# Cisco Nexus 7000 Series Network Analysis Module (NAM-NX1)
# An Overview

July, 2013

# Forward-Looking Statement

Many of the products and features described herein remain in varying stages of development and will be offered on a when-and-if-available basis.  This roadmap is subject to change at the sole discretion of  Cisco, and Cisco will have no liability for delay in the delivery or failure to deliver any of the products or features set forth in this document.

# Cisco NAM Value Proposition
## Integrated Network Traffic and Performance Analysis

Cisco Prime™ NAM delivers actionable visibility to optimize resources, troubleshoot performance issues, and support consistent end-user experience
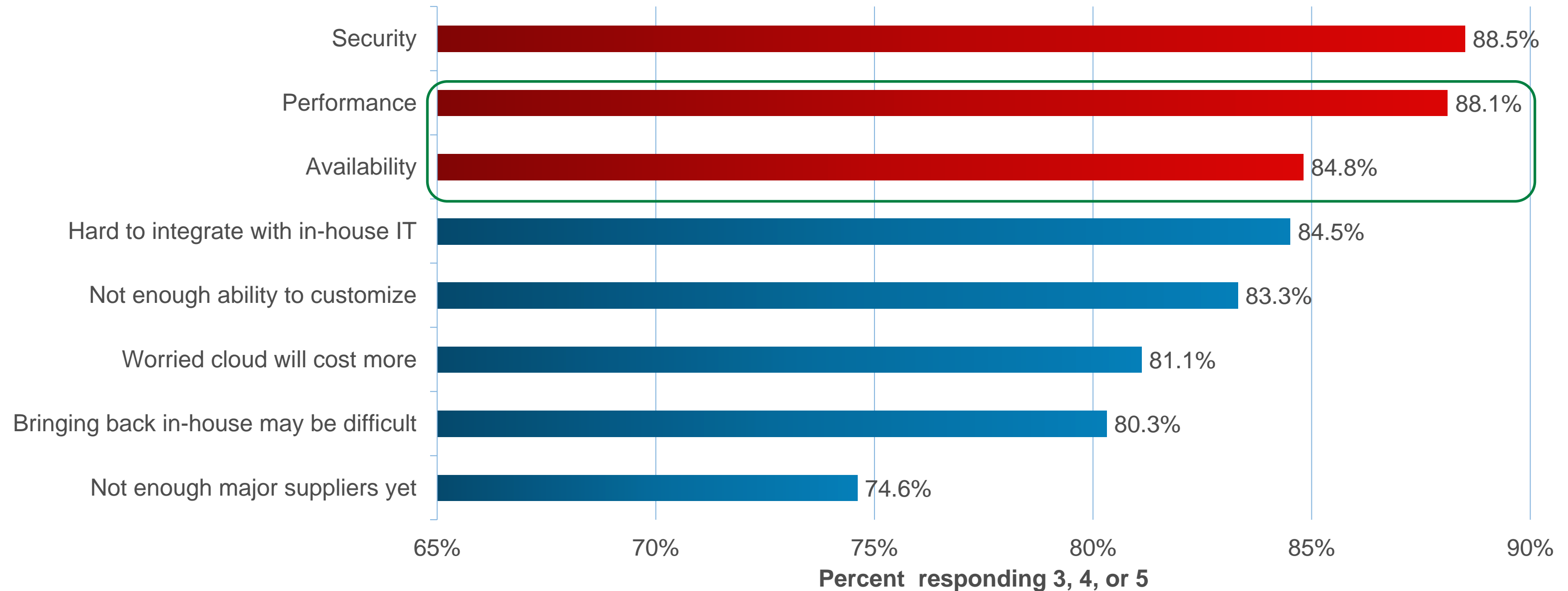


- Improves operational efficiency

- Provides consistent application and performance visibility across the network

- Reduces total cost of ownership

# Key Barrier to Entry for Cloud Services in Enterprises
## Performance and Availability Is Critical for Adoption

**Rate the challenges or issues of the cloud or on-demand model
(where 1 equals not significant and 5 equals very significant)**



| | Percent responding 3, 4, or 5 |
|---|---|
| Security | 88.5% |
| Performance | 88.1% |
| Availability | 84.8% |
| Hard to integrate with in-house IT | 84.5% |
| Not enough ability to customize | 83.3% |
| Worried cloud will cost more | 81.1% |
| Bringing back in-house may be difficult | 80.3% |
| Not enough major suppliers yet | 74.6% |

**Percent  responding 3, 4, or 5**

Source: IDC

# Building the Data Center Cloud
## Network as a Platform for Efficient Service Delivery

| DISTRIBUTED APPLICATIONS | WORKLOAD MOBILITY | BUSINESS AGILITY |
| --- | --- | --- |

## Service Delivery Requirements

- Improved application experience

- Optimized network resources

- Enhanced operational efficiency

Data Center Cloud
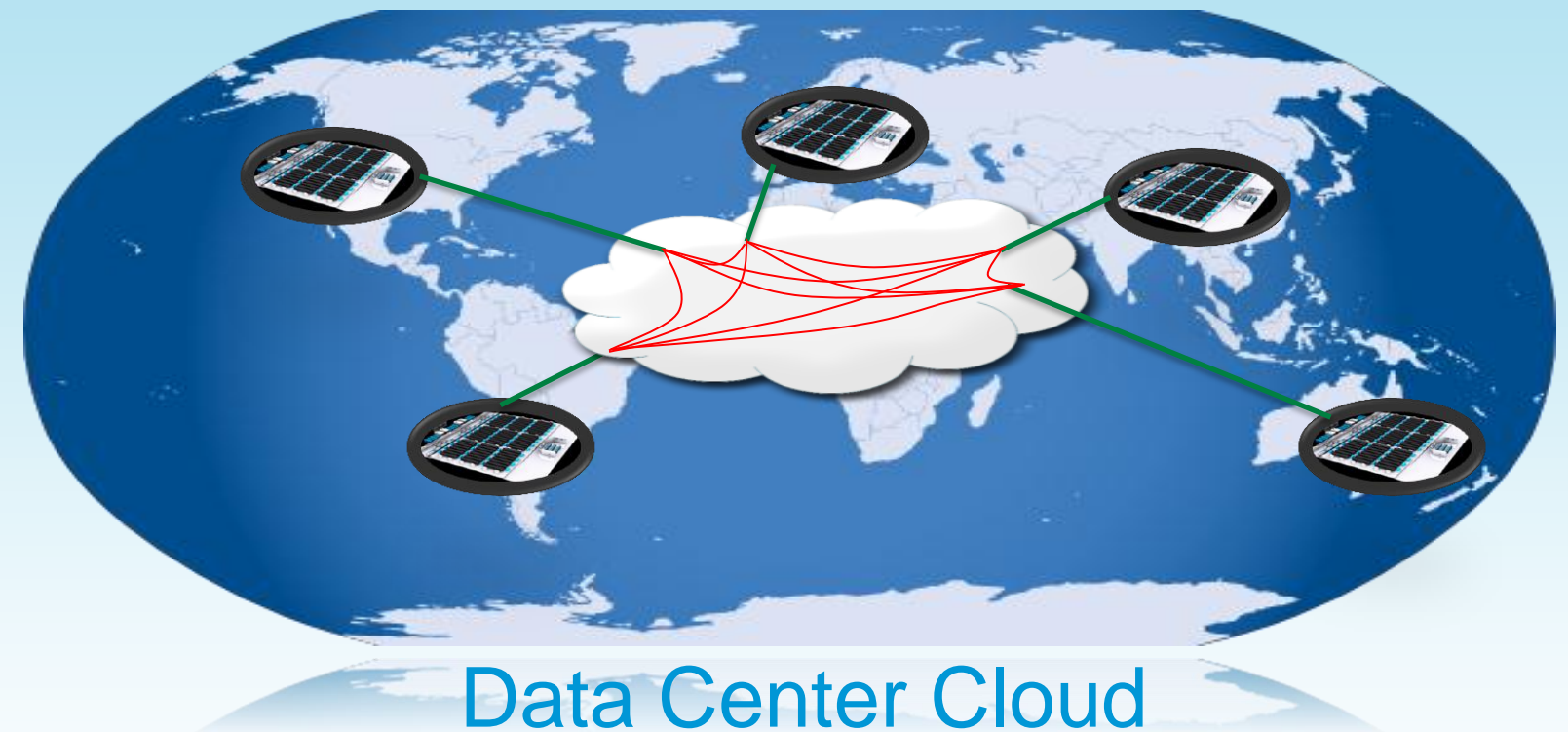
## Demands Application Awareness, Deeper Network Analytics, and Instrumentation Flexibility

# Application Intelligence in the Data Center

## Network Analysis Module (NAM) — First Integrated Services Module on Cisco Nexus® 7000

**AWARENESS**
Improved application performance

**ANALYTICS**
Optimized network resources

**PROGRAMMABILITY**
Enhanced operational efficiency

**Performance Analytics** | Business applications, voice, video

**Network Intelligence** | OTV, LISP, TrustSec®, VXLAN

Cisco ONE Controller

**Programmability** | Traffic steering, path setup, traffic engineering

Network Analysis Module

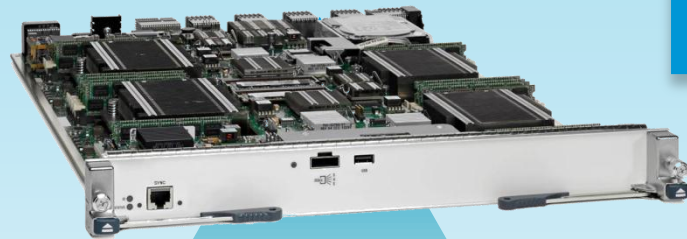Application Awareness

Cisco Unified Fabric

**Application Services**

# Increase Visibility and Control

# Introducing Cisco Nexus 7000 Series NAM
## Integrated Application Intelligence and Deeper Network Visibility

**NAM-NX1**

Cisco Nexus® 7000 Series Switches

| | |
|---|---|
| APPLICATION VISIBILITY | Deep application-awareness and characterization |
| PERFORMANCE ANALYTICS | Application Response Time, MOS, Jitter |
| NETWORK INTELLIGENCE | OTV, TrustSec®, VXLAN, CAPWAP |
| PRECISION PACKET TIMESTAMPS | Based on PTP, 1588 time synchronization |
| EXTENDED CAPTURE STORAGE | Choices across Mini-SAS or iSCSI |

# Visibility and Control for Improved Customer Services

"We've seen a large return on our investment in Cisco Prime NAM by reducing system downtime and greatly streamlining IT administration. With thousands of connections to servers, we rely upon NAM to help keep vital network and customer services at maximum performance and availability.   As we will be deploying Cisco Nexus 7000 Switches in our data centers, we are pleased that NAM will also be available as a services module for that platform."

**Ron van Vliet, IT Specialist, DC LAN, Wireless, VPN**

# Characterize Performance of Business-Critical Applications
## Improve End-User Experience and Isolate the Cause of Degradation



**Transaction Analysis**

Data transfer time
Server response time
Network time

**Clients**

**Client Network**

Request

WAN

Response

New York

**Network Analysis Module**

Cisco® Unified Fabric

**Application Servers**

Pie chart labels: telepresence-media, cifs, skype, pcoip, rdp, sqlserver, shockwave, Call-Signaling, itunes, oracle-bi, citrix
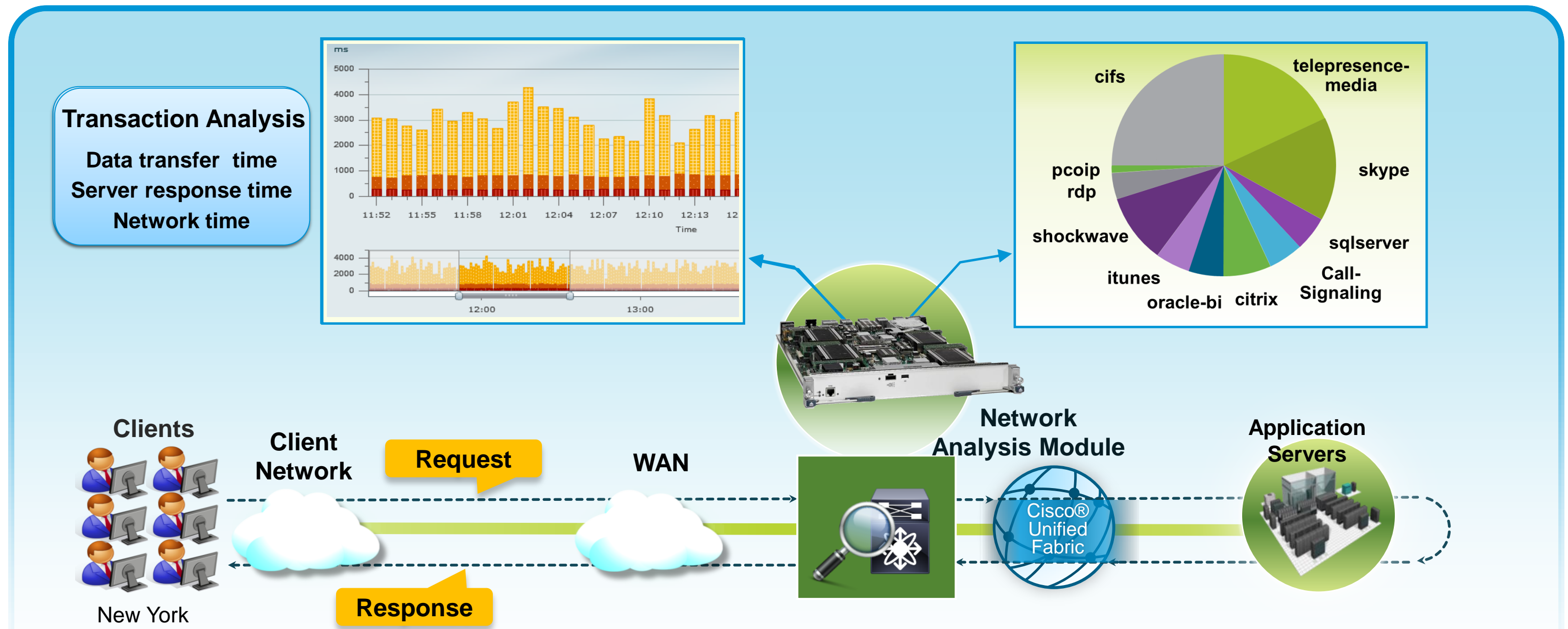
# Enhance Application Performance Levels

# Connecting Virtualized Data Centers
## Unleash the Benefits of Overlay Transport Virtualization (OTV) for Long-Distance Stretched VLANs



Network Analysis Module

OTV

Workload Mobility

LAN Extension – OTV, VPLS

Network Analysis Module

OTV

OTV

**Deeper Network Visibility**

- Profile the traffic for OTV-based VLAN extensions
- Assess the impact of workload mobility in the network and end-user experience
- Troubleshoot performance issues
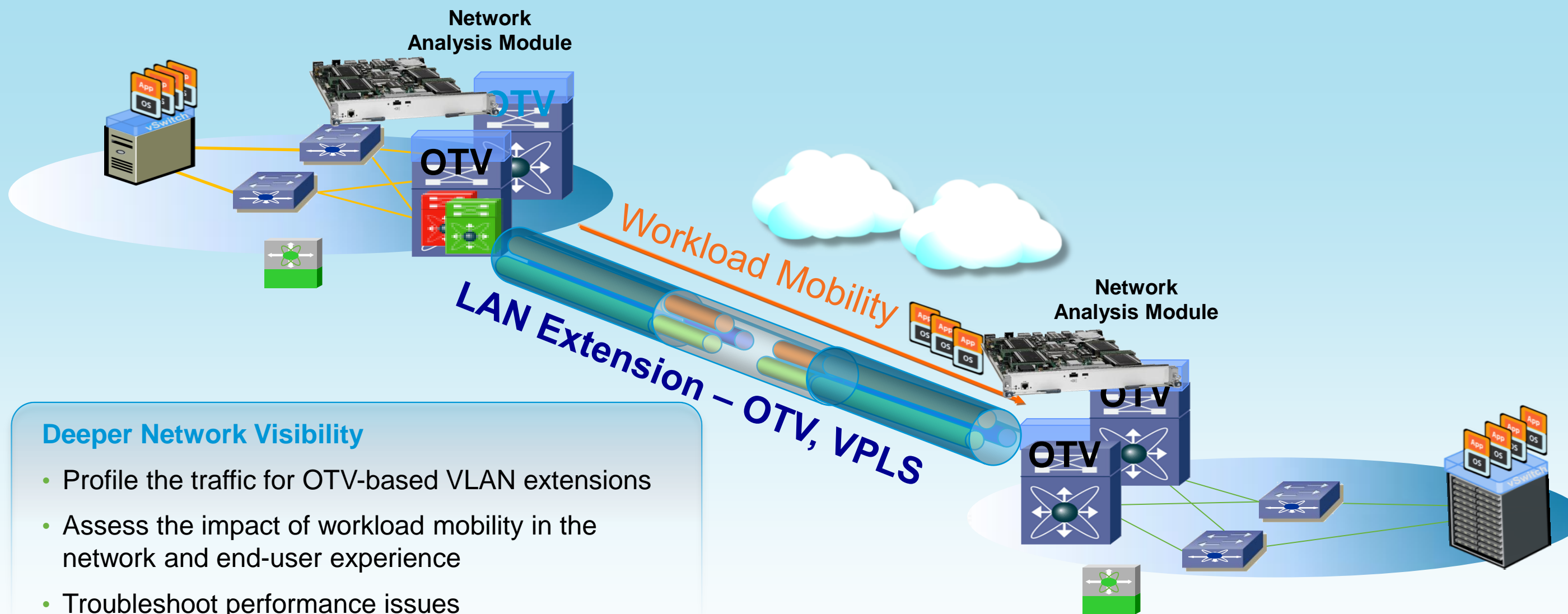
# Manage Workload Mobility

# Validate Compliance to Cisco TrustSec Policy
## NAM Delivers Traffic Visibility by Security Group Tags (SGTs)

I'm a contractor
My group is HR

SGT = 100

Contractor & HR
SGT = 100

Network Analysis
Module

Finance (SGT=4)

802.1X/MAB/Web Auth

HR (SGT=10)

STOP

SGACL
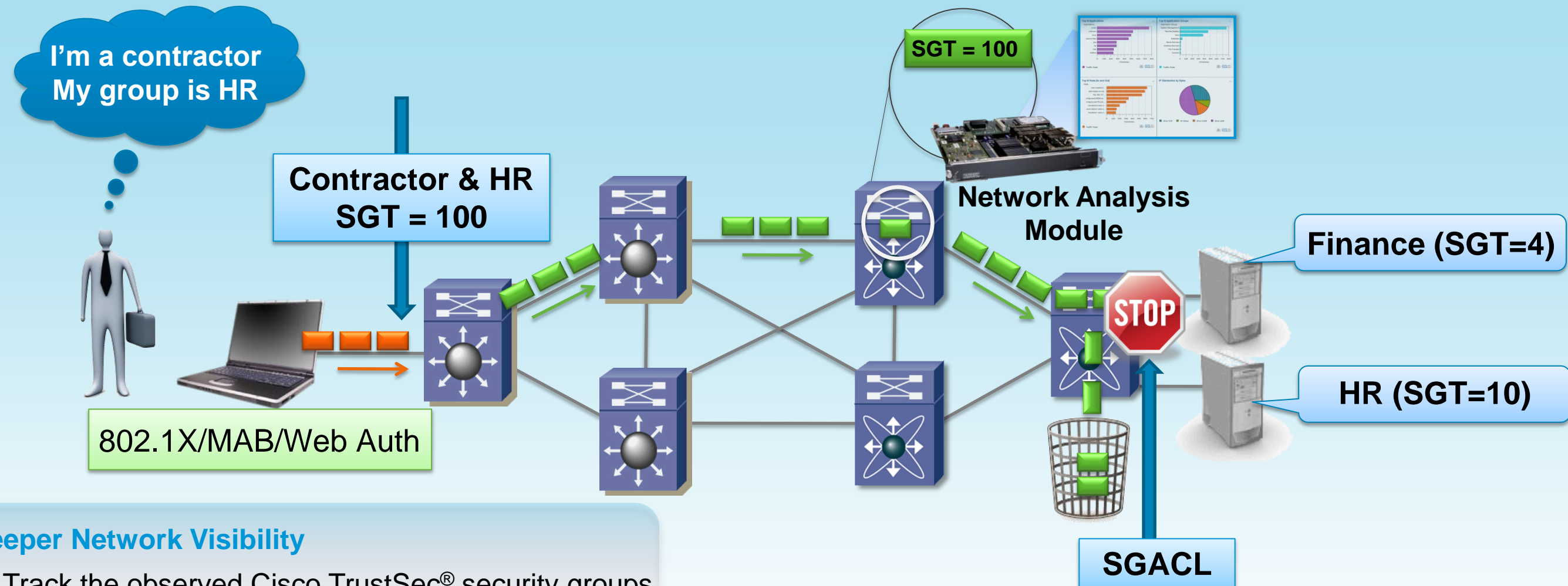
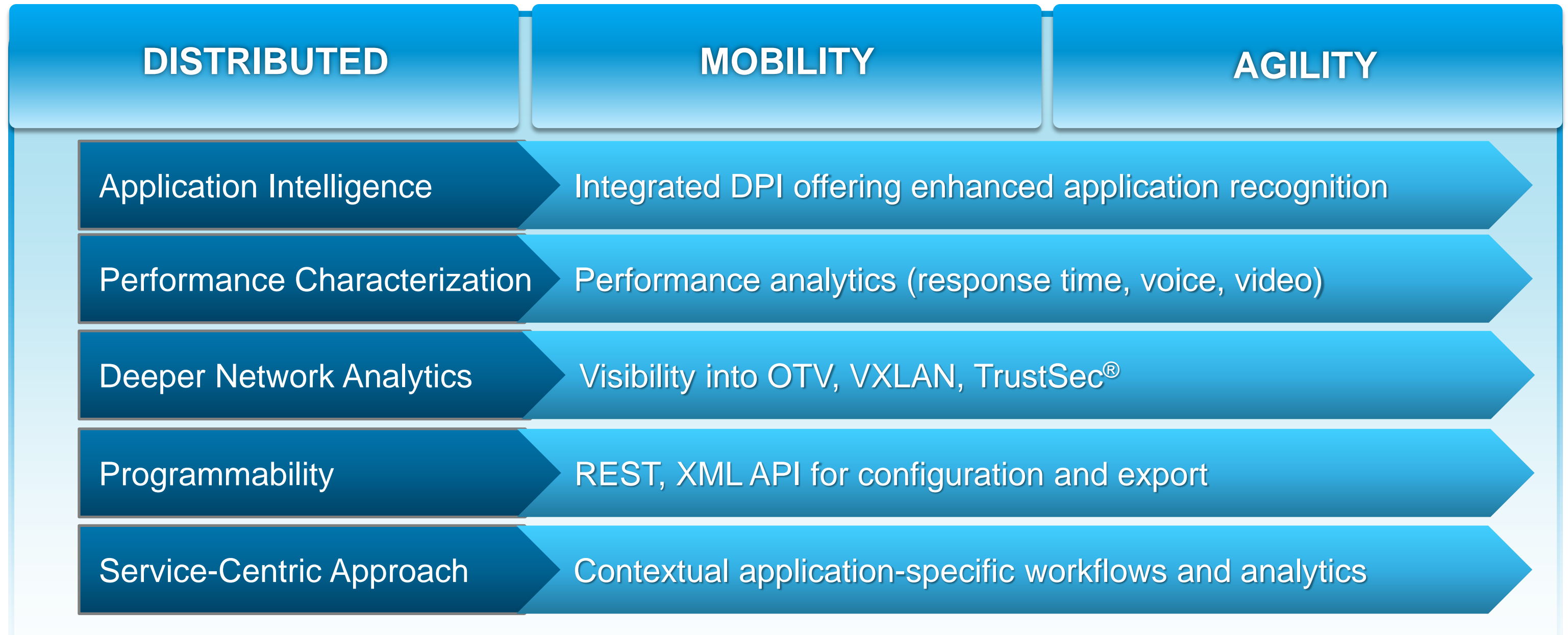**Deeper Network Visibility**

- Track the observed Cisco TrustSec® security groups
- Evaluate the endpoints, hosts, applications, and conversations in one or more security group

# Reinforce Network Security

# Simplifying Data Center Operations
## NAM Delivers Application Intelligence, Network Analytics, and Instrumentation Flexibility

| DISTRIBUTED | MOBILITY | AGILITY |
| --- | --- | --- |
| Application Intelligence | Integrated DPI offering enhanced application recognition | |
| Performance Characterization | Performance analytics (response time, voice, video) | |
| Deeper Network Analytics | Visibility into OTV, VXLAN, TrustSec® | |
| Programmability | REST, XML API for configuration and export | |
| Service-Centric Approach | Contextual application-specific workflows and analytics | |

## Realize the Benefits of Cloud

# Advantages of an Integrated Service Module
## Transform the Fabric into a Service Delivery Platform

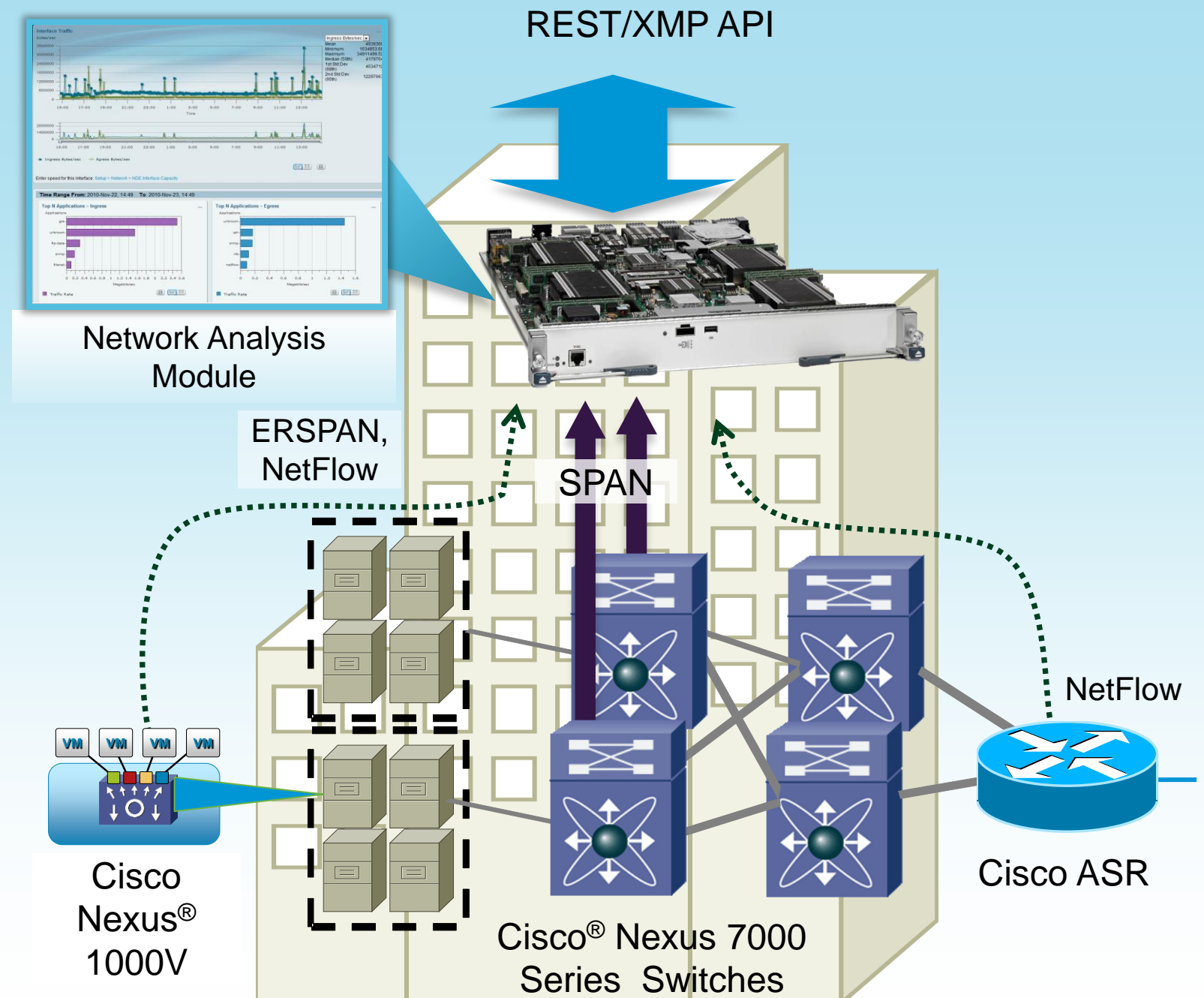**Embedded Application Intelligence**

- Rich application performance analytics
- Built-in analytics dashboards

**Deeper Network Analytics**

- Efficiency through backplane integration
- Deeper network analytics (OTV, VXLAN)
- Operational continuity across physical and virtual environment

**Reduced Total Cost of Ownership**

- Reduced network footprint, no external connectors, improved power management
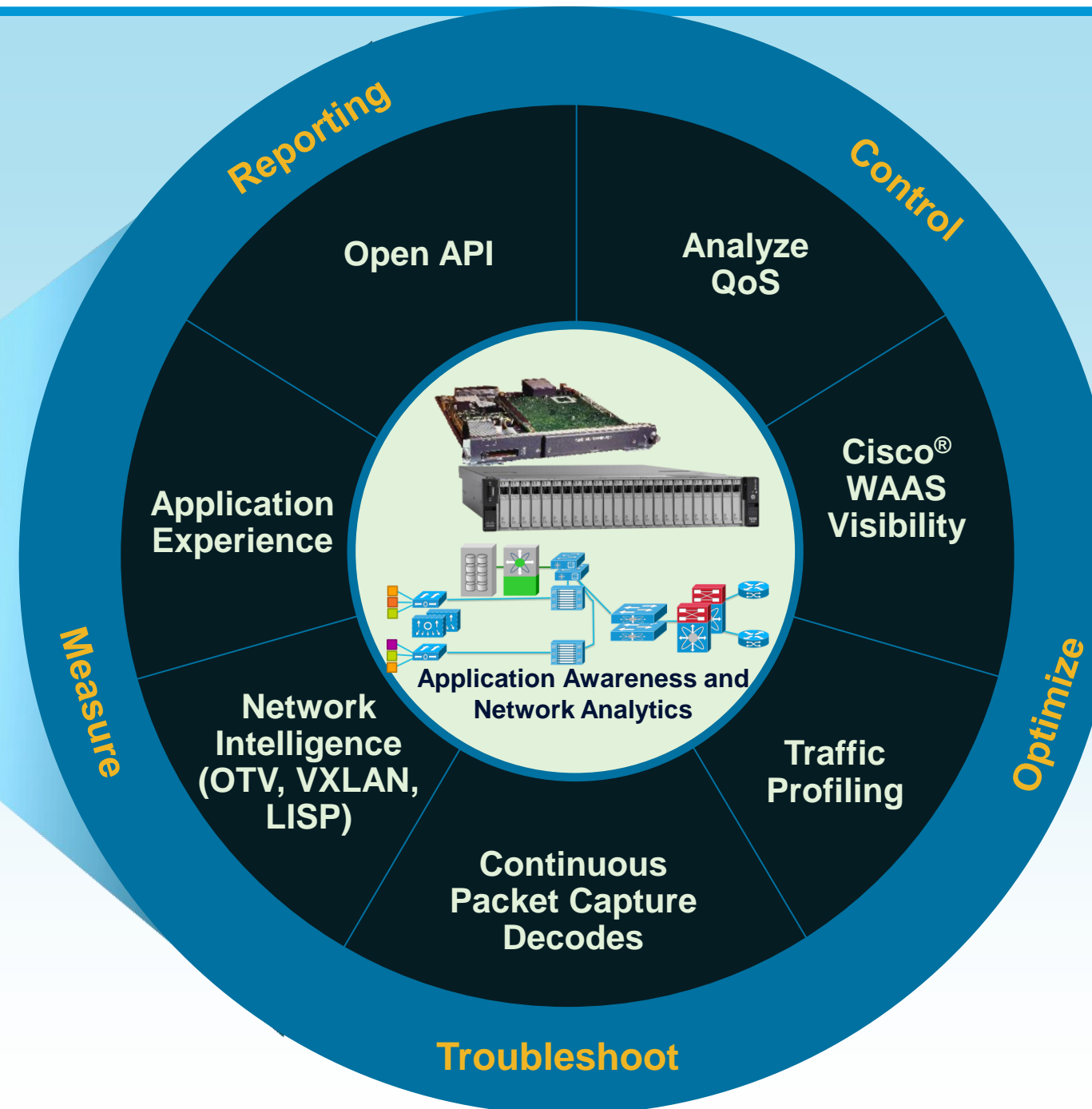- Standards-based (REST/XML) open API

REST/XMP API

Network Analysis Module

ERSPAN, NetFlow

SPAN

NetFlow

VM VM VM VM

Cisco Nexus® 1000V

Cisco® Nexus 7000 Series  Switches

Cisco ASR

# Cisco Prime NAM Portfolio Overview

# Cisco Prime NAM Overview
## Deeper Application Awareness and Rich Network Analytics



**Integrated Management and Reporting Dashboard**

Reporting

Control

Open API

Analyze QoS

Application Experience

Cisco® WAAS Visibility

Measure

Application Awareness and Network Analytics

Optimize

Network Intelligence (OTV, VXLAN, LISP)

Traffic Profiling

Continuous Packet Capture Decodes

Troubleshoot

# Deployment Choices with Purpose-Designed Form Factors
## Integrated Service Modules, Virtual Blades, and Appliances

**Target availability: Q3CY13**

Cisco Prime™ Virtual NAM (vNAM)

Cisco® Prime NAM for Nexus 1110

Cisco Prime NAM for ISR G2 SRE

**NAM Product Portfolio**

Nexus® 7000 Series NAM Blade (NAM-NX1)

Cisco Catalyst® 65xx, Cisco 76xx NAM blade (NAM1, NAM2)

Cisco Catalyst 6500 Series NAM Blade (NAM3)

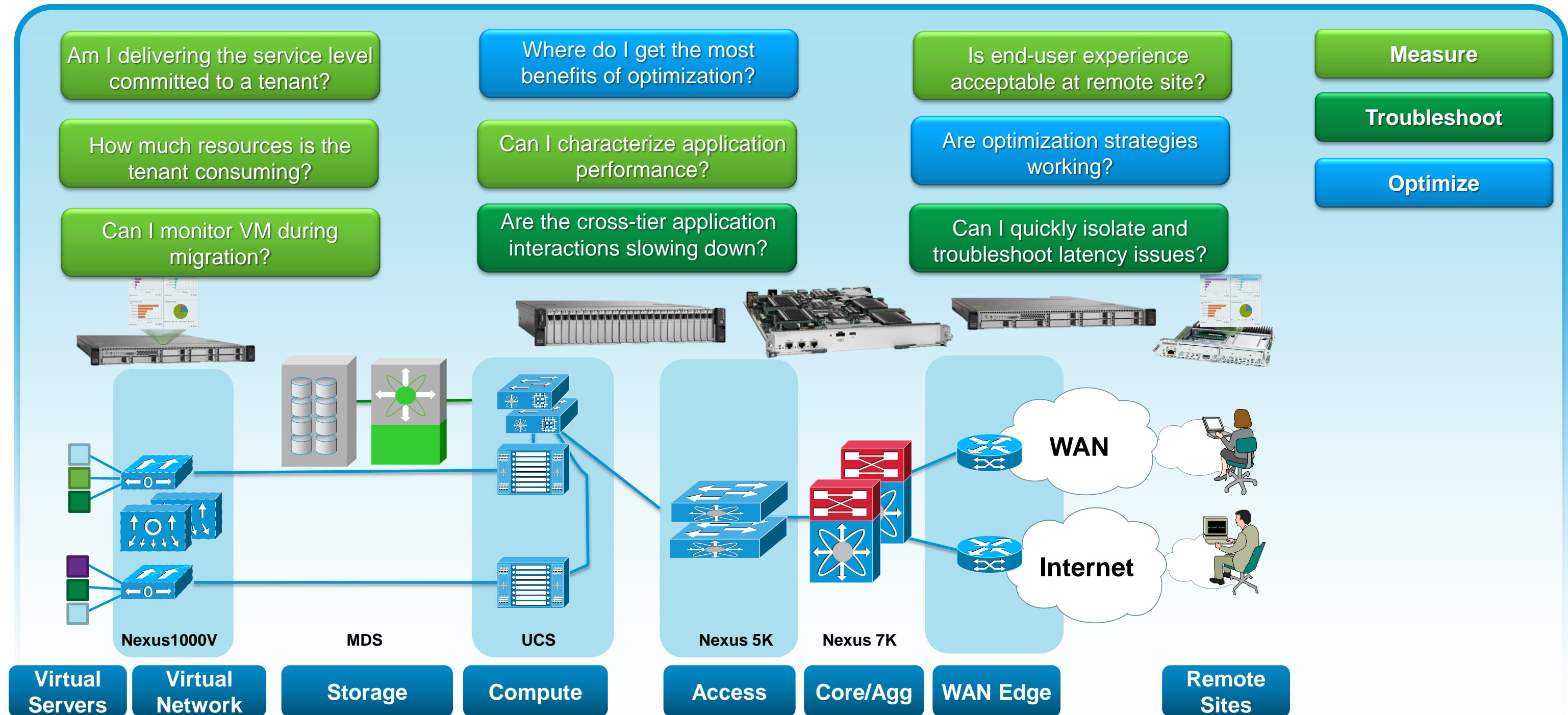NAM 2300 Series Appliance

| SPAN | ERSPAN | RSPAN | NetFlow | CEF | VACL | WAAS | Performance Agent (PA) |
|------|--------|-------|---------|-----|------|------|------------------------|

# Use Case-Driven Deployment Points
## Consistent Application Recognition, Performance, and Usage Analytics

Am I delivering the service level committed to a tenant?

How much resources is the tenant consuming?

Can I monitor VM during migration?

Where do I get the most benefits of optimization?

Can I characterize application performance?

Are the cross-tier application interactions slowing down?

Is end-user experience acceptable at remote site?

Are optimization strategies working?

Can I quickly isolate and troubleshoot latency issues?

**Measure**

**Troubleshoot**

**Optimize**

**WAN**

**Internet**

Nexus1000V

MDS

UCS

Nexus 5K

Nexus 7K

| Virtual Servers | Virtual Network | Storage | Compute | Access | Core/Agg | WAN Edge | Remote Sites |

# Product Information

- Cisco Prime™ Network Analysis Module (NAM) Family

  http://www.cisco.com/go/nam

- Cisco Nexus® 7000 Series NAM (NAM-NX1)

  http://www.cisco.com/go/nxnam

- Blog:
  http://blogs.cisco.com/datacenter/introducing-first-services-module-on-nexus-7000-series/#more-98686

- Cisco® TechWise TV:

  http://www.youtube.com/watch?v=X3_dj4MnKxY

- Questions:

  nam-info@cisco.com

Thank you.

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