



Deploy Wide Area Bonjour on Traditional Networks

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About Wide Area Bonjour on Traditional Networks

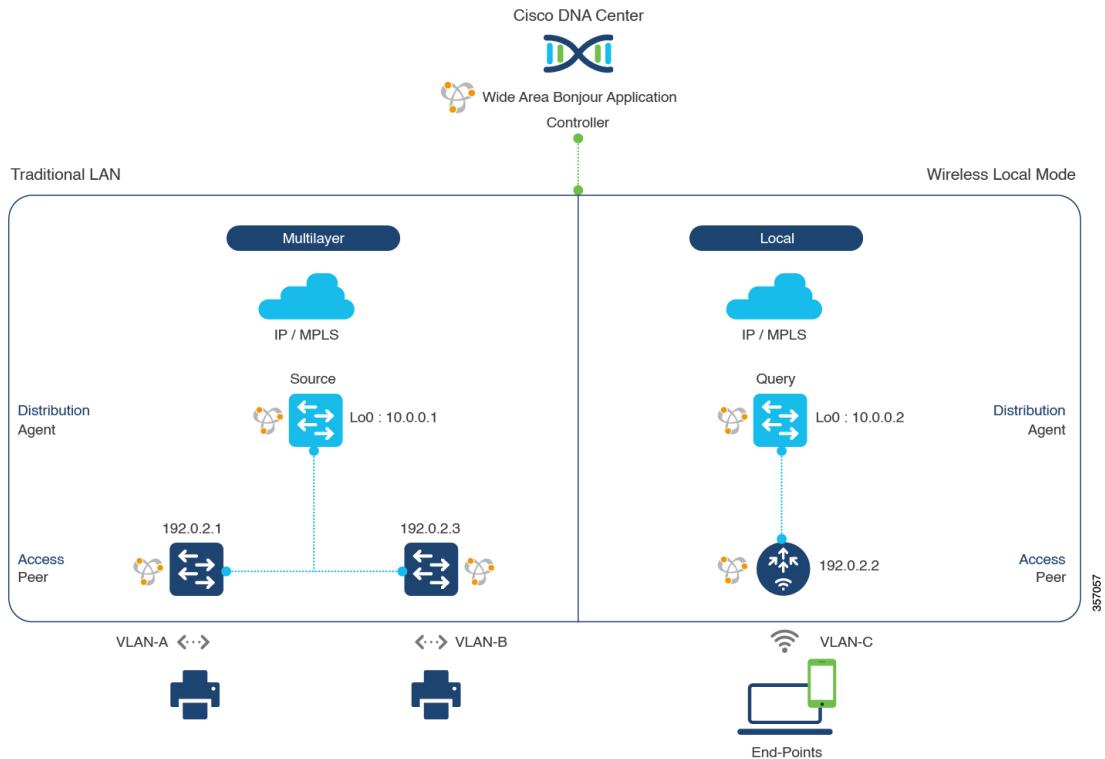
Cisco DNA Service for Bonjour supports various types of traditional wired and wireless LAN network deployment models. This chapter lists configuration instructions to implement global service filter policies in the Cisco Wide Area Bonjour application, enabling network-wide service-routing functions between various supporting deployment models.

Traditional LAN and Wireless Local Mode

This section provides guidelines to create a global configuration policy that enables Wide Area Bonjour within a traditional LAN, providing Bonjour services (such as wired printers) to wireless users connected over wireless networks with Cisco Wireless Access Points in local mode.

The following figure illustrates example network topologies for traditional LAN and wireless local-mode networks with Bonjour source and receiver agents across IP networks.

Figure 1: Traditional LAN and Wireless Local Mode Network Service Routing



Note The Cisco Catalyst 9800 Series Wireless Controller with access-point in FlexConnect Central Switching mode follows the same configuration steps described in this section.

For more information about the Cisco Catalyst 9800 Series Wireless Controller configuration guidelines, see the [Cisco Catalyst 9800 Series Wireless Controller Software Configuration Guide, Cisco IOS XE Amsterdam 17.3.x](#).

Configure Service Filters for Traditional LAN and Wireless Local Mode

This section lists the general steps to implement global service filters, which permit the Cisco Wide Area Bonjour application to dynamically discover and distribute service information between trusted Cisco Catalyst SDG agent switches across your IP network.

- Step 1** Navigate to the **Configuration** tab in the Cisco Wide Area Bonjour application.
 - Step 2** From the sidebar, select the subdomain for which you want to create the service filter.
 - Step 3** Ensure that the **Service Filter** box is checked.
 - Step 4** Click the service filter icon from the topology to view a list of the service filters for the selected domain.
- You can also manually edit existing service filters from this list.

- Step 5** Click **Create Service Filter**.
- Step 6** From the **Network Mode** drop-down list, choose **Traditional** (the default mode).
- Step 7** Enter a unique name for the service filter.
- Step 8** (Optional) Enter a description for the service filter.
- Step 9** Select one or more service types to permit announcements and queries.
- Step 10** Enable or disable service filters after creating them. By default, they are enabled.
-

Configure Source SDG Agents in Traditional LAN and Wireless Local Mode

This section lists additional configuration steps to enable discovering wired printer sources from the LAN Distribution switches paired with Layer 2 Catalyst Switches in a service peer role. The wireless distribution switches paired with a Cisco Catalyst 9800 Series Wireless Controller in a service peer role receive query responses for wired printers and distribute the responses to querying devices over the wireless local mode network.

A unidirectional service filter allows network-wide service discovery for operation and management purposes. However, the service can't be distributed across the IP network without configuring a query agent. For the steps to configure a query SDG agent, see [Configure Query SDG Agents in Traditional LAN and Wireless Local Mode, on page 4](#).

Before you begin

Ensure that you've completed the steps in [Configure Service Filters for Traditional LAN and Wireless Local Mode, on page 2](#).

- Step 1** Click **Add** in the upper-right corner of the window.
- Step 2** Click the radio button to select a source SDG agent. By default, the source radio button is selected.
- Step 3** From the **SDG Agent/IP** drop-down list, choose an SDG agent (10.0.0.1) which announces the services (for example, printer).
- Step 4** From the **Service Layer** drop-down list, choose **Peer**.
- Step 5** Uncheck the **Any** check box. By default, this check box is unchecked.
- Step 6** Select the source VLAN (Vlan-A and Vlan-B) to discover services (printer) from a specific network.
- Step 7** Enable or disable a service from a selected IPv4 subnet. By default, this is enabled.
- Step 8** Enable or disable a service from a selected IPv6 subnet. By default, this is enabled.
- Step 9** Enter the service peer IPv4 address (192.0.2.1). Click the plus icon to add more peers (192.0.2.3). Select **Any** to accept services from any peer on the selected VLAN.
- Step 10** For **Location Group**, do one of the following:
- To accept services from any location group, check the check box.
 - To accept services from location group 0, choose **Default** from the drop-down list.
 - To use a custom location group ID, choose **Custom** from the drop-down list and enter the location group ID. The valid range is from 1 to 4096.
- Step 11** (Optional) Click **Add Next** to add more source SDG agents. (Repeat the preceding steps.)
- Step 12** Click **DONE**.

Step 13 Click **CREATE**.

Configure Query SDG Agents in Traditional LAN and Wireless Local Mode

This section lists the additional configuration steps to distribute services to query SDG agents, based on a policy.

For instructions to configure a source SDG agent, see [Configure Source SDG Agents in Traditional LAN and Wireless Local Mode, on page 3](#).

Before you begin

Ensure that you've completed the steps in [Configure Service Filters for Traditional LAN and Wireless Local Mode, on page 2](#).

- Step 1** Click **Add** in the upper-right corner of the window.
- Step 2** Click the radio button to select a query SDG agent. By default, the source radio button is selected.
- Step 3** From the **SDG Agent/IP** drop-down list, choose an SDG agent (10.0.0.2) that receives queries for the services (printer).
- Step 4** From the **Service Layer** drop-down list, choose **Peer**.
- Step 5** Ensure that the **Any** check box is unchecked. By default, this is enabled.
- Step 6** Select the query VLAN (Vlan-C) to distribute services (printer) to a specific network.
- Step 7** Enable or disable services from the selected query IPv4 subnet. By default, this is enabled.
- Step 8** Enable or disable services from the selected query IPv6 subnet. By default, this is enabled.
- Step 9** Enter the service peer IPv4 address (192.0.2.2).
- Step 10** For **Location Group**, do one of the following:
- To accept services from any location group, check the check box.
 - To accept services from location group 0, choose **Default** from the drop-down list.
 - To use a custom location group ID, choose **Custom** from the drop-down list and enter the location group ID. The valid range is from 1 to 4096.
- Step 11** Click the plus icon to add more service-peers (192.0.2.4). Select **Any** to accept services from any peer on a selected VLAN.
- Step 12** (Optional) Click **Add Next** to add more query agents. (Repeat the preceding steps.)
- Step 13** Click **DONE**.
- Step 14** Click **CREATE**.
-

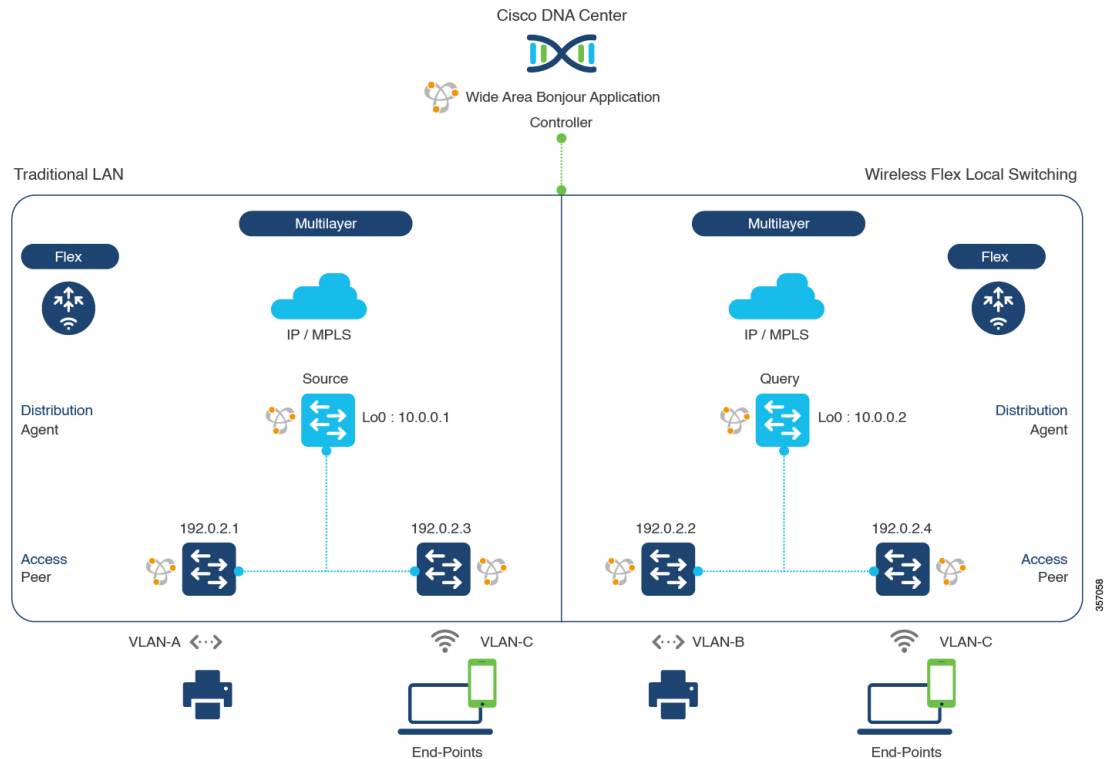
Traditional LAN and Wireless FlexConnect Local Switching Mode

This section provides step-by-step global configuration policy guidelines to enable Wide Area Bonjour over traditional LAN, which provide Bonjour services (such as wired printers) to local or remotely attached wireless

users connected over wireless networks with Cisco Wireless Access Points in FlexConnect Local Switching mode.

The following figure illustrates a reference network topology for traditional LAN and wireless FlexConnect Local Switching mode networks with Bonjour source and receiver SDG agents across IP networks.

Figure 2: Traditional LAN and Wireless FlexConnect Local Switching Network Service Routing



Note Cisco Catalyst 9800 Series Wireless Controller with FlexConnect Access Point in Local Switching mode doesn't require mDNS configuration settings.

For more information about the Cisco Catalyst 9800 Series Wireless Controller configuration guidelines, see [Cisco Catalyst 9800 Series Wireless Controller Software Configuration Guide, Cisco IOS XE Amsterdam 17.3.x](#).

Configure Service Filters for Traditional LAN and Wireless FlexConnect Local Switching Mode

This section lists the general steps to implement global service filters, which permit the Cisco Wide Area Bonjour application to dynamically discover and distribute service information between trusted Cisco Catalyst SDG agent switches across your IP network.

Step 1 Navigate to the **Configuration** tab in the Cisco Wide Area Bonjour application.

- Step 2** From the sidebar, select the subdomain for which you want to create the service filter.
- Step 3** Ensure that the **Service Filter** box is checked.
- Step 4** Click the service filter icon from the topology to view a list of the service filters for the selected domain.
You can also manually edit existing service filters from this list.
- Step 5** Click **Create Service Filter**.
- Step 6** From the **Network Mode** drop-down list, choose **Traditional** (the default mode).
- Step 7** Enter a unique name for the service filter.
- Step 8** (Optional) Enter a description for the service filter.
- Step 9** Select one or more service types to permit announcements and queries.
- Step 10** Enable or disable service filters after creating them. By default, they are enabled.
-

Configure Source SDG Agents in Traditional LAN and Wireless FlexConnect Local Switching Mode

This section lists the common configuration steps to enable discovering wired printer sources from the LAN Distribution Block-1 switches paired with Layer 2 Catalyst switches in a service peer role. The LAN Distribution Block-2 switches are paired with another pair of Catalyst switches in a service peer role.

A unidirectional service filter allows network-wide service discovery for operation and management purposes. However, the services can't be distributed across an IP network without configuring a query agent. For steps to configure a query SDG agent, see [Configure Query SDG Agents in Traditional LAN and Wireless FlexConnect Local Switching Mode, on page 7](#).

Before you begin

Ensure that you've completed the steps in [Configure Service Filters for Traditional LAN and Wireless FlexConnect Local Switching Mode, on page 5](#).

- Step 1** Click **Add** in the upper-right corner of the window.
- Step 2** Click the radio button to select a source SDG agent. By default, the source radio button is selected.
- Step 3** From the **SDG Agent/IP** drop-down list, choose an SDG agent (10.0.0.1) that announces the services (Printer).
- Step 4** From the **Service Layer** drop-down list, choose **Peer**.
- Step 5** Uncheck the **Any** check box. By default, this check box is unchecked.
- Step 6** Select the source VLAN (Vlan-A) to discover services (Printer) from a specific network.
- Step 7** Enable or disable a service from a selected IPv4 subnet. By default, this is enabled.
- Step 8** Enable or disable a service from a selected IPv6 subnet. By default, this is enabled.
- Step 9** Enter the service peer IPv4 address (192.0.2.1). Click the plus icon to add more peers (192.0.2.3). Select **Any** to accept services from any peer on the selected VLAN.
- Step 10** For **Location Group**, do one of the following:
- To accept services from any location group, check the check box.
 - To accept services from location group 0, choose **Default** from the drop-down list.

- To use a custom location group ID, choose **Custom** from the drop-down list and enter the location group ID. The valid range is from 1 to 4096.

Step 11 (Optional) Click **Add Next** to add more source SDG agents. (Repeat the preceding steps.)

Step 12 Click **DONE**.

Step 13 Click **CREATE**.

Configure Query SDG Agents in Traditional LAN and Wireless FlexConnect Local Switching Mode

This section lists the additional configuration steps to distribute services to query SDG agents, based on a policy.

For instructions to configure a source SDG agent, see [Configure Source SDG Agents in Traditional LAN and Wireless FlexConnect Local Switching Mode, on page 6](#).

Before you begin

Ensure that you've completed the steps in [Configure Service Filters for Traditional LAN and Wireless FlexConnect Local Switching Mode, on page 5](#).

Step 1 Click **Add** in the upper-right corner of the window.

Step 2 Click the radio button to select a query SDG agent. By default, the source radio button is selected.

Step 3 From the **SDG Agent/IP** drop-down list, choose an SDG agent (10.0.0.2) that receives queries for the services (printer).

Step 4 From the **Service Layer** drop-down list, choose **Peer**.

Step 5 Ensure that the **Any** check box is unchecked. By default, this is enabled.

Step 6 Select the query VLAN (Vlan-C) to distribute services (printer) to a specific network.

Step 7 Enable or disable services from the selected query IPv4 subnet. By default, this is enabled.

Step 8 Enable or disable services from the selected query IPv6 subnet. By default, this is enabled.

Step 9 Enter the service peer IPv4 address (192.0.2.2).

Step 10 For **Location Group**, do one of the following:

- To accept services from any location group, check the check box.
- To accept services from location group 0, choose **Default** from the drop-down list.
- To use a custom location group ID, choose **Custom** from the drop-down list and enter the location group ID. The valid range is from 1 to 4096.

Step 11 Click the plus icon to add more service peers (192.0.2.4). Select **Any** to accept services from any peer on a selected VLAN.

Step 12 (Optional) Click **Add Next** to add more query agents. (Repeat the preceding steps.)

Step 13 Click **DONE**.

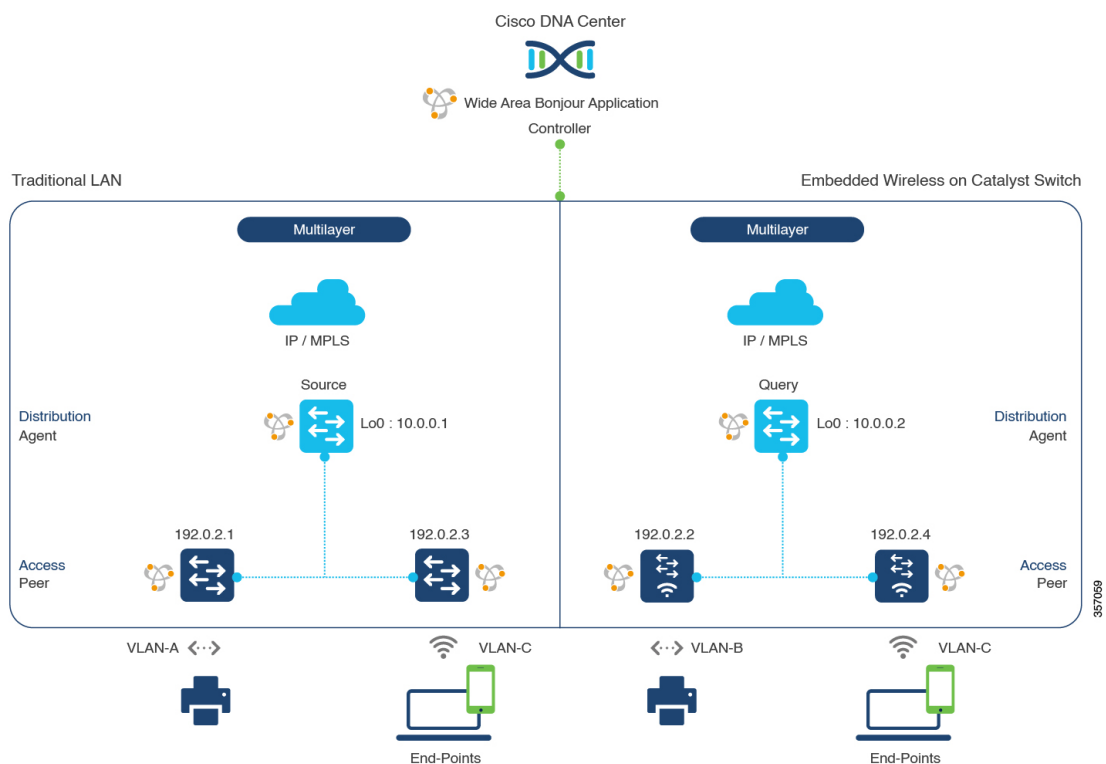
Step 14 Click **CREATE**.

Traditional LAN and Wireless Embedded Wireless Controller - Catalyst Switch

This section provides step-by-step global configuration policy guidelines to enable Cisco Wide Area Bonjour between Cisco Catalyst 9300 series switches with Embedded Wireless Controller (EWC) function. The traditional LAN providing Bonjour services, such as wired printers to the local or remote attached wireless users connected wireless networks with Cisco Wireless Access Points in Local mode.

The following figure illustrates reference network topologies for traditional LAN and wireless Local mode networks with Bonjour source and receiver across IP networks.

Figure 3: Traditional LAN and EWC on Switch Service Routing



For more information about the Cisco Catalyst 9300 series switch configuration guidelines, see the [Software Configuration Guide, Cisco IOS XE Amsterdam 17.3.x \(Catalyst 9300 Switches\)](#).

Configure Service Filters for a Traditional LAN and Wireless Embedded Wireless Controller - Catalyst Switch

This section lists the general steps to implement global service filters, which permit the Cisco Wide Area Bonjour application to dynamically discover and distribute service information between trusted Cisco Catalyst SDG agent switches across your IP network.

-
- Step 1** Navigate to the **Configuration** tab in the Cisco Wide Area Bonjour application.
- Step 2** From the sidebar, select the subdomain for which you want to create the service filter.
- Step 3** Ensure that the **Service Filter** box is checked.
- Step 4** Click the service filter icon from the topology to view a list of the service filters for the selected domain.
You can also manually edit existing service filters from this list.
- Step 5** Click **Create Service Filter**.
- Step 6** From the **Network Mode** drop-down list, choose **Traditional** (the default mode).
- Step 7** Enter a unique name for the service filter.
- Step 8** (Optional) Enter a description for the service filter.
- Step 9** Select one or more service types to permit announcements and queries.
- Step 10** Enable or disable service filters after creating them. By default, they are enabled.
-

Configure Source SDG Agents in Traditional LAN and Wireless Embedded Wireless Controller - Catalyst Switch

This section lists additional configuration steps to enable discovering wired printer sources from the LAN Distribution Block-1 switches paired with Layer 2 Catalyst Switches in a service peer role. The LAN Distribution Block-2 switches are paired with another pair of Catalyst switches in a service peer role.

A unidirectional service filter allows network-wide service discovery for operation and management purposes. However, it can't be distributed across an IP network without configuring a query agent. For instructions to configure a query SDG agent, see [Configure Query SDG Agents in Traditional LAN and Wireless Embedded Wireless Controller - Catalyst Switch](#), on page 10.

Before you begin

Ensure that you've completed the steps in [Configure Service Filters for a Traditional LAN and Wireless Embedded Wireless Controller - Catalyst Switch](#), on page 8.

- Step 1** Click **Add** in the upper-right corner of the window.
- Step 2** Click the radio button to select a source SDG agent. By default, this box is unchecked.
- Step 3** From the **SDG Agent/IP** drop-down list, choose an SDG agent (10.0.0.1) that announces the services (printer).
- Step 4** From the **Service Layer** drop-down list, choose **Peer**.
- Step 5** Uncheck the **Any** check box. By default, this check box is unchecked.
- Step 6** Select the source VLAN (Vlan-A) to discover services (printer) from a specific network.
- Step 7** Enable or disable a service from a selected source IPv4 subnet. By default, this is enabled.
- Step 8** Enable or disable a service from a selected source IPv6 subnet. By default, this is enabled.
- Step 9** Enter the service peer IPv4 address (192.0.2.1). Click the plus icon to add more peers (192.0.2.3). Select **Any** to accept services from any peer on the selected VLAN.
- Step 10** For **Location Group**, do one of the following:
- To accept services from any location group, check the check box.

- To accept services from location group 0, choose **Default** from the drop-down list.
- To use a custom location group ID, choose **Custom** from the drop-down list and enter the location group ID. The valid range is from 1 to 4096.

Step 11 (Optional) Click **Add Next** to add more source SDG agents. (Repeat the preceding steps.)

Step 12 Click **DONE**.

Step 13 Click **CREATE**.

Configure Query SDG Agents in Traditional LAN and Wireless Embedded Wireless Controller - Catalyst Switch

This section lists the additional configuration steps to distribute services to query SDG agents, based on a policy.

For instructions to configure a source SDG agent, see [Configure Source SDG Agents in Traditional LAN and Wireless Embedded Wireless Controller - Catalyst Switch](#), on page 9.

Before you begin

Ensure that you've completed the steps in [Configure Service Filters for a Traditional LAN and Wireless Embedded Wireless Controller - Catalyst Switch](#), on page 8.

Step 1 Click **Add** in the upper-right corner of the window.

Step 2 Click the radio button to select a query SDG agent. By default, the source radio button is selected.

Step 3 From the **SDG Agent/IP** drop-down list, choose an SDG agent (10.0.0.2) that receives queries for the service type (printer).

Step 4 From the **Service Layer** drop-down list, choose **Peer**.

Step 5 Ensure that the **Any** check box is unchecked. By default, this check box is unchecked.

Step 6 Select the query VLAN (Vlan-C) to distribute services (printer) to a specific network.

Step 7 Enable or disable services from the selected query IPv4 subnet. By default, this is enabled.

Step 8 Enable or disable services from the selected query IPv6 subnet. By default, this is enabled.

Step 9 Enter the service peer IPv4 address (192.0.2.2).

Step 10 Click the plus icon to add more service peers (192.0.2.4). Select **Any** to accept services from any peer on a selected VLAN.

Step 11 For **Location Group**, do one of the following:

- To accept services from any location group, check the check box.
- To accept services from location group 0, choose **Default** from the drop-down list.
- To use a custom location group ID, choose **Custom** from the drop-down list and enter the location group ID. The valid range is from 1 to 4096.

Step 12 (Optional) Click **Add Next** to add more query agents. (Repeat the preceding steps.)

Step 13 Click **DONE**.

Step 14 Click **CREATE**.

What to do next

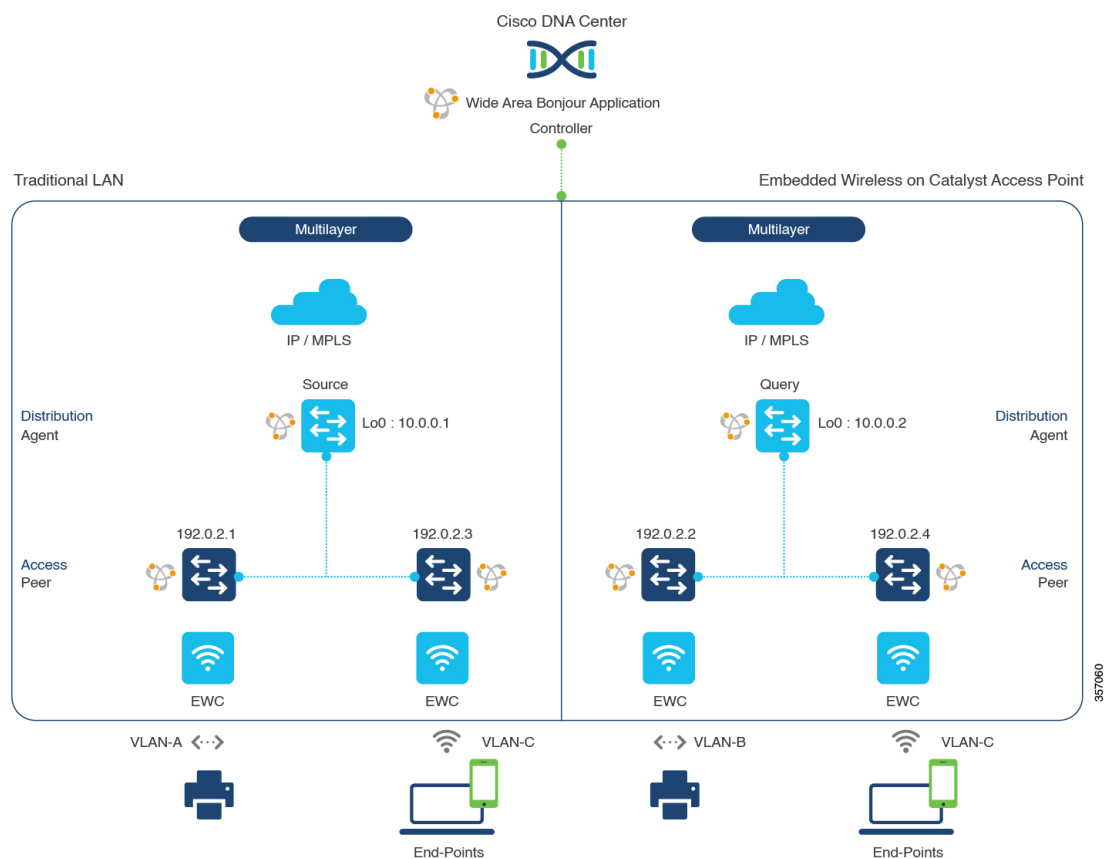
Create a new reverse service filter configuration to permit Printer service discovery from source 10.0.0.2 and peer 192.0.2.2, and distribute the service to remote querying SDG agent 10.0.0.1 and wireless users connected to the peer 192.0.2.3.

Traditional LAN and Wireless Embedded Wireless Controller - Catalyst Access Points

This section provides step-by-step global configuration policy guidelines to enable Wide Area Bonjour between devices on a traditional LAN network providing Bonjour services (such as wired printers) to local or remotely connected wired and wireless users. The Bonjour gateway on the Catalyst switch supports controller-less Wireless networks with Embedded Wireless Controller (EWC) function on the Catalyst Access Points.

The following figure illustrates reference network topologies for traditional LAN and EWC Catalyst Access Points with Bonjour source and receiver across IP networks.

Figure 4: Traditional LAN and EWC - Catalyst Access Point Network Service Routing



Note The older access point in Mobility Express mode follows the same configuration steps described in this section.

For more information about the Cisco Catalyst Access Point series EWC configuration guidelines, see the [Cisco Embedded Wireless Controller on Cisco Catalyst Access Points](#).

Configure Service Filters for a Traditional LAN and Wireless Embedded Wireless Controller - Catalyst Access Points

This section lists the general steps to implement global service filters, which permit the Cisco Wide Area Bonjour application to dynamically discover and distribute service information between trusted Cisco Catalyst SDG agent switches across your IP network.

-
- Step 1** Navigate to the **Configuration** tab in the Cisco Wide Area Bonjour application.
 - Step 2** From the sidebar, select the subdomain for which you want to create the service filter.
 - Step 3** Ensure that the **Service Filter** box is checked.
 - Step 4** Click the service filter icon from the topology to view a list of the service filters for the selected domain.
You can also manually edit existing service filters from this list.
 - Step 5** Click **Create Service Filter**.
 - Step 6** From the **Network Mode** drop-down list, choose **Traditional** (the default mode).
 - Step 7** Enter a unique name for the service filter.
 - Step 8** (Optional) Enter a description for the service filter.
 - Step 9** Select one or more service types to permit announcements and queries.
 - Step 10** Enable or disable service filters after creating them. By default, they are enabled.
-

Configure Source SDG Agents in Traditional LAN and Wireless Embedded Wireless Controller - Catalyst Access Points

This section provides guidelines for additional configuration steps in global policies to enable discovering wired printer sources from the LAN distribution switches paired with Layer 2 Cisco Catalyst switches in a service peer role. The EWC - Catalyst Access Point can receive query responses for local and remote wired printers when browsed over wireless networks.

A unidirectional service filter allows network-wide service discovery for operation and management purposes. However, the services can't be distributed across the IP network unless the query agent is configured. For instructions to configure a query SDG agent, see [Configure Query SDG Agents in Traditional LAN and Wireless Embedded Wireless Controller - Catalyst Access Points](#), on page 13.

Before you begin

Ensure that you've completed the steps in [Configure Service Filters for a Traditional LAN and Wireless Embedded Wireless Controller - Catalyst Access Points](#), on page 12.

-
- Step 1** Click **Add** in the upper-right corner of the window.
 - Step 2** Click the radio button to select a source SDG agent. By default, the source radio button is selected.

- Step 3** From the **SDG Agent/IP** drop-down list, choose an SDG agent (10.0.0.1) that announces the services (printer).
- Step 4** From the **Service Layer** drop-down list, choose **Peer**.
- Step 5** Uncheck the **Any** check box. By default, this check box is unchecked.
- Step 6** Select the source VLAN (Vlan-A) to discover services (printer) from a specific network.
- Step 7** Enable or disable a service from a selected IPv4 subnet. By default, this is enabled.
- Step 8** Enable or disable a service from a selected IPv6 subnet. By default, this is enabled.
- Step 9** Enter the service peer IPv4 address (192.0.2.1).
- Step 10** Click the plus icon to add more peers (192.0.2.3). Select **Any** to accept services from any peer on the selected VLAN.
- Step 11** For **Location Group**, do one of the following:
- To accept services from any location group, check the check box.
 - To accept services from location group 0, choose **Default** from the drop-down list.
 - To use a custom location group ID, choose **Custom** from the drop-down list and enter the location group ID. The valid range is from 1 to 4096.
- Step 12** (Optional) Click **Add Next** to add more source SDG agents. (Repeat the preceding steps.)
- Step 13** Click **DONE**.
- Step 14** Click **CREATE**.
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Configure Query SDG Agents in Traditional LAN and Wireless Embedded Wireless Controller - Catalyst Access Points

This section lists the additional configuration steps to distribute services to query SDG agents, based on a policy.

For instructions to configure a source SDG agent, see [Configure Source SDG Agents in Traditional LAN and Wireless Embedded Wireless Controller - Catalyst Access Points, on page 12](#).

Before you begin

Ensure that you've completed the steps in [Configure Service Filters for a Traditional LAN and Wireless Embedded Wireless Controller - Catalyst Access Points, on page 12](#).

- Step 1** Click **Add** in the upper-right corner of the window.
- Step 2** Click the radio button to select a query SDG agent. By default, the source radio button is selected.
- Step 3** From the **SDG Agent/IP** drop-down list, choose an SDG agent (10.0.0.2) that receives queries for the service type (printer).
- Step 4** From the **Service Layer** drop-down list, choose **Peer**.
- Step 5** Ensure that the **Any** check box is unchecked. By default, this check box is unchecked.
- Step 6** Select the query VLAN (Vlan-C) to distribute services (printer) to a specific network.
- Step 7** Enable or disable services from the selected query IPv4 subnet. By default, this is enabled.
- Step 8** Enable or disable services from the selected query IPv6 subnet. By default, this is enabled.
- Step 9** Enter the service peer IPv4 address (192.0.2.2).

- Step 10** Click the plus icon to add more service peers (192.0.2.4). Select **Any** to accept services from any peer on a select VLAN.
- Step 11** For **Location Group**, do one of the following:
- To accept services from any location group, check the check box.
 - To accept services from location group 0, choose **Default** from the drop-down list.
 - To use a custom location group ID, choose **Custom** from the drop-down list and enter the location group ID. The valid range is from 1 to 4096.
- Step 12** (Optional) Click **Add Next** to add more query agents. (Repeat the preceding steps.)
- Step 13** Click **DONE**.
- Step 14** Click **CREATE**.
-

What to do next

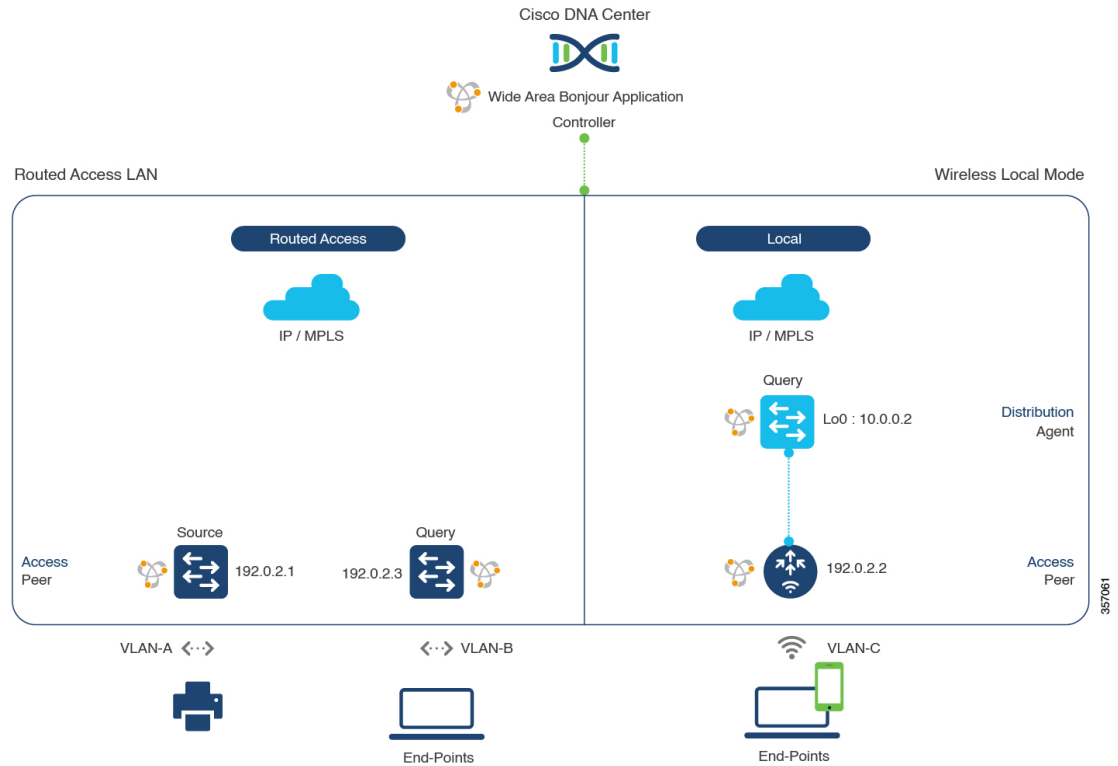
Create a new reverse service filter configuration to permit Printer service discovery from source 10.0.0.2 and peer 192.0.2.2 and enable distribution to remote querying SDG agent 10.0.0.1 and wireless users connected to peer 192.0.2.3.

Traditional Routed Access LAN and Wireless Local Mode

This section provides step-by-step global configuration policy guidelines to enable Wide Area Bonjour between devices on Routed Access LAN networks, providing Bonjour services (such as wired printers) to remotely connected wired users and wireless users connected over wireless networks with Cisco Wireless Access Points in Local mode.

The following figure illustrates a reference network topology for Routed Access LAN and wireless Local mode networks with Bonjour source and receiver devices across IP networks.

Figure 5: Routed Access LAN and Wireless Local Mode Network Service Routing



Note Use the configuration steps described in this section for Cisco Catalyst 9800 Series Wireless Controller with access points in FlexConnect Central Switching mode.

For more information about the Cisco Catalyst 9800 Series Wireless Controller configuration guidelines, see the [Cisco Catalyst 9800 Series Wireless Controller Software Configuration Guide, Cisco IOS XE Amsterdam 17.3.x](#).

Configure Service Filters for a Traditional Routed Access LAN and Wireless Local Mode

This section lists the general steps to implement global service filters, which permit the Cisco Wide Area Bonjour application to dynamically discover and distribute service information between trusted Cisco Catalyst SDG agent switches across your IP network.

- Step 1** Navigate to the **Configuration** tab in the Cisco Wide Area Bonjour application.
- Step 2** From the sidebar, select the subdomain for which you want to create the service filter.
- Step 3** Ensure that the **Service Filter** box is checked.
- Step 4** Click the service filter icon from the topology to view a list of the service filters for the selected domain.

You can also manually edit existing service filters from this list.

- Step 5** Click **Create Service Filter**.
 - Step 6** From the **Network Mode** drop-down list, choose **Traditional** (the default mode).
 - Step 7** Enter a unique name for the service filter.
 - Step 8** (Optional) Enter a description for the service filter.
 - Step 9** Select one or more service types to permit announcements and queries.
 - Step 10** Enable or disable service filters after creating them. By default, they are enabled.
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Configure Source SDG Agents in Traditional Routed Access LAN and Wireless Local Mode

This section lists guidelines for additional configuration steps to enable discovering wired printer sources from LAN switch-1 in an SDG agent role. The wired printer can be discovered by remotely connected wired users from LAN switch-2, and to wireless users from WLAN Distribution Block-2 switches paired with a Cisco Catalyst 9800 Series Wireless Controller in a service peer role.

A unidirectional service filter allows network-wide service discovery for operation and management purposes. However, it can't be distributed across the IP network unless you configure a query SDG agent. For steps to configure a query SDG agent, see [Configure Query SDG Agents for Traditional Routed Access LAN and Wireless Local Mode](#), on page 17.

Before you begin

Ensure that you've completed the steps in [Configure Service Filters for a Traditional Routed Access LAN and Wireless Local Mode](#), on page 15.

- Step 1** Click **Add** in the upper-right corner of the window.
- Step 2** Click the radio button to select a source SDG agent. By default, the source radio button is selected.
- Step 3** From the **SDG Agent/IP** drop-down list, choose an SDG agent (10.0.0.1) that announces the services (printer).
- Step 4** From the **Service Layer** drop-down list, choose **Local**.
- Step 5** Uncheck the **Any** check box. By default, this check box is unchecked.
- Step 6** Select the source VLAN (Vlan-A) to discover services (Printer) from a specific network.
- Step 7** Enable or disable a service from a selected source IPv4 subnet. By default, this is enabled.
- Step 8** Enable or disable a service from a selected source IPv6 subnet. By default, this is enabled.
- Step 9** For **Location Group**, do one of the following:
 - To accept services from any location group, check the check box.
 - To accept services from location group 0, choose **Default** from the drop-down list.
 - To use a custom location group ID, choose **Custom** from the drop-down list and enter the location group ID. The valid range is from 1 to 4096.
- Step 10** (Optional) Click **Add Next** to add more source SDG agents. (Repeat the preceding steps.)
- Step 11** Click **DONE**.

Step 12 Click **CREATE**.

Configure Query SDG Agents for Traditional Routed Access LAN and Wireless Local Mode

This section lists the additional configuration steps to distribute services to query SDG agents, based on a policy.

For instructions to configure a source SDG agent, see [Configure Source SDG Agents in Traditional Routed Access LAN and Wireless Local Mode, on page 16](#).

Before you begin

Ensure that you've completed the steps in [Configure Service Filters for a Traditional Routed Access LAN and Wireless Local Mode, on page 15](#).

- Step 1** Click **Add** in the upper-right corner of the window.
- Step 2** Click the radio button to select a query SDG agent. By default, the source radio button is selected.
- Step 3** From the **SDG Agent/IP** drop-down list, choose an SDG agent (192.0.2.3) that receives queries for the services (printer).
- Step 4** From the **Service Layer** drop-down list, choose **Local**.
- Step 5** Ensure that the **Any** check box is unchecked. By default, this is enabled.
- Step 6** Select the query VLAN (Vlan-B) to distribute services (printer) to a specific network.
- Step 7** Enable or disable services from the selected query IPv4 subnet. By default, this is enabled.
- Step 8** Enable or disable services from the selected query IPv6 subnet. By default, this is enabled.
- Step 9** For **Location Group**, do one of the following:
- To accept services from any location group, check the check box.
 - To accept services from location group 0, choose **Default** from the drop-down list.
 - To use a custom location group ID, choose **Custom** from the drop-down list and enter the location group ID. The valid range is from 1 to 4096.
- Step 10** Click **Add Next**.
- Step 11** From the **SDG Agent/IP** drop-down list, choose a query SDG agent (10.0.0.2).
- Step 12** From the **Service Layer** drop-down list, choose **Peer**.
- Step 13** Ensure that the **Any** check box is unchecked. By default, this is enabled.
- Step 14** Select the query VLAN (Vlan-C) to distribute services (printer) to a specific network.
- Step 15** Enable or disable services from the selected query IPv4 subnet. By default, this is enabled.
- Step 16** Enable or disable services from the selected IPv6 subnet. By default, this is enabled.
- Step 17** Enter the service peer IPv4 address (192.0.2.2).
- Step 18** Click the plus icon to add more service-peers (192.0.2.4). Select **Any** to accept services from any peer on a selected VLAN.
- Step 19** For **Location Group**, do one of the following:
- To accept services from any location group, check the check box.
 - To accept services from location group 0, choose **Default** from the drop-down list.

- To use a custom location group ID, choose **Custom** from the drop-down list and enter the location group ID. The valid range is from 1 to 4096.

Step 20 (Optional) Click **Add Next** to add more query agents. (Repeat the preceding steps.)

Step 21 Click **DONE**.

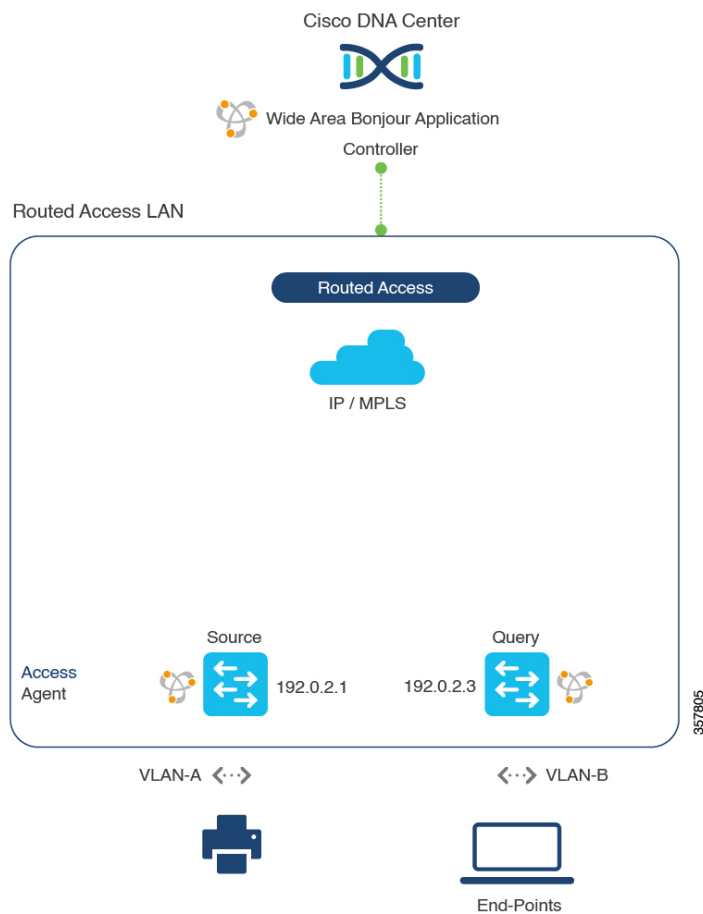
Step 22 Click **CREATE**.

Traditional Routed Access LAN

This section provides step-by-step global configuration policy guidelines to enable Wide Area Bonjour between devices on Routed Access LAN networks, providing Bonjour services (such as wired printers) to remotely connected wired users and wireless users.

The following figure illustrates a reference network topology for Routed Access LAN networks with Bonjour source and receiver devices across IP networks.

Figure 6: Traditional Routed Access LAN Service Routing





Note Use the configuration steps described in this section for Cisco Nexus switches.

For more information about the Cisco Nexus switches configuration guidelines, see the [Cisco DNA Service For Bonjour Configuration Guide, Cisco Nexus 9000 Series NX-OS, Release 10.2\(3\)F](#).

Configure Service Filters for Traditional Routed Access LAN

This section lists the general steps to implement global service filters, which permit the Cisco Wide Area Bonjour application to dynamically discover and distribute service information between trusted SDG agent switches across your IP network.

-
- Step 1** Navigate to the **Configuration** tab in the Cisco Wide Area Bonjour application.
 - Step 2** From the sidebar, select the subdomain for which you want to create the service filter.
 - Step 3** Ensure that the **Service Filter** box is checked.
 - Step 4** Click the service filter icon from the topology to view a list of the service filters for the selected domain.
You can also manually edit existing service filters from this list.
 - Step 5** Click **Create Service Filter**.
 - Step 6** From the **Network Mode** drop-down list, choose **Traditional** (the default mode).
 - Step 7** Enter a unique name for the service filter.
 - Step 8** (Optional) Enter a description for the service filter.
 - Step 9** Select one or more service types to permit announcements and queries.
 - Step 10** Enable or disable service filters after creating them. By default, they are enabled.
-

Configure Source SDG Agents in Traditional Routed Access LAN

This section lists guidelines for additional configuration steps to enable discovering wired printer sources from LAN switch-1 in an SDG agent role. The wired printer can be discovered by remotely connected wired users from LAN switch-2.

A unidirectional service filter allows network-wide service discovery for operation and management purposes. However, it can't be distributed across the IP network unless you configure a query SDG agent. For steps to configure a query SDG agent, see [Configure Query SDG Agents in Traditional Routed Access LAN, on page 20](#).

Before you begin

Ensure that you've completed the steps in [Configure Service Filters for Traditional Routed Access LAN, on page 19](#).

-
- Step 1** Click **Add** in the upper-right corner of the window.
 - Step 2** Click the radio button to select a source SDG agent. By default, the source radio button is selected.

- Step 3** From the **SDG Agent/IP** drop-down list, choose an SDG agent (10.0.0.1) that announces the services (printer).
- Step 4** From the **Service Layer** drop-down list, choose **Local**.
- Step 5** Uncheck the **Any** check box. By default, this check box is unchecked.
- Step 6** Select the source VLAN (Vlan-A) to discover services (Printer) from a specific network.
- Step 7** Enable or disable a service from a selected source IPv4 subnet. By default, this is enabled.
- Step 8** Enable or disable a service from a selected source IPv6 subnet. By default, this is enabled.
- Step 9** For **Location Group**, do one of the following:
- To accept services from any location group, check the check box.
 - To accept services from location group 0, choose **Default** from the drop-down list.
 - To use a custom location group ID, choose **Custom** from the drop-down list and enter the location group ID. The valid range is from 1 to 4096.
- Step 10** (Optional) Click **Add Next** to add more source SDG agents. (Repeat the preceding steps.)
- Step 11** Click **DONE**.
- Step 12** Click **CREATE**.
-

Configure Query SDG Agents in Traditional Routed Access LAN

This section lists the additional configuration steps to distribute services to query SDG agents, based on a policy.

For instructions to configure a source SDG agent, see [Configure Source SDG Agents in Traditional Routed Access LAN, on page 19](#).

Before you begin

Ensure that you've completed the steps in [Configure Service Filters for Traditional Routed Access LAN, on page 19](#).

- Step 1** Click **Add** in the upper-right corner of the window.
- Step 2** Click the radio button to select a query SDG agent. By default, the source radio button is selected.
- Step 3** From the **SDG Agent/IP** drop-down list, choose an SDG agent (192.0.2.3) that receives queries for the services (printer).
- Step 4** From the **Service Layer** drop-down list, choose **Local**.
- Step 5** Ensure that the **Any** check box is unchecked. By default, this is enabled.
- Step 6** Select the query VLAN (Vlan-B) to distribute services (printer) to a specific network.
- Step 7** Enable or disable services from the selected query IPv4 subnet. By default, this is enabled.
- Step 8** Enable or disable services from the selected query IPv6 subnet. By default, this is enabled.
- Step 9** For **Location Group**, do one of the following:
- To accept services from any location group, check the check box.
 - To accept services from location group 0, choose **Default** from the drop-down list.
 - To use a custom location group ID, choose **Custom** from the drop-down list and enter the location group ID. The valid range is from 1 to 4096.
- Step 10** (Optional) Click **Add Next** to add more query agents. (Repeat the preceding steps.)

Step 11 Click **DONE**.

Step 12 Click **CREATE**.
