



Cisco 월간 웹 세미나

Wireless Is The NEW ACCESS

최 기 곤 수석부장

kichoi@cisco.com

2015년 9월 17일(목)

Agenda



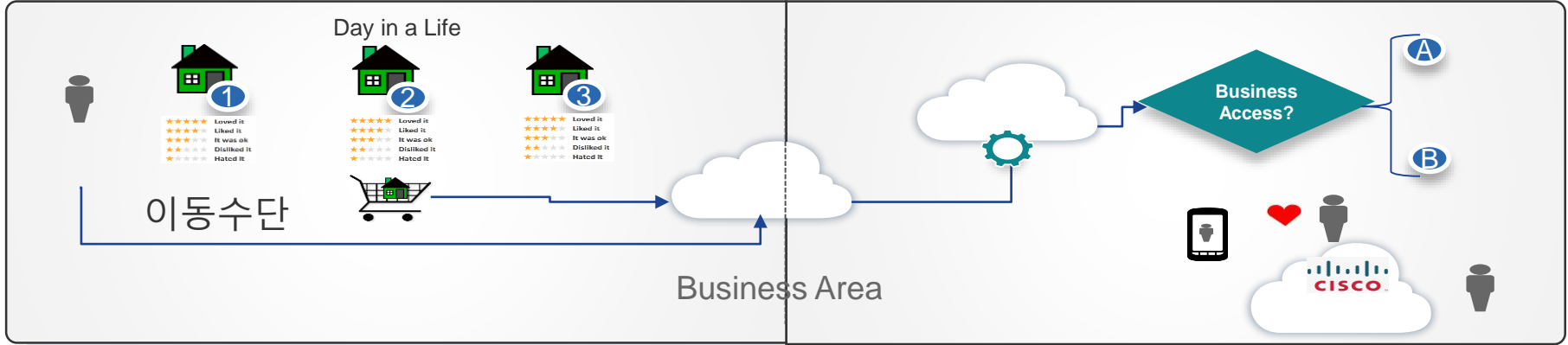
Access Strategy



Solution Update



Access Point



현황

- 선호 디바이스
- 주요 액세스 포인트

목표

- 복잡성 고려
- 최소 비용

Wireless

Connectivity

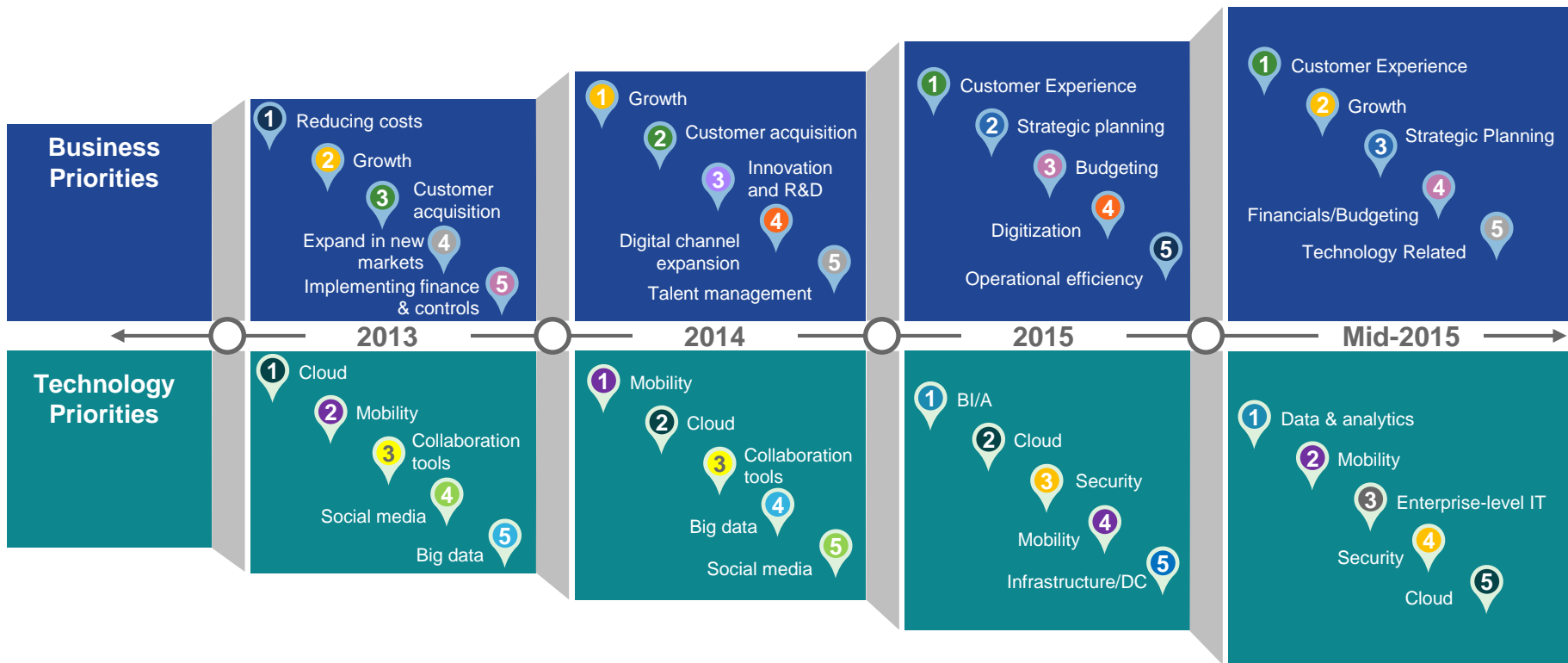


- An organization or business that uses **technology** as a competitive advantage for all internal and external operations.



- A Digital Enterprise by every conceivable measure **grows faster** and is **more profitable** than their non-digital competitors...
- Operating “digitally” makes them **more agile** at meeting changing customer demands and competitive pressures.

Business Decision Priorities

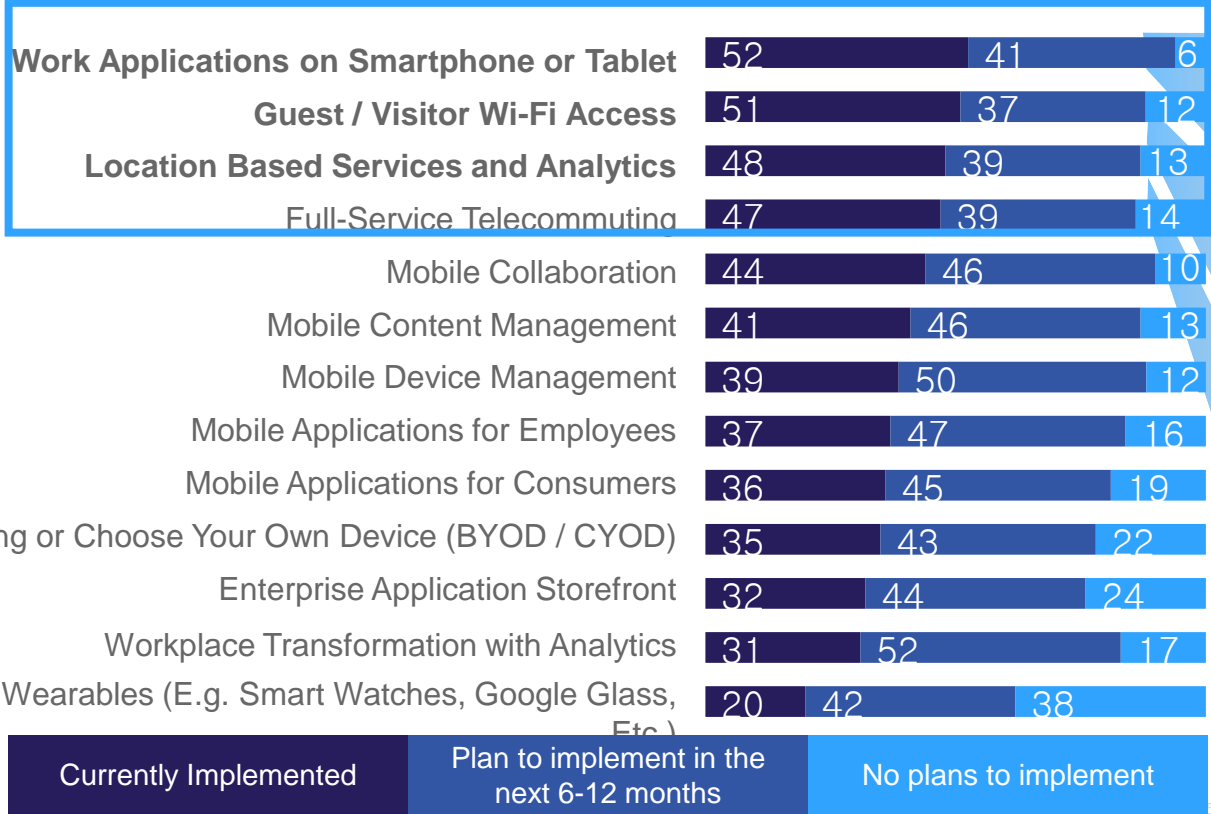


Technical Decision Priorities



Access Strategy

Digital Enterprise/Mobility Initiatives



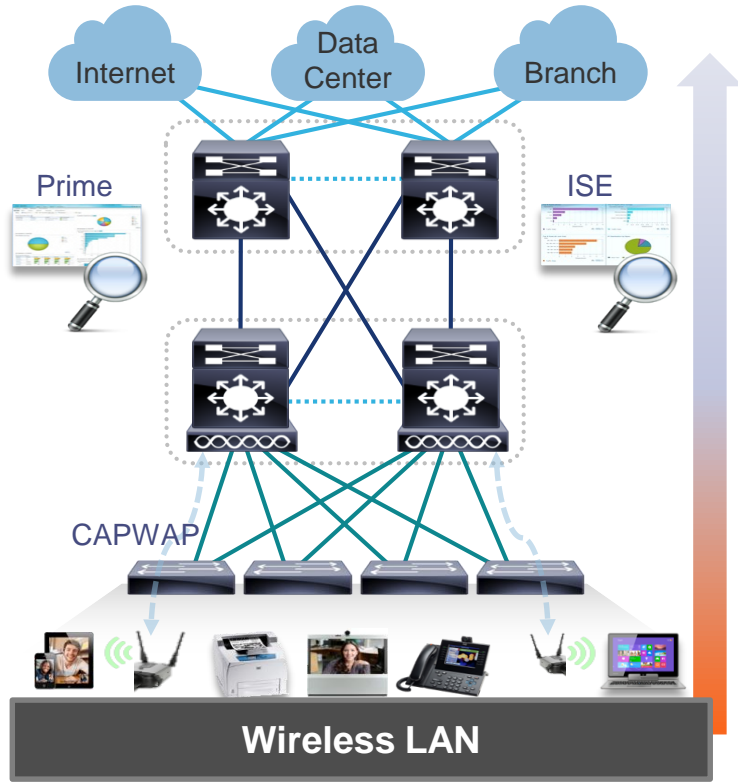
Work Applications
 93% use or plan to enable Work Applications on Smartphones or Tablets

Guest Access
 88% use or plan to use Wi-Fi for Guest / Visitor Access

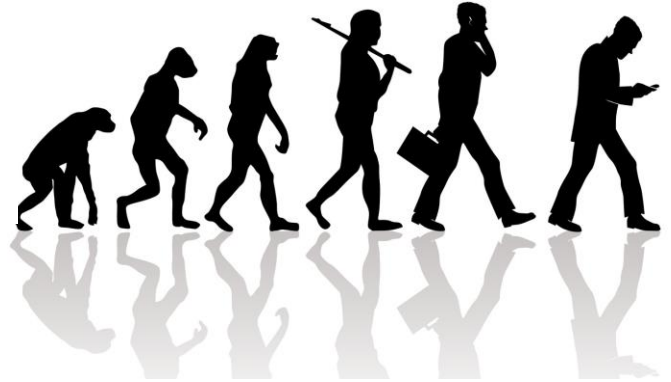
LBS + Analytics
 87% use or plan to use Location Based Services with Analytics

Derived from a survey of 1,400+ CIOs across 14 countries

Access 전략



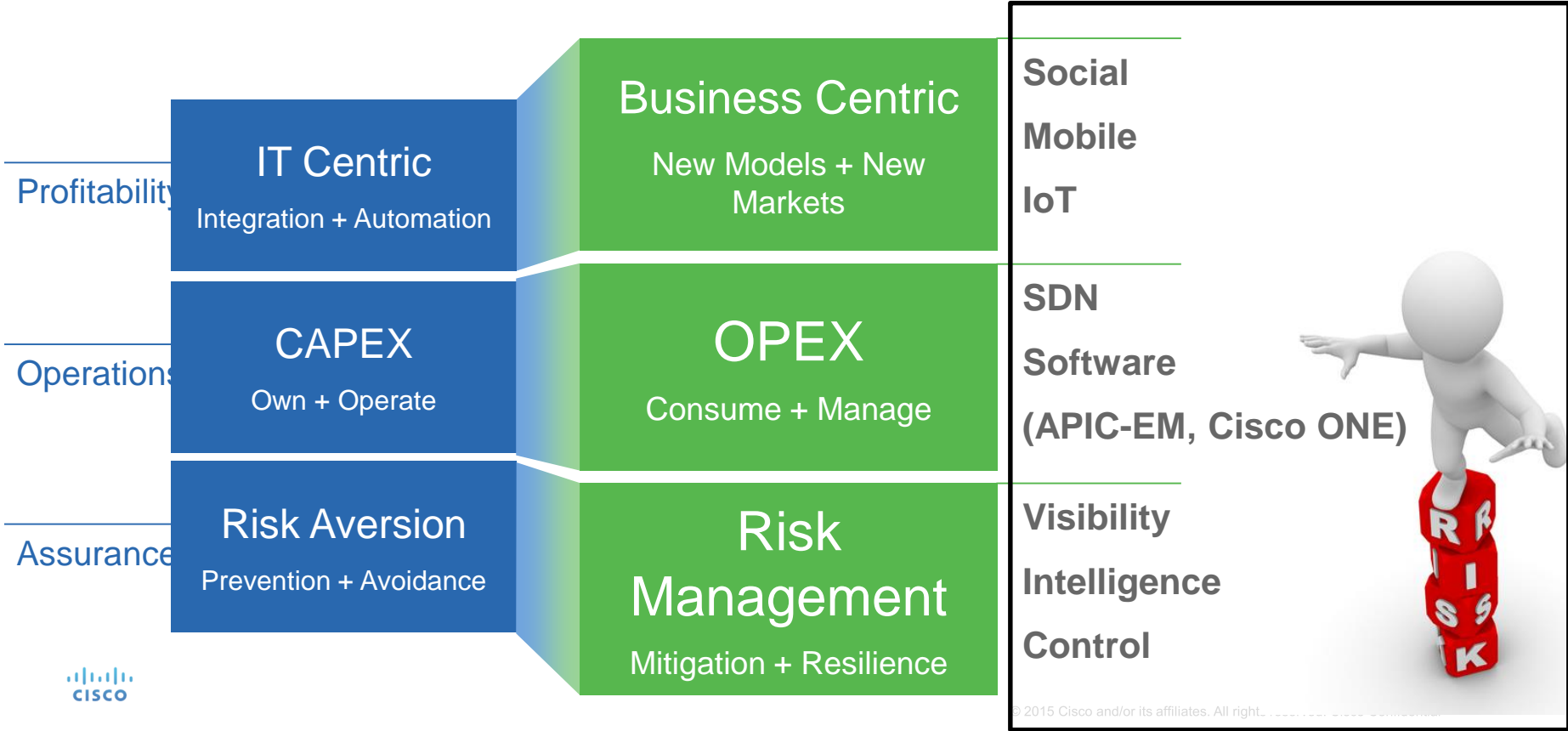
Long Term Success



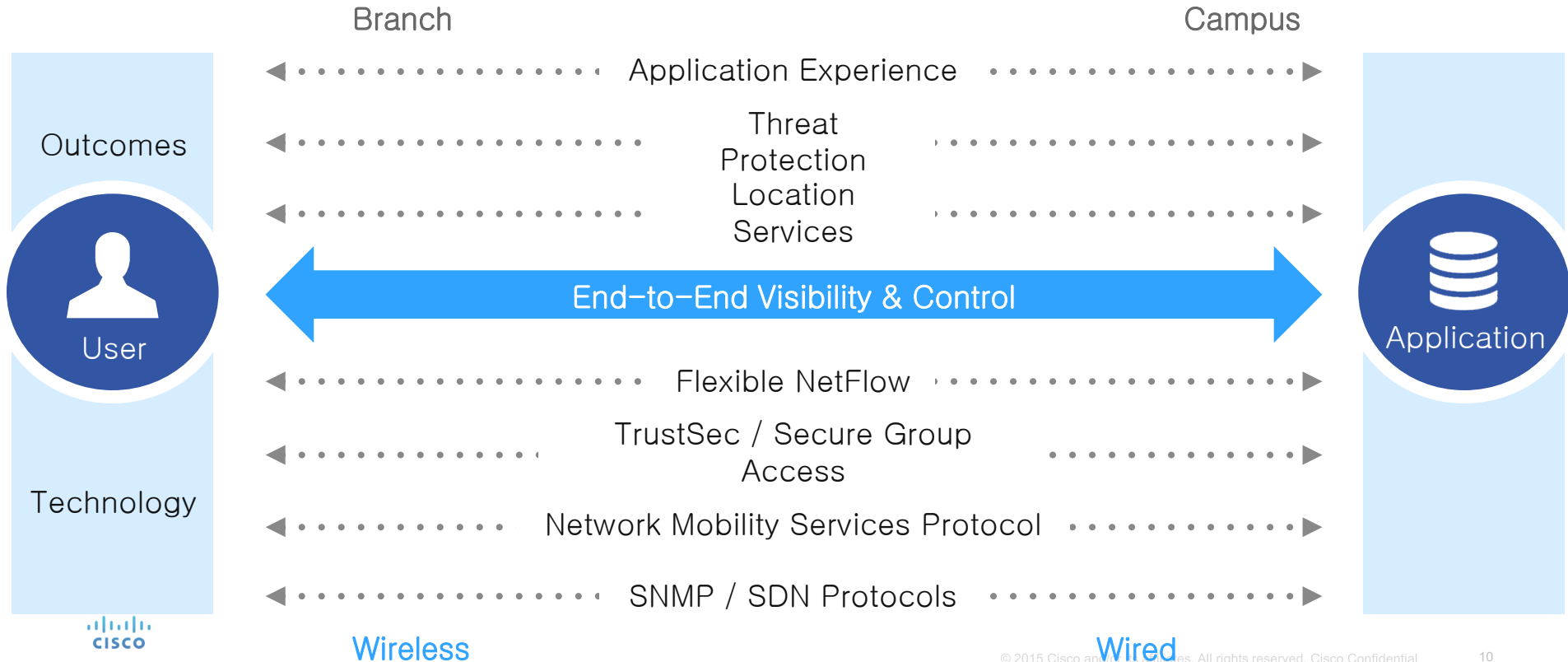
Access

엑세스 기술동향에 대한
이해
네트워크 인프라의
방향성 설정

Access Initiatives



Unified Access



Unified Access

Basic WLC Function

- AP configuration management
- AP image management
- Holistic RF management

Advanced WLC Function

- Application Visibility & Control
- Stateful Switchover
- mDNS Services
- Profiling
- Policy



Access Point: Simple by Design – Mobility Express



Private Cloud: Granular by Design



Public Cloud: Simple by Design – Meraki Cloud



Appliance: Granular by Design



Switch: Granular by Design



Router: Granular by Design

Mobility Initiatives

- **Location Analytics**
 - Users and Visitors
 - Location (Dwell Time)
 - Activity Patterns (Crossovers)
- **Network Analytics**
 - Device utilization
 - Interface utilization
 - Application utilization

The screenshot shows a dashboard titled "Verticalization" with a navigation bar at the top containing "SELECT & LOCATE", "ANALYTICS", "MANAGE", and "SYSTEM". Below the navigation bar, there are tabs for "Locations", "BLE Beacons", and "Notifications". The main content area is divided into sections: "Getting Started" with a list of questions, "Choose Your Vertical" with buttons for "Default", "Retail", "Hospitality", "Education", and "Healthcare" (which is selected), and a "Healthcare" section. The "Healthcare" section includes a "Vertical Dictionary" with terms like "Lobby", "Waiting Room", "ICU", etc., and a "Who is this vertical for?" section with a list of hospital departments. A central diagram shows "Widgets in Healthcare Report" with icons for "Visitor Count", "Connected Clients", "Busiest Department", "Wait Times", "Diners per Cafeteria", and "Path Analysis". A "Run Setup Wizard" button is at the bottom right.

The screenshot displays four network analytics dashboards. The top-left dashboard is titled "Interface Availability Summary" and shows a pie chart for "Total Interface: 283" with a legend for 100%, 90%, 80%, and 70% availability. The top-right dashboard is titled "Top 10 Interface Utilizations" and shows a table of interface utilization data. The bottom-left dashboard is titled "Interface Utilization Summary" and shows two pie charts for "Transmitted (Tx)" and "Received (Rx)" data. The bottom-right dashboard is titled "Top 10 Interface Errors and Discards" and shows a table of error and discard data.

Device Name	Device IP	Interface	Speed (Mbps)	Average	Maximum	Last Poll'd
LOW-375A-SBR	10.11.18.3	FacEthernet1/0/8	1000Mbps	20.2%	99%	9%
LOW-375B-SBR	10.11.18.3	GigabitEthernet1/0	1000Mbps	2.8%	12%	9%
LOW-406A-ABR1	10.11.18.1	GigabitEthernet1/1	1000Mbps	2.7%	12%	9%
ARM-4311-RBR	192.168.152.2	GigabitEthernet0/28	80Mbps	2.3%	1%	9%

Device Name	Device IP	Interface	Input Error Rate	Output Error Rate	Input Discard Rate	Output Discard Rate
SF-4331-ABR-ct	10.3.35.254	GigabitEthernet0/0	0%	0%	0%	0%
SF-4331-ABR-ct	10.3.35.254	GigabitEthernet0/1	0%	0%	0%	0%
SF-4331-ABR-ct	10.3.35.254	SAB1/1	0%	0%	0%	0%
SF-4331-ABR-ct	10.3.35.254	GigabitEthernet0/2	0%	0%	0%	0%
NY-3603-SBR-ct	10.4.19.1	GigabitEthernet1	0%	0%	0%	0%

Agenda



Access Strategy

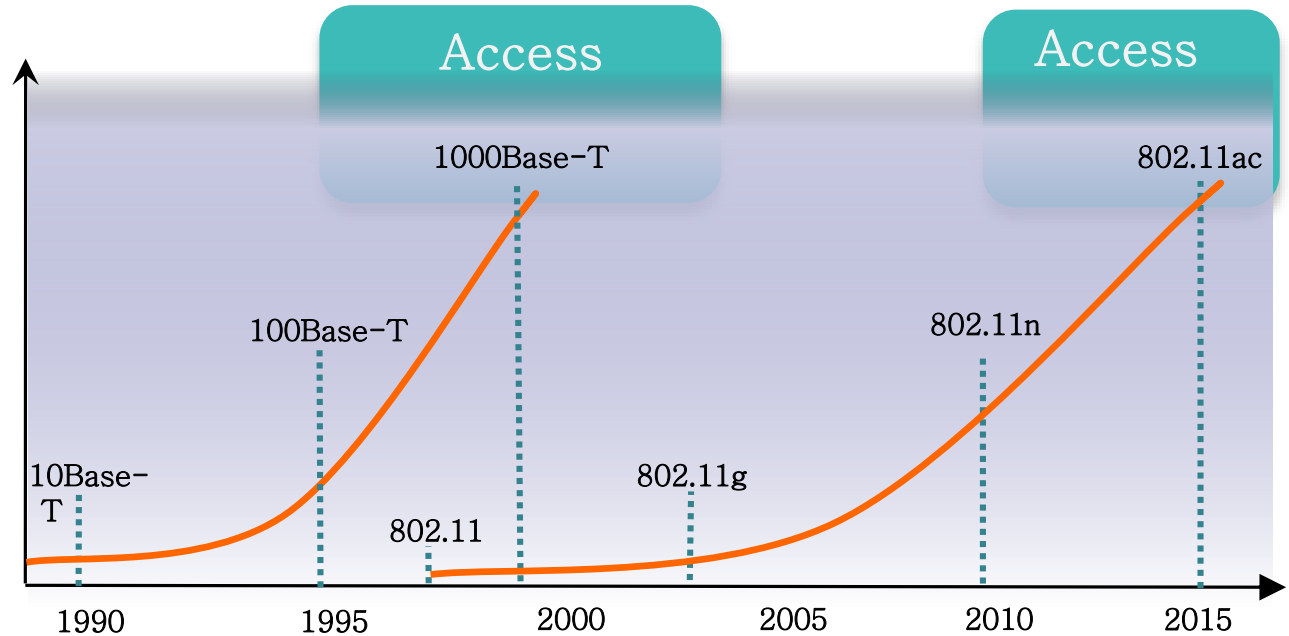


Solution Update

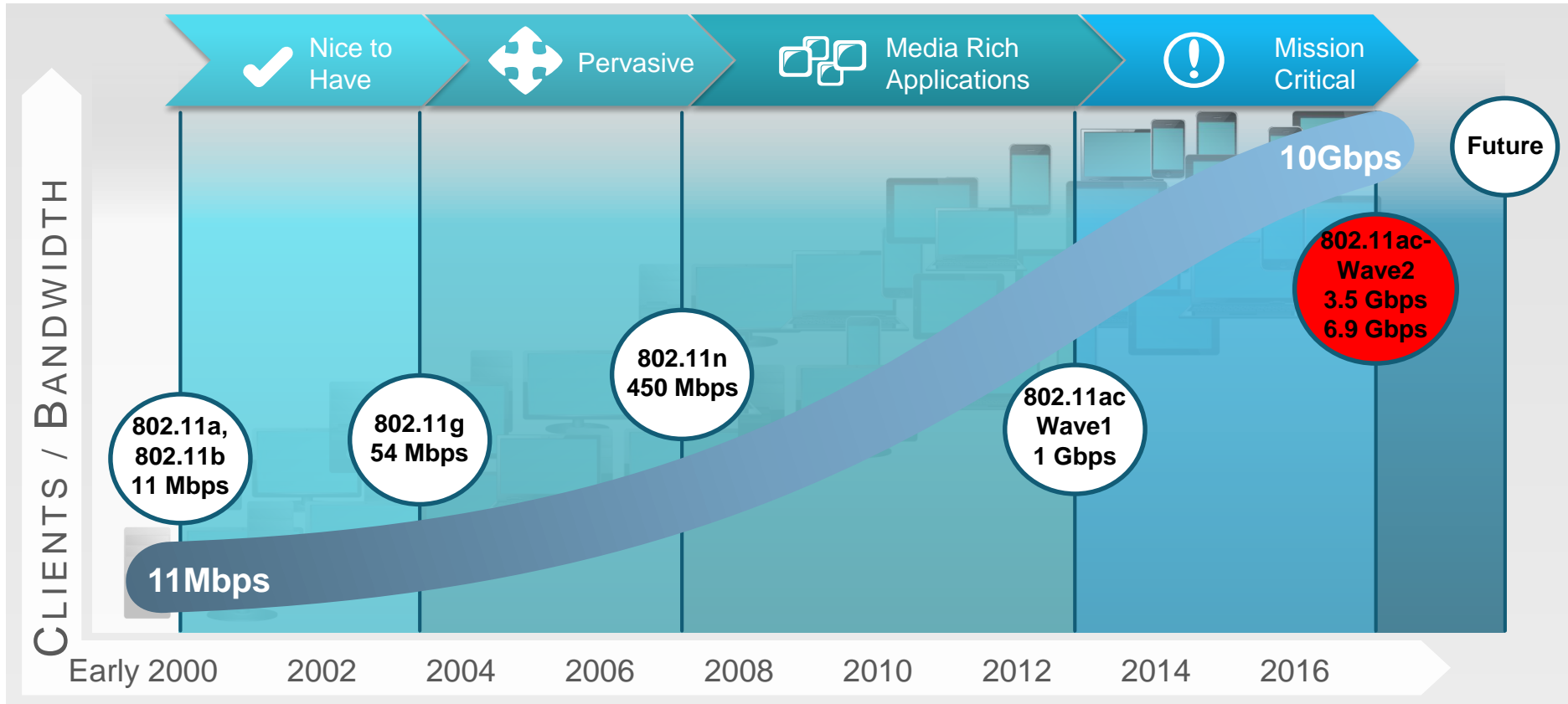


Access 환경의 변화

- 2017년까지 50%이상의 기업의 트래픽이 Wi-fi 를 통해서 발생 (Cisco VNI)
- 새로운 WiFi Device 의 상당수가 Wi-Fi 디바이스가 802.11ac 기능을 탑재
- 802.11ac 기술은 battery 효율성을 높임



Wireless Access 트렌드 변화



AP1850





















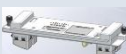

Cisco Aironet® 1850 Series

- Next-generation 4x4 MIMO:4 spatial streams (SS) **Wave 2** 802.11ac access points
- Dual radio, 802.11ac Wave 2, 80 MHz
- 5 GHz: 4x4 supporting
 - 3 SS MU-MIMO
 - 4 SS SU-MIMO
 - 1.7 Gbps Max 5-GHz PHY
 - 2.0 Gbps Max Aggregate PHY
- 2 x Gigabit Ethernet and USB 2.0
- Internal and external antenna models





















Gigabit Wi-Fi has fully arrived.

Wireless Indoor AP

	802.11n 3 Spatial Streams				802.11ac				Wave 2	AP3x00 Modules	
Ruggedized	 AP1600e	 AP3500p	 AP2600e	 AP3600e	 AP2700e	 AP3700e	 AP3700p	 AP1850e			
Carpeted	 AP700W	 AP700	 AP1600i	 AP2600i	 AP3600i	 AP1700i	 AP2700i	 AP3700i	 AP1850i		 HALO
Home Office	 OEAP600										 WSM
										 3G	
										 11ac*	
										* AP3600 only	



Wireless Outdoor AP

Indoor AP with Enclosure	1530 Series Outdoor APs	1550 Series Outdoor APs		1570 Series Outdoor APs	Integrated Industry Solution APs		Industrial Wireless AP
<p data-bbox="48 551 106 780" style="writing-mode: vertical-rl; transform: rotate(180deg);">Outdoor or Outdoor-like Indoor</p>   <p data-bbox="135 862 280 933"><i>Enclosure by 3rd Party Vendors</i></p>	 <p data-bbox="338 638 463 660">AP1532E</p>  <p data-bbox="338 895 463 917">AP1532I</p>	 <p data-bbox="521 638 637 660">AP1552I</p>  <p data-bbox="521 895 637 917">AP1552C</p>	<p data-bbox="821 349 975 371">Uniband-Antennas</p>  <p data-bbox="666 638 782 660">AP1552E</p>  <p data-bbox="830 638 956 660">AP1552EU</p>  <p data-bbox="666 895 782 917">AP1552H</p>  <p data-bbox="830 895 956 917">AP1552CU</p>	 <p data-bbox="1101 638 1246 660">AP1572EAC</p>  <p data-bbox="1033 895 1149 917">AP1572IC</p>  <p data-bbox="1188 895 1304 917">AP1572EC</p>	<p data-bbox="1362 442 1477 464">Honeywell</p>  <p data-bbox="1362 638 1487 660">AP1552SA</p> <p data-bbox="1362 693 1477 726">EMERSON Process Management</p>  <p data-bbox="1352 895 1487 917">AP1552WU</p> <p data-bbox="1516 442 1632 464">Honeywell</p>  <p data-bbox="1516 638 1642 660">AP1552SD</p> <p data-bbox="1516 693 1632 726">Rockwell Automation</p>  <p data-bbox="1535 879 1613 933">Stratix 5100</p>	 <p data-bbox="1690 726 1816 748">* IW3700</p>	

Wireless Controller

	Branches	Campus	Global	Converged Access
FlexConnect	 Virtual		 Flex 7510	
Standalone	 CT2500	  CT5508 CT5520	  CT8510 CT8540	 CT5760
Integrated	 AP1852	 WiSM2 (Cat6k)		   Cat3650 Cat3850 Cat4500/Sup8E



Wireless Controller-5520/8540

5520 WLAN Controller



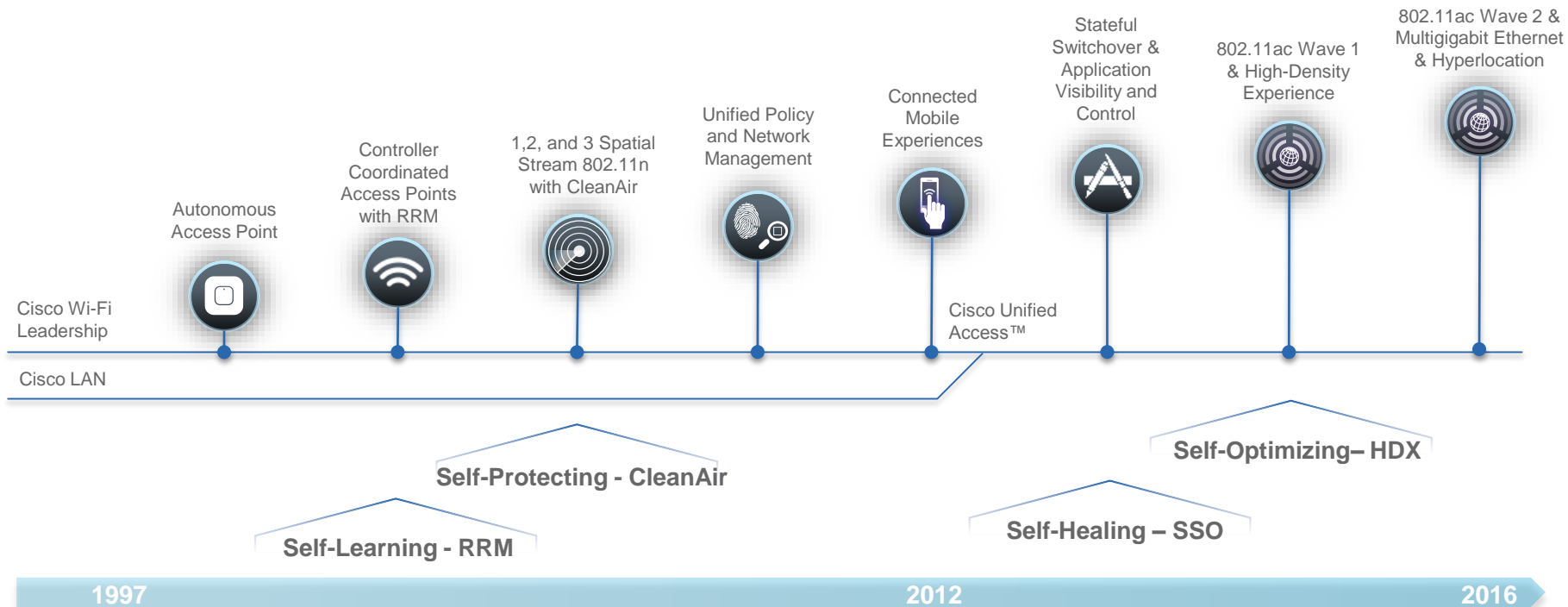
Access Points	1,500
Clients	20,000
Deployment Modes	Centralized, FlexConnect ,Mesh
Form Factor	1 RU
IO Interface	Dual 1G or 10G ports with LAG
Power	AC w/Optional Redundant Power Supply
Redundancy	Solid State Drives

8540 WLAN Controller

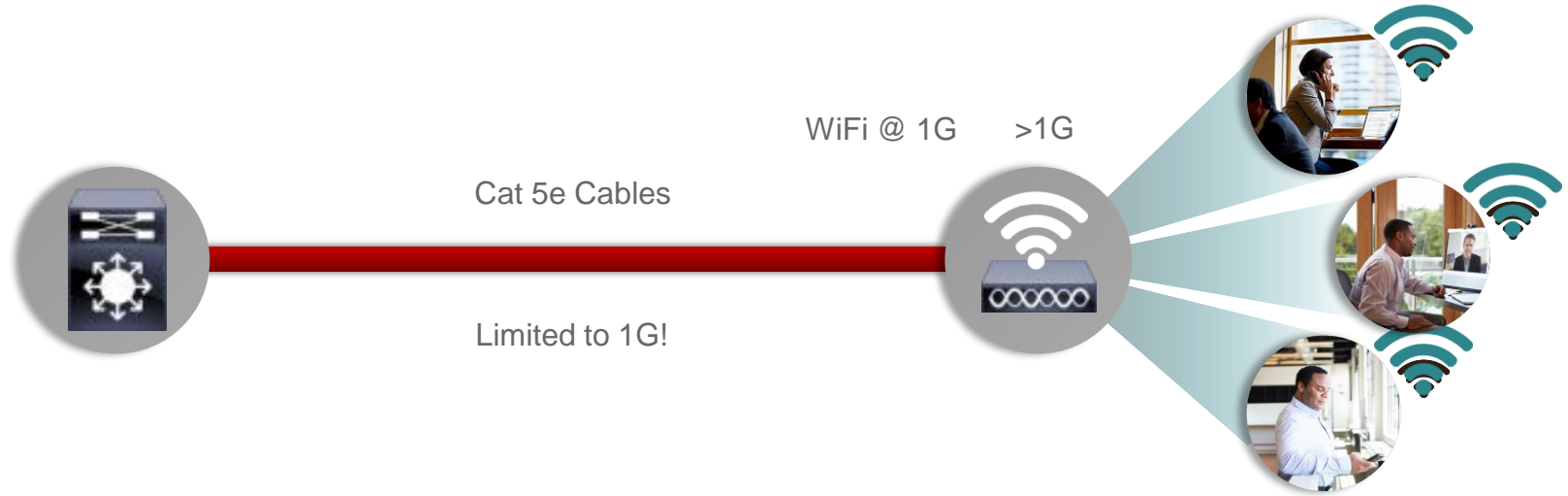


Access Points	6,000
Clients	64,000
Deployment Modes	Centralized, FlexConnect ,Mesh
Form Factor	2 RU
IO Interface	Four port 1G or 10G with LAG
Power Options	AC or DC
Redundancy	Dual Power supply and Solid State Drive with RAID

Wireless 차별화 기술



엑세스 환경의 새로운 도전과제



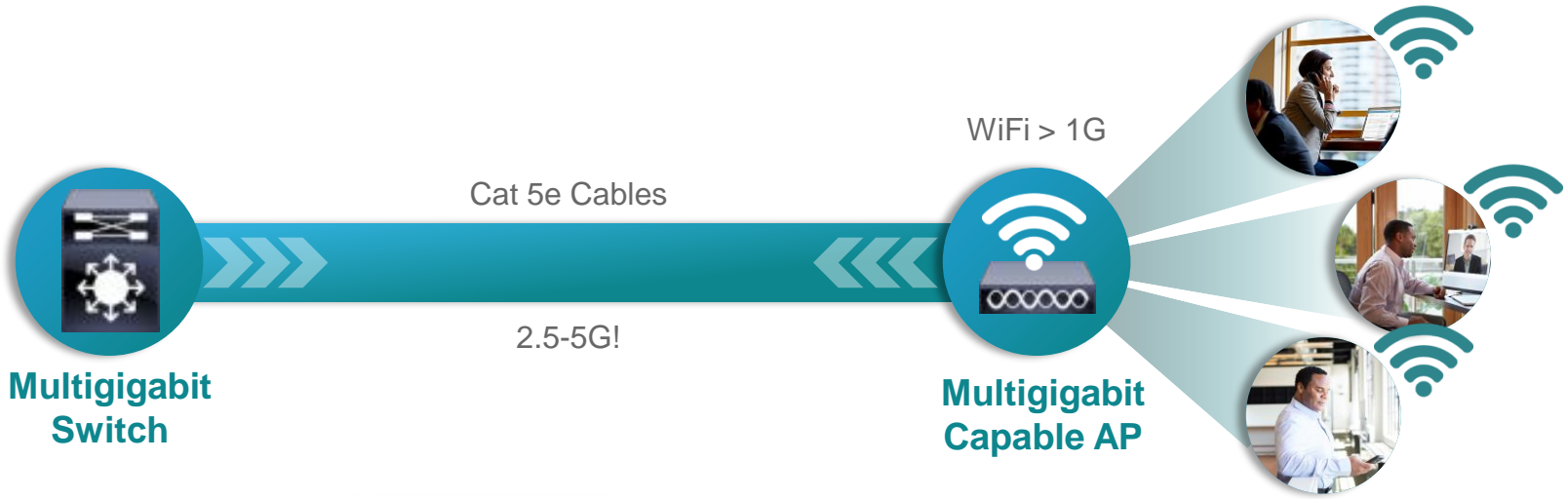
기존의 기가비트
인프라스트럭처가 11ac 기술
성장에 따른 중/장기 전략 요구



1999년에 기가비트 이더넷이 완성,
현재 병목구간으로 대두

기존의 케이블 인프라에서 >1Gbps
이상의 지원이 되어야 하는
혁신적인 기술이 필요

Multigigabit 기술



Cisco Multigigabit with **NBASE-T**™

1G 이상의 속도를 지원할 수 있는 구조

Enables 2.5 and 5 Gbps up to 100m on legacy cables

Supports all PoE standards up to 60W

Delivers up to 5X Speeds in Enterprise without replacing Cabling Infrastructure

Multigigabit 기술

Cable Type	1G	2.5G	5G	10G
Cat5e	100m, PoE/PoE+/UPoE	100m, PoE/PoE+/UPoE	70*-100m, PoE/PoE+/UPoE	N/A
Cat6	100m, PoE/PoE+/UPoE	100m, PoE/PoE+/UPoE	100m, PoE/PoE+/UPoE	55m, PoE/PoE+/UPoE
Cat6a	100m, PoE/PoE+/UPoE	100m, PoE/PoE+/UPoE	100m, PoE/PoE+/UPoE	100m, PoE/PoE+/UPoE

* 5G on Cat5e may be limited to 70m in worstcase cable bundle

- Auto-negotiation of cable type of speeds supported
- **Brownfield** deployments can leverage existing Cat5e extending ROI and support mGig at 2.5G and 5G speeds up to a distance of 100m
- **Greenfield** deployments with Cat6a will support 10G but can also now support mGig at 2.5G and 5G speeds up to a distance of 100m

mGig 기술 특징점



Connect 802.11ac Wave 2 APs with one cable

Adaptive Rate Technology (FE, 1G, 2.5G, 5G, and 10G)



Infrastructure Investment Protection

Supports 100m distance with Cat5e cabling up to 5G speeds

Supports Cat6a cabling for Greenfield deployments for higher speeds



POE/POE+/UPOE

Cisco Innovation over 802.3 standard to support higher power end point needs



Standards Compliant

1G and 10G Base-T IEEE 802.3 amendments with intermediate speeds under development



4500E Multigigabit Line Card



C3850 12 port and 24 port Multigigabit



Compact Multigigabit switch 3650CX

mGig 스위치 제품군



Modular Access



Fixed Access



NG Workspace Switch



Price-compelling 48-port Mgid

of mGig Ports

12 mGig ports

Port Capabilities

UPOE, EEE, MACsec

New uplink Modules 

**New 2x40G and 8x10G
(existing NM's are supported)**



High Performance 24-port 10Gb-T

24 mGig ports

UPOE, EEE, MACsec

**New 2x40G and 8x10G
(existing NM's are supported)**

mGig 스위치 제품군

Product Family	SKU	Description
Catalyst 4500	WS-X4748-12X48U+E	Catalyst 4500 48 port Multigigabit Ethernet Module
Catalyst 3850	WS-C3850-12X48U-L	Catalyst 3850 48 port Multigigabit switch LAN Base
	WS-C3850-12X48U-S	Catalyst 3850 48 port Multigigabit switch IP Base
	WS-C3850-12X48U-E	Catalyst 3850 48 port Multigigabit switch IP Services
	WS-C3850-24XU-L	Catalyst 3850 24 port Multigigabit switch LAN Base
	WS-C3850-24XU-S	Catalyst 3850 24 port Multigigabit switch IP Base
	WS-C3850-24XU-E	Catalyst 3850 24 port Multigigabit switch IP Services
	C3850-NM-2-40G	Catalyst 3850 2 port 40G uplink module
	C3850-NM-8-10G	Catalyst 3850 8 port 10G uplink module
	Compact C3560CX	WS-C3560CX-8XPD-S

코어 스위칭 환경의 진화

Catalyst 4500
Sup8E



Catalyst 6800/6500
Sup2T



2x40Gig, QSFP

80G Non Blocking

Only work on mGig and 10G Fiber (24-port) Switches



8x10Gig, SFP/SFP+

80G Non Blocking

Only work on mGig and 10G Fiber (24-port) Switches

Performance

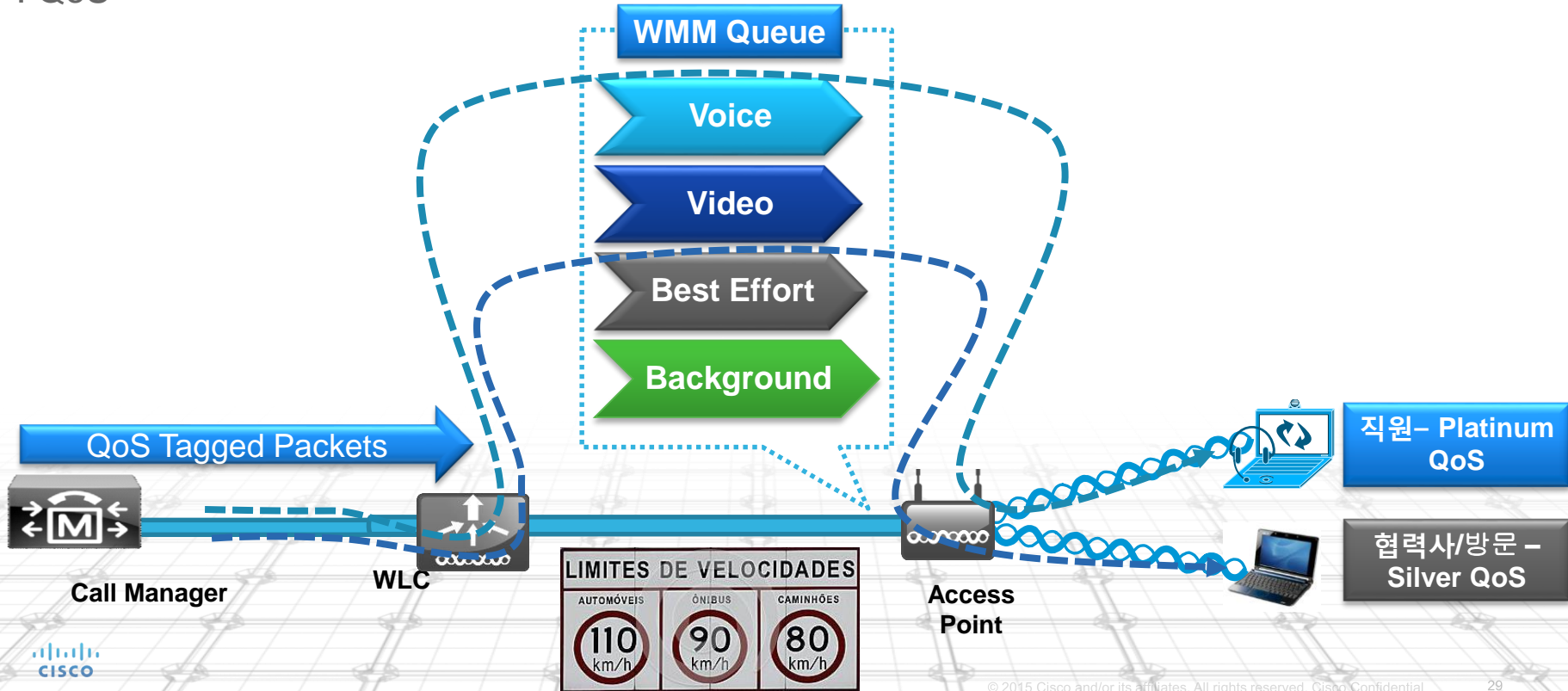
Compatibility



Mobility Service







Application 서비스
: QoS

Allowing Per-User and Per-Devices Limiting of the Maximum QoS Level












Mobility Service

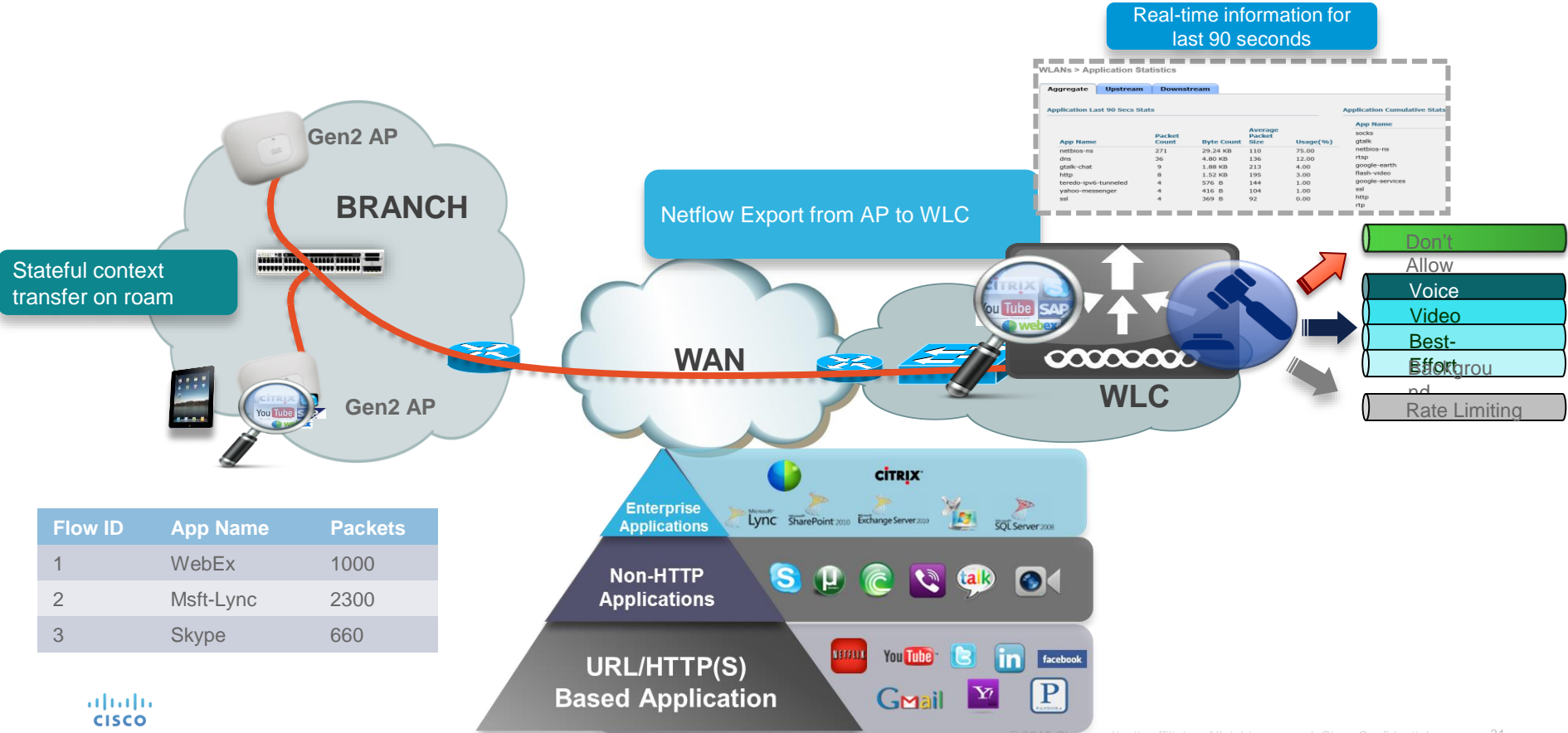
AVC provides Layer 7 policies per User (by Device Type and User Role)

Applications	Priority
Real Time Applications (Business)  	High
Non Real Time Applications (Business) 	Normal
Casual Applications  	Low
Malicious Applications 	Drop

CISCO

User Role	Applications	Device	Priority
Exec 			High
Employee 			Normal
Contractor 			Low

Mobility Service

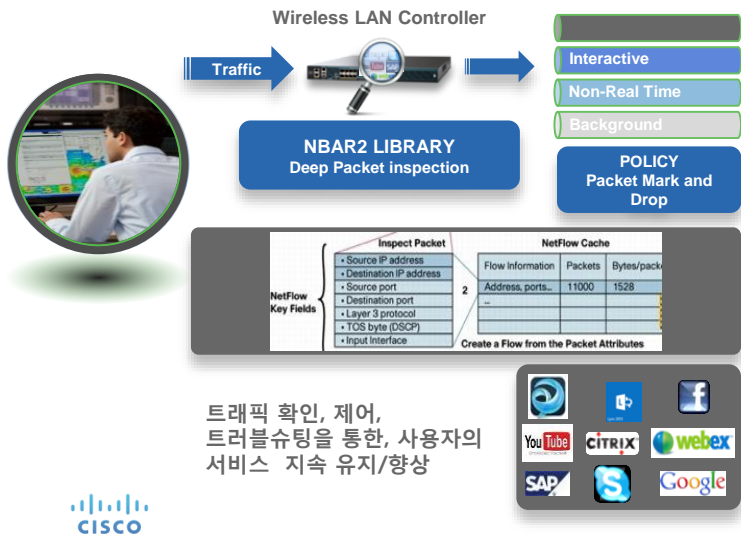


Mobility Service

AVC(Application Visibility, Control) 기능을 이용하여, 사용자 어플리케이션에 대한 세분화된 분리 및 제어가 가능함

Cisco AVC

Network Based Application Recognition—NBAR2
Deep Packet Inspection and App ID



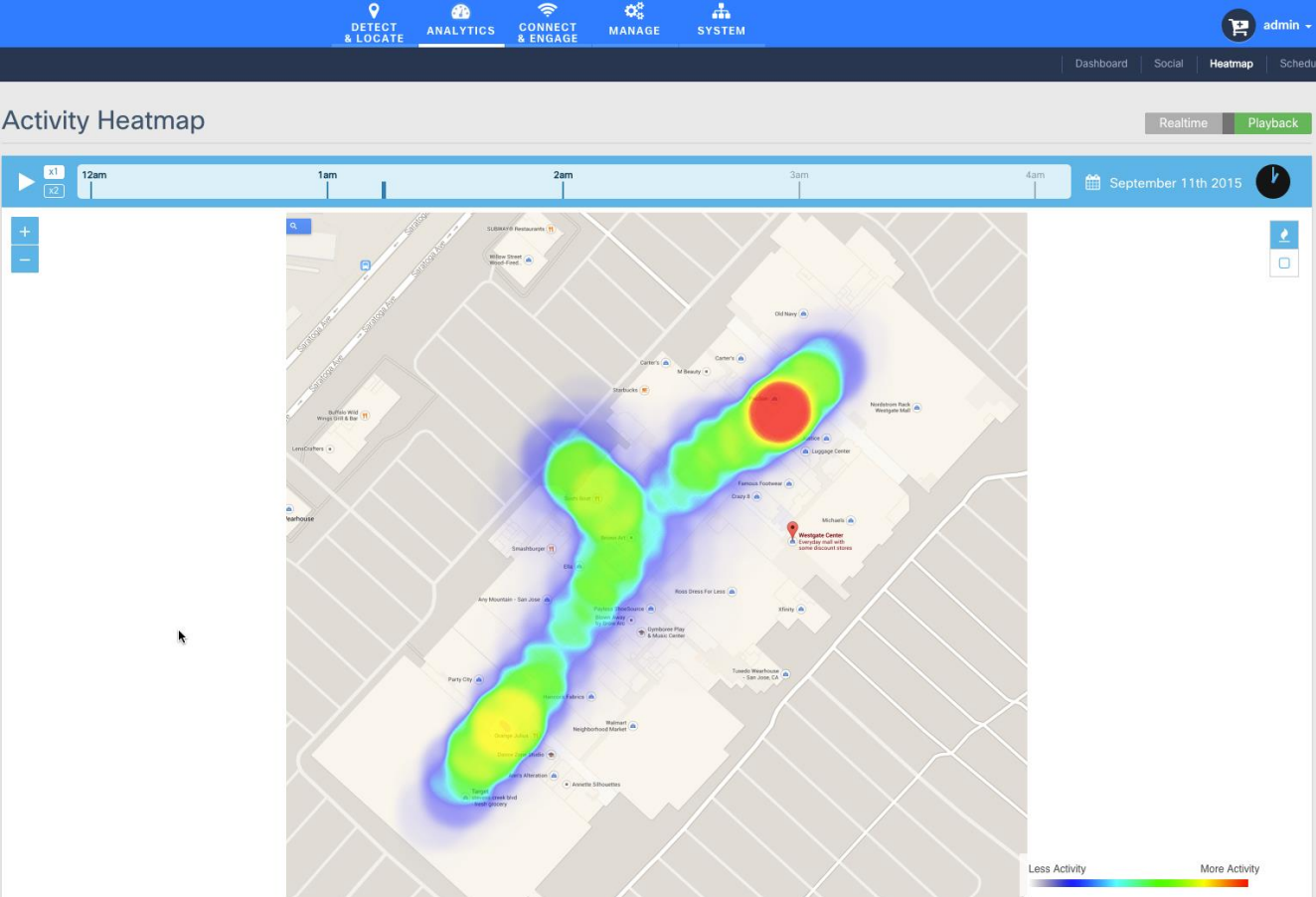
특/장점

- 시스코는 1,000여개 이상의 어플리케이션에 대한 분리 및 Historical Data 에 대한 모니터링이 가능함
 유/무선 네트워크의 AVC(어플리케이션 인지/제어 기능)
- 국내 SNS 어플리케이션에 대한 인지 기능
- Protocol Pack 를 사용한 손쉬운 어플리케이션 D/B 추가

Cisco

Cumulative Historical Application data on WLC	Yes
Additional license for DPI	No
Protocol pack support	Yes
Wired + Wireless AVC	Yes
QoS Statistics per Clients	Yes
AVC Rate-limiting	as low as 5 kbps

Analytics Service - Heatmap



Analytics Service

Verticalization

- Getting Started**
- What is verticalization?
 - What does choosing a vertical offer me?
 - After choosing a vertical, what's next?

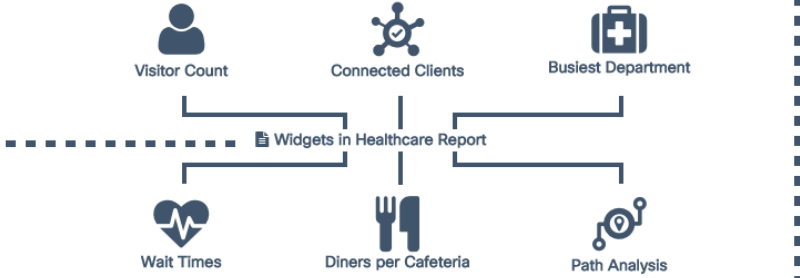
Choose Your Vertical

- Default
- Retail
- Mall
- Hospitality
- Education
- Healthcare**

Healthcare

Who is this vertical for?
Hospital?
A Clinic?
Trauma Center?
Rehabilitation Center?
If so, this is for you

- Vertical Dictionary**
- Location Terms:**
 - Lobby
 - Waiting Room
 - Restroom
 - Cafeteria
 - AAU
 - Burn Center
 - CCU
 - CSSD
 - Emergency
 - Geriatric Care
 - ICU
 - Records
 - Neonatal
 - Operating Room
 - Pediatric Care
 - Pharmacy



Run Setup Wizard

Analytic Service

각 영역의 무선 인프라를 이용하여, 영역별/장소별 Device 에 대한 이용 수량 및 평균 점유 시간의 확인이 가능함 → 건물내의 공간 활용 및 사용자들의 편의 사항 개선을 위한 비즈니스 인텔리전스 확보

▶ 특정 장소에서의 사용자들의 평균 점유 시간

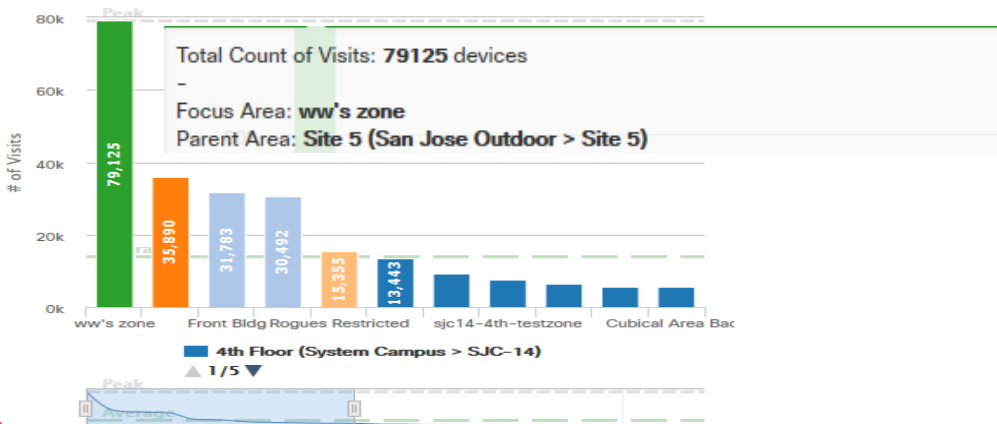
▶ 가장 많은 사용자들이 찾는 장소?

▶ 가장 많은 사용자들의 건물과 세부 위치 ?



Visitor Count

2015



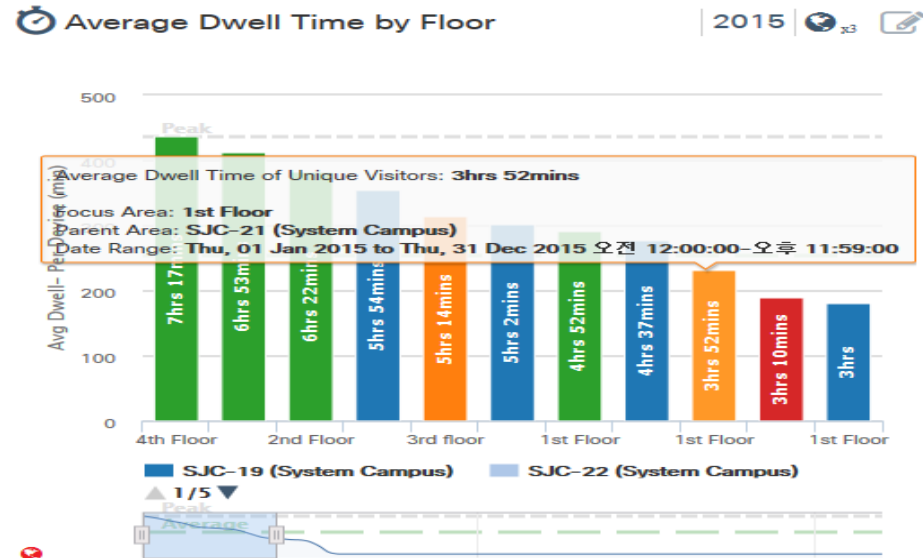
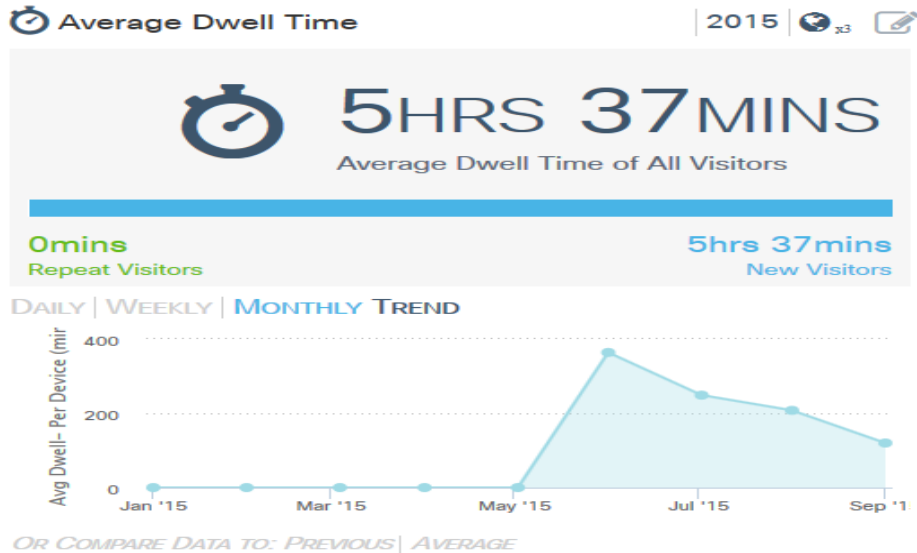
건물내의 Peak Zone 은 어떻게 되는지?
해당 Zone 에서의 Total Visitor 의 숫자는 ?

Analytic Service

각 영역의 무선 인프라를 이용하여, 사용자들의 추이를 분석하며, 특정 장소에 대한 평균 이용시간 확인 → 건물의 공간 활용 및 건물내 사용자들의 편의 사항 지속 개선을 위한 비즈니스 인텔리전스 확보

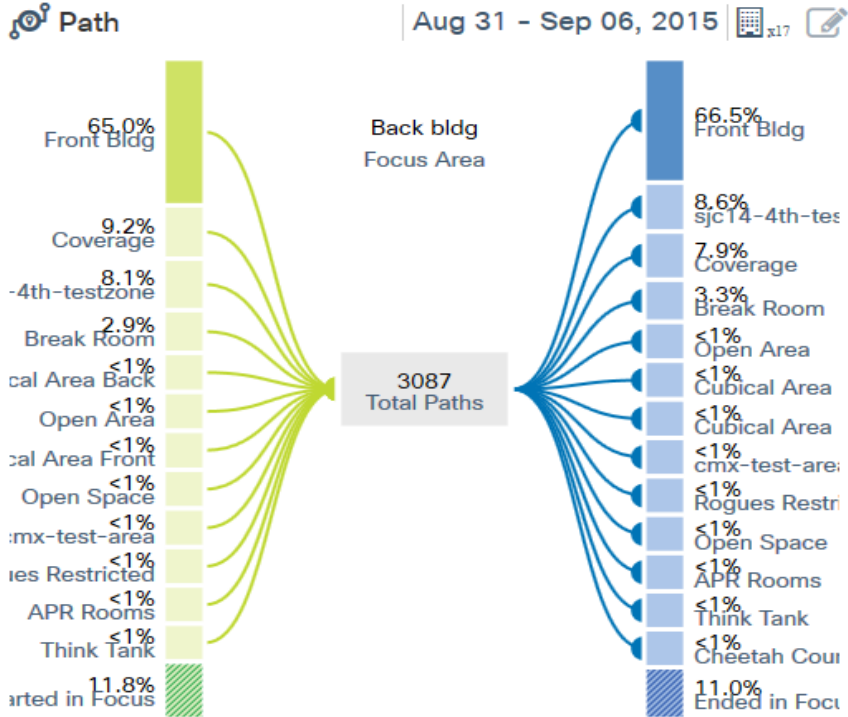
▶ Daily, Weekly, Monthly의 각 영역내에서 이용객/클라이언트의 점유 시간 확인

▶ 각 층별로의 점유시간 확인

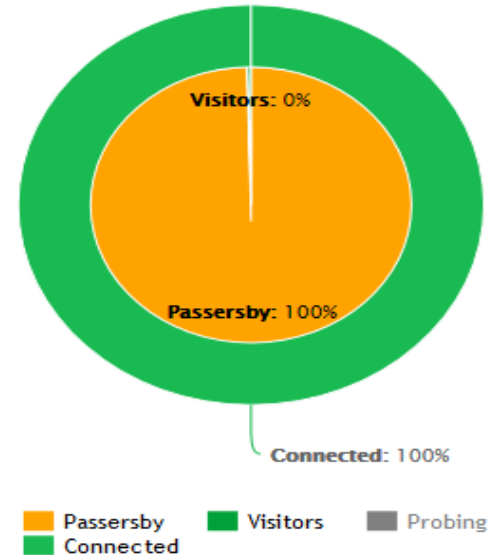


Analytic Service

각 영역의 무선 인프라를 이용하여, 건물내의 특정 장소에 대한 Path 에 대한 확인을 통한, 물리적 보안 환경 및 이용객 동선 및 건물내 시설 안내 및 온라인 광고판의 활용도 극대화



Proximity Distribution



Prime Infrastructure : Network Summary

Dashboard / Network Summary

Overview Incidents +

Metrics

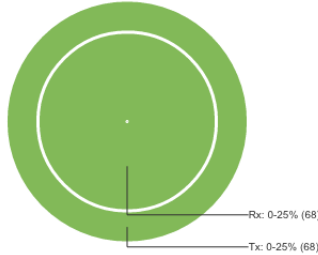
ICMP Reachability Status			Alarm Summary			Unified AP Status			Controller Status			System Health		
59	58	1	25	1	160	29	82.8%	17.2%	8	8	0	0	1	1
All	Reachable	Unreachable	Critical	Major	Minor	All	Reachable	Unreachable	All	Reachable	Unreachable	Critical	Major	Minor

Last Updated: Friday, September 11 2015 at 12:42 AM

Filters Time Frame Past 2 Week Apply

Interface Utilization Summary

Zoom: 1h | 6h | 1d | 1w | 2w | 4w | 3m | 6m | 1y | From: 8/28/2015, 12:42 AM To: 9/11/2015, 12:42 AM

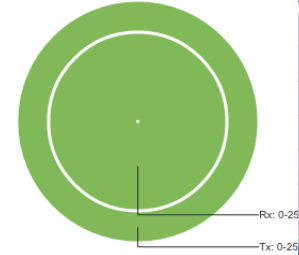


Tx: 0-25% Rx: 0-25%

Friday, September 11 2015 at 12:42 AM

Interface Utilization Summary

Zoom: 1h | 6h | 1d | 1w | 2w | 4w | 3m | 6m | 1y | From: 8/28/2015, 12:42 AM To: 9/11/2015, 12:42 AM



Tx: 0-25% Rx: 0-25%

Friday, September 11 2015 at 12:42 AM

Settings

- Add New Dashboard
- Rename Dashboard
- Add or Remove Metric Dashlet(s)
- Add Dashlet(s)
- Network
 - Interface Availability Summ... (2) Add
 - Interface Utilization Summary (2) Add
 - Network Topology (1) Add
 - Top N CPU Utilization (1) Add
 - Top N Environmental Tempe... Add
 - Top N Interface Utilization (1) Add
 - Top N Memory Utilization Add
 - Top N WAN interfaces by u... Add
- Client
- Incident
- Add or Remove Filter(s)
- Export
- Layout Template
- Manage Dashboards

360 Device View

Monitor / Managed Elements / Network Devices

- Device Groups
- All Devices
 - Device Type
 - Cisco UCS Series
 - Routers
 - Switches and Hubs
 - Unified AP
 - Wireless Controller
 - Cisco 2500 Series Wireless LAN Con
 - Cisco 5500 Series Wireless LAN Con
 - Cisco Catalyst 3650 Series Switches
 - Cisco Catalyst 3850 Series Ethernet
 - Location
 - User Defined

Device Groups / Device Type
Wireless Controller

Device Name	Reachability	IP Address/DNS	
<input type="checkbox"/> PRIME-CT5508	<input checked="" type="checkbox"/>	10.16.254.30	→ ⓘ
<input type="checkbox"/> SW-3650-BR3.pr...	<input checked="" type="checkbox"/>	10.14.200.163	→ ⓘ
<input type="checkbox"/> SW-CA-POD1-E	<input checked="" type="checkbox"/>	10.14.201.5	→ ⓘ
<input type="checkbox"/> SW-CA-POD5-E...	<input checked="" type="checkbox"/>	10.14.205.5	→ ⓘ
<input checked="" type="checkbox"/> SW-POD1-E.pri...	<input checked="" type="checkbox"/>	10.14.201.1	→ ⓘ
<input type="checkbox"/> SW-POD2-E	<input checked="" type="checkbox"/>	10.14.202.1	→ ⓘ
<input type="checkbox"/> SW-POD3-E.pri...	<input checked="" type="checkbox"/>	10.14.203.1	→ ⓘ
<input type="checkbox"/> SW-POD4-E.pri...	<input checked="" type="checkbox"/>	10.14.204.1	→ ⓘ
<input type="checkbox"/> SW-POD6-E.pri...	<input checked="" type="checkbox"/>	10.14.206.1	→ ⓘ
<input type="checkbox"/> SW-POD7-E.pri...	<input checked="" type="checkbox"/>	10.14.207.1	→ ⓘ
<input type="checkbox"/> SW-SP1-A.pri...	<input checked="" type="checkbox"/>	10.14.200.201	→ ⓘ
<input type="checkbox"/> SW-SP2-A.pri...	<input checked="" type="checkbox"/>	10.14.200.202	→ ⓘ
<input type="checkbox"/> WLC-POD1-W	<input checked="" type="checkbox"/>	172.195.1.1	→ ⓘ
<input type="checkbox"/> WLC-POD2-W	<input checked="" type="checkbox"/>	172.195.2.1	→ ⓘ
<input type="checkbox"/> WLC-POD3-W	<input checked="" type="checkbox"/>	172.195.3.1	→ ⓘ
<input type="checkbox"/> WLC-POD4-W	<input checked="" type="checkbox"/>	172.195.4.1	→ ⓘ
<input type="checkbox"/> WLC-POD5-W	<input checked="" type="checkbox"/>	172.195.5.1	→ ⓘ
<input type="checkbox"/> WLC-POD6-W	<input checked="" type="checkbox"/>	172.195.6.1	→ ⓘ
<input type="checkbox"/> WLC-POD7-W	<input checked="" type="checkbox"/>	172.195.7.1	→ ⓘ

Device 360° Views

PRIME-CT5508 🟢🟢

10.16.254.30

🌐 All Locations, Unassigned

up for 40 days 7 hrs 23 mins 55 secs

Software Version 8.1.102.0

Licence-used/capacity 3/12

Number of Active AP's 3

Number of Active Clients 3

CPU Utilization (1 hour)

0.00%

Minimum: 0.00% | Average: 0.00% | Maximum: 0.00%

Memory Utilization (1 hour)

44.00%

Minimum: 44.00% | Average: 44.00% | Maximum: 44.00%

Alarms

Wireless Interfaces

WLAN

Profile Name	SSID	Security Policy	No. of Clients
BR1-central	BR1-central	[WPA2] [Auth(802.1X)]	2
BR1-flex	BR1-flex	[WPA2] [Auth(PSK)]	0

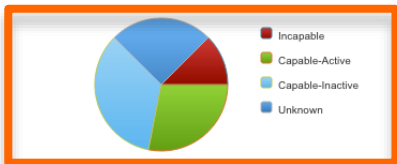
Actions

- Alarm Browser
- Connect to Device
- Support Community
- Support Request
- Ping
- Traceroute
- N-Hop Topology



Application Service

AVC Capable Devices



The Cisco Application Visibility and Control (AVC) solution is a suite of services in Cisco network devices that provides application-level classification, monitoring, and traffic control in order to:

- Improve business-critical application performance
- Support capacity management and planning
- Reduce network operating costs

The Cisco AVC solution is provided within the Cisco Integrated Services Routers 2nd Generation (ISR2), Cisco 4000 Series Integrated Services Routers (ISR4K), Cisco ASR 1000 Series Aggregation Service Routers (ASR1K), Cisco Cloud Services Router 1000V Series (CSR) and Cisco Wireless LAN Controllers.

For more information on Cisco Application Visibility And Control, [click here](#)

AVC Readiness Assessment analyzes wired routers, detects AVC capable and incapable routers and recommends on appropriate actions to become capable if possible or to improve AVC support.

Complete View

Total 32

Show All

Location	Device Name	Device Type	Device IP	Image Version	AVC Capability	App Visibility Ac...	QoS Activation	Recommended Actions	NBAR2 Active P-Pack	AVC LI...
... Location/All Locations,Loc	RTR-POD1-W.prime.ciscofr...	Cisco 892,892W Integrated ...	10.14.201.4	15.4(2)T1	✓ Capable				Advanced:11.0.0	Active
... Location/All Locations,Loc	RTR-SP1.prime.ciscofrance...	Cisco 892,892W Integrated Services Router G2 07		15.4(2)T1	✓ Capable	✓ Active		Upgrade to Protocol Pack 9...	Advanced:7.1.0	Active
... Location/All Locations,Loc	RTR-POD2-W.prime.ciscofr...	Cisco 892,892W Integrated ...	10.14.202.4	15.4(2)T1	✓ Capable	✓ Active			Advanced:11.0.0	Active
... Location/All Locations,Loc	RTR-POD3-W.prime.ciscofr...	Cisco 892,892W Integrated ...	10.14.203.4	15.5(1)T1	✓ Capable				Advanced:11.0.0	Active
... Location/All Locations,Loc	RTR-POD6-W.prime.ciscofr...	Cisco 892,892W Integrated ...	10.14.206.4	15.5(1)T1	✓ Capable				Advanced:11.0.0	Active
... Location/All Locations,Loc	RTR-POD7-W.prime.ciscofr...	Cisco 892,892W Integrated ...	10.14.207.4	15.4(2)T1	✓ Capable				Advanced:11.0.0	Active
... Location/All Locations,Loc	RTR-POD4-W.prime.ciscofr...	Cisco 892,892W Integrated ...	10.14.204.4	15.4(2)T1	✓ Capable				Advanced:11.0.0	Active
... Location/All Locations,Loc	RTR-POD5-W.prime.ciscofr...	Cisco 892,892W Integrated ...	10.14.205.4	15.5(1)T1	✓ Capable				Advanced:11.0.0	Active
... Location/All Locations,Loc	RTR-SP2.prime.ciscofrance...	Cisco 2921 Integrated Servic...	10.14.200.108	15.4(2)T1	✓ Capable	✓ Active		Upgrade to Protocol Pack 9...	Advanced:7.1.0	Active
... Location/All Locations,Loc	RTR-2911-BR1.prime.ciscofr...	Cisco 2921 Integrated Servic...	10.14.200.151	15.4(2)T1	✓ Capable		✓ Active	Upgrade to Protocol Pack 9...	Advanced:7.1.0	Active
... Location/All Locations,Loc	RTR-2911-BR3.prime.ciscofr...	Cisco 2921 Integrated Servic...	10.14.200.153	15.5(2)T1	✓ Capable		✓ Active		Advanced:13.1.0	Active
... Location/All Locations,Loc	RTR-892-BR4.prime.ciscofr...	Cisco 892,892W Integrated ...	10.14.200.154	15.2(1)T1	✗ Incapable			Upgrade ISR2 Image		Inactive



Application Configuration/ Monitoring

Services / Application Visibility & Control / Interfaces Configuration

Data Sources |

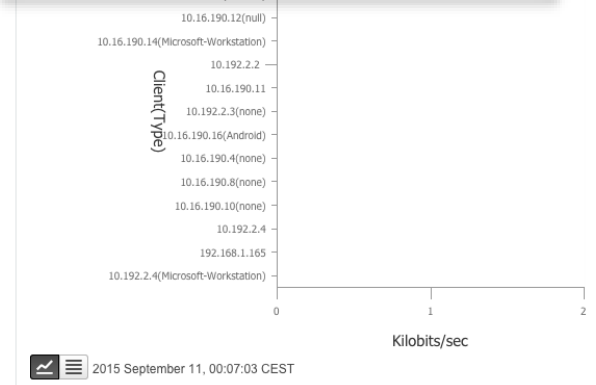
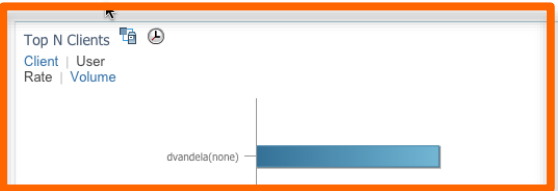
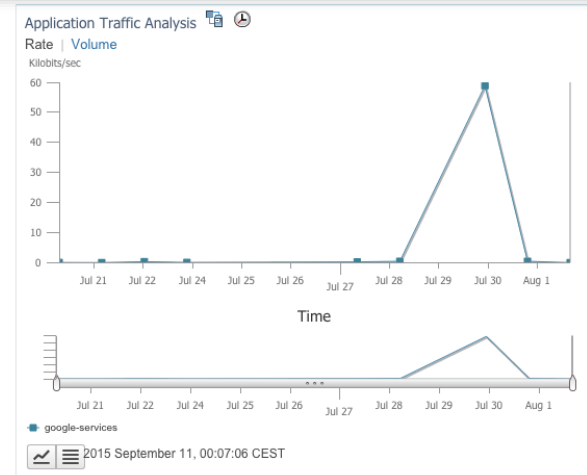
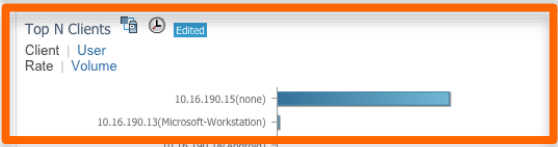
- Port Groups
- ALL
 - Port Type
 - DS0
 - DS1
 - Ethernet CSMACD
 - Gigabit Ethernet
 - ISDN
 - ISDNS
 - L2 VLAN
 - LAPD
 - Other
 - Prop Point To Point Serial
 - Prop Virtual
 - Software Loop Back
 - Tunnel
 - Voice ENCAP
 - Voice FXO
 - Voice Over IP
 - System Defined
 - AVC Configured Interfaces**
 - Access Ports
 - Link Ports
 - Trunk Ports
 - UCS Interfaces
 - Unconnected Ports
 - WAN Interfaces
 - User Defined
 - myportgroup

Port Groups / System Defined / AVC Configured Interfaces
AVC Configured Interfaces

Selected 2 / Total 10

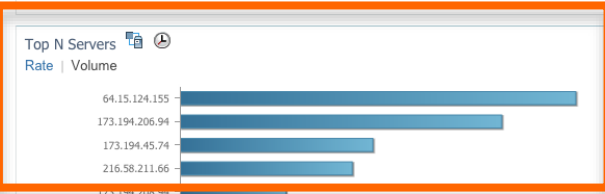
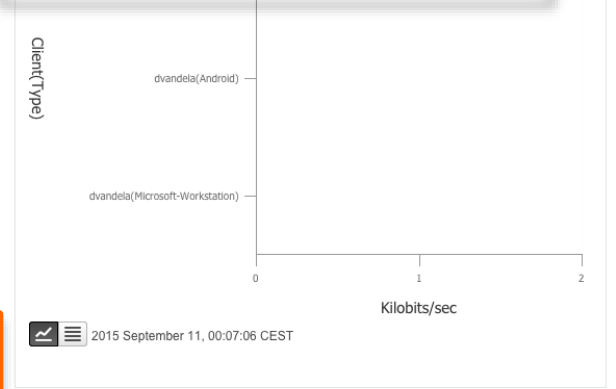
		Enable App Visibility	Disable App Visibility	Enable QoS	Disable QoS	Update Devices QoS	View Jobs	Show	AVC Capable	
Device Name	Device IP	Interface Name	Interface Descripti...	App Visibility Status	App Visibility Policy	QoS Status	Ingress QoS	Egress QoS		
...	10.14.20...	GigabitEthernet0/0/1		Enabled	AVC-pilab template					
...	10.14.20...	GigabitEthernet0		Enabled	App Visibility & Performa					
3	...	GigabitEthernet0/0/1	RTR-POD2-E...	Enabled	App Visibility & Performa					
4	...	GigabitEthernet0/0/0	RTR-POD1-E...			Enabled	nbar-5-cl	marking		
5	...	GigabitEthernet0/0/1	RTR-POD1-E...	Enabled	App Visibility & Performa	Enabled	nbar-5-cl	marking		
6	...	GigabitEthernet0/1	RTR-2911-BR...	Enabled	App Visibility & Performa	Enabled	nbar-5-cl	marking		
7	...	GigabitEthernet0/0	RTR-2911-BR...			Enabled	nbar-5-cl	marking		
8	...	GigabitEthernet0/1	RTR-2911-BR...			Enabled	nbar-5-cl	marking		
9	...	GigabitEthernet0/0	RTR-2911-BR...			Enabled	nbar-5-cl	marking		
10	10.192.2...	Vlan1	JANDMPN.p...	Enabled	App Visibility & Performa					

Filters Application: google-services Time Frame: Past 3 Months Network Aware: All Site: No Selection Go



Application Server Performance

Application ...	Site	Application	Avg. Se...	Ma...	Analysis
173.194.116.79	Unassigned	google-ser...	43	43	Show Anal...
64.15.124.155	Unassigned	google-ser...	32	32	Show Anal...
74.125.136.154	Unassigned	google-ser...	25	25	Show Anal...
173.194.208.94	Unassigned	google-ser...	24	24	Show Anal...
74.125.136.157	Unassigned	google-ser...	24	24	Show Anal...

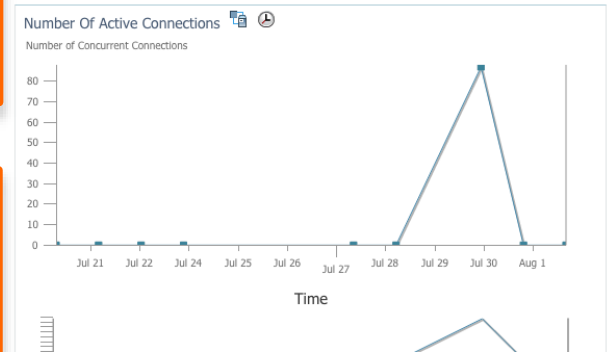


2015 September 11, 00:07:05 CEST

Worst N Clients by ART Metrics

Selected Metric: Transaction Time

Client	Type	U...	Application	Maximum Transacti...	Averag
192.168...			google-services	179,953	179,953



AP Performance Monitor

Dashboard / Performance

Site Device Access Point Interface Application Voice/Video End User Experience WAN Optimization

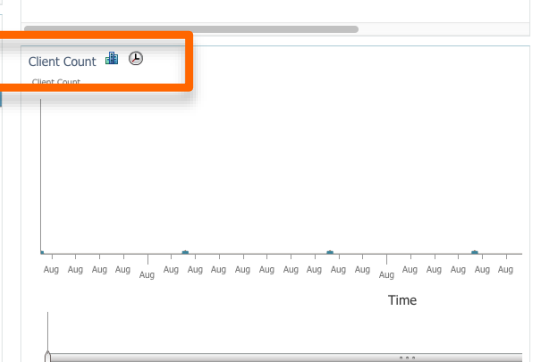
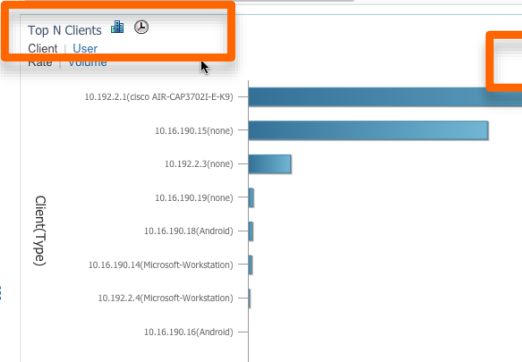
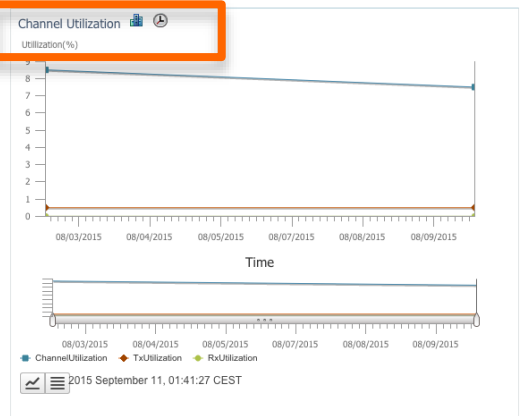
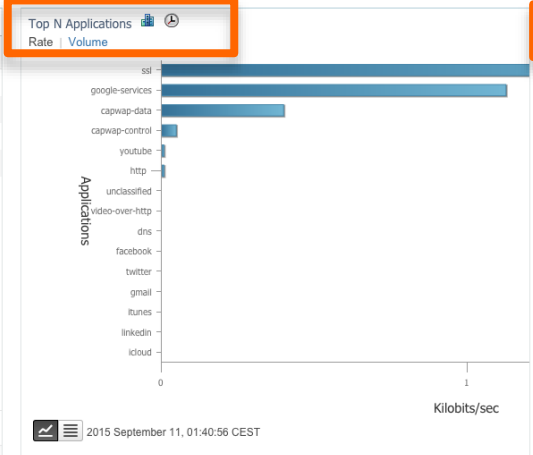
Settings

Filters *Access Point AP-BR1-dvandela Time Frame Past 3 Months Go

Access Point Details

Property	Value
AP Name	AP-BR1-dvandela
Radio Mac	08:cc:68:cc:cb:30
Ethernet Mac	7c:ad:74:ff:d6:52
Model	AIR-CAP3702I-E-K9

2015 September 11, 01:40:55 CEST



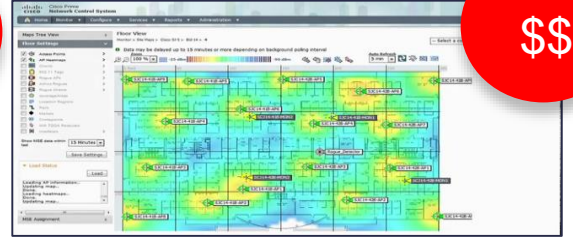
Mobility Solution 구성



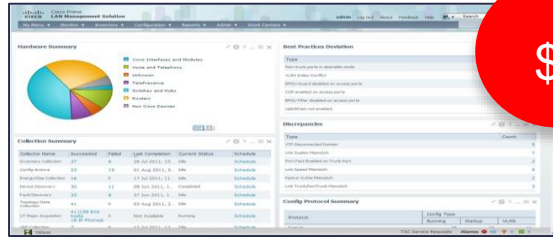
Controller AP License



Prime Infrastructure Lifecycle



MSE Base Location



Prime Infrastructure Assurance



ISE Base License



소규모 무선 환경 구성

: CME Bundle



Bundle SKU:

AIR-AP1702I-K-WLC

Mobility Express AP1700i-E and WLC2504 with 25 lic

Bundle SKU:

AIR-AP2702I-UX-WLC

Mobility Express AP2700i and WLC2504 with 25 lic

Bundle SKU:

AIR-AP3702I-UX-WLC

Mobility Express AP3700i and WLC2504 with 25 lic

소규모 무선 환경 구성

: Cisco Mobility Express

Fast IT



3-step over-the-air wireless network configuration, Cisco WLAN Express Setup Wizard

Manage Up to 25 Access Points



Network management for up to 25 access points and 500 clients



Runs on Cisco® Aironet® 1850 Access Points

Summary

Wireless as Primary Connectivity for the Digital Enterprise





CISCO

TOMORROW starts here.