The bridge to possible

Cisco DNA Service for Bonjour

Contents

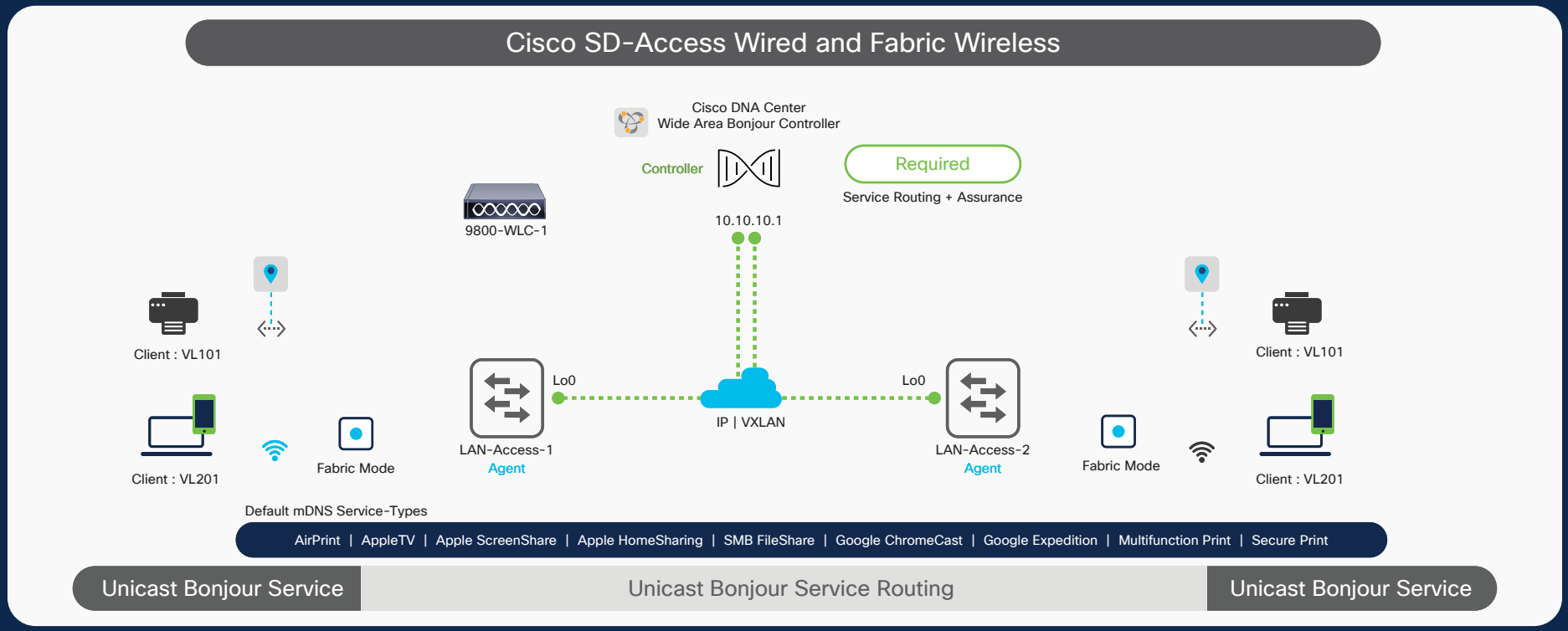
The bridge to possible

Cisco SD-Access Network – Fabric-Enabled Wired and Wireless Mode

Overview

This quick configuration section, briefly covers different components of the Cisco DNA Service for Bonjour and describe how to configure the Cisco SD-Access Network – Fabric-enabled wired and wireless mode. The Cisco DNA Service for Bonjour is an end-to-end solution that includes the following key components and benefits:

Figure 1. Wide Area Bonjour for Cisco SD-Access Wired and Wireless



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Wide Area Bonjour Domain

The Wide Area Bonjour domain is a controller-based solution. The network wide distributed Catalyst 9000 series SDG agent devices establish a lightweight, stateful, and reliable communication channel with the centralized Cisco DNA Center controller running the Wide Area Bonjour application. The Cisco DNA-Center can discover and distribute mDNS services across Wide Area Bonjour domain based on policies.

Service Discovery Gateway agent

A Catalyst 9000 switch in SD-Access Fabric-Edge role functions as an SDG agent and communicates with directly-attached wired and wireless Bonjour service endpoints to support mDNS gateway function. It exports aggregated mDNS service information to the central Cisco DNA controller to discover and distributed mDNS services across SD-Access fabric-domain.

Cisco DNA controller

The Cisco DNA controller provides a secure channel with trusted SDG agents for centralized services management and controlled mDNS service routing. The Cisco Wide Area Bonjour application operates across two integrated domain networks with end-to-end unicast-based service routing.

Endpoints

A endpoint is any device that advertises or queries mDNS services conforming to RFC 6762. The endpoints can be in either LANs or WLANs. The Wide Area Bonjour application is designed to integrate with RFC 6762-compliant Bonjour services, including AirPlay, Google Chromecast, AirPrint, and more.

Local Area Bonjour Domain

The Local Area Bonjour domain is a single gateway solution that terminates at Layer 3 network boundary on Cisco SD-Access Fabric Edge switch for wired and wireless endpoints.

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Quick Configuration

	LAN-ACCESS-1 – SDG agent	LAN-ACCESS-2 – SDG agent
Product support	Catalyst 9300, 9400, 9500, 9600 Series	
Cisco DNA Center	Required to support for mDNS service routing and service assurance	
Minimum software version	Cisco IOS® XE Release 17.6.2 Cisco DNA Center Release 2.2.3	
Minimum software license	Cisco DNA Advantage	
Network prerequisite configuration	IP reachability between SDG agent and Cisco DNA Center Wireless AP multicast Complete SD-Access Fabric Automation	
Default mDNS service routing	**Local Area Bonjour – service routing**	
	! mdns-sd gateway mode sdg-agent active-query timer 1 ! vlan configuration <WIRED-USER-VLAN> mdns-sd gateway ! vlan configuration <WIRELESS-USER-VLAN> mdns-sd gateway !	! mdns-sd gateway mode sdg-agent active-query timer 1 ! vlan configuration <WIRED-USER-VLAN> mdns-sd gateway ! vlan configuration <WIRELESS-USER-VLAN> mdns-sd gateway !
	Wide Area Bonjour – service routing	
	! service-export mdns-sd controller DNAC-CONTROLLER-POLICY controller-address <IPv4 address> controller-source-interface <ID> !	! service-export mdns-sd controller DNAC-CONTROLLER-POLICY controller-address <IPv4 address> controller-source-interface <ID> !

The bridge to possible

	LAN-ACCESS-1 – SDG agent	LAN-ACCESS-2 – SDG agent
Micro-location-based service routing	**Wired + Wireless Local Mode – Micro-Location – OPTIONAL**	
	! mdns-sd location-group <LOCATION-GROUP-ID> vlan <WIRED-USER-VLAN> interface <WIRED-mDNS-ENDPOINT-INTERFACE-ID> interface <WIRED-mDNS-ENDPOINT-INTERFACE-ID> !	! mdns-sd location-group <LOCATION-GROUP-ID> vlan <WIRED-USER-VLAN> interface <WIRED-mDNS-ENDPOINT-INTERFACE-ID> interface <WIRED-mDNS-ENDPOINT-INTERFACE-ID> !
Inter-VN local service proxy	**Inter-VN wired-wireless local service proxy – OPTIONAL**	
	! mdns-sd location-filter <INTER-VN-LOCAL-PROXY-NAME> match location-group default <VRF-1-VLAN-ID> match location-group default <VRF-2-VLAN-ID> ! mdns-sd service-list <CUSTOM-VRF-1-SERVICE-LIST> out match <service-type> location-filter <INTER-VN-LOCAL-PROXY-NAME> ! mdns-sd service-list <CUSTOM-VRF-2-SERVICE-LIST> out match <service-type> location-filter <INTER-VN-LOCAL-PROXY-NAME> ! mdns-sd service-policy <CUSTOM-VRF-1-SERVICE-POLICY> service-list <CUSTOM-VRF-1-SERVICE-LIST> out ! mdns-sd service-policy <CUSTOM-VRF-2-SERVICE-POLICY> service-list <CUSTOM-VRF-2-SERVICE-LIST> out ! vlan configuration <VRF-1-VLAN-ID> mdns-sd gateway service-policy <CUSTOM-VRF-1-SERVICE-POLICY> ! vlan configuration <VRF-2-VLAN-ID> mdns-sd gateway service-policy <CUSTOM-VRF-2-SERVICE-POLICY> !	! mdns-sd location-filter <INTER-VN-LOCAL-PROXY-NAME> match location-group default <VRF-1-VLAN-ID> match location-group default <VRF-2-VLAN-ID> ! mdns-sd service-list <CUSTOM-VRF-1-SERVICE-LIST> out match <service-type> location-filter <INTER-VN-LOCAL-PROXY-NAME> ! mdns-sd service-list <CUSTOM-VRF-2-SERVICE-LIST> out match <service-type> location-filter <INTER-VN-LOCAL-PROXY-NAME> ! mdns-sd service-policy <CUSTOM-VRF-1-SERVICE-POLICY> service-list <CUSTOM-VRF-1-SERVICE-LIST> out ! mdns-sd service-policy <CUSTOM-VRF-2-SERVICE-POLICY> service-list <CUSTOM-VRF-2-SERVICE-LIST> out ! vlan configuration <VRF-1-VLAN-ID> mdns-sd gateway service-policy <CUSTOM-VRF-1-SERVICE-POLICY> ! vlan configuration <VRF-2-VLAN-ID> mdns-sd gateway service-policy <CUSTOM-VRF-2-SERVICE-POLICY> !

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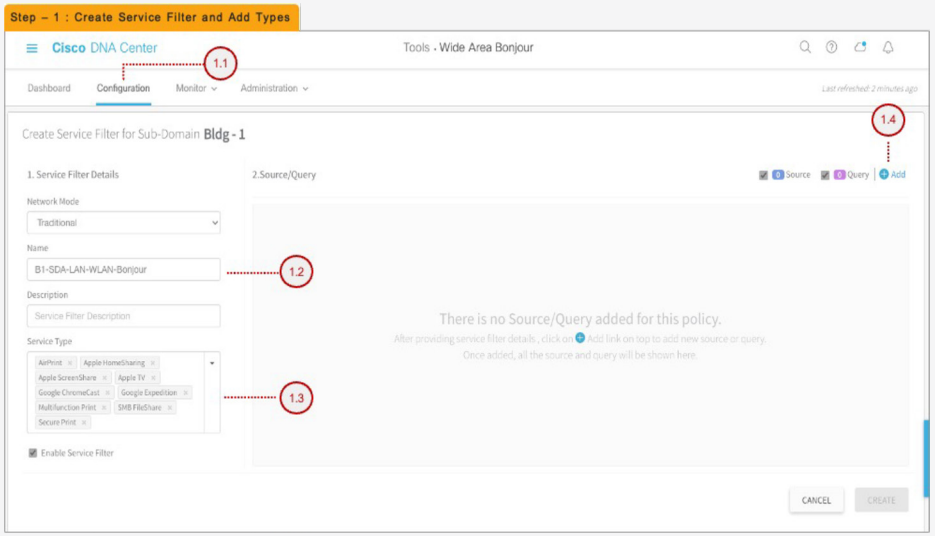
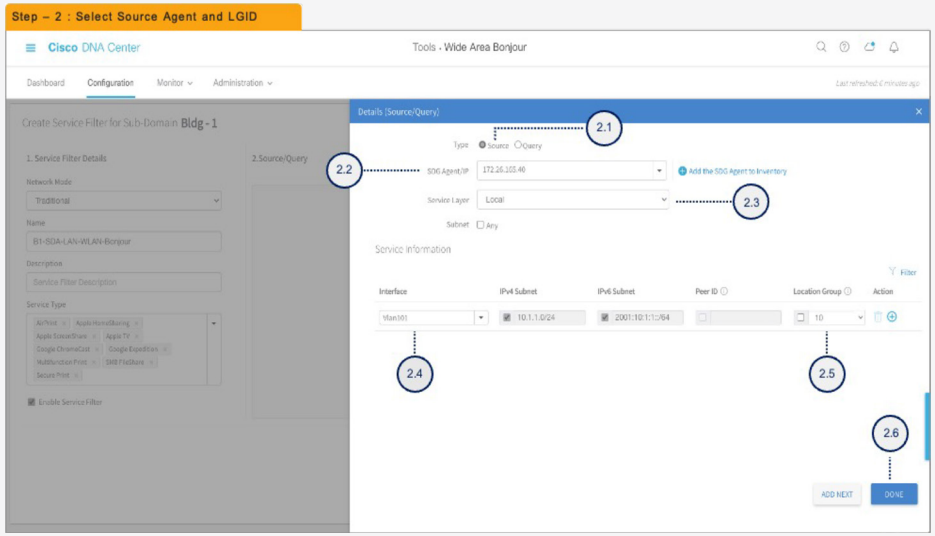
Cisco DNA Center – Wide Area Bonjour service filter configuration steps





Step 1: Configuration tasks

1.2 Click the Configuration tab in the Wide Area Bonjour application to create a new service filter.

1.2 Type the service filter name.

1.3 Select the service type(s) to be permitted from the drop-down menu.

1.4 Click Add and add Source and Query (Receiver) SDG agent(s) in the service filter.

Step 2: Configuration tasks

2.1 Select Source as the Type.

2.2 Select a source SDG agent from the drop-down menu to accept mDNS service announcements, for example, LAN-ACCESS-1 switch.

2.3 Select Local from the Service Layer drop-down menu to accept mDNS service announcements from the selected Layer 3 access switch in the SDG agent role, for example, LAN-ACCESS-1 switch.

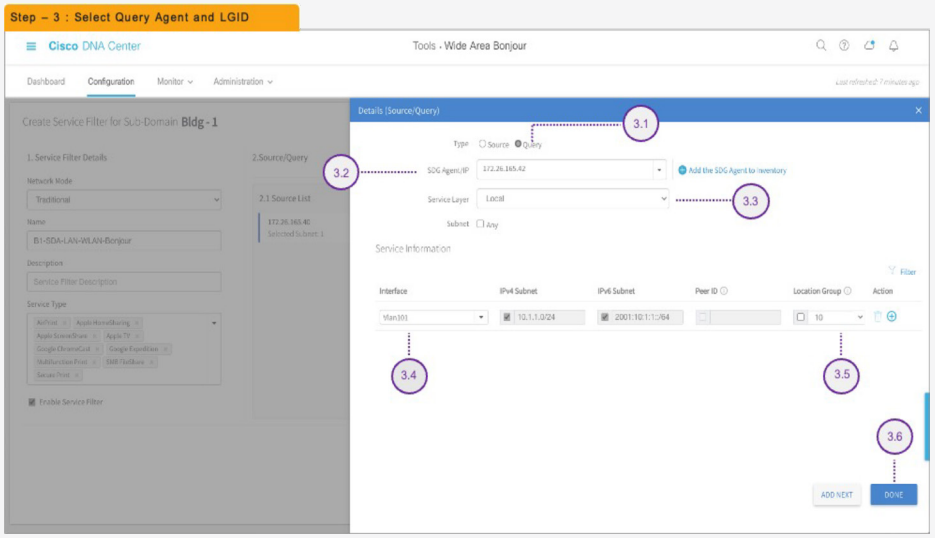
2.4 Select the switch virtual interface (SVI) from the Interface drop-down menu to accept mDNS service announcements from a specific VLAN, for example, Printer VLAN ID 101.

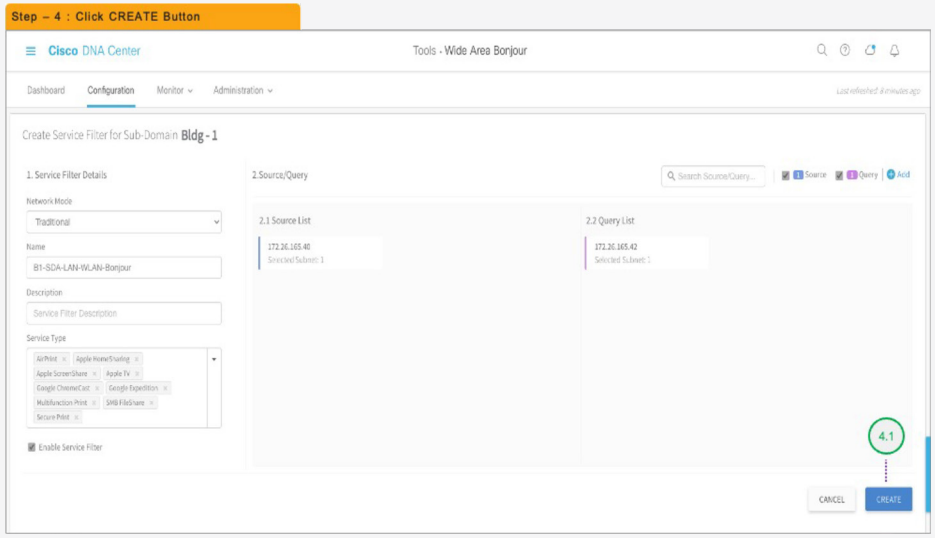
2.5 Optional. Select Custom from the Location Group drop-down menu and enter the location group ID for the printer LAN port. (Optional micro-location service-routing function.)

2.6 Click Done to return to the service filter page.

The bridge to possible

Cisco DNA Center – Wide Area Bonjour service filter configuration steps





Step 3: Configuration tasks

3.1 Select Query as the Type.

3.2 Select a query SDG agent from the drop-down menu to accept mDNS service query requests, for example, LAN-ACCESS-2 switch.

3.3 Select Local from the Service Layer drop-down menu to accept mDNS service announcements from a selected Layer 3 access switch in the SDG agent role, for example, LAN-ACCESS-2 switch.

3.4 Select the SVI from the Interface drop-down menu to accept mDNS service query requests from specific VLAN, for example, Wired Client VLAN ID 201.

3.5 Optional. Select Custom from the Location Group drop-down menu and enter the location group ID for the wired user LAN port. (Optional micro-location service-routing function.)

3.6 Click Done to return to the service filter page.

Step 4: Configuration tasks

4.1 Click Create to complete the building of the Wide Area Bonjour service filter.

Bi-Directional Policy

Repeat Step 1 to 4 to build bi-directional service-routing policy by reversing SDG Agent 172.26.165.42 as Source and 172.26.165.40 as Query Type;

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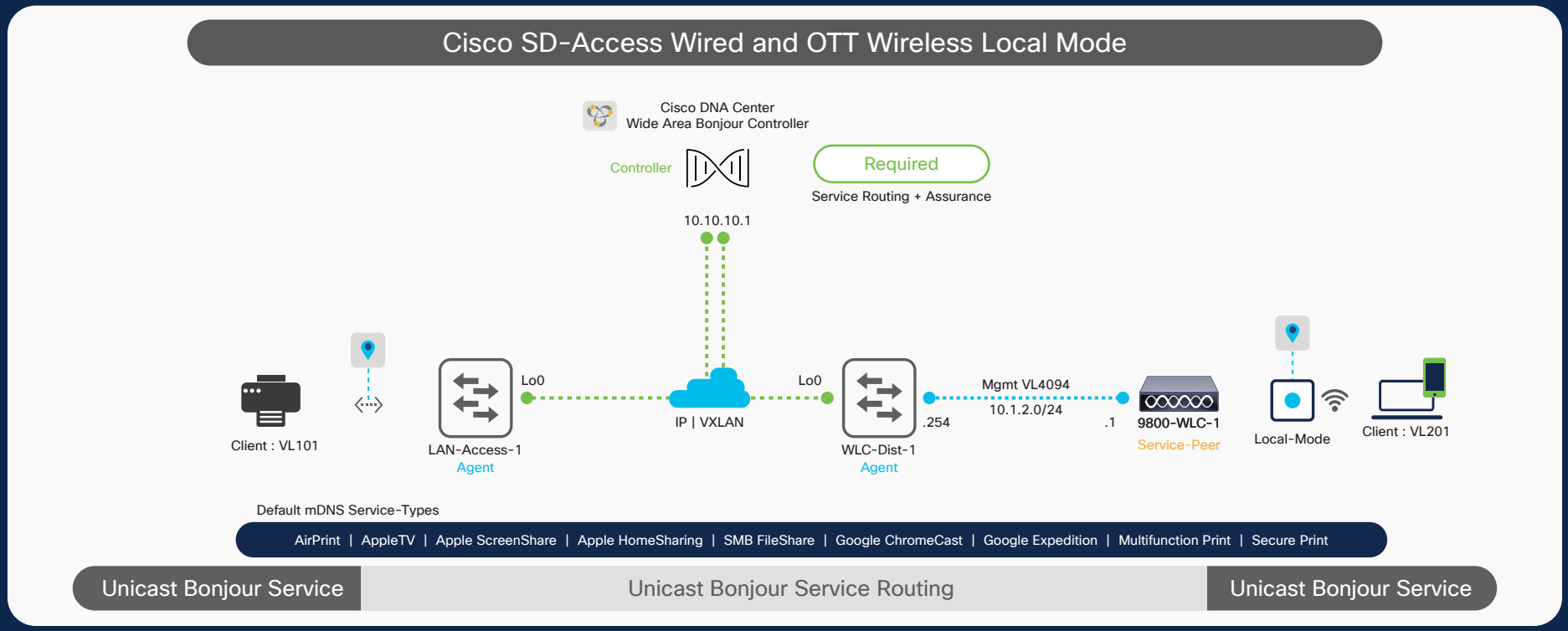
Cisco SD-Access Network – Fabric-Enabled Wired and Wireless OTT Mode

Overview

This quick configuration section, briefly covers different components of the Cisco DNA Service for Bonjour and describe how to configure the Cisco SD-Access Network – Fabric-enabled wired and wireless OTT or traditional local mode. The Cisco DNA Service for Bonjour is an end-to-end solution that includes the following key components and benefits:

Figure 2. Wide Area Bonjour for Cisco SD-Access Wired and OTT Wireless



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Wide Area Bonjour Domain

The Wide Area Bonjour domain is a controller-based solution. The network wide distributed Catalyst 9000 series SDG agent devices establish a lightweight, stateful, and reliable communication channel with the centralized Cisco DNA Center controller running the Wide Area Bonjour application. The Cisco DNA-Center can discover and distribute mDNS services across Wide Area Bonjour domain based on policies.

Service peer

A Catalyst 9800 series Wireless LAN Controller (WLC) in Layer 2 access function in service peer mode to support unicast-based communication with local attached wireless endpoints and export service information to the upstream Cisco Service Discovery Gateway (SDG) agent in the distribution layer.

Service Discovery Gateway agent

A Fabric-Edge Catalyst switch in LAN Access and wireless distribution layer Catalyst 9000 switch functions as an SDG agent and communicates with locally attached wired Bonjour service endpoints or aggregates information from the downstream service peer switch or WLC, and exports information to the central Cisco DNA controller.

Cisco DNA controller

The Cisco DNA controller provides a secure channel with trusted SDG agents from SD-Access fabric and traditional network for centralized services management and controlled service routing. The Cisco Wide Area Bonjour application operates across two integrated domain networks with end-to-end unicast-based service routing.

Endpoints

A Bonjour endpoint is any device that advertises or queries Bonjour services conforming to RFC 6762. The Bonjour endpoints can be in either LANs or WLANs. The Wide Area Bonjour application is designed to integrate with RFC 6762-compliant Bonjour services, including AirPlay, Google Chromecast, AirPrint, and so on.

Local Area Bonjour Domain

The Local Area Bonjour domain is a single gateway solution that terminates at Layer 3 network boundary of LAN and wireless distribution block. The introduction of the service peer switches and WLC at Layer 2 eliminates the classic flood-and-learn and introduces support for unicast-based service routing between local Layer 2 wired and wireless network devices. The Catalyst 9000 series switches and the Catalyst 9800 WLC supporting Local Mode Access-Point can be deployed in the service peer role.

The bridge to possible

Quick Configuration

	LAN-ACCESS-1 – SDG agent	WLC-DIST-1 – SDG agent	9800-WLC-1 – service peer
Product support	Catalyst 9300, 9400, 9500, 9600 Series	Catalyst 9300, 9400, 9500, 9600 Series	Catalyst 9800, 9800-L, 9800-CL
Cisco DNA Center	Required to support for mDNS service routing and service assurance		
Minimum software version	Cisco IOS® XE Release 17.6.2 Cisco DNA Center Release 2.2.3		
Minimum software license	Cisco DNA Advantage		
Network prerequisite configuration	IP reachability between SDG agent and service peer(s) (Layer 2 WLC) IP reachability between SDG agent and Cisco DNA Center Wireless AP multicast Wireless client switch virtual interface (SVI) with valid IP on WLC Complete SD-Access Fabric Automation		
Default mDNS service routing	**Local Area Bonjour – service routing**		
	! mdns-sd gateway mode sdg-agent active-query timer 1 ! vlan configuration <WIRED-USER-VLAN> mdns-sd gateway !	! mdns-sd gateway mode sdg-agent ! vlan configuration <WIRELESS-USER-VLAN> mdns-sd gateway !	! mdns-sd gateway mode service-peer sdg-agent <DISTRIBUTION-MGMT-IP-GW> ! wlan <PROFILE> id <SSID> mdns-sd-interface gateway
	Wide Area Bonjour – service routing		
	! service-export mdns-sd controller DNAC-CONTROLLER-POLICY controller-address <IPv4 address> controller-source-interface <ID> !	! service-export mdns-sd controller DNAC-CONTROLLER-POLICY controller-address <IPv4 address> controller-source-interface <ID> !	

The bridge to possible

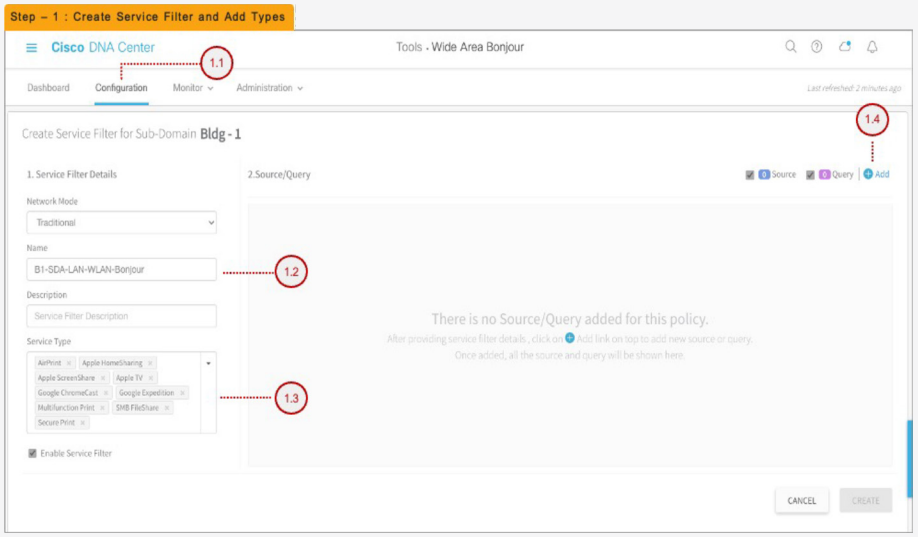
	LAN-ACCESS-1 – SDG agent	WLC-DIST-1 – SDG agent	9800-WLC-1 – service peer
Micro-location-based service routing Inter-VN local service proxy	**Wired + Wireless local mode – micro-location – OPTIONAL**		
	! mdns-sd location-group <LOCATION-GROUP-ID> vlan <WIRED-USER-VLAN> interface <WIRED-mDNS-ENDPOINT-INTERFACE-ID> interface <WIRED-mDNS-ENDPOINT-INTERFACE-ID> !		! wireless rule application mdns rule-priority <#> rule-name <BLDG-1-NAME> regex <BLDG-1-AP-NAME-REGEX> action-type grouping group-id <LOCATION-GROUP-ID> ! mdns-sd service-policy <CUSTOM-SERVICE-POLICY> location location-group ! wireless profile policy <NAME> mdns-sd service-policy <CUSTOM-SERVICE-POLICY> !

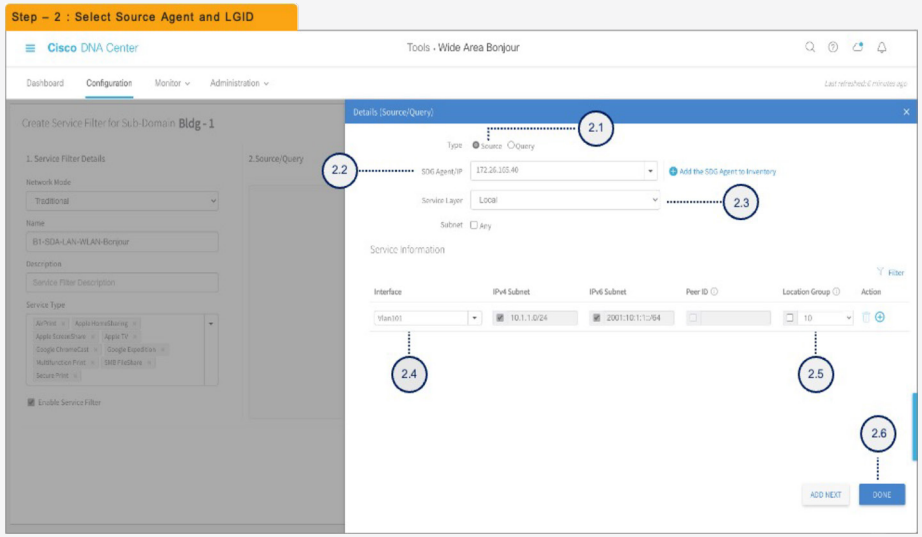
The bridge to possible

	LAN-ACCESS-1 – SDG agent	WLC-DIST-1 – SDG agent	9800-WLC-1 – service peer
Inter-VN local service proxy	Inter-VN wired-wireless local service proxy – OPTIONAL		
	! mdns-sd location-filter <INTER-VN-LOCAL-PROXY-NAME> match location-group default <VRF-1-VLAN-ID> match location-group default <VRF-2-VLAN-ID> ! mdns-sd service-list <CUSTOM-VRF-1-SERVICE-LIST> out match <service-type> location-filter <INTER-VN-LOCAL-PROXY-NAME> ! mdns-sd service-list <CUSTOM-VRF-2-SERVICE-LIST> out match <service-type> location-filter <INTER-VN-LOCAL-PROXY-NAME> ! mdns-sd service-policy <CUSTOM-VRF-1-SERVICE-POLICY> service-list <CUSTOM-VRF-1-SERVICE-LIST> out ! mdns-sd service-policy <CUSTOM-VRF-2-SERVICE-POLICY> service-list <CUSTOM-VRF-2-SERVICE-LIST> out ! vlan configuration <VRF-1-VLAN-ID> mdns-sd gateway service-policy <CUSTOM-VRF-1-SERVICE-POLICY> ! vlan configuration <VRF-2-VLAN-ID> mdns-sd gateway service-policy <CUSTOM-VRF-2-SERVICE-POLICY> !	Not applicable	

The bridge to possible

Cisco DNA-Center – Wide Area Bonjour service filter configuration steps





Step 1: Configuration tasks

1.1 Click the Configuration tab in the Wide Area Bonjour application to create a new service filter.

1.2 Type the service filter name.

1.3 Select the service type(s) to be permitted from the drop-down menu.

1.4 Click Add and add Source and Query (Receiver) SDG agent(s) in the service filter.

Step 2: Configuration tasks

2.1 Select Source as the Type.

2.2 Select a source SDG agent from the drop-down menu to accept mDNS service announcements, for example, LAN-ACCESS-1 switch.

2.3 Select Local from the Service Layer drop-down menu to accept mDNS service announcements from the selected Layer 3 access switch in the SDG agent role, for example, LAN-ACCESS-1 switch.

2.4 Select the SVI from the Interface drop-down menu to accept mDNS service announcements from a specific VLAN, for example, Printer VLAN ID 101.

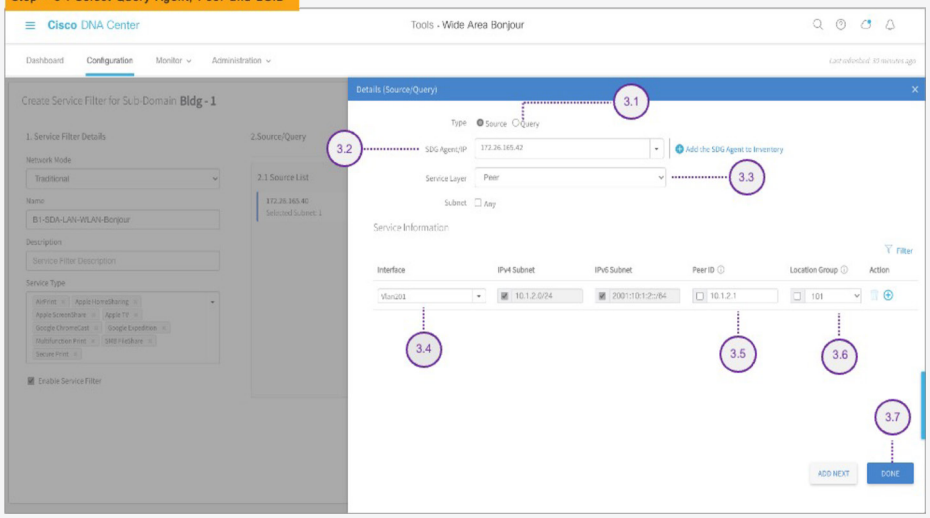
2.5 Optional. Select Custom from the Location Group drop-down menu and enter the Location group ID for the Printer LAN Port. (Optional micro-location service-routing function.)

2.6 Click Done to return to the service filter page.

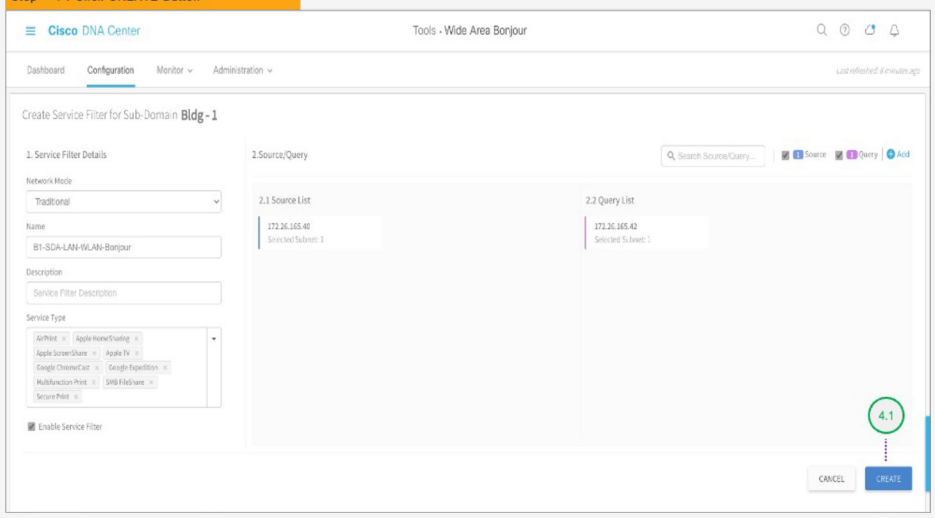
The bridge to possible

Cisco DNA-Center – Wide Area Bonjour service filter configuration steps

Step – 3 : Select Query Agent, Peer and LGID



Step – 4 : Click CREATE Button



Step 3: Configuration tasks

3.1 Select Query as the Type.

3.2 Select a query SDG agent from the drop-down menu to accept mDNS service query requests, for example, WLC-DIST-1 switch.

3.3 Select Peer from the Service Layer drop-down menu to accept mDNS service query requests from specific or more service peer(s), for example, 9800-WLC-1 Controller.

3.4 Select the SVI from the Interface drop-down menu to accept mDNS service query requests from a specific VLAN, for example, Wireless Client VLAN ID 201.

3.5 For Peer ID, type the management IPv4 address of the 9800 WLC in service peer mode, for example, 10.1.2.1.

3.6 Optional. Select Custom from the Location Group drop-down menu and enter the location group ID for the local mode access point. (Optional micro-location service-routing function.)

3.7 Click Done to return to the service filter page.

Step 4: Configuration tasks

4.1 Click Create button to complete the building of the Wide Area Bonjour service filter.

Bi-Directional Policy

Repeat Step 1 to 4 to build bi-directional service-routing policy by reversing SDG Agent 172.26.165.42 as Source and 172.26.165.40 as Query Type;

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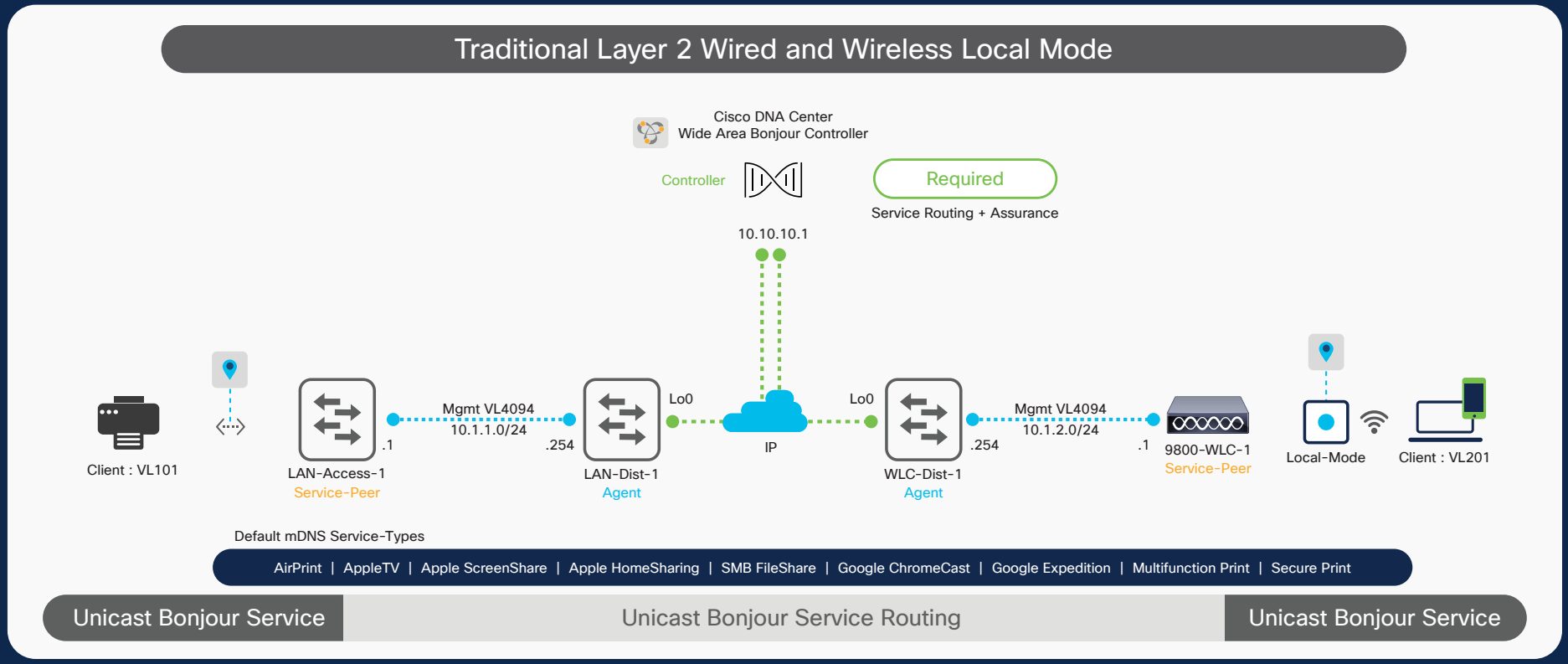
Traditional Network – Layer 2 LAN Access and Wireless Local Mode

Overview

This quick configuration section, briefly covers different components of the Cisco DNA Service for Bonjour and describe how to configure the Traditional Network – Layer 2/3 wired and central-switching local wireless mode.

Figure 3. Wide Area Bonjour for Traditional Layer 2 LAN and Wireless Local Mode



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Wide Area Bonjour Domain

The Wide Area Bonjour domain is a controller-based solution. The network wide distributed Catalyst 9000 series SDG agent devices establish a lightweight, stateful, and reliable communication channel with the centralized Cisco DNA Center controller running the Wide Area Bonjour application. The Cisco DNA-Center can discover and distribute mDNS services across Wide Area Bonjour domain based on policies.

Service peer

A Cisco® Catalyst® switch and Catalyst Wireless LAN Controller (WLC) in Layer 2 access function in service peer mode to support unicast-based communication with local attached endpoints and export service information to the upstream Cisco Service Discovery Gateway (SDG) agent in the distribution layer.

Service Discovery Gateway agent

A Catalyst switch functions as an SDG agent and communicates with the Bonjour service endpoints or aggregates information from the downstream service peer switch and WLC, and exports information to the central Cisco DNA controller.

Cisco DNA controller

The Cisco DNA controller provides a secure channel with trusted SDG agents for centralized services management and controlled service routing. The Cisco Wide Area Bonjour application operates across two integrated domain networks with end-to-end unicast-based service routing.

Endpoints

A Bonjour endpoint is any device that advertises or queries Bonjour services conforming to RFC 6762. The Bonjour endpoints can be in either LANs or WLANs. The Wide Area Bonjour application is designed to integrate with RFC 6762-compliant Bonjour services, including AirPlay, Google Chromecast, AirPrint, and so on.

Local Area Bonjour Domain

The Local Area Bonjour domain is a single gateway solution that terminates at Layer 3 network boundary of LAN and wireless distribution block. The introduction of the service peer switches and WLC at Layer 2 eliminates the classic flood-and-learn and introduces support for unicast-based service routing between local Layer 2 wired and wireless network devices. The Catalyst 9000 series switches and the Catalyst 9800 WLC supporting Local Mode Access-Point can be deployed in the service peer role.

The bridge to possible

Quick Configuration

	LAN-ACCESS-1 – service peer	LAN-DIST-1 – SDG agent	WLC-DIST-1 – SDG agent	9800-WLC-1 – service peer
Product support	Catalyst 9300, 9400, 9500, 9600 Series		Catalyst 9300, 9400, 9500, 9600 Series	Catalyst 9800, 9800-L, 9800-CL
Cisco DNA Center	Required to support for mDNS service routing and service assurance			
Minimum software version	Cisco IOS® XE Release 17.6.2 Cisco DNA Center Release 2.2.3			
Minimum software license	Cisco DNA Advantage			
Network prerequisite configuration	IP reachability between SDG agent and service peer(s) (Layer 2 Switch | WLC) IP reachability between SDG agent and Cisco DNA Center Wireless AP multicast Wireless client Switch Virtual Interface (SVI) with valid IP on WLC			
Default mDNS service routing	**Local Area Bonjour – service routing**			
	! mdns-sd gateway mode service-peer active-query timer 1 sdg-agent <DISTRIBUTION-MGMT-IP-GW> ! vlan configuration <WIRED-USER-VLAN> mdns-sd gateway ! interface <ID> ! description CONNECTED TO LAN-DIST SWITCH mdns-sd trust !	! mdns-sd gateway mode sdg-agent ! vlan configuration <WIRED-USER-VLAN> mdns-sd gateway ! interface <ID> ! description CONNECTED TO LAN-ACCESS SWITCH mdns-sd trust !	! mdns-sd gateway mode sdg-agent ! vlan configuration <WIRELESS-USER-VLAN> mdns-sd gateway ! interface <ID> ! description CONNECTED TO WLC mdns-sd trust !	! mdns-sd gateway mode service-peer sdg-agent <DISTRIBUTION-MGMT-IP-GW> ! wlan <PROFILE> id <SSID> mdns-sd-interface gateway !

The bridge to possible

	LAN-ACCESS-1 – service peer	LAN-DIST-1 – SDG agent	WLC-DIST-1 – SDG agent	9800-WLC-1 – service peer
	Local Area Bonjour – inter-service-peer service-routing – OPTIONAL			
		!	!	
		mdns-sd service-peer group peer-group <#>	mdns-sd service-peer group peer-group <#>	
		service-policy default-mdns-service-policy	service-policy default-mdns-service-policy	
		service-peer <LAN-ACCESS-1-MGMT-IP> location-group all role none	service-peer <WLC-1-MGMT-IP> location-group all role none	
		service-peer <LAN-ACCESS-2-MGMT-IP> location-group all role none	service-peer <WLC-2-MGMT-IP> location-group all role none	
		!	!	
	Local Area Bonjour – inter-service-peer service-routing – OPTIONAL			
		!	!	
		service-export	service-export	
		mdns-sd controller DNAC-CONTROLLER-POLICY	mdns-sd controller DNAC-CONTROLLER-POLICY	
		controller-address <IPv4 address>	controller-address <IPv4 address>	
		controller-source-interface <ID>	controller-source-interface <ID>	
		!	!	

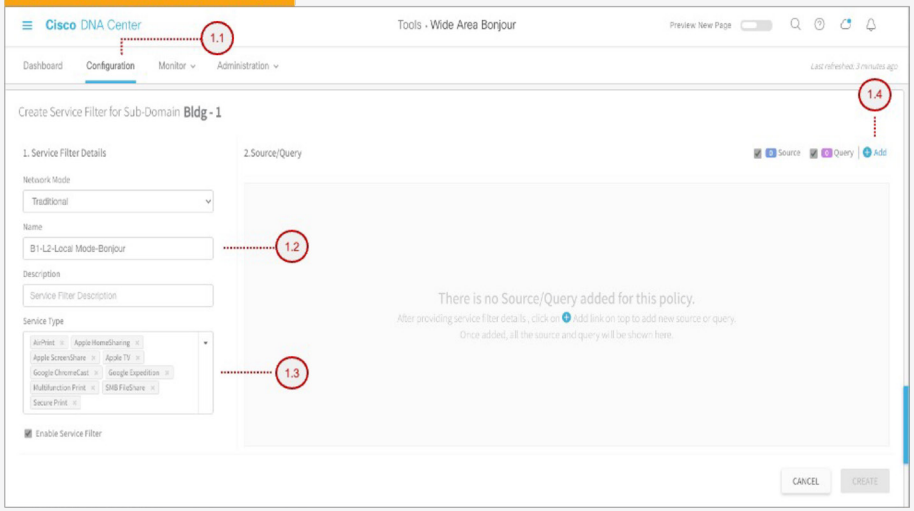
The bridge to possible

	LAN-ACCESS-1 – service peer	LAN-DIST-1 – SDG agent	WLC-DIST-1 – SDG agent	9800-WLC-1 – service peer
Micro-location-based service routing	**Wired + Wireless local mode – micro-location – OPTIONAL**			
	! mdns-sd location-group <LOCATION-GROUP-ID> vlan <WIRED-USER-VLAN> interface <WIRED-mDNS-ENDPOINT-INTERFACE-ID> interface <WIRED-mDNS-ENDPOINT-INTERFACE-ID> !	! mdns-sd service-peer group peer-group <#> service-policy default-mdns-service-policy service-peer <LAN-ACCESS-1-MGMT-IP> location-group <LOCATION-GROUP-ID> role none service-peer <LAN-ACCESS-2-MGMT-IP> location-group <LOCATION-GROUP-ID> role none !	! mdns-sd service-peer group peer-group <#> service-policy default-mdns-service-policy service-peer <WLC-1-MGMT-IP> location-group <LOCATION-GROUP-ID> role none service-peer <WLC-2-MGMT-IP> location-group <LOCATION-GROUP-ID> role none !	! wireless rule application mdns rule-priority <#> rule-name <BLDG-1-NAME> regex <BLDG-1-AP-NAME-REGEX> action-type grouping group-id <LOCATION-GROUP-ID> ! mdns-sd service-policy <CUSTOM-SERVICE-POLICY> location location-group ! wireless profile policy <NAME> mdns-sd service-policy <CUSTOM-SERVICE-POLICY> !

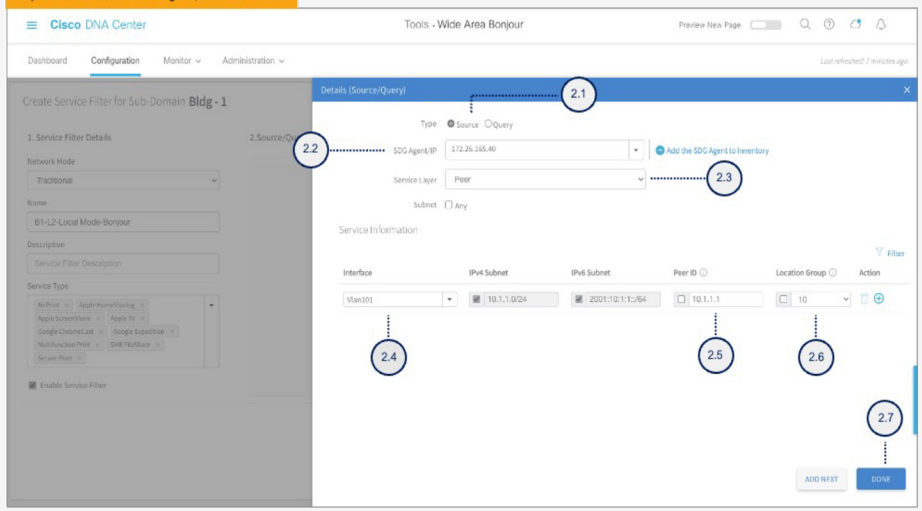
The bridge to possible

Cisco DNA-Center – Wide Area Bonjour service filter configuration steps

Step – 1 : Create Service Filter and Add Types



Step – 2 : Select Source Agent, Peer and LGID



Step 1: Configuration tasks

1.1 Click the Configuration tab in the Wide Area Bonjour application to create a new service filter.

1.2 Type the service filter name.

1.3 Select the service type(s) to be permitted from the drop-down menu.

1.4 Click Add and add Source and Query (Receiver) SDG agent(s) in the service filter.

Step 2: Configuration tasks

2.1 Select Source as the Type.

2.2 Select a source SDG agent from the drop-down menu to accept mDNS service announcements, for example, LAN-DIST-1 switch.

2.3 Select Peer from the Service Layer drop-down menu to accept mDNS service announcements from specific or more service peer(s), for example, LAN-ACCESS-1 switch.

2.4 Select the SVI from the Interface drop-down menu to accept mDNS service announcements from a specific VLAN, for example, Printer VLAN ID 101.

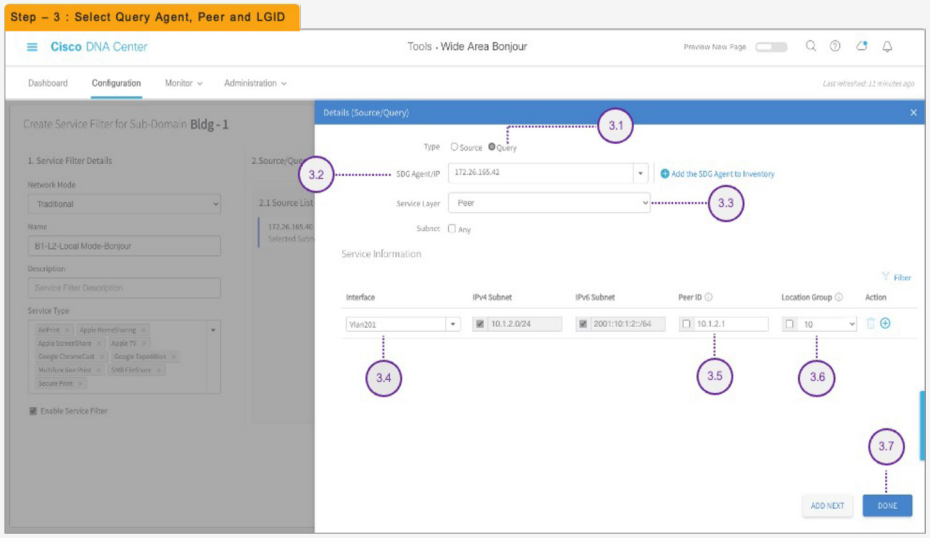
2.5 For Peer ID, type the management IPv4 address of the Layer 2 LAN access switch in service peer mode, for example, 10.1.1.1

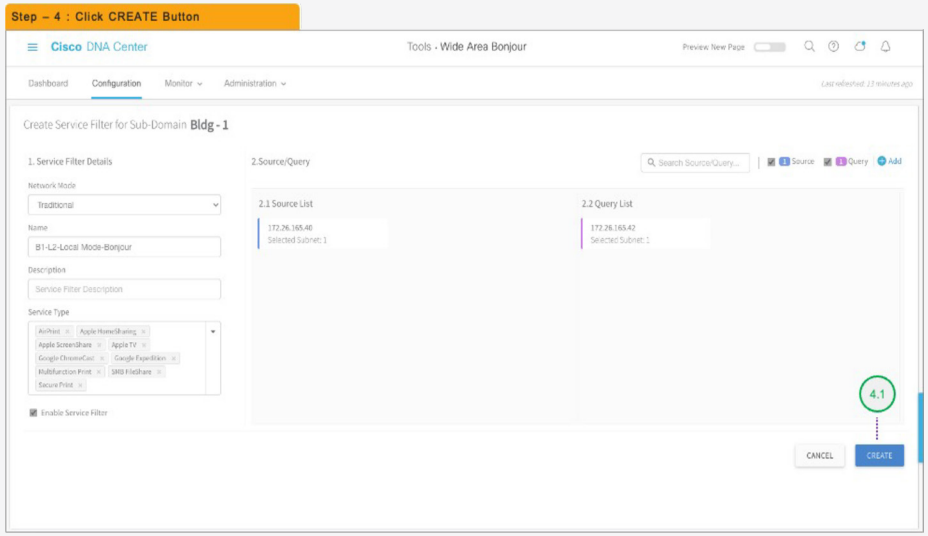
2.6 Optional. Select Custom from the Location Group drop-down menu and enter the location group ID for the printer LAN port. (Optional micro-location service routing function.)

2.7 Click Done to return to the Service Filter page.

The bridge to possible

Cisco DNA-Center – Wide Area Bonjour service filter configuration steps





Step 3: Configuration tasks

3.1 Select Query as the Type.

3.2 Select a query SDG agent from the drop-down menu to accept mDNS service query requests, for example, WLC-DIST-1 switch.

3.3 Select Peer from the Service Layer drop-down menu to accept mDNS service query requests from specific or more service peers, for example, 9800-WLC-1 Controller.

3.4 Select the SVI from the Interface drop-down menu to accept mDNS service query requests from a specific VLAN, for example, Wireless Client VLAN ID 201.

3.5 For Peer ID, type the management IPv4 address of the 9800 WLC in service peer mode, for example, 10.1.2.1.

3.6 Optional. Select Custom from the Location Group drop-down menu and enter the location group ID for the local mode access point. (Optional micro-location service routing function.)

3.7 Click Done to return to the service filter page.

Step 4: Configuration tasks

4.1 Click Create to complete the building of the Wide Area Bonjour service filter.

Bi-Directional Policy

Repeat Step 1 to 4 to build bi-directional service-routing policy by reversing SDG Agent 172.26.165.42 as Source and 172.26.165.40 as Query Type;

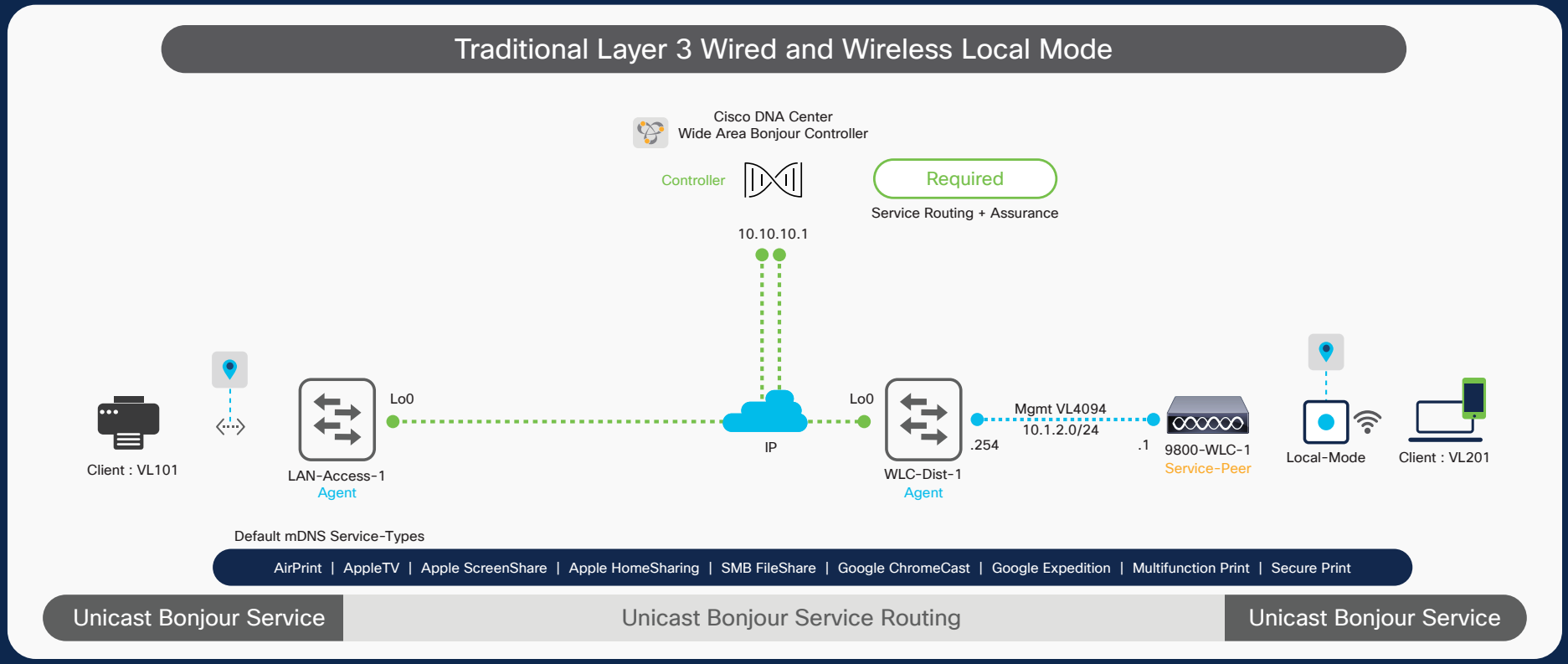
The bridge to possible

Traditional Network – Layer 3 LAN Access and Wireless Local Mode

Overview

This quick configuration section, briefly covers different components of the Cisco DNA Service for Bonjour and describe how to configure the Traditional Network – Layer 3 wired and central-switching local wireless mode.

Figure 4. Wide Area Bonjour for Traditional Layer 3 LAN and Wireless Local Mode



The bridge to possible

Wide Area Bonjour Domain

The Wide Area Bonjour domain is a controller-based solution. The network wide distributed Catalyst 9000 series SDG agent devices establish a lightweight, stateful, and reliable communication channel with the centralized Cisco DNA Center controller running the Wide Area Bonjour application. The Cisco DNA-Center can discover and distribute mDNS services across Wide Area Bonjour domain based on policies.

Service peer

A Cisco® Catalyst® Wireless LAN Controller (WLC) in Layer 2 access function in service peer mode to support unicast-based communication with local attached endpoints and export service information to the upstream Cisco Service Discovery Gateway (SDG) agent in the distribution layer.

Service Discovery Gateway agent

A Layer 3 Catalyst switch functions as an SDG agent and communicates with the Bonjour service endpoints or aggregates information from the downstream service peer switch and WLC, and exports information to the central Cisco DNA controller.

Cisco DNA controller

The Cisco DNA controller provides a secure channel with trusted SDG agents for centralized services management and controlled service routing. The Cisco Wide Area Bonjour application operates across two integrated domain networks with end-to-end unicast-based service routing.

Endpoints

A Bonjour endpoint is any device that advertises or queries Bonjour services conforming to RFC 6762. The Bonjour endpoints can be in either LANs or WLANs. The Wide Area Bonjour application is designed to integrate with RFC 6762-compliant Bonjour services, including AirPlay, Google Chromecast, AirPrint, and so on.

Local Area Bonjour Domain

The Local Area Bonjour domain is a single gateway solution that terminates at Layer 3 network boundary of LAN and wireless distribution block. The introduction of the service peer switches and WLC at Layer 2 eliminates the classic flood-and-learn and introduces support for unicast-based service routing between local Layer 2 wired and wireless network devices. The Catalyst 9000 series switches and the Catalyst 9800 WLC supporting Local Mode Access-Point can be deployed in the service peer role.

The bridge to possible

Quick Configuration

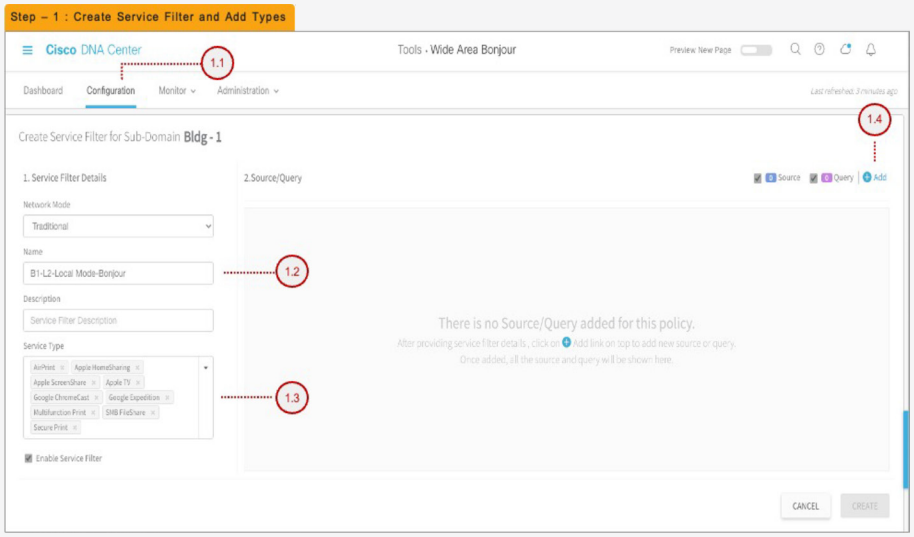
	LAN-ACCESS-1 – SDG agent	WLC-DIST-1 – SDG agent	9800-WLC-1 – service peer
Product support	Catalyst 9300, 9400, 9500, 9600 Series	Catalyst 9300, 9400, 9500, 9600 Series	Catalyst 9800, 9800-L, 9800-CL
Cisco DNA Center	Required to support for mDNS service routing and service assurance		
Minimum software version	Cisco IOS® XE Release 17.6.2 Cisco DN -Center Release 2.2.3		
Minimum software license	Cisco DNA Advantage		
Network prerequisite configuration	IP reachability between SDG agent and service peer(s) (Layer 2 switch | WLC) IP reachability between SDG agent and Cisco DNA Center Wireless AP multicast Wireless client Switch Virtual Interface (SVI) with valid IP on WLC		
Default mDNS service routing	**Local Area Bonjour – service routing**		
	! mdns-sd gateway mode sdg-agent active-query timer 1 ! vlan configuration <WIRED-USER-VLAN> mdns-sd gateway !	! mdns-sd gateway mode sdg-agent ! vlan configuration <WIRELESS-USER-VLAN> mdns-sd gateway ! interface <ID> ! description CONNECTED TO WLC mdns-sd trust !	! mdns-sd gateway mode service-peer sdg-agent <DISTRIBUTION-MGMT-IP-GW> ! wlan <PROFILE> id <SSID> mdns-sd-interface gateway !

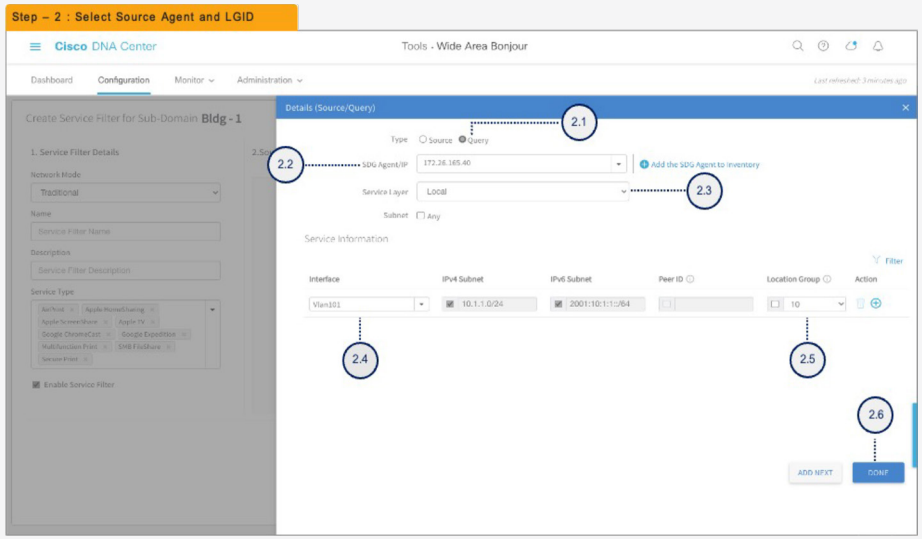
The bridge to possible

	LAN-ACCESS-1 – SDG agent	WLC-DIST-1 – SDG agent	9800-WLC-1 – service peer
	Local Area Bonjour – inter-service peer service routing – OPTIONAL		
		! mdns-sd service-peer group peer-group <#> service-policy default-mdns-service-policy service-peer <WLC-1-MGMT-IP> location-group all role none service-peer <WLC-2-MGMT-IP> location-group all role none !	
	Wide Area Bonjour – service routing		
	! service-export mdns-sd controller DNAC-CONTROLLER-POLICY controller-address <IPv4 address> controller-source-interface <ID> !	! service-export mdns-sd controller DNAC-CONTROLLER-POLICY controller-address <IPv4 address> controller-source-interface <ID> !	
Micro-location-based service routing	**Wired + Wireless local mode – micro-location – OPTIONAL**		
	! mdns-sd location-group <LOCATION-GROUP-ID> vlan <WIRED-USER-VLAN> interface <WIRED-mDNS-ENDPOINT-INTERFACE-ID> interface <WIRED-mDNS-ENDPOINT-INTERFACE-ID> !	! mdns-sd service-peer group peer-group <#> service-policy default-mdns-service-policy service-peer <WLC-1-MGMT-IP> location-group <LOCATION-GROUP-ID> role none service-peer <WLC-2-MGMT-IP> location-group <LOCATION-GROUP-ID> role none !	! wireless rule application mdns rule-priority <#> rule-name <BLDG-1-NAME> regex <BLDG-1-AP-NAME-REGEX> action-type grouping group-id <LOCATION-GROUP-ID> ! mdns-sd service-policy <CUSTOM-SERVICE-POLICY> location location-group ! wireless profile policy <NAME> mdns-sd service-policy <CUSTOM-SERVICE-POLICY> !

The bridge to possible

Cisco DNA-Center – Wide Area Bonjour service filter configuration steps





Step 1: Configuration tasks

1.1 Click the Configuration tab in the Wide Area Bonjour Application to create a new service filter.

1.2 Type the service filter name.

1.3 Select the service type(s) to be permitted from the drop-down menu.

1.4 Click Add and add Source and Query (Receiver) SDG agent(s) in the service filter.

Step 2: Configuration tasks

2.1 Select Source as the Type.

2.2 Select a source SDG Agent from the drop-down menu to accept mDNS service announcements, for example, LAN-ACCESS-1 switch.

2.3 Select Local from the Service Layer drop-down menu to accept mDNS service-announcements from the selected Layer 3 access switch in the SDG Agent role, for example, LAN-ACCESS-1 switch.

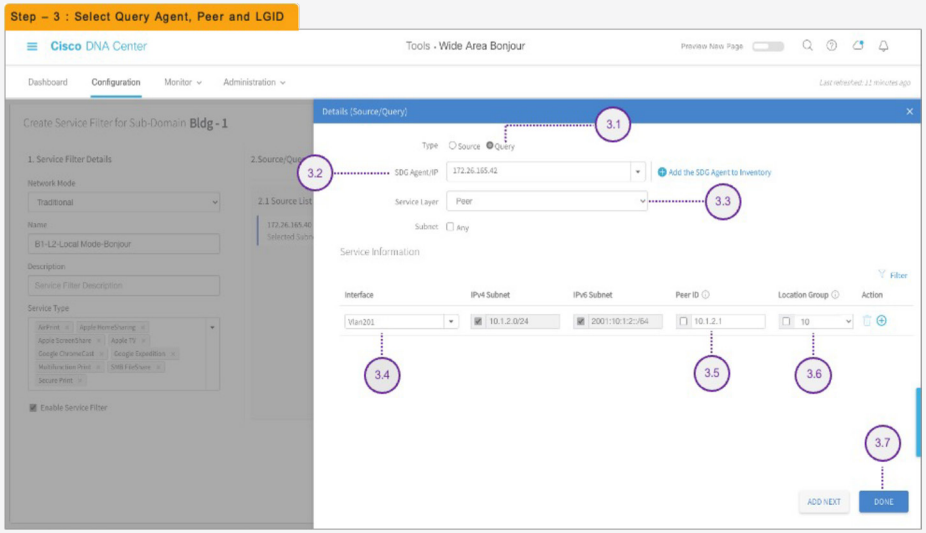
2.4 Select the SVI from the Interface drop-down menu to accept mDNS service announcements from a specific VLAN, for example, Printer VLAN ID 101.

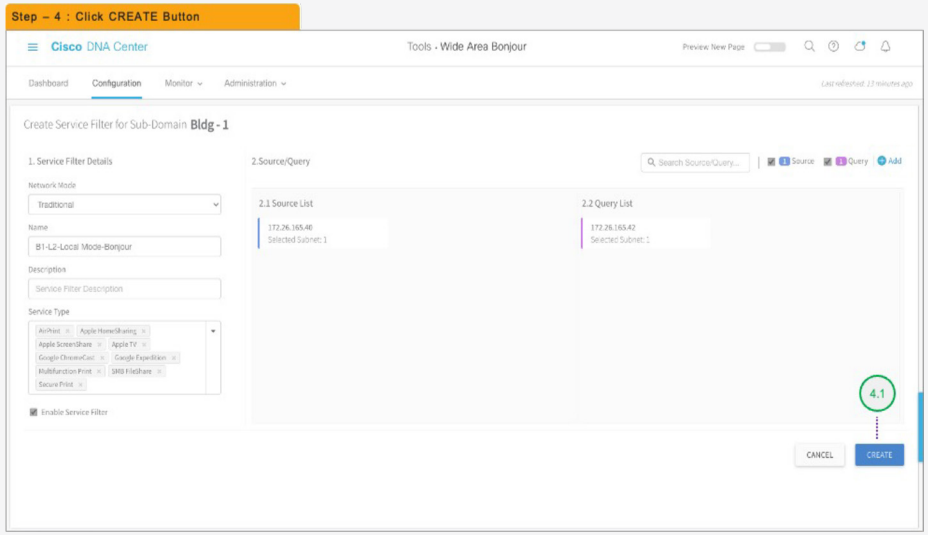
2.5 Optional. Select Custom from the drop-down menu and enter the location group ID for the printer LAN port. (Optional micro-location service routing function.)

2.6 Click Done to return to the service filter page.

The bridge to possible

Cisco DNA-Center – Wide Area Bonjour service filter configuration steps





Step 3: Configuration tasks

3.1 Select Query as the Type.

3.2 Select a query SDG Agent from the drop-down menu to accept mDNS service query request, for example, WLC-DIST-1 switch.

3.3 Select Peer from the Service Layer drop-down menu to accept mDNS service query requests from specific or more service peer(s), for example, 9800-WLC-1 Controller.

3.4 Select the SVI from the Interface drop-down menu to accept mDNS service query request from a specific VLAN, for example, Wireless Client VLAN ID 201.

3.5 For Peer ID, type the management IPv4 address of the 9800 WLC in service peer mode, for example, 10.1.2.1.

3.6 Optional. Select Custom from the Location Group drop-down menu and enter the location group ID for the local mode access point. (Optional micro-location service routing function.)

3.7 Click Done to return to the service filter page.

Step 4: Configuration tasks

4.1 Click Create to complete the building of the Wide Area Bonjour service filter.

Bi-Directional Policy

Repeat Step 1 to 4 to build bi-directional service-routing policy by reversing SDG Agent 172.26.165.42 as Source and 172.26.165.40 as Query Type;

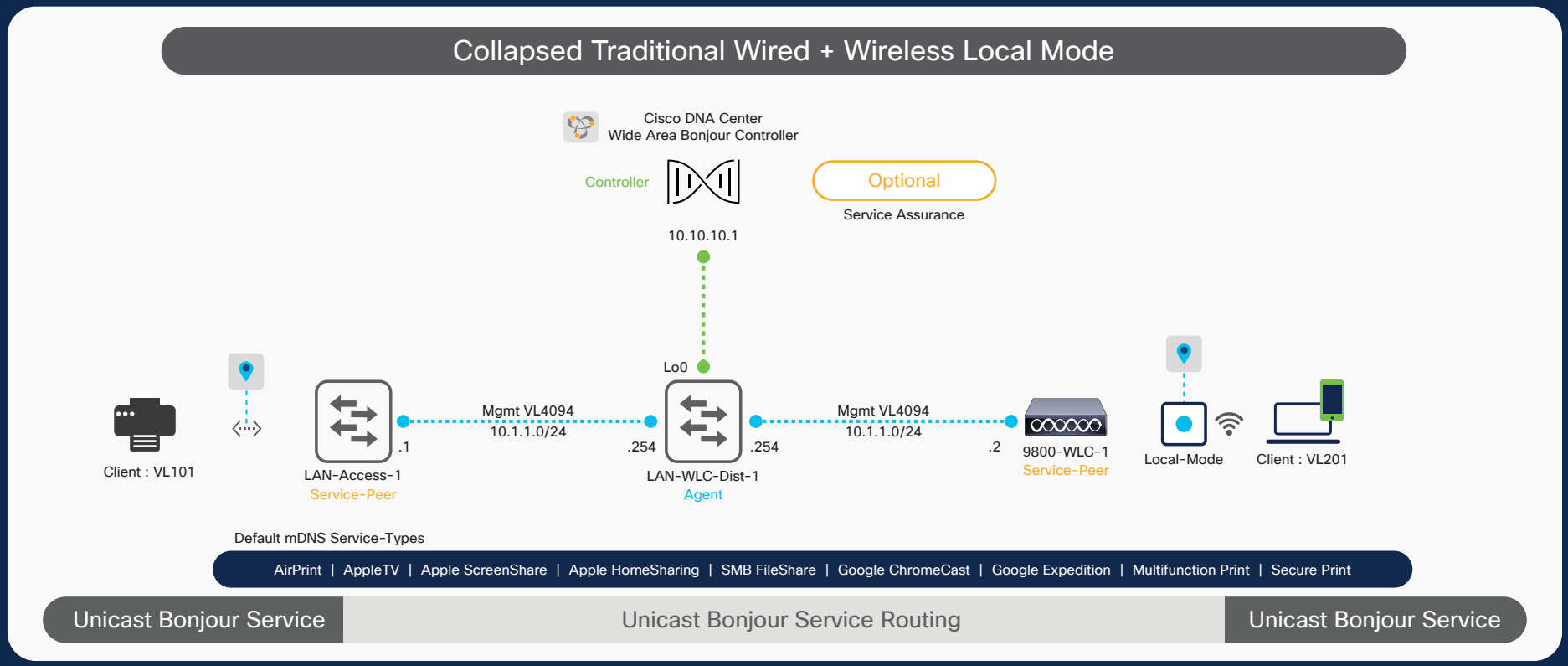
The bridge to possible

Traditional Network – Collapsed Layer 2 LAN Access and Wireless Local Mode

Overview

This quick configuration section, briefly different components of the Cisco DNA Service for Bonjour and describe how to configure the Traditional Network – Collapsed wired and wireless network to single IP gateway.

Figure 5. Wide Area Bonjour for Collapsed Layer 2 LAN and Wireless Local Mode



The bridge to possible

Wide Area Bonjour Domain

The Wide Area Bonjour domain is a controller-based solution. The network wide distributed Catalyst 9000 series SDG agent devices establish a lightweight, stateful, and reliable communication channel with the centralized Cisco DNA Center controller running the Wide Area Bonjour application. The Cisco DNA-Center can discover and distribute mDNS services across Wide Area Bonjour domain based on policies.

Service peer

A Cisco® Catalyst® switch and Catalyst Wireless LAN Controller (WLC) in Layer 2 access function in service peer mode to support unicast-based communication with local attached endpoints and export service information to the upstream Cisco Service Discovery Gateway (SDG) agent in the distribution layer.

Service Discovery Gateway agent

A Catalyst switch functions as an SDG agent and communicates with the Bonjour service endpoints or aggregates information from the downstream service peer switch and WLC, and exports information to the central Cisco DNA controller.

Cisco DNA controller

The Cisco DNA controller is optional requirement as mDNS service-routing beyond single SDG agent may not be required. It enables secure channel with trusted SDG agents for centralized services management.

Endpoints

A Bonjour endpoint is any device that advertises or queries Bonjour services conforming to RFC 6762. The Bonjour endpoints can be in either LANs or WLANs. The Wide Area Bonjour application is designed to integrate with RFC 6762-compliant Bonjour services, including AirPlay, Google Chromecast, AirPrint, and so on.

Local Area Bonjour Domain

The Local Area Bonjour domain is a single gateway solution that terminates at Layer 3 network boundary of LAN and wireless distribution block. The introduction of the service peer switches and WLC at Layer 2 eliminates the classic flood-and-learn and introduces support for unicast-based service routing between local Layer 2 wired and wireless network devices. The Catalyst 9000 series switches and the Catalyst 9800 WLC supporting Local Mode Access-Point can be deployed in the service peer role.

The bridge to possible

Quick Configuration

	LAN-ACCESS-1 – service peer	LAN-WLC-DIST-1 – SDG agent	9800-WLC-1 – service peer
Product support	Catalyst 9300, 9400, 9500, 9600 Series	Catalyst 9300, 9400, 9500, 9600 Series	Catalyst 9800, 9800-L, 9800-CL
Cisco DNA Center	Optional to support for mDNS service assurance		
Minimum software version	Cisco IOS® XE Release 17.6.2 Cisco DNA Center Release 2.2.3		
Minimum software license	Cisco DNA Advantage		
Network prerequisite configuration	IP reachability between SDG agent and service peer(s) (Layer 2 switch | WLC) IP reachability between SDG agent and Cisco DNA Center Wireless AP multicast Wireless client Switch Virtual Interface (SVI) with valid IP on WLC		
Default mDNS service routing	**Local Area Bonjour – service routing**		
	! mdns-sd gateway mode service-peer active-query timer 1 sdg-agent <DISTRIBUTION-MGMT-IP-GW> ! vlan configuration <WIRED-USER-VLAN> mdns-sd gateway ! interface <ID> ! description CONNECTED TO LAN-DIST SWITCH mdns-sd trust !	! mdns-sd gateway mode sdg-agent ! vlan configuration <WIRED-USER-VLAN> mdns-sd gateway ! vlan configuration <WIRELESS-mDNS-SERVICE-VLAN> mdns-sd gateway ! interface <ID> ! description CONNECTED TO LAN-ACCESS SWITCH mdns-sd trust ! interface <ID> ! description CONNECTED TO WLC mdns-sd trust !	! mdns-sd gateway mode service-peer sdg-agent <DISTRIBUTION-MGMT-IP-GW> ! wlan <PROFILE> id <SSID> mdns-sd-interface gateway !

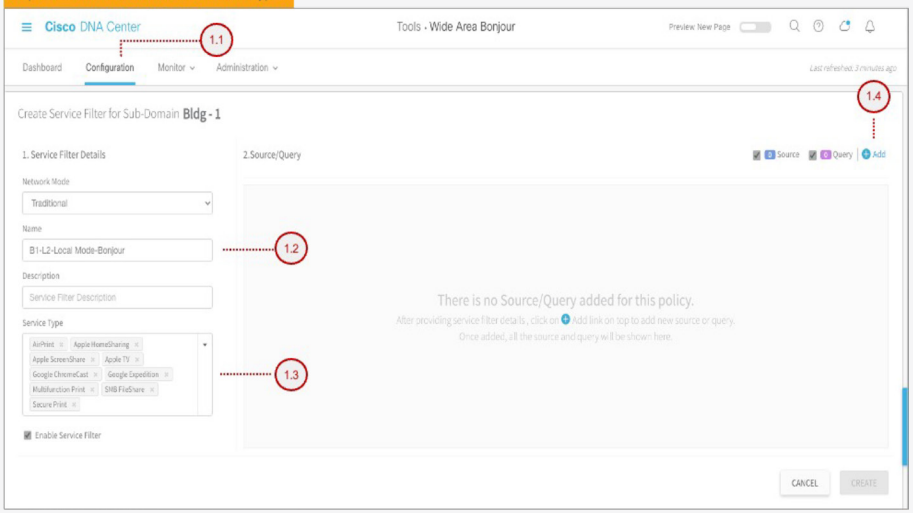
The bridge to possible

	LAN-ACCESS-1 – service peer	LAN-WLC-DIST-1 – SDG agent	9800-WLC-1 – service peer
	Local Area Bonjour – inter-peer service routing		
		! mdns-sd service-peer group peer-group <#> service-policy default-mdns-service-policy service-peer <LAN-ACCESS-1-MGMT-IP> location-group all role none service-peer <WLC-1-MGMT-IP> location-group all role none !	
	Wide Area Bonjour – service routing – OPTIONAL		
		! service-export mdns-sd controller DNAC-CONTROLLER-POLICY controller-address <IPv4 address> controller-source-interface <ID> !	
Micro-location-based service routing	**Wired + Wireless micro-location group – OPTIONAL**		
	! mdns-sd location-group <LOCATION-GROUP-ID> vlan <WIRED-USER-VLAN> interface <WIRED-mDNS-ENDPOINT-INTERFACE-ID> interface <WIRED-mDNS-ENDPOINT-INTERFACE-ID> !	! mdns-sd service-peer group peer-group <#> service-policy default-mdns-service-policy service-peer <LAN-ACCESS-1-MGMT-IP> location-group <LOCATION-GROUP-ID> role none service-peer <WLC-1-MGMT-IP> location-group <LOCATION-GROUP-ID> role none !	! wireless rule application mdns rule-priority <#> rule-name <BLDG-1-NAME> regex <BLDG-1-AP-NAME-REGEX> action-type grouping group-id <LOCATION-GROUP-ID> ! mdns-sd service-policy <CUSTOM-SERVICE-POLICY> location location-group ! wireless profile policy <NAME> mdns-sd service-policy <CUSTOM-SERVICE-POLICY> !

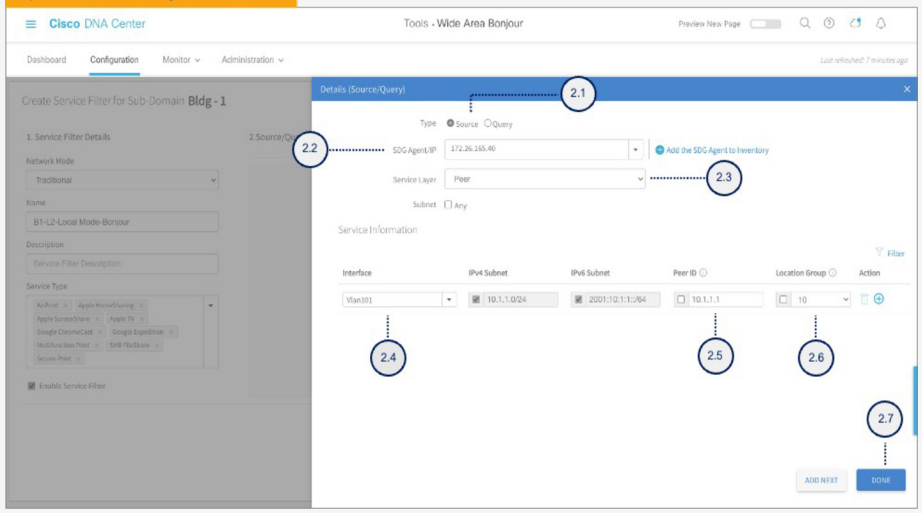
The bridge to possible

Cisco DNA-Center – Wide Area Bonjour service filter configuration steps – OPTIONAL

Step – 1 : Create Service Filter and Add Types



Step – 2 : Select Source Agent, Peer and LGID



Step 1: Configuration tasks

1.1 Click the Configuration tab in the Wide Area Bonjour application to create a new service filter.

1.2 Type the service filter name.

1.3 Select the service type(s) to be permitted from the drop-down menu.

1.4 Click Add and add Source SDG agent(s) in the service filter.

Step 2: Configuration tasks

2.1 Select Source as the Type.

2.2 Select a source SDG agent from the drop-down menu to accept mDNS service announcements, for example, LAN-DIST-1 switch.

2.3 Select Peer from the Service Layer drop-down menu to accept mDNS service announcements from specific or more service peer(s), for example, LAN-ACCESS-1 switch.

2.4 Select the SVI from the Interface drop-down menu to accept mDNS service announcements from a specific VLAN, for example, Printer VLAN ID 101.

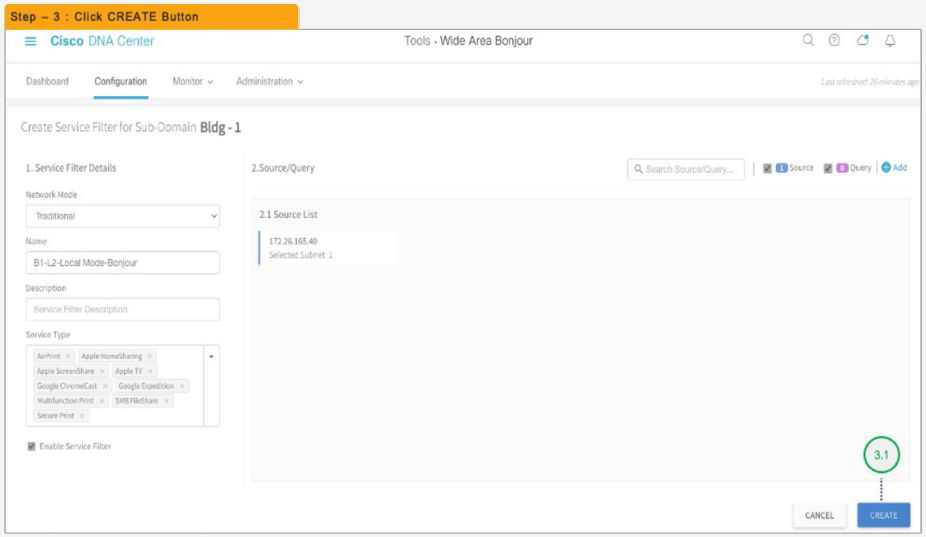
2.5 For Peer ID, type the management IPv4 address of the Layer 2 LAN access switch in service peer mode, for example, 10.1.1.1.

2.6 Optional. Select Custom from the Location Group drop-down menu and enter the location group ID for the printer LAN port. (Optional micro-location service-routing function.)

2.7 Click Done to return to the service filter page.

The bridge to possible

Cisco DNA-Center – Wide Area Bonjour service filter configuration steps – OPTIONAL



Step 3: Configuration tasks

3.1 Click Create to complete the building of the Wide Area Bonjour service filter.

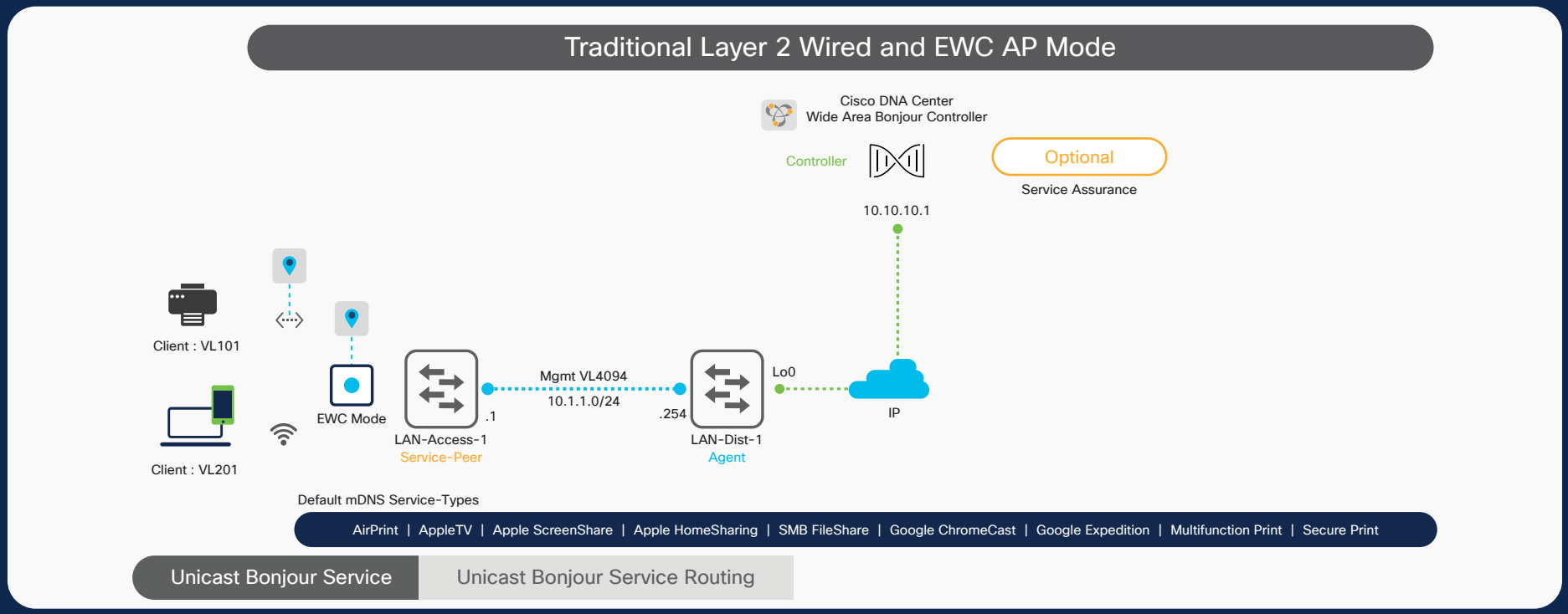
The bridge to possible

Traditional Network – Layer 2 LAN Access and Embedded Wireless Controller AP Mode

Overview

This quick configuration section, briefly covers different components of the Cisco DNA Service for Bonjour and describe how to configure the Traditional Network – Layer/Layer 3 wired and EWC mode Cisco Catalyst 9100 series Access-Points. The Cisco DNA Service for Bonjour is an end-to-end solution that includes the following key components and benefits:

Figure 6. Wide Area Bonjour for Traditional Layer 2 LAN and EWC AP Mode



The bridge to possible

Wide Area Bonjour Domain

The Wide Area Bonjour domain is a controller-based solution. The network wide distributed Catalyst 9000 series SDG agent devices establish a lightweight, stateful, and reliable communication channel with the centralized Cisco DNA Center controller running the Wide Area Bonjour application. The Cisco DNA-Center can discover and distribute mDNS services across Wide Area Bonjour domain based on policies.

Service peer

A Cisco® Catalyst® switch in Layer 2 access function in service peer mode to support unicast-based communication with local attached wired and wireless mDNS endpoints and export service information to the upstream Cisco Service Discovery Gateway (SDG) agent in the distribution layer.

Service Discovery Gateway agent

A Catalyst switch functions as an SDG agent and communicates with the Bonjour service endpoints or aggregates information from the downstream service peer switch and WLC, and exports information to the central Cisco DNA controller.

Cisco DNA controller

The Cisco DNA controller is optional requirement as mDNS service-routing beyond single SDG agent may not be required. It builds secure channel with trusted SDG agents for centralized services management function.

Endpoints

A Bonjour endpoint is any device that advertises or queries Bonjour services conforming to RFC 6762. The Bonjour endpoints can be in either LANs or WLANs. The Wide Area Bonjour application is designed to integrate with RFC 6762-compliant Bonjour services, including AirPlay, Google Chromecast, AirPrint, and so on.

Local Area Bonjour Domain

The Local Area Bonjour domain is a single gateway solution that terminates at Layer 3 network boundary of LAN and wireless distribution block. The introduction of the service peer switches and WLC at Layer 2 eliminates the classic flood-and-learn and introduces support for unicast-based service routing between local Layer 2 wired and wireless network devices. The Catalyst 9000 series switches and the Catalyst 9800 WLC supporting Local Mode Access-Point can be deployed in the service peer role.

The Wide Area Bonjour domain is a controller-based solution. The network wide distributed Catalyst 9000 series SDG agent devices establish a lightweight, stateful, and reliable communication channel with the centralized Cisco DNA Center controller running the Wide Area Bonjour application. The Cisco DNA-Center can discover and distribute mDNS services across Wide Area Bonjour domain based on policies.

The bridge to possible

Quick Configuration

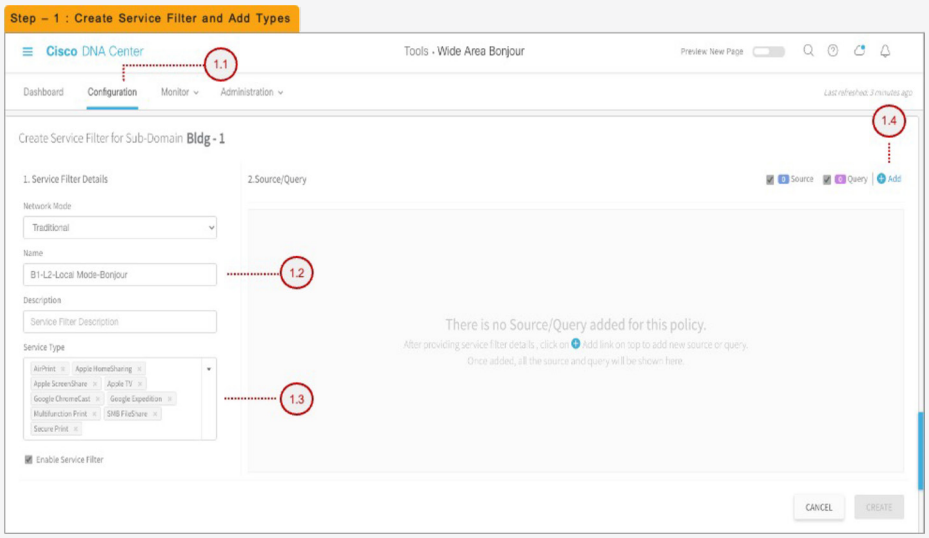
	LAN-ACCESS-1 – service peer	LAN-DIST-1 – SDG agent
Product support	Catalyst 9300, 9400, 9500, 9600	Catalyst 9300, 9400, 9500, 9600
Cisco DNA Center	Optional to support for mDNS service assurance	
Minimum software version	Cisco IOS® XE Release 17.6.2 Cisco DNA Center Release 2.2.3	
Minimum software license	Cisco DNA Advantage	
Network prerequisite configuration	IP reachability between SDG agent and service peer(s) (Layer 2 switch) IP reachability between SDG agent and Cisco DNA-Center	
Default mDNS service routing	**Local Area Bonjour – service routing**	
	! mdns-sd gateway mode service-peer active-query timer 1 sdg-agent <DISTRIBUTION-MGMT-IP-GW> ! vlan configuration <WIRED-USER-VLAN> mdns-sd gateway ! vlan configuration <WIRELESS-USER-VLAN> mdns-sd gateway ! interface <ID> ! description CONNECTED TO LAN-DIST SWITCH mdns-sd trust !	! mdns-sd gateway mode sdg-agent ! vlan configuration <WIRED-USER-VLAN> mdns-sd gateway ! vlan configuration <WIRELESS-USER-VLAN> mdns-sd gateway ! interface <ID> ! description CONNECTED TO LAN-ACCESS SWITCH mdns-sd trust !

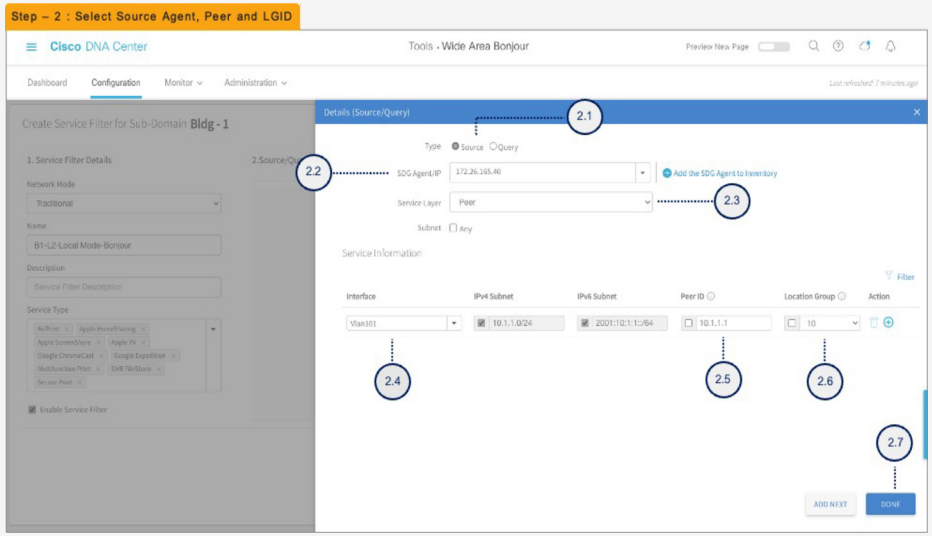
The bridge to possible

	LAN-ACCESS-1 – service peer	LAN-DIST-1 – SDG agent
Micro-location-based service routing	**Local Area Bonjour – inter-service peer service routing – OPTIONAL**	
		! mdns-sd service-peer group peer-group <#> service-policy default-mdns-service-policy service-peer <LAN-ACCESS-1-MGMT-IP> location-group all role none service-peer <LAN-ACCESS-2-MGMT-IP> location-group all role none !
	Wide Area Bonjour – service routing – OPTIONAL	
		! service-export mdns-sd controller DNAC-CONTROLLER-POLICY controller-address <IPv4 address> controller-source-interface <ID> !
	Wired + Wireless local mode – micro-location – OPTIONAL	
	! mdns-sd location-group <LOCATION-GROUP-ID> vlan <WIRED-USER-VLAN> interface <WIRED-mDNS-ENDPOINT-INTERFACE-ID> ! mdns-sd location-group <LOCATION-GROUP-ID> vlan <WIRELESS-USER-VLAN> interface <EWC-AP-INTERFACE-ID> !	! mdns-sd service-peer group peer-group <#> service-policy default-mdns-service-policy service-peer <LAN-ACCESS-1-MGMT-IP> location-group <LOCATION-GROUP-ID> role none service-peer <LAN-ACCESS-2-MGMT-IP> location-group <LOCATION-GROUP-ID> role none !

The bridge to possible

Cisco DNA-Center – Wide Area Bonjour service filter configuration steps – OPTIONAL





Step 1: Configuration tasks

1.1 Click the Configuration tab in the Wide Area Bonjour application to create a new service filter.

1.2 Type the service filter name.

1.3 Select the service type(s) to be permitted from the drop-down menu.

1.4 Click Add and add Source SDG agent(s) in the service filter.

Step 2: Configuration tasks

2.1 Select Source as the Type.

2.2 Select a source SDG agent from the drop-down menu to accept mDNS service announcements, for example, LAN-DIST-1 switch.

2.3 Select Peer from the Service Layer drop-down menu to accept mDNS service announcements from specific or more service peer(s), for example, LAN-ACCESS-1 switch.

2.4 Select the Switch Virtual Interface (SVI) from the Interface drop-down menu to accept mDNS service announcements from a specific VLAN, for example, Printer VLAN ID 101.

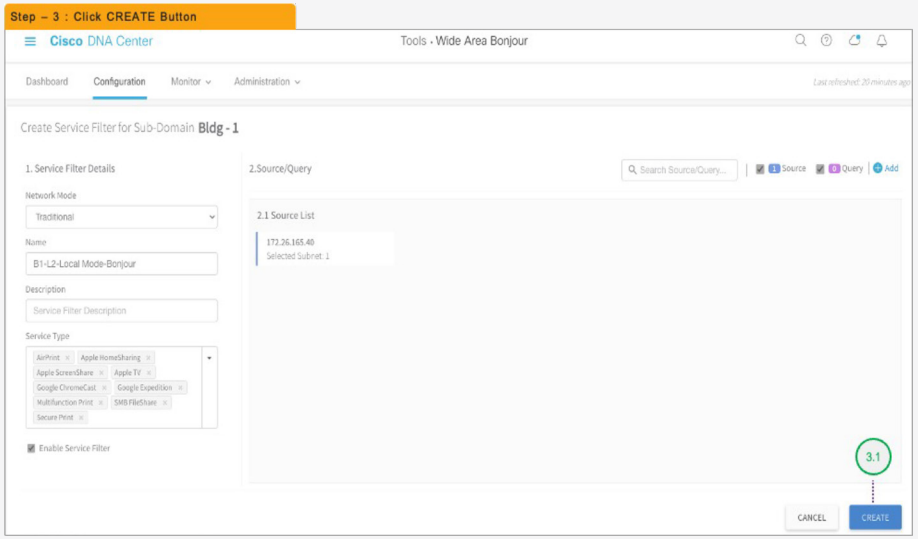
2.5 For Peer ID, type the management IPv4 address of the Layer 2 LAN access switch in service peer mode, for example, 10.1.1.1.

2.6 Optional. Select Custom from the Location Group drop-down menu and enter the location group ID for the printer LAN port. (Optional micro-location service routing function.)

2.7 Click Done to return to the service filter page.

The bridge to possible

Cisco DNA-Center – Wide Area Bonjour service filter configuration steps – OPTIONAL



Step 3: Configuration tasks

3.1 Click Create to complete the building of the Wide Area Bonjour service filter.

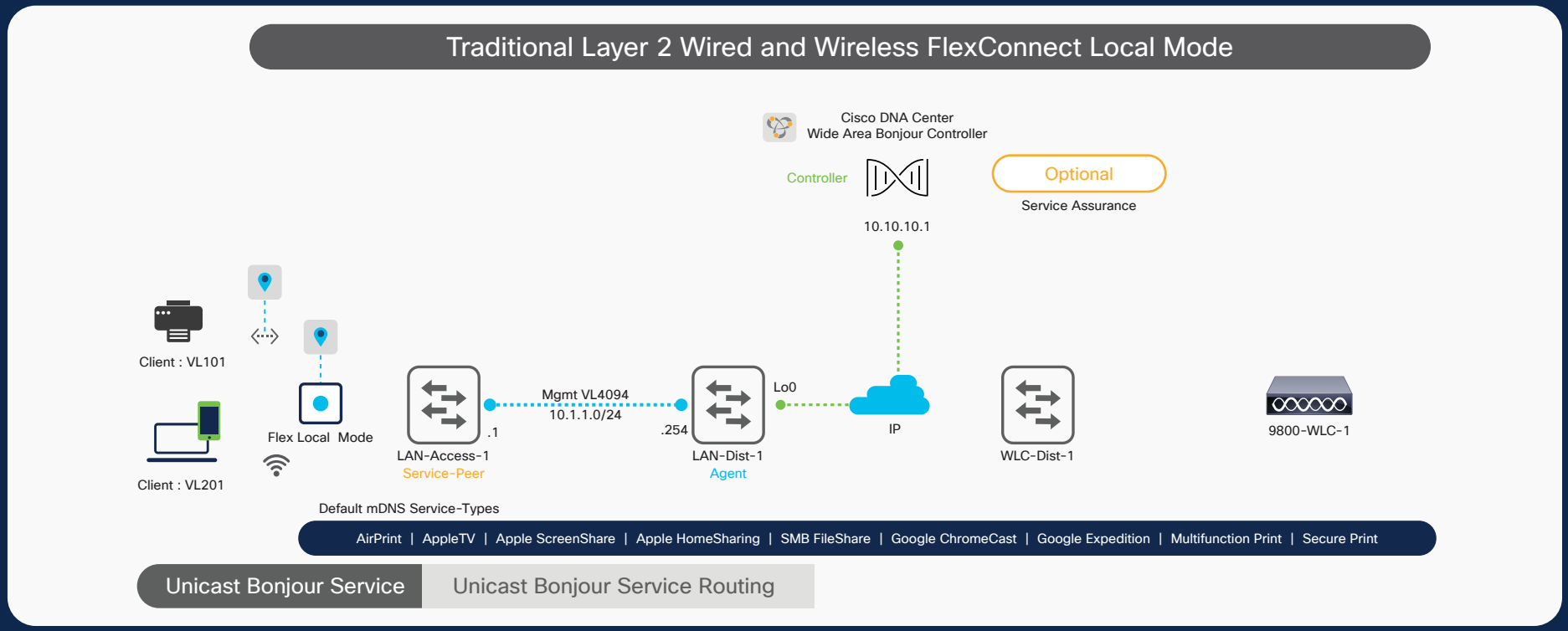
The bridge to possible

Traditional Network – Layer 2 LAN Access and Wireless FlexConnect Local Switching Mode

Overview

This quick configuration section, briefly covers different components of the Cisco DNA Service for Bonjour and describe how to configure the Traditional Network – Layer2/3 wired and FlexConnect local switching wireless mode.

Figure 7. Wide Area Bonjour for Traditional Layer 2 LAN and FlexConnect Mode



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Wide Area Bonjour Domain

The Wide Area Bonjour domain is a controller-based solution. The network wide distributed Catalyst 9000 series SDG agent devices establish a lightweight, stateful, and reliable communication channel with the centralized Cisco DNA Center controller running the Wide Area Bonjour application. The Cisco DNA-Center can discover and distribute mDNS services across Wide Area Bonjour domain based on policies.

Service peer

A Cisco® Catalyst® switch in Layer 2 access function in service peer mode to support unicast-based communication with local attached endpoints and export service information to the upstream Cisco Service Discovery Gateway (SDG) agent in the distribution layer.

Service Discovery Gateway agent

A Catalyst switch functions as an SDG agent and communicates with the Bonjour service endpoints or aggregates information from the downstream service peer switch, and exports information to the central Cisco DNA controller.

Cisco DNA controller

The Cisco DNA controller is optional requirement as mDNS service-routing beyond single SDG agent may not be required. It provides a secure channel with trusted SDG agents for centralized services management.

Endpoints

A Bonjour endpoint is any device that advertises or queries Bonjour services conforming to RFC 6762. The Bonjour endpoints can be in either LANs or WLANs. The Wide Area Bonjour application is designed to integrate with RFC 6762-compliant Bonjour services, including AirPlay, Google Chromecast, AirPrint, and so on.

Local Area Bonjour Domain

The Local Area Bonjour domain is a single gateway solution that terminates at Layer 3 network boundary of LAN and wireless distribution block. The introduction of the service peer switches and WLC at Layer 2 eliminates the classic flood-and-learn and introduces support for unicast-based service routing between local Layer 2 wired and wireless network devices. The Catalyst 9000 series switches and the Catalyst 9800 WLC supporting Local Mode Access-Point can be deployed in the service peer role.

The bridge to possible

Quick Configuration

	LAN-ACCESS-1 – service peer	LAN-DIST-1 – SDG agent
Product support	Catalyst 9300, 9400, 9500, 9600 Series	Catalyst 9300, 9400, 9500, 9600 Series
Cisco DNA Center	Optional to support for mDNS service assurance	
Minimum software version	Cisco IOS® XE Release 17.6.2 Cisco DNA Center Release 2.2.3	
Minimum software license	Cisco DNA Advantage	
Network prerequisite configuration	IP reachability between SDG agent and service peer(s) (Layer 2 switch) IP reachability between SDG agent and Cisco DNA Center	
Default mDNS service routing	**Local Area Bonjour – service routing**	
	! mdns-sd gateway mode service-peer active-query timer 1 sdg-agent <DISTRIBUTION-MGMT-IP-GW> ! vlan configuration <WIRED-USER-VLAN> mdns-sd gateway ! vlan configuration <WIRELESS-USER-VLAN> mdns-sd gateway ! interface <ID> ! description CONNECTED TO LAN-DIST SWITCH mdns-sd trust !	! mdns-sd gateway mode sdg-agent ! vlan configuration <WIRED-USER-VLAN> mdns-sd gateway ! vlan configuration <WIRELESS-USER-VLAN> mdns-sd gateway ! interface <ID> ! description CONNECTED TO LAN-ACCESS SWITCH mdns-sd trust !

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	LAN-ACCESS-1 – service peer	LAN-DIST-1 – SDG agent
Micro-location-based service routing	**Local Area Bonjour – inter-service peer service routing – OPTIONAL**	

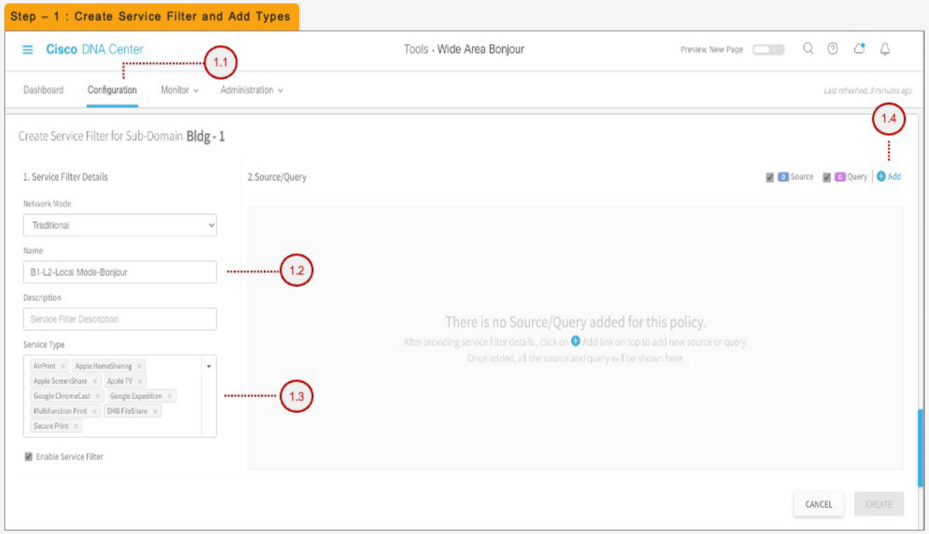
		!
		mdns-sd service-peer group
		 peer-group <#>
		  service-policy default-mdns-service-policy
		  service-peer <LAN-ACCESS-1-MGMT-IP> location-group all role none
		  service-peer <LAN-ACCESS-2-MGMT-IP> location-group all role none
		!

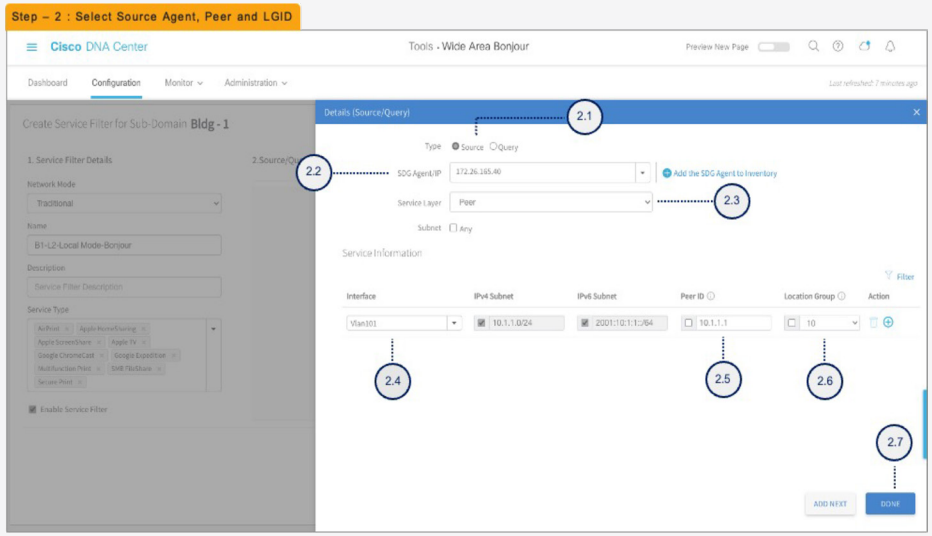
	Wide Area Bonjour – service routing – OPTIONAL	
		! service-export mdns-sd controller DNAC-CONTROLLER-POLICY controller-address <IPv4 address> controller-source-interface <ID> !
	Wired + Wireless local mode – micro-location – OPTIONAL	

	!
	mdns-sd location-group <LOCATION-GROUP-ID> vlan <WIRED-USER-VLAN>
	 interface <WIRED-mDNS-ENDPOINT-INTERFACE-ID>
	!
	mdns-sd location-group <LOCATION-GROUP-ID> vlan <WIRELESS-USER-VLAN>
	 interface <FLEXCONNECT-AP-INTERFACE-ID>
	!
		!
		mdns-sd service-peer group
		 peer-group <#>
		  service-policy default-mdns-service-policy
		  service-peer <LAN-ACCESS-1-MGMT-IP> location-group <LOCATION-GROUP-ID> role none
		  service-peer <LAN-ACCESS-2-MGMT-IP> location-group <LOCATION-GROUP-ID> role none
		!

The bridge to possible

Cisco DNA-Center – Wide Area Bonjour service filter configuration steps – OPTIONAL





Step 1: Configuration tasks

1.1 Click the Configuration tab in the Wide Area Bonjour application to create a new service filter.

1.2 Type the service filter name.

1.3 Select the service type(s) to be permitted from the drop-down menu.

1.4 Click Add and add Source SDG agent(s) in the service filter.

Step 2: Configuration tasks

2.1 Select Source as the Type.

2.2 Select a source SDG agent from the drop-down menu to accept mDNS service announcements, for example, LAN-DIST-1 switch.

2.3 Select Peer from the Service Layer drop-down menu to accept mDNS service announcements from specific or more service peer(s), for example, LAN-ACCESS-1 switch.

2.4 Select the Switch Virtual Interface (SVI) from the Interface drop-down menu to accept mDNS service announcements from a specific VLAN, for example, Printer VLAN ID 101.

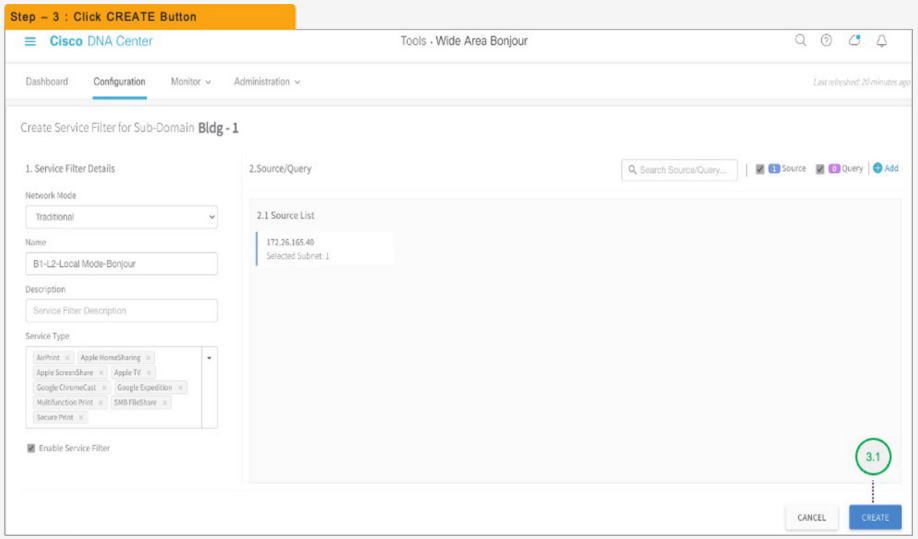
2.5 For Peer ID, type the management IPv4 address of the Layer 2 LAN access switch in service peer mode, for example, 10.1.1.1.

2.6 Optional. Select Custom from the Location Group drop-down menu and enter the location group ID for the printer LAN port. (Optional micro-location service routing function).

2.7 Click Done to return to the service filter page.

The bridge to possible

Cisco DNA-Center – Wide Area Bonjour service filter configuration steps – OPTIONAL



Step 3: Configuration tasks

3.1 Click Create to complete the building of the Wide Area Bonjour service filter.

The bridge to possible

Summary

Cisco DNA Service for Bonjour is an enterprise-grade Wide Area Bonjour solution designed to seamlessly integrate into complex wired and wireless network infrastructure. Cisco Wide Area Bonjour retains the original end user experience for using Bonjour technology in an enterprise network. In addition, the solution provides plug-and-play service-routing capabilities without any equipment changes in DHCP/DNS servers or manual MAC address management.

The distributed architecture supports unparalleled scale, performance, security, and redundancy that offers a vendor-agnostic compatible solution to enable end-to-end services in a rich network infrastructure between computers, IoT devices, and more.

C07-2943907-00 06/22