Wireless Is The NEW ACCESS

최 기 곤 수석부장
kichoi@cisco.com
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Agenda

Access Strategy

Solution Update
Access Point

Day in a Life

Business Area

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.
Technical Decision Priorities

Source: SMO FRAT - BDMs/TDMs and CxO Priorities –

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Access Strategy

Digital Enterprise/Mobility Initiatives

<table>
<thead>
<tr>
<th>Initiative</th>
<th>Currently Implemented</th>
<th>Plan to implement in the next 6-12 months</th>
<th>No plans to implement</th>
</tr>
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<tbody>
<tr>
<td>Work Applications on Smartphone or Tablet</td>
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<td>Guest / Visitor Wi-Fi Access</td>
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<td>Location Based Services and Analytics</td>
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<td>Mobile Applications for Employees</td>
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<td>Mobile Applications for Consumers</td>
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<td>19</td>
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<td>Bring or Choose Your Own Device (BYOD / CYOD)</td>
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<td>22</td>
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<td>Enterprise Application Storefront</td>
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</tr>
<tr>
<td>Workplace Transformation with Analytics</td>
<td>31</td>
<td>52</td>
<td>17</td>
</tr>
<tr>
<td>Wearables (E.g. Smart Watches, Google Glass, Etc.)</td>
<td>20</td>
<td>42</td>
<td>38</td>
</tr>
</tbody>
</table>

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

Access

엑세스 기술동향에 대한 이해
네트워크 인프라의 방향성 설정

IPSec
CAPWAP
ISE

Internet
Data Center
Branch

Long Term Success

Wireless LAN
Access Initiatives

- IT Centric: Integration + Automation
- CAPEX: Own + Operate
- Risk Aversion: Prevention + Avoidance
- Business Centric: New Models + New Markets
- OPEX: Consume + Manage
- Risk Management: Mitigation + Resilience

- Social
- Mobile
- IoT

- SDN
- Software
- (APIC-EM, Cisco ONE)

- Visibility
- Intelligence
- Control

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Unified Access

Outcomes

User

Technology

Wireless

Wired

Branch

Application Experience

Threat Protection

Location Services

Flexible NetFlow

TrustSec / Secure Group Access

Network Mobility Services Protocol

SNMP / SDN Protocols

End-to-End Visibility & Control

Campus

Application

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## 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

<table>
<thead>
<tr>
<th>Router: Granular by Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switch: Granular by Design</td>
</tr>
<tr>
<td>Appliance: Granular by Design</td>
</tr>
<tr>
<td>Private Cloud: Granular by Design</td>
</tr>
<tr>
<td>Public Cloud: Simple by Design – Meraki Cloud</td>
</tr>
<tr>
<td>Access Point: Simple by Design – Mobility Express</td>
</tr>
</tbody>
</table>

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Mobility Initiatives

• Location Analytics
  • Users and Visitors
  • Location (Dwell Time)
  • Activity Patterns (Crossovers)

• Network Analytics
  • Device utilization
  • Interface utilization
  • Application utilization
Agenda

Access Strategy

Solution Update
Access 환경의 변화

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

100Base-T 802.11 g 802.11n
Access
Access
802.11ac

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Wireless Access 트렌드 변화

- 802.11a, 802.11b: 11 Mbps
- 802.11g: 54 Mbps
- 802.11n: 450 Mbps
- 802.11ac: 1 Gbps
- 802.11ac-Wave2: 3.5 Gbps, 6.9 Gbps

Future: 10 Gbps

Media Rich Applications
Pervasive
Nice to Have
Mission Critical


尼斯有
普及
丰富媒体应用
使命关键
AP1850

- 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

Cisco Aironet® 1850 Series

Gigabit Wi-Fi has fully arrived.
# Wireless Indoor AP

<table>
<thead>
<tr>
<th></th>
<th><strong>802.11n</strong></th>
<th>3 Spacial Streams</th>
<th><strong>802.11ac</strong></th>
<th>Wave 2</th>
<th><strong>AP3x00 Modules</strong></th>
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<tbody>
<tr>
<td><strong>Ruggedized</strong></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>AP1600e</td>
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<td>AP2700e</td>
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<tr>
<td></td>
<td>AP3500p</td>
<td></td>
<td>AP3700e</td>
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<td>AP2600e</td>
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<td>AP3700p</td>
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<td>AP3600e</td>
<td></td>
<td>AP1850e</td>
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<tr>
<td><strong>Carpeted</strong></td>
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<tr>
<td>AP700W</td>
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<td></td>
<td>HALO</td>
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<tr>
<td>AP700</td>
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<td>WSM</td>
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<td>AP1600i</td>
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<td>3G</td>
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<tr>
<td>AP2600i</td>
<td></td>
<td></td>
<td>AP1700i</td>
<td></td>
<td>11ac*</td>
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<tr>
<td>AP3600i</td>
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<td>AP2700i</td>
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<td>AP3700i</td>
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</tr>
<tr>
<td>AP1850i</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Home Office</strong></td>
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<tr>
<td>OEAP600</td>
<td></td>
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</table>

* AP3600 only
# Wireless Outdoor AP

<table>
<thead>
<tr>
<th>Indoor AP with Enclosure</th>
<th>1530 Series Outdoor APs</th>
<th>1550 Series Outdoor APs</th>
<th>1570 Series Outdoor APs</th>
<th>Integrated Industry Solution APs</th>
<th>Industrial Wireless AP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enclosure by 3rd Party Vendors</td>
<td>AP1532E</td>
<td>AP1552I, AP1552E</td>
<td>AP1552EU</td>
<td>AP1572EAC</td>
<td>* IW3700</td>
</tr>
<tr>
<td>AP1532I</td>
<td>AP1552C</td>
<td>AP1552H</td>
<td>AP1552CU</td>
<td>AP1572IC</td>
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</table>

Uniband-Antennas

* : 예정

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## Wireless Controller

<table>
<thead>
<tr>
<th></th>
<th>Branches</th>
<th>Campus</th>
<th>Global</th>
<th>Converged Access</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FlexConnect</strong></td>
<td>Virtual</td>
<td></td>
<td>Flex 7510</td>
<td></td>
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<tr>
<td><strong>Standalone</strong></td>
<td>CT2500</td>
<td>CT5508</td>
<td>CT8510</td>
<td>CT5760</td>
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<tr>
<td></td>
<td>CT5520</td>
<td></td>
<td>CT8540</td>
<td></td>
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<tr>
<td><strong>Integrated</strong></td>
<td>AP1852</td>
<td>WiSM2 (Cat6k)</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Cat3650</td>
<td>Cat4500/Sup8E</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Cat3850</td>
<td></td>
</tr>
</tbody>
</table>

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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

- 1997: Self-Learning - RRM
- 2016: Cisco Wi-Fi Leadership, Autonomous Access Point, Controller Coordinated Access Points with RRM, 1, 2, and 3 Spatial Stream 802.11n with CleanAir, Unified Policy and Network Management, Connected Mobile Experiences, Stateful Switchover & Application Visibility and Control, 802.11ac Wave 1 & High-Density Experience, 802.11ac Wave 2 & Multigigabit Ethernet & Hyperlocation

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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

Cat 5e Cables
Limited to 1G!

WiFi @ 1G
>1G

Limited to 1G!
Delivers up to 5X Speeds in Enterprise without replacing Cabling Infrastructure
### Multigigabit 기술

<table>
<thead>
<tr>
<th>Cable Type</th>
<th>1G</th>
<th>2.5G</th>
<th>5G</th>
<th>10G</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cat5e</td>
<td>100m, PoE/PoE+/UPoE</td>
<td>100m, PoE/PoE+/UPoE</td>
<td>70*-100m, PoE/PoE+/UPoE</td>
<td>N/A</td>
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<tr>
<td>Cat6</td>
<td>100m, PoE/PoE+/UPoE</td>
<td>100m, PoE/PoE+/UPoE</td>
<td>100m, PoE/PoE+/UPoE</td>
<td>55m, PoE/PoE+/UPoE</td>
</tr>
<tr>
<td>Cat6a</td>
<td>100m, PoE/PoE+/UPoE</td>
<td>100m, PoE/PoE+/UPoE</td>
<td>100m, PoE/PoE+/UPoE</td>
<td>100m, PoE/PoE+/UPoE</td>
</tr>
</tbody>
</table>

* 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 특장점

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

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### mGig 스위치 제품군

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<th>Ports</th>
<th>Port Capabilities</th>
<th>New Uplink Modules</th>
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<tr>
<td><strong>Modular Access</strong></td>
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<td></td>
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<tr>
<td><strong>Fixed Access</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>NG Workspace Switch</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Price-compelling 48-port Mgig</strong></td>
<td>48</td>
<td>12 mGig ports</td>
<td>UPOE, EEE, MACsec</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>New 2x40G and 8x10G (existing NM’s are supported)</td>
</tr>
<tr>
<td><strong>High Performance 24-port 10Gb-T</strong></td>
<td>24</td>
<td>24 mGig ports</td>
<td>UPOE, EEE, MACsec</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>New 2x40G and 8x10G (existing NM’s are supported)</td>
</tr>
</tbody>
</table>
### 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 | Compact 3560X Multigigabit switch
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
Mobility Service

Application: QoS

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

WMM Queue

Voice

Video

Best Effort

Background

QoS Tagged Packets

Call Manager

WLC

Access Point

Direct – Platinum QoS

 협력사/방문 – Silver QoS

LIMITES DE VELOCIDADES

AUTÔVÔIS: 110 km/h
ONÁIS: 90 km/h
CÂMINKÓES: 80 km/h
Mobility Service

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

<table>
<thead>
<tr>
<th>Applications</th>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Time Applications (Business)</td>
<td>High</td>
</tr>
<tr>
<td>Non Real Time Applications (Business)</td>
<td>Normal</td>
</tr>
<tr>
<td>Casual Applications</td>
<td>Low</td>
</tr>
<tr>
<td>Malicious Applications</td>
<td>Drop</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>User Role</th>
<th>Applications</th>
<th>Device</th>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exec</td>
<td></td>
<td></td>
<td>High</td>
</tr>
<tr>
<td>Employee</td>
<td></td>
<td></td>
<td>Normal</td>
</tr>
<tr>
<td>Contractor</td>
<td></td>
<td></td>
<td>Low</td>
</tr>
</tbody>
</table>

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Mobility Service

- Stateful context transfer on roam

Flow ID | App Name | Packets
--- | --- | ---
1 | WebEx | 1000
2 | Msft-Lync | 2300
3 | Skype | 660

Real-time information for last 90 seconds

Don’t Allow
Voice
Video
Best Effort
Rate Limiting
AVC(Application Visibility, Control) 기능을 이용하여, 사용자 어플리케이션에 대한 세분화된 분리 및 제언가 가능함

특/장점
• 시스코는 1,000여개 이상의 어플리케이션에 대한 분리 및 Historical Data에 대한 모니터링이 가능함
  유/무선 네트워크의 AVC(어플리케이션 인지/제어 기능)
• 국내 SNS 어플리케이션에 대한 인지 기능
• Protocol Pack를 사용한 손쉬운 어플리케이션 D/B 추가

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

Traffic
Wireless LAN Controller

NBAR2 LIBRARY
Deep Packet inspection

Interactive
Non-Real Time
Background
POLICY
Packet Mark and Drop

트래픽 확인, 제어, 트러블슈팅을 통한, 사용자의 서비스 지속 유지/향상

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
- CSSD
- Emergency
- Geriatric Care
- ICU
- Records
- Neonatal
- Operating Room
- Pediatric Care
- Pharmacy

Visitor Count
- Connected Clients
- Busiest Department

Widgets in Healthcare Report

Wait Times
- Diners per Cafeteria
- Path Analysis

Run Setup Wizard
Analytic Service

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

특정 장소에서의 사용자들의 평균 접유 시간
가장 많은 사용자들이 찾는 장소?
가장 많은 사용자들의 건물과 세부 위치?

건물내의 Peak Zone 은 어떻게 되는지?
해당 Zone 에서의 Total Visitor 의 숫자는?
각 영역의 무선 인프라를 이용하여, 사용자들의 추이를 분석하며, 특정 장소에 대한 평균 이용시간 확인 → 건물의 공간 활용 및 건물내 사용자들의 편이 사항 지속 개선을 위한 비즈니스 인텔리전스 확보

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

각 층별로의 점유시간 확인

---

**Average Dwell Time**

**5HRS 37MINS**

Average Dwell Time of All Visitors

<table>
<thead>
<tr>
<th>Omins</th>
<th>5hrs 37mins</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 mins</td>
<td>Repeat Visitors</td>
</tr>
<tr>
<td></td>
<td>New Visitors</td>
</tr>
</tbody>
</table>

**Average Dwell Time by Floor**

- **0-1F**
- **1F**
- **2F**
- **3F**
- **4F**

**Average Dwell Time of Unique Visitors:** 3hrs 52mins

**Focus Area:** SJC-21 (System Campus)

**Data Range:** Thu, 01 Jan 2015 to Thu, 31 Dec 2015 오전 12:00:00→오후 11:59:00
각 영역의 무선 인프라를 이용하여, 건물내의 특정 장소에 대한 Path에 대한 확인을 통한, 물리적 보안 환경 및 이용객 동선 및 건물 내 시설 안내 및 온라인 광고판의 활용도 극대화

Analytic Service
Prime Infrastructure: Network Summary
360 Device View

Monitor / Managed Elements / Network Devices

Device Groups / Device Type

Wireless Controller

- Cisco 2560 Series Wireless LAN Controller
- Cisco 5600 Series Wireless LAN Controller
- Cisco Catalyst 3560 Series Switches
- Cisco Catalyst 3850 Series Ethernet Switches

Search Filter

Device Name | Reachability | IP Address/DNS
---|---|---
PRIME-CT8658 | ✔️ | 10.16.254.30
SW-3950-BR3 | ✔️ | 10.14.160.163
SW-CA-POD1-E | ✔️ | 10.14.201.5
SW-CA-POD5-E | ✔️ | 10.14.201.5
SW-POD1-6-4 | ✔️ | 10.14.201.1
SW-POD2-E | ✔️ | 10.14.201.2
SW-POD3-E | ✔️ | 10.14.201.3
SW-POD4-E | ✔️ | 10.14.201.4
SW-POD6-E | ✔️ | 10.14.201.6
SW-POD7-E | ✔️ | 10.14.201.7
SW-SP1-Apri-m | ✔️ | 10.14.201.201
SW-SP2-Apri-m | ✔️ | 10.14.201.202
WLC-POD1-W | ✔️ | 172.195.1.1
WLC-POD2-W | ✔️ | 172.195.2.1
WLC-POD3-W | ✔️ | 172.195.3.1
WLC-POD4-W | ✔️ | 172.195.4.1
WLC-POD5-W | ✔️ | 172.195.5.1
WLC-POD6-W | ✔️ | 172.195.6.1
WLC-POD7-W | ✔️ | 172.195.7.1

PRIME-CT5508

IP Address: 10.16.254.30
All Locations: Unassigned
Software Version: 8.1.102.0
Licence-used/capacity: 3/21
Number of Active APs: 2
Number of Active Clients: 3

Device 360° Views

CPU Utilization (1 hour)

0.00%

Memory Utilization (1 hour)

44.00%

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

Actions:
- Alarm Browser
- Connect to Device
- Support Community
- Support Request
- Ping
- Trace route
- N-Hop Topology

Last Inventory Collection

- Completed
- Completed
- Completed
- Completed
- Completed
- Completed
- Completed
- Completed
- Completed
- Completed
- Completed
- Completed
- Completed
- Completed
- Completed
- Completed
## Application Service

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 (ISR2G), Cisco 4000 Series Integrated Services Routers (ISR4K), Cisco ASR 1000 Series Aggregation Service Routers (ASR), Cisco CallManager Express (CME), 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.

### AVC Capable Devices

<table>
<thead>
<tr>
<th>Location</th>
<th>Device Name</th>
<th>Device Type</th>
<th>Device IP</th>
<th>Image Version</th>
<th>AVC Capability</th>
<th>App Visibility Active</th>
<th>QoS Activation</th>
<th>Recommended Actions</th>
<th>NEAR2 Active P-Pack</th>
<th>AVC Li...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>RTR-P01-1W</td>
<td>Cisco 892,892W Integrated Services Router 03</td>
<td>10.14.200.1</td>
<td>15.4(2)T1</td>
<td>Capable</td>
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<td>Capable</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Recommended Actions**
- Upgrade to Protocol Pack 9...
- Upgrade to Protocol Pack 9...
- Upgrade to Protocol Pack 9...
- Upgrade to Protocol Pack 9...
- Upgrade ISRG2 Image
AP Performance Monitor

Dashboard / Performance

Filters
- Access Point
- Time Frame
- 3 Months

Access Point Details

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>AP Name</td>
<td>AP-BR1-dwindsda</td>
</tr>
<tr>
<td>Radio Mac</td>
<td>08:ed:58:cc:bf:30</td>
</tr>
<tr>
<td>Ethernet Mac</td>
<td>7c:ad:74:4:65:52</td>
</tr>
<tr>
<td>Model</td>
<td>AR-CAP1700G-E-K9</td>
</tr>
</tbody>
</table>

Top N Applications

Channel Utilization

Top N Clients

Client Count
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.