Prime Infrastructure Update

Agenda

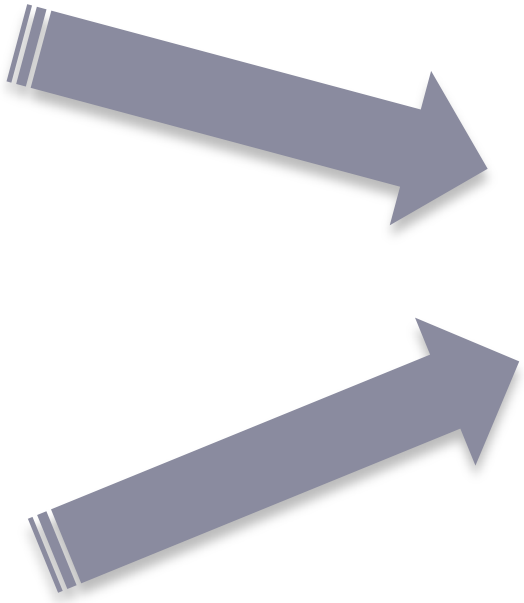
- Prime Infrastructure Update
- Prime Infrastructure 2.2
- Licensing Update
- Converged Access deployment – Simplified
- IWAN Management with Prime Infrastructure
- Prime Infrastructure Nihau Release

Finally!!! A single release for Wireless Management

One Release for all Wireless Management

PI 1.x (1.3.x, 1.4.x)

PI 2.x (2.0, 2.1.x)



PI 2.2

- Configuration and Monitoring for AireOS 7.4, 7.5, 7.6 and 8.0
- Monitoring Support for 8.1
- Up to MSE 8.0
- ISE 1.2, 1.3

12 Months of Solid Execution

PI 2.0

Sep 2013

- Return to stability
- Restore Back-up addressed
- Wired Device Packs

PI 2.1

Apr 2014

- WLAN device support sync
- Quality improvements
- Nexus 9K

PI 2.2

Nov 2014
FCS RR

- Quality ++
- L2 Topology
- UI and Map Performance
- IWAN / CA provisioning
- Tech Packs

PI Niihau

Q2 CY15*
(Targeting Apr 2015)

- Architectural improvements
- LMS features
- IWAN monitoring
- DC Assurance

** Release not committed yet*

Prime Infrastructure 2.2

Platform	Wireless	Wired	Datacenter
Topology	CUWN - 8.0 and 8.1 Support with APs	IPV6 Device Management	UCS Server Assurance
PI Operations Center	Converged Access – 3.6 and 3.7 with APs	QoS Monitoring Support	Nexus 9K Assurance
R/W API's	Maps Performance Improvements	IWAN Configuration Workflows	VM Support via Tech Pack
Technology Packs	Meraki AP Support Tech Pack		

New AP Platforms Supported

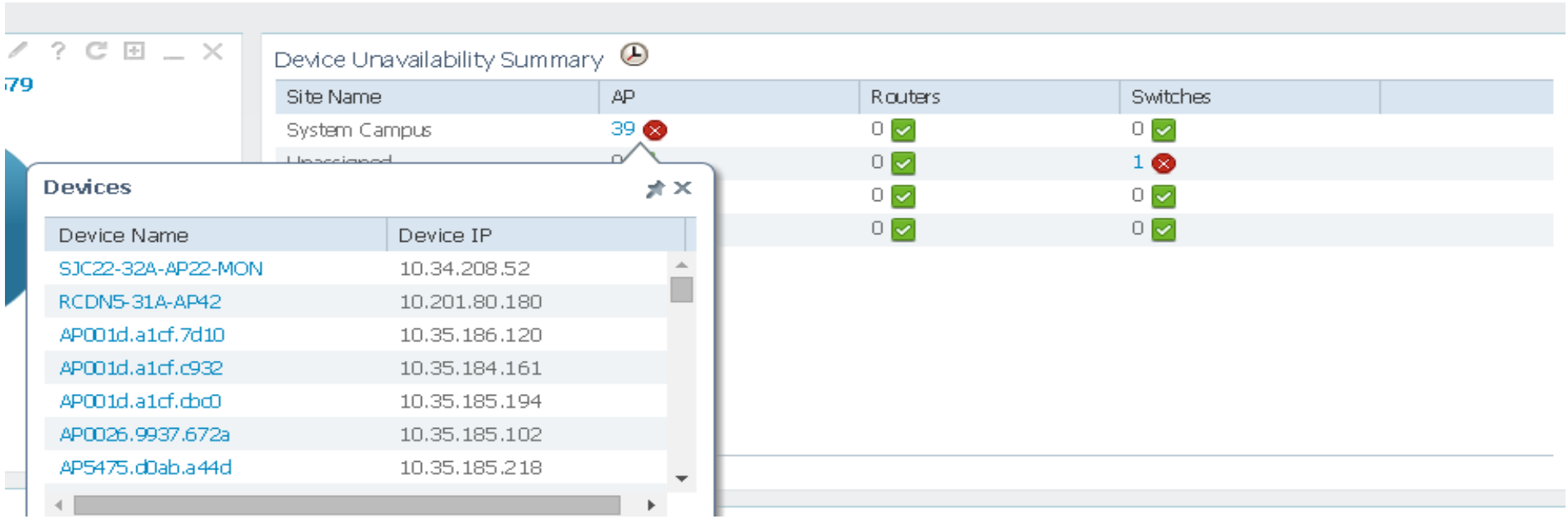
- Cisco AP 1700
- Cisco AP 1572
- World Regulatory Domain APs

New Wireless Features

- Policy Classification Engine
- Client SSO
- Bonjour configuration
- PMIP V6 enhancements
- IPv6 – clients and WLC
- Sleeping Client
- 802.11w

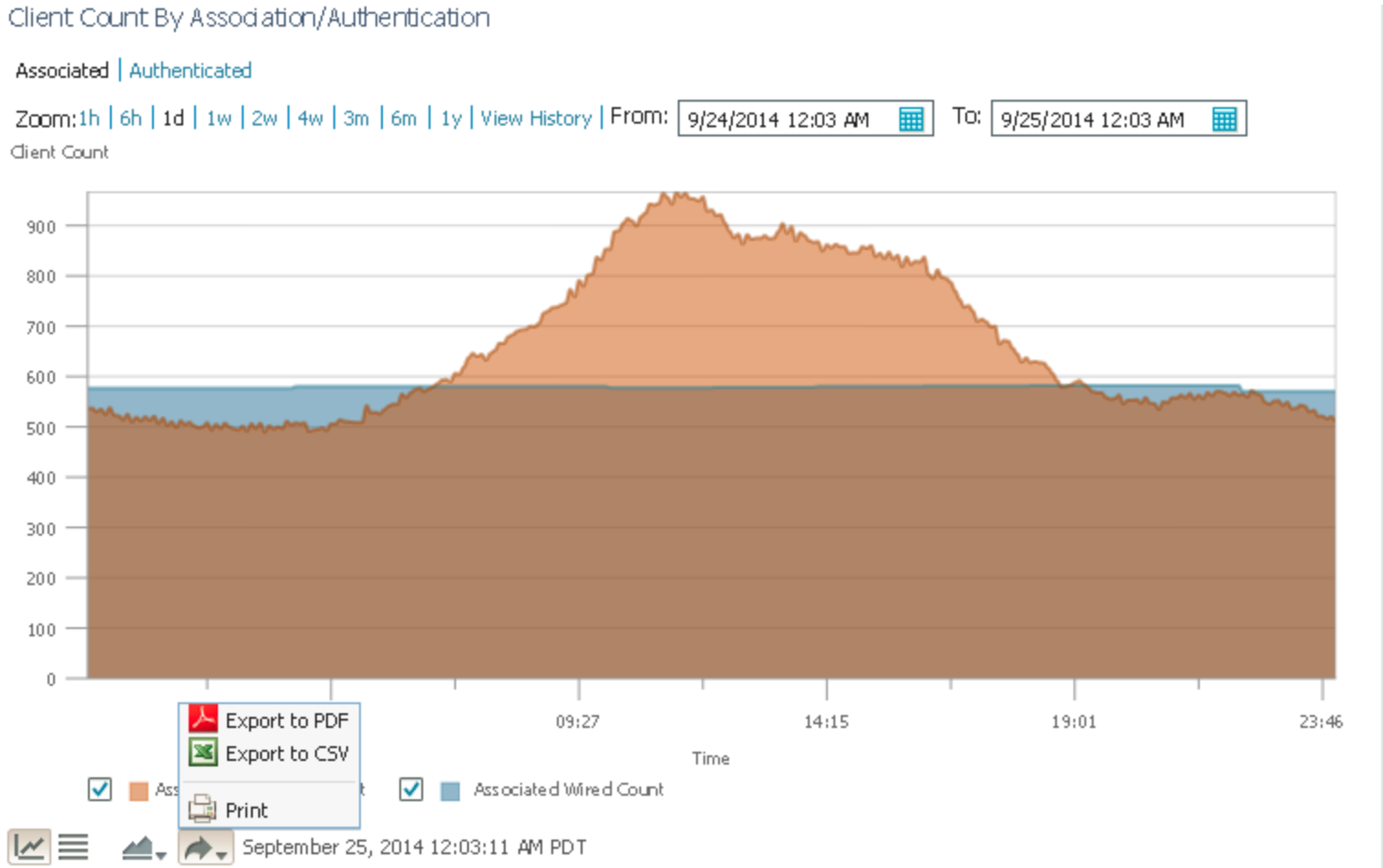
- PEAP/EAP-TLS on AP in Flex mode
- Flex Connect Audit Support
- FlexConnect VLAN Config (FlexConnect Groups)
- DHCP Proxy in WLAN Config
- Clean Air Express on AP 1600/AP1700

Monitoring Enhancements



Use Case:
How do I know if my AP is up/down
What is the health of my site?

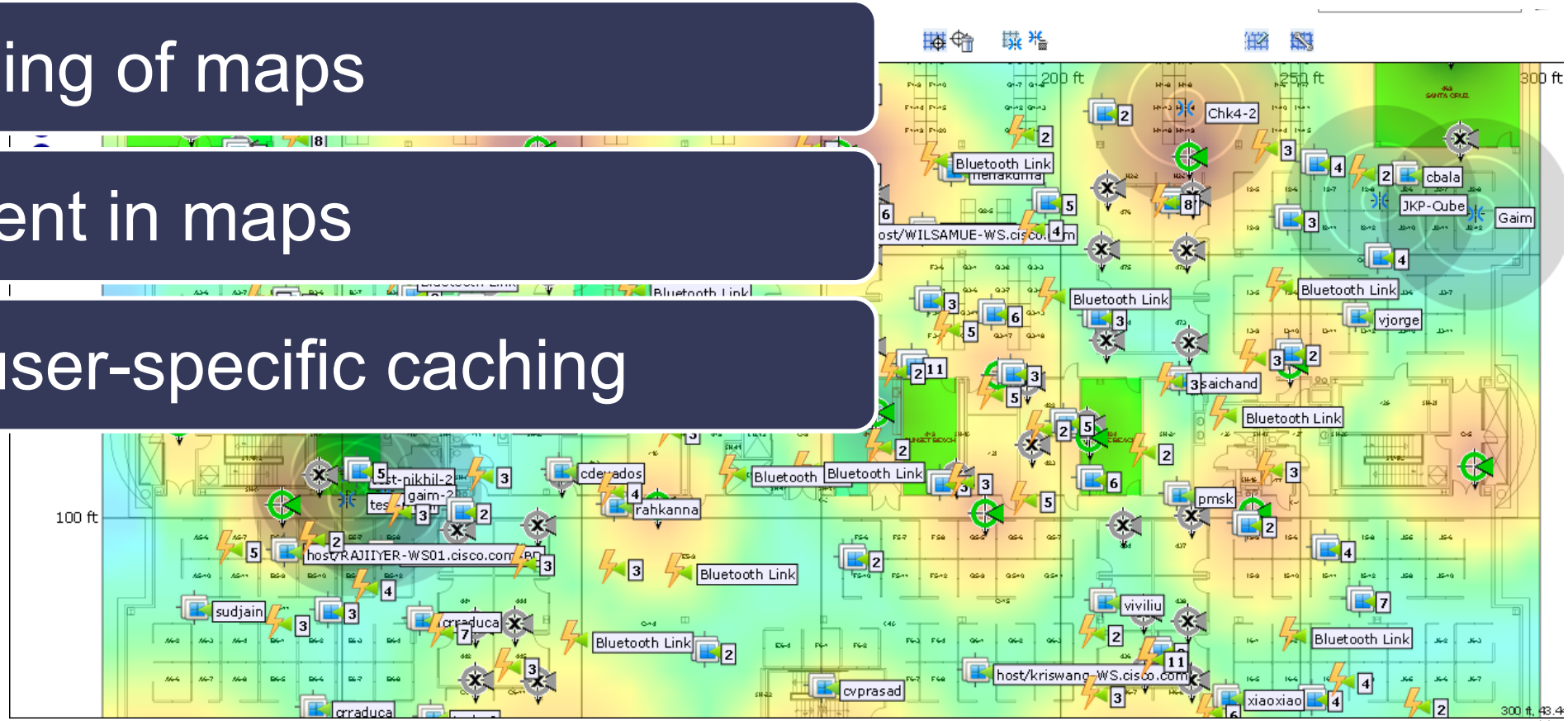
New Wireless Dashlets



- Customize graph type
- Export dashlet to PDF and CSV

Wireless Maps Enhancements

- Zoom improvements 133% to 1052%
- Faster loading of maps
- AP placement in maps
- Intelligent user-specific caching

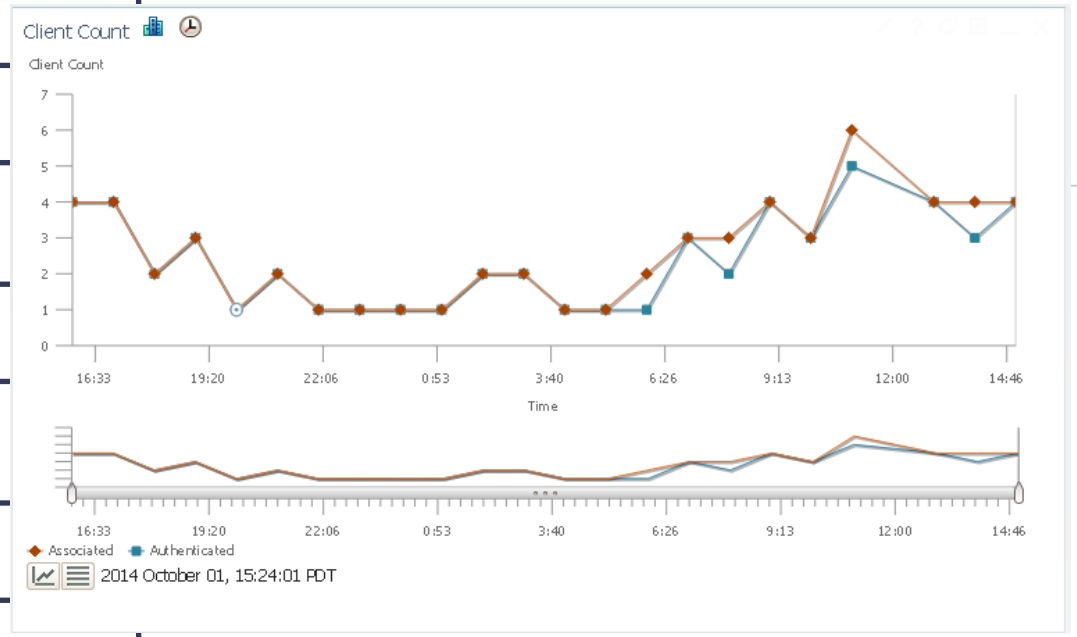


New AP Dashboard

- AP Details
- Top applications by bandwidth
- Top clients by bandwidth
- Clients count on the AP over time
- Channel Utilization and AP throughput over time

Access Point Details

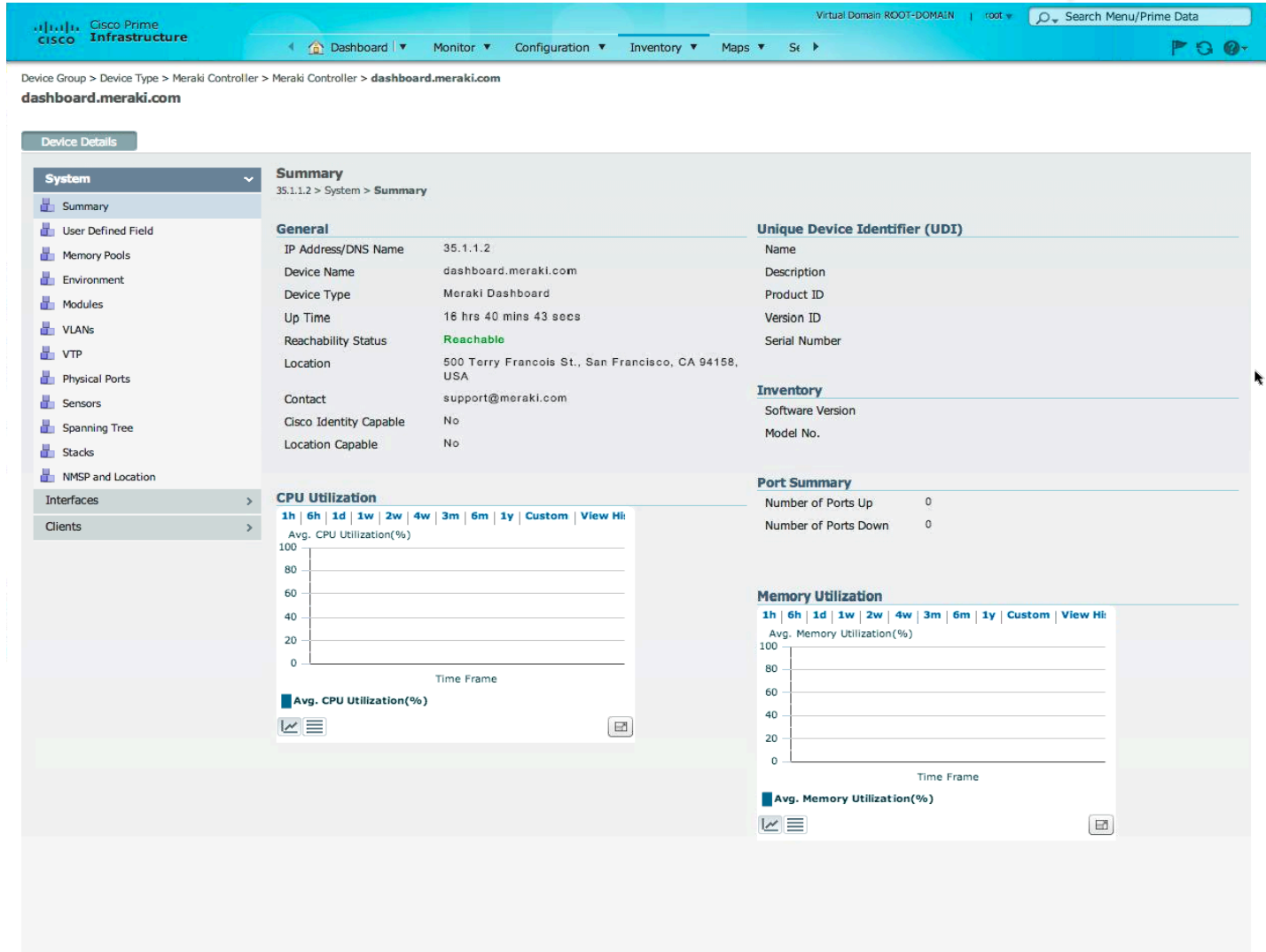
Property	Value
AP Name	SJC14-42A-AP-C3
Radio Mac	18:e7:28:9d:c3:30
Ethernet Mac	18:e7:28:80:f6:58
Model	AIR-CAP3702I-A-K9
Controller	10.32.37.6
Location	default location
Map Location	System Campus > SJC-14 > 4th Floor
Base Radio	AP SJC14-42A-AP-C3, Interface 802.11b/g/n AP SJC14-42A-AP-C3, Interface 802.11a/...



Prime Infrastructure – Meraki Support

Tech Pack
Dec 2014

- Discovery
- Inventory
- Reachability
- Cross launch into Meraki dashboard
- No Wired in Phase 1
- Technology pack on PI 2.2

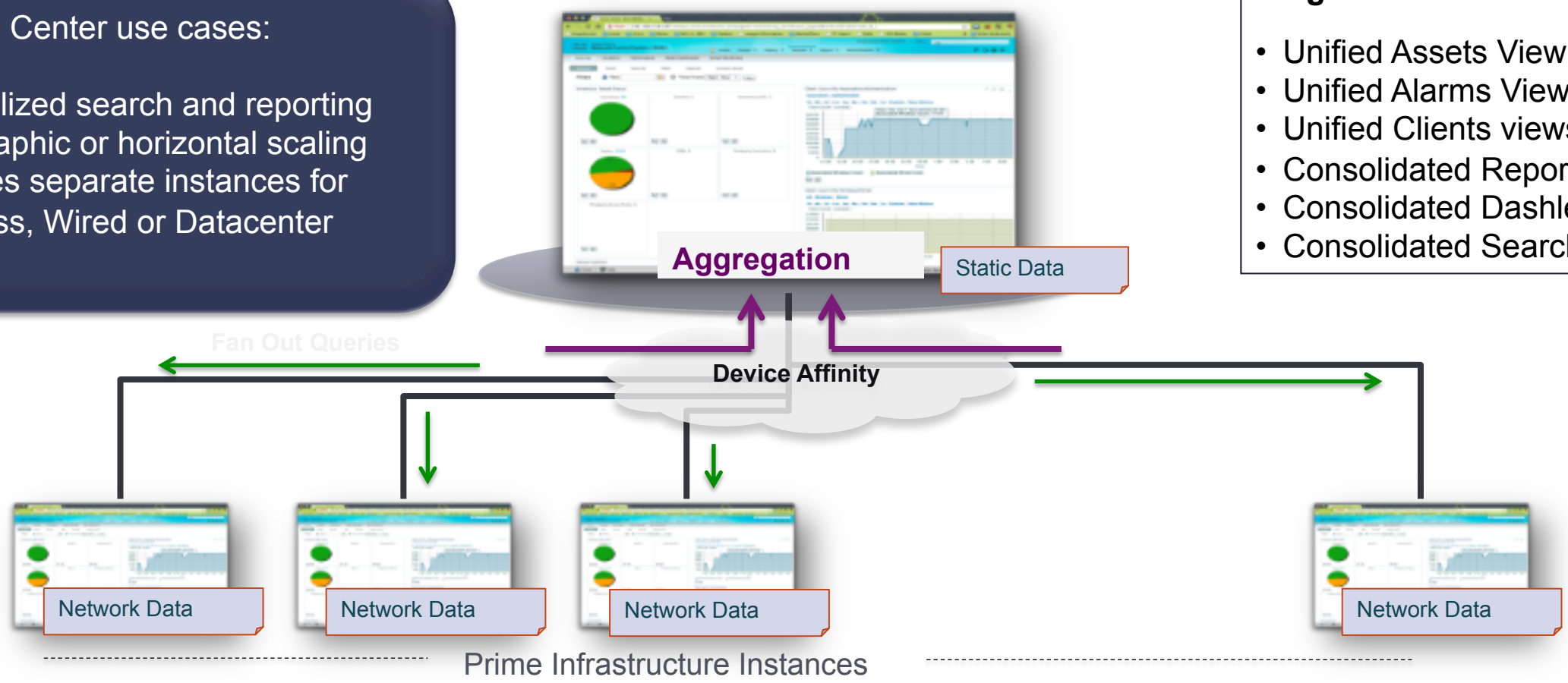


Cisco Prime Infrastructure – Operations Center

Centralized Visualization Across Multiple PI Instances

Operations Center use cases:

- Centralized search and reporting
- Geographic or horizontal scaling
- Enables separate instances for Wireless, Wired or Datacenter

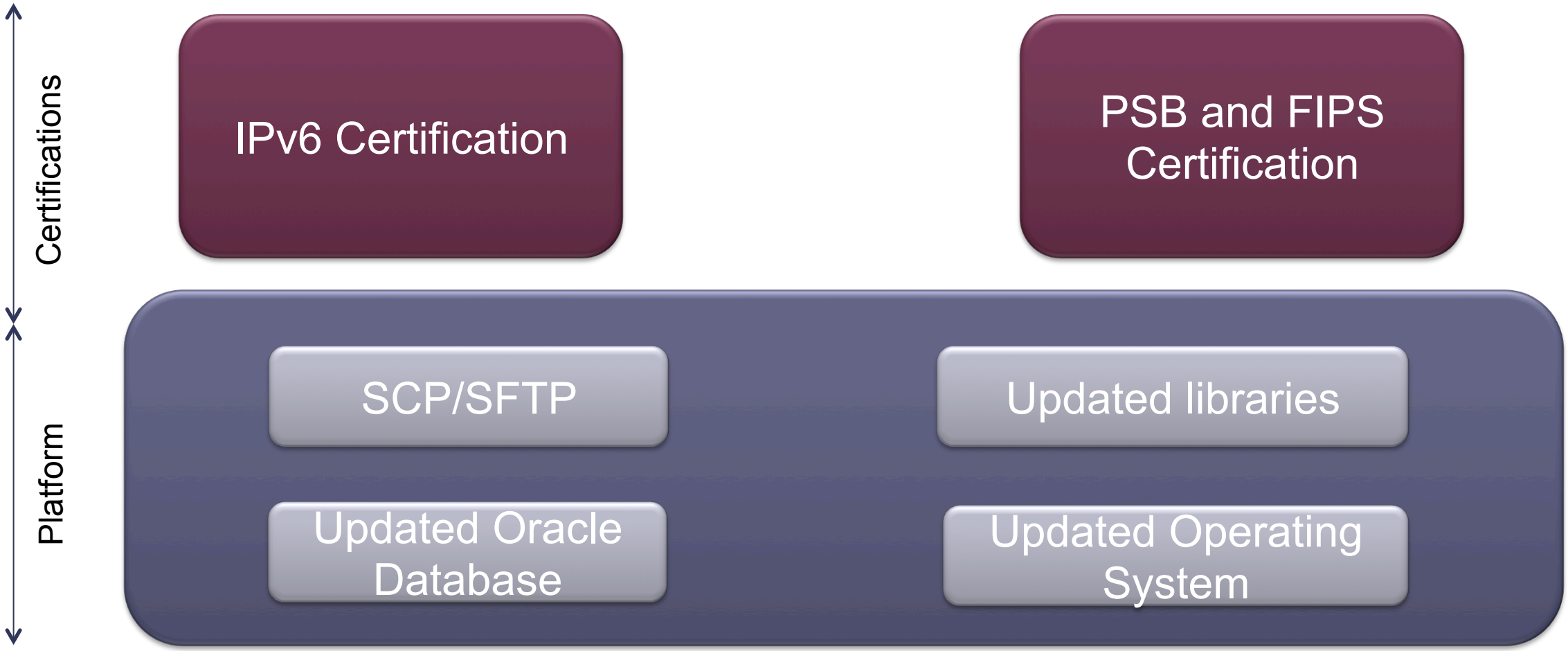


Single Pane Monitoring

- Unified Assets View
- Unified Alarms View
- Unified Clients views
- Consolidated Reports
- Consolidated Dashlets
- Consolidated Search

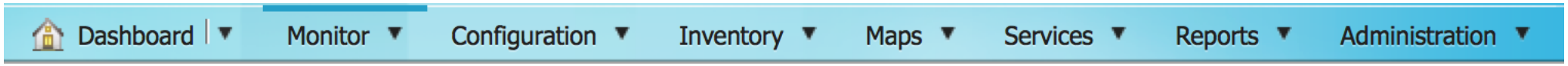
Platform Enhancements

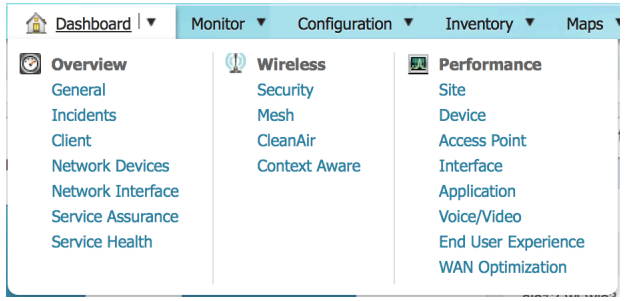
Management Platform Security Enhancements

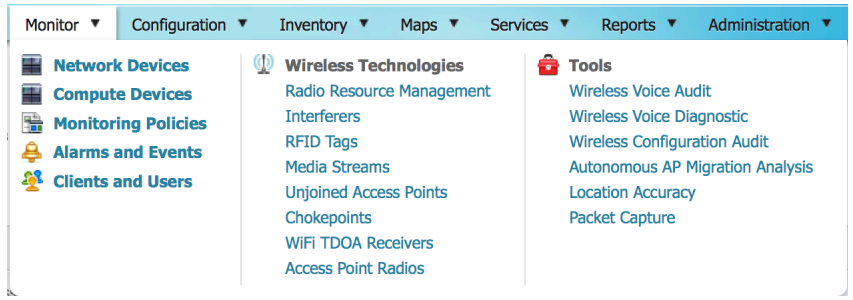


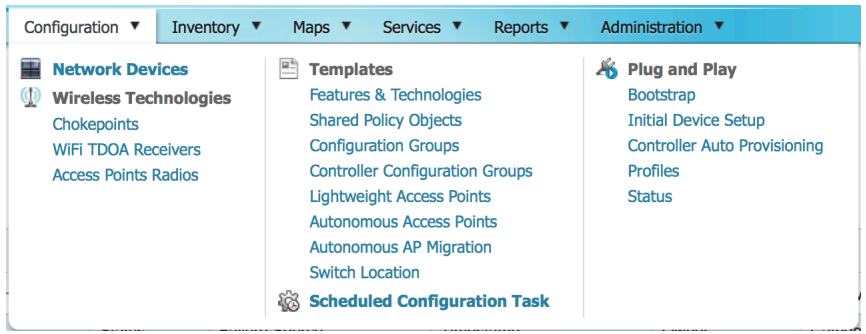
Converged Menu

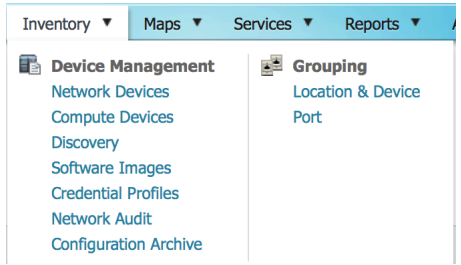
Single Menu for All Operational Tasks







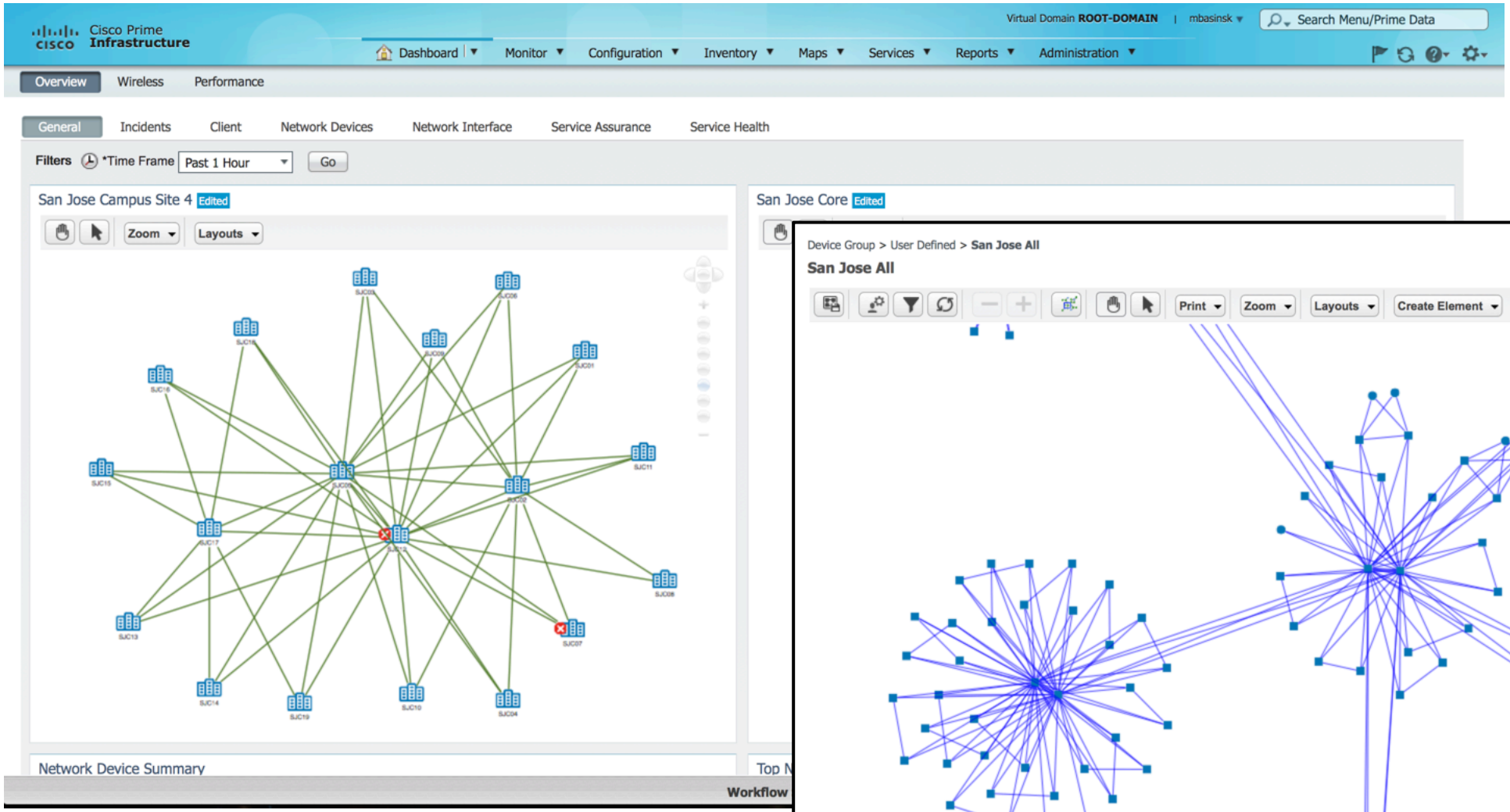


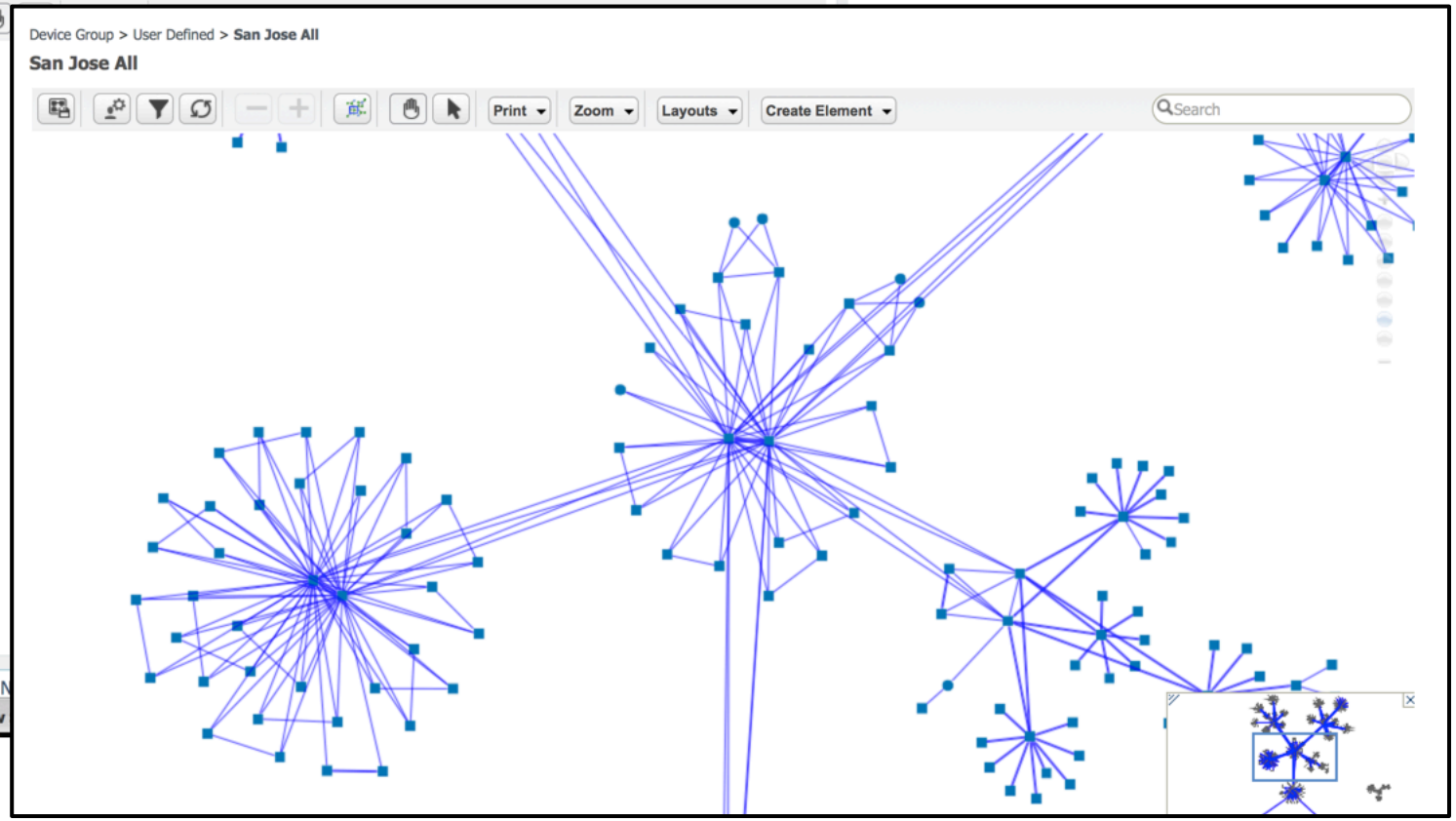


- Similar to Classic View
- Classic view is deprecated
- Maps and Topology at top level
- Device Work Center optimized

Network Topology Visualization

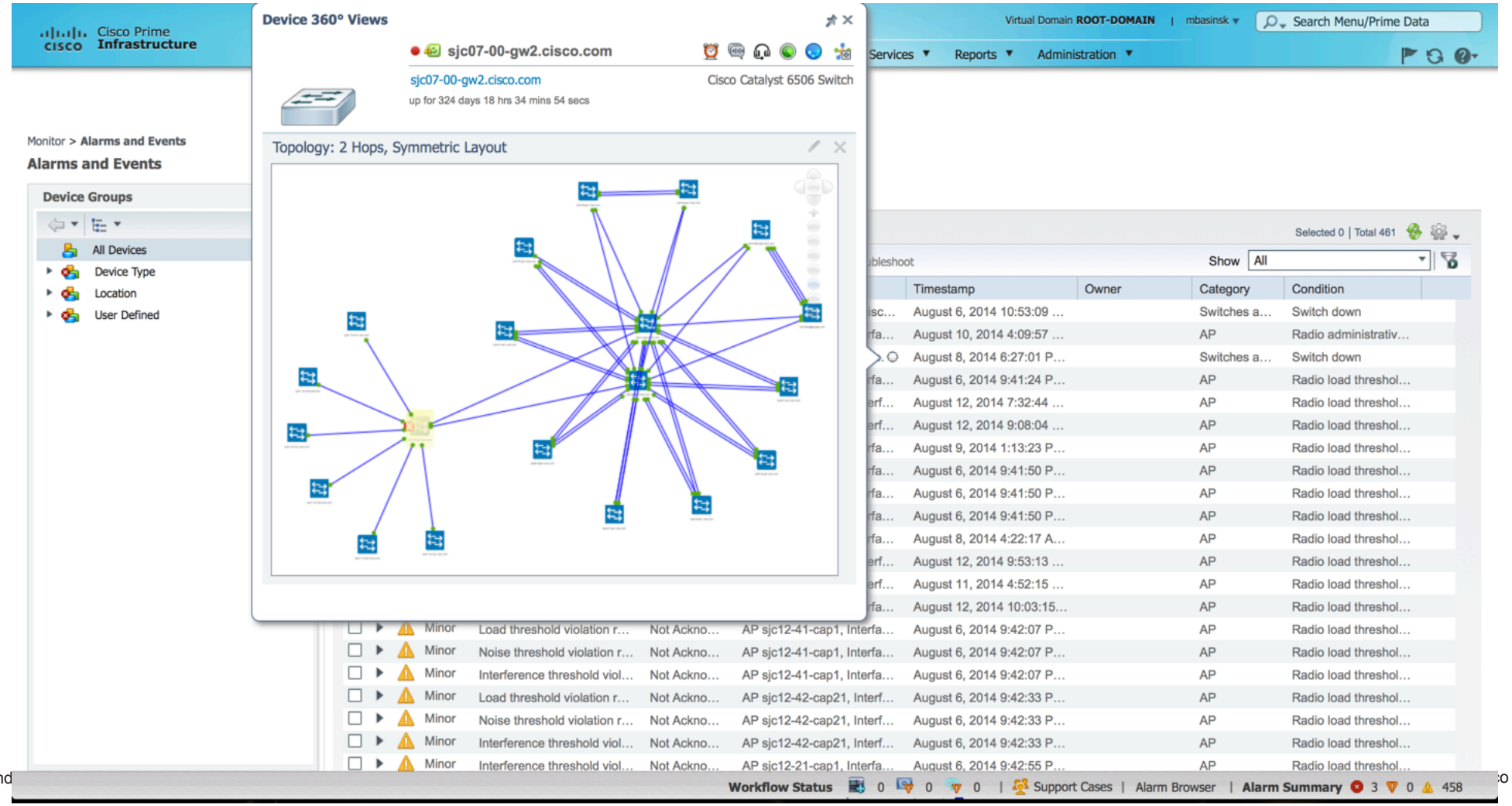
Device & Site Connectivity





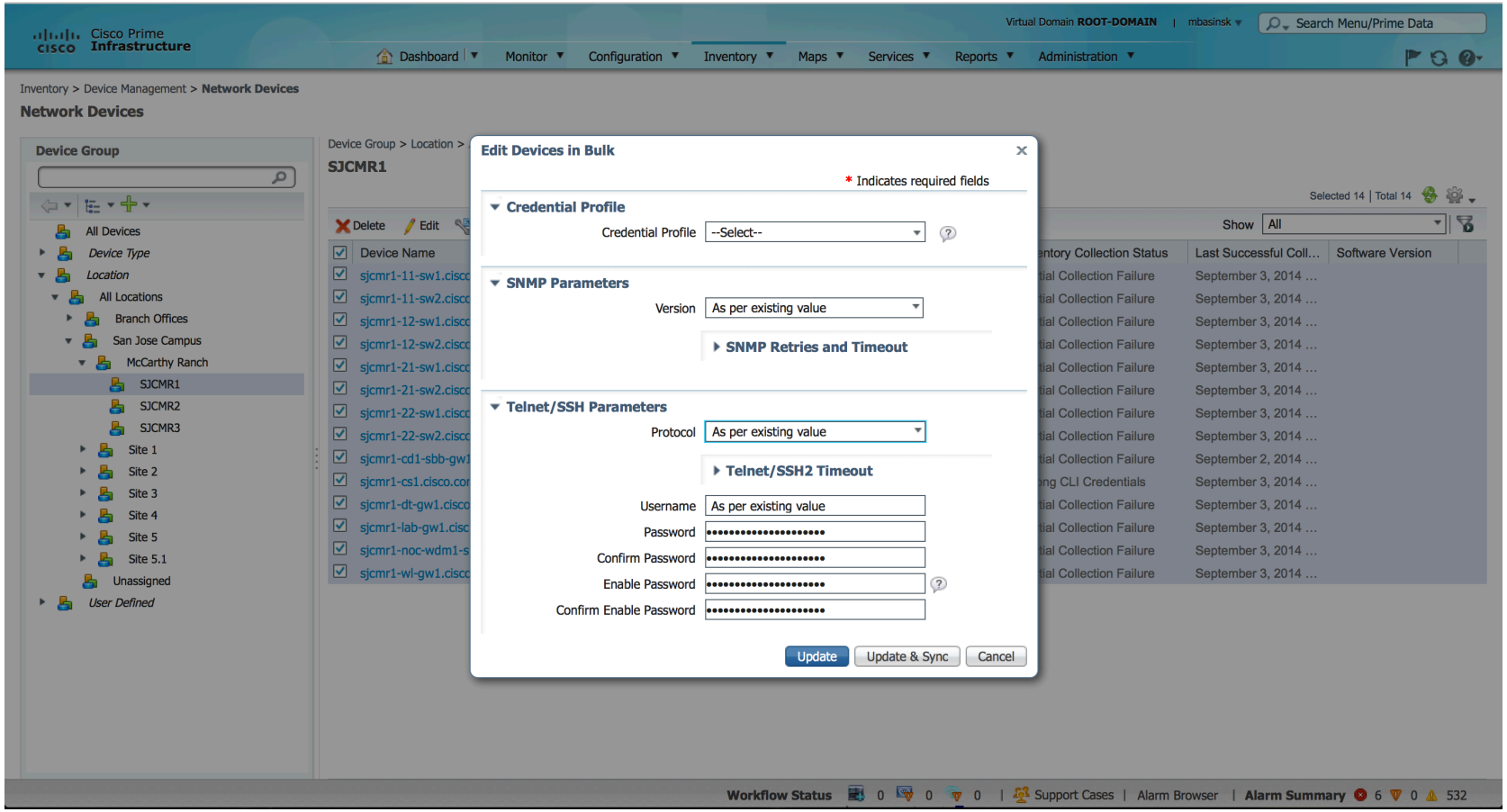
Network Topology Visualization

Device 360 Launch to Topology “N-Hop” Drill Down



Credential Profiles & Bulk Device Edit

Bulk credential & UDF management



Use Case:
SoX requirement- update device credentials, once every 6 months

Installation Simplified

- Removal of license "node lock”
- Simplified OVA install – One OVA file for all types of PI instances
- VMWare ESXi 5.5 support
- Virtual IP for High Availability
- New PI Appliance
- External Oracle Database (Post PI 2.2 via Tech Pack)

Additional Platform Features

- Flexible Grouping Hierarchy
- Management of network devices via IPv6
- Read Write REST APIs
  - Adding devices in bulk, managing wireless devices, provisioning WLANs
- Native IE browser support
  - No Chrome Plug-In needed
- Improvements in Job handling
  - Periodic jobs, copy run start option, stop/continue failure option, improved presentation of job results

Significant Architectural Improvements

Kauai (Nov 2014)

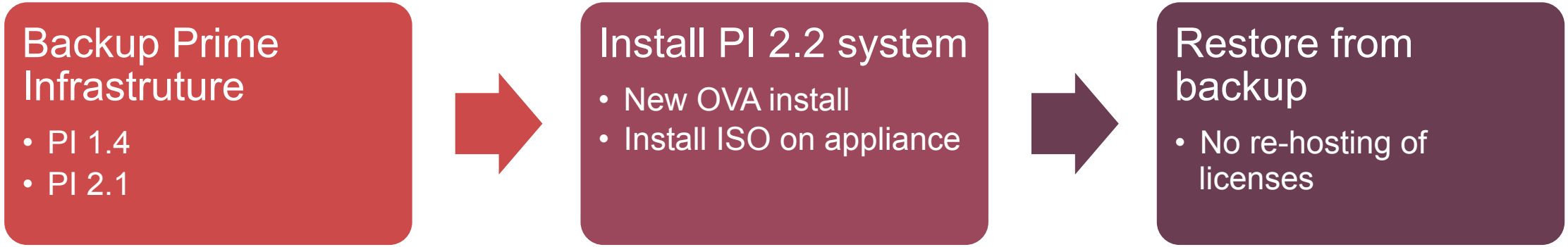
- Background tasks improvements:
  - AP discovery, MAPs
- New converged UI
- Operations Center
- Device and Technology support packs (non-wireless)
- Security (PSB and FIPS compliance)
- Fast Failover (<30 secs) for HA (available as Tech pack)
- External DB support (available as Tech pack)
- Maps zooming, performance and reliability improved with smarter caching and better concurrency control.

Nihau (Q2 CY15)

- New UI framework (Vudu)
- Technology Stack convergence (inventory, polling and scheduler)
- Optimize additional Background Tasks
- Client discovery via enriched traps
- Inline aggregation of performance data
- AP support via async device packs.
- Service discovery, correlation
- Multi-layer correlation and RCA
- SNMP timeout visibility and reporting
- Large SP T1 customer scale support

With the architectural improvements, the new UCS appliance or the flexible OVA, Prime Infrastructure will deliver to published scale.

Upgrade to 2.2



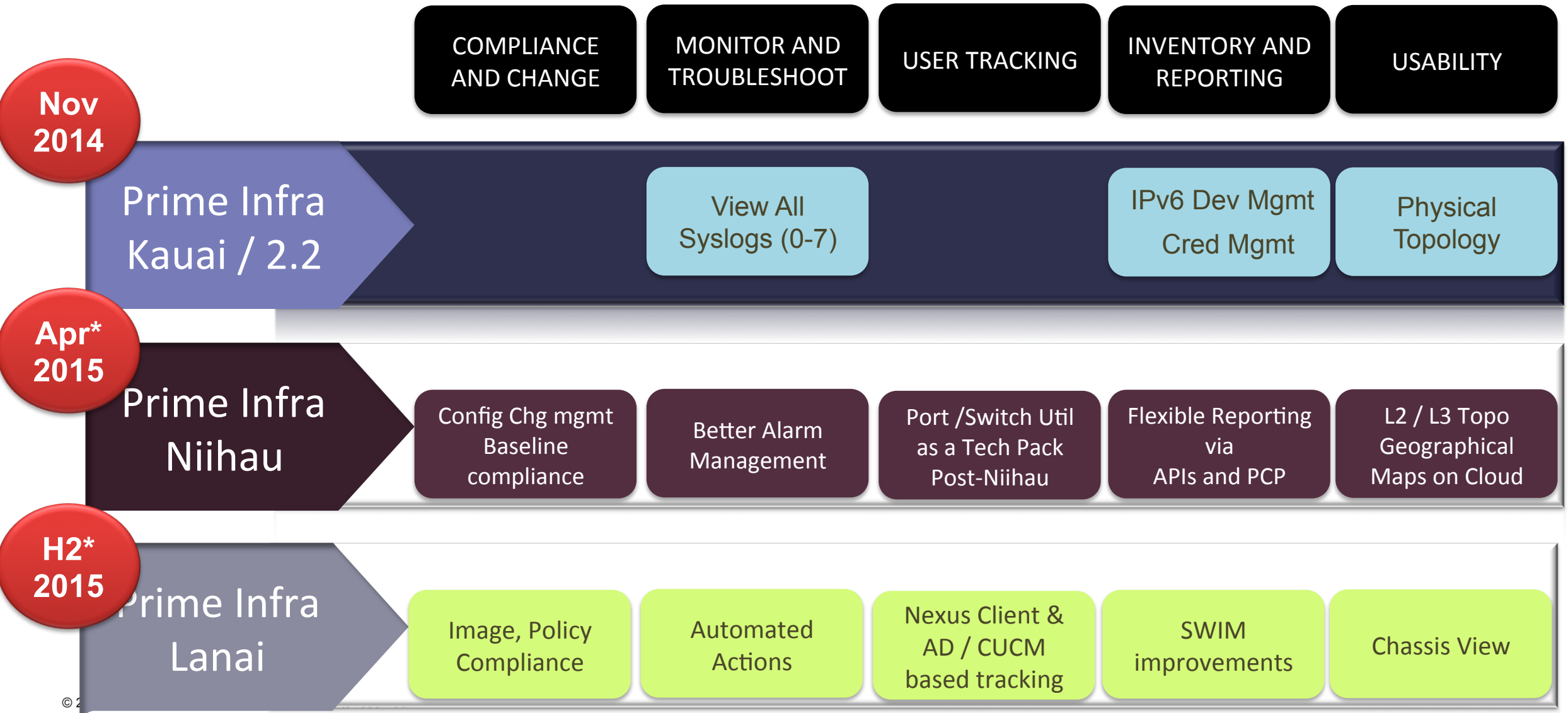
- No inline upgrade support to PI 2.2
- Recommended upgrade is through backup and restore
- No need for license re-hosting as VUDI check is removed

Why no inline upgrade:

Upgraded platform (OS)

Upgraded database

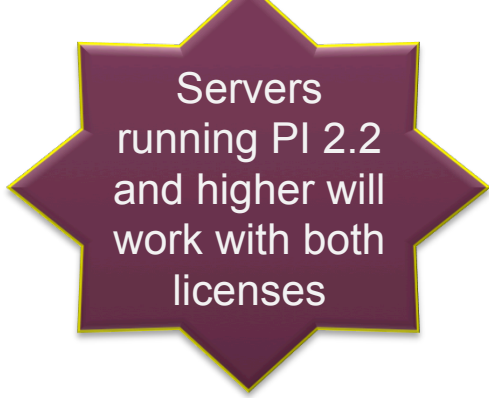
Continuing Push to LMS Transition



** Release not committed*

Licensing Update

No Node Lock Starting with 2.2



Node Lock is removed from PI Licenses starting with PI 2.2

Implications

- Two kinds of licenses will be issued
  - Licenses with Node lock (For backward compatibility w/ servers running PI 2.1 and lower versions)
  - Licenses without Node (For all servers PI 2.2 and higher)
- Removes the need for re-hosting
- Node lock removed licenses still will retain the following
  - Device count
  - Expiration dates (for evaluation or demo or NFR)

New UCS Appliance

Scale numbers estimates and will be revised after testing

PRIME-NCS-APL-K9
2.4 GHz, Intel E5620

1 RU, Dual Power sup., Hot swappable HDD

	ISO Image Avail Today	ISO Image Avail Mar 2015
CPU	8 Cores	10 Cores
MEM	16 GB	64 GB
HDD	4 x 300 GB	8 x 900GB
RAID	RAID 5	RAID 10

Gen1 Appliance Scale
5,000 Unif APs
3,000 Auton APs
500 WLCs
6,000 Switches + Rtrs
25 MSE
500 NAMs
10,000 Total Devices

Gen 2 Appliance Scale
10,000 Unif. APs
3,000 Auton APs
1,000 WLCs
10,000 Switches + Rtrs
25 MSE
1,000 NAMs
20,000 Total Devices

PI-UCS-APL-K9
UCSC-C220-M4S
2.30 GHz E5-2650 v3/105W 10C/ 25MB Cache/DDR4 2133MHz

1 RU, Dual Power sup., Hot swappable HDD

Physical Appliance FAQ

Current Prime Physical Appliance (Gen 1), PRIME-NCS-APL-K9

- Is four year old server platform and scheduled for EoS/EoL in Q1 CY2015
- **Yes, current PHY Appliance will support up to and including PI 2.2**

UCS based Physical Appliance (Gen 2), PI-UCS-APL-K9

- Scheduled to launch in Q1 CY2015 and orderability: Q1 CY2015
- Will support PI 2.2 or higher
- Will have a corresponding ISO image

**For scalability info please refer to Scalability Table*

EoL Preview

WCS

- Product Family AIRMGMU

NCS

- Product Family AIRNCS
- Gen 1 Appliance

Prime Infrastructure 1.x

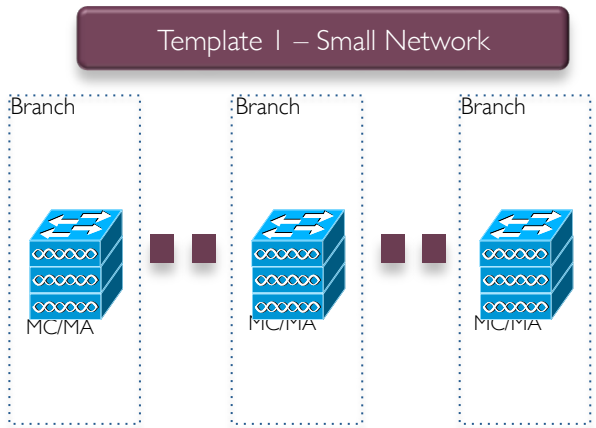
- 1.2.x
- 1.3.x
- 1.4.x
- Product Family INFRA

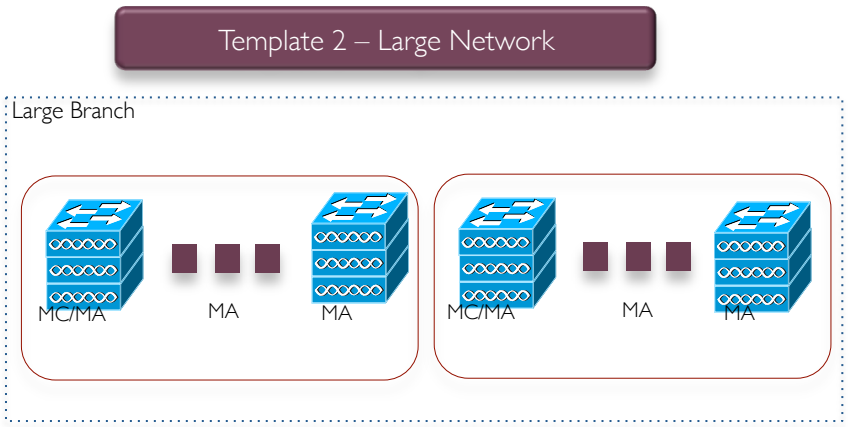
Simplifying Converged Access Deployment

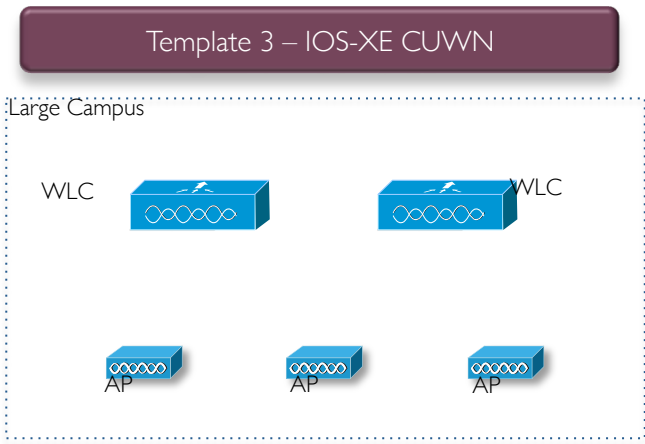
Simplified Converged Access Deployment

Tech Pack
Dec 2014

- Supports 3 deployment models based on best practice
- CVD based prescriptive templates that can be edited
- Full tested wireless configuration for converged access enabled in less than a minute
- Guided workflow for multi-site deployment

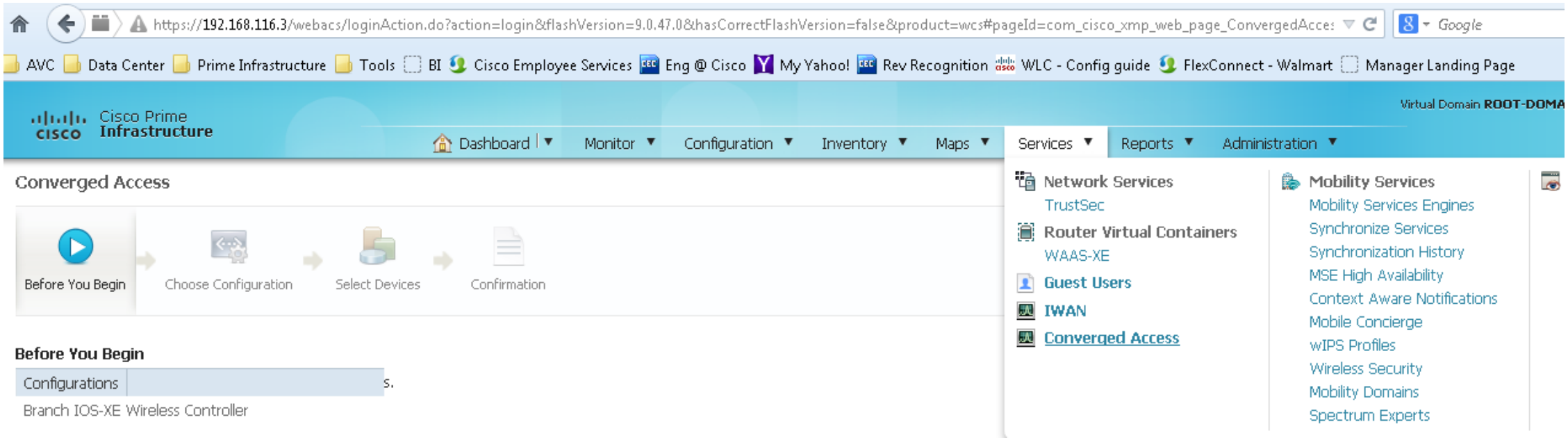






Select the CA Workflow from Services

Tech Pack
Dec 2014



Step 1: Select the CA Design Type

Tech Pack
Dec 2014

Converged Access

Before You Begin → Choose Configuration → Select Devices → IOS-XE Controller - Sma... → Confirmation

Choose Configuration

This allows you to choose the available configuration options.

Select Deployment Model: IOS-XE Controller - Small Network

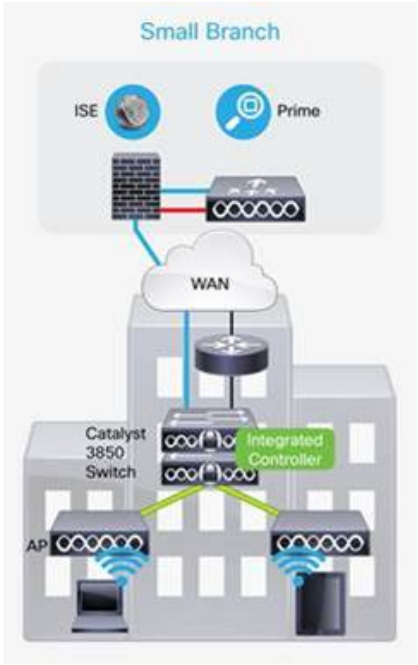
Small Branch Environment

This is normally a small site such as a satellite office or a chain store. There is typically no onsite IT support. Network reliability is critical because most network services and resources are located at the central headquarters. Any simplification and efficiency improvements at a single branch office can translate into significant savings for companies when multiplied by their large number of sites. Converged access for a small branch site can be implemented by a single stack of Cisco Catalyst 3850 switches to support local LAN and wireless needs. No dedicated WLC is needed.

Features: Advanced QoS, NetFlow, other services for wireless and wired traffic, Layer 3 visibility, and WAN efficiency.

Benefits: Management simplicity, good availability due to mobility agent/mobility controller redundancy within the Cisco Catalyst 3850 switch stack, optimized multicast, mobile device onboarding, BYOD and wireless continuity with either WAN outage or switch failure within the stack. These benefits are also shared with environments describe next.

Scalability: The Cisco Catalyst 3850 switch stack serves as wireless mobility agent and mobility controller to support up to 50 access points and 2000 wireless clients.

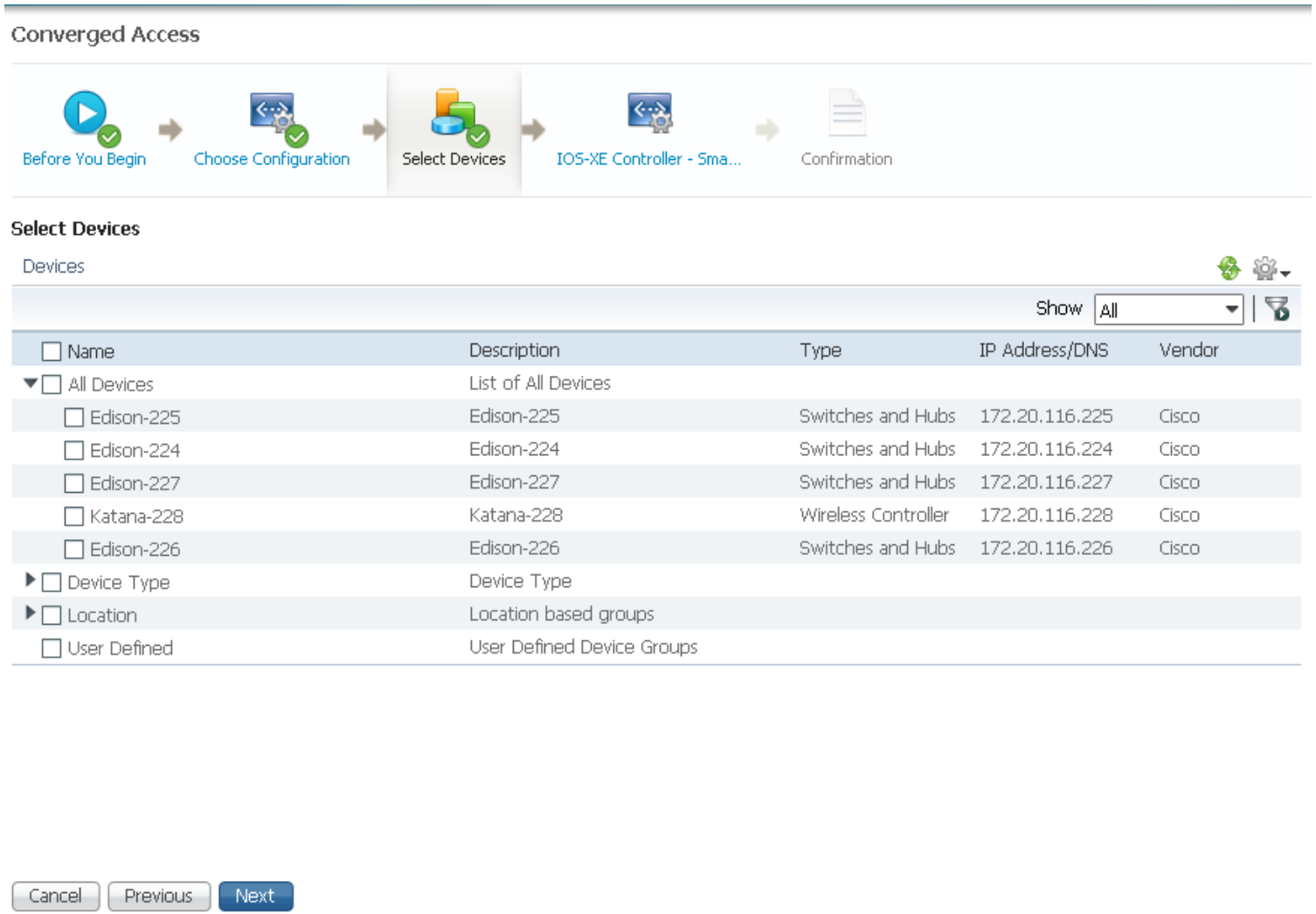


Provide design and topology for the design selection

Cancel | Previous | Next

Step 2: Select the devices

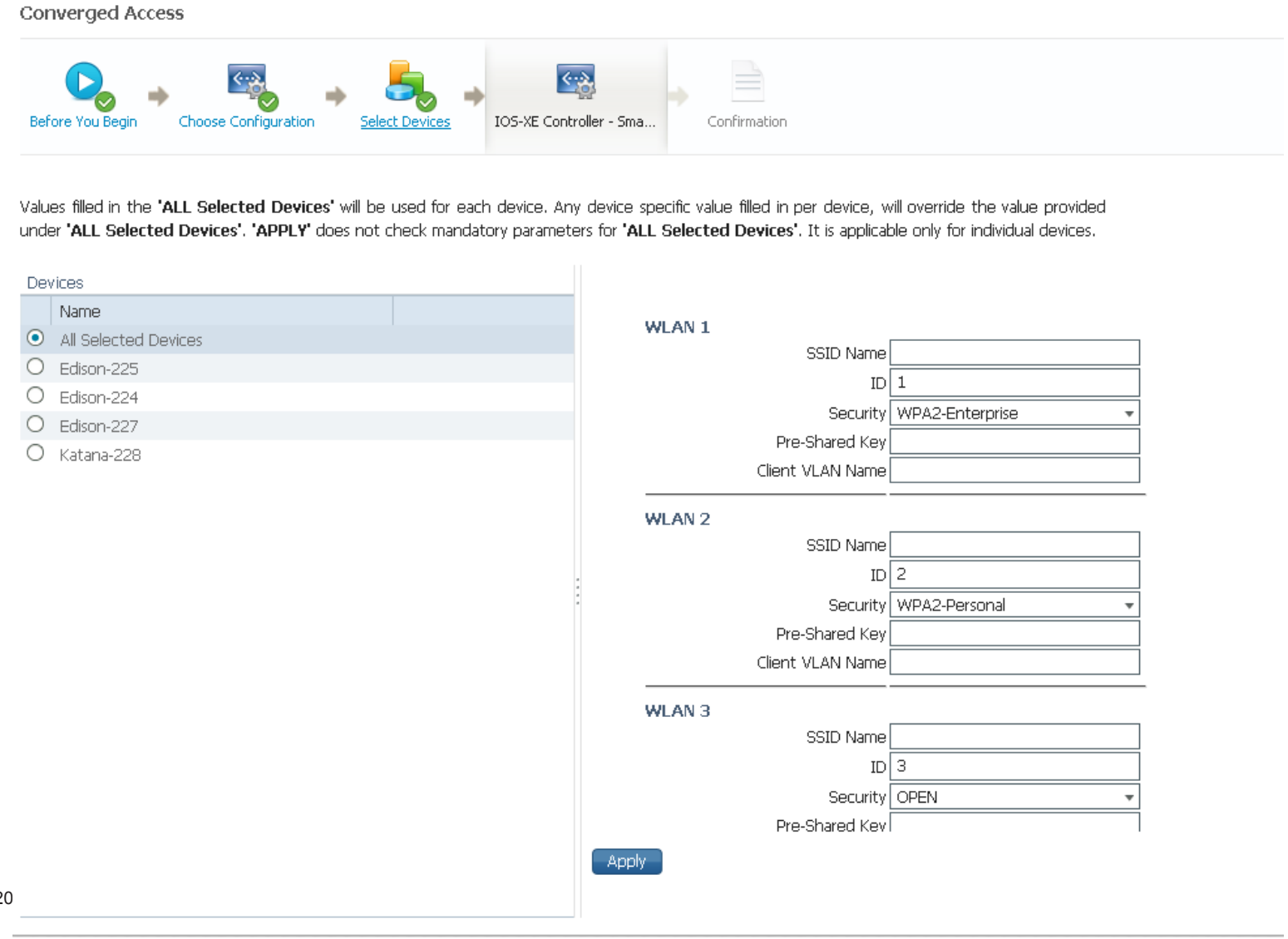
Tech Pack
Dec 2014



Select the list of devices to enable converged access and guest access

Step 3: Configure details for Converged access

Tech Pack
Dec 2014



- User Inputs
- SSID details
- Guest Network
- Security
- AVC configuration
- Wireless Management

Converged Access Deployed

WLAN : 4 SSID Support – WPA2-Ent/WPA2-Personal/Open/Guest-CWA, 802.11 AC, Captive Bypass-Portal, Fast SSID-Change etc.

Application Experience : Wireless Flexible Netflow, Application Visibility and Per-SSID BW allocation

Security : Radius, TACACS+, 802.1X, CWA, AAA-Override, Client Timeout, NAC, DHCP Snooping, ARP Inspection, Clear Password Encryption etc.

Wireless Best Practices : Band-Select, RRM, CleanAir, DCA Channel, Radius Timeout, WiFi Direct Policy etc

IWAN Management with Prime Infrastructure

IWAN Management with PI 2.2 Release

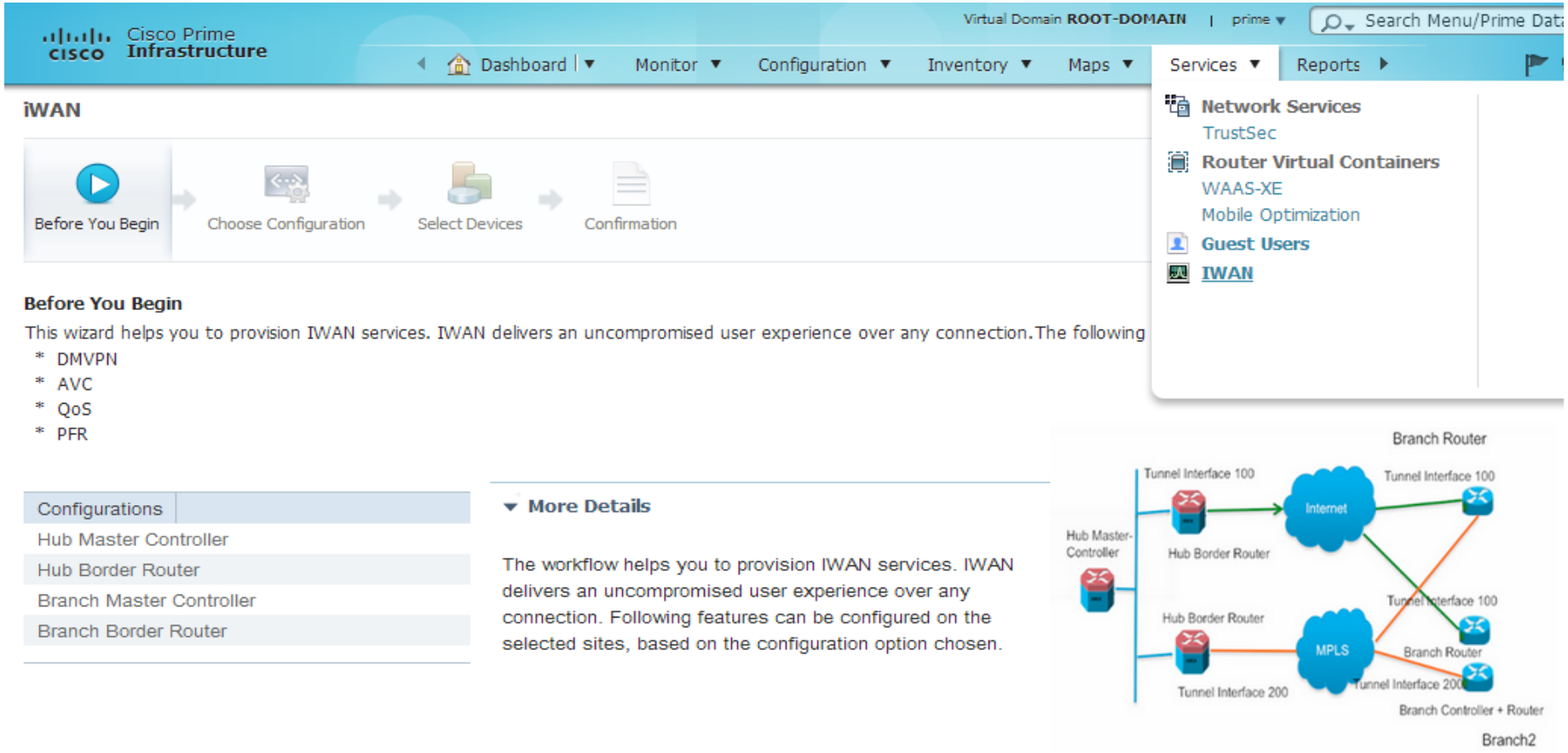
Configuration

- Workflow for IWAN Configuration for Hub/Spoke routers
  - Green-field and brown field deployments
  - Customize IWAN technology enablement
- AVC Work Center
  - Network assessment
  - NBAR Protocol Pack Management
  - Multi-device AVC configuration
  - Create and Manage custom application
- QoS Management
  - Best practices based design
  - Create/Modify/Delete
  - NBAR and DSCP based configuration support

Monitoring

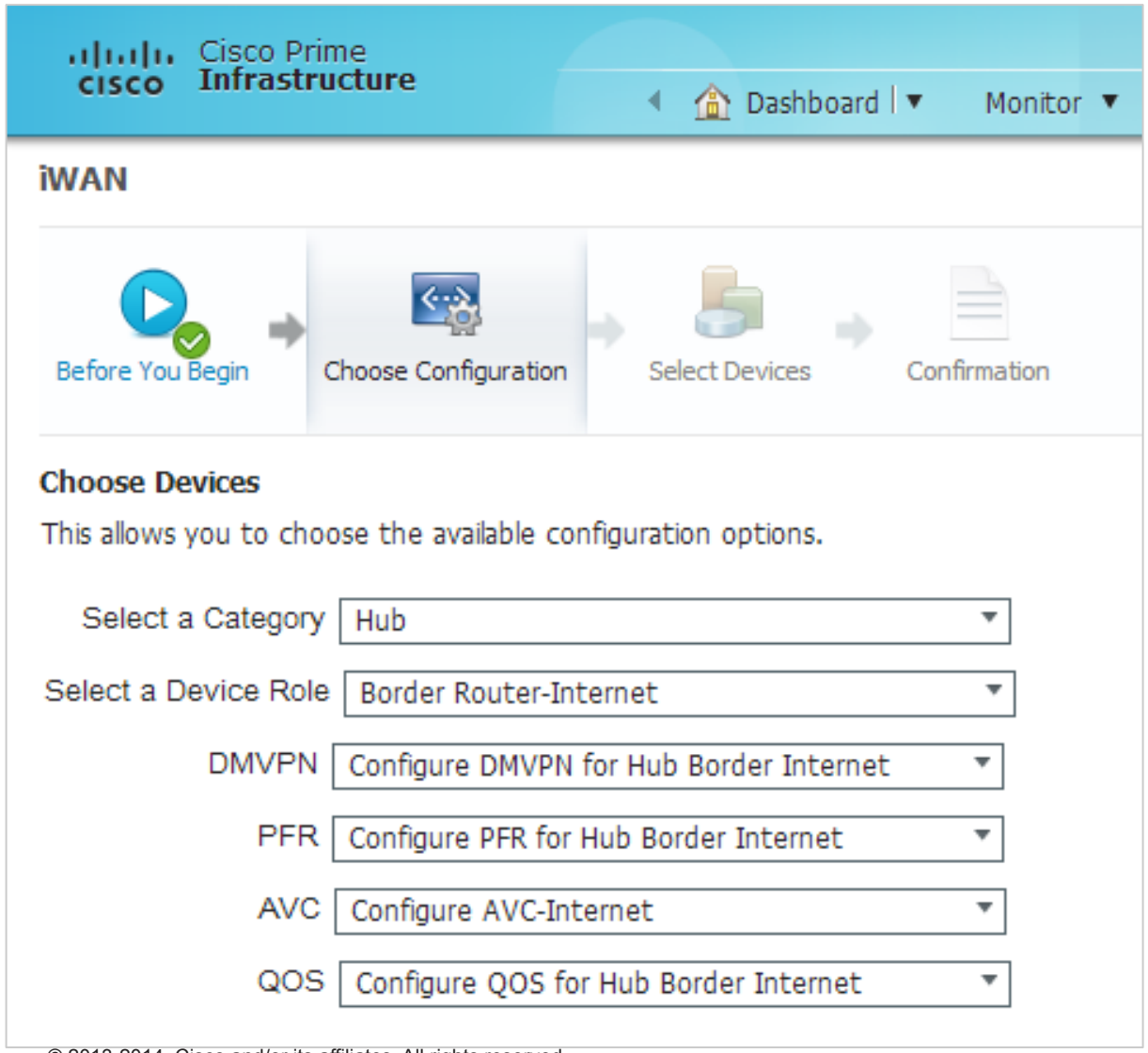
- Network performance (CPU/Memory/Interface)
- Network Application Health Dashboard
- Application visibility – NBAR, ART, Perfmon
- WAAS Performance Monitoring with NAM
- QoS performance and trending
- Perfmon based troubleshooting

Step 1: Start IWAN Workflow



Guided Workflow to help design and deploy IWAN on your branch or hub

Step 2: Role Selection



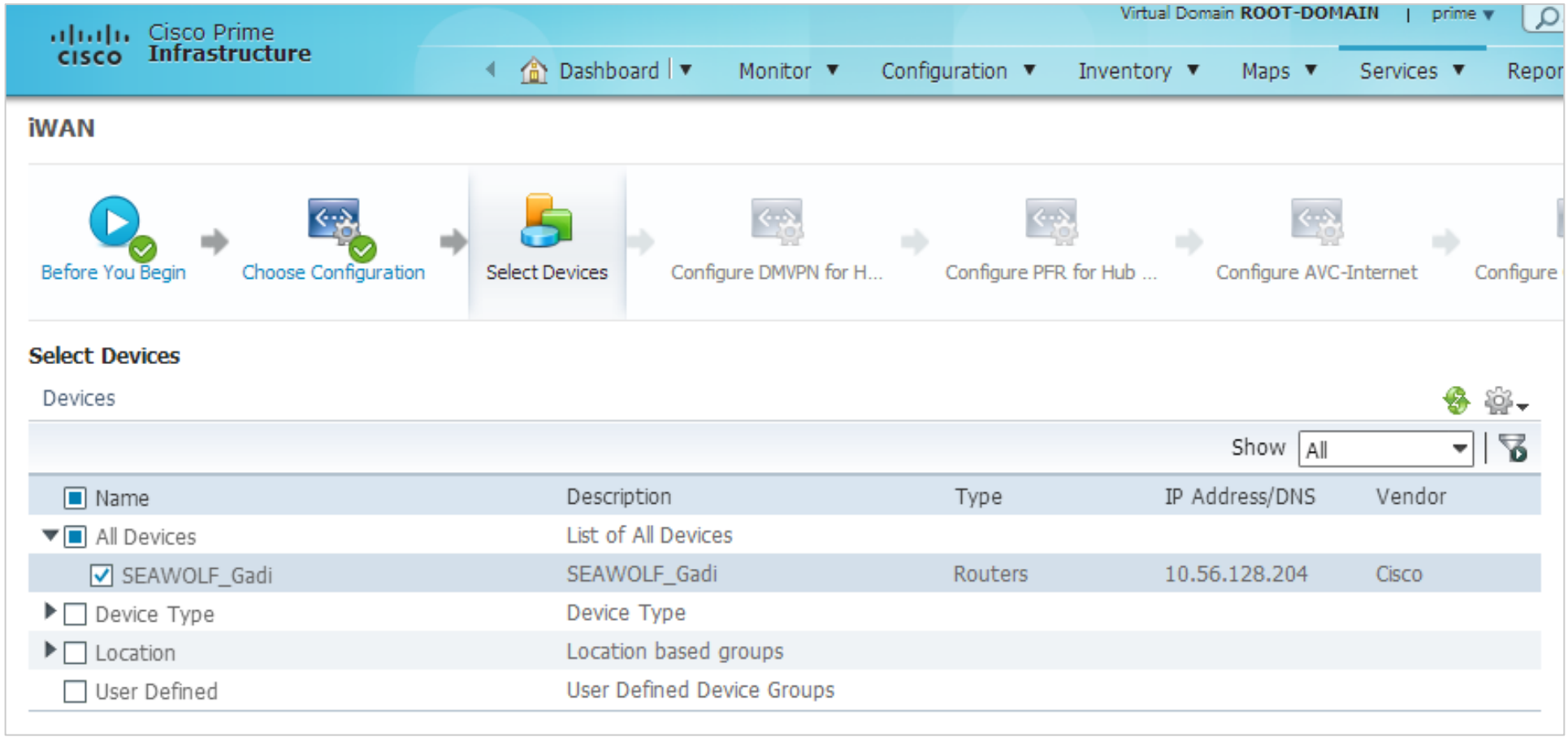
Select the PIN (hub or branch)

Identify the device role

Select the IWAN features to be configured:

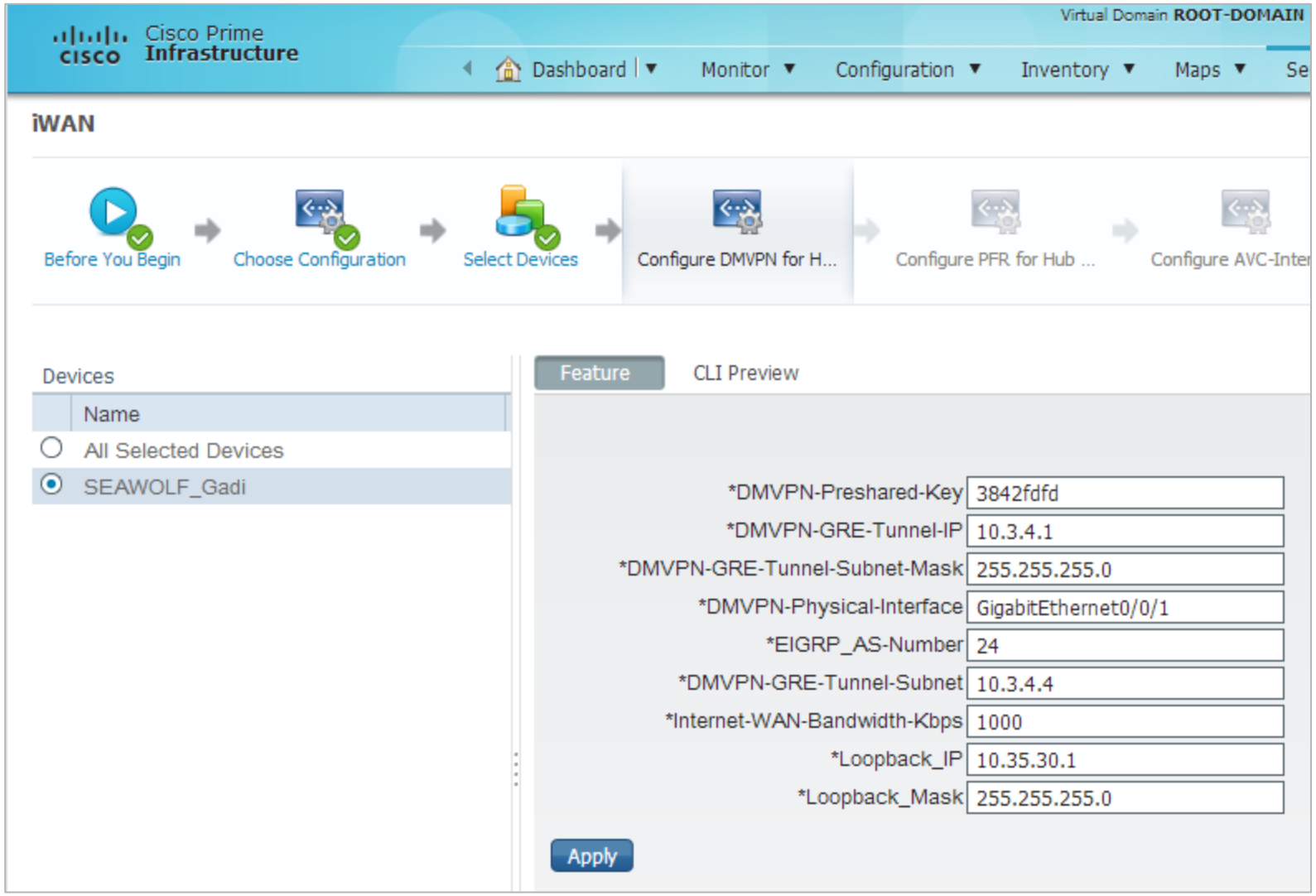
- DMVPN
- PFR
- AVC
- QOS

Step 3: Device Selection



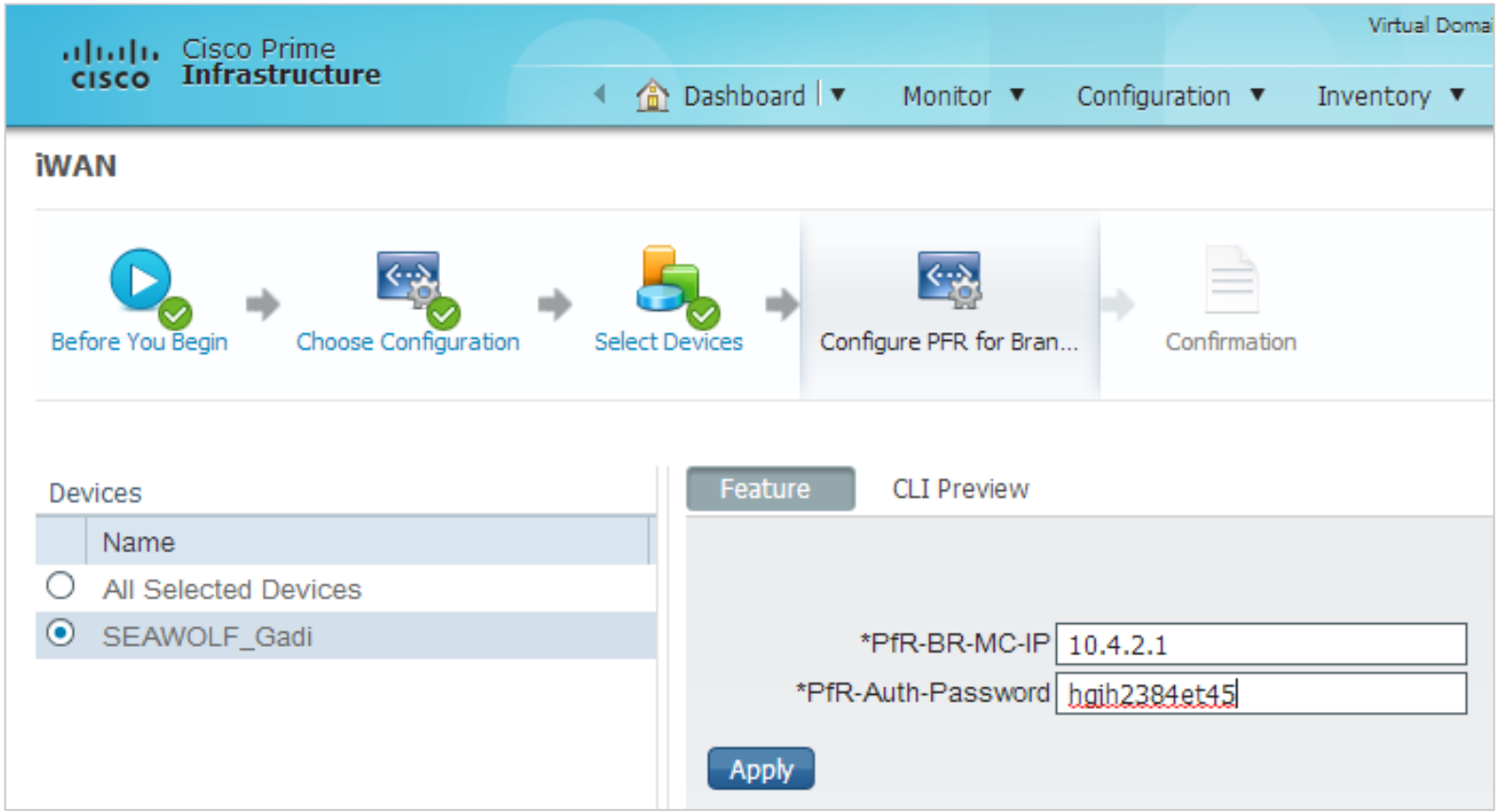
Select the devices
- Hub device
- Branch devices by location
- Enables configuration of more than one branch

Step 4: DMVPN Configuration



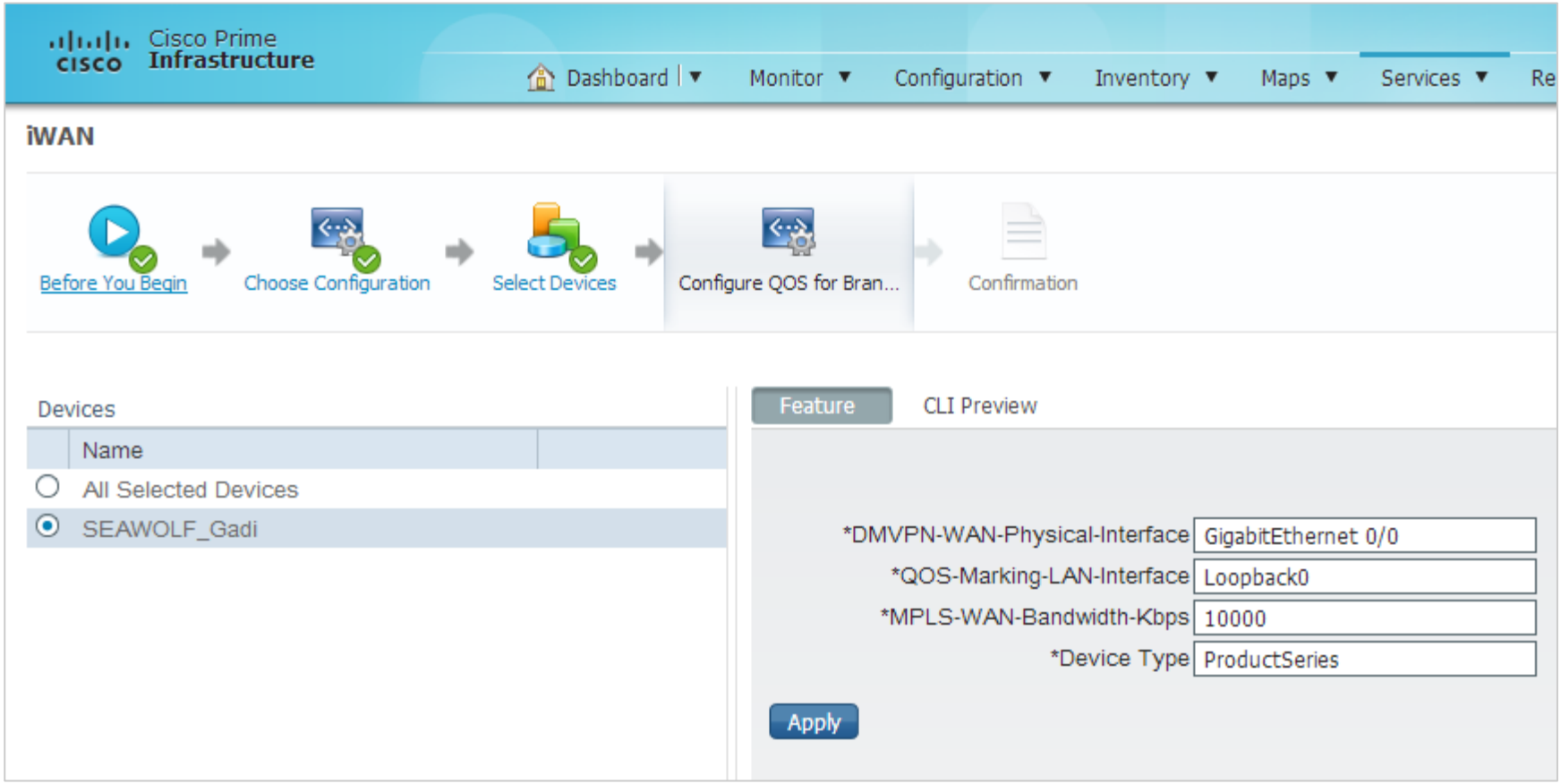
DMVPN Configuration
- Can be part of Hub or Spoke configuration

Step 5: PfR Configuration



PfR Configuration
- PfR Policy on Hub
- PfR at the spoke with reference to MC
- Out of the Box 3 class model

Step 6: Quality of Service Configuration



QoS Configuration

- On the hub (8 class model)
- On the spoke (8 class model)
- NBAR based classification and shaping

Prime Infrastructure – Nihau Release Plan

Prime Infrastructure – PI Niihau Release*

Platform	Wireless	Wired	Datacenter
Topology - Logical	CUWN - 8.1 – ATE, MS Lync	Complete IWAN support with APIC EM Integration	UCS Service Profiles
Alarm Flexibility	Rogue and Client Management	PfR Monitoring	Nexus - VXLAN
New User Interface	AVC for Flex, Policy based AVC	Converged Access deployment Workflows	UCS-C, UCS-E Performance
Configuration Compliance		Multi-NAM /vNAM deployment	

*Roadmap – not committed yet