

Configuring Warp SPAN

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Information About Warp SPAN

Warp SPAN is AlgoBoost feature that spans the traffic coming into a dedicated port to a group of ports at very low latency. In Warp SPAN, traffic arriving at one dedicated ingress port is replicated to a user configurable group of egress ports. The packet replication happens without any filters or lookup mechanisms. Unlike normal or Warp mode traffic forwarding, the incoming traffic is replicated before any traffic classification or ACL processing occurs. Because traffic bypasses these processes, the latency for the replicated packets is as low as 50ns. The Warp SPAN functions independently and simultaneously to normal traffic forwarding. For example, the incoming source traffic can be switched, routed, multicast replicated, and so on, while at the same time this incoming traffic is warp spanned to multiple destination ports.

The original traffic ingressing the dedicated source port is forwarded normally with nominal switch latency, along with the Warp SPAN traffic at about 50ns to the configured destination ports. Warp SPAN can be enabled both in normal traffic forwarding mode and Warp mode.

The source can be monitored only in the ingress direction and is not configurable. The source port is configured automatically as soon as you configure the Warp SPAN session.

You configure the dedicated source Layer 2/Layer 3 port (must be Ethernet port 1/36) with standard configuration as required by the network.

You configure destination ports similar to any regular SPAN destination port. The destination ports cannot be used as regular Layer 2/Layer 3 ports. Destination ports must be configured in groups of four, so you can create a maximum of 12 groups with a total of 47 destination ports (one port—port 1/36—is the fixed source port). See the following table.

Table 1: Warp SPAN Groups

Group	Destination Ports
1	1-4

Group	Destination Ports
2	5-8
3	9-12
4	13-16
5	17-20
6	21-24
7	25-28
8	29-32
9	33-35 [1]
10	37-40
11	41-44
12	45-48

[1] Port 36 is the dedicated source port.

Guidelines and Limitations for Warp Span

Warp SPAN has the following configuration guidelines and limitations:

- Source and destination Warp SPAN ports must all be 10G.
- The source port is not configurable and is fixed as Ethernet port 1/36.
- You can create a maximum of 12 groups with a total of 47 destination ports. All of the groups have four ports, except for group 9, which has only three ports and excludes port 1/36 (the fixed source port).
- All four ports in a group must be configured with the **switchport monitor** command before they can be grouped in a SPAN destination group.
- Warp SPAN does not allow the destination group to be configured unless all of the ports are administratively up. After the group has been configured, you can bring up or down any of the ports in the SPAN destination group. If you copy a working warp configuration that has one or more ports in the administratively down state and paste that configuration back in the configuration file of the same switch, Warp SPAN logs the following error:

  ```
  ERROR: Cannot configure group with member interfaces in admin DOWN state
  ```

- The use of the same source interface on Warp SPAN and ERSPAN is not supported.

Configuring Warp SPAN

You configure Warp SPAN by enabling it and then configuring its destination groups.

SUMMARY STEPS

1. switch# **configure terminal**
2. switch(config-monitor)# **interface ethernet** *port/slot*
3. switch(config-if)# **switchport monitor**
4. switch(config-if)# **no shutdown**
5. switch(config)# **monitor session warp**
6. switch(config)# **no shutdown**
7. switch(conifig-monitor)# **destination group** *group-number*
8. (Optional) switch(config-if)# **copy running-config startup-config**

DETAILED STEPS

Procedure

	Command or Action	Purpose
Step 1	switch# **configure terminal**	Enters global configuration mode.
Step 2	switch(config-monitor)# **interface ethernet** *port/slot*	Enters interface configuration mode for the specified interface. **Note** You can specify a range to configure multiple interfaces at once.
Step 3	switch(config-if)# **switchport monitor**	Sets the interface to monitor mode. Priority flow control (PFC) is disabled when the port is configured as a SPAN destination.
Step 4	switch(config-if)# **no shutdown**	Brings the interface administratively up.
Step 5	switch(config)# **monitor session warp**	Enables Warp SPAN on the interface.
Step 6	switch(config)# **no shutdown**	Brings the interface administratively up.
Step 7	switch(conifig-monitor)# **destination group** *group-number*	Configures the destination group. **Note** You can create a maximum of 12 groups with a total of 47 destination ports. All of the groups have four ports, except for group 9, which has only three ports and excludes port 1/36 (the fixed source port).
Step 8	(Optional) switch(config-if)# **copy running-config startup-config**	Saves the change persistently through reboots and restarts by copying the running configuration to the startup configuration.

Example

The following example shows how to configure destination SPAN ports 1/1-4 for Warp SPAN:

```
switch# configure terminal
switch(config-monitor)# interface ethernet 1/1-4
switch(config-if-range)# switchport monitor
switch(config-if-range)# no shutdown
switch(config)# monitor session warp
switch(config)# no shutdown
switch(config-monitor)# destination group 1
switch(config-if-range)# copy running-config startup-config
```

Verifying Warp SPAN Mode Configuration

You can verify the Warp SPAN mode configuration.

SUMMARY STEPS

1. switch(config)# **show monitor session** {*number* | **all** | *range*}
2. switch(config)# **show monitor session warp**

DETAILED STEPS

Procedure

	Command or Action	Purpose
Step 1	switch(config)# **show monitor session** {*number* | **all** | *range*}	Displays information about a specific SPAN session, all SPAN sessions, or a range of SPAN sessions.
Step 2	switch(config)# **show monitor session warp**	Displays information about only the Warp SPAN sessions.

Example

This example shows how to display information about all SPAN sessions and only the Warp SPAN sessions:

```
switch(config)# show monitor session all
session warp
---------------
type : local
state : up
source intf :
rx : Eth1/36
tx :
both :
source VLANs :
rx :
destination ports : Eth1/1 Eth1/2 Eth1/3 Eth1/4
```

```
Legend: f = forwarding enabled, l = learning enabled


switch(config)# show monitor session warp
session warp
---------------
type : local
state : up
source intf :
rx : Eth1/36
tx :
both :
source VLANs :
rx :
destination ports : Eth1/1 Eth1/2 Eth1/3 Eth1/4

Legend: f = forwarding enabled, l = learning enabled
```

Feature History for Warp SPAN

Feature Name	Release	Feature Information
Warp SPAN	5.0(3)A1(2)	This feature was introduced.