

# Using EtherChannel

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This appendix describes the configuration procedures for the EtherChannel application. EtherChannel is a high-bandwidth connection between two Catalyst 5000 series or Catalyst 3000 series switches. An EtherChannel is a group of two switch devices that behave as a one.

To start the EtherChannel application from CiscoView, select **Tools>EtherChannel Configuration**.

Where windows display optional fields, you can either enter a value, or you can leave the field blank so that the device automatically generates the value.

## EtherChannel and Catalyst 5000 Series Switches

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**Note** The EtherChannel feature applies only to Catalyst 5000 series switches configured with WS-X5201, WS-X5225R, WS-X5201R, WS-X5203, and uplink cards on Supervisor III <WS-X5530> modules.

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Each Catalyst 5000 series switch EtherChannel comprises two to seven ports, to provide a bidirectional bandwidth of up to 800 Mbps. The module ports are divided into three hardware groups:

- Group 1—ports 1 to 4
- Group 2—ports 5 to 8
- Group 3—ports 9 to 12

### EtherChannel Port Combinations

Ethernet channels can be created using the ports within the same group and with the following combinations only:

- No ports channeled.
- The first two ports in each group (ports 1 and 2, ports 5 and 6, or ports 9 and 10) form a channel, but the other ports in the group (ports 3 and 4, ports 7 and 8, or ports 11 and 12) are not channeled.
- The first two ports in the group (ports 1 and 2, ports 5 and 6, or ports 9 and 10) form one channel, and the other ports in the group (ports 3 and 4, ports 7 and 8, or ports 11 and 12) form the other channel.
- All four ports in each group (ports 1 to 4, ports 5 to 8, or ports 9 to 12) are channeled together.

For example, ports 7 and 8 cannot be channeled without ports 5 and 6, and ports 1 and 2 cannot be channeled with port 3 alone.

### Configure Ethernet Channels

When you click **Configure** from the Ethernet Channelling category, the Configure Ethernet Channel dialog box is displayed. The information is shown in a table; each entry consists of the following:

- Card number—Lists the modules with EtherChannel
- Group number—Lists the ports configured for EtherChannel

Port configuration of each group is through pop-up menus. There are four possible combinations listed as choices in the popup menus:

- no—No port is channeled in this group at all
- (1,2)—Creates an EtherChannel using ports 1 and 2; ports 3 and 4 are not channeled
- (1,2) (3,4)—Creates two EtherChannels: one channel using ports 1 and 2, and one channel uses ports 3 and 4
- (1,2,3,4)—Creates an EtherChannel using ports 1 to 4

## Configuration Considerations

To ensure proper EtherChannel functionality, you must consider the following items:

- Half-duplex and full-duplex. A single EtherChannel can include a combination of half-duplex and full-duplex connections; for example, an EtherChannel containing three ports can have two full-duplex and one half-duplex connection. However, each pair of interconnected ports must both be either half-duplex or full-duplex.
- Statistics reporting. Statistics for the EtherChannel are displayed for individual ports, not for the EtherChannel as a whole. Station addresses are distributed among the ports in the EtherChannel.
- Address filtering. Address filters are added automatically to every port in an EtherChannel.
- EtherChannel software learns addresses differently than regular ports, as follows:
  - New source address. When a packet arrives at an EtherChannel port with an unknown source address, the system module creates an entry in the master table and the port table for the EtherChannel. The system module assigns the primary port in the EtherChannel as the port of entry.
  - For additional source addresses, the system module assigns ports of entries alternately to other ports in the EtherChannel. When all ports in the EtherChannel have at least one address assigned, the system module starts assigning from the primary port again.

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**Note** When using EtherChannel, set the Address Aging Time (System Information Menu) to 60 minutes or more. More frequent aging is undesirable because the time it takes to remove inactive addresses could affect Catalyst 3000 series switch performance.

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- New destination address. An unknown destination address packet is sent out the primary ports of the EtherChannel, but entries are not made in port tables until a reply packet comes back. Entries in port tables depend upon the destination.
- Broadcast and multicast packets. Broadcast and multicast packets go to the primary port of each EtherChannel.

## Configuration Considerations

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- Link failure. If one link in an EtherChannel fails, a trap is sent and the entire EtherChannel is disabled.
- Port configuration for all ports that belong to a channel are the same; this applies to both ends of the channel, for example, duplex mode (full duplex delivers high bandwidth).
- All ports in one channel must be assigned to the same VLAN.
- Ports are disabled automatically (no user intervention) when channeling is turned off. This prevents broadcast storms from occurring when the spanning tree is disabled and there are loops in connection.
- Port security feature is disabled on the channeled ports. If port security is enabled for a channeled port, it will shut down when it receives packets whose source address does not match the secure address of the port.
- The ports in a channel are not configured as dynamic VLAN ports.