CHAPTER 12

Ethernet Menu Tasks

These topics describe the Ethernet menu tasks for Element Manager:

Note The instructions in this chapter apply only to server switches that run Ethernet gateways.

Viewing and Adding Addresses to the Static ARP Table

These topics describe how to view and manage the static ARP table:

Viewing the ARP Table

To view the static ARP table, from the Ethernet menu, choose **ARP**.

The ARP window opens and displays the static ARP table. Table 12-1 describes the fields in this table.

Table 12-1 ARP Table Field Descriptions

Field	Description
Port	Port (in slot#port# format) on your server switch to which the host connects.
NetAddress	IP address of the host.
PhysAddess	MAC address of the host.
Type	Type of route between the host and your server switch, either static or dynamic.

Adding a Static Address to the ARP Table

To add a static address to the ARP table, follow these steps:

Step 1 From the Ethernet menu, choose **ARP**.

The ARP window opens and displays the static ARP table.

Step 2 Click **Insert Ethernet**.

The Insert static Ethernet ARP window opens.

Step 3 Click the **...** button next to the Port field.

The choose Port window opens.

Step 4 Check the check box of the Ethernet gateway port to which you want to assign the new entry, and then click **OK**.

Step 5 Enter the IP address of the static host in the Net Address field.

Step 6 Enter the MAC address of the static host in the MAC field, and then click **Insert**.

Viewing and Managing Ethernet Routes

These topics describe how to view and manage Ethernet routes:

Viewing Ethernet Routes

To view Ethernet routes, from the Ethernet menu, choose **Routes**.

The Routes window opens. Table 12-2 describes the fields in this window.

Table 12-2 Routes Window Field Descriptions

Field	Description
Dest	Destination IP address of the route.
Mask	Subnet mask of the route.
NextHop	IP address of the next hop on the Ethernet route (address of the Ethernet router).
Port	Ethernet gateway port of the route.
Type	Identifies the type of route as direct or indirect.
Proto	Protocol that the route runs.
NextHopAS	Autonomous System Number of the next hop.

Creating an Ethernet Route

To create an Ethernet route, follow these steps:

Step 1 From the Ethernet menu, choose **Routes**.

The Routes window opens.

Step 2 Click **Insert**.

The Insert Routes window opens.

Step 3 Enter the destination IP address in the Dest field.

Step 4 Enter the subnet mask in the Mask field.

Step 5 Enter the IP address of the next hop in the NextHop field, and then click **Insert**.

Deleting an Ethernet Route

To delete an Ethernet route, follow these steps:

Step 1 From the Ethernet menu, choose **Routes**.

The Routes window opens.

Step 2 Click the route to delete, and then click **Delete**.

Viewing IP Addresses

To view IP addresses, from the Ethernet menu, choose **IP Addresses**.

The IP Addresses window opens. Table 12-3 describes the fields in this window.

Table 12-3 IP Addresses Window Field Descriptions

Field	Description
Port	Index value that uniquely identifies the interface to which this entry is applicable.
Address	IP address to which the addressing information of this entry pertains.
Netmask	Subnet mask associated with the IP address of this entry.
BcastAddrFormat	IP broadcast address format used on this interface.
ReasmMaxSize	Size of the largest IP datagram which this entity can reassemble from incoming IP fragmented datagrams received on this interface.
Type	Identifies the address as a primary or backup address.
Status	Identifies the port as active or backup.

Viewing and Managing Trunk Groups

These topics describe how to view and manage trunk groups:

- Viewing Trunk Groups, page 12-4
- Creating a Trunk Group, page 12-5
- Deleting a Trunk Group, page 12-5
- Editing a Trunk Group, page 12-5

Viewing Trunk Groups

To view the trunk groups on your server switch, from the **Ethernet** menu, choose **Trunking**.

The Trunking window opens. Table 12-4 describes the fields in this window.

Table 12-4 Trunking Window Field Descriptions

Field	Description
ID	Trunk group identifier.
Name	Trunk group name.
Port Members	Physical Ethernet gateway ports that belong to this trunk group.
Distribution Type	Packet forwarding distribution algorithm of the trunk group.
Enabled	Identifies the trunk group as enabled or disabled.
MTU	Maximum transmission unit of the trunk group.
MAC Address	MAC address assigned to this trunk group.
IfIndex	Logical port identifier that represents the trunk group.

Creating a Trunk Group

To create a trunk group, follow these steps:

Step 1 From the Ethernet menu, choose **Trunking**.

The Trunking window opens.

Step 2 Click **Insert**.

The Insert Trunk Groups window opens.

Step 3 In the ID field, enter an integer value (between 1 and 256).

Step 4 In the Name field, enter a name, with ASCII characters.

Step 5 Click the **...** button in the Port Members field.

The choose Ports window opens.

Step 6 Check the check box of any port that you want to add to the trunk group. Uncheck any check box that you want to omit from the group. Click **OK**.

Step 7 In the Distribution Type field, click the radio button of a distribution type.

Step 8 (Optional) Check the **Enabled** check box to enable the new group when you create it. To disable the new group, uncheck the check box.

Step 9 Click **Insert**.

The new group appears as a row in the Trunking window.

Deleting a Trunk Group

To delete a trunk group, follow these steps:

Step 1 From the Ethernet menu, choose **Trunking**.

The Trunking window opens.

Step 2 Click the entry of the trunk group that you want to delete, and then click **Delete**.

Editing a Trunk Group

Trunk groups can be edited as follows:

- Changing a Trunk Group Name, page 12-6
- Adding or Removing Physical Ethernet Gateway Ports from a Trunk Group, page 12-6
- Changing the Distribution Type of a Trunk Group, page 12-6
- Enabling or Disabling a Trunk Group, page 12-7

Changing a Trunk Group Name

To change a trunk group name, follow these steps:

Step 1 From the Ethernet menu, choose **Trunking**.

The Trunking window opens.

Step 2 Double-click the cell in the Name column of the entry with a name that you want to change.

The cell becomes editable.

Step 3 Enter the new trunk group name, and then press the **Enter** key.

Step 4 Click **Apply**.

Note You can make multiple changes before you click **Apply**, but you must click it to make the changes in the configuration file on the server switch.

Adding or Removing Physical Ethernet Gateway Ports from a Trunk Group

To add or remove physical Ethernet gateway ports from a trunk group, follow these steps:

Step 1 From the Ethernet menu, choose **Trunking**.

The Trunking window opens.

Step 2 Double-click the cell in the Port Members column of the entry to which you want to add or remove ports.

The choose Ports window opens.

Step 3 In the Choose Ports window, check the check boxes of ports to add to the group. Uncheck the boxes of ports to remove. Click **OK**.

Step 4 Click **Apply**.

Note You can make multiple changes before you click Apply, but you must click it to make the changes in the configuration file on the server switch.

Changing the Distribution Type of a Trunk Group

To change the distribution type of a trunk group, follow these steps:

Step 1 From the Ethernet menu, choose **Trunking**.

The Trunking window opens.

Step 2 In the Distribution Type column, click the cell of the trunk group with a distribution type that you want to change.

A drop-down menu appears.

Step 3 From the drop-down menu, choose a new distribution type.

Step 4 Click **Apply**.

Note You can make multiple changes before you click Apply, but you must click it to make the changes in the configuration file on the server switch.

Enabling or Disabling a Trunk Group

To enable or disable a trunk group, follow these steps:

Step 1 From the Ethernet menu, choose **Trunking**.

The Trunking window opens.

Step 2 Click the cell in the Enabled column of the trunk group with the enabled/disabled status that you want to change.

A drop-down menu appears.

Step 3 From the drop-down menu, choose **true** (to enable) or **false** (to disable).

Step 4 Click **Apply**.

Note You can make multiple changes before you click Apply, but you must click it to make the changes in the configuration file on the server switch.

Viewing and Managing Bridge Groups

These topics describe how to view and manage bridge groups:

Viewing Bridge Groups

To view the bridge groups on the server switch, from the Ethernet menu, choose **Bridging**.

The Bridging window opens. Table 12-5 describes the fields in this window.

Table 12-5 Bridging Window Field Descriptions

Field	Description
ID	Unique numeric identifier of the bridge group.
Name	Name in ASCII characters, of the bridge group.
Ethernet Port	Ethernet interface that is assigned to this bridge group. A value of zero (0) means that no interface is currently assigned.
IB Port	InfiniBand interface that is assigned to this bridge group. A value of zero (0) means that no interface is currently assigned.
Broadcast Forwarding	Configures whether or not this bridge group should forward broadcast packets. Enabling broadcast forwarding can cause broadcast storms in a network if the network is not configured properly.
Broadcast Forwarding Mode	Active broadcast forwarding mode.
Loop Protection Method	Loop protection method of this bridge group.
IP Multicast	Specifies if the group forwards IP-V4 multicast packets.
IP Multicast Mode	Active IP multicast mode.
Redundancy Group	Redundancy group to which this bridge group is assigned.
Oper Failover Priority	Active failover priority of the bridge group.
IP Address	IP address of the bridge group.
Gratuitous IGMP	Displays Enabled if gratuitous IGMP is set, otherwise displays Disabled.
Gratuitous IGMP Mode	Active gratuitous IGMP mode.
IGMP Version	Active IGMP version, v1, v2, or v3.
IGMP Version Mode	Active IGMP version mode.

Table 12-5 Bridging Window Field Descriptions (continued)

Field	Description
Directed Broadcast	Indicates whether directed broadcasting is enabled for the bridge group.
Directed Broadcast Mode	Active directed-broadcast mode.

Creating a Bridge Group

To create a bridge group, follow these steps:

Step 1 From the Ethernet menu, choose **Bridging**.

The Bridging window opens.

Step 2 Click **Add**.

The Add Bridge Group window opens.

Step 3 (Optional) In the ID field, enter an integer to assign a numeric identifier to the bridge group.

Element Manager automatically populates this field.

Step 4 In the Name field, enter a plain-text identifier of ASCII characters.

Step 5 Click the **Groups** tab.

Step 6 In the Ethernet Port field, click **Select**.

The Bridge Port window opens.

Step 7 From the Port drop-down menu, choose the Ethernet gateway port to assign to the bridge group.

Step 8 (Optional) In the VLAN field, enter the VLAN of the Ethernet gateway port to assign to the bridge group.

Step 9 Click **OK**.

Step 10 In the InfiniBand Port field, click **Select**.

The Bridge Port window opens.

Step 11 From the Port drop-down menu, choose the internal InfiniBand port on the Ethernet gateway to assign to the bridge group.

Step 12 In the P_Key field, enter the partition key of the partition to add the internal port.

Step 13 Click **OK**.

Step 14 (Optional) In the Broadcast Forwarding field, check the **Enabled** check box to enable broadcast forwarding.

Step 15 In the Loop Protection Method field, choose **one** or **none** from the drop-down menu.

Currently, only one method of loop protection is supported.

Step 16 (Optional) In the IP Multicast field, check the **Enabled** check box to enable IP multicast forwarding.

Step 17 (Optional) In the IP Address field, enter an IP Address for the bridge group.

Step 18 (Optional) Check the **Gratuitous IGMP** check box to enable gratuitous IGMP for the bridge group.

Enable this feature when IGMP snooping is enabled on the Ethernet switches connected to the Ethernet gateway.

Step 19 (Optional) From the IGMP Version drop-down menu, choose an IGMP version for the bridge group.

The IGMP version must be set to correspond to the version used by the hosts and routers bridged by this bridge group. It is used by gratuitous IGMP to generate reports and might have additional future uses.

Step 20 (Optional) In the Directed Broadcast field, check the **Enabled** check box to enable directed broadcasting for the bridge group.

Directed broadcasting allows directed broadcast traffic from the remote subnet Ethernet host to be broadcast to the IB network bridged by this bridge group.

Step 21 Click **Add**.

Deleting a Bridge Group

To delete a bridge group, follow these steps:

Step 1 From the Ethernet menu, choose **Bridging**.

The Bridging window opens.

Step 2 Click the bridge group entry that you want to delete, and then click **Delete**.

Adding Bridge Forwarding to a Bridge Group

To add bridge forwarding to a group, follow these steps:

Step 1 From the Ethernet menu, choose **Bridging**.

The Bridging window opens.

Step 2 Click the bridge group to which you want to add bridge forwarding, and then click **Edit**.

The Edit Bridge Group window opens.

Step 3 Click the **Forwarding** tab.

Step 4 Click **Add**.

The Add Bridge Forwarding window opens.

Step 5 From the drop-down menu in the Port Type field, choose **eth** or **ib**.

Step 6 In the Destination Address field, enter the destination IP address.

Step 7 In the Destination Length field, enter an integer value from 0 to 32.

Step 8 In the Next Hop field, enter the IP address of the next hop.

Step 9 In the Subnet Prefix field, enter the subnet prefix of the next hop.

Step 10 In the Prefix Length field, enter an integer value from 0 to 32.

Step 11 Click **Add**.

Adding a Subnet to a Bridge Group

To add an IPv4 subnet for bridging by a bridge group, follow these steps:

Step 1 From the Ethernet menu, choose **Bridging**.

The Bridging window opens.

Step 2 Click the bridge group to which you want to add a subnet, and then click **Edit**.

The Edit Bridge Group window opens.

Step 3 Click the **Subnet** tab.

Step 4 Click **Add**.

The Add Subnet window opens.

Step 5 In the Subnet Prefix field, enter an IPv4 subnet prefix.

Step 6 In the Prefix Length field, enter an integer value from 0 to 32.

Step 7 Click **Add**.

Viewing and Managing Redundancy Groups

These topics describe how to view and manage redundancy groups:

Viewing Redundancy Groups

To view the redundancy groups on your server switch, from the **Ethernet** menu, choose **Redundancy**. The Redundancy Groups window opens. Table 12-6 describes the fields in this window.

Table 12-6 Redundancy Groups Window Field Descriptions

Field	Description
Group ID	Unique numerical identifier of the redundancy group.
Name	ASCII-text name of the redundancy group.
Group P_Key	16-bit multicast partition key used by this redundancy group.
Load Balancing	Used to enable/disable load balancing for this redundancy group.
Bridge Group Members	Indicates the bridge groups that are assigned to this redundancy group.
Broadcast Forwarding	Displays true if broadcast forwarding is enabled, otherwise displays false.
IP Multicast	Displays true if multicast forwarding is enabled, otherwise displays false.

Table 12-6 Redundancy Groups Window Field Descriptions (continued)

Field	Description
Member Force Reelection	Displays true if the group is configured to reelect a new primary when a new member joins the redundancy group or an existing member comes online, otherwise displays false.
Directed Broadcast	Indicates whether directed broadcasting is enabled for the redundancy group.

Creating a Redundancy Group

To create a redundancy group, follow these steps:

Step 1 From the Ethernet menu, choose **Redundancy**.

The Redundancy Groups window opens.

Step 2 Click **Add**.

The Add Redundancy Group window opens.

Step 3 (Optional) In the ID field, enter an integer value. Element Manager automatically populates this field.

Step 4 Enter a name for the redundancy group in the Name field.

Step 5 (Optional) In the Load Balancing field, check the **Enabled** check box to apply load balancing to this redundancy group.

Step 6 (Optional) In the Broadcast Forwarding field, check the **Enabled** check box to apply broadcast forwarding to this redundancy group.

Applying broadcast forwarding temporarily overwrites the broadcast forwarding setting on all members of the redundancy group. Once a bridge group is removed from a redundancy group the original broadcast forwarding setting is restored.

Step 7 (Optional) In the IP Multicast field, check the **Enabled** check box to apply the multicast forwarding feature to this redundancy group.

Applying multicast forwarding temporarily overwrites the multicast forwarding setting on all members of the redundancy group. Once a bridge group is removed from a redundancy group the original multicast forwarding setting is restored.

Step 8 (Optional) In the Member Force Reelection field, check the **Enabled** check box to force the redundancy group to elect a new primary when a new member joins, or when an existing member comes online.

Step 9 (Optional) Check the **Gratuitous IGMP** check box to enable gratuitous IGMP for the redundancy group.

Gratuitous IGMP ap[plied to a redundancy group temporarily overwrites the gratuitous IGMP status on all bridge groups members of the redundancy group. Once a bridge group is removed from a redundancy group the original gratuitous IGMP status is restored.

Step 10 (Optional) From the IGMP Version drop-down menu, choose an IGMP version for the redundancy group.

This setting temporarily overwrites the IGMP version setting on all bridge groups members of the redundancy group. Once a bridge group is removed from a redundancy group the original IGMP version setting is restored.

Step 11 (Optional) In the Directed Broadcast field, check the **Enabled** check box to enable directed broadcasting for the redundancy group.

Directed broadcasting allows directed broadcast traffic from the remote subnet Ethernet host to be broadcast to the IB network bridged by this redundancy group.

Directed broadcast applied to a redundancy group temporarily overwrites the directed-broadcast setting on all bridge groups that are members of the redundancy group. Once a bridge group is removed from a redundancy group the original directed-broadcast setting is restored.

Step 12 Click **Add Member**.

The Add Member window opens.

Step 13 From the Bridge Group drop-down menu, choose a bridge group.

Step 14 Click **Add**.

The entry appears in the Members field.

Step 15 (Optional) Repeat Step 12 through Step 14 to add additional members.

Step 16 Click **Apply**.

Editing a Redundancy Group

To edit a redundancy group, follow these steps:

Step 1 From the Ethernet menu, choose **Redundancy**.

The Redundancy Groups window opens.

Step 2 Click the entry of the redundancy group to edit, and then click **Edit**.

The Edit Redundancy Group window opens.

Step 3 (Optional) In the Name field, change the name.

Step 4 (Optional) In the Load Balancing field, check or uncheck the **Enabled** check box to enable or disable load balancing for this redundancy group.

Step 5 (Optional) In the Broadcast Forwarding field, check or uncheck **Enabled** to enable or disable broadcast forwarding for this redundancy group.

Applying broadcast forwarding temporarily overwrites the broadcast forwarding setting on all members of the redundancy group. Once a bridge group is removed from a redundancy group the original broadcast forwarding setting is restored.

Step 6 (Optional) In the IP Multicast field, check or uncheck the **Enabled** check box to enable or disable multicast forwarding for this redundancy group.

Applying multicast forwarding temporarily overwrites the multicast forwarding setting on all members of the redundancy group. Once a bridge group is removed from a redundancy group the original multicast forwarding setting is restored.

Step 7 (Optional) In the Member Force Reelection field, check or uncheck the **Enabled** check box to enable or disable the forced election of a new primary when a new member joins the redundancy group, or when an existing member comes online.

Step 8 (Optional) Check or uncheck the **Gratuitous IGMP** check box to enable or disable gratuitous IGMP for the redundancy group.

Gratuitous IGMP ap[plied to a redundancy group temporarily overwrites the gratuitous IGMP status on all bridge groups members of the redundancy group. Once a bridge group is removed from a redundancy group the original gratuitous IGMP status is restored.

Step 9 (Optional) From the IGMP Version drop-down menu, choose an IGMP version for the bridge group.

This setting temporarily overwrites the IGMP version setting on all bridge groups members of the redundancy group. Once a bridge group is removed from a redundancy group the original IGMP version setting is restored.

Step 10 (Optional) In the Directed Broadcasting field, check the **Enabled** check box to enable directed broadcasting for the redundancy group.

Directed broadcasting allows directed broadcast traffic from the remote subnet Ethernet host to be broadcast to the IB network bridged by this redundancy group.

Directed broadcast applied to a redundancy group temporarily overwrites the directed-broadcast setting on all bridge groups that are members of the redundancy group. Once a bridge group is removed from a redundancy group the original directed-broadcast setting is restored.

Step 11 (Optional) Click a bridge group member, and then click **Remove** to remove a bridge group member.

Step 12 (Optional) Click **Add Member** to add a bridge group member. (See the "Creating a Redundancy Group" section on page 12-12.)

Step 13 Click **Apply**.

Deleting a Redundancy Group

To delete a redundancy group, follow these steps:

Step 1 From the Ethernet menu, choose **Redundancy**.

The Redundancy Groups window opens.

Step 2 Click the entry of the redundancy group that you want to delete, and then click **Remove**.

The Delete Redundancy Group window opens.

Step 3 Click **Yes**.