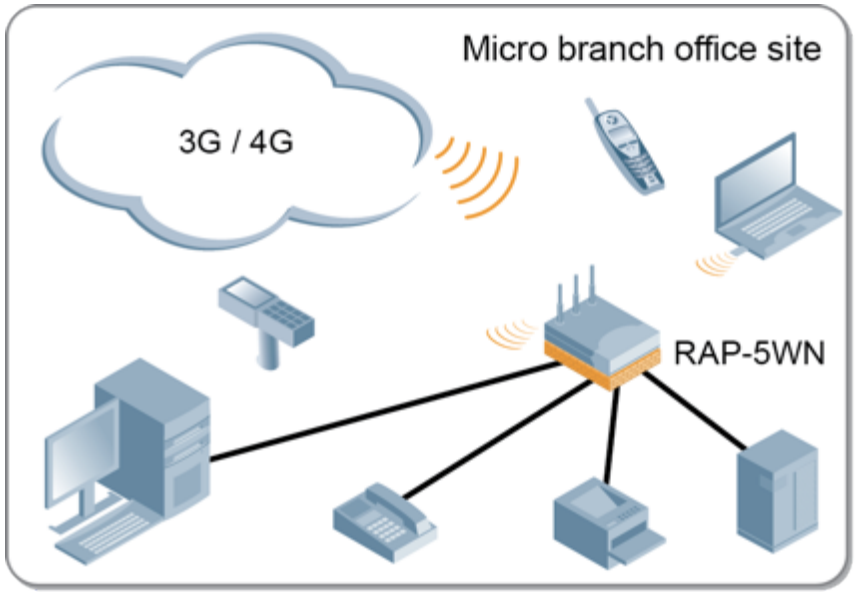
Wired or Wireless Backhaul





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Branch Office

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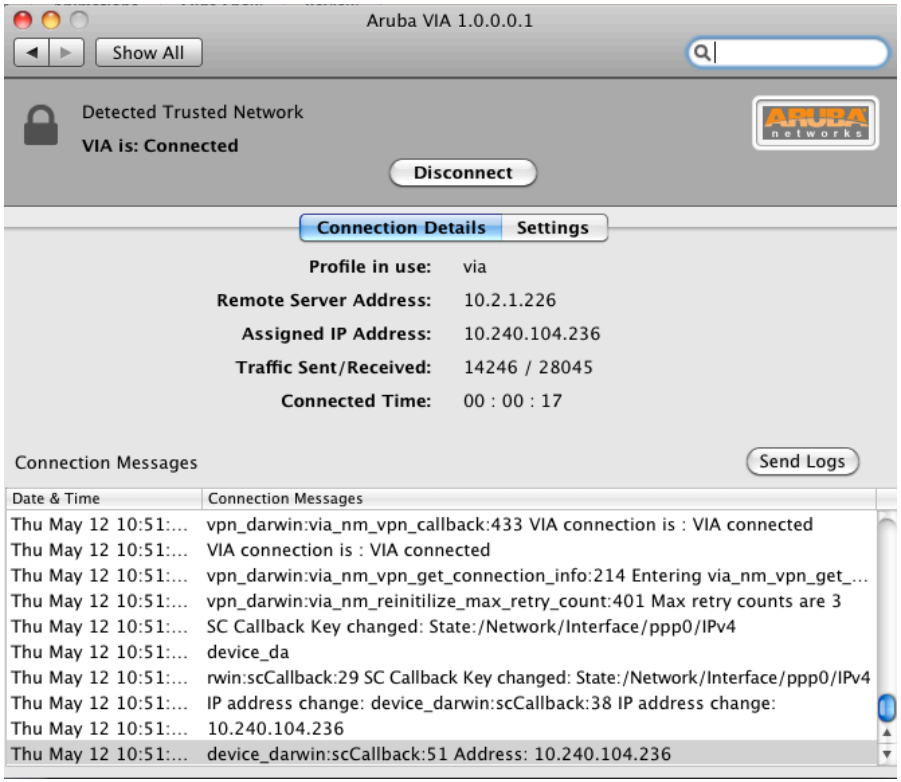
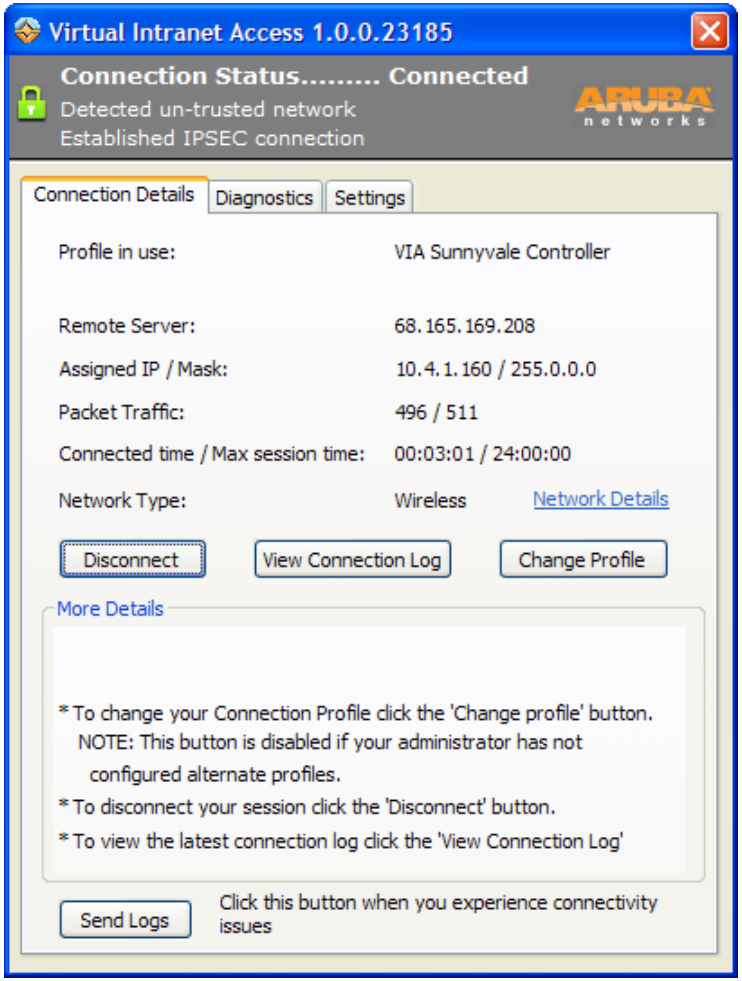
Aruba VIA





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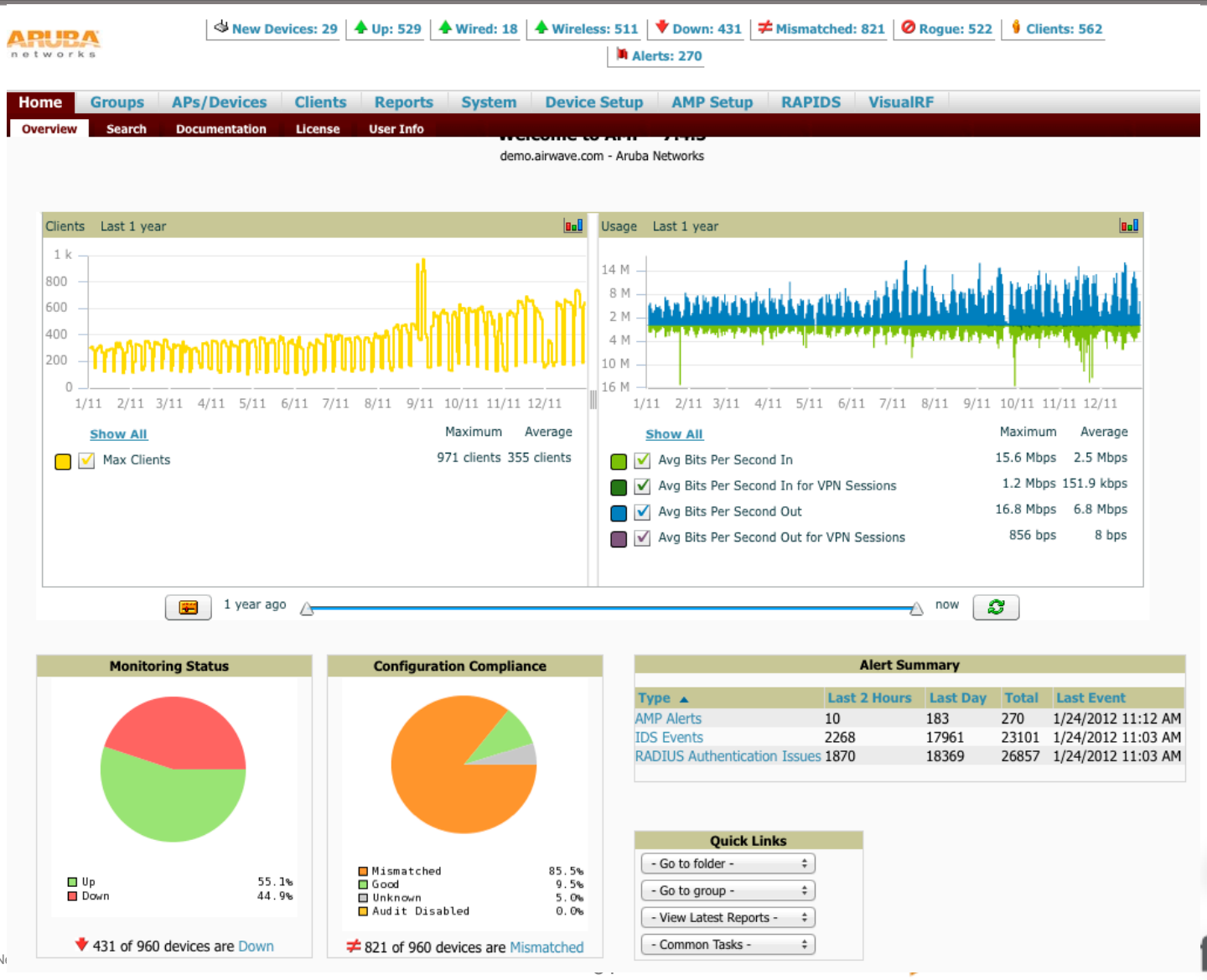
Monitoring



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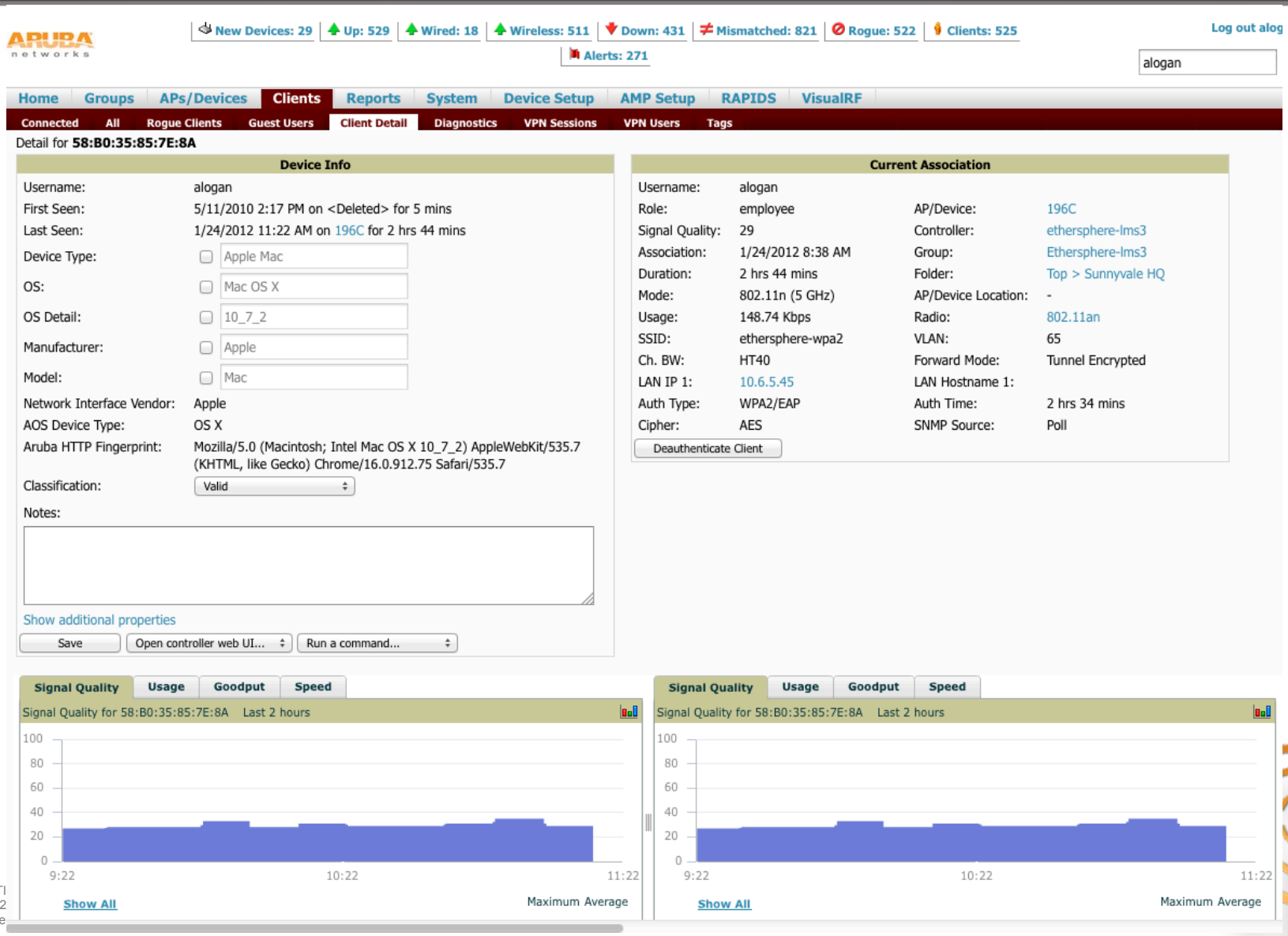
Troubleshooting



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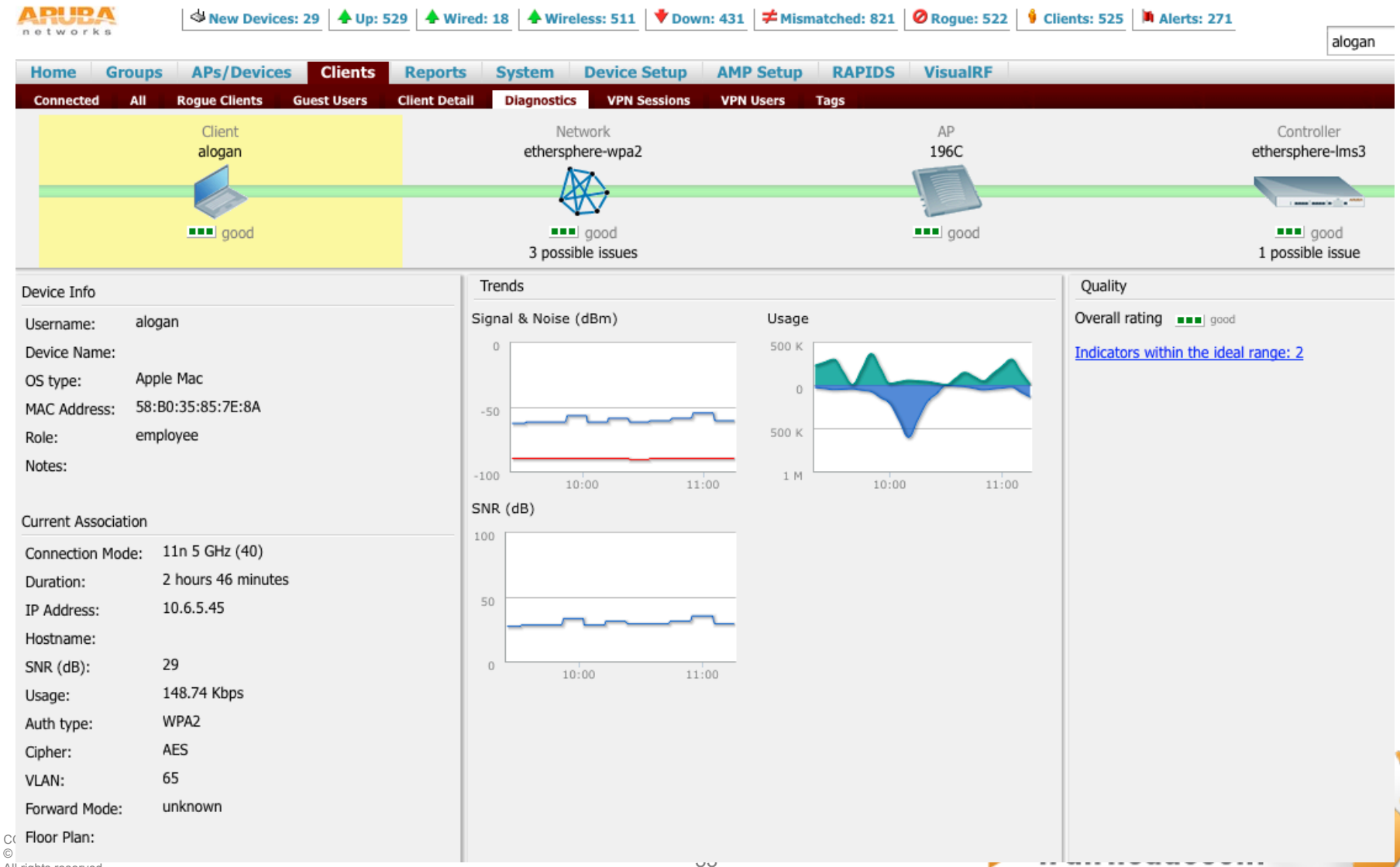
Client Diagnostics



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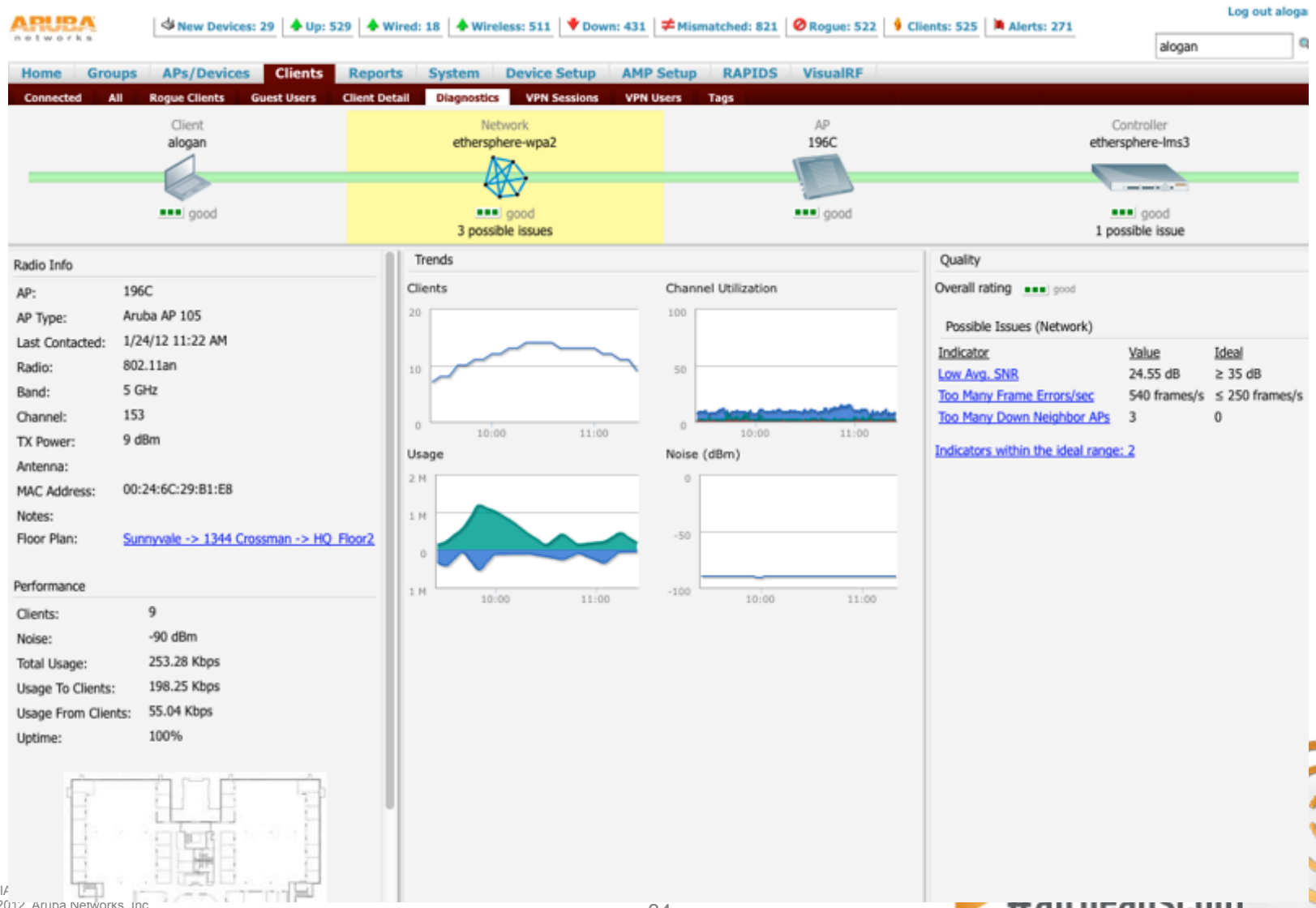
Network Diagnostics



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The WLAN Lifecycle

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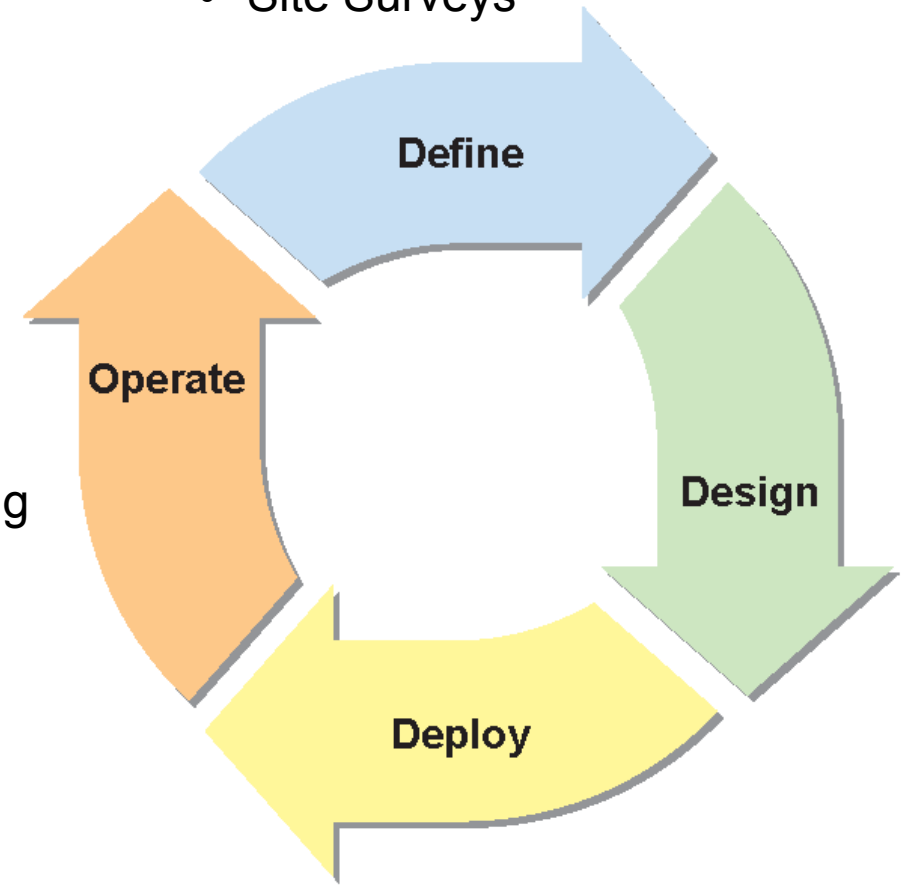

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LAS VEGAS 2012
Coming Up:
Tech Playground 12pm – 1:30pm
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