

# Решение Cisco Wi-Fi для сервис-провайдеров

Telecom Summit 2015

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# Драйверы развития Wi-Fi в мире



# Ценности Wi-Fi для потребителей



Wi-Fi as a platform for service innovation, revenue generation and experience transformation



Wi-Fi as a 3G/4G offload technology: a mobile network optimization tool



Wi-Fi as a hotspot technology: a traditional consumer service



# Как достичь выгоды от решения

Save Money



Make Money

## Retention & Loyalty

Increase customer stickiness by offering free mobile Internet through public Wi-Fi



## Mobile Data Offload

Optimize mobile data network or deploy offload services



## Managed Services

Increase B2B revenues with managed wireless services



## Location Analytics

Create new revenues through location data analytics



## Location-Based Advertising

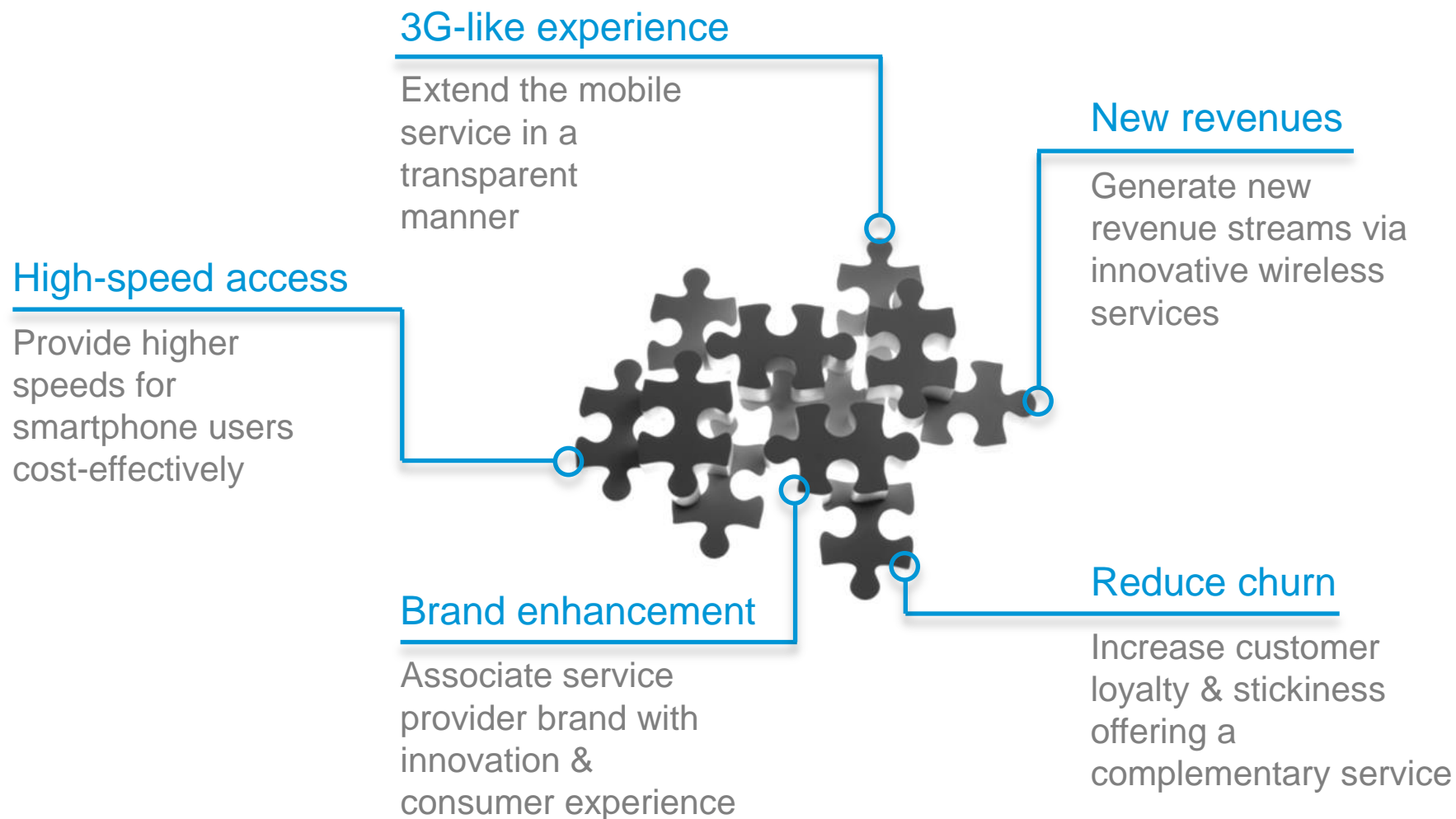
Generate new revenue streams via mobile advertising



# Пример: Shopping Mall



# Wi-Fi содержит множество ключевых преимуществ для провайдеров



# Обзор архитектуры решения Cisco Wi-Fi для сервис- провайдеров

The SP Wi-Fi solution set contains multiple architecture models

Which one is suitable for you and your customer?

# Единственное комплексное Wi-Fi решение для сервис-провайдеров



Carrier-Grade



Residential, multi-dwelling, hotspot/SMB, venue, and metro



“Cisco is **by far the leading vendor** of service provider Wi-Fi technology, with the **broadest product portfolio** and **greatest breadth of integration experience...**”

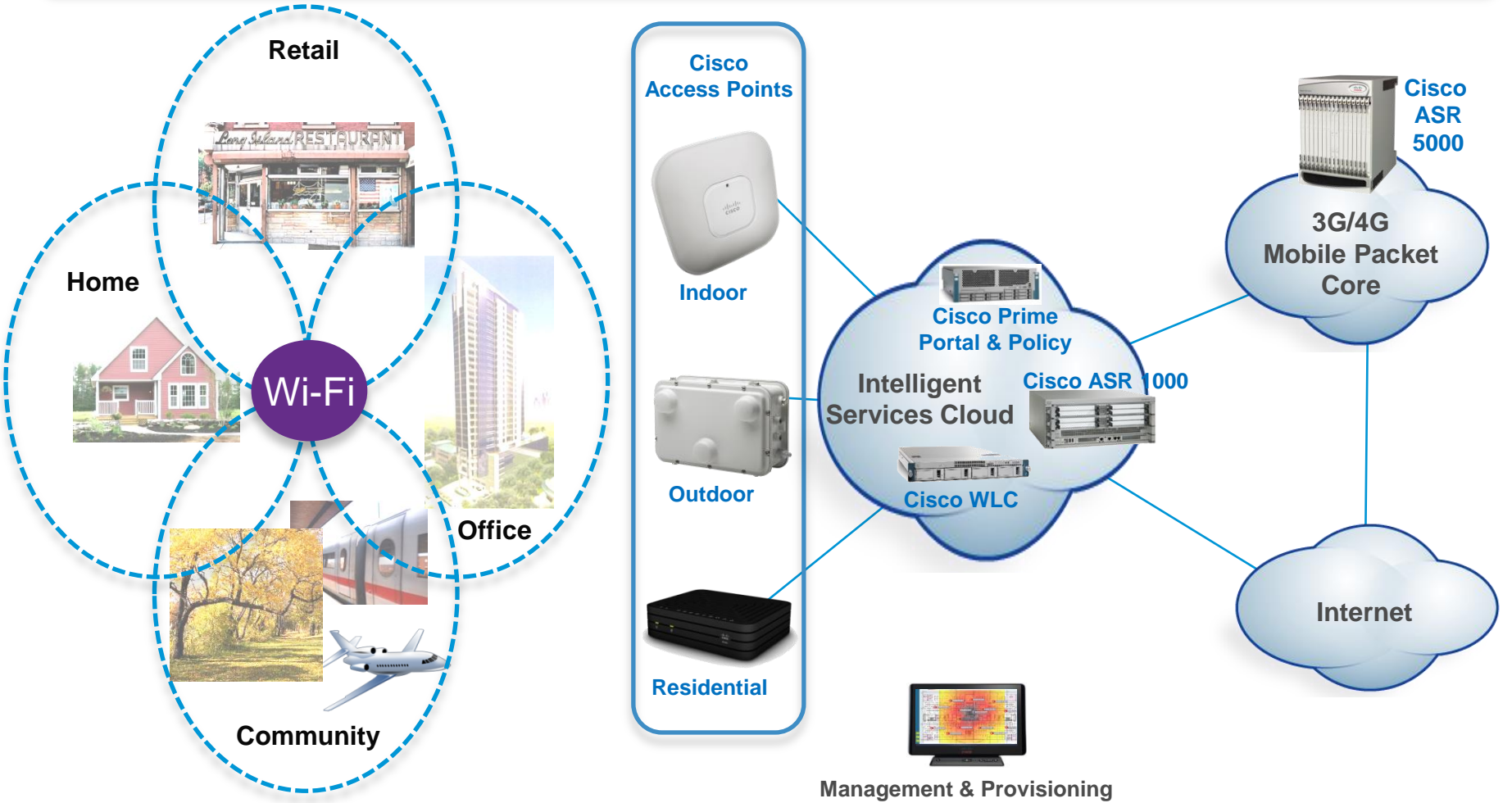
Source: Heavy Reading: Vol. 9, No. 10, November 2011





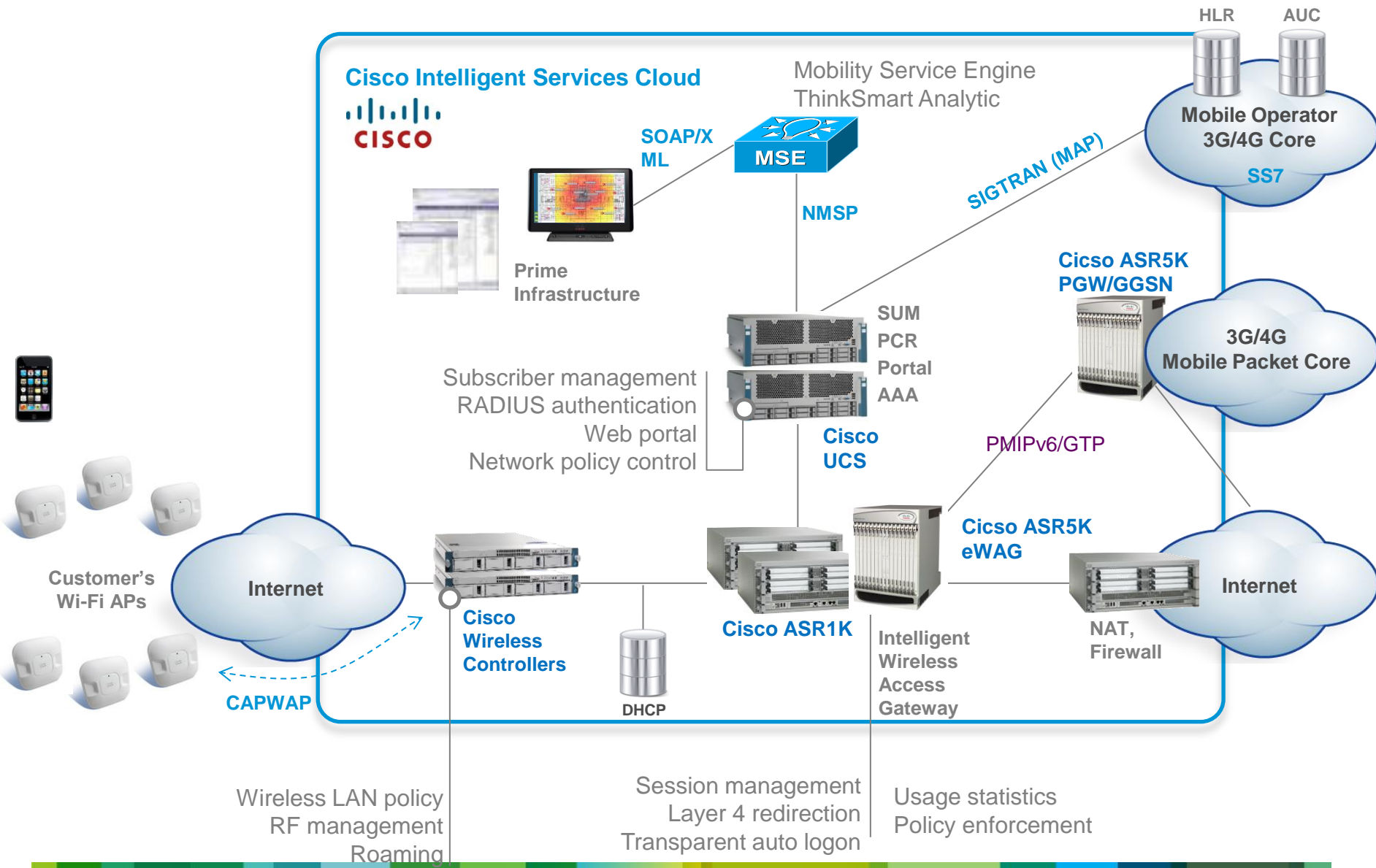
# Решение Cisco Wi-Fi операторского уровня

## Cisco Advanced Services



## Cisco Prime

# Обзор решения Cisco Wi-Fi для SP



# Взаимодействие решения с пользовательскими устройствами

**User Endpoint is a subscribers carrier experience**

Coverage, Performance,  
Ease of use

## Seamless

Authentication  
Network Roaming  
Session Roaming  
Policy Roaming



## Authentication Options

EAP-SIM  
EAP-AKA  
WISPr  
Web Logon  
MAC TAL

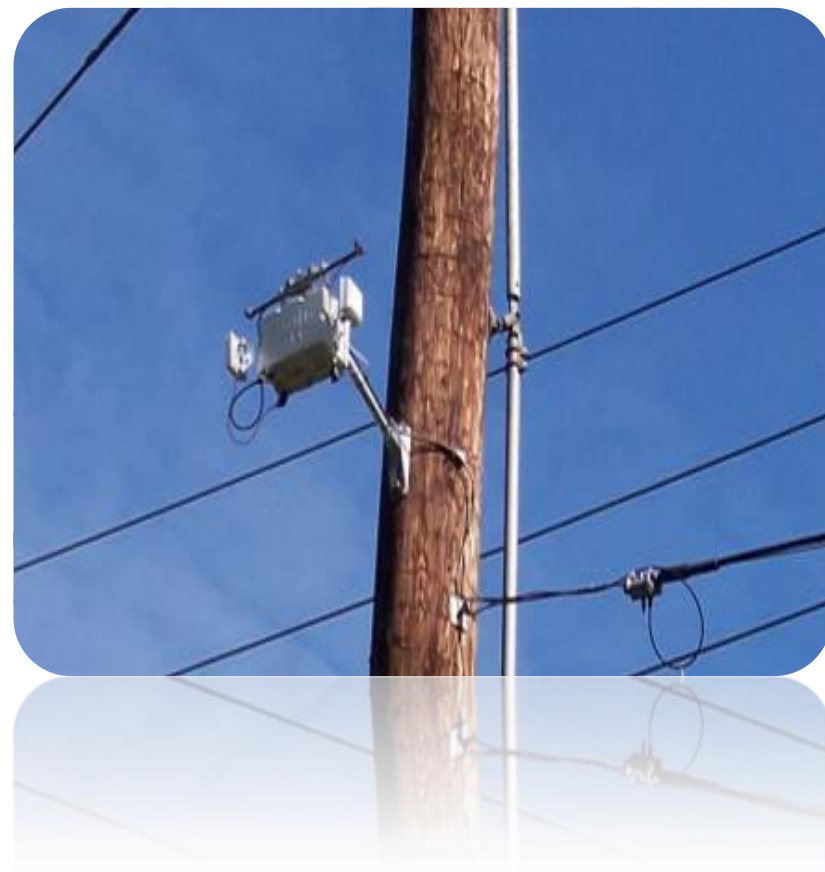
## Standards

ANDSF  
HS 2.0

## Goals:

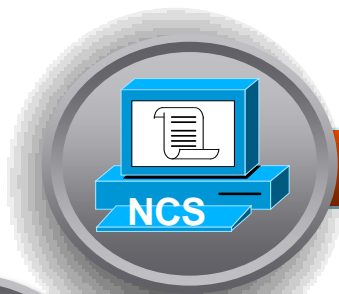
- Seamless Roaming across many providers networks (HS 2.0)
- Zero Configuration (ANDSF)
- Zero footprint (Client Less)
- Support no-UE devices

# Компоненты решения Cisco Wi-Fi для SP



# Основные компоненты

Управление



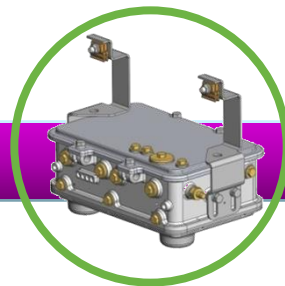
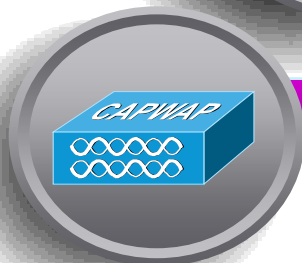
Сервисы  
мобильности



Контроллеры



Точки  
доступа



# Портфолио WLAN контроллеров в 2015 г.

## Large Campus and Service Provider

AireOS 5508



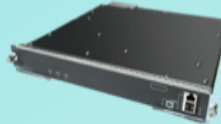
- 500 APs
- 7000 clients
- 8 Gbps

IOS 5760



- 1000 APs
- 12,000 clients
- 60 Gbps

AireOS WISM2



- 1000 APs
- 15,000 clients
- 20 Gbps

AireOS 5520



- 1500 APs
- 20,000 clients
- 20 Gbps

NEW

AireOS 8510



- 6000 APs
- 64,000 clients
- 10 Gbps

AireOS 8540



- 6000 APs
- 64,000 clients
- 40 Gbps

NEW

## Small Campus / Branch (Controller On-Premise)

AireOS  
Mobility  
Express

AireOS 2500



- 25 APs
- 500 clients
- Flexconnect
- 75 APs
- 1000 clients
- 1 Gbps

IOS Catalyst 3650



- 50 APs per switch/stack
- Directly connected APs
- 1000 clients per stack
- 40 Gbps per switch

IOS Catalyst 3850



- 100 APs per stack
- Directly connected APs
- 2K clients per stack
- 40 Gbps per switch

IOS Catalyst 4500-E SUP

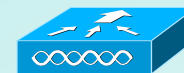


- 100 APs per SUP
- Indirectly connected APs
- 2K clients per stack
- 40 Gbps per switch

## Branch (Controller in DC)

Scale  
With 8.2

AireOS Virtual  
WLC



- ESXi & KVM
- 1.5K APs
- 16K clients
- 500 Mbps

AireOS Flex 7500



- 6000 APs
- 64,000 clients
- 1 Gbps

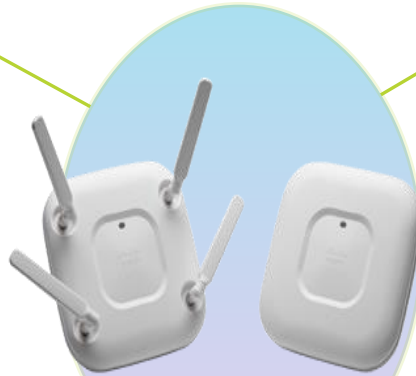
# Передовые технологии Cisco

Performance, Mitigation, Scalability, and AP Roaming Optimized for High Client Density Networks

## Cisco CleanAir® 80 MHz

Optimal performance for high-throughput, high-density environments

RF interference detection and mitigation optimized for 802.11ac's wider channel bandwidths



## RF Turbo Performance

Support highly dense clients without performance degradation

Scale seamlessly to 60+ 802.11ac clients using interactive video and multimedia traffic with no performance degradation

## Cisco® ClientLink 3.0

Increase performance and range by up to 60%

Cisco patented implicit beamforming technology for 802.11ac clients complements explicit beamforming. Also extends beamforming to 802.11a/g/n clients.

## RF Noise Reduction

Dense AP deployments support high volumes of clients with minimal co-channel interference

Increase spectrum usage efficiency and improve performance

## Optimized AP Roaming

Intelligently assist client roaming based on configurable attributes

Right-sized Wi-Fi cell to better assist client handoff in a dense network

# Внутренние точки доступа Cisco Aironet Indoor

Industry's Best 802.11ac / 802.11n Access Points

## Mission Specific 600 & 700

802.11n



- Up to 600 Mbps, 802.11n
- 702w: Wall Plate AP ideal for Hospitality, Dorm Rooms, MDUs
- 702i: Compact Mid-market AP
- 600: Teleworker AP

NEW

Enterprise Class

## 1700

802.11ac



- Up to 1 Gbps, 802.11ac
- 3x3 MIMO : 2 SS
- CleanAir Express\*
- Transmit Beamforming

Mission Critical

## 2700

802.11ac



- Over 1 Gbps, 802.11ac
- 3x4 MIMO : 3 SS
- HDX Technology
- CleanAir 80 MHz, ClientLink 3.0, VideoStream

Best in Class

## 3700

802.11ac



- Over 1 Gbps, 802.11ac
- 4x4 MIMO : 3SS
- HDX Technology
- CleanAir 80 MHz, ClientLink 3.0, VideoStream
- Future proof modularity: Security, 3G Small Cell, Location Accuracy or Wave 2 802.11ac

Mission Specific

Enterprise

Mission  
Critical

Best In Class



# Внешние точки доступа Cisco Aironet Outdoor

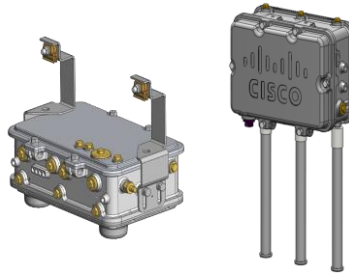
Industry's Best 802.11ac / 802.11n Access Points

## Base 1530



- 802.11n, 2G: 3x3:3; 5G: 2x3:2
- Low profile, competitive price
- 1x GigE port
- Power: PoE or VDC
- Int/External Antennas

## High Functionality 1550



- 802.11n, 2x3 MIMO : 2 SS
- Multiple models and options
- Enterprise, Carriers, MSOs
- DOCSIS 3.0 8x4
- Int/External Antennas

Best in Class

## 1570

NOV  
2014



- 802.11ac, 4x4 MIMO : 3 SS
- HDX Technology
- CleanAir, ClientLink, Optimized Roaming for Outdoors
- Carrier and Enterprise-class
- NG Cable: DOCSIS 3.0 24x8
- Int/External Antennas
- Modular: Future Proof

# Точка доступа Cisco Aironet 1570

## Enterprise and Carrier-class Outdoor 802.11ac with HDX Technology

Introducing Cisco Aironet 1570 Series



**3X** Performance  
of 802.11n

- 4X4 Transmit & Receive
- 3 Spatial Streams
- Max. Allowable Transmit Power\*
- Flex + Mesh (Bridge) Mode
- Future Proof: Plug-in Module via POE
- Stateful Switch Over

## HIGH DENSITY EXPERIENCE

RF Interference,  
Detection and Mitigation  
**CleanAir for 80MHz**

Increase Performance  
and Range  
**ClientLink 3.0**

Intelligent Handoff  
in High Density  
**Optimized Roaming**

More 802.11ac  
Clients per AP  
**Turbo Performance**

\*Meets Highest Power allowed by FCC

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