# Configuring Wide Area Bonjour

Cisco Wide Area Bonjour domain enables global service-routing beyond a single IP gateway for traditional LAN and WLAN networks. In Cisco Wide Area Bonjour domain, Cisco Catalyst LAN switches are deployed in Layer 3 routed mode to act as distributed SDG Agents throughout the network. These SDG agents build a TCP-based, stateful, reliable, and light-weight communication channel with a Cisco DNA Center. The Cisco DNA Center must also be configured with Cisco Wide Area Bonjour application for policy-based global service discovery and distribution.


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## Restrictions for Wide Area Bonjour for LAN and WLAN Networks

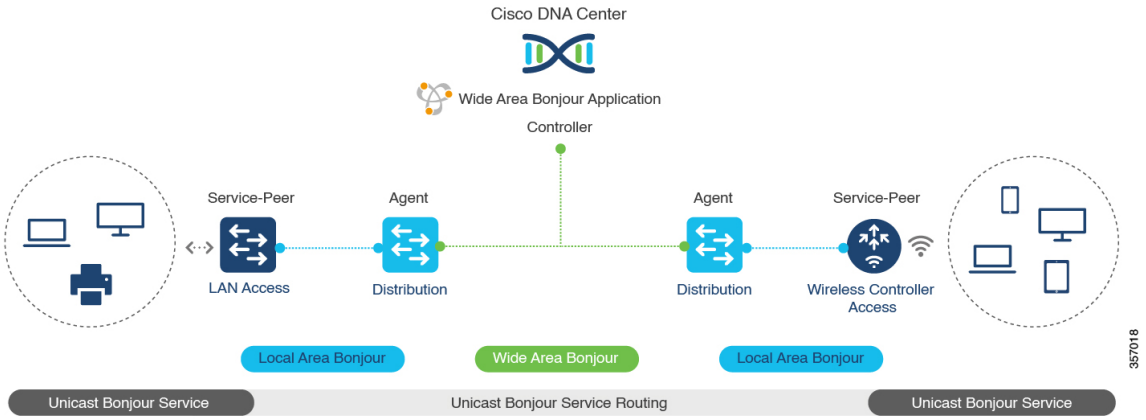
Wide Area Bonjour service-routing between Cisco DNA Center and a Catalyst SDG Agent Switch over management port is not supported. We recommend that you use a switch Loopback interface instead.

## Information About Wide Area Bonjour LAN and WLAN Networks

Wide Area Bonjour, by definition, allows service-routing over an IP network without network boundaries. Hence, the core objective of Cisco Wide Area Bonjour is to advertise and browse Bonjour services in a global IP network that is limited to local or remote sites, as required. Typically, the LAN and Wireless LAN IP gateway deployed in SDG Agent mode build the stateful TCP-based unicast connection to the Cisco DNA Center for Wide Area Bonjour service-routing.

The fundamentals of service-routing are based on the policies defined in Local Area and Wide Area Bonjour domains. The policy defines implicit guidelines to accept, process and respond to mDNS services on the SDG Agent and the Cisco DNA-Center. The service policy carries multiple tuples to distinctly classify and distribute the service provider information along with granular network location. The following figure illustrates an end-to-end reference network model for Cisco Wide Area Bonjour.

*Figure 1: Cisco Wide Area Bonjour Domain*




# How to Configure Wide Area Bonjour for LAN and WLAN Networks

This section provides information about how to configure Wide Area Bonjour for LAN and WLAN networks. Configuration of Cisco Wide Area Bonjour requires you to configure the Cisco Catalyst Series switch in SDG Agent mode and build the service policies in Wide Area Bonjour application of Cisco DNA Center.

## Configuring Cisco Wide Area Bonjour Service-Routing

To build and apply Wide Area Bonjour export service policy and setup controller parameters that enable service-routing, perform the following steps

### Procedure

| | Command or Action | Purpose |
|---|---|---|
| **Step 1** | **enable**<br>**Example:**<br>`Device> enable` | Enables privileged EXEC mode.<br>Enter your password, if prompted. |
| **Step 2** | **configure terminal**<br>**Example:**<br>`Device# configure terminal` | Enters global configuration mode. |
| **Step 3** | **service-export mdns-sd controller** *controller-name*<br>**Example:**<br>`Device(config)# service-export mdns-sd controller DNAC-BONJOUR-CONTROLLER` | Configures the service export controller to enable Wide Area Bonjour service-routing with Cisco DNA Center.<br>Only one service export can be configured. |

| | Command or Action | Purpose |
|---|---|---|
| **Step 4** | **controller-address** *ipv4-address*<br>**Example:**<br>`Device(config-mdns-sd-se)# controller-address 100.0.0.1` | Assigns the Cisco DNA Center IPv4 address to pair service-routing.<br>Only one controller address can be configured. |
| **Step 5** | **controller-source-interface** *interface-name*<br>**Example:**<br>`Device(config-mdns-sd-se)# controller-source-interface Loopback0` | Configures the source interface to build service-routing from the SDG-Agent and the Cisco DNA Center.<br>We recommend you to use the Loopback interface. |
| **Step 6** | **end**<br>**Example:**<br>`Device(config-mdns-sd-se)# end` | Returns to privileged EXEC mode. |

### What to do next

The default controller service policy is automatically configured, if a customized controller service policy is not configured. To configure a customized controller service policy, see (Optional) Configuring Cisco Wide Area Bonjour Custom Controller Service Policy, on page 3

# (Optional) Configuring Cisco Wide Area Bonjour Custom Controller Service Policy

To build and apply the Wide Area Bonjour custom-controller service policy, perform the following steps.

### Procedure

| | Command or Action | Purpose |
|---|---|---|
| **Step 1** | **enable**<br>**Example:**<br>`Device> enable` | Enables privileged EXEC mode.<br>Enter your password, if prompted. |
| **Step 2** | **configure terminal**<br>**Example:**<br>`Device# configure terminal` | Enters global configuration mode. |
| **Step 3** | **mdns-sd controller service-list** *controller-service-list-name*<br>**Example:**<br>`Device(config)# mdns-sd controller service-list WIDE-AREA-SERVICES-LIST` | Configures the mDNS controller service list to classify one or more service types. |

| | Command or Action | Purpose |
|---|---|---|
| **Step 4** | **match** {**all**\|*service-definition-name* [**message-type** {**any**\| **announcement**\|**query**} ] [**source-interface** {*mDNS-VLAN-number* \| *mDNS-VLAN-range*} ] }<br>**Example:**<br>`Device(config-mdns-sl-out)# match APPLE-TV`<br>`Device(config-mdns-sl-out)# match PRINTER-APPS` | Checks and matches the controller service list. The switch exports locally discovered services and requests remote service information from Wide Area Bonjour domain. The service announcement and query request are processed based on permitted, built-in, or custom service types.<br>The service list contains an implicit deny at the end. |
| **Step 5** | **mdns-sd controller service-policy** *controller-service-policy-name*<br>**Example:**<br>`Device(config)# mdns-sd controller service-policy DNAC-CONTROLLER-POLICY` | Creates a custom mDNS controller service policy. |
| **Step 6** | **service-list** *controller-service-list-name*<br>**Example:**<br>`Device(config-mdns-ser-policy)# service-list WIDE-AREA-SERVICES-LIST` | Associates a controller service list to a controller service policy. |
| **Step 7** | **exit**<br>**Example:**<br>`Device(config-mdns-sd)# exit` | Returns to global configuration mode. |
| **Step 8** | **service-export mdns-sd controller** *controller-name*<br>**Example:**<br>`Device(config)# service-export mdns-sd controller DNAC-BONJOUR-CONTROLLER` | Configures the service export controller to enable Wide Area Bonjour service-routing with Cisco DNA Center.<br>Only one service export can be configured. |
| **Step 9** | **controller-service-policy** *controller-service-policy-name*<br>**Example:**<br>`Device(config-mdns-sd-se)# controller-service-policy DNAC-CONTROLLER-POLICY` | Associates the custom mDNS controller service policy for Wide Area Bonjour service-routing. |
| **Step 10** | **end**<br>**Example:**<br>`Device(config-mdns-sd-se)# end` | Returns to privileged EXEC mode. |

# Verifying Wide Area Bonjour for LAN and WLAN Networks

The following **show** commands are used to verify Wide Area Bonjour for LAN and WLAN networks:

- **show mdns-sd controller detail**
- **show mdns-sd controller export-summary**
- **show mdns-sd controller statistics**
- **show mdns-sd controller summary**

# Additional References for Wide Area Bonjour for LAN and WLAN Networks

| Related Topic | Document Title |
|---|---|
| Cisco Wide Area Bonjour Application on Cisco DNA Center User Guide | Cisco Wide Area Bonjour Application on Cisco DNA Center User Guide, Release 2.1.2 |
| DNA Service for Bonjour Deployment on Cisco Catalyst 9800 WLCs | Cisco Catalyst 9800 Series Wireless Controller Software Configuration Guide |