

The Cisco Live! logo features the word "CISCO" in a bold, black, sans-serif font, followed by "Live!" in a black, cursive script font. The background of the entire image is a vibrant, multi-colored abstract pattern of overlapping, semi-transparent shapes in shades of red, orange, yellow, green, and blue, creating a sense of motion and energy.

CISCO *Live!*

Let's go

#CiscoLive



The bridge to possible

# Cisco DNA Service for Bonjour

Randeep Singh  
Technical Marketing Engineer  
BRKENS-2097

CISCO *Live!*

#CiscoLive



# Cisco Webex App

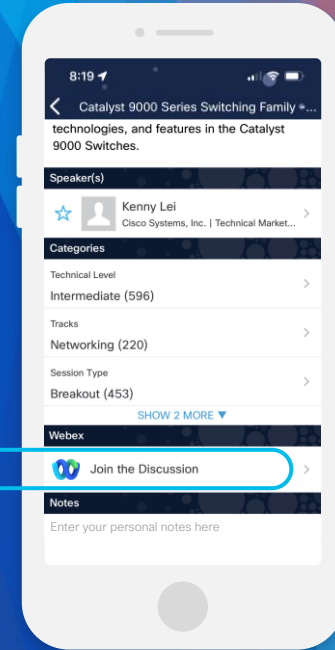
## Questions?

Use Cisco Webex App to chat with the speaker after the session

## How

- 1 Find this session in the Cisco Live Mobile App
- 2 Click “Join the Discussion”
- 3 Install the Webex App or go directly to the Webex space
- 4 Enter messages/questions in the Webex space

Webex spaces will be moderated by the speaker until June 9, 2023.



<https://cislive.ciscoevents.com/cislivebot/#BRKENS-2097>

# Agenda

- Success Stories
- More Than Just AirPlay
- mDNS Challenges in the Enterprise
- Solution Overview
- Location-Based Services
- Configuring the Solution
- References

## Challenges

St. Vrain Valley School District consists of several schools and primary district office. Our classrooms relies on mDNS technology allowing students to engage, collaborate and share content with their teachers.

The single WLC scale, performance and granular location-based mDNS service solution had been challenging. As our network and services scale horizontally, the overall Wireless user-experience across academics and office network was impacted.

50  
Sites

35000  
Users

2450  
AP

1  
WLC  
HA

## Solution

Since 2017, we migrated to Cisco DNA Service for Bonjour solution to enable distributed and scalable mDNS service-routing solution for our environment.

Our networks are more reliable with improved performance. The services in classrooms are more secure and delivers predictable user-experience to students, teachers and staff.

5000+  
AirServers

20000  
Receivers

6  
Catalyst

1  
Controller

Global Enterprise Customers\*

7000+



Enterprise



Healthcare



Education



Financial



Public Sector



Manufacturing



Hospitality



Media



Transportation



Retail

\*App Downloads Since 9/19

## Media

SONY



Google

harman/kardon®



## AVB

Audinate

BARCO

Panasonic

visual engineering  
LIGHTWARE

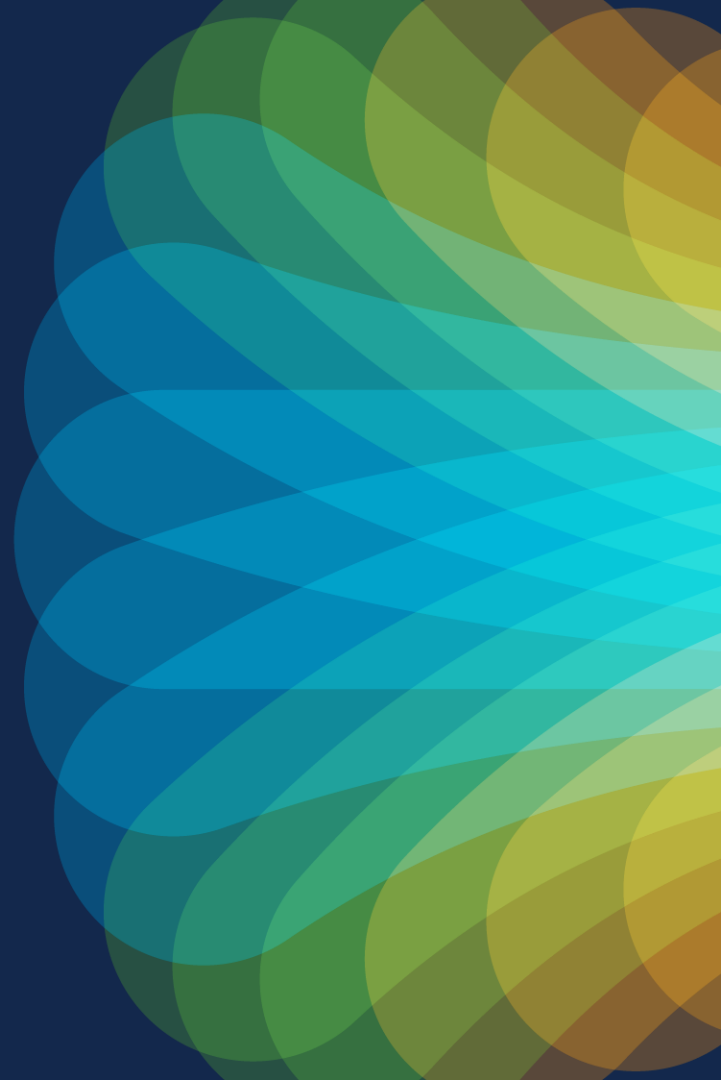
## Video/Conferencing

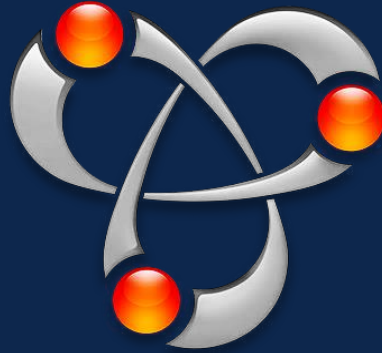
webex  
by CISCO

zoom

CRESTRON

# Bonjour Challenges in Enterprise





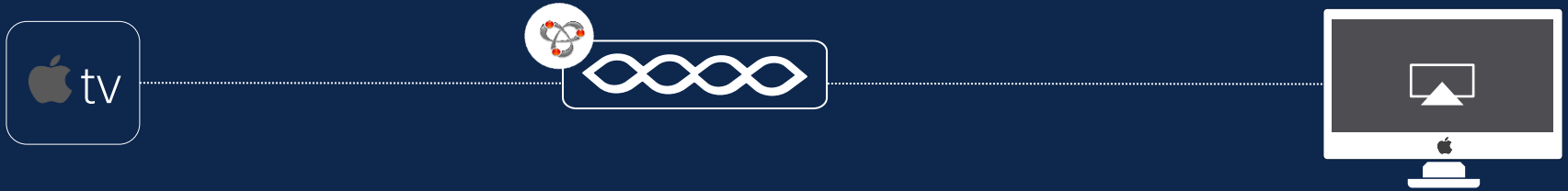
## Overview

ZeroConf Service Solution  
Ease of Use  
Consumer-class & beyond  
Industry Standard



## Challenges

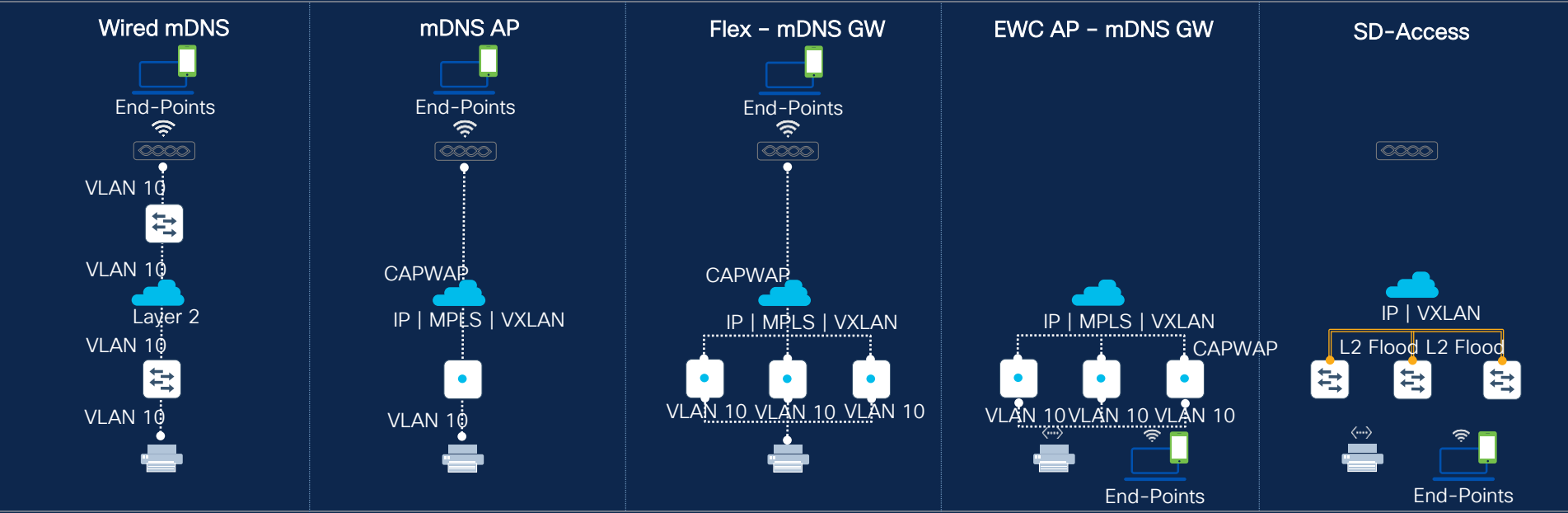
- Single Network visibility
- Single Local Gateway
- No End-to-End Solution
- Not Scalable



## Challenges

- Single Network visibility
- Limited Wired Service
- Flooded L2 Networks
- Not Scalable

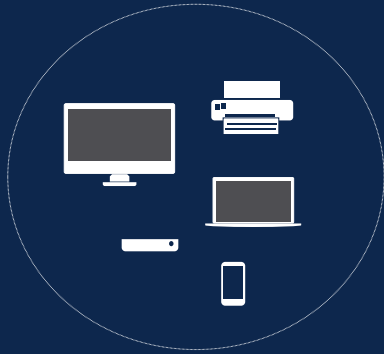
# Flood Domain Extended Networks



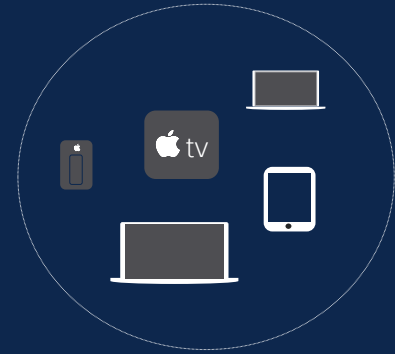
## Challenges

- Flood-n-Learn mechanics
- Limited scale
- Performance Impacting
- Extended fault domain





Local Area Bonjour



Local Area Bonjour

## Challenges



Network

Wired & Wireless  
Service without boundaries



Scalable

High scale solution  
No performance compromise



Secure

IT controlled service  
Policy-Based service distribution



Role-Based

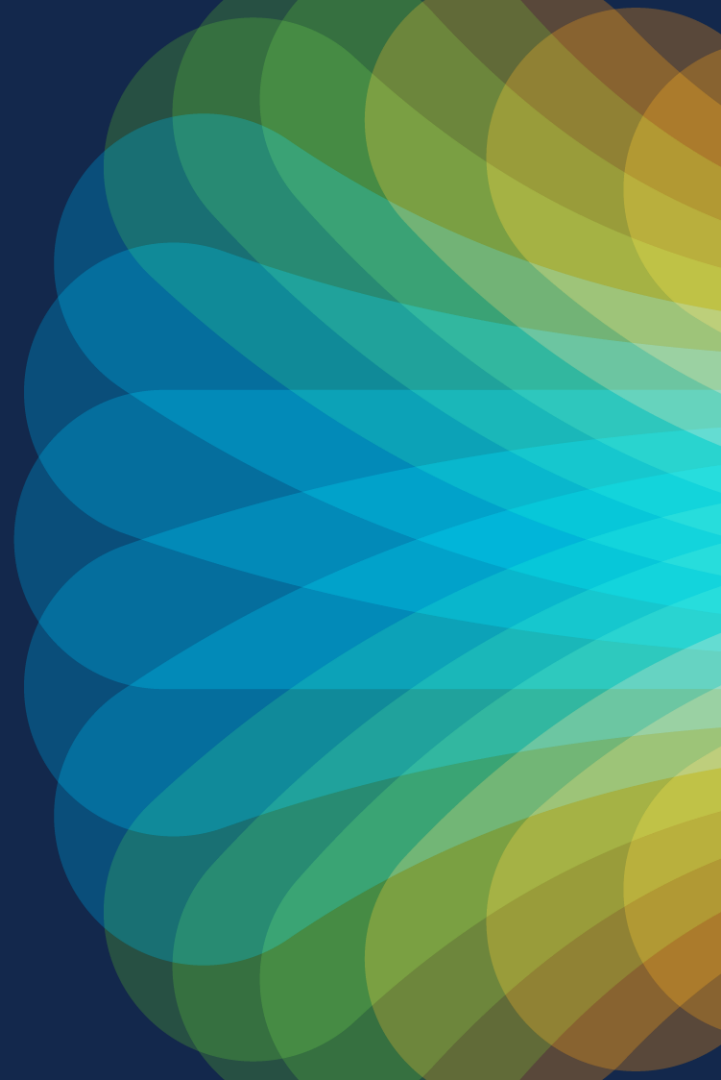
BYOD Service Management  
Role and Network Policy Based

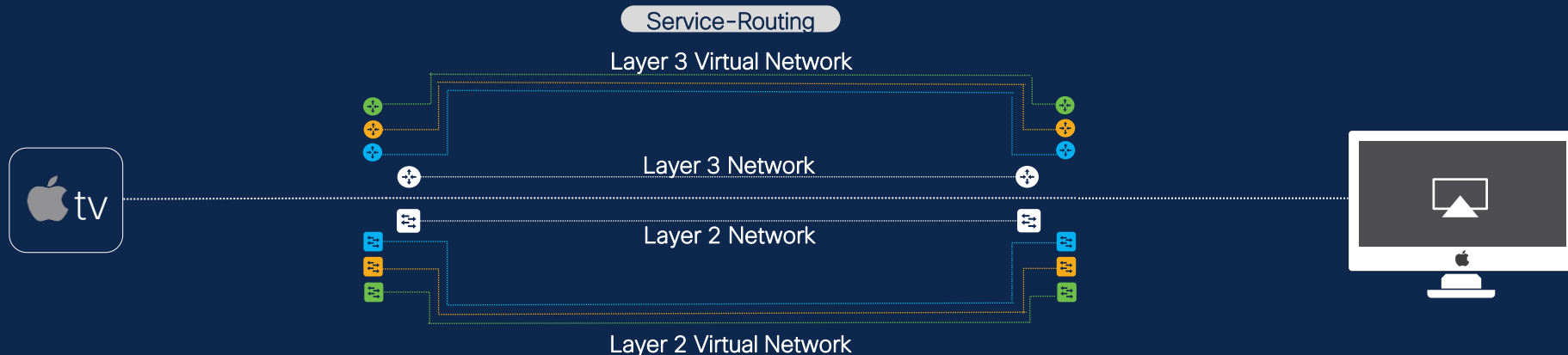


Location

Location Proximity Service  
Wired and Wireless Mobility

# Solution Overview





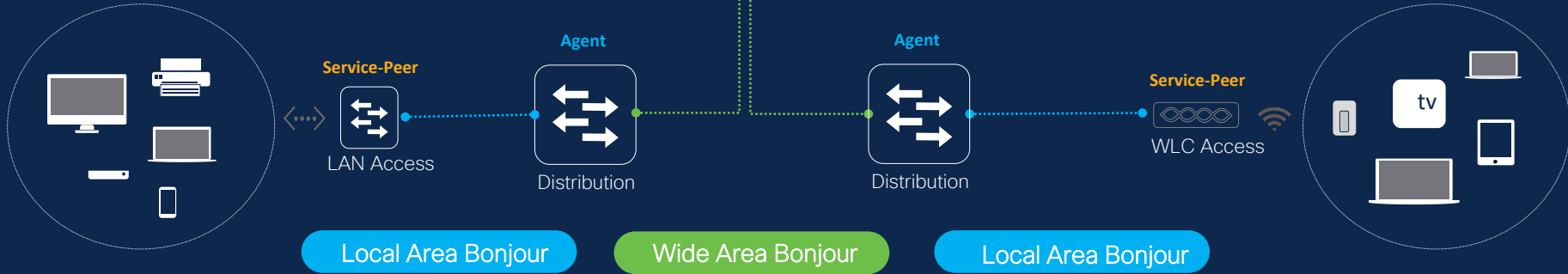
## Service-Routing

- Routes non-routeable
- Enterprise grade solution
- Seamless Integration
- Transparent Experience

# Cisco DNA Center



Wide Area Bonjour Application  
Controller



## Unicast Bonjour Service

## Unicast Bonjour Service Routing

## Unicast Bonjour Service



Hierarchical



Secure



Location



Performance



Battery Life

2-Tier Service Routing

Policy-Based Service Management

Deep granular location-based service

Improved system performance

May assist improve battery-life

Structured Role and Function

IT controlled deterministic services

Location-aware Wide Area Bonjour

Increase network bandwidth

On-demand Query response mode

mDNS Flood-Free Networks

Protected network flood boundaries

Flexible design any Enterprise Network

Flexible design any Enterprise Network

Increase Wireless network bandwidth





Cisco DNA Center



Catalyst 9000



Nexus 9000



Catalyst 9800



macOS



iOS



tvOS



audioOS



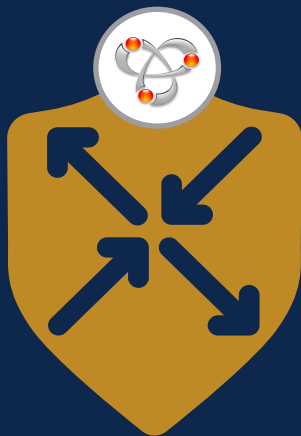
## Integration

Seamless Integration

Transparent to Users

Compatible with any Vendors

Follows Industry Standards



## Reflection

- Built-in IANA PTR support
- Enumerated Query Blocked
- Strict Policy Enforcement



## Amplification

- Rate-limited Query Flood
- Unicast Query Blocked
- Advanced Query Mgmt



## MITM Spoofing

- Flood-free L2 networks
- Limited to PTR Query only
- Authentic source discovery



## Poisoning

- Role-based mDNS Policy
- Secure service distribution
- Dynamic Policy Enforcement



## Resource

- Protected Resource Utilization
- HW-based rate-limiters
- Secure endpoint devices

## Cisco DNA Center

Catalyst  
9000



Catalyst  
9800



### Traditional Wired Networks

Multi-Layer Network  
Routed Access



### Traditional Wireless Networks

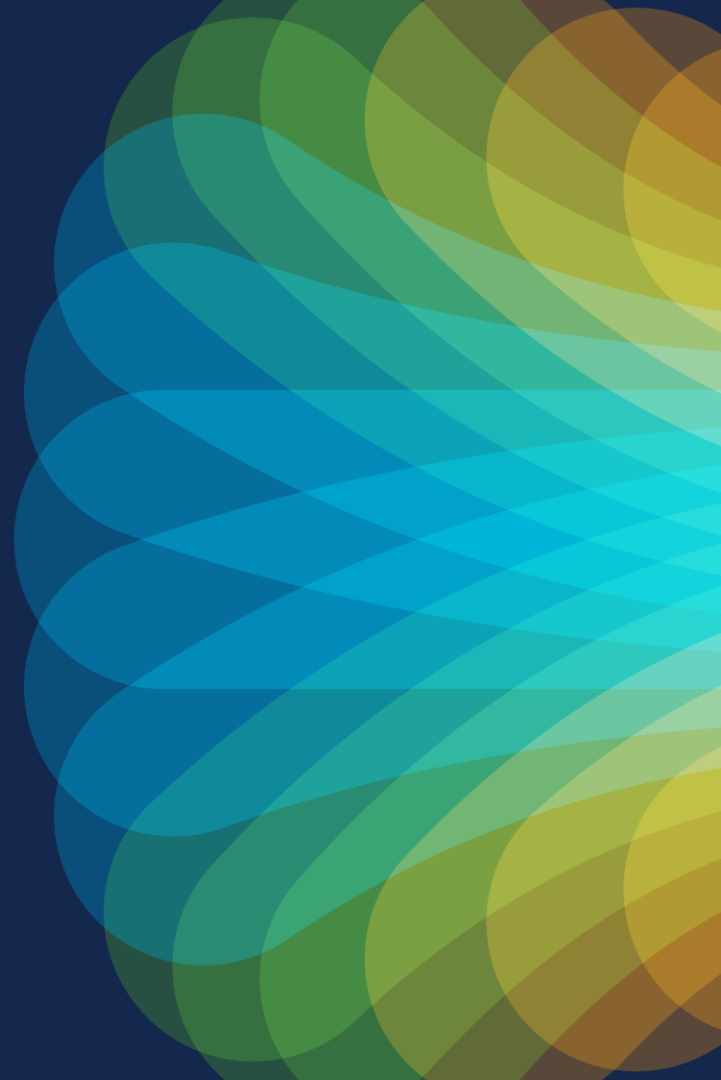
Local-Mode  
FlexConnect – Central Switching  
FlexConnect – Local Switching  
EWC – Access Point  
EWC – Catalyst Switch



### Overlay Networks

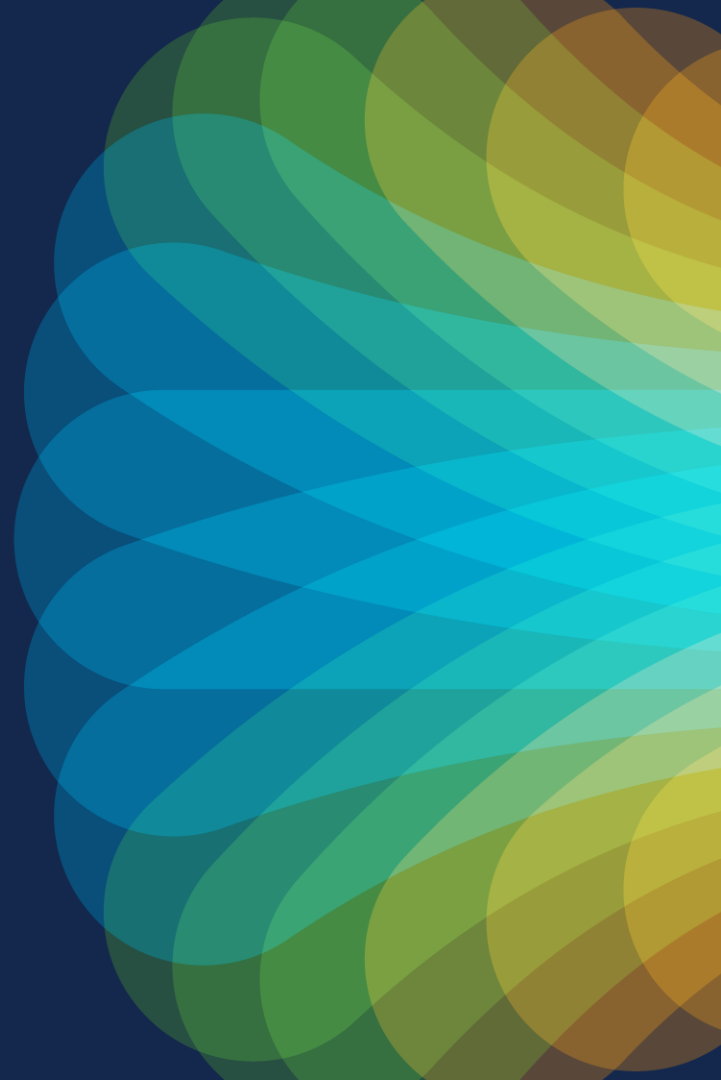
SD-Access – Wired | Wireless  
BGP EVPN VXLAN  
MPLS Layer 3 VPN  
VPLS  
Multi-VRF

# WebEx AirPlay mDNS Solution



Wide Area Bonjour

# Enterprise- Grade mDNS Solution





Desk Series



Board Pro Series



Board Series



Room Series





## Beacon Discovery

Option - 1

Simple AirPlay discovery solution with support via Bluetooth® Low Energy Beacon.



## DNA Service for Bonjour

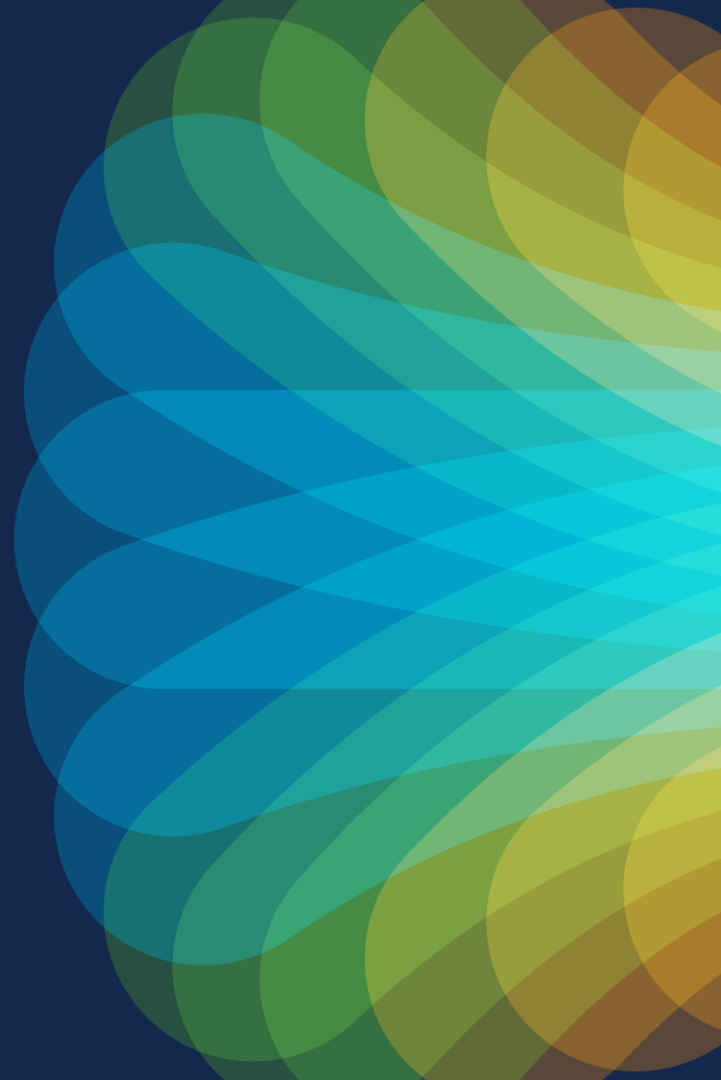
Option - 2

Enterprise-grade AirPlay and more services solution.  
Scalable Service Routing across any complex networks.  
Secure Enterprise IT enforced policy control.

	Beacon	Cisco DNA Services for Bonjour
Bluetooth® Low Energy AirPlay Support	✓	✗
Network Vendor Solution	Any Vendor	Cisco Wired   Wireless   DNA-Center
AirPlay Interface Support	Wired   Wireless	Wired   Wireless
Multicast DNS Mode	Flood and learn	Unicast
Supports Non-Radio Cisco video devices	✗	Optional
Enterprise-grade mDNS Solution	✗	✓
Infosec mDNS Security (Network   Service   User Role Based Services)	✗	✓
AirPlay Location Proximity Range	Dependent on construction materials and number of walls	IT defined Boundary for any Service (Micro service zone   Floor   Bldg   Site)
IPv4 AirPlay support	✓	✓
IPv6 AirPlay support	✗	✓

Wide Area Bonjour

# Enterprise-Grade mDNS Solution



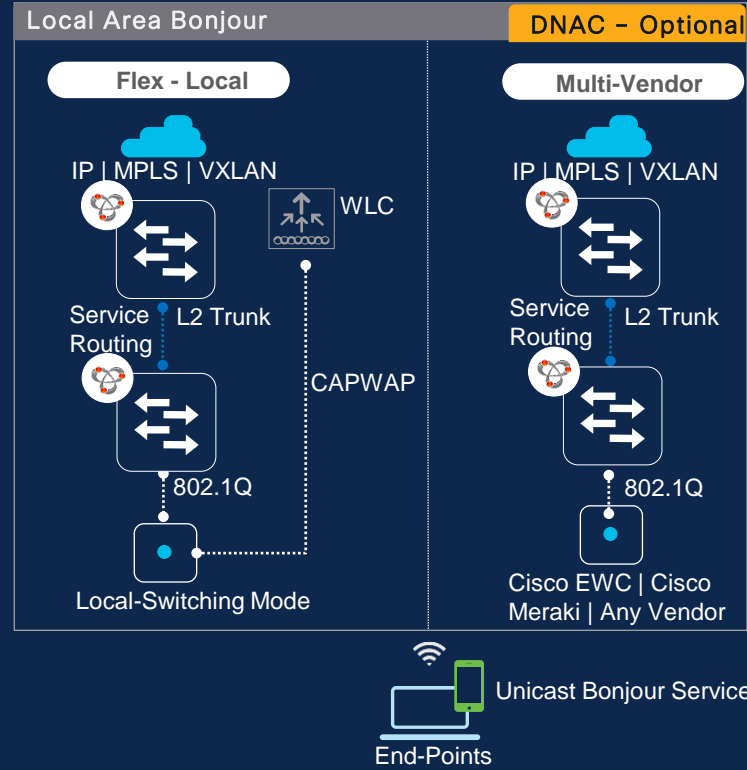
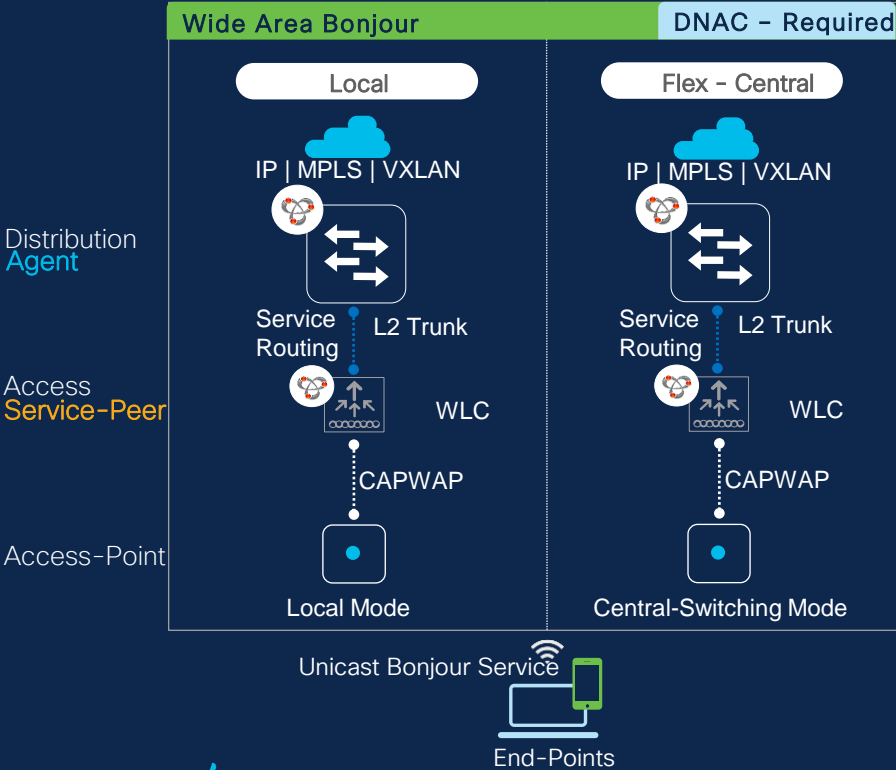
## Wide Area Bonjour

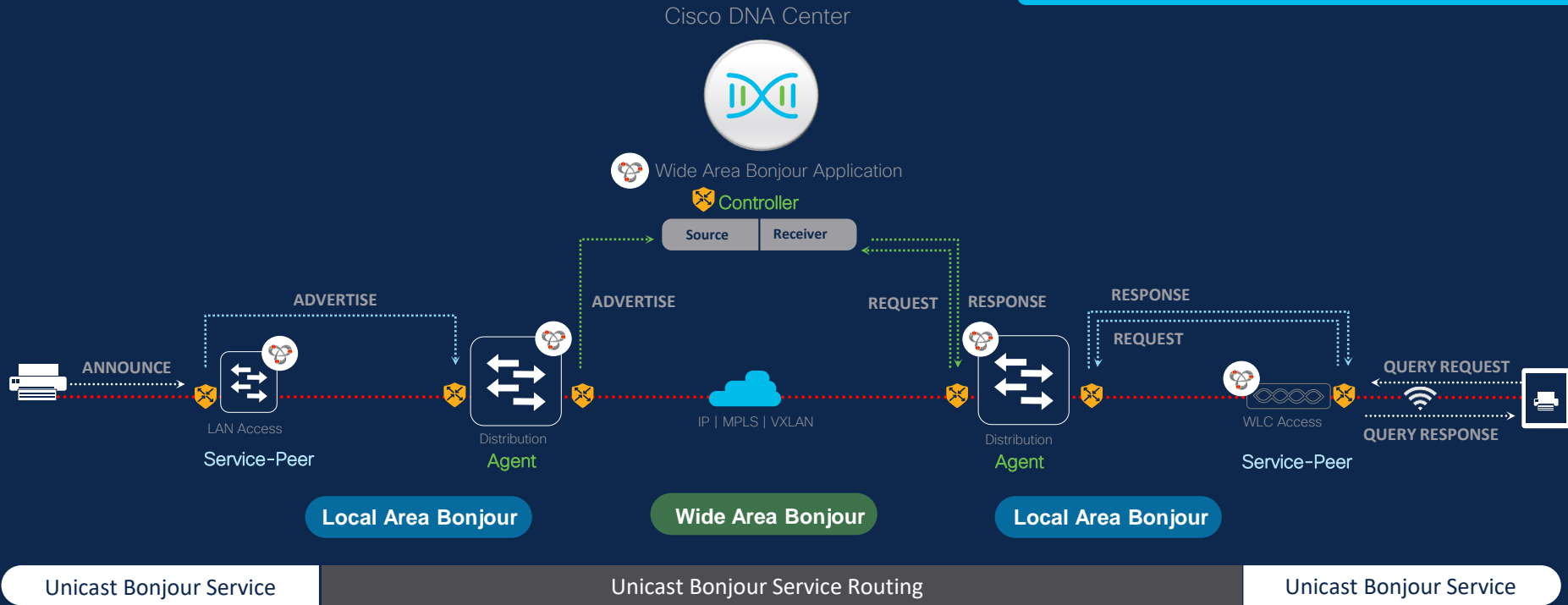
## Local Area Bonjour

Cisco DNA Center  
Controller



Wide Area Bonjour  
Application





## Wide Area Bonjour

Policy-based Processing  
Centralized Service Lookup  
Distributed Data-Plane  
Follows Network Security

# Compact. Consistent. Smart.



## Wired

### L2 Access



Service-Routing

### Gateway



```
!
mdns-sd gateway
mode service-peer
sdg-agent <MGMT-IP>
!
vlan configuration <WIRED-VLAN>
mdns-sd gateway
!
```

```
!
mdns-sd gateway
!
vlan configuration <WIRED-VLAN>
mdns-sd gateway
!
service-export mdns-sd controller DNAC
controller-address <IPv4 address>
controller-source-interface <ID>
!
```

IP | VXLAN | MPLS

## Wireless

### Gateway



Service-Routing

### L2 Access



```
!
mdns-sd gateway
!
vlan configuration <WIRELESS-VLAN>
mdns-sd gateway
!
service-export mdns-sd controller DNAC
controller-address <IPv4 address>
controller-source-interface <ID>
!
```

```
!
mdns-sd gateway
mode service-peer
sdg-agent <MGMT-IP>
!
wlan <PROFILE> id <SSID>
mdns-sd-interface gateway
!
```

Apple TV

Mobile Printing

ChromeCast

Webex AirPlay

Multifunction Print

File Share

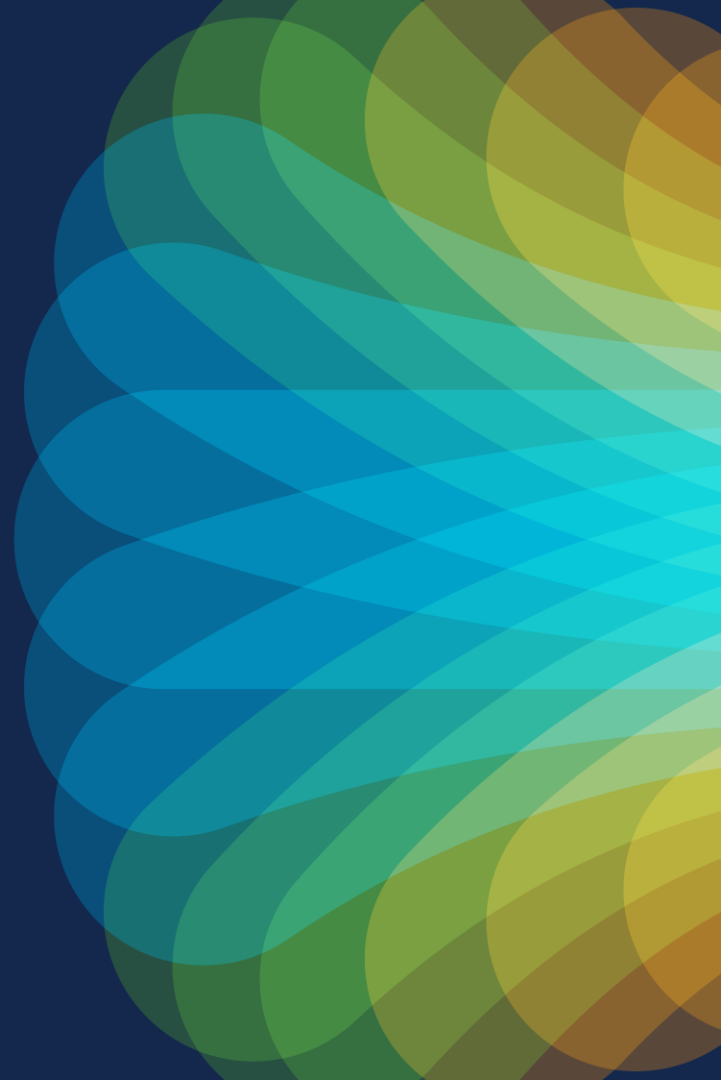
Secure Shell

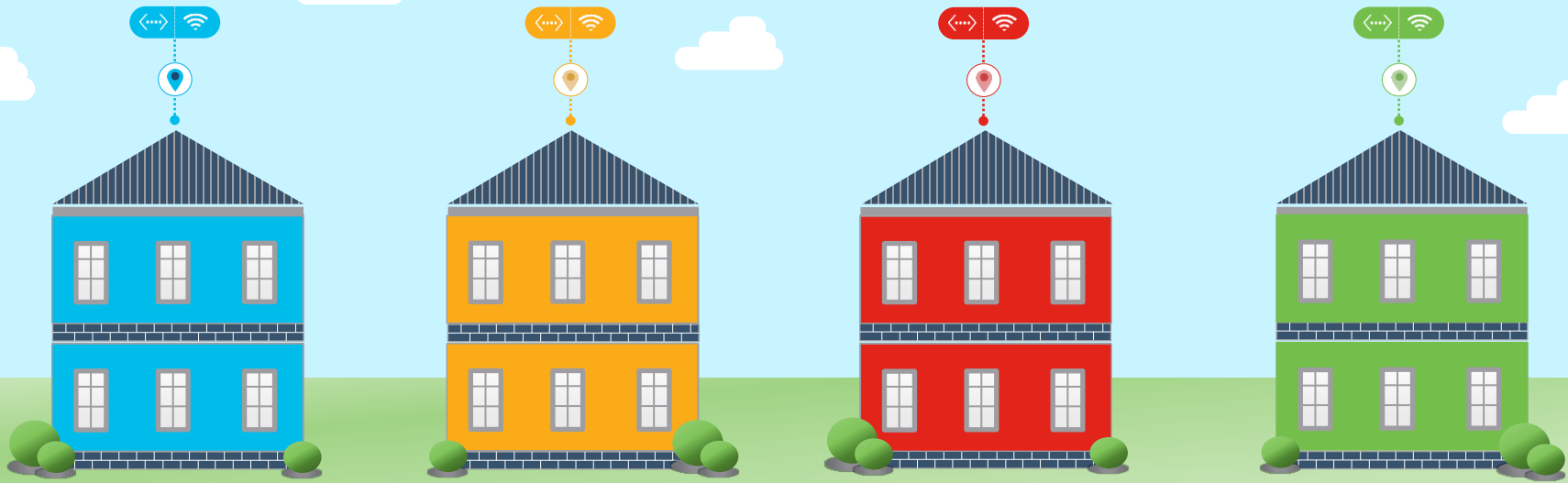
Unified mDNS  
Solution

One OS. One Experience  
Simplified to scale  
Nearly zero-conf IT solution  
Smart default new services

# Traditional Network – Location-Based

Wired and Wireless Networks





Zone

Floor

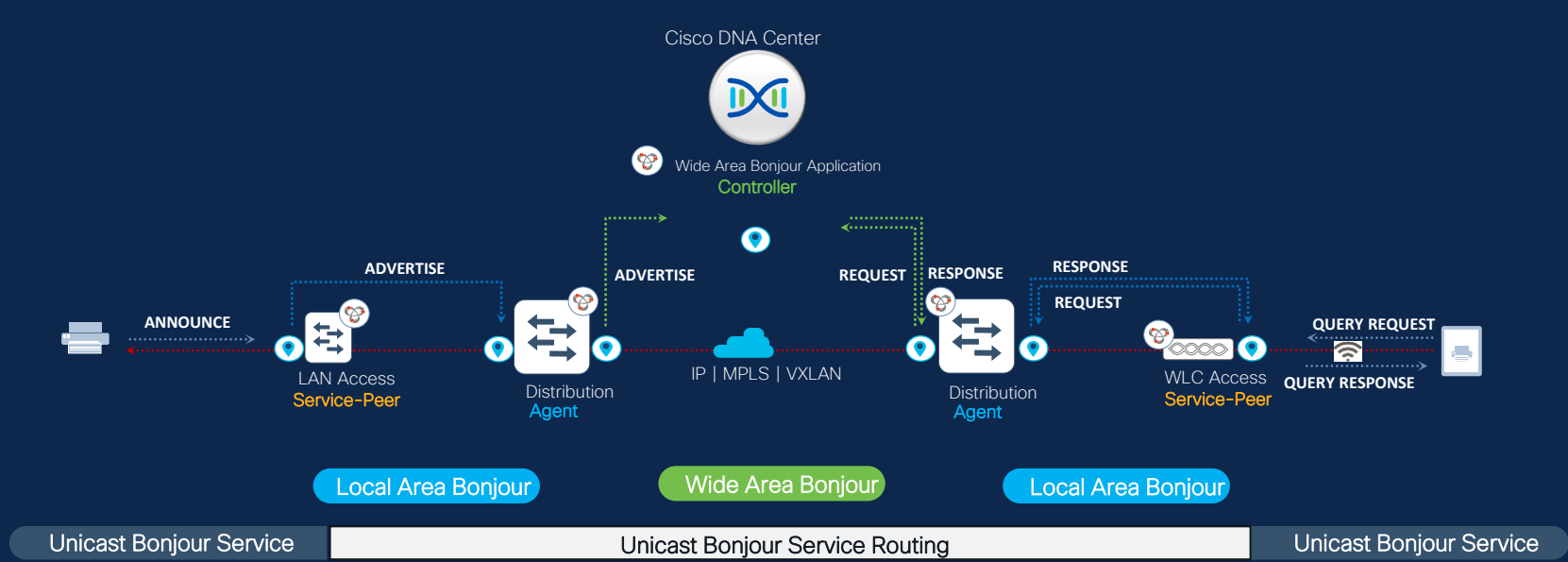
Building

End-to-End Location-Based Service-Routing

Wide Area Bonjour  
Micro Location

Granular location-based solution  
Best-in-Class User-experience  
Zero – Wireless and Wired change  
End-to-End mDNS location-tag routing

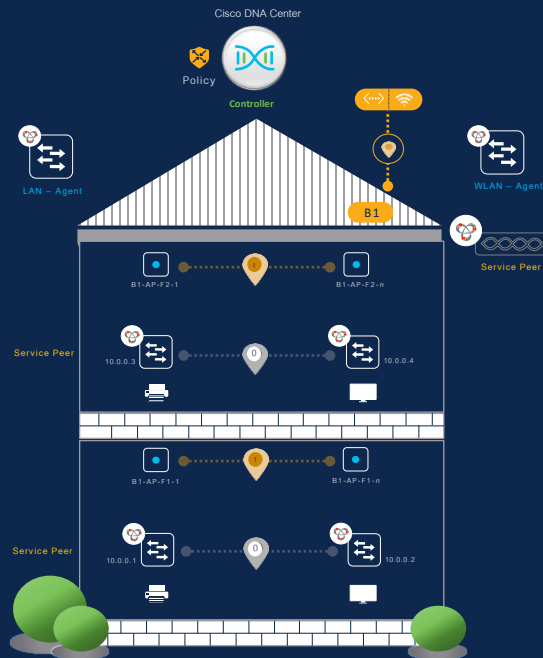
CISCO *Live!*



## Micro Location Service Routing

- Numerical mDNS location tag assignment
- Extend location tag with services
- Location-based mDNS policy
- 4094 micro-location tag support

## Custom Policy



### LAN Service-Peer | Location-Service

#### Create Location

Optional configuration at individual L2 LAN switch

Default Location-Group (0) on all Ports for each mDNS enabled VLAN

mDNS Services and Query routed with Default LGID to Agent Switch

### LAN SDG-Agent | Location-Service

#### Create Peer Policy

! Enable Wired-to-Wired Service-Routing between Floors

```
mdns-sd service-peer group
```

```
peer-group 1
```

```
service-policy default-mdns-service-policy
```

```
service-peer 10.0.0.1 location-group default role none
```

```
service-peer 10.0.0.2 location-group default role none
```

```
service-peer 10.0.0.3 location-group default role none
```

```
service-peer 10.0.0.4 location-group default role none
```

```
!
```

### Wireless Service-Peer | Location-Service

#### Create Location Rule

```
mdns-sd service-policy LOCAL-AREA-BONJOUR-POLICY
location location-group
```

```
!
```

```
wireless rule application mdns
```

```
rule-priority 1 rule-name BLDG-1-F1F2-LOCATION
```

```
regex B1-AP
```

```
action-type grouping
```

```
group-id 1
```

```
!
```

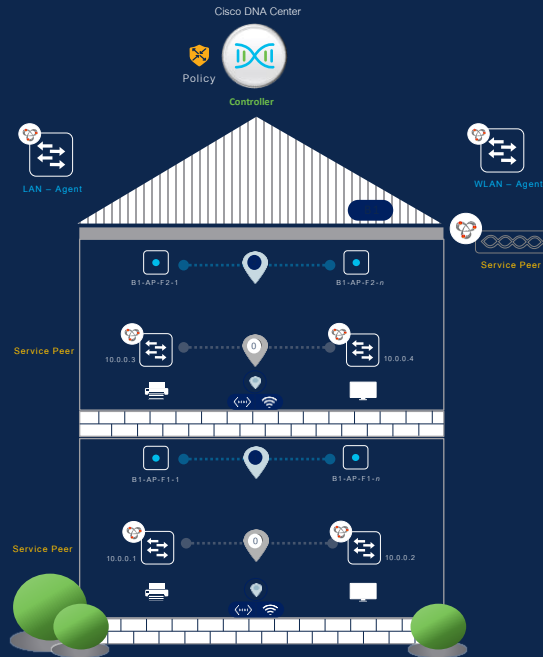
### WLAN SDG-Agent | Location-Service

#### Create Peer Policy

Optional Peer Policy configuration if no Inter-peer routing required.

mDNS Services and Query routed with LGID 1 to Controller

## Custom Policy



## Per-Floor Micro-Location Service-Routing

### Wireless Service-Peer | Location-Service

Create Location Rule

```
mdns-sd service-policy LOCAL-AREA-BONJOUR-POLICY
location location-group
!
wireless rule application mdns
rule-priority 1 rule-name BLDG-F1-LOCATION
regex B1-AP-F1
action-type grouping
group-id 1
rule-priority 2 rule-name BLDG-F2-LOCATION
regex B1-AP-F2
action-type grouping
group-id 2
!
```

### WLAN SDG-Agent | Location-Service

Create Peer Policy

Optional Peer Policy configuration if no Inter-peer routing required.  
mDNS Services and Query routed with LGID 1 and 2 to Controller

### LAN Service-Peer | Location-Service

Create Location Rule

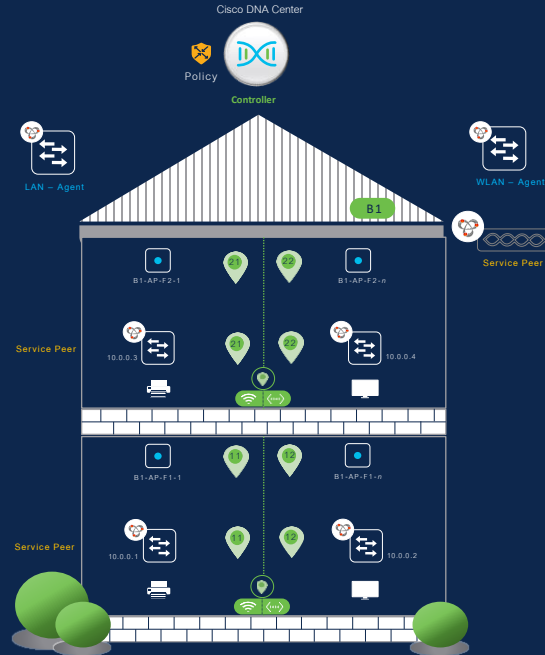
Optional configuration at individual L2 LAN switch  
Default Location-Group (0) on all Ports for each mDNS enabled VLAN  
mDNS Services and Query routed with Default LGID to Agent Switch

### LAN SDG-Agent | Location-Service

Create Peer Policy

```
! Enable Wired-to-Wired Service-Routing on same Floors
mdns-sd service-policy group
peer-group 1
service-policy default-mdns-service-policy
service-peer 10.0.0.1 location-group default role none
service-peer 10.0.0.2 location-group default role none
peer-group 2
service-policy default-mdns-service-policy
service-peer 10.0.0.3 location-group default role none
service-peer 10.0.0.4 location-group default role none
!
```

## Custom Policy



### LAN Service-Peer | Location-Service

#### Create Location Policy

```
!
mdns-sd location-group 11 vlan 11
interface GigabitEthernet 1/0/1
!
```

### LAN SDG-Agent | Location-Service

#### Create Peer Policy

```
! Enable Wired-to-Wired Service-Routing on same Floors
No Peer Policy needed to support Inter-Peer routing.
Wired-to-Wired service limited per L2 Switch and permitted location ports
```

### Wireless Service-Peer | Location-Service

#### Create Location Rule

```
mdns-sd service-policy LOCAL-AREA-BONJOUR-PO
location location-group
```

```
!
wireless rule application mdns
rule-priority 1 rule-name BLDG-F1-ZONE-1
regex B1-AP-F1-1
action-type grouping
group-id 11
wireless rule application mdns
rule-priority 1 rule-name BLDG-F1-ZONE-2
regex B1-AP-F1-2
action-type grouping
group-id 12
< snip >
```

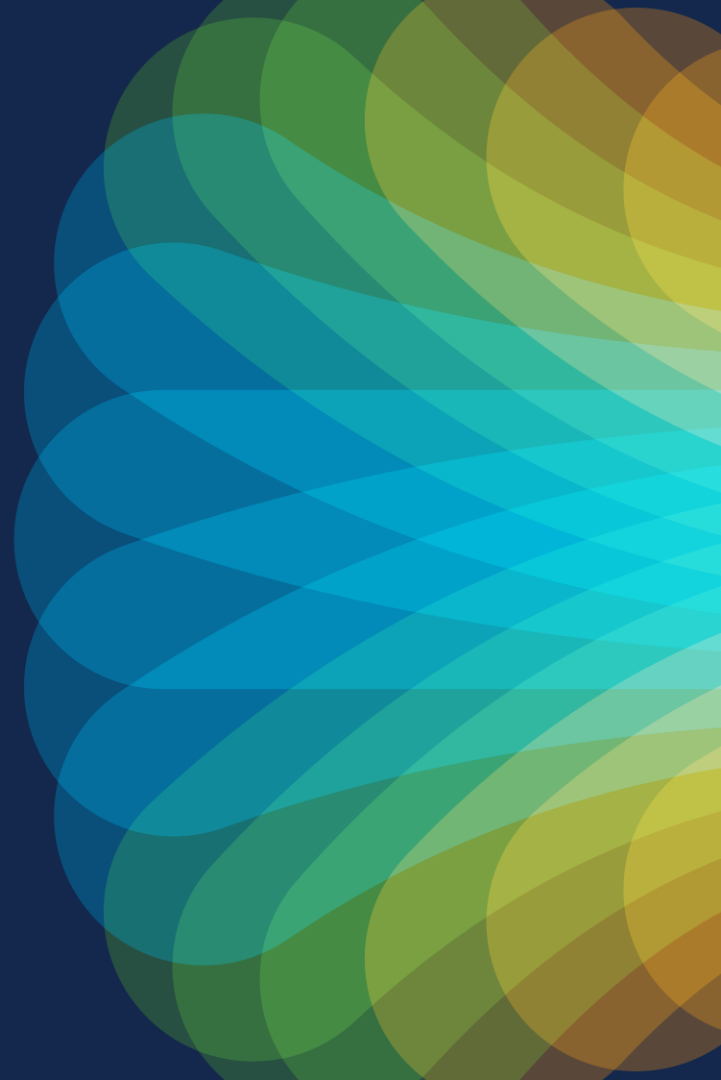
### WLAN SDG-Agent | Location-Service

#### Create Peer

```
Optional Peer Policy configuration if no Inter-peer routing required.
mDNS Services and Query routed with LGID 11-12 and 21-22 to Controller
```

# Wide Area Bonjour App

Wired and Wireless Networks



### Network Snapshot

**Sites**  
As of Feb 3, 2021 5:42 PM

2

DNS Servers : 0  
NTP Servers : 0

[Add Sites](#)

**Network Devices**  
As of Feb 3, 2021 5:42 PM

615

Unclaimed: 0  
Unprovisioned: 8  
Unreachable: 66

[Find New Devices](#)

**Network Profiles**  
As of Feb 3, 2021 5:42 PM

0

Routing: 0  
Switching: 0  
Wireless: 0  
NFVIS: 0

[Manage Profiles](#)

[+ Import Images/SMUs](#)


**Cisco DNA Licensed Devices**  
As of Feb 3, 2021 5:42 PM

0


Switches: 0  
Routers: 0  
Wireless: 0


[Manage Licenses](#)

### Tools


  
**Discovery**  
Automate addition of devices to controller inventory


  
**Topology**  
Visualize how devices are interconnected and how they communicate

  
**Command Runner**  
Allows you to run diagnostic CLIs against one or more devices


  
**License Manager**  
Visualize and manage license usage

  
**Template Editor**  
An interactive editor to author CLI templates

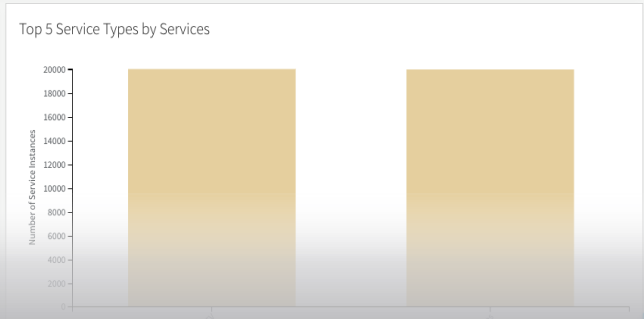
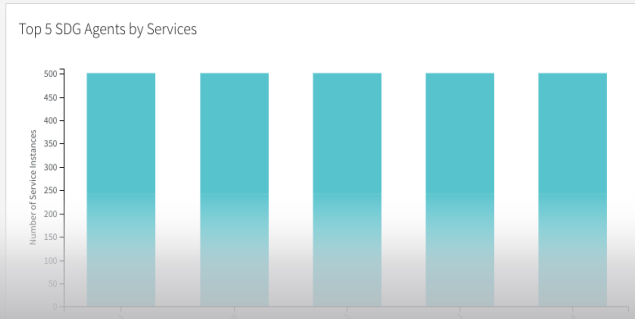
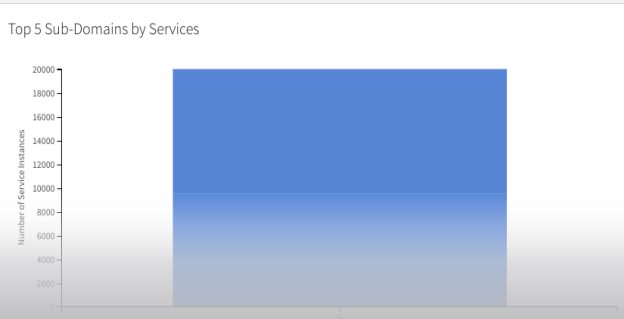
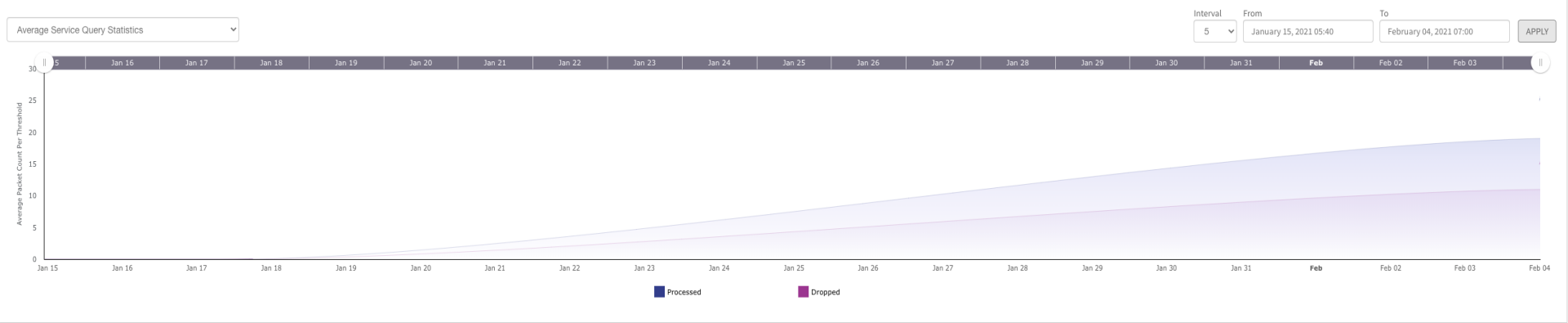
  
**Wide Area Bonjour**  
Enables discovery and distribution of policy-based Apple Bonjour services, independent of network boundaries

  
**Security Advisories**  
Identify security vulnerabilities in the network

  
**Model Config Editor**  
An interactive editor to author Model Config designs

  
**Network Reasoner**  
Troubleshoot issues in the network

2 Sub-Domain 40 40 issues to fix Service Filter 20040 Service Instance Active 20040 Inactive 0 40 SDG Agent Up 40 Down 0 Reachable 0 Unreachable 40



### Dashboard

Landing page providing key statistics across Wide Area Bonjour domain



### 360° View

Multi-level brief policy configuration and service-routing statistics



### 360° View

Network-wide top service distribution domains, Agents and Service-Types

# App – Sub-Domains Overview

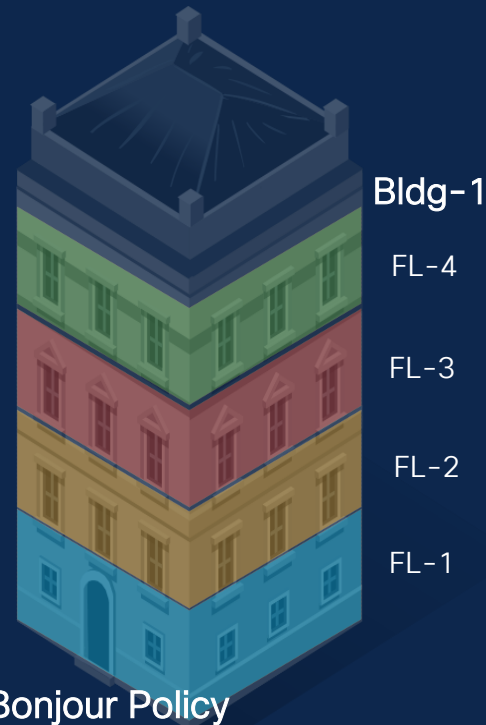
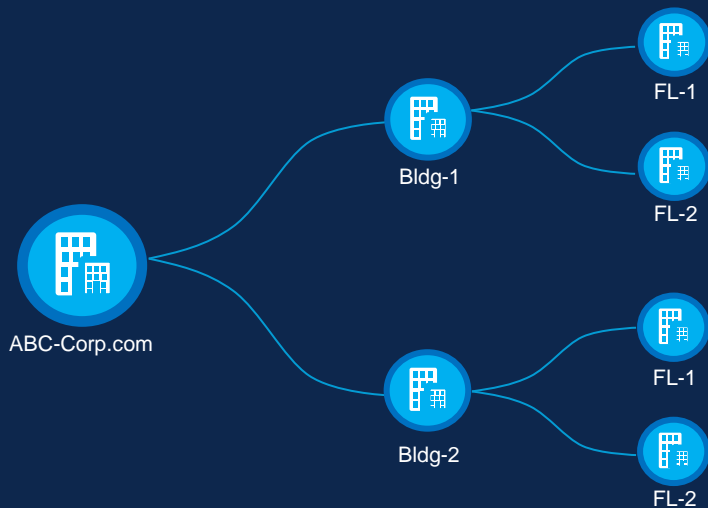
## Sub-Domain Hierarchy

Logical hierarchy for policy

Independent operations between sub-domains

One more more policies at any level

No branch-level nested policies



## Wide Area Bonjour Policy

Service-Routing between distributed networks

Global policies support varies by Source : Receiver network designs, including 1:1, 1:n, n:1 or n:n

Structured L2 Network = Better Service Control

Granular L2 network at Access and WLC AP-Group

**Subdomain Panel**  
Hierarchical Domain list with SDG Agents and global Policy summary count

**Domain Management**  
Build and manage Subdomain hierarchy, import / export policy configuration

**Subdomain Canvas**  
3-tier hierarchical structure to build and 360° domain monitoring

Tools - Wide Area Bonjour

Cisco DNA Center

Dashboard Configuration Monitor Administration

Subdomains

Cisco RTP Campus

North Carolina, USA

**SDG Agent Filter**

360° SDG Agent count monitoring on selected Subdomain

Search Subdomain

Cisco RTP Campus  
1 Subdomains | 0 Agents | 0 Filters

Bldg-1  
1 Subdomains | 0 Agents | 0 Filters

Bldg-1-FL-1  
0 Subdomains | 1 Agents | 1 Filters

Sub-Domain SDG Agent Service Filter Parent Domain

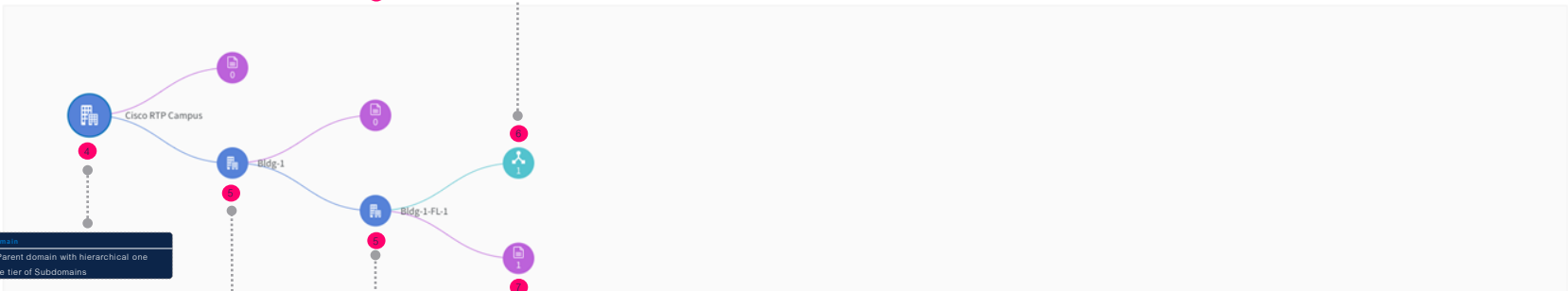
Search

Create Subdomain

**Root Domain**  
Single Parent domain with hierarchical one ore more tier of Subdomains

**Subdomain Hierarchy**  
Hierarchical one ore more tier of Subdomain consisting policy configuration

**Policy Filter**  
Policy filter configuration and 360° count monitoring on selected Subdomain



Bonjour devices on ANY  network

# Resources





Networking

## Multicast Domain Name System (mDNS) – Still Flooding?

Rahul Kachalia

“Most likely”, said John with frustration and despair as he grappled with the daunting task of stabilizing the performance of a large university network while simultaneously supporting Multicast Domain Name System (mDNS) services for end-users. The need to accommodate non-routable mDNS technology across complex enterprise networks is a frequent challenge. John’s worries, such as high CPU usage, WiFi network instability, extensive mDNS flooding, and the need to re-structure the Layer 2 network, are just a few of the well-documented challenges that arise in any large, inundated enterprise network environments.

In today’s fast-paced and ever-evolving technological landscape, digital natives expect seamless access to a wide range of services with just a few simple taps or clicks. They expect the same level of convenience and ease of use at home and at work, which has set a high bar for enterprise networks to meet. The mDNS protocol has proven to be an indispensable tool for delivering rich, intuitive service experiences to end users. As a result, it has become a widely adopted and de facto standard for “smart” consumer devices, Internet of Things (IoT) devices, and audio-visual (AV) endpoints.

As technology continues to advance, the implementation of Bring Your Own Device (BYOD) policies has given way to the proliferation of next-generation information technology (IT), operational technology (OT), and audio-visual (AV) managed products that incorporate mDNS protocols. This can pose significant challenges for network architects like John, as they must navigate the intricacies of supporting such demanding and mission-critical services while ensuring scalability, security, and non-disruptive network operation.

<https://blogs.cisco.com/networking/multicast-domain-name-system-mdns-still-flooding>

# Cisco DNA Service for Bonjour

## Cisco FlexConnect and EWC Bonjour Deployment Guide

## Cisco SD-Access Bonjour Deployment Guide

## Cisco Traditional Wired and Wireless Local Mode Bonjour Deployment Guide

Contents

- Cisco SD-Access
- Cisco SD-Access
- Traditional Wired and Wireless
- Traditional Wired and Wireless
- Traditional Wired and Wireless
- Traditional Wired and Wireless

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- Cisco DNA Service for Bonjour solution components
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- Cisco DNA Service for Bonjour solution components
- Deploying local area Bonjour Deployment
- Deploying location-group based Bonjour Deployment
- Appendix
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- Deploying Wide Area Bonjour Deployment
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Updated: November 8, 2022

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Introduction

Bonjour technology invented and standardized by Apple introducing zero-configuration solution that simplifies network configuration and enables communication between connected devices, services, and applications. Bonjour leverages link-local Multicast DNS and it is designed to enable peer-to-peer communication on single Layer 2 domains that are ideal for small, flat, single-domain setups, such as home networks.

The mDNS enabled services on consumer products, digital conference room, IoT and more is pervasive in service-oriented Enterprise network. The Cisco DNA Service for Bonjour solution eliminates the single Layer 2 domain constraint and expands the scope to enterprise-grade traditional wired and wireless networks, next-generation fabric-based overlay networks such as Cisco Software-Defined Access (SD-Access) and industry-standard BGP EVPN with VXLAN. The Cisco Catalyst 9000 series LAN switches and Cisco 9800 series wireless LAN controllers follow the industry standard, RFC 6762-based multicast DNS (mDNS) specification to support interoperability with various compatible wired and wireless consumer products in enterprise networks.

Challenges

The Enterprise networks are going through constant digital transformation as more and more smart and services-rich devices are being connected. While every device is designed with different purposes, the users-centric application and operational simplicity in their operation

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## Solution Overview

Data sheet (<https://www.cisco.com/c/en/us/solutions/collateral/enterprise-networks/datasheet-c78-740204.html>)

At-A-Glance (<https://www.cisco.com/c/dam/en/us/solutions/collateral/enterprise-networks/nb-06-dna-bonjour-aag-cte-en.pdf>)

FAQ (<https://www.cisco.com/c/dam/en/us/solutions/collateral/enterprise-networks/nb-06-dna-bonjour-faq-cte-en.pdf>)

## Solution Guides

Cisco DNA Service for Bonjour : Quick Configuration Guide (<https://www.cisco.com/c/en/us/solutions/collateral/enterprise-networks/dna-service-bonjour-og.pdf>)

Cisco DNA Service for Bonjour : SD-Access Wired and Wireless Deployment Guide (<https://www.cisco.com/c/en/us/solutions/collateral/enterprise-networks/sd-access-wired-wireless-dg.html>)

Cisco DNA Service for Bonjour : Traditional Wired and Wireless Local Mode Deployment Guide (<https://www.cisco.com/c/en/us/solutions/collateral/enterprise-networks/dna-service-for-bonjour-dg.html>)

Cisco DNA Service for Bonjour : Traditional Wired and Wireless FlexConnect Mode Deployment Guide (<https://www.cisco.com/c/en/us/solutions/collateral/enterprise-networks/guide-c07-743788.html>)

## Product Guides

Cisco Catalyst 9300 Series Switches ([https://www.cisco.com/c/en/us/td/docs/switches/lan/catalyst9300/software/release/17-6/configuration\\_guide/bonjour/b\\_176\\_bonjour\\_9300\\_cg.html](https://www.cisco.com/c/en/us/td/docs/switches/lan/catalyst9300/software/release/17-6/configuration_guide/bonjour/b_176_bonjour_9300_cg.html))

Cisco Catalyst 9400 Series Switches ([https://www.cisco.com/c/en/us/td/docs/switches/lan/catalyst9400/software/release/17-6/configuration\\_guide/bonjour/b\\_176\\_bonjour\\_9400\\_cg.html](https://www.cisco.com/c/en/us/td/docs/switches/lan/catalyst9400/software/release/17-6/configuration_guide/bonjour/b_176_bonjour_9400_cg.html))

Cisco Catalyst 9500 Series Switches ([https://www.cisco.com/c/en/us/td/docs/switches/lan/catalyst9500/software/release/17-6/configuration\\_guide/bonjour/b\\_176\\_bonjour\\_9500\\_cg.html](https://www.cisco.com/c/en/us/td/docs/switches/lan/catalyst9500/software/release/17-6/configuration_guide/bonjour/b_176_bonjour_9500_cg.html))

Cisco Catalyst 9600 Series Switches ([https://www.cisco.com/c/en/us/td/docs/switches/lan/catalyst9600/software/release/17-6/configuration\\_guide/bonjour/b\\_176\\_bonjour\\_9600\\_cg.html](https://www.cisco.com/c/en/us/td/docs/switches/lan/catalyst9600/software/release/17-6/configuration_guide/bonjour/b_176_bonjour_9600_cg.html))

Cisco Nexus 9300 Series Switches (<https://www.cisco.com/c/en/us/td/docs/dcn/hx-os/nexus9000/102x/bonjour-gw-config/b-cisco-dna-service-for-bonjour-config-n9k-1023F.html>)

Cisco Catalyst 9800 Series WLC ([https://www.cisco.com/c/en/us/td/docs/wireless/controller/9800/17-6/config-guide/b\\_wl\\_17\\_6\\_cg/m\\_about\\_cisco\\_dna-center\\_bonjour.html](https://www.cisco.com/c/en/us/td/docs/wireless/controller/9800/17-6/config-guide/b_wl_17_6_cg/m_about_cisco_dna-center_bonjour.html))

Cisco Catalyst 9100 Series – Embedded Wireless LAN Controller ([https://www.cisco.com/c/en/us/td/docs/wireless/controller/ewc/17-6/config-guide/ewc\\_cg\\_17\\_6/m\\_about\\_cisco\\_dna-center\\_bonjour.html](https://www.cisco.com/c/en/us/td/docs/wireless/controller/ewc/17-6/config-guide/ewc_cg_17_6/m_about_cisco_dna-center_bonjour.html))

Cisco DNA-Center – Wide Area Bonjour User Guide ([https://www.cisco.com/c/en/us/td/docs/cloud-systems-management/network-automation-and-management/dna-center/2-3-3/cisco-dna-service-for-bonjour/b\\_cisco\\_dna\\_service\\_for\\_bonjour\\_user\\_guide\\_2-3-3.html](https://www.cisco.com/c/en/us/td/docs/cloud-systems-management/network-automation-and-management/dna-center/2-3-3/cisco-dna-service-for-bonjour/b_cisco_dna_service_for_bonjour_user_guide_2-3-3.html))

## Success Stories

St. Vrain Valley School District (<https://www.cisco.com/c/dam/en/us/solutions/collateral/enterprise-networks/nb-09-st-vrain-valley-case-study-en.pdf>)

## Videos

Cisco TechWise - Enterprise - Class Bonjour (<https://www.youtube.com/watch?v=0NJICXig7g8>)

Cisco Catalyst TV – Traditional Wired and Wireless Networks (<https://www.youtube.com/watch?v=qtRcb00Ue7E>)

Tech Field Day – Cisco DNA Service for Bonjour (<https://www.youtube.com/watch?v=10wJjPn1HBU>)

## Cisco Support Community

Networking Support Forums – (<https://community.cisco.com/t5/technology-and-support/ci-p/technology-support?profile.language=en>)

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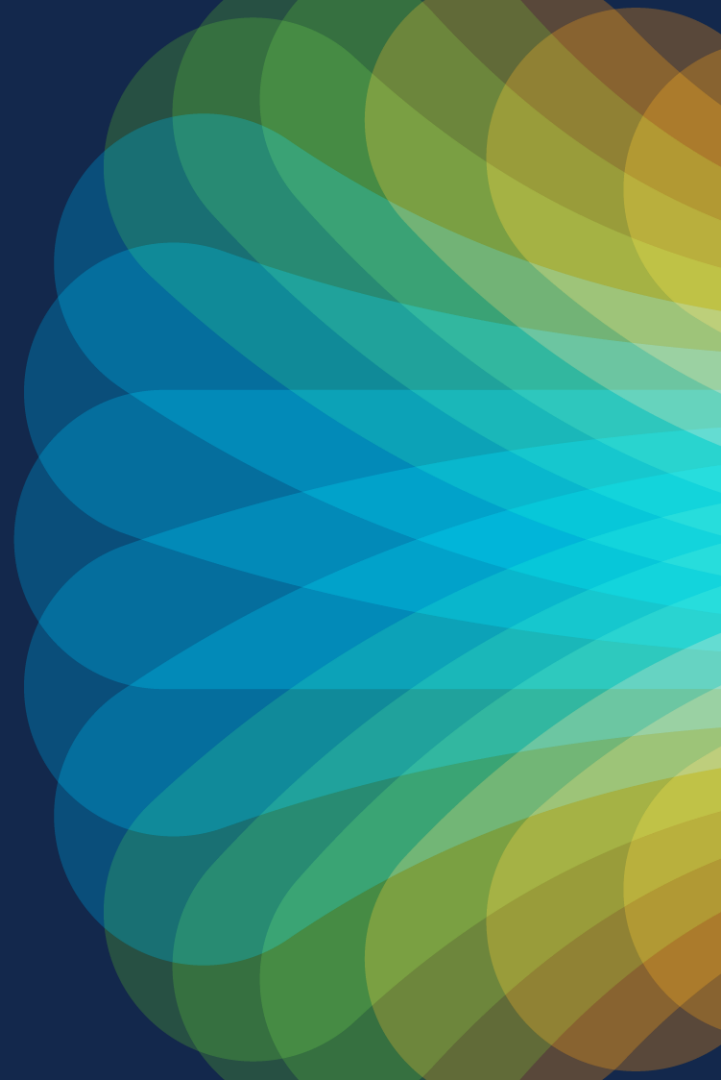


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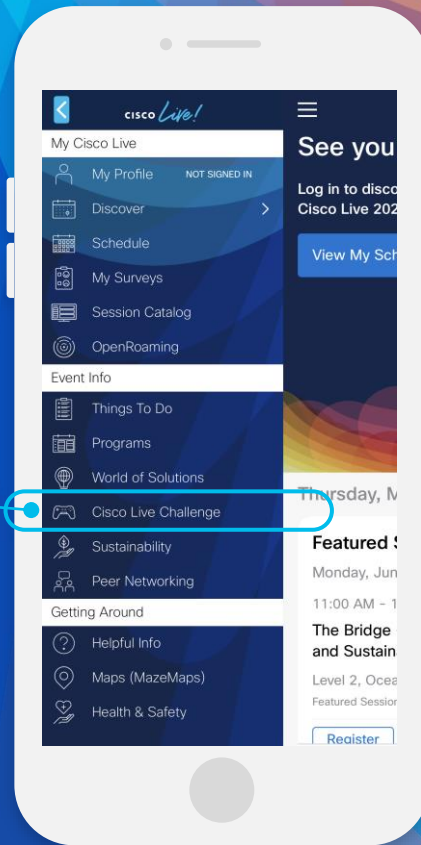
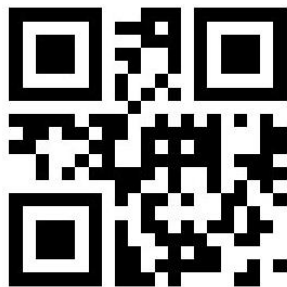


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