

# DLSw+ RSVP Bandwidth Reservation

---

## Feature Summary

The DLSw+ RSVP Bandwidth Reservation feature allows DLSw+ to reserve network bandwidth for the DLSw+ TCP connection between DLSw+ peers.

## Benefits

Although it has been possible to reserve bandwidth for a particular existing DLSw+ peer connection through the RSVP command line interface (CLI) support in Cisco IOS software, the CLI required prior knowledge of the TCP ports for which the reservation was being made. Because DLSw+ used one well-known port and one randomly assigned port, the reservation could not be made until after the peer connection was active.

The DLSw+ RSVP Bandwidth Reservation feature permits new DLSw+ peer connections to request bandwidth reservations automatically upon connection, thereby removing the need for user intervention after the peer is connected. This feature ensures the reservation survives a network or device failure and that the DLSw+ traffic carried over a TCP connection is not affected by congestion.

## List of Terms

**Resource Reservation Protocol (RSVP)**—IETF standard for allowing applications to request specific Quality of Service (QoS) for specific flows (as specified in RFC 2205).

## Platforms

The DLSw+ RSVP Bandwidth Reservation feature is supported on the following platforms:

- Cisco 1600 series
- Cisco 1700 series
- Cisco 2500 series
- Cisco 2600 series
- Cisco 3600 series
- Cisco 3800 series
- Cisco 4000 series (Cisco 4000, 4000-M, 4500, 4500-M, 4700, 4700-M)

- Cisco 7200 series
- Cisco 7500 series

## Supported MIBs and RFCs

No MIBs are supported by this feature.

The DLSw+ RSVP Bandwidth Reservation feature supports the following RFCs:

- RFC 1795
- RFC 2166
- RFC 2205

## Functional Description

The user specifies the amount of RSVP reserved bandwidth for DLSw+ in the following ways:

- Globally—When the user configures the **dlsw rsvp** command, DLSw+ uses these values for initiating RSVP to all its peers.
- Per peer —When the user configures the **dlsw remote peer tcp** command, DLSw+ configures the RSVP parameters specifically for this peer connection.
- Type of peer connection—When the user configures either the **dlsw peer-on-demand-defaults** or **dlsw prom-peer defaults** command, DLSw+ uses the configured RSVP parameters for peer-on-demand and promiscuous peer connections, respectively.

In any of these situations, the user turns off RSVP by setting the *average-bit-rate* or *maximum-burst* values to 0.

Because RSVP requires both a sender and a receiver, the DLSw+ RSVP Bandwidth Reservation feature must be implemented on both devices of a DLSw+ connection. However, RSVP does not need to be configured on all devices that are in the IP routed path between two DLSw+ peers. In this type of configuration the devices in the middle must support only IP RSVP; they do not need to be configured for the new DLSw+ RSVP Bandwidth Reservation feature or of DLSw+. The devices between the peers prioritize the IP packets belonging to the DLSw+ session according to the IP TOS settings. If, however, the devices in the middle do not support IP RSVP, end-to-end bandwidth is not guaranteed.

In the case of priority peers, RSVP bandwidth reservation is done only for the highest priority connection to the peer (TCP port 2065). If the user configures priority queuing and RSVP on the same peer, the user must ensure that the RSVP designated traffic is assigned to the highest priority TCP peer connection.

If the users change the *average-bit-rate* or *maximum-burst* settings without removing the existing RSVP bandwidth reservation, a message warns the users that they are removing the existing reservation and that they need to request a new reservation with new values.

## Configuration Tasks

### Enable DLSw+ RSVP Bandwidth Reservation

Issuing the **dlsw rsvp** command enables the DLSw+ RSVP Bandwidth Reservation feature on the router and sets the RSVP parameters for all of its peer connections.

To enable the DLSw+ RSVP Bandwidth Reservation feature, use the following command in global configuration mode:

Command	Purpose
<b>dlsw rsvp</b> { <b>default</b> / [ <i>average-bit-rate maximum-burst</i> ] }	Enable DLSw+ RSVP Bandwidth Reservation feature on the local peer.

### Enable RSVP Support on Specific Peers

After RSVP is globally enabled, the user must enable RSVP on specific peers. The user can retain the *average-bit-rate* and *maximum-burst* values set in the **dlsw rsvp** command or the user can override these values for any particular peer connection (remote, promiscuous, or peer-on-demand) by configuring the **dlsw remote peer**, **dlsw prom-peer-defaults**, or **dlsw peer-on-demand-defaults** command.

#### Remote Peers

To enable RSVP support for a remote peer connection, use the following command in global configuration mode:

Command	Purpose
<b>dlsw remote peer</b> [rsvp { <b>global</b>   [ <i>average-bit-rate maximum burst</i> ] }]	Configures RSVP parameters for a specific peer connection.

#### Promiscuous Peers

To enable RSVP support for a promiscuous peer connection, use the following command in global configuration mode:

Command	Purpose
<b>dlsw prom-peer-defaults</b> [rsvp { <b>global</b>   <b>learn</b>   [ <i>average-bit-rate maximum burst</i> ] }]	Configures RSVP parameters for this promiscuous peer's connection.

#### Peer-on-Demand Peers

To enable RSVP support for a peer-on-demand connection, use the following command in global configuration mode:

Command	Purpose
<b>dlsw peer-on-demand-defaults</b> [ <b>global</b>   [ <i>average-bit-rate maximum burst</i> ]]	Configures RSVP parameters for this peer-on-demand peer's connection.

## Verify DLSw+ RSVP Bandwidth Reservation feature

To verify that the RSVP PATH messages for DLSw+ are sent and that the feature is working correctly, use the following command in global configuration mode:

Command	Purpose
<b>show ip rsvp sender</b>	Verifies that the RSVP PATH messages for DLSw+ are being sent.

To verify whether the RSVP RESV messages for DLSw+ are sent all the way through the RSVP network to the remote peer, issue the following command in global configuration mode:

Command	Purpose
<b>show ip rsvp request</b>	Verifies that the RSVP RESV messages for DLSw+ are being sent.

To verify that the RSVP bandwidth reservations are in place for the DLSw+ peers, issue the following command in global configuration mode:

Command	Purpose
<b>show ip rsvp reservation</b>	Verifies that the RSVP reservations are configured for a peer.

## Disable the DLSw+ RSVP Bandwidth Reservation feature

To disable the DLSw+ RSVP Bandwidth Reservation feature for all peers, issue the following command in global configuration mode:

Command	Purpose
<b>no dlsw rsvp</b>	Disables the DLSw+ RSVP Bandwidth Reservation feature.

Setting the *average-bit-rate* and *maximum burst* values to 0 in the **dlsw remote peer tcp**, **dlsw prom-peer defaults**, and **dlsw peer-on-demand defaults** commands turns off RSVP for a particular peer connection.

---

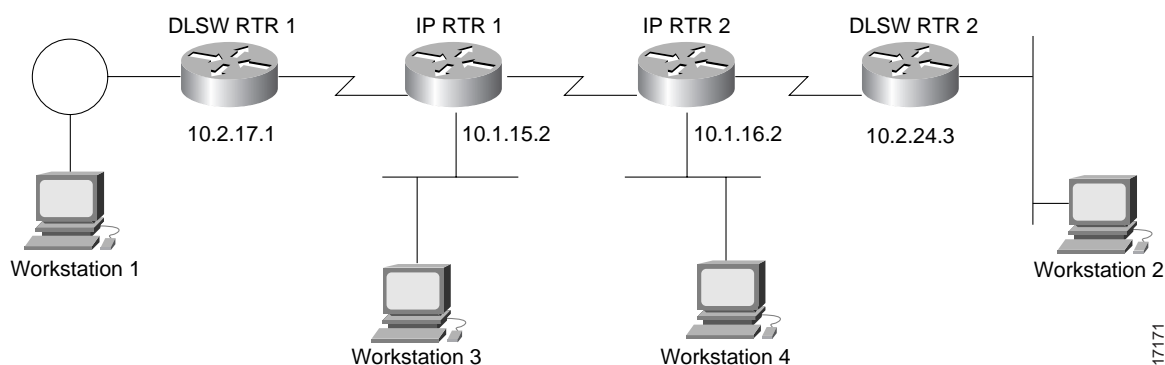
**Note** The reservations made by the DLSw+ RSVP commands can be deleted by the global RSVP commands (for example, **no ip rsvp reservation**).

---

## Configuration Examples

Figure 1 shows a DLSw+ network with the DLSw+ RSVP Bandwidth Reservation feature configured.

**Figure 1 DLSw+ RSVP Bandwidth Reservation Feature Configured**



DLSWRTR 1 and DLSWRTR 2 are configured for the DLSw+ RSVP Bandwidth Reservation feature with an average bit rate of 40 and a maximum-burst rate of 10.

### DLSWRTR 1

```
dlsw local-peer peer id 10.2.17.1
dlsw remote-peer 0 tcp 10.2.24.3
dlsw rsvp 40 10
```

### DLSWRTR2

```
dlsw local-peer peer id 10.2.24.3
dlsw remote-peer 0 tcp 10.2.17.1
dlsw rsvp 40 10
```

The following output of the **show ip rsvp sender** command on the DLSWRTR2 verifies that PATH messages are being sent from DLSWRTR2:

```
DLSWRTR2#show ip rsvp sender
To          From          Pro DPort Sport Prev Hop I/F  BPS   Bytes
10.2.17.1   10.2.24.3     TCP 2065 11003                10K   28K
10.2.24.3   10.2.17.1     TCP 11003 2065 10.2.17.1 Et1/1 10K   28K
```

The following output of the **show ip rsvp req** command on the DLSWRTR2 verifies that RESV messages are being sent from DLSWRTR2:

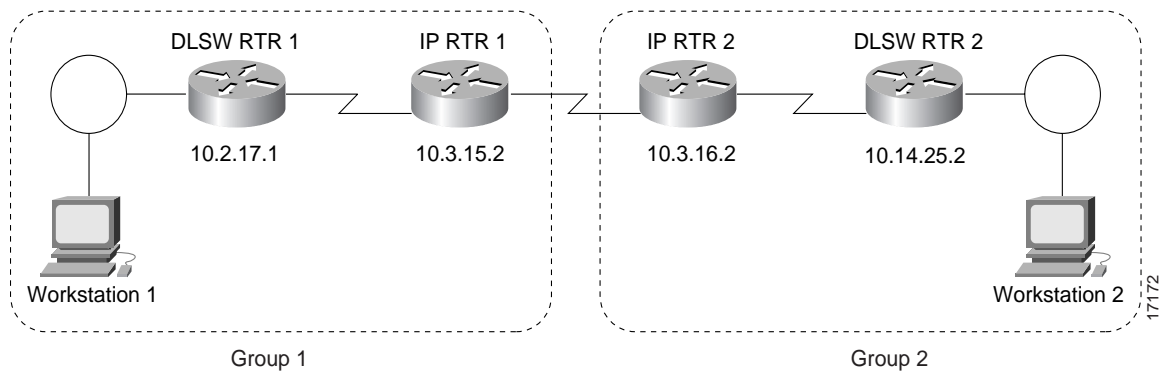
```
DLSWRTR2#show ip rsvp req
To          From          Pro DPort Sport Next Hop      I/F  Fi Serv BPS Bytes
10.2.24.3   10.2.17.1     TCP 11003 2065 10.2.17.1      Et1/1 FF RATE 10K 28K
```

If the IP cloud is able to guarantee the bandwidth requested and the **show ip rsvp sender** and **show ip rsvp req** commands are successful, issue the **show ip rsvp res** command to verify that a reservation was made from DLSWRTR1 to DLSWRTR2:

```
DLSWRTR2#show ip rsvp rese
To          From          Pro DPort Sport Next Hop      I/F  Fi Serv BPS Bytes
10.2.17.1   10.2.24.3    TCP 2065  11003 10.2.17.1 Et1/1 FF RATE  10K  28K
10.2.24.3   10.2.17.1    TCP 11003 2065                FF RATE  10K  28K
```

Figure 2 shows a DLSw+ border peer network configured with DLSw+ RSVP.

**Figure 2 DLSw+ RSVP Bandwidth Reservation Feature and Border Peers**



The following example configures DLSWRTR1 to send PATH messages at rates of 40 Kbps and 10KBps and DLSWRTR2 to send PATH messages at rates of

**DLSWRTR1**

```
dlsw local-peer peer-id 10.2.17.1 group 1 promiscuous
dlsw rsvp default
dlsw remote-peer 0 tcp 10.3.15.2
dlsw peer-on-demand-defaults rsvp 40 10
```

**IPRTR1**

```
dlsw local-peer peer-id 10.3.15.2 group 1 border promiscuous
dlsw remote-peer 0 tcp 10.3.16.2
```

**IPRTR2**

```
dlsw local-peer peer-id 10.3.16.2 group 2 border promiscuous
dlsw remote-peer 0 tcp 10.3.15.2
```

**DLSWRTR2**

```
dlsw local-peer peer-id 10.14.25.2 group 2 promiscuous
dlsw rsvp default
dlsw remote-peer 0 tcp 10.3.16.2
```

The following output of the **show ip rsvp sender** command on DLSWRTR2 verifies that PATH messages are being sent from DLSWRTR2:

```
DLSWRTR2#show ip rsvp sender
To          From          Pro DPort Sport Prev Hop      I/F  BPS  Bytes
10.2.17.1   10.14.25.2    TCP 2065 11003
10.14.25.2  10.2.17.1     TCP 11003 2065 10.2.17.1    Et1/1 10K  28K
```

The following output of the **show ip rsvp request** command on DLSWRTR2 verifies that RESV messages are being sent from DLSWRTR 2:

```
DLSWRTR2#show ip rsvp req
To          From          Pro DPort Sport Next Hop      I/F  Fi Serv BPS Bytes
10.14.25.2  10.2.17.1     TCP 11003 2065 10.2.17.1    Et1/1 FF RATE 10K  28K
```

The following output of the **show ip rsvp res** command on the DLSWRTR1 verifies that the RSVP reservation was successful:

```
DLSWRTR1#show ip rsvp rese
To          From          Pro DPort Sport Next Hop      I/F  Fi Serv BPS Bytes
10.2.17.1   10.14.25.2    TCP 2065 11003 10.14.25.2    Et1/1 FF RATE 10K  28K
10.14.25.2  10.2.17.1     TCP 11003 2065
                                         FF RATE 10K  28K
```

## Command Reference

This section documents new or modified commands. All other commands used with this feature are documented in the Cisco IOS Release 12.0 command references.

- **dlsw peer-on-demand-defaults**
- **dlsw prom-peer-defaults**
- **dlsw remote-peer tcp**
- **dlsw rsvp**

## dls w peer-on-demand-defaults

Use the **dls w peer-on-demand-defaults** global configuration command to configure defaults for peer-on-demand transport. Use the **no** form of this command to disable the previous assignment.

```
dls w peer-on-demand-defaults [fst] [bytes-netbios-out bytes-list-name] [cost cost]
  [dest-mac destination-mac-address] [dmac-output-list access-list-number] [rsvp {global |
  average-bit-rate maximum burst}] [host-netbios-out host-list-name] [inactivity minutes]
  [keepalive seconds] [lf size] [lsap-output-list list] [port-list port-list-number] [priority]
  [tcp-queue-max]
no dls w peer-on-demand-defaults [fst] [bytes-netbios-out bytes-list-name] [cost cost]
  [dest-mac destination-mac-address] [dmac-output-list access-list-number] [rsvp global |
  average-bit-rate maximum burst] [host-netbios-out host-list-name] [inactivity minutes]
  [keepalive seconds] [lf size] [lsap-output-list list] [port-list port-list-number] [priority]
  [tcp-queue-max]
```

### Syntax Description

<b>fst</b>	(Optional) Use FST encapsulation for all peers-on-demand established by this router.
<b>bytes-netbios-out</b> <i>bytes-list-name</i>	(Optional) Configures NetBIOS bytes output filtering for peer-on-demand peers. The <i>bytes-list-name</i> is the name of the previously defined NetBIOS bytes access list filter.
<b>cost</b> <i>cost</i>	(Optional) Specifies the cost to reach peer-on-demand peer. The valid range is 1 to 5. The default cost is 3.
<b>dest-mac</b> <i>destination-mac-address</i>	(Optional) Specifies the exclusive destination MAC address for peer-on-demand peers.
<b>dmac-output-list</b> <i>access-list-number</i>	(Optional) Specifies the filter output destination MAC addresses.
<b>rsvp global</b>	(Optional) Sets the RSVP parameters to the global values specified in the <b>dls w rsvp</b> command.
<b>rsvp</b> <i>average-bit-rate</i>	(Optional) Average bit rate kilobits per second to reserve up to 75 percent of total bits on the interface. The valid range is 0 to 4,294,967.
<b>rsvp</b> <i>maximum-burst</i>	(Optional) Maximum burst size (kilobytes of data in queue). The valid range is 0 to 4,294,967.
<b>host-netbios-out</b> <i>host-list-name</i>	(Optional) Configures NetBIOS host output filtering for peer-on-demand peers. The <i>host-list-name</i> is the name of the previously defined NetBIOS host access list filter.
<b>inactivity</b> <i>minutes</i>	(Optional) Configures the length of time after the peer's circuit count is 0 that the peer-on-demand is disconnected. The valid range is 0 to 1440 seconds. The default is 600 seconds.
<b>keepalive</b> <i>seconds</i>	(Optional) Configures the peer-on-demand keepalive interval. The valid range is 0 to 1200 seconds. The default is 30 seconds.

<b>If size</b>	(Optional) Largest frame size for this remote peer. Valid maximum frame sizes are the following:  516-516 bytes 1470-1470 bytes 1500-1500 bytes 2052-2052 bytes 4472-4472 bytes 8144-8144 bytes 11407-11407 bytes 11454-11454 bytes 17800-17800 bytes
<b>lsap-output-list list</b>	(Optional) Configures local service access point (LSAP) output filtering for peer-on-demand peers. Valid numbers are in the range 200 to 299.
<b>port-list port-list-number</b>	(Optional) Configures a port list for peer-on-demand peers. Valid numbers are in the range 0 to 4095.
<b>priority</b>	(Optional) Configures prioritization for peer-on-demand peers. The default state is off.
<b>tcp-queue-max</b>	(Optional) Configures the maximum output TCP queue size for peer-on-demand peers.

## Default

The default peer-on-demand transport is TCP.

## Command Mode

Global configuration

## Usage Guidelines

This command first appeared in Cisco IOS Release 11.0.

Setting the *average-bit-rate* and *maximum burst* values to 0 disables the RSVP bandwidth reservation for the peer connections.

## Example

The following example configures FST for peer-on-demand transport:

```
dlsw peer-on-demand-defaults fst
```

## dlsw prom-peer-defaults

Use the **dlsw prom-peer-defaults** global configuration command to configure defaults for promiscuous transport. Use the **no** form of this command to disable the previous assignment.

```
dlsw prom-peer-defaults [fst] [bytes-netbios-out bytes-list-name] [cost cost]
  [dest-mac destination-mac-address] [dmac-output-list access-list-number]
  [host-netbios-out host-list-name] [keepalive seconds] [lf size]
  [lsap-output-list list] [rsvp {global | learn | [average-bit-rate
  maximum burst]}] [tcp-queue-max size]
no dlsw prom-peer-defaults [fst] [bytes-netbios-out bytes-list-name] [cost cost]
  [dest-mac destination-mac-address] [dmac-output-list access-list-number]
  [host-netbios-out host-list-name] [keepalive seconds] [lf size]
  [lsap-output-list list] [rsvp {global | learn | [average-bit-rate
  maximum burst]}] [tcp-queue-max size]
```

### Syntax Description

<b>fst</b>	(Optional) Use FST encapsulation for all promiscuous peers established by this router.
<b>bytes-netbios-out</b> <i>bytes-list-name</i>	(Optional) Configures NetBIOS bytes output filtering for promiscuous peers. The <i>bytes-list-name</i> is the name of the previously defined NetBIOS bytes access list filter.
<b>cost</b> <i>cost</i>	(Optional) Specifies the cost to reach promiscuous peers. The valid range is 1 to 5. The default cost is 3.
<b>dest-mac</b> <i>destination-mac-address</i>	(Optional) Specifies the exclusive destination MAC address for promiscuous peers.
<b>dmac-output-list</b> <i>access-list-number</i>	(Optional) Specifies the filter output destination MAC addresses.
<b>host-netbios-out</b> <i>host-list-name</i>	(Optional) Configures NetBIOS host output filtering for promiscuous peers. The <i>host-list-name</i> is the name of the previously defined NetBIOS host access list filter.
<b>keepalive</b> <i>seconds</i>	(Optional) Configures the promiscuous keepalive interval. The valid range is 0 to 1200 seconds. The default is 30 seconds.

<b>If size</b>	(Optional) Largest frame size for this promiscuous peer. Valid maximum frame sizes are the following:  516-516 bytes 1470-1470 bytes 1500-1500 bytes 2052-2052 bytes 4472-4472 bytes 8144-8144 bytes 11407-11407 bytes 11454-11454 bytes 17800-17800 bytes
<b>lsap-output-list list</b>	(Optional) Configures LSAP output filtering for promiscuous peers. Valid numbers are 200 to 299.
<b>rsvp global</b>	(Optional) Sets the RSVP parameters to the global values.
<b>rsvp learn</b>	(Optional) Configures RSVP parameters ( <i>average-bit-rate</i> and <i>maximum burst</i> rate) to be those of the remote peer to which the promiscuous peer is connecting.
<i>average-bit-rate</i>	(Optional) Configures RSVP parameters for this peer connection, which are different from the global values. Average bit rate (kilobits per second) to reserve up to 75 percent of the total bits on the interface. The valid range is 0 to 4,294,967.
<i>maximum-burst</i>	(Optional) Maximum burst size (kilobytes of data in queue). The valid range is 0 to 4,294,967.
<b>tcp-queue-max size</b>	(Optional) Configures the maximum output TCP queue size for promiscuous peers.

## Default

The default promiscuous peer transport is TCP.

## Command Mode

Global configuration

## Usage Guidelines

This command first appeared in Cisco IOS Release 11.0.

A promiscuous peer is a peer not configured as a remote peer on this DLSw+ device, but which initiated a peer connection that was accepted because promiscuous peering was enabled.

Setting the *average-bit-rate* and *maximum burst* values to 0 disables the RSVP bandwidth reservation for non-configured remote peers.

## Configuration Examples

---

### Example

The following example configures the cost for promiscuous peers:

```
dlsw prom-peer-defaults cost 4
```

### Related Commands

**show dlsw capabilities**

## dlsw remote-peer tcp

Use the **dlsw remote-peer tcp** global configuration command to identify the IP address of a peer with which to exchange traffic using TCP. Use the **no** form of this command to remove a remote peer.

```
dlsw remote-peer list-number tcp ip-address [backup-peer [ip-address | frame-relay
interface serial number dldci-number | interface name]] [bytes-netbios-out bytes-list-name]
[cost cost] [dest-mac mac-address] [dmac-output-list access-list-number]
[host-netbios-out host-list-name] [inactivity minutes] [dynamic] [keepalive seconds]
[lf size] [linger minutes] [lsap-output-list list] [no-llc minutes] [passive] [priority]
[rif-passthru virtual-ring-number] [rsvp {global | [average-bit-rate maximum
burst]}] [tcp-queue-max size] [timeout seconds]
```

```
no dlsw remote-peer list-number tcp ip-address [backup-peer [ip-address | frame-relay
interface serial number dldci-number | interface name]] [bytes-netbios-out bytes-list-name]
[cost cost] [dest-mac mac-address] [dmac-output-list access-list-number]
[host-netbios-out host-list-name] [inactivity minutes] [dynamic] [keepalive seconds]
[lf size] [linger minutes] [lsap-output-list list] [no-llc minutes] [passive] [priority]
[rif-passthru virtual-ring-number] [rsvp {global | [average-bit-rate maximum
burst]}] [tcp-queue-max size] [timeout seconds]
```

### Syntax Description

<i>list-number</i>	Remote peer ring group list number. The default ring group list number is 0. Otherwise, this value must match the number you specify with the <b>dlsw ring-list</b> , <b>dlsw port-list</b> , or <b>dlsw bgroup-list</b> command.
<b>tcp</b> <i>ip-address</i>	IP address of the remote peer with which the router is to communicate.
<b>backup-peer</b> <i>ip-address</i>	(Optional) IP address of the existing TCP/FST peer for which this peer is the backup peer.
<b>backup-peer frame-relay interface serial</b> <i>number</i> <i>dldci-number</i>	(Optional) Serial interface and DLCI number of the existing Direct/LLC2 Frame Relay peer for which this peer is the backup peer.
<b>backup-peer interface</b> <i>name</i>	(Optional) Interface name of the existing direct peer for which this peer is the backup peer.
<b>bytes-netbios-out</b> <i>bytes-list-name</i>	(Optional) Configures NetBIOS bytes output filtering for this peer. The <i>bytes-list-name</i> argument is the name of the previously defined NetBIOS bytes access list filter.
<b>cost</b> <i>cost</i>	(Optional) Cost to reach this remote peer. The valid range is 1 to 5.
<b>dest-mac</b> <i>mac-address</i>	(Optional) Permits the TCP connection to be established only when there is an explorer frame destined for the specified 48-bit MAC address (written in dotted triplet form).

<b>dmac-output-list</b> <i>access-list-number</i>	(Optional) Establishes TCP connection to be established only when the explorer frame passes the specified access list. The <i>access-list-number</i> is the list number specified in an <b>access-list</b> command.
<b>host-netbios-out</b> <i>host-list-name</i>	(Optional) Configures NetBIOS host output filtering for this peer. The <i>host-list-name</i> is the name of the previously defined NetBIOS host access list filter.
<b>inactivity</b> <i>minutes</i>	(Optional) Length of time a connection is idle before closing the dynamic remote peer connection. The valid range is 1 to 300 minutes. The default is 5 minutes.
<b>dynamic</b>	(Optional) Establishes TCP connection only when there is DLSw+ data to send.
<b>keepalive</b> <i>seconds</i>	Keepalive interval for this remote peer. The range is 0 to 1200 seconds.
<b>lf</b> <i>size</i>	(Optional) Largest frame size, in bytes, this local peer will use on a circuit to avoid segmented frames. Valid sizes are 516, 1470, 1500, 2052, 4472, 8144, 11407, 11454, and 17800 bytes.
<b>linger</b> <i>minutes</i>	(Optional) Configures length of time the backup peer remains connected after the primary peer connection is reestablished. The valid range is 1 to 300 minutes. The default is 5 minutes.
<b>lsap-output-list</b> <i>list</i>	(Optional) Filters output IEEE 802.5 encapsulated packets. Valid access list numbers are in the range 200 to 299.
<b>no-llc</b> <i>minutes</i>	(Optional) Configures the length of time a remote peer remains connected after all LLC2 connections are gone. The valid range is 1 to 300 minutes. The default is 5 minutes.
<b>passive</b>	(Optional) Designates this remote peer as passive.
<b>priority</b>	(Optional) Enables prioritization features for this remote peer. Valid TCP port numbers are the following: <ul style="list-style-type: none"> <li>• High: 2065</li> <li>• Medium: 1981</li> <li>• Normal: 1982</li> <li>• Low: 1983</li> </ul>
<b>rif-passthru</b> <i>virtual-ring-number</i>	(Optional) C onfigures the remote peer as RIF-Passthru. The <i>virtual-ring-number</i> value is the same number as the <i>ring number</i> value assigned in the <b>source-bridge ring-group</b> commands of the DLSw+ Passthru peers.

<b>rsvp global</b>	(Optional) Configures the RSVP parameters for this specific peer back to the global values.
<b>rsvp average-bit-rate</b>	(Optional) Configures RSVP parameters for this peer, which are different from the global values. Average bit rate (kilobits per second) reserves up to 75 percent of the total bits on the interface. Range is 0 to 4,294,967.
<b>rsvp maximum burst</b>	(Optional) Maximum burst size (kilobytes of data in queue). Range is 0 to 4,294,967.
<b>tcp-queue-max size</b>	(Optional) Maximum output TCP queue size for this remote peer. The valid maximum TCP queue size is a number in the range 10 to 2000.
<b>timeout seconds</b>	(Optional) Configures the retransmit time limit for TCP. The valid range is 5 to 1200 seconds. The default is 90 seconds.

## Defaults

No peer IP address is identified.

The **linger** option is inactive. If the **linger** option is added with no minutes specified, the default is 5 minutes.

The **dynamic** option is not on by default. If the **dynamic** option is added without either the **inactivity** or **no-llc** argument specified, the default is to terminate the TCP connection to the remote peer after 5 minutes of no active LLC2 connection.

## Command Mode

Global configuration

## Usage Guidelines

This command first appeared in Cisco IOS Release 10.3. The following keywords and arguments first appeared in Cisco IOS Release 11.1: **dynamic**, **inactivity minutes**, **linger minutes**, **no-llc minutes** and **timeout seconds**. The following keywords and arguments first appeared in Cisco IOS Release 11.2: **dest-mac mac-address**, **dmac-output-list access-list-number**, **linger minutes**.

SNA Dial-on-Demand Routing allows switched links to be closed during idle periods. To enable this feature, set the **keepalive** option to 0 and configure the **timeout** option. When the **dynamic** option is configured, the **keepalive** option is automatically set to 0.

To enhance DDR cost savings, configure the TCP connection to a remote peer to be dynamically established (that is, established only when there is DLSw data to send). You can also configure the TCP connection to terminate after a specified period of idle time on the peer or after a specified period of no active LLC sessions on the peer.

You cannot use both **no-llc** and **inactivity** in a command specifying a dynamic peer.

When you need to permit access to a single MAC address, the **dest-mac** option is an easier option than the **dmac-output-list** option.

Use the **linger** option to specify that a backup peer will remain connected for a specified period of time after the primary connection is gone.

When the **priority** option on the **dlsw remote-peer** command is configured, DLSw+ automatically activates four TCP ports to that remote peer (ports 2065, 1981, 1982, and 1983) and assigns traffic to specific ports. Furthermore, if APPN is running with DLSw+ and you specify the **priority** option on the **dlsw remote-peer** command, then the SNA TOS maps APPN COS to TCP TOS and will preserve the APPN COS characteristics throughout the network.

The **rif passthru** option works only on Token Ring LANs via SRB. Other LAN types, such as SDLC and QLLC, are not supported. The RIF passthru feature is supported with TCP encapsulation and it disables local acknowledgment.

The following features are not supported with the DLSw+ RIF Passthru feature:

- Border peers
- Peer-on-demand peers
- Dynamic peers
- Backup peers

Setting the *average-bit-rate* or *maximum burst rate* to 0 turns off RSVP for this peer.

### Examples

The following example specifies a TCP encapsulation connection for remote peer transport:

```
dlsw remote-peer 0 tcp 10.2.17.8
```

The following example specifies a TCP peer as backup to a primary FST peer:

```
dlsw remote-peer 0 fst 10.2.18.9  
dlsw remote-peer 0 tcp 10.2.17.8 backup-peer 10.2.18.9
```

### Related Commands

**show dlsw peers**

## dlsw rsvp

Use the **dlsw rsvp** global configuration command to enable the DLSw+ RSVP Bandwidth Reservation feature on the local peer. Use the **no** form of this command to disable the DLSw+ RSVP Bandwidth Reservation feature for all peers in the router.

```
dlsw rsvp { default | [average-bit-rate maximum burst] }
no dlsw rsvp { default | [average-bit-rate maximum burst] }
```

### Syntax Description

<b>default</b>	(Optional) Sets the average bit rate to 10 Kbps and the maximum burst rate to 28 KBps.
<i>average-bit-rate</i>	(Optional) Average bit rate (kilobits per second) to reserve up to 75 percent of the total bits on the interface. The valid range is 1 to 4,294,967.
<i>maximum burst</i>	(Optional) Maximum burst size (kilobytes of data in queue). The valid range is 1 to 4,294,967.

### Default

The default values for the *average-bit-rate* and *maximum burst rate* are 10 Kbps and 28 KBps, respectively.

### Command Mode

Global configuration

### Usage Guidelines

This command first appeared in Cisco IOS Release 12.0(3)T.

The DLSw+ RSVP Bandwidth Reservation feature does not require that all peers in a network have RSVP configured. However, the feature does require that the end peer devices are configured with RSVP and that all devices in the middle are IP RSVP capable.

The **default** value assumes that the DLSw+ peer is connected via a 56 Kbps link. If this is not the case, then the default values will likely not produce optimal results. Even if the line speed is 56 Kbps, the default values (10 Kbps *average-bit-rate* and 28 KBps *maximum burst rate*) may not be optimal in a particular network environment and should be changed accordingly.

### Example

The following example configures the DLSw+ RSVP Bandwidth Reservation feature with an *average-bit-rate* of 10 Kbps and a *maximum-burst* rate of 28 KBps:

```
dlsw rsvp default
```

### Related Commands

```
dlsw peer-on-demand-defaults  
dlsw prom-peer defaults  
dlsw remote-peer tcp  
show ip rsvp sender  
show ip rsvp req  
show ip rsvp res
```