







bridge addressDatabase add

Adding a Statically Configured Address to an Address Forwarding Database

You can add a statically configured address to a forwarding database using the add command on the addressDatabase menu.

To add a statically configured address to forwarding database:

1. At the Top-level menu, enter:

   bridge addressDatabase add

   The following prompt is displayed:

   ```
   Select bridge port(AL1-AL4,unit:port,?):
   ```

2. Enter the number of the unit and port that you wish to add an address to.

   The following prompt is displayed:

   ```
   Enter address:
   ```

3. Enter the address, which must be entered in the form of hyphen separated bytes, for example: 08-00-02-06-03-bd

   The following prompt is displayed:

   ```
   Enter VLAN ID (1) [1]:
   ```

4. Enter the VLAN ID for the new statically configured address.

The error message `Invalid option, or combination of options, selected` *appears if you select a bridge port which is not a member of the VLAN that you select.*

Related Commands

agingTime	Setting the Bridge Address Database Aging Time
find	Finding a MAC Address
remove	Removing a MAC Address from a Port
summary	Displaying MAC Addresses for a Port



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physicalInterface ethernet portCapabilities

Setting the Port Capabilities

You can modify the port capabilities that are advertised when your Switch has auto-negotiation enabled using the `portCapabilities` command on the Ethernet menu.

This command gives you greater control over autonegotiation. For example, you may want to restrict the bandwidth of certain ports (whilst allowing auto-negotiation of duplex mode), or to restrict autonegotiation where there are compatibility issues.

To set the port capabilities:

1. At the Top-level menu, enter:

   `physicalInterface ethernet portCapabilities`

   The following prompt is displayed:

   ```
   Select Ethernet port (unit:port,?):
   ```

2. Enter the number of the unit and port to be modified.

   The following prompt is displayed:

   ```
   Enter new advertised capabilities - comma separated or all
   (10half,10full,100half,100full,flowControl,all)
   [10half,10full,100half,100full,flowControl]:
   ```

   The advertised port capabilities will vary depending on your type of Switch unit and on the port you examine.

3. Enter, for example, **`100full, 100half`** or **`all`**.

Related Commands

detail	Displaying Detailed Information
flowControl	Enabling and Disabling Flow Control
portMode	Specifying the Speed and Duplex Mode
portState	Enabling and Disabling Ports
smartAutosense	Enabling/Disabling Smart Autosensing
summary	Displaying Port Summary Information

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bridge addressDatabase find

Finding a MAC Address

You can find a MAC address within the address forwarding database on the unit using the `find` command on the addressDatabase menu.

To find a MAC address:

1. At the Top-level menu, enter:

   `bridge addressDatabase find`

   The following prompt is displayed:

   `Enter address:`

2. Enter the address that you wish to find. The address must be entered in the form of hyphen separated bytes, for example: 08-00-02-06-03-bd

The unit information for the Mac address you wish to find is displayed as in the following example:

```
Location             VLAN ID     Permanent
-----------------------------------------
Unit 1 Port 13       1           No
```

Related Commands

add	Adding a Statically Configured Address to an Address Forwarding Database
agingTime	Setting the Bridge Address Database Aging Time
remove	Removing a MAC Address from a Port
summary	Displaying MAC Addresses for a Port

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bridge addressDatabase remove

Removing a MAC Address from a Port

You can remove a MAC address associated with a selected port using the `remove` command on the addressDatabase menu.

To remove a MAC address:

1. At the Top-level menu, enter:

   `bridge addressDatabase remove`

   The following prompt is displayed:

   ```
   Enter address:
   ```

2. Enter the address that you wish to remove.The address must be entered in the form of hyphen separated bytes, for example: 08-00-02-06-03-bd

   The following prompt is displayed:

   ```
   Enter VLAN ID (1) [1]:
   ```

3. Enter the VLAN ID for the address that you want to remove.

Related Commands

add	Adding a Statically Configured Address to an Address Forwarding Database
agingTime	Setting the Bridge Address Database Aging Time
find	Finding a MAC Address
summary	Displaying MAC Addresses for a Port

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bridge addressDatabase summary

Displaying MAC Addresses for a Port

You can display a summary of MAC addresses associated with a selected port using the `summary` command on the addressDatabase menu.

To display a summary of MAC addresses associated with a port:

1. At the Top-level menu, enter:

   `bridge addressDatabase summary`

   The following prompt is displayed:

   ```
   Select bridge port (AL1-AL4,unit:port...,all,?):
   ```

2. Enter the number of the unit and port that you wish to have its associated MAC addresses displayed, or enter **`all`** for all the ports.

The command produces a list of all MAC addresses associated with the specified port(s).


A MAC address can appear more than once in the summary list against different VLANs.

Related Commands

add	Adding a Statically Configured Address to an Address Forwarding Database
agingTime	Setting the Bridge Address Database Aging Time
find	Finding a MAC Address
remove	Removing a MAC Address from a Port

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bridge broadcastStormCtrl

Enabling and Disabling Broadcast Storm Control

Broadcast Storm Control is a system that monitors the level of broadcast traffic on each port. If the broadcast traffic level rises to a pre-defined threshold, the broadcast traffic on the port is either blocked until the broadcast traffic level drops below the threshold level or throttled to keep it below that value (depending on the model of Switch). This system prevents the overwhelming broadcast traffic that can result from network equipment which is faulty or configured incorrectly.

You can enable or disable broadcast storm control for the unit using the `broadcastStormCtrl` command on the bridge menu.

To enable or disable broadcast storm control for the Switch:

1. At the Top-level menu, enter:

   `bridge broadcastStormCtrl`

   The following prompt is displayed:

   ```
   Enter new value (enable, disable) [enable]:
   ```

2. Enter **`enable`** or **`disable`**.

   If you enter enable, the following prompt is displayed:

   ```
   Enter threshold in pps (0-200000) [3000]:
   ```

3. Enter the value for the rising threshold in packets per second.



The Switch 4226T (3C17300), Switch 4250T (3C17302), and Switch 4228G (3C17304) calculate threshold in packets per second over two 15sec samples, and block the traffic on a port until the traffic drops below the theshold.



The Switch 4200 26-Port (3C17300A), Switch 4200 50-Port (3C17302A), and Switch 4200 28-Port (3C17304A) calculate threshold in bytes per second which is approximated from the specified packets per second, and throttle the traffic to keep it below the theshold value.

Related Commands

summary Displaying Bridge Information



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bridge linkAggregation detail

Displaying Detailed Aggregated Link Information

You can display detailed aggregated link information for a single aggregated link within the current Switch unit using the `detail` command on the linkAggregation menu.

To display detailed aggregated link information:

1. At the Top-level menu, enter:

   bridge linkAggregation detail

   The following prompt is displayed:

   ```
   Select aggregated link index (1-4):
   ```

2. Enter the index number of the aggregated link for which you wish to see detailed information.

3. The detailed aggregated link information is displayed as shown in the example below.

```
Aggregated Link 1
LACP is operational
LACP ActorID: 8000,01-23-45-67-89-ab
LACP PartnerID: 8000,01-23-45-67-89-ac

Unit    Port    Member Reason  Port Mode       Status
1       25      Manual         100full Auto    Active
2       26      Manual         100full Auto    Active
```

Related Commands

summary	Displaying Summary Aggregated Link Information

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bridge linkAggregation modify addPort

Adding a Port to an Aggregated Link

You can add a single port to an aggregated link on the current Switch unit using the `addPort` command on the Link Aggregation menu.

You cannot add a port to an aggregated link that is already a member of an aggregated link or part of a resilient link.

To add a port to an aggregated link:

1. At the Top-level menu, enter:

   `bridge linkAggregation modify addPort`

   The following prompt is displayed:

   ```
   Select aggregated link index (1-4):
   ```

2. Enter the index number of the aggregated link that you wish to add a port to.

   The following prompt is displayed:

   ```
   Select ports (unit:port....,?):
   ```

3. Enter the unit and port number that you wish to add to the aggregated link. (The choice of unit numbers reflects suitable candidate units.)

   The specified port is then added to the aggregated link.

Related Commands

linkState	Enabling and Disabling Aggregated Links
partnerID	Setting the identity of a partner unit for an Aggregated Link
removePort	Removing a Port from an Aggregated Link

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bridge linkAggregation modify linkState

Enabling and Disabling Aggregated Links

You can enable or disable an aggregated link on the current Switch unit using the `linkState` command on the linkAggregation menu.

To enable or disable an aggregated link:

1. At the Top-level menu, enter:

   `bridge linkAggregation modify linkState`

   The following prompt is displayed:

   ```
   Select aggregated link index (1-4):
   ```

2. Enter the index number of the aggregated link that you wish to enable or disable.

   The following prompt is displayed:

   ```
   Enter new value (enable,disable):
   ```

3. Enter **`enable`** or **`disable`**.

Related Commands

addPort	Adding a Port to an Aggregated Link
partnerID	Selecting a Partner for an Aggregated Link
removePort	Removing a Port from an Aggregated Link

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bridge linkAggregation modify partnerID

Setting or Modifying the Partner ID for an Aggregated Link

You can use the PartnerID command on the Link Aggregation menu to set or modify the identity of a partner unit at the remote end of an aggregated link on the current Switch unit.

This command is used for Link Aggregation Control Protocol (LACP IEEE 802.3ad) Pre-Configured Aggregations. This allows you to manually configure a PartnerID (that is, the MAC address of a partner device) to an aggregated link, so that you know which aggregated link is associated with which device in your network. On detecting an active port with a matching PartnerID, LACP will automatically add the port to the pre-configured aggregated link.

The aggregated link should be manually configured with appropriate configuration settings, such as VLAN membership, to match the partner device.

To set or modify the identity of a partner unit at the remote end of an aggregated link:

1. At the Top-level menu, enter:

   bridge linkAggregation modify partnerID

   The following prompt is displayed:

   ```
   Select aggregated link index (1-4):
   ```

2. Enter the index number of the aggregated link that you wish to set the unit partner identity for.

   The following prompt is displayed:

   ```
   Enter System Priority (0x0-0xffff) [0x8000]:
   ```

3. Enter the system priority of the partner unit.

   The following prompt is displayed:

   ```
   Enter PartnerID (<MAC address>, none) [00-00-00-00-00-01]:
   ```

4. Enter the MAC Address of the partner unit.

Related Commands

addPort	Adding a port to an Aggregated Link
linkState	Enabling and Disabling Aggregated Links
removePort	Removing a Port from an Aggregated Link



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bridge linkAggregation modify removePort

Removing a Port from an Aggregated Link

You can remove a single port from an aggregated link using the `removePort` command on the linkAggregation/modify menu.

To remove a port from an aggregated link:

1. At the Top-level menu, enter:

   `bridge linkAggregation modify removePort`

   The following prompt is displayed:

   ```
   Select aggregated link index (1-4):
   ```

2. Enter the index number of the aggregated link that you wish to remove a port from.

   The following prompt is displayed:

   ```
   Select ports (unit:port...,?):
   ```

3. Enter the unit and port number that you wish to remove from the aggregated link. (The choice of unit numbers reflects suitable candidate units.)

   The specified port is then removed from the aggregated link.

Related Commands

addPort	Adding a port to an Aggregated Link
linkState	Enabling and Disabling Aggregated Links
partnerID	Setting the identity of a partner unit for an Aggregated Link



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bridge linkAggregation summary

Displaying Summary Aggregated Link Information

You can display summary aggregated link information about all aggregated links supported by the unit using the summary command on the Link Aggregation menu.

To display summary aggregated link information:

1. At the Top-level menu, enter:

   bridge linkAggregation summary

2. The summary aggregated link information is displayed as shown in the example below.

```
LACP ActorID: 8000,01-23-45-67-89-ab

Aggregated  Active    Inactive  Disabled  LACP PartnerID
Link        Ports     Ports     Ports
------------------------------------------------------------------
 1          0         0         0         Not known
 2          0         0         0         Not known
 3          0         0         0         Not known
 4          0         0         0         Not known
```

Related Commands

detail	Displaying Detailed Aggregated Link Information

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bridge multicastFilter igmp modify fastLeave

Enabling and Disabling IGMP modify fast leave

You can enable or disable IGMP fastLeave for all Switch units in the stack using the `modify fastLeave` command on the IGMP menu.

To enable or disable IGMP fast leave:

1. At the Top-level menu, enter:

   `bridge multicastFilter igmp modify fastLeave`

   The following prompt is displayed:

   ```
   Enter new value (enable, disable) [disable]:
   ```

2. Enter **`enable`** or **`disable`**.

It is recommended that the fastLeave option is not enabled when multiple multicast clients are connected to a single port.

You Switch provides automatic multicast filtering support using IGMP (Internet Group Management Protocol) v1, v2 or v3 Snooping. It can also act as an IGMPv2 querier.

Related Commands

queryMode	Enabling and disabling query mode
snoopMode	Enabling and disabling snoop mode (IGMP multicast learning)

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bridge multicastFilter igmp queryMode

Enabling and Disabling IGMP query mode

You can enable or disable IGMP query mode for the unit using the queryMode command on the IGMP menu.

You would use this command to enable query mode if you wish to run multicast sessions in a network that does not contain any IGMP routers (or queriers). This command will configure the Switch to automatically negotiate with compatible devices on VLAN 1 to become the querier.

To enable or disable IGMP query mode:

1. At the Top-level menu, enter:

   bridge multicastFilter igmp queryMode

   The following prompt is displayed:

   ```
   Enter new value (enable, disable) [disable]:
   ```

2. Enter **enable** or **disable**.

IGMP querying is disabled by default due to potential interoperability issues with core products that do not follow the lowest IP address election method. Refer to "Using Multicast Filtering" in the Implementation Guide for more information about this method.

The Switch is compatible with any device that conforms to the IGMP v2 protocol.

Related Commands

fastLeave	Enabling and disabling fast leave
snoopMode	Enabling and disabling snoop mode (IGMP multicast learning)

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bridge multicastFilter igmp snoopMode

Enabling and Disabling IGMP Snooping

You can enable or disable IGMP Snooping for the unit using the IGMP command on the Multicast Filtering menu.

To enable or disable IGMP Snooping:

1. At the Top-level menu, enter:

   bridge multicastFilter igmp snoopMode

   The following prompt is displayed:

   ```
   Enter new value (enable, disable) [enable]:
   ```

2. Enter **enable** or **disable**.

Related Commands

fastLeave	Enabling and disabling fast leave
queryMode	Enabling and disabling query mode

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bridge multicastFilter routerPort addPort

Manually Defining a Router Port

You can manually define router ports for any unit in the stack using the `addPort` command on the routerPort menu.

To manually define a router port:

1. At the Top-level menu, enter:

   `bridge multicastFilter routerPort addPort`

   The following prompt is displayed:

   ```
   Select router ports (AL1-AL4,unit:port...,?):
   ```

2. Enter the number of the unit and port for the router port.

Related Commands

autoDiscovery	Enabling and Disabling Router Port Auto-Discovery
removePort	Removing a Router Port
summary	Displaying a Router Port Summary



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bridge multicastFilter routerPort autoDiscovery

Enabling and Disabling Router Port Auto-Discovery

You can enable or disable router port auto-discovery for the unit using the `autoDiscovery` command on the Router Port menu.



The default setting for the Switch is router port auto-discovery enabled, with no manually identified router ports. You can manually identify router ports with auto-discovery enabled.

To enable or disable router port auto-discovery:

1. At the Top-level menu, enter:

   `bridge multicastFilter routerPort autoDiscovery`

   The following prompt is displayed:

   `Enter new value (enable, disable) [enable]:`

2. Enter **`enable`** or **`disable`**.

Related Commands

addPort	Manually Defining a Router Port
removePort	Removing a Router Port
summary	Displaying a Router Port Summary



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bridge multicastFilter routerPort removePort

Removing a Router Port

You can remove a router port from the unit using the `removePort` command on the Router Port menu. This command can remove router ports whether manually configured, or automatically learned by IGMP Snooping. If an automatically learned router port is removed, it may be relearned.

To remove a router port:

1. At the Top-level menu, enter:

   `bridge multicastFilter routerPort removePort`

   The following prompt is displayed:

   `Select unit for router port (1):`

2. Enter the number of unit for the router port that you wish to remove.

   The following prompt is displayed:

   `Select router port (3,4,all):`

   The list in the prompt only includes the router ports on the selected unit.

3. Enter the number of the router port that you wish to remove.

Related Commands

addPort	Manually Defining a Router Port
autoDiscovery	Enabling and Disabling Router Port Auto-Discovery
summary	Displaying a Router Port Summary

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bridge multicastFilter routerPort summary

Displaying a Router Port Summary

You can display a summary of router ports for the unit using the summary command on the routerPort menu.

This list displays all router ports whether manually configured, or automatically learned via auto-discovery.

To display all router ports:

1. At the Top-level menu, enter:

   bridge multicastFilter routerPort summary

2. The router port information for the unit is displayed in ascending port number order.

   An example of the router port information is shown below:

```
Unit      Router Port       Learning State
-----------------------------------------
1         1                 Manual
1         2                 Manual
1         3                 Manual
1         5                 Auto
```

Related Commands

addPort	Manually Defining a Router Port
autoDiscovery	Enabling and Disabling Router Port Auto-Discovery
removePort	Removing a Router Port

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bridge port detail

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Displaying Port Information

You can display information about a port on the current Switch unit using the `detail` command on the Port menu.

To display the port information:

1. At the Top-level menu, enter:

   bridge port detail

   The following prompt is displayed:

   `Select bridge port (AL1-AL4,unit:port,?):`

2. Enter the number of a unit and port.

   The port information for the Switch is displayed as shown in the example below.

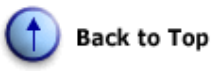
```
Unit 1, Port 1 Detailed Information

StpState:                Enabled        fwdTransitions:         1
StpCost:                      18        BroadcastStormControl:  Enabled
StpFastStart:               Auto        LinkTrap:               Enabled
DefaultPriority:               0        QoS Profile:            2
LACP State:                    -
LACP PartnerID:         Not known

VLAN ID             VLAN Name           Tagging Mode        Spanning Tree
-------------------------------------------------------------------------------
1                   Default VLAN        Untagged            Forwarding
```

Related Commands

lacpState	Enabling and Disabling Link Aggregation Control Protocol (LACP)
linkTrap	Enabling and Disabling Port Link Traps
stpCost	Setting the Spanning Tree Path Cost
stpFastStart	Configuring Spanning Tree Fast Start
summary	Displaying Port Summary Information



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bridge port lacpState

Enabling or Disabling LACP on a Port

You can enable or disable Link Aggregation Control Protocol (LACP IEEE 802.3ad) on individual ports on all units in a stack using the `lacpState` command on the Port menu.

You can only enable or disable LACP on physical ports rather than logical bridge ports. Hence aggregated links do not appear at the port list prompt.

To enable or disable LACP on a port:

1. At the Top-level menu, enter:

   `bridge port lacpState`

   The following prompt is displayed:

   ```
   Select Ethernet port (unit:port...,?):
   ```

2. Enter the unit and the number of the port for which you wish to enable or disable LACP.

   The following prompt is displayed:

   ```
   Enter new value(enable,disable)[disable]:
   ```

3. Enter the new value for the port.

Related Commands

detail	Displaying Port Information
linkTrap	Enabling and Disabling Port Link Traps
stpCost	Setting the Spanning Tree Path Cost
stpFastStart	Configuring Spanning Tree Fast Start
summary	Displaying Port Summary Information

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bridge port linkTrap

Enabling or Disabling Link Trap

You can enable or disable Link Trap on individual ports on all units in a stack using the `linkTrap` command on the Port menu.



You can only enable or disable LinkTrap on physical ports rather than logical bridge ports. Hence aggregated links do not appear at the port list prompt.

To enable or disable Link Trap on a port:

1. At the Top-level menu, enter:

   `bridge port linkTrap`

   The following prompt is displayed:

   ```
   Select Bridge ports (AL1-AL4,unit:port...,?):
   ```

2. Enter the unit and the number of the port for which you wish to enable or disable Link Trap.

   The following prompt is displayed:

   ```
   Enter new value(enable,disable)[enable]:
   ```

3. Enter the new value for the port.

Related Commands

detail	Displaying Port Information
lacpState	Enabling and Disabling Link Aggregation Control Protocol (LACP)
stpCost	Setting the Spanning Tree Path Cost
stpFastStart	Configuring Spanning Tree Fast Start
summary	Displaying Port Summary Information

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bridge port stpCost

Setting the Spanning Tree Path Cost

You can set the spanning tree path cost on a port of the current Switch using the `stpCost` command on the Port menu.

To set the spanning tree path cost:

1. At the Top-level menu, enter:

   `bridge port stpCost`

   The following prompt is displayed:

   ```
   Select bridge ports (AL1-AL4,unit:port...,?):
   ```

2. Enter the number of the unit and port.

   The following prompt is displayed:

   ```
   Enter new value (1-200000000,auto)[19]:
   ```

3. Enter the new value for the spanning tree path cost on the port. If you enter *auto* the unit will set a value depending on the speed of the port.

Related Commands

detail	Displaying Port Information
lacpState	Enabling and Disabling Link Aggregation Control Protocol (LACP)
linkTrap	Enabling and Disabling Port Link Traps
stpFastStart	Configuring Spanning Tree Fast Start
summary	Displaying Port Summary Information



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bridge port stpFastStart

Enabling and Disabling Spanning Tree Fast Start

You can enable or disable spanning tree fast start on a port of the current Switch unit using the `stpFastStart` command on the Port menu.



Fast Start should only be enabled on ports that are directly connected to endstations.

To enable or disable spanning tree fast start:

1. At the Top-level menu, enter:

   `bridge port stpFastStart`

   The following prompt is displayed:

   ```
   Select bridge ports (AL1-AL4,unit:port...,?):
   ```

2. Enter the number of the unit and port to be enabled or disabled.

   The following prompt is displayed:

   ```
   Enter new value (enable,disable,auto) [auto]:
   ```

   By default front panel ports operate in *Auto* mode. This inserts a 4 second delay before the port starts forwarding packets.

   Enable mode causes ports to enter forwarding mode immediately after becoming active. This mode should be used for ports connected to edge devices in an AppleTalk network.

   Disable mode causes a 30 second delay before a port becomes active and is suited to networks where loops occur with shorter delays.

3. Enter **`enable`**, **`disable`**, or **`auto`**.

Related Commands

detail	Displaying Port Information
lacpState	Enabling and Disabling Link Aggregation Control Protocol (LACP)
linkTrap	Enabling and Disabling Port Link Traps
stpCost	Setting the Spanning Tree Path Cost
stpFastStart	Configuring Spanning Tree Fast Start
summary	Displaying Port Summary Information



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bridge port summary







Displaying Port Summary Information

You can display summary information about a port, or all ports, of the current Switch unit using the `summary` command on the Port menu.

To display the port summary information:

1. At the Top-level menu, enter:

   `bridge port summary`

   The following prompt is displayed:

   `Select bridge ports (AL1-AL4,unit:port...,all,?):`

2. Enter the number of a unit and port, or all.

   The port summary information for the Switch is displayed as shown in the example below.

```
Port  Link      Spanning     Forward    StpCost     LACP PartnerID
                Tree         Trans.
-------------------------------------------------------------------------------
1:1   Active    Forwarding   1          18          -
1:2   Inactive  Disabled     0          19          -
1:3   Inactive  Disabled     0          19          -
1:4   Inactive  Disabled     0          19          -
1:5   Inactive  Disabled     0          19          -
1:6   Inactive  Disabled     0          19          -
1:7   Inactive  Disabled     0          19          -
1:8   Inactive  Disabled     0          19          -
1:9   Inactive  Disabled     0          19          -
1:10  Inactive  Disabled     0          19          -
1:11  Inactive  Disabled     0          19          -
1:12  Inactive  Disabled     0          19          -
1:13  Inactive  Disabled     0          19          -
```

The following port summary information is displayed:

- `stpState` — Displays the parameters that provide the state of the port, the possible values are:
  - Disabled — port is disabled
  - Link Down — port is enabled but link is down
  - Blocking — equivalent to STP blocking state
  - Listening — equivalent to STP listening state
  - Forwarding — equivalent to STP forwarding state
  - Broken — port is broken
- `fwdTransitions` — Displays the number of times this port has entered the forwarding state from the learning state.
- `stpCost` — Displays the current path cost associated with the port.
- `LACP PartnerID` - Displays the current LACP PartnerID associated with the port.

Related Commands

detail	Displaying Port Information
lacpState	Enabling and Disabling Link Aggregation Control Protocol (LACP)
linkTrap	Enabling and Disabling Port Link Traps

stpCost Setting the Spanning Tree Path Cost
stpFastStart Configuring Spanning Tree Fast Start

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bridge spanningTree stpDefaultPathCost

Setting the Bridge Spanning Tree Default Path Costs

You can set the bridge spanning tree default path costs of the current Switch using the `stpDefaultPathCost` command on the spanningTree menu.

This command allows you to specify whether you wish the path costs to default to those of the IEEE 802.1D standard (for use with a legacy network), or use the latest IEEE 802.1t default path costs. This command provides a mechanism for future-proofing your network as the 802.1t path costs support the latest approved standards.

To set the bridge spanning tree default path costs:

1. At the Top-level menu, enter:

   `bridge spanningTree stpDefaultPathCost`

2. The following prompt is displayed:

   ```
   Enter default Path Costs version - 1=802.1D-1998,2=802.1t (1-2)[1]:
   ```

3. Enter the new value for the default path costs.

Related Commands

stpForwardDelay	Setting the Bridge Spanning Tree Forward Delay Parameter
stpHelloTime	Setting the Bridge Spanning Tree Hello Timer
stpMaxAge	Setting the Bridge Spanning Tree Maximum Age
stpPriority	Setting the Spanning Tree Bridge Priority
stpState	Enabling and Disabling Spanning Tree on a Bridge
stpVersion	Selecting the version of Spanning Tree to run on a Bridge



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bridge spanningTree stpForwardDelay

Setting the Bridge Spanning Tree Forward Delay

You can set the bridge forward delay spanning tree parameter of the current Switch using the `stpForwardDelay` command on the spanningTree menu.

The forward delay is the amount of time in seconds that a bridge spends in the listening and learning states.

To set the bridge spanning tree forward delay:

1. At the Top-level menu, enter:

   `bridge spanningTree stpForwardDelay`

2. The following prompt is displayed:

   `Enter new value in seconds (4-30) [15]:`

3. Enter the new value for the forward delay.



The stpForwardDelay, stpHelloTime and stpMaxAge commands are interrelated. Changing the value for one of them will change the prompts and values for the others.

Related Commands

stpDefaultPathCost	Setting the Spanning Tree default path costs
stpHelloTime	Setting the Bridge Spanning Tree Hello Timer
stpMaxAge	Setting the Bridge Spanning Tree Maximum Age
stpPriority	Setting the Spanning Tree Bridge Priority
stpState	Enabling and Disabling Spanning Tree on a Bridge
stpVersion	Selecting the version of Spanning Tree to run on a Bridge



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bridge spanningTree stpHelloTime

Setting the Bridge Spanning Tree Hello Timer

You can set the bridge hello timer spanning tree parameter of the current Switch using the `stpHelloTime` command on the spanningTree menu.

The hello time is the time that elapses between the configuration messages generated by a bridge.

To set the bridge spanning tree hello timer:

1. At the Top-level menu, enter:

   `bridge spanningTree stpHelloTime`

   The following prompt is displayed:

   ```
   Enter new value in seconds (1-4) [2]:
   ```

2. Enter the new value for the hello timer.



The stpForwardDelay, stpHelloTime and stpMaxAge commands are interrelated. Changing the value for one of them will change the prompts and values for the others.

Related Commands

stpDefaultPathCost	Setting the Spanning Tree default path costs
stpForwardDelay	Setting the Bridge Spanning Tree Forward Delay
stpMaxAge	Setting the Bridge Spanning Tree Maximum Age
stpPriority	Setting the Spanning Tree Bridge Priority
stpState	Enabling and Disabling Spanning Tree on a Bridge
stpVersion	Selecting the version of Spanning Tree to run on a Bridge



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bridge spanningTree stpMaxAge

Setting the Bridge Spanning Tree Maximum Age

You can set the bridge maximum age spanning tree parameter of the current Switch using the `stpMaxAge` command on the spanningTree menu.

The maximum age value determines when the stored configuration message information is too old and is discarded.

To set the bridge spanning tree maximum age:

1. At the Top-level menu, enter:

   `bridge spanningTree stpMaxAge`

   The following prompt is displayed:

   ```
   Enter new value in seconds (6-40) [20]:
   ```

2. Enter the the new value for the maximum age.



The stpForwardDelay, stpHelloTime and stpMaxAge commands are interrelated. Changing the value for one of them will change the prompts and values for the others.

Related Commands

stpDefaultPathCost	Setting the Spanning Tree default path costs
stpForwardDelay	Setting the Bridge Spanning Tree Forward Delay
stpHelloTime	Setting the Bridge Spanning Tree Hello Timer
stpPriority	Setting the Spanning Tree Bridge Priority
stpState	Enabling and Disabling Spanning Tree on a Bridge
stpVersion	Selecting the version of Spanning Tree to run on a Bridge



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bridge spanningTree stpPriority

Setting the Spanning Tree Bridge Priority

You can set the spanning tree bridge priority of the current Switch using the `stpPriority` command on the spanningTree menu.

The priority is the configurable value that is appended as the most significant portion of a Bridge Identifier.

The Bridge Identifier is calculated using the priority defined for the bridge and the MAC address of the bridge. The Bridge Identifier specifies which bridge acts as the central reference point, or Root Bridge, for the STP system — the lower the Bridge Identifier, the more likely the bridge is to become the Root Bridge.

To set the spanning tree bridge priority:

1. At the Top-level menu, enter:

   `bridge spanningTree stpPriority`

   The following prompt is displayed:

   `Select stp priority (?)[32768]:`

2. Enter the new value for the bridge priority (the default option indicates the current value of the stpPriority MIB item).

   You can enter **?** *to display the priority values that you can set for the Switch.*

Related Commands

stpDefaultPathCost	Setting the Spanning Tree default path costs
stpForwardDelay	Setting the Bridge Spanning Tree Forward Delay
stpHelloTime	Setting the Bridge Spanning Tree Hello Timer
stpMaxAge	Setting the Bridge Spanning Tree Maximum Age
stpState	Enabling and Disabling Spanning Tree on a Bridge
stpVersion	Selecting the version of Spanning Tree to run on a Bridge

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bridge spanningTree stpState

Enabling and Disabling Spanning Tree on a Bridge

You can enable or disable spanning tree on a bridge of the current Switch unit using the `stpState` command on the spanningTree menu.

To enable or disable spanning tree on a bridge:

1. At the Top-level menu, enter:

   `bridge spanningTree stpState`

   The following prompt is displayed:

   ```
   Enter new value (enable, disable) [disable]:
   ```

2. Enter **`enable`** or **`disable`**.

Related Commands

stpDefaultPathCost	Setting the Spanning Tree default path costs
stpForwardDelay	Setting the Bridge Spanning Tree Forward Delay
stpHelloTime	Setting the Bridge Spanning Tree Hello Timer
stpMaxAge	Setting the Bridge Spanning Tree Maximum Age
stpPriority	Setting the Spanning Tree Bridge Priority
stpVersion	Selecting the version of Spanning Tree to run on a Bridge

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bridge spanningTree stpVersion

Setting the Bridge Spanning Tree Version

You can set the bridge spanning tree version for the current Switch using the `stpVersion` command on the spanningTree menu.

You can set the STP version to STP to inter-operate with legacy Switches, or alternatively to RSTP (Rapid STP).



RSTP is an enhanced version of the STP feature and is enabled by default. RSTP can restore a network connection much quicker than the original STP feature. STP conforms to the IEEE 802.1D standard, and RSTP conforms to the IEEE 802.1w standard.

To set the bridge spanning tree version:

1. At the Top-level menu, enter:

   `bridge spanningTree stpVersion`

2. The following prompt is displayed:

   ```
   Enter Spanning Tree version - 0=STP,2=RSTP (0,2)[2]:
   ```

3. Enter the required value for the STP version.



The stpForwardDelay, stpHelloTime and stpMaxAge commands are interrelated. Changing the value for one of them will change the prompts and values for the others.

Related Commands

stpDefaultPathCost	Setting the Spanning Tree default path costs
stpForwardDelay	Setting the Bridge Spanning Tree Forward Delay Parameter
stpHelloTime	Setting the Bridge Spanning Tree Hello Timer
stpMaxAge	Setting the Bridge Spanning Tree Maximum Age
stpPriority	Setting the Spanning Tree Bridge Priority
stpState	Enabling and Disabling Spanning Tree on a Bridge



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bridge summary

Displaying Bridge Information

You can display bridge information on the current Switch unit using the `display` command on the bridge menu.

To display the statistical information:

1. At the Top-level menu, enter:

   bridge summary

2. The bridge information for the Switch is displayed as shown in the following example.

```
stpVersion:     2 (RSTP)   defaultPathCosts:   802.1D-1998
stpState:       disabled   agingTime:          300

Time since topology
change:                    0 hrs 0 mins 0 seconds
Topology
Changes:                   0
Bridge Identifier:         8000 00803e408f01
Designated
Root:                      0000 000000000000

maxAge:         20         bridgeMaxAge:       20
helloTime:      2          bridgeHelloTime:    2
forwardDelay:   15         bridgeFwdDelay:     15
holdTime:       1          rootCost:           0
rootPort:       No Port    priority:           32768


Select menu option:
```

The following bridge information is displayed:

- `stpVersion` — Displays the bridge spanning tree version that is currently set.
- `stpState` — Displays the configurable parameter that provides the state of the bridge (that is, whether Spanning Tree is enabled or disabled).
- `defaultPathCosts` - Displays the spanning tree default path costs of the bridge.
- `agingTime` — Displays the time-out period in seconds for aging out dynamically learned forwarding information.
- `Time Since Topology Change` — Displays the time elapsed (in hours, minutes, and seconds) since STP last reconfigured the network topology.
- `Topology Changes` — Displays the number of times that STP has reconfigured the network topology.
- `Bridge Identifier` — Displays the bridge identification. It includes the

bridge priority value and the MAC address of the lowest numbered port.

- `Designated Root` — Displays the root bridge identification. It includes the root bridge's priority value and the MAC address of the lowest numbered port on that bridge.
- `bridgeMaxAge` — Displays the maximum age value, used when this bridge is the root bridge. This value determines when the stored configuration message information is too old and is discarded.
- `maxAge` — Displays the maximum age in seconds at which the stored configuration message information is judged to be too old and is discarded. This value is determined by the root bridge.
- `bridgeHelloTime` — Displays the Hello time value, used when this bridge is the root bridge. This value is the time that elapses between the configuration messages generated by a bridge that assumes itself to be the root.
- `helloTime` — Displays the time that elapses between the configuration messages generated by a bridge that assumes itself to be the root
- `bridgeFwdDelay` — Displays the forward delay value used when this bridge is the root bridge. This value sets the amount of time that a bridge spends in the listening and learning states.
- `forwardDelay` — Displays the time that a bridge spends in the "listening" and "learning" states.
- `holdTime` — Displays the minimum delay time in seconds between sending topology change Bridge Notification Protocol Data Units (BPDUs).
- `rootCost` — Displays the cost of the best path to the root from the root port of the bridge. For example, one determining factor of cost is the speed of the network interface, that is, the faster the speed, the smaller the cost.
- `rootPort` — Displays the best path from the bridge to the root bridge. Will display a port number, aggregated link number, unit number or No Port.
- `priority` — Displays the configurable value that is appended as the most significant portion of a bridge identifier.

Related Commands

broadcastStormCtrl	Enabling and Disabling Broadcast Storm Control

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bridge vlan create

Creating a VLAN

You can create a VLAN using the `create` command on the VLAN menu.

To create a VLAN:

1. At the Top-level menu, enter:

   `bridge vlan create`

   The following prompt is displayed:

   ```
   Enter VLAN ID (2-4094)[2]:
   ```

2. Enter the number of the VLAN ID that you wish to create. The default option is the lowest value within the VLAN ID range not currently used on the unit.

   The following prompt is displayed:

   ```
   Enter VLAN Name [VLAN 2]:
   ```

3. Enter the name for the VLAN. The VLAN name can be a maximum of 32 characters, including spaces. The default VLAN name is VLAN x, where x is the VLAN ID.

Related Commands

delete	Deleting a VLAN
detail	Displaying Detailed VLAN Information
summary	Displaying Summary VLAN Information



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bridge vlan delete

Deleting a VLAN

You can delete a VLAN using the `delete` command on the VLAN menu.

To delete a VLAN:

1. At the Top-level menu, enter:

   `bridge vlan delete`

   The following prompt is displayed:

   ```
   Select VLAN ID (5):
   ```

2. Enter the VLAN ID that you wish to delete. If the VLAN contains member ports, a warning message is displayed that asks you to confirm deletion of the VLAN.

Related Commands

create	Creating a VLAN
detail	Displaying Detailed VLAN Information
summary	Displaying Summary VLAN Information

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bridge vlan detail







Displaying Detailed VLAN Information

You can display detailed information about a VLAN, specifically port membership and statistics, for the unit that is a member of the specified VLAN using the `detail` command on the VLAN menu.

To display detailed VLAN information:

1. At the Top-level menu, enter:

   `bridge vlan detail`

   The following prompt is displayed:

   ```
   Select VLAN ID (1,5)[1]:
   ```

2. Enter the VLAN ID that you wish to display.

   The detailed VLAN information for the selected VLAN ID is displayed as shown in the example below.

```
VLAN ID: 1      Name: Default VLAN

Unit              Untagged Member Ports      Tagged Member Ports
------------------------------------------------------------------------
1                 13-26                      1-12
Aggregated Links  AL1-AL4                    none
```

Related Commands

create	Creating a VLAN
delete	Deleting a VLAN
summary	Displaying Summary VLAN Information

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bridge vlan modify addPort

Adding a Port to a VLAN

You can add a single port to a VLAN, or add all ports on the current Switch unit to the selected VLAN using the `addPort` command on the VLAN menu.

To add a port to a VLAN:

1. At the Top-level menu, enter:

   `bridge vlan modify addPort`

   The following prompt is displayed:

   ```
   Select VLAN ID (1,5)[1]:
   ```

2. Enter the number of the VLAN ID that you wish to add a port to.

   The following prompt is displayed:

   ```
   Select bridge ports (AL1-AL4,unit:port...,?):
   ```

3. Enter the unit and port number to be added to the VLAN.

   The following prompt is displayed:

   ```
   Enter tag type (untagged,tagged):
   ```

4. Enter the tagging information for the port added to the VLAN.



If you select `untagged` and the port is already a member of an untagged vlan, the port will be removed from the old untagged vlan and added to the new untagged vlan. Each port may only be a member of one untagged vlan.

Related Commands

name	Modifying a VLAN Name
removePort	Removing a Port from a VLAN

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bridge vlan modify name

Modifying a VLAN Name

You can modify the VLAN name for a specified VLAN ID using the `modify` command on the VLAN menu.

To modify a VLAN name:

1. At the Top-level menu, enter:

   `bridge vlan modify name`

   The following prompt is displayed:

   ```
   Select VLAN ID (1,5):
   ```

2. Enter the VLAN ID that you wish to modify.

   The following prompt is displayed:

   ```
   Enter VLAN Name [VLAN 3]:
   ```

3. Enter the new VLAN name. The default option is the current VLAN name for the specified VLAN ID.

Related Commands

addPort	Adding a Port to a VLAN
removePort	Removing a Port from a VLAN

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bridge vlan modify removePort

Removing a Port from a VLAN

You can remove a single port from a VLAN, or remove all ports on the current Switch unit from the selected VLAN using the `removePort` command on the VLAN menu.

To remove a port from a VLAN:

1. At the Top-level menu, enter:

   `bridge vlan modify removePort`

   The following prompt is displayed:

   ```
   Select VLAN ID (1,5)[1]:
   ```

2. Enter the number of the VLAN ID that you wish to remove a port from.

   The following prompt is displayed:

   ```
   Select bridge ports (AL1-AL4,unit:port...,?):
   ```

3. Enter the unit and port number to be removed from the VLAN. The choice of port numbers reflects the number of ports on the current Switch unit.

Related Commands

addPort	Adding a Port to a VLAN
name	Modifying a VLAN Name

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bridge vlan summary

Displaying Summary VLAN Information

You can display summary information about a single VLAN or all VLANs present in the unit, specifically port membership, using the `summary` command on the VLAN menu.

To display summary VLAN information:

1. At the Top-level menu, enter:

   `bridge vlan summary`

   The following prompt is displayed:

   ```
   Select VLAN ID (1,5,all)[all]:
   ```

2. Enter the VLAN ID that you wish to display, or enter **`all`** to display all VLANs on the current unit.

   The summary VLAN information for the selected VLAN ID is displayed as shown in the example below.

   ```
   VLAN ID                 Name
   ------------------------------------
   1                       Default VLAN
   5                       VLAN 5 - 802.1Q Tag 5

   Select menu option:
   ```

Related Commands

create	Creating a VLAN
delete	Deleting a VLAN
detail	Displaying Detailed VLAN Information

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gettingStarted

Using the gettingStarted Wizard for Initial Configuration

You can carry out configuration of essential items using the `gettingStarted` command on the top level menu. The configurable items that appear in the getting started wizard are duplicates of existing menu items that can also be configured separately as single line commands.

The configurable items within the getting started wizard are:

- IP Address information: IP address, Subnet Mask, Default Gateway
- Sytem Details: Switch Name, Location, Contact
- Change all user passwords

The wizard also provides you with the option to proceed with some advanced configuration options, these are:

- Change all user SNMP Community Strings
- Enter SNMP Trap destination address

To use the getting started wizard to carry out initial configuration of your Switch:

1. At the Top-level menu, enter:

   gettingStarted

   The wizard then walks you through each configurable item step-by-step.

 *Configuration changes made whilst working through the getting started wizard are only applied to the Switch at the end of the wizard when you enter* **yes** *when prompted to apply the changed parameters. It is possible to leave the wizard at any point by entering ESC - changes made up to this point will be discarded.*

Related Commands

basicConfig	Configuring basic IP information for the Switch
name	Specifying a Switch Name
location	Specifying Switch Location Details
contact	Specifying a Contact Name for the Switch
community	Specifying SNMP Community Strings
create	Specifying Trap Destination Details



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logout

Exiting the Command Line Interface

You can exit the command line interface at any time using the logout command on the top level menu.

To exit the command line interface:

1. At the Top-level menu, enter:

   logout

If there is a period of inactivity lasting longer than 30 minutes, you exit from the command line interface automatically.

After the exit, the first key that you press returns you to the login sequence.

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physicalInterface ethernet detail

Displaying Detailed Information

You can display detailed information and statistics about a single Ethernet port using the `detail` command on the ethernet menu.

The values are automatically refreshed and updated every 10 seconds. The detail screen can be changed from the default Counters display to either Differences, Rates, or Utilization, as detailed in step 3.

To display the information:

1. At the Top-level menu, enter:

   physicalInterface ethernet detail

   The following prompt is displayed:

   ```
   Select Ethernet port (unit:port,?):
   ```

2. Enter the number of the unit and port that you wish to learn more about.

   An example of the information displayed is shown below:

```
Port: 1:2   State: enabled    Mode: 100full (Auto)

Active Features: Secure Mode, BSC_Enabled


Refresh Time:10 Seconds        Sampling Time:10 Seconds

Received Stats                 Transmit Stats
Unicast Packets:    0          Unicast Packets:  21068955
Non Unicast
Packets:            0          Non Unicast
                               Packets:          3293577
Octets:             0          Octets:           1649693060
Fragments:          0          Collisions:       0
Discarded Packets:  0

Errors
Undersize:          0          Oversize:         0
CRC Error:          0          Jabbers:          0

Packet Size
Analysis
64 Octets:          22285440   256 to 511
                               Octets:           11927
65 to 127 Octets:   1872859    512 to 1023
                               Octets:           431
```

```
128 to 255 Octets:  191798      1024 to 1518 Octets:  77

Quit    Counters    Differences Rates                 Utilization
```

3. Enter **Q** to quit and return to the previous menu. Or you can enter **C**: to display the Counter values for all the fields, **D**: to display the differences, **R**: to display the rates, or **U**: to display the utilization as a percentage for the port.

Related Commands

flowControl	Enabling and Disabling Flow Control
portCapabilities	Setting the Port Capabilities
portMode	Specifying the Speed and Duplex Mode
portState	Enabling and Disabling Ports
smartAutosense	Enabling/Disabling Smart Autosensing
summary	Displaying Port Summary Information

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physicalInterface ethernet flowControl

Enabling and Disabling Flow Control

IEEE 802.3x flow control minimizes packet loss during periods of congestion on ports that are operating in full duplex.

You can enable or disable IEEE 802.3x flow control for Ethernet ports on the Switch using the `flowControl` command on the Ethernet menu.

If auto-negotiation is disabled, then the `flowControl` command specifies the flow control of the port. If auto-negotiation is enabled, the flowControl value you specify is used as the default value when auto-negotiation is disabled or fails.Therefore if auto-negotiation is enabled, the `flowControl` command does not show the current flow control of the port.

 *During auto-negotiation flow control is determined by the advertised pause bits of the ports at both ends of the link. The advertised pause bits may be set or cleared using the flowControl parameter in the* portCapabilities *command.*

To enable or disable IEEE 802.3x flow control for a port:

1. At the Top-level menu, enter:

   `physicalInterface ethernet flowControl`

   The following prompt is displayed:

   ```
   Select Ethernet port (unit:port...,?):
   ```

2. Enter the number of the unit and port to have IEEE 802.3x flow control enabled or disabled, or enter **`all`** for all the ports.

   The following prompt is displayed:

   ```
   Enter new value (on,off) [on]:
   ```

3. Enter **`on`** or **`off`**.

   If you are enabling or disabling IEEE 802.3x flow control for all the ports, only the ports which can support IEEE 802.3x flow control are changed.

   If you are configuring the 10/100/1000 ports of the unit the `txOn` and `RxOn` modes will also be offered.

 *For IEEE 802.3x flow control to operate correctly, it must be enabled at both ends of the link.*

Related Commands

detail	Displaying Detailed Information

portCapabilities	Setting the Port Capabilities
portMode	Specifying the Speed and Duplex Mode
portState	Enabling and Disabling Ports
smartAutosense	Enabling/Disabling Smart Autosensing
summary	Displaying Port Summary Information

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bridge addressDatabase agingTime

Setting the Bridge Address Database Aging Time

You can set the bridge aging time using the `agingTime` command on the addressDatabase menu.

The aging time is the time-out period in seconds for aging out dynamically learned forwarding information on the Switch.

To set the address aging time:

1. At the Top-level menu, enter:

   `bridge addressDatabase agingTime`

   The following prompt is displayed:

   ```
   Enter new value in seconds (60-825,off) [300]:
   ```

2. Enter the new value for the aging timeout period. If you select `off`, aging will be turned off.

Related Commands

add	Adding a Statically Configured Address to an Address Forwarding Database
find	Finding a MAC Address
remove	Removing a MAC Address from a Port
summary	Displaying MAC Addresses for a Port

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physicalInterface ethernet portMode

Specifying the Speed, Duplex, and Autonegotiation Mode

You can specify the speed, duplex, and autonegotiation mode of Ethernet ports on the Switch using the `portMode` command on the Ethernet menu.

To specify the speed, duplex, and autonegotiation mode of a port:

1. At the Top-level menu, enter:

   `physicalInterface ethernet portMode`

   The following prompt is displayed:

   ```
   Select Ethernet port (unit:port...,?):
   ```

2. Enter the number of the unit and port to have its mode specified.

   The following prompt is displayed:

   ```
   Enter auto-negotiation mode (enable,disable)[enable]:
   ```

3. Enter **`enable`** to make the selected port autonegotiate or **`disable`** to manually set the speed and duplex of the port

   If you are specifying the speed and duplex mode of more than one ports, only the ports which can support the new speed and duplex mode are changed.

   ⚠ ***CAUTION:*** *To communicate without errors, both ends of a link must use the same duplex mode.*

   - If you entered **`enable`**, you will be prompted to enter the fallback port mode settings. These are the settings that the port will adopt if autonegotiation fails. The following prompt will be displayed, showing available options and currently selected value:

     ```
     Enter fallback port mode
     (10half,10full,100half,100full)[100half]:
     ```

   - If you entered **`disable`**, you will be prompted to enter the port mode settings (that is, the fixed speed/duplex settings) supported by the port(s). The following prompt will be displayed, showing available options and currently selected value:

     ```
     Enter port mode (10half,10full,100half,100full)[100half]:
     ```

4. Enter the desired port mode/fallback port mode.

ℹ *You can enter a single line version of this command, which does not require you to wait for each prompt. For example, from the top level menu at the* `Select menu option:` *prompt, enter:* **`physicalInterface ethernet`**

portMode 1:1 enable 100half

Related Commands

detail	Displaying Detailed Information
flowControl	Enabling and Disabling Flow Control
portCapabilities	Setting the Port Capabilities
portState	Enabling and Disabling Ports
smartAutosense	Enabling/Disabling Smart Autosensing
summary	Displaying Port Summary Information

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physicalInterface ethernet portState

Enabling and Disabling Ports

You can enable and disable Ethernet ports on the Switch using the `portState` command on the Ethernet menu.

 *By default, all ports on the Switch are enabled.*

To enable or disable a port:

1. At the Top-level menu, enter:

   `physicalInterface ethernet portState`

   The following prompt is displayed:

   ```
   Select Ethernet port (unit:port...,?):
   ```

2. Enter the number of the unit and port to be enabled or disabled.

   The following prompt is displayed:

   ```
   Enter new value (enable,disable) [enable]:
   ```

3. Enter **`enable`** or **`disable`**.

Related Commands

detail	Displaying Detailed Information
flowControl	Enabling and Disabling Flow Control
portCapabilities	Setting the Port Capabilities
portMode	Specifying the Speed and Duplex Mode
smartAutosense	Enabling/Disabling Smart Autosensing
summary	Displaying Port Summary Information



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physicalInterface ethernet smartAutosense

Enabling/Disabling Smart Autosensing

Smart autosensing allows auto-negotiating multi-speed ports, such as 10/100 Mbps or 10/100/1000 Mbps, to monitor and detect errors in the physical interconnection to another port and react accordingly. For example, smart autosensing can detect network problems, such as a high error rate, or a 1000 Mbps link that fails to establish, or a poor quality cable. If a 10/100/1000 Mbps port is connected to a 10/100 Mbps port, then autosensing tunes the link to 100 Mbps provided that the error rate is not high at this speed.

An SNMP Trap can be sent every time a port is down-rated to a lower speed.

 *Smart Autosense will not operate on links that do not support auto-negotiation, or on links where one end is at a fixed speed.*

 *GBIC and SFP ports only support 1000 Mbps communication and are unaffected by the* `smartAutosense` *command.*

You can enable or disable smart autosensing on the Switch using the `smartAutosense` command on the Ethernet menu.

To enable or disable the smart autosensing:

1. At the Top-level menu, enter:

   `physicalInterface ethernet smartAutosense`

   The following prompt is displayed:

   `Enter new value (enable,disable) [enable]:`

2. Enter **`enable`** or **`disable`**.

Related Commands

detail	Displaying Detailed Information
flowControl	Enabling and Disabling Flow Control
portCapabilities	Setting the Port Capabilities
portMode	Specifying the Speed and Duplex Mode
portState	Enabling and Disabling Ports
summary	Displaying Port Summary Information



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Command Line Interface

physicalInterface ethernet summary

Displaying Port Summary Information

You can display summary information about Ethernet ports on the Switch using the `summary` command on the Ethernet menu.

The values are automatically refreshed and updated every 10 seconds and the values displayed are taken over a sampling time of 10 seconds.. The summary screen can be changed from the default `Counters` display to `Differences` as detailed in step 3.

The display is refreshed and updated every 10 seconds.

To display the port summary information:

1. At the Top-level menu, enter:

   `physicalInterface ethernet summary`

   The following prompt is displayed:

   ```
   Select Ethernet port (unit:port...,all,?):
   ```

2. Enter the unit and port number, or enter **`all`** for all the ports.

   The port summary information for the port(s) is displayed.

   An example of the port summary information (ports **`1:1-1:7`**) is shown below:

   ```
   Refresh Time: 10 Seconds          Sampling Time: 10 Seconds


   Port   State     Mode             Rx Packets   Rx Octets    Errors
   1:1    enabled   100full (Auto)   163542       65439864     4
   1:2    disabled  0                0            0            0
   1:3    enabled   100full (Auto)   639263       83636219     4
   1:4    enabled   100full (Auto)   645232       23142514     0
   1:5    enabled   100full (Auto)   163542       65439864     3
   1:6    enabled   100full (Auto)   163542       65439864     3
   1:7    enabled   100full (Auto)   163542       83636219     0

   Quit   Counters  Differences                   Next
   ```

3. Enter **`Q`** to quit and return to the previous menu. Or you can enter **`C`**: to display the Counter values for the ports (default display), or **`D`**: to display the differences. Enter **`N`** to display the next page and **`P`** to display the previous page of information.

Related Commands

detail	Displaying Detailed Information
flowControl	Enabling and Disabling Flow Control
portCapabilities	Setting the Port Capabilities

portMode	Specifying the Speed and Duplex Mode
portState	Enabling and Disabling Ports
smartAutosense	Enabling/Disabling Smart Autosensing

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protocol ip basicConfig

Basic IP Management Configuration

Your Switch has automatic IP configuration enabled by default. That is, it will automatically be allocated IP information via either a DHCP server, a BOOTP server, or auto-IP. You can use the `basicConfig` command on the IP menu to view automatically allocated IP information via the IP information summary that this command displays.

For detailed information on how the automatic IP configuration feature is operates, please refer to the Implementation Guide that accompanies your Switch.

Alternatively, you can use the `basicConfig` command on the IP menu if you wish to manually enter IP information. This command allows you to manually configure the IP address, subnet mask, and the default gateway IP address.

To manually configure basic IP management:

1. At the Top-level menu, enter:

   `protocol ip basicConfig`

   The following prompt is displayed, allowing you to select which method of IP configuration you wish to use for the Switch:

   ```
   Enter configuration method (auto,manual,none)[auto]:
   ```

2. Enter your required configuration option. If you select `none` no further options are displayed. If you select `manual`, the following prompt is displayed:

   ```
   Enter IP address [xxx.xxx.xxx.xxx]:
   ```

3. Enter a valid IP address.

   The following prompt is displayed, allowing you to enter a subnet mask for the Switch:

   ```
   Enter subnet mask [255.255.255.0]
   ```

4. Enter a subnet mask, if required.

   The following prompt is displayed, allowing you to enter a default gateway IP address for the Switch:

   ```
   Enter gateway IP address [xxx.xxx.xxx.xxx]:
   ```

5. Enter a valid gateway IP address, if required.

   A summary of the IP management information is displayed as shown in the example below.

```
IP address:            xxx.xxx.xxx.xxx
Subnet mask:           255.255.255.0
Gateway IP address:    xxx.xxx.xxx.xxx
```

Related Commands

initializeConfig	Resetting IP Information to Factory Defaults
ping	Pinging Other Devices

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protocol ip initializeConfig

Resetting IP Information to Factory Defaults

You can reset all IP information (including SLIP) to factory defaults using the `initializeConfig` command on the IP menu.

 *The Switch is not reset and BootP is not initiated.*

To reset IP information to factory defaults:

1. At the Top-level menu, enter:

   `protocol ip initializeConfig`

   The following prompt is displayed, allowing you to reset the IP address for the Switch:

   ```
   WARNING: This change will lock out all SNMP, Telnet and Web
   management access.
   Do you wish to continue (yes,no)[no]:
   ```

2. Enter `yes` to reset all IP information.

Related Commands

basicConfig	Basic IP Management Configuration
ping	Pinging Other Devices

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protocol ip interface modify

Modifying IP Interface Information

You can modify IP interface information using the `modify` command on the Interface menu.

To modify IP interface information:

1. At the Top-level menu, enter:

   `protocol ip interface modify`

   The following prompt is displayed, allowing you to select the IP interface:

   ```
   Select IP interface [1,2]:
   ```

2. Enter the number of the IP interface.

   The following prompt is displayed, allowing you to select which method of IP configuration you wish to use for the Switch:

   ```
   Enter configuration method [auto,manual,none]:
   ```

3. Enter your required configuration option. If you select `none` no further options are displayed. If you select `manual`, the following prompt is displayed, allowing you to enter an IP address for the interface:

   ```
   Enter IP address [0.0.0.0]:
   ```

4. Enter a valid IP address.

   The following prompt is displayed, allowing you to enter a subnet mask for the interface:

   ```
   Enter subnet mask [255.255.255.0]
   ```

5. Enter a subnet mask, if required.

   The following prompt is displayed, allowing you to enter a VLAN ID for the Switch:

   ```
   Enter VLAN ID (1)[1]:
   ```

6. Enter a VLAN ID.

Related Commands

summary	Displaying IP Information



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protocol ip interface summary

Displaying IP Information

You can display IP information for the current unit using the summary command on the Interface menu.

To display the IP information:

1. At the Top-level menu, enter:

   protocol ip interface summary

   The following prompt is displayed:

   ```
   Select IP interfaces (1-2,all)[all]:
   ```

2. Enter the number of the IP interface.

   The IP information for the Switch is displayed.

An example of the IP information is shown below:

Index	Type	IP address	Subnet mask	State	VLAN ID
1	Network	196.168.100.1	255.255.255.0	Up	1
2	SLIP	196.168.101.1	255.255.255.0	Up	n/a

Related Commands

modify	Modifying IP Interface Information

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protocol ip ping

Pinging Other Devices

The PING feature allows you to send out a PING request to test whether devices on an IP network are accessible and functioning correctly. This feature is useful for testing that the unit is installed and set up correctly, and that your network connections are working.

You can PING other devices on your network using the `ping` command on the IP menu.

To PING a device:

1. At the top-level menu, enter:

   `protocol ip ping`

   The following prompt is displayed:

   `Enter destination IP address:`

2. Enter the IP address of the device that you want to PING.

   The unit sends a single PING request to the specified device and a message similar to the following is displayed:

   `Starting ping, resolution of displayed time is 10 milli-seconds`

- If the device is accessible and functioning correctly, a message similar to the following is displayed:

  `Response from 191.128.40.121: Time-To-Live is 29 time=10ms`

- If the device is not accessible, or is not functioning correctly, a message similar to the following is displayed:

  `No answer from 191.128.40.121`

Related Commands

basicConfig	Basic IP Management Configuration
initializeConfig	Resetting IP Information to Factory Defaults











protocol ip route default

Defining the Default Route

You can define the default route on the Switch using the `default` command on the route menu.

To configure the default route:

1. At the Top-level menu, enter:

   `protocol ip route default`

   The following prompt is displayed, allowing you to enter a default gateway IP address for the Switch:

   ```
   Enter gateway IP address [161.71.53.20]:
   ```

2. Enter a valid gateway IP address, if required.

Related Commands

nodefault	Removing the Default Route
summary	Displaying IP Route Summary



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protocol ip route noDefault

Removing the Default Route

You can remove the default route, using the `noDefault` command on the route menu.

To remove the default route:

1. At the Top-level menu, enter:

   `protocol ip route noDefault`

2. The following prompt is displayed if there is no default route configured:

   `No items to remove.`

Related Commands

default	Defining the Default Route
summary	Displaying IP Route Summary



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protocol ip route summary

Displaying IP Route Summary

To display information about IP routes:

1. At the Top-level menu, enter:

   protocol ip route summary

   The IP route information for the switch is displayed.

An example of the IP route information is shown below:

```
Destination   Subnet Mask   Metric        Gateway       Status
-------------------------------------------------------------------------------
Default Route --            --            196.168.100.1 Static

Select menu option
```

Related Commands

default	Defining the Default Route
nodefault	Removing the Default Route

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security device access modify

Modifying Access Rights

You can modify the access rights for the access levels on the unit using the `modify` command on the Access menu.

To modify the access rights for the unit:

1. From the Top-level menu, enter:

   `security device access modify`

   The following prompt is displayed:

   ```
   Enter access level (monitor,manager,security):
   ```

2. Enter the access level to be modified.

   The following prompt is displayed:

   ```
   Enter new value for SNMP (enable,disable) [enable]:
   ```

3. Enter **`enable`** if the access level allows SNMP management, or **`disable`** if it does not.

   The following prompt is displayed:

   ```
   Enter new value for console (enable,disable) [enable]:
   ```

4. Enter **`enable`** if the access level allows management through a console port of the unit, or **`disable`** if it does not.

   The following prompt is displayed:

   ```
   Enter new value for telnet (enable,disable) [enable]:
   ```

5. Enter **`enable`** if the access level allows telnet management, or **`disable`** if it does not.

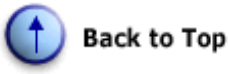
   The following prompt is displayed:

   ```
   Enter new value for web (enable,disable) [enable]:
   ```

6. Enter **`enable`** if the access level allows web management, or **`disable`** if it does not.

Disabling access will not terminate any existing console, telnet, or web sessions — however, it does immediately stop any SNMP traffic for all users on that access level.

Related Commands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security device access summary

Displaying Access Rights

You can display a summary of the access rights for all access levels on the unit using the summary command on the Access menu.

To display the access rights for the unit:

- From the Top-level menu, enter:

  security device access summary

The access rights are displayed.

An example of the access rights information is shown below:

Access Level	SNMP	Console	Telnet	Web
monitor	enable	enable	enable	enable
manager	enable	enable	enable	enable
security	enable	enable	enable	enable

Related Commands

modify	Modifying Access Rights

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security device user create

Defining a New User

You can define a new user for the unit using the `create` command on the user menu.

To define a new user for the unit:

1. From the Top-level menu, enter:

   `security device user create`

   The following prompt is displayed:

   `Enter a new user name:`

2. Enter a name for the new user.

   The following prompt is displayed:

   `Enter the access level (monitor,manager,security) [security]:`

3. Enter an access level for the new user.

   The following prompt is displayed:

   `Enter the password:`

4. Enter a password for the new user.

   The following prompt is displayed:

   `Re-enter the password:`

5. Enter the password for the new user again.

   The following prompt is displayed:

   `Enter the community string [<user>]:`

6. Enter a community string for the new user.

Related Commands

delete	Deleting User Details
modify	Modifying User Details
pwdRecover	Enabling/Disabling Password Recovery
summary	Displaying User Details



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security device user delete

Deleting User Details

You can delete user details from the unit using the `delete` command on the user menu.

To remove user details from the unit:

1. From the Top-level menu, enter:

   `security device user delete`

   The following prompt is displayed:

   `Enter the user name (<users>,all):`

2. Enter the name of the user that is to have its details removed, or enter **`all`** to remove the details of all users (except default users).

Related Commands

create	Defining a New User
modify	Modifying User Details
pwdRecover	Enabling/Disabling Password Recovery
summary	Displaying User Details



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security device user modify

Modifying User Details

You can modify user details for the unit using the `modify` command on the User menu.



The user's access level cannot be modified — to change access levels you need to remove the user and define a new one with the same name.

To modify user details for the unit:

1. From the Top-level menu, enter:

   `security device user modify`

   The following prompt is displayed:

   `Enter the user name (admin,manager,monitor):`

2. Enter the name of the user to be modified.

   The following prompt is displayed:

   `Enter the password:`

3. Enter a password for the user.

   The following prompt is displayed:

   `Re-enter the password:`

4. Enter the password for the user again.

   The following prompt is displayed:

   `Enter the community string [<user>]:`

5. Enter a community string for the user.

Related Commands

create	Defining a New User
delete	Deleting User Details
pwdRecover	Enabling/Disabling Password Recovery
summary	Displaying User Details



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security device user pwdRecover

Enabling/Disabling Password Recovery

You can enable or disable password recovery for the unit using the `pwdRecover` command on the user menu.

 ***CAUTION:*** *If you disable Password Recovery and subsequently forget the password for the "admin" user account, you will have to return the Switch to 3Com.*

To define a new user for the unit:

1. From the Top-level menu, enter:

   `security device user pwdRecover`

   The following example prompt is displayed:

   ```
   The Password Recovery feature is enabled.
   Enter new value (enable,disable) [enable]:
   ```

 *Click here for further information about performing password recovery.*

Related Commands

create	Creating User Details
delete	Deleting User Details
modify	Modifying User Details
summary	Displaying User Details



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security device user summary

Displaying User Details

You can display the user details for the unit using the `display` command on the User menu.

To display the user details for the unit:

- From the Top-level menu, enter:

  `security device user summary`

A summary of the user details for the unit is displayed as shown in the example below.

User Name	Access Level	Community String
admin	security	private
manager	manager	manager
monitor	monitor	public

Related Commands

create	Defining a New User
delete	Deleting User Details
modify	Modifying User Details
pwdRecover	Enabling/Disabling Password Recovery

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security network access detail

Displaying Port User Information

You can view summary information about port users on the Switch using the `detail` command on the access menu.

To display summary information on port users:

1. At the top-level menu, enter:

   `security network access detail`

   The following prompt is displayed:

   `Select user ports (unit:port...,?):`

2. Enter the unit and port number for which you wish to display summary information.

   A summary is displayed as shown in the example below.

```
Port number:                1:2
Mode:                       radaElseNetworkLogin
Action on RADIUS
failure:                    maintainSecurity
Authorized Addresses:       3
Session time:               1 Hours 12 Minutes 45 Seconds
Authentication method:      remote
Termination cause:          connected
Bytes received:             1
Bytes transmitted:          2
Frames received:            1
Frames transmitted:         2
```



The details displayed by the **`security network access detail`** *command will vary depending on the security mode active on the port.*

Related Commands

portSecurity	Enabling and Disabling Port Security
summary	Displaying Port Security Settings
systemMode	Enabling and Disabling Network Security
systemSummary	Displaying Summary Information



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security network access portSecurity

Enabling and Disabling Port Security

You can enable and disable security and set the mode of operation on a port using the `portSecurity` command on the access menu.

To enable or disable port security and set the mode of operation:

1. At the top-level menu, enter:

   `security network access portSecurity`

   The following prompt is displayed:

   ```
   Select user ports (unit:port...,?):
   ```

2. Enter the unit and port number on which you wish to enable or disable port security.

   The following prompt is displayed:

   ```
   Enter mode of operation (?)[noSecurity]:
   ```

3. Enter the mode of operation that you wish the port to use.

   - **noSecurity** (default)
     Port security is disabled and all network traffic is forwarded through the port without any restrictions.

   - **Learning Off**
     This allows the secure addresses to be manually configured against the port. The secure addresses can also be manually pre-configured into the 'No Security' mode before entering a different mode of operation.

     When a port which has been configured to operate in the 'Automatic Learning' mode and it learns the configured number of addresses then the port security mode automatically switches to the 'Learning off' mode.

   - **continuallyLearn**
     MAC addresses are learned continuously by the port until the number of authorised addresses specified is reached. When this number is exceeded the first address that was learned by the port is deleted, allowing a new address to be learned.

   - **autoLearn**
     MAC addresses are learned continuously by the port until the number of authorised addresses specified is reached. When this number is exceeded the port automatically stops learning addresses and Disconnect Unauthorized Device (DUD) is enabled on the port.

     When a port which has been configured to operate in the

'Automatic Learning' mode and it learns the configured number of addresses then the port security mode automatically switches to the 'Learning off' mode.

- **standardNetworkLogin**
  When the user has been successfully authorized, all network traffic is forwarded through the port without any restrictions.

- **secureNetworkLogin**
  When the user has been successfully authorized, only network traffic that is received from the authorized client device is forwarded through the port. The source MAC address in received packets is used to determine this; all traffic from other network devices is filtered. Disconnect Unauthorized Device (DUD) is enabled on the port.

- **Rada (Basic Radius Authenticated Device Access)**
  Basic Radius Authenticated Device Access (RADA) provides a means of disabling access, or changing the port VLAN assignment based purely on central authentication of an end station's MAC address. In practice this can be used to provide basic RADIUS-based security for hosts which do not have 802.1X clients installed. Another application would be to isolate individual PCs that have been identified to contain viruses. This mode should not be considered a totally secure mode, as it may be bypassed by MAC-address spoofing.

- **Rada Else Network Login (Secure Network Login with RADA Override)**
  This mode provides the secure login capability of 802.1X, and also offers an override capability based on MAC address. This mode is intended for use where 802.1X Network Login is the normal access mechanism, but a means of isolating hosts is still required – for example client virus isolation.

  This mode is intended to compliment 802.1X network login, and can be used to authorise host access to any network resource. It can only be considered secure if the MAC-based authentication is configured to deny access to all secure network resources. It is intended to prevent access to secure network resources if a particular edge device is authorized by RADA (e.g. if a PC is known to be infected by a virus) and placed on a seperate ‘safe’ VLAN.

- **Rada Or Network Login (Mixed Secure Network Login and Rada-based Network Access)**
  This mode provides for both 802.1X and RADA authentication to be operated in parallel. It provides a migration path where a single port may be shared by a number of devices at different times, only some of which support 802.1X. It also allows a single port configuration to be used throughout a switch, regardless of the type of device that is to be connected. For example this mode could be used in education, where a large and varied range of “student” PCs and devices can use Rada authentication, but permanent staff require a secure log-in to enhanced services.

  This mode can only be considered totally secure if the Rada–based authentication is configured to deny access to secure network resources, and where 802.1X Network Login does not share a port (i.e. not via a hub).

4. Enter the following information, depending on what you entered in step 3:

- If you enter **noSecurity** the following prompt is displayed:

  ```
  The number of authorized addresses is not used by this port,
  but is
  used to determine the possible number of authorized addresses
  for the other ports on the unit.
  Enter the number of authorized addresses (0-107)[2]:
  ```

  Enter the number of authorized addresses

- If you enter **continuallyLearn** or **autoLearn**, the following prompt is displayed:

  ```
  Enter the number of authorized addresses (0-233)[1]:
  ```

  Enter the number of authorized addresses.

  - If you entered **continuallylearn**, no further prompts are displayed.
  - If you entered **learningoff** or **autolearn**, the following prompt is displayed:

    ```
    Enter Disconnect Unauthorized Device mode (?)[noAction]:
    ```

    Enter **noAction**, **permanentlyDisable** or **temporaryDisable**.

    If you entered **noAction**, the port is not disabled and data from authorized client devices will continue to be transmitted, whilst data from unauthorized client devices will be filtered.

    If you entered **permanentlyDisable**, the port is disabled for all devices.

    If you entered **temporaryDisable**, the port is disabled for 20 seconds. When the time period has expired the port is re-enabled; if the port is set to one of the Network Login security modes, the client device is authenticated again

- If you entered **standardNetworkLogin** or **secureNetworkLogin**, the following warning is displayed:

  ```
  WARNING: RADIUS is not configured, RADIUS authentication will
  fail.

  Do you wish to continue (yes,no) [no]:
  ```

  Enter **yes** or **no**

  The following prompt is displayed:

  Enter `Disconnect Unauthorized Device mode (?)[noAction]:`

  Enter **noAction**, **permanentlyDisable** or **temporaryDisable**.

The following prompt is displayed:

```
Source of port VLAN membership (switch,RADIUS,?)[RADIUS]:
```

Enter **switch** or **RADIUS**



If you select `standardNetworkLogin`, `secureNetworkLogin`, `rada`, `radaElseNetworkLogin` or `radaOrNetworkLogin` *and you have not already configured your Switch for RADIUS authentication. Please use the* setup *command.*

- If you entered **rada, radaElseNetworkLogin**, **radaOrNetworkLogin**, **secureNetwork**, or **standardNetworkLogin** the following warning is displayed:

```
WARNING: RADIUS is not configured, RADIUS authentication will
fail.
```

```
Do you wish to continue (yes,no) [yes]:
```

Enter **yes** or **no**

The following prompt is displayed:

```
Enter action on RADIUS server failure(?)[maintainSecurity]:
```

Enter **maintainSecurity** , or **localAuthentication**

The following prompt is displayed:

Enter the number of authorized addresses (1-184)[1]:

Enter the number of authorized address.

The following prompt is displayed:

```
Enter Unauthorized Device action (?)[blockMacAddress]:
```

Enter **allowDefaultAccess** or **blockMacAddress**.

The following prompt is displayed:

```
Source of port VLAN membership (switch,RADIUS,?)[RADIUS]:
```

Enter **switch** or **RADIUS**

Related Commands

detail	Displaying Port User Information
summary	Displaying Port Security Settings
systemMode	Enabling and Disabling Network Security
systemSummary	Displaying Summary Information



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security network access secureAddresses add

Adding a Secure Address

You can add a Secure Address using the `add` command on the secureAddresses menu.

To add a Secure MAC Address:

1. From the Top-level menu, enter:

   `security network access secureAddresses add`

   The following prompt is displayed:

   ```
   Select user port (unit:port,?):
   ```

2. Enter the user port number on which you wish to add a secure address or enter "?" to see a list of ports available.

   After selecting a port number the following prompt is displayed:

   ```
   Enter MAC address:
   ```

3. Enter the MAC address that you want the port to use. The address must be entered in the form of hyphen separated bytes, for example: 08-00-02-06-03-bd.

Related Commands

remove	Removing a Secure Address
summary	Displaying a Secure Address



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security network access secureAddresses remove

Removing a Secure Address

You can remove a Secure MAC Address using the `remove` command on the secureAddresses menu.

To remove a Secure MAC Address:

1. From the Top-level menu, enter:

   `security network access secureAddresses remove`

   The following prompt is displayed:

   ```
   Select user port (unit:port,?):
   ```

2. Enter the user port number on which you wish to remove a secure address.

   The following prompt is displayed:

   ```
   Enter MAC address:
   ```

3. Enter the MAC address that you want to remove from the port. The address must be entered in the form of hyphen separated bytes, for example: 08-00-02-06-03-bd.

Related Commands

add	Adding a Secure Address
summary	Displaying a Secure Address

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security network access secureAddresses summary

Displaying Secure Address Information

You can view Secure MAC Address information on specified ports using the `summary` command on the secureAddresses menu.

To display Secure MAC Address information:

1. From the Top-level menu, enter:

   `security network access secureAddresses summary`

   The following prompt is displayed:

   ```
   Select user ports (unit:port…,all,?):
   ```

2. Enter a unit and specific port number to view the secure address or enter **`all`** to view a list of all secure addresses.

   A summary is displayed as shown in the example below:

Unit	Port	Mode	DUD mode	MAC Address
1	3	noSecurity	noAction	00-22-33-44-55-xx
1	5	noSecurity	noAction	00-22-33-44-66-xx
1	9	noSecurity	noAction	00-22-33-44-67-xx

Related Commands

add	Adding a Secure Address
remove	Removing a Secure Address

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Command Line Interface









security network access summary

Displaying Port Security Settings

You can view summary information about port security on the Switch using the `detail` command on the access menu.

To display summary information on port security:

1. At the top-level menu, enter:

   `security network access summary`

   The following prompt is displayed:

   `Select user ports (unit:port...,?):`

2. Enter the unit and port number for which you wish to display summary information.

   A summary is displayed as shown in the example below:

```
-----------------------------------------------------------------------
Port  Mode                  Max       DUD           Authorized
                          Addresses   Mode
-----------------------------------------------------------------------
1:1   noSecurity              1 (N/A) N/A                0 (N/A)
1:2   autoLearn               10      N/A                4
1:3   secureNetworkLogin      6       noAction           5
1:4   radaOrNetworkLogin      6       permanentlyDisable 1
1:5   radaElseNetworkLogin    12      allowDefaultAccess 5
1:6   rada                    80      blockMacAddress    10
```

Mode
The mode of operation that the port is using. For further information, see security network access portSecurity.

Max Addresses
The maximum number of MAC addresses that can be authorized on the port.

DUD mode
The Disconnect Unauthorized Device (DUD) mode that the port is using.

Authorized
The current number of authorized MAC addresses on the port.

Related Commands

detail	Displaying Port User Information
portSecurity	Enabling and Disabling Port Security
systemMode	Enabling and Disabling Network Security
systemSummary	Displaying Summary Information



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security network access systemMode

Enabling and Disabling Network Security

You can enable and disable network security on the Switch using the `systemMode` command on the access menu.

To enable and disable network security:

1. At the top-level menu, enter:

   `security network access systemMode`

   The following prompt is displayed:

   ```
   Enter system mode (enable,disable)[enable]:
   ```

2. Enter **`enable`** or **`disable`** to enable or disable network security on the Switch.

Related Commands

detail	Displaying Port User Information
portSecurity	Enabling and Disabling Port Security
summary	Displaying Port Security Settings
systemSummary	Displaying Summary Information

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security network access systemSummary

Displaying Security Summary Information

You can view summary information about security on the Switch using the systemMode command on the access menu.

To display summary information on system security:

- At the top-level menu, enter:

  security network access systemSummary

  The current security settings for the Switch will be displayed as shown in the example below.

```
System security mode:                                  enable
Primary RADIUS authentication server IP address:       123.45.67.81
Primary RADIUS authentication server UDP port
number:                                                1812
Secondary RADIUS authentication server IP
address:                                               123.45.67.82
Secondary RADIUS authentication server UDP port
number:                                                1812
Primary RADIUS accounting server IP address:           123.45.67.83
Primary RADIUS accounting server UDP port number:      1813
Secondary RADIUS accounting server IP address:         123.45.67.84
Secondary RADIUS accounting server UDP port
number:                                                1813
Action on accounting failure:                          reject
Maximum attempts:                                      4
Timeout (seconds):                                     2
Poll time (seconds):                                   120
Status of RADIUS authenication servers:                not configured
Status of RADIUS accounting servers:                   not configured
```

Related Commands

detail	Displaying Port User Information
portSecurity	Enabling and Disabling Port Security
summary	Displaying Port Security Settings
systemMode	Enabling and Disabling Network Security



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security radius accounting display

Displaying the RADIUS Accounting Statistics for the Switch

You can display the RADIUS accounting statistics for the Switch using the display command on the accounting menu.

These statistics can be used for monitoring and troubleshooting your system.



An error message will appear if the statistics cannot be accessed.

To display the RADIUS accounting statistics for the Switch:

- From the Top-level menu, enter:

  security radius accounting display

  A summary of the RADIUS accounting statistics for the Switch is displayed as shown in the example below.

Statistics	Primary	Secondary	Total
Accounting failures:	N/A	N/A	2
Round trip time:	4	1	N/A
Requests:	100	20	120
Responses:	99	20	119
Retransmissions:	5	1	6
Malformed responses:	1	0	1
Bad authenticators:	1	0	1
Pending requests:	1	0	1
Timeouts:	20	0	20
Unknown types:	1	0	1
Dropped packets:	1	0	1
Start requests:	98	19	117
Start responses:	98	19	117
Interim requests:	98	19	117
Interim responses:	98	19	117
Stop requests:	98	19	117
Stop responses:	98	19	117

Related Commands

setup	Using the RADIUS Configuration Wizard
accounting modify	Modifying RADIUS Accounting Configuration
authentication display	Displaying RADIUS Authentication Statistics
authentication modify	Modifying RADIUS Authentication Configuration
retries	Modifying RADIUS Retry Parameters

sharedSecret	Modifying RADIUS Security Key
radius summary	Displaying RADIUS Summary Information

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security radius accounting modify

Modifying the RADIUS Accounting Configuration

You can modify the RADIUS accounting configuration for the Switch using the `modify` command on the accounting menu.

You can configure a primary and secondary accounting server address.

To modify the RADIUS accounting configuration for the Switch:

1. From the Top-level menu, enter:

   `security radius accounting modify`

   The following prompt is displayed:

   ```
   Enter primary accounting server IP address [0.0.0.0]:
   ```

2. Enter the IP address of the RADIUS server that you wish to identify as the primary accounting server.

   The following prompt is displayed:

   ```
   Enter primary accounting server UDP port number (?)[1813]:
   ```

3. Enter the UDP port number on the primary accounting server. Valid ports are 1-65535. A value of 0 disables usage of this server.

   The following prompt is displayed:

   ```
   Enter secondary accounting server IP address [0.0.0.0]:
   ```

4. Enter the IP address of the RADIUS server that you wish to identify as the secondary accounting server.

   The following prompt is displayed:

   ```
   Enter secondary accounting server UDP port number (?)[1813]:
   ```

5. Enter the UDP port number on the secondary accounting server. Valid ports are 1-65535. A value of 0 disables usage of this server.

   The following prompt is displayed:

   ```
   Select accounting action on failure (ignore,reject) [reject]:
   ```

   This prompt allows you to determine how the Switch will respond if an accounting session cannot be started. You can enter **`ignore`** so the associated login attempt failure will be ignored and access will be granted, or you can enter **`reject`** so that the failure is treated as an authentication reject and will disallow access to that user.

Related Commands

setup	Using the RADIUS Configuration Wizard
accounting display	Modifying RADIUS Accounting Configuration
authentication display	Displaying RADIUS Authentication Statistics
authentication modify	Modifying RADIUS Authentication Configuration
retries	Modifying RADIUS Retry Parameters
sharedSecret	Modifying RADIUS Security Key
radius summary	Displaying RADIUS Summary Information

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security radius authentication display

Displaying the RADIUS Authentication Statistics for the Switch

You can display the RADIUS authentication statistics for the Switch using the display command on the authentication menu.

These statistics can be used for monitoring and troubleshooting your system.



An error message will appear if the statistics cannot be accessed.

To display the RADIUS authentication statistics for the Switch:

- From the Top-level menu, enter:

  security radius authentication display

  A summary of the RADIUS authentication statistics for the Switch is displayed as shown in the example below.

Statistics	Primary	Secondary	Total
Round trip time:	4	1	N/A
Requests:	100	20	120
Responses:	99	20	119
Retransmissions:	5	1	6
Accepts:	98	1	117
Rejects:	1	0	2
Challenges:	0	0	0
Malformed responses:	1	0	1
Bad authenticators:	1	0	1
Pending requests:	1	0	1
Timeouts:	20	0	20
Unknown types:	1	0	1
Dropped packets:	1	0	1

Related Commands

setup	Using the RADIUS Configuration Wizard
accounting display	Displaying RADIUS Accounting Statistics
accounting modify	Modifying RADIUS Accounting Configuration
authentication modify	Modifying RADIUS Authentication Configuration
retries	Modifying RADIUS Retry Parameters
sharedSecret	Modifying RADIUS Security Key
radius summary	Displaying RADIUS Summary Information



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security radius authentication modify

Modifying the RADIUS Authentication Configuration

You can modify the RADIUS authentication configuration for the Switch using the `modify` command on the authentication menu.

You can configure a primary and secondary authentication server address.

To modify the RADIUS authentication configuration for the Switch:

1. From the Top-level menu, enter:

   `security radius authentication modify`

   The following prompt is displayed:

   ```
   Enter primary authentication server IP address [0.0.0.0]:
   ```

2. Enter the IP address of the RADIUS server that you wish to identify as the primary authentication server.

   The following prompt is displayed:

   ```
   Enter primary authentication server UDP port number (?)[1813]:
   ```

3. Enter the UDP port number on the primary authentication server. Valid ports are 1-65535. A value of 0 disables usage of this server.

   The following prompt is displayed:

   ```
   Enter secondary authentication server IP address [0.0.0.0]:
   ```

4. Enter the IP address of the RADIUS server that you wish to identify as the secondary authentication server.

   The following prompt is displayed:

   ```
   Enter secondary authentication server UDP port number
   (?)[1813]:
   ```

5. Enter the UDP port number on the secondary authentication server. Valid ports are 1-65535. A value of 0 disables usage of this server.

Related Commands

setup	Using the RADIUS Configuration Wizard
accounting display	Displaying RADIUS Accounting Statistics
accounting modify	Modifying RADIUS Accounting Configuration

authentication display	Displaying RADIUS Authentication Statistics
retries	Modifying RADIUS Retry Parameters
sharedSecret	Modifying RADIUS Security Key
radius summary	Displaying RADIUS Summary Information

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security radius pollTime

Set the RADIUS failure poll time

You can modify the RADIUS poll parameters for the RADIUS server on your network using the `pollTime` command on the radius menu. Poll time specifies time (in seconds) between polls of an out-of-service radius server to detect return to service.

To modify the RADIUS poll time parameters:

1. From the Top-level menu, enter:

   `security radius pollTime`

   The following prompt is displayed:

   ```
   Enter poll time in seconds(10-3600)[120]:
   ```

2. Enter the RADIUS failure poll time.

Related Commands

setup	Using the RADIUS Configuration Wizard
accounting display	Displaying RADIUS Accounting Statistics
accounting modify	Modifying RADIUS Accounting Configuration
authentication display	Displaying RADIUS Authentication Statistics
authentication modify	Modifying RADIUS Authentication Configuration
sharedSecret	Modifying RADIUS Security Key
radius summary	Displaying RADIUS Summary Information

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security radius retries

Modifying the RADIUS Retry Parameters

You can modify the RADIUS retry parameters for all RADIUS servers on your network using the `retries` command on the radius menu.

To modify the RADIUS retry parameters:

1. From the Top-level menu, enter:

   `security radius retries`

   The following prompt is displayed:

   ```
   Enter maximum attempts (1-10) [4]:
   ```

2. Enter the maximum number of attempts that you wish your RADIUS servers to allow.

   The following prompt is displayed:

   ```
   Enter timeout value in seconds (1-10) [2]:
   ```

3. Enter the number of seconds that you wish to be the timeout value for your RADIUS servers.

Related Commands

setup	Using the RADIUS Configuration Wizard
accounting display	Displaying RADIUS Accounting Statistics
accounting modify	Modifying RADIUS Accounting Configuration
authentication display	Displaying RADIUS Authentication Statistics
authentication modify	Modifying RADIUS Authentication Configuration
sharedSecret	Modifying RADIUS Security Key
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security radius setup

Setting up your Switch as a RADIUS Client using the Setup Configuration Wizard

If you have a RADIUS server on your nework you can configure your Switch as a RADIUS client using the `setup` command on the radius menu. The Switch can then be used to carry out RADIUS authentication

The configurable items that appear in the setup configuration wizard are duplicates of existing menu items that can also be configured separately as single line commands.

For your Switch to begin RADIUS authentication once it has been setup, you need to change the authentication mode from local to RADIUS using the `systemMode` *command.*

The configurable items within the setup wizard are:

- Primary authentication server IP address and UDP port number
- Secondary authentication server IP address and UDP port number
- Shared secret
- Primary accounting server IP address and UDP port number
- Secondary accounting server IP address and UDP port number
- Accounting action on failure

To configure your Switch as a RADIUS client:

- From the Top-level menu, enter:

  `security radius setup`

  The wizard then takes you through each configurable item step-by-step.

Related Commands

accounting display	Displaying RADIUS Accounting Statistics
accounting modify	Modifying RADIUS Accounting Configuration
authentication display	Displaying RADIUS Authentication Statistics
authentication modify	Modifying RADIUS Authentication Configuration
retries	Modifying RADIUS Retry Parameters
sharedSecret	Modifying RADIUS Security Key

Displaying RADIUS Summary Information

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security radius sharedSecret

Modifying the Security Key

You can modify the security key, that is the shared secret value that the Switch and the RADIUS server use, using the `sharedSecret` command on the radius menu.

To modify the security key for the Switch:

1. From the Top-level menu, enter:

   `security radius sharedSecret`

   The following prompt is displayed:

   ```
   Enter shared secret (?):
   ```

2. Enter the existing shared secret.

   The following prompt is displayed:

   ```
   Invalid shared secret length (x).
   Length must be between 8 and 128 characters.
   Enter shared secret (?):
   ```

3. Enter the new shared secret.

   The shared secret on the Switch must exactly match the shared secret on the RADIUS server. This shared secret must not exceed 128 characters, even if the server supports a greater number of characters.

Related Commands

setup	Using the RADIUS Configuration Wizard
accounting display	Displaying RADIUS Accounting Statistics
accounting modify	Modifying RADIUS Accounting Configuration
authentication display	Displaying RADIUS Authentication Statistics
authentication modify	Modifying RADIUS Authentication Configuration
retries	Modifying RADIUS Retry Parameters
radius summary	Displaying RADIUS Summary Information



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security radius summary

Displaying the RADIUS Configuration Settings of the Switch

You can display a summary of the RADIUS configuration settings of the Switch using the summary command on the radius menu.

To display the RADIUS settings for the Switch:

- From the Top-level menu, enter:

  security radius summary

The current RADIUS configuration settings for the Switch, including the device authentication mode will be displayed as shown in the example below.

Primary RADIUS authentication server IP address:	123.45.678.1
Primary RADIUS authentication server UDP port number:	1812
Secondary RADIUS authentication server IP address:	123.45.678.2
Secondary RADIUS authentication server UDP port number:	1812
Primary RADIUS accounting server IP address:	123.45.678.3
Primary RADIUS accounting server UDP port number:	1813
Secondary RADIUS accounting server IP address:	123.45.678.4
Secondary RADIUS accounting server UDP port number:	1813
Action on accounting failure:	reject
Maximum attempts:	4
Timeout (seconds):	2
Poll time (seconds):	170
Status of RADIUS authentication servers	notConfigured
Status of RADIUS accounting servers	notConfigured

Related Commands

setup	Using the RADIUS Configuration Wizard
accounting display	Displaying RADIUS Accounting Statistics
accounting modify	Modifying RADIUS Accounting Configuration
authentication display	Displaying RADIUS Authentication Statistics
authentication modify	Modifying RADIUS Authentication Configuration
retries	Modifying RADIUS Retry Parameters

sharedSecret Modifying RADIUS Security Key

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system backupConfig restore

Restoring a Configuration

You can restore the configuration of your Switch from a remote file using the Restore command.

If the Switch is part of a stack, it is the configuration of the stack that is restored. You cannot restore the configuration of a single unit in the stack from the saved file; you would restore the configuration of the entire stack.

All configuration information that can be set using the Switch's Command Line Interface is saved and restored. Sensitive information such as user passwords and the IP address configuration is not saved. You can edit the text file and add this information if you wish before restoring the configuration.

You must have either the *manager* or *security* management access level to be able to save and restore the Switch configuration. If a manager level user attempts to restore a configuration that was saved by a security level user, the restore operation will fail because the security level commands are not available to the manager. A manager level user can only save a configuration that contains the commands that are available to that user level.

The configuration can only be restored onto a device or stack which has the same physical connections and configuration, including expansion modules, as when the configuration was initially saved. The restore operation will be unsuccessful if the physical configuration of the device or stack is different.



The Switch unit must be reset to its factory default settings before you can restore a configuration onto it. You can reset the Switch using the **system control initialize** *command.*



The configuration of the Switch must only be restored or saved by a single user at a time. The **system summary** *CLI command displays the progress of restore and save operations to all other users.*

To restore the configuration:

1. At the top-level menu, enter:

   system backupConfig restore

   The following prompt is displayed:

   ```
   WARNING: Before proceeding with this command please ensure the
   device has been reset to factory defaults.

   TFTP Server Address [0.0.0.0]:
   ```

2. Enter the IP address of the TFTP server that you want to restore the configuration from.

   The following prompt is displayed:

```
File Name []:
```

3. Enter the name of the configuration file that you want to restore.

   The following prompt is displayed:

   ```
   The following text is stored in the file:

   [system description]
   [user notes]

   Do you wish to continue (yes,no)[no]:
   ```

4. Enter **yes** to continue restoring the configuration.

   The following prompt is displayed:

   ```
   Any interruption during restore may cause an inconsistent
   configuration. In this event, repeat the restore command. For
   more information, refer to the documentation supplied with
   your device.

   Number of bytes restored up so far: --- bytes.
   ```

5. When the configuration has been saved, the following prompt is displayed:

   ```
   Restore of system configuration successful.
   ```

Related Operations

Save	Saves the current configuration of the stack to a file.

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system backupConfig Save

Saving the Configuration

You can save the configuration of your Switch as a file on a remote server using the Save command. The configuration information is stored in an editable ASCII text file as a set of Command Line Interface (CLI) commands.

If the Switch is part of a stack, it is the configuration of the stack that is saved. You cannot save the configuration of a single unit in the stack; you must save the configuration of the entire stack.

All configuration information that can be set using the Switch's Command Line Interface is saved and restored. Sensitive information such as user passwords and the IP address configuration is not saved. You can edit the text file and add this information if you wish before restoring the configuration.

You must have either the *manager* or *security* management access level to be able to save and restore the Switch configuration. If a manager level user attempts to restore a configuration that was saved by a security level user, the restore operation will fail because the security level commands are not available to the manager. A manager level user can only save a configuration that contains the commands that are available to that user level.



The configuration of the Switch must only be restored or saved by a single user at a time. The **system summary** *CLI command displays the progress of restore and save operations to all other users.*

To save the configuration:

1. At the top-level menu, enter:

   system backupConfig save

   The following prompt is displayed:

   ```
   WARNING: This command will not save any user and password
   information, SNMPv3 keys or engine-identity, Ssh keys or the
   Ssh authentication method.

   Enter TFTP Server Address [0.0.0.0]:
   ```

2. Enter the IP address of the TFTP server that you want to save the configuration onto.

   The following prompt is displayed:

   ```
   Enter File Name []:
   ```

3. Enter a name for the saved configuration file.

   The following prompt is displayed:

   ```
   Backing up: 3Com SuperStack 3
   ```

```
Enter User notes:
```

4. Enter any notes for the saved configuration file.

   The following prompt is displayed:

   ```
   Any interruption during save may cause an incomplete
   configuration file. In this event, repeat the save command.
   For more information, refer to the documentation supplied with
   your device.

   Number of bytes saved so far: --- bytes.
   ```

5. When the configuration has been saved, the following prompt is displayed:

   ```
   Save of system configuration successful.
   ```

Related Operations

Restore	Restores the configuration of the stack from a file.

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system control initialize

Initializing the Unit

You can initialize the unit using the `initialize` command on the System menu.

CAUTION: *Use great care when initializing the unit — it removes all configuration information (excluding IP configuration information), including password and security information.*

CAUTION: *When initializing the unit, network loops may occur if you have set up aggregated links, VLANs, or the Spanning Tree Protocol. Before initializing the unit, ensure you have disconnected the cabling for all standby or duplicate links.*

To initialize the unit:

1. At the top-level menu, enter:

   `system control initialize`

   The following prompt is displayed:

   ```
   WARNING: This command initializes the system to factory
   defaults (excluding Management IP configuration) and causes a
   reset.
   Do you wish to continue (yes,no) [no]:
   ```

2. Enter **`y`** if you wish to proceed, or **`n`** if you want to stop the initialization.

What Happens During an Initialization?

Initializing the unit returns it to its default (factory) settings. The only information that does not return to its default setting is the IP and SLIP information, which is retained to ensure that you can continue managing the unit. You may want to initialize the unit if it has previously been used in a different part of your network, and its settings are incorrect for the new environment.

The unit takes about 10 seconds to initialize. While the unit is initializing, you cannot communicate with it.

Related Commands

reboot	Resetting the Unit
softwareUpgrade	Upgrading Management Software



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system control reboot

Resetting the Unit

You can reset the unit using the `reset` command on the System menu.

CAUTION: *Resetting the unit causes some of the traffic being transmitted over the network to be lost. It also clears all Learned entries from the Switch Database.*

To reset the unit:

1. At the Top-level menu, enter:

   `system control reboot`

2. The following prompt is displayed:

   ```
   Are you sure you want to reboot the system (yes,no) [no]:
   ```

   Enter **yes** if you wish to proceed, or **no** if you want to stop the reset.

What Happens During a Reset?

Resetting the unit simulates a power-off/on cycle. You may want to do this if you need to:

- Remove all the Learned entries in the Switch Database (SDB).
- Reset the statistic counters of the unit.

The unit takes about 10 seconds to reset. While the unit is resetting, you cannot communicate with it.

Related Commands

initialize	Initializing the Unit
softwareUpgrade	Upgrading Management Software

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system control softwareUpgrade

Upgrading Management Software

You can upgrade the management software of the Switch by using the `softwareUpgrade` command on the Control menu.

Use the method outlined below to upgrade the management software of the Switch, using the Windows 3Com TFTP Server utility.

Preparing for the Software Upgrade

- Before you begin
- Preparing the management software file
- Setting up your TFTP Server
- Configuring the Switch and TFTP Server IP information

Performing the Software Upgrade

- Performing a TFTP upgrade via the Command Line Interface
- Confirming that your software upgrade has been successful

Before you begin

- The 3Com TFTP Server is a Microsoft Windows TFTP application. If you are using another operating system (for example Macintosh or Unix), you will require a different TFTP Server application, please refer to the instructions that accompanied your system for further information.
- The management software cannot be upgraded out-of-band over RS232 using the TFTP protocol, because TFTP is not supported over the console port.
- The management software cannot be upgraded using IPX, because TFTP/IPX (In-band over Ethernet) protocols are not supported.
- Upgrading the management software of a Switch results in a reset and causes data to temporarily stop passing through the Switch. You should perform an upgrade when your network is inactive, or you should notify users that the network will temporarily be offline. Users should save their work and exit before the upgrade begins.
- Ensure that the Switch that you are upgrading and the workstation which is running the TFTP Server application are on the same IP subnet or have a route between them. To confirm the route, use the Command Line Interface to ping the workstation from the unit. Type **Protocol -> IP -> Ping** and enter the IP address of the workstation.
- Downgrading your Switch to an older version of management software is not recommended. It may introduce faults that have been fixed in the latest release of software.

- When the management software is upgraded the Switch will retain all currently configured settings.

Preparing the management software file

1. The executable file containing the management software to upgrade the Switch may be supplied on the CD-ROM that accompanies your Switch.

   3Com recommends that you download the latest publicly available version of management software from the 3Com website:

   http://support.3com.com

   To receive the very latest releases you must purchase a support contract from your reseller.

2. Run the executable file to extract the .bin file to a tftp boot sub-directory C:\Program Files\3Com\TFTP Server\tftpboot\. This file contains the management software.

3. If you have not used the default tftpboot sub-directory, make a note of where you have extracted the .bin file, as you will need to direct your TFTP Server to it.

Setting up your TFTP Server

⚠ ***CAUTION:*** *These instructions apply to the 3Com TFTP Server, which is a Microsoft Windows-only TFTP application.*

1. Install the 3Com TFTP Server:

   - From the CD-ROM that accompanies your Switch, or
   - By Downloading the 3Com TFTP Server (filename 3ts01_xx.exe) from the 3Com website:

     http://support.3com.com

2. Install the 3Com TFTP Server on a Microsoft Windows 95/98/NT/2000/XP machine.

3. To launch the 3Com TFTP Server, click **Start** -> **Programs** -> **3Com TFTP Server** -> **3Com TFTP Server**.

4. Check that the 3Com TFTP Server is configured to point where the .bin upgrade file is located. To do this:

   - Click the *Options* button on the 3Com TFTP Server menu bar.
   - The *Upload/Download directory* file path should point to the tftp boot sub-directory e.g. C:\Program Files\3Com\TFTP Server\tftpboot\. This is the directory where the Switch will look for the file to upgrade the Switch.
   - You may need to change the file path to point to the directory containing the .bin upgrade file.
   - Click the *OK* button to close the Setup window.

The IP address of the 3Com TFTP Server is displayed on the Title Bar. You will need this to configure the Switch and TFTP Server with IP information.

Configuring the Switch and TFTP Server IP information

1. Ensure that you assign an IP address to the Switch that is being upgraded. For further information about setting up an IP address, refer to Setting Up IP Information in the Switch documentation.

2. Ensure that you have connected your Switch to the TFTP Server using an RJ-45 cable (the TFTP Server is the workstation containing the 3Com TFTP Server application).

3. The Switch that you are upgrading must:

    - Be in the same subnet as the workstation running your TFTP Server.

      For example, if your workstation's IP address is 192.168.1.40, and a subnet mask of 255.255.255.0, and your Switch unit is configured with an IP address of 192.168.1.x, and a subnet mask of 255.255.255.0, then your upgrade should be successful.

      Or,

    - Have a route between the Switch and the workstation.

      To confirm the route, use the Command Line Interface to ping the workstation from the unit. Type **Protocol -> IP -> Ping** and enter the IP address of the workstation.

CAUTION: *Ensure that the Switch port connected to the TFTP Server belongs to the Default VLAN (VLAN 1). The TFTP Server can only upgrade the management software of the Switch if it is connected to the Switch by the Default VLAN or if an IP route exists between the Default VLAN and the VLAN the TFTP Server belongs to.*

Performing a TFTP upgrade via the Command Line Interface

1. To start a Telnet session to the Switch, click *Start* in Microsoft Windows 95/98/2000/NT.

    - Click *Run*.

    - In the the dialogue box that appears type the IP address of the Switch e.g. **`Telnet 192.168.1.40`**.

    - Click *OK*.

2. Press *Enter* to open a login prompt.

3. Log into the Switch.

   The default user name is **`admin`** (lower case). There is no default password (press *Enter*).

4. From the Top-level menu, enter:

   `system control softwareUpgrade`

The following prompt is displayed:

```
TFTP Server Address [0.0.0.0]:
```

5. Enter the IP address of the TFTP Server. This is the IP address of the workstation running the TFTP Server application.

   The IP address is displayed on the 3Com TFTP Server's title bar.

   The following prompt is displayed:

   ```
   File name []:
   ```

6. Enter the name of the software upgrade file. The filename format is:

   ```
   nnnxx_yy.bin
   ```

   where nnn is the prefix of the Switch and xx_yy is the version of management software.

   CAUTION: *You must use the nnnxx_yy.bin format, otherwise the upgrade will fail.*

   The following warning is displayed:

   ```
   A power interrupt during software upgrade may cause a
   corrupted image on the device. In this event the software
   should be upgraded via the software update utility. For more
   information, refer to the user guide supplied with your
   device.
   ```

   Followed by the message:

   ```
   Software upgrade in progress.......
   ```

   The unit will report errors if they occur and abort the file transfer if it is unable to complete it. Follow any instructions listed with the errors to resolve the problem.

7. When the software upgrade is complete the following is displayed (the text will vary depending on the number of units being upgraded):

   ```
   Upgrade of unit 1 successful
   Upgrade of this unit complete. Starting new software.
   ```

   The unit will disconnect the Telnet session and be unavailable for both Telnet and Web access for 1—2 minutes while it overwrites the old software.

   CAUTION: *Do not power down or reset the Switch or attempt to stop the upgrade once it has begun. Interrupting the upgrade will cause the Switch to become unusable.*

8. The Switch will reset when the upgrade is complete, and the Power/Self test LED will change from flashing ON/OFF Green to solid Green.

   Once the LED shows as solid Green the upgrade has been completed and

the unit is again ready for Telnet and Web access.

If you are unable to access the Switch through the Web Interface or through the Command Line Interface, then it is possible that you can no longer manage your Switch due to a failure during the software upgrade. Refer to the Solving Management Software Upgrade Problems section of the Management Interface Reference Guide for further assistance.

Related Commands

initialize	Initializing the Switch
reboot	Rebooting the Switch

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system inventory

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Displaying System Summary Information

You can display summary information about the unit using the `inventory` command on the System menu.

To display the information:

- From the Top-level menu, enter:

  `system inventory`

The summary information is displayed.

An example of the summary information is shown below:

Position	Description	Unit Name	State
1	Switch 4xxx	Accounts	Operational

The following read-only fields are displayed:

Position

Displays the number of the unit.

Description

Displays the product name of the unit.

Unit Name

Displays the descriptive name, or system name, for the unit. For information about assigning a new name, see the `system management name` CLI command.

State

Displays the current operating state of the unit:

- *Operational* — The unit is operating normally.
- *Loading* — A process taking place on the unit, for example a software upgrade.

Related Commands

summary	Displaying Switch Administration Summary



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system management alert addAddress

Adding an email address to an alert

You can add an email address to an alert using the `addAddress` command on the alert menu.

To add an email address to an alert:

1. From the Top-level menu, enter:

   `system management alert addAddress`

   The following prompt is displayed:

   `Select address type (to,cc):`

2. Enter the address type that you want to set up.

   The following prompt is displayed:

   `Select alert index (1,3,5-7)[1]:`

3. Enter the alert index that you want to add an address to.

   The following prompt is displayed:

   `Enter email address list:`

4. Enter the email address or address list that you want to be alerted. You can enter more than one address or list at one time by separating each entry with a comma(,).

Related Commands

create	Creating an alert
delete	Deleting an alert
modify	Modifying an existing alert
removeAddress	Removing an email address from an alert
summary	Displaying summary information for the alert settings
test	Generating a test alert
monitor modify	Modifying a monitored item
monitor summary	Displaying summary information for the monitored item



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system management alert create

Creating an alert

You can create an alert using the `create` command on the alert menu.

Creating an alert means that certain events that occur on specified monitored items, that is a unit or port(s), can generate email or pager notification. These events are:

- Unit powers up
- A link fails or returns to service — you can select specific links that you wish to receive messages for, for example, a mission-critical link to a server
- A security violation occurs


When you create an alert, the Alert Index number is automatically assigned. The first unused index number is allocated, starting from 1.

To create an alert:

1. From the Top-level menu, enter:

   `system management alert create`

   The following prompt is displayed:

   ```
   alert index: 1
   Select alert type (email,pager)[email]:
   ```

2. Enter the alert type that you wish to set up.

   The following prompt is displayed:

   ```
   Enter SMTP host address [0.0.0.0]:
   ```

3. Enter the IP address of the SMTP server that you want to send the messages.

   The following prompt is displayed:

   ```
   Enter SMTP port (1-65535)[25]:
   ```

4. Enter the port on the SMTP server that you want to set up to send the messages.

   The following prompt is displayed:

   ```
   Enter email 'From' address []:
   ```

5. Enter the email 'From' address that you want to display on the messages.

   The following prompt is displayed:

   ```
   Enter email 'To' address list:
   ```

6. Enter the email 'To' address list that you want to send the messages to.

   The following prompt is displayed:

   ```
   Enter email 'cc' address list:
   ```

7. Enter the email 'cc' address list that you want to copy the messages to.

Related Commands

addAddress	Adding an email address to an alert
delete	Deleting an alert
modify	Modifying an existing alert
removeAddress	Removing an email address from an alert
summary	Displaying summary information for the alert settings
test	Generating a test alert
monitor modify	Modifying a monitored item
monitor summary	Displaying summary information for the monitored item

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system management alert delete

Deleting an alert

You can delete an alert using the `delete` command on the alert menu.

To delete an alert:

1. From the Top-level menu, enter:

   `system management alert delete`

   The following prompt is displayed:

   `Select alert index (1,3,5-7,all):`

2. Enter the number of the alert index that you want to delete.

Related Commands

addAddress	Adding an email address to an alert
create	Creating an alert
modify	Modifying an existing alert
removeAddress	Removing an email address from an alert
summary	Displaying summary information for the alert settings
test	Generating a test alert
monitor modify	Modifying a monitored item
monitor summary	Displaying summary information for the monitored item



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system management alert modify

Modifying an existing alert

You can modify an existing alert using the `modify` command on the alert menu.

To modify an alert:

1. From the Top-level menu, enter:

   `system management alert modify`

   The following prompt is displayed:

   ```
   Select alert index (1,3,5-7)[1]:
   ```

2. Enter the alert index that you want to modify.

   ```
   Select alert type (email,pager)[email]:
   ```

3. Enter the alert type that you want to modify.

   The following prompt is displayed:

   ```
   Enter SMTP host address [0.0.0.0]:
   ```

4. Enter the IP address of the SMTP server that you want to send the messages.

   The following prompt is displayed:

   ```
   Enter SMTP port (1-65535)[25]:
   ```

5. Enter the port on the SMTP server that you want to send the messages.

   The following prompt is displayed:

   ```
   Enter email 'From' address []:
   ```

6. Enter the email 'From' address that you want to display on the messages.

Related Commands

addAddress	Adding an email address to an alert
create	Creating an alert
delete	Deleting an alert
removeAddress	Removing an email address from an alert

summary	Displaying summary information for the alert settings
test	Generating a test alert
monitor modify	Modifying a monitored item
monitor summary	Displaying summary information for the monitored item

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system management alert removeAddress

Removing an email address from an alert

You can remove an email address from an alert using the `removeAddress` command on the alert menu.

To remove an email address from an alert:

1. From the Top-level menu, enter:

   `system management alert removeAddress`

   The following prompt is displayed:

   ```
   Select address type (to,cc):
   ```

2. Enter the address type that you wish to remove the address from.

   The following prompt is displayed:

   ```
   Select alert index (1,3,5-7)[1]:
   ```

3. Enter the alert index that you wish to remove the address from.

   The following example prompt is displayed:

   ```
   a n other@3com.com - remove? (yes,no,all)[no]:
   ```

4. Enter **`yes`**, **`no`**, or **`all`**. If there is more than one email address or list assigned to that address type and alert index, each email address or list will be displayed in turn and offer you the chance to remove it.

Related Commands

create	Creating an alert
delete	Deleting an alert
modify	Modifying an existing alert
addAddress	Adding an email address to an alert
summary	Displaying summary information for the alert settings
test	Generating a test alert
monitor modify	Modifying a monitored item
monitor summary	Displaying summary information for the monitored item



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system management alert summary

Displaying Summary Information for the Alert Settings

You can display information about the alert settings using the summary command on the alert menu.

To display summary information for the alert settings:

- From the Top-level menu, enter:

  system management alert summary

The alert settings summary information is displayed as shown in the example below.

```
Index  Name       SMTP address:port   Type          Email Address
-------------------------------------------------------------------
-----
1      'Alert1'   0.0.0.0:25          email From:   <None>
                                             To:     <None>
                                             cc:     <None>
2      'Alert2'   0.0.0.0:25          email From:   <None>
                                             To:     <None>
                                             cc:     <None>
```

Related Commands

addAddress	Adding an email address to an alert
create	Creating an alert
delete	Deleting an alert
modify	Modifying an alert
removeAddress	Removing an email address from an alert
test	Generating a test alert
monitor modify	Modifying a monitored item
monitor summary	Displaying summary information for the monitored item

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system management alert test

Generating a test alert

You can generate a test alert using the `test` command on the alert menu.

To generate a test alert:

1. From the Top-level menu, enter:

   `system management alert test`

   The following prompt is displayed:

   `Select alert index (1,3,5-7)[1]:`

2. Enter the alert index from which you want to generate an alert.

Related Commands

addAddress	Adding an email address to an alert
create	Creating an alert
delete	Deleting an alert
modify	Modifying an alert
removeAddress	Removing an email address from an alert
summary	Displaying summary information for the alert settings
monitor modify	Modifying a monitored item
monitor summary	Displaying summary information for the monitored item



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system management contact

Specifying a Contact Name for the Unit

You can specify contact name details for the unit using the `contact` command on the management menu.

To specify the administration details:

1. From the Top-level menu, enter:

   `system management contact`

   The following prompt is displayed:

   ```
   Enter system contact [<contact name>]:
   ```

2. Enter a system contact for the unit. The name can be up to 255 characters long.

Related Commands

location	Specifying Unit Location Details
name	Specifying a Unit Name
password	Changing Your Password
remoteAccess	Enabling and Disabling Remote Access

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system management location

Specifying Unit Location Details

You can specify physical location details for the unit using the `location` command on the management menu.

To specify the administration details:

1. From the Top-level menu, enter:

   `system management location`

   The following prompt is displayed:

   ```
   Enter system location [<location>]:
   ```

2. Enter a physical location for the unit. The location name can be up to 255 characters long.

Related Commands

contact	Specifying a Contact Name for the Unit
name	Specifying a Unit Name
password	Changing Your Password
remoteAccess	Enabling and Disabling Remote Access



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system management monitor modify

Modifying a monitored item

A monitored item is either a Switch unit or a port(s) that you can select to be monitored so that you can receive email or pager notification when certain events occur. This command should be used in conjunction with the Alert commands.

You can modify an item to be monitored using the `modify` command on the monitor menu.

To modify a monitored item:

1. From the Top-level menu, enter:

   `system management monitor modify`

   The following prompt is displayed:

   ```
   Select monitored item (systemDevice,port)[port]:
   ```

2. Enter the monitored item that you want to modify.

   If you enter `systemDevice` *as the monitored item, the prompt shown in step 2 is not displayed. You will move straight on to the prompt shown in step 3.*

   In the following example the default settings are those for "all" ports selected. Note that the default settings displayed when monitoring a system device are: Monitor State [on], Email Alert Index [1], Pager Alert Index [2]. The default settings displayed when monitoring a single port are: Monitor State [off], Email Alert Index [1], Pager Alert Index [2].

   The following prompt is displayed:

   ```
   Select ports to monitor (unit:port...,all,?):
   ```

3. Enter the ports that you want to monitor or **?** for a list of available ports.

   The following prompt is displayed:

   ```
   Select Monitor State (on,off):
   ```

4. Enter **on** or **off**, depending on whether or not you want monitoring to take place.

   The following prompt is displayed:

   ```
   Select Email Alert Index (1,none)[none]
   ```

5. Enter the email alert index number you want to set up to receive alerts for this monitored item.

   The following prompt is displayed:

```
Select Pager Alert Index (2,none)[none]:
```

6. Enter the pager alert index number you want to set up to receive alerts for this monitored item.

Related Commands

monitor summary	Displaying summary information for the monitored item
addAddress	Adding an email address to an alert
create	Creating an alert
delete	Deleting an alert
modify	Modifying an existing alert
removeAddress	Removing an email address from an alert
summary	Displaying summary information for the alert settings
test	Generating a test alert

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system management monitor summary

Displaying a summary of monitored items

You can display a summary of monitored items using the `summary` command on the monitor menu.

To display summary information for the monitored items:

- From the Top-level menu, enter:

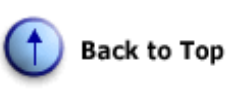
  system management monitor summary

The monitored item summary information is displayed as shown in the example below.

```
Monitored Item     Label                          Email  Pager  Monitor
                                                  Alert  Alert  State
-------------------------------------------------------------------------
System Device      `3Com SuperStack 3'            1      2      off
Unit 1 Port 1      `RMON Port 01 on unit 1'       1      2      on
```

Related Commands

monitor modify	Modifying a monitored item
addAddress	Adding an email address to an alert
create	Creating an alert
delete	Deleting an alert
modify	Modifying an existing alert
removeAddress	Removing an email address from an alert
summary	Displaying summary information for the alert settings
test	Generating a test alert











system management name

Specifying a Unit Name

You can specify a unit name using the name command on the management menu.

To specify the administration details:

1. From the Top-level menu, enter:

   system management name

   The following prompt is displayed:

   Enter system name [<system name>]:

2. Enter a system name for the unit. The name can be up to 255 characters long.

Related Commands

contact	Specifying a Contact Name for the Unit
location	Specifying Unit Location Details
password	Changing Your Password
remoteAccess	Enabling and Disabling Remote Access

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system management password

Changing Your Password

You can change the password for the current user using the `password` command on the management menu.

 *Passwords must only contain alpha-numeric characters and is limited to a maximum of 10 characters.*

To change the password:

1. At the Top-level menu, enter:

   `system management password`

   The following prompt appears, allowing you to enter the existing password:

   ```
   old password:
   ```

2. Enter the existing password.

   The following prompt is displayed, allowing you to enter a new password for the current user:

   ```
   Enter new password:
   ```

3. Enter the new password.

   The following prompt is displayed, allowing you to re-enter the new password as confirmation:

   ```
   Retype password:
   ```

A message is displayed informing you that the password has been successfully changed.

Related Commands

contact	Specifying a Contact Name for the Unit
location	Specifying Unit Location Details
name	Specifying a Unit Name
remoteAccess	Enabling and Disabling Remote Access



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system management remoteAccess

Enabling and Disabling Remote Access

As a basic security measure, you can enable or disable remote access to the management software of the unit:

- When remote access is enabled, you can access the management software using all management methods.
- When remote access is disabled:
  - Users cannot access the unit over the network using the command line interface.
  - Users cannot access the unit over the network using the web interface.
  - Users cannot access the unit using an SNMP Network Manager.
  - Users can only access the command line interface or web interface using a direct connection to the console port of the unit.

You can enable or disable remote access to the management software of the unit using the `remoteAccess` command on the Management menu.

To enable or disable remote access:

1. At the Top-level menu, enter:

   `system management remoteAccess`

2. The following prompt is displayed:

   ```
   Enter new value (enable,disable) [enable]:
   ```

3. Enter **`enable`** or **`disable`** as required.

Related Commands

contact	Specifying a Contact Name for the Unit
location	Specifying Unit Location Details
name	Specifying a Unit Name
password	Changing Your Password

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system management snmp community

Specifying SNMP Community Strings

You can specify SNMP community strings for the users defined on the unit using the `community` command on the SNMP menu.

To specify the SNMP community strings:

1. At the Top-level menu, enter:

   `system management snmp community`

   The following prompt is displayed:

   ```
   Enter new community for user 'admin' [private]:
   ```

   The community string is limited to 30 characters.

2. Enter the community string for the user.
3. Repeat step 2 for the other users defined on the unit.

The default users and their default community string community strings are:

'admin' [private]
'manager' [manager]
'monitor' [public]

Related Commands

get	Performing an SNMP Get Command
next	Performing an SNMP Next Command
set	Performing an SNMP Set Command

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system management snmp get

Performing an SNMP Get Command

Access to the SNMP MIB is provided via the SNMP `get`, `set`, and `next` CLI commands. These commands are intended to allow advanced users the ability to generate reports and configuration scripts for devices.

The SNMP GET command allows you to retrieve values of SNMP objects from a network device. You can perform an SNMP GET command on the unit using the `get` command on the SNMP menu.

To perform an SNMP GET command on the unit:

1. At the Top-level menu, enter:

   `system management snmp get`

   The following prompt is displayed:

   `Enter object-identifier:`

2. Enter the identifier of the SNMP object.

   The following prompt is displayed:

   `Enter type (phys,ip,gauge,cnt,num,str,time,oid)[str]:`

3. Enter the data type of the SNMP object.

   The value of the SNMP object is displayed.

   `Value = 3Com SuperStack 3`

Related Commands

community	Specifying SNMP Community Strings
next	Performing an SNMP Next Command
set	Performing an SNMP Set Command

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system management snmp next

Performing an SNMP Next Command

Access to the SNMP MIB is provided via the SNMP `get`, `set`, and `next` CLI commands. These commands are intended to allow advanced users the ability to generate reports and configuration scripts for devices.

An SNMP Next command allows you to specify an SNMP object in a network device and then retrieve information about the next few SNMP objects in the device. You can perform an SNMP Next command on the unit using the `next` command on the SNMP menu.

To perform an SNMP Next command on the unit:

1. At the Top-level menu, enter:

   `system management snmp next`

   The following prompt is displayed:

   `Enter object-identifier:`

2. Enter the identifier of an SNMP object.

   The following prompt is displayed:

   `Enter count:`

3. Enter the number of SNMP objects after the object specified for which you want to retrieve information.

   The SNMP object information is displayed.

Related Commands

community	Specifying SNMP Community Strings
get	Performing an SNMP Get Command
set	Performing an SNMP Set Command

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system management snmp set

Performing an SNMP Set Command

Access to the SNMP MIB is provided via the SNMP `get`, `set`, and `next` CLI commands. These commands are intended to allow advanced users the ability to generate reports and configuration scripts for devices.

An SNMP SET command allows you to modify values of SNMP objects in a network device. You can perform an SNMP SET command on the unit using the `set` command on the SNMP menu.

⚠ ***CAUTION:*** *You should not modify the values of SNMP objects unless you have considerable knowledge and experience with SNMP.*

To perform an SNMP SET command on the unit:

1. At the Top-level menu, enter:

   `system management snmp set`

   The following prompt is displayed:

   `Enter object-identifier:`

2. Enter the identifier of the SNMP object.

   The following prompt is displayed:

   `Enter type (phys,ip,gauge,cnt,num,str,time,oid)[str]:`

3. Enter the data type of the SNMP object.

   The following prompt is displayed:

   `Enter value:`

4. Enter the new value of the SNMP object.

Related Commands

community	Specifying SNMP Community Strings
get	Performing an SNMP Get Command
next	Performing an SNMP Next Command

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system management snmp trap create

Specifying Trap Destination Details

You can specify the community string and IP address of devices that are to be the destination for traps on your network using the `create` command on the trap menu.



When a new trap is created, the Trap Index number is automatically assigned. The first unused index number is allocated, starting from 1.

To specify the details of a trap destination device:

1. At the Top-level menu, enter:

   `system management snmp trap create`

   The following prompt is displayed:

   `Enter the trap community string [monitor]:`

2. Enter the community string of the trap destination device.

   The following prompt is displayed:

   `Enter the trap destination address:`

3. Enter the IP address of the trap destination device.

Related Commands

delete	Removing Trap Destination Details
modify	Modifying Trap Destination Details
summary	Displaying Trap Destination Details



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system management snmp trap delete

Removing Trap Destination Details

You can remove the details of a current trap destination device using the `delete` command on the trap menu.

To remove trap destination details:

1. At the Top-level menu, enter:

   `system management snmp trap delete`

   The following prompt is displayed:

   `Select trap index (1,2,3,all):`

2. Enter the index number of the trap destination device that is to have its details removed, or enter **`all`** to remove all trap destination device details.

Related Commands

create	Specifying Trap Destination Details
modify	Modifying Trap Destination Details
summary	Displaying Trap Destination Details



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system management snmp trap modify

Modifying Trap Destination Details

You can modify the community string and IP address of a current trap destination device using the `modify` command on the trap menu.

To modify trap destination details:

1. At the Top-level menu, enter:

   `system management snmp trap modify`

   The following prompt is displayed:

   ```
   Select trap index (1,2,3):
   ```

2. Enter the index number of the trap destination device to be modified.

   The following prompt is displayed:

   ```
   Enter the trap community string [monitor]:
   ```

3. Enter the new community string of the trap destination device.

   The following prompt is displayed:

   ```
   Enter the trap destination address [<ip address>]:
   ```

4. Enter the new IP address of the trap destination device.

Related Commands

create	Specifying Trap Destination Details
delete	Removing Trap Destination Details
summary	Displaying Trap Destination Details

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system management snmp trap summary

Displaying Trap Destination Details

You can display a summary of the community string and IP address of the current trap destination devices using the summary command on the trap menu.

To display trap destination details:

- At the Top-level menu, enter:

  system management snmp trap summary

The trap destination details are displayed.

An example of the information is shown below:

Index	Community String	Destination Address
1	monitor	191.1.1.1
2	monitor	191.1.1.2
3	monitor	191.1.1.3
4	monitor	191.1.1.4

Related Commands

create	Specifying Trap Destination Details
delete	Removing Trap Destination Details
modify	Modifying Trap Destination Details

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system summary

Displaying Switch Administration Summary

You can display the administration details for the unit using the `summary` command on the system menu. This information may be useful for your technical support representative if you have a problem.

To display the information:

- From the Top-level menu, enter:

  `system summary`

The administration details are displayed as shown in the example below:

```
3Com SuperStack 3
System Name:                Development
Location:                   Wiring Closet, Floor 1
Contact:                    System Administrator

Time Since Reset:           2 days, 3 hours, 10 minutes
Operational Version:        1_00
Hardware Version:           1.0
Boot Version:               1.00
MAC Address:                08:00:00:00:11:11
Product Number:             3C17300
Serial Number:              7ZNR001111
```

Additional system information may be displayed at the bottom of the summary if a system error occurs. For example:

In the event of a TFTP failure, the following example information will appear in the summary:

```
TFTP server address : 196.168.100.1
Filename : s4201_01.bin
Last software upgrade : TFTP File Not Found
```

The following read-only fields are displayed:

System Name

Displays the descriptive name, or system name, for the unit. For information about assigning a new name, see the `system management name` command.

Location

Displays the physical location of the unit. For information about assigning a

new location, see the `system management location` command.

Contact

Displays the details of a person to contact about the unit. For information about assigning new contact details, see the `system management contact` command.

Time Since Reset

Displays the time that has elapsed since the unit was last reset, initialized or powered-up.

Operational Version

Displays the version number of the management software currently installed on the unit. For information about how to upgrade the management software, see the `system control softwareUpgrade` command.

Hardware Version

Displays the version number of the unit hardware.

Boot Version

Displays the version of Boot PROM software installed on the unit.

MAC Address

Displays the MAC (Ethernet) address of the unit.

Product Number

Displays the product number of the unit.

Serial Number

Displays the serial number of the unit

Related Commands

---

inventory Displaying System Summary Information

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system unit alertLED

Changing the State of the Alert LED

You can set the status of the Alert LED using the `alertLED` command on the unit menu.

The Alert LED can be set to Flashing or to Off. When set to Flashing the Alert LED on the front of the unit will flash on and off twice every second. This enables a particular unit to be identified within a stack. The default state for the Alert LED is Off.

To make the Alert LED flash:

1. At the Top-level menu, enter:

   system unit alertLED

   The following prompt is displayed, allowing you to set the state of the Alert LED:

   ```
   Enter alert LED status (flashing,off) [off]:
   ```

2. Enter the word:

   flashing

To stop the Alert LED flashing:

1. At the Top-level menu, enter:

   system unit alertLED

   The following prompt is displayed, allowing you to set the state of the Alert LED:

   ```
   Enter alert LED status (flashing,off) [flashing]:
   ```

2. Enter the word:

   off

Related Commands

select	Moving the Focus of the Command Line Interface

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system unit select

Moving the Focus of the Command Line Interface

Many commands in the command line interface enable you to manage a single Switch unit in the stack. You can select the switch you want to manage using the `select` command on the unit menu.

 *The use of this command is restricted to Switches that support stacking. Please refer to your Switch Getting Started Guide to find out whether your Switch supports stacking, and if so, how many switches you can have in a stack.*

To select the switch you want to manage:

1. At the Top-level menu, enter:

   `system unit select`

   The following prompt is displayed, allowing you to enter a unit number:

   `Select unit [1]:`

2. Enter the number of the unit to be managed.

    *The following information will help you determine the unit number:*

- *If the stack contains one unit, that unit is unit 1.*
- *If the stack contains more than one unit, the Switches are numbered 1 to 4, from the bottom up, for management purposes. Please refer to your Switch Getting Started Guide to find out whether your Switch supports stacking, and if so, how many switches you can have in a stack.*

Returning the Focus to the Previous Switch Unit

You can return to managing the previous Switch unit in the stack using the `logout` command.

Related Commands

alertLED	Changing the State of the Alert LED



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trafficManagement qos classifier create

Creating a Classifier

You can create a new classifier that can be used by a QoS profile for the Switch using the `create` command on the classifier menu.

To create a new classifier for the Switch:

1. From the Top-level menu, enter:

   `trafficManagement qos classifier create`

   The following prompt is displayed:

   ```
   Enter classifier number (101-121,123-1000)[101]:
   ```

2. Enter the number that you wish to use to identify the new classifier. The default provides the lowest unused identity.

   The following prompt is displayed:

   ```
   Enter classifier name:
   ```

3. Enter the name that you wish to use to identify the new classifier.

   The following prompt is displayed:

   ```
   Enter classifier type (dscp):
   ```

4. Enter the classifier type that you wish to define.

   The following prompt is displayed:

   ```
   Enter DiffServ code point(0-63,EF,AF11-AF43)[0]:
   ```

Type of Service (TOS) to DiffServ Code Point (DSCP) Mappings

Some applications, for example 3Com DynamicAccess, ask for input in terms of TOS bytes. Because the Switch's QoS feature uses DSCP values you will need to translate the TOS bytes into a DSCP value. See below for a TOS/DSCP mapping table.


The mappings between TOS Precedence and DSCP values are industry standard. Refer to RFC 2474 section 4.2 for more information.

Name	IP Precedence Value	Type Of Service Value	DiffServ Code Point Value
Class Selector 0 / Best Effort	0	0	0
Class Selector 1	1	32	8
Class Selector 2	2	64	16
Class Selector 3	3	96	24

Class Selector 4	4	128	32
Class Selector 5	5	160	40
Class Selector 6	6	192	48
Class Selector 7	7	224	56

Related Commands

delete	Deleting a Classifier
detail	Displaying Detailed Classifier Information
modify	Modifying a Classifier
summary	Displaying Summary Classifier Information

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trafficManagement qos classifier delete

Deleting a Classifier

You can delete an existing classifier from the Switch using the `delete` command on the classifier menu.

 *If the classifier exists, but is being used by an existing QoS profile, it will not be presented for deletion.*

To delete an existing classifier from the Switch:

1. From the Top-level menu, enter:

   `trafficManagement qos classifier delete`

   The following prompt is displayed:

   `Select classifier number (104-105,113,122):`

2. Enter the classifier number that you wish to delete.

Related Commands

create	Creating a Classifier
detail	Displaying Detailed Classifier Information
modify	Modifying a Classifier
summary	Displaying Summary Classifier Information

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trafficManagement qos classifier detail

Displaying Detailed Classifier Information

You can display a summary of information for one classifier using the `detail` command on the classifier menu.

To display a summary of information about one classifier:

1. From the Top-level menu, enter:

   `trafficManagement qos classifier detail`

   The following prompt is displayed:

   ```
   Select classifier number (1-5,113,122):
   ```

2. Enter the number of the classifier for which you wish to display summary information.

   The detailed information for the specified classifier is displayed.

   An example of the classifier information is shown below:

   ```
   Classifier Number: 3
   Classifier Name: 3Com NBX Voice-IP
   Classifier Type: dscp
   ```

Related Commands

create	Creating a Classifier
delete	Deleting a Classifier
modify	Modifying a Classifier
summary	Displaying Summary Classifier Information

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trafficManagement qos classifier modify

Modifying a Classifier

You can modify an existing classifier using the `modify` command on the classifier menu.

The classifier's type cannot be changed, you can only modify the parameters of that classifier type.

To modify a classifier:

1. From the Top-level menu, enter:

   `trafficManagement qos classifier modify`

   The following prompt is displayed:

   `Select classifier number (4-5,113,122)[4]:`

2. Enter the number of the classifier that you wish to modify.

   The following prompt is displayed:

   `Enter classifier name:`

3. Enter the name of the classifier that you wish to modify.

   The following prompt is displayed:
   Enter DiffServ code point(0-63,EF,AF11-AF43)[0]:

Type of Service (TOS) to DiffServ Code Point (DSCP) Mappings

Some applications, for example 3Com DynamicAccess, ask for input in terms of TOS bytes. Because the Switch's QoS feature uses DSCP values you will need to translate the TOS bytes into a DSCP value. See below for a TOS/DSCP mapping table.

The mappings between TOS Precedence and DSCP values are industry standard. Refer to RFC 2474 section 4.2 for more information.

Name	IP Precedence Value	Type Of Service Value	DiffServ Code Point Value
Class Selector 0 / Best Effort	0	0	0
Class Selector 1	1	32	8
Class Selector 2	2	64	16
Class Selector 3	3	96	24
Class Selector 4	4	128	32
Class Selector 5	5	160	40

Class Selector 6	6	192	48
Class Selector 7	7	224	56

Related Commands

create	Creating a Classifier
delete	Deleting a Classifier
detail	Displaying Detailed Classifier Information
summary	Displaying Summary Classifier Information

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trafficManagement qos classifier summary

Displaying Summary Classifier Information

You can display a summary of information for all classifiers, or specific classifiers, using the summary command on the classifier menu.

To display a summary of information for all, or specific classifiers:

1. From the Top-level menu, enter:

   trafficManagement qos classifier summary

2. The detailed information for the classifier(s) is displayed.

   An example of the classifier summary information is shown below:

Classifier Num	Name	Type	Description	Used in QoS profile
3	3Com NBX Voice-IP	dscp	46 (EF)	2
7	Internetwork Control	dscp	48	2
8	Network Control	dscp	56	2

Related Commands

create	Creating a Classifier
delete	Deleting a Classifier
detail	Displaying Detailed Classifier Information
modify	Modifying a Classifier



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trafficManagement qos profile addClassifier

Adding a Classifier to a QoS Profile

You can add a classifier to an existing QoS profile using the `addClassifier` command on the profile menu.

To add a classifier:

1. From the Top-level menu, enter:

   `trafficManagement qos profile addClassifier`

   The following prompt is displayed:

   ```
   Select profile number (1-5,7,16,all)[all]:
   ```

2. Enter the number of the QoS profile that you wish to add the classifier to.

   The following prompt is displayed:

   ```
   Select classifier number (1-5,13,22):
   ```

3. Enter the number of the classifier that you wish to add to the QoS profile.

   The following prompt is displayed:

   ```
   Select service level number (1-5,10-11,19):
   ```

4. Enter the number of the service level that you wish to add to the QoS profile.

Related Commands

assign	Assigning QoS Profiles to Ports
create	Creating a QoS Profile
delete	Deleting a QoS Profile
detail	Displaying Detailed Information for a QoS Profile
listPorts	Listing All Ports With Their Associated QoS Profiles
modify	Modifying a QoS Profile
removeClassifier	Removing a Classifier from a QoS Profile
summary	Displaying a Summary of QoS Profiles



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trafficManagement qos profile assign

Assigning QoS Profiles to Ports

You can assign a QoS profile to a port using the `assign` command on the profile menu.

When you change the QoS profile for a port, any existing QoS settings for that port are replaced by the new profile.

To assign a QoS profile:

1. From the Top-level menu, enter:

   `trafficManagement qos profile assign`

   The following prompt is displayed:

   `Select ports (unit:port...,?):`

2. Enter the number of the unit and port that you wish to assign the QoS profile to.

   The following prompt is displayed:

   `Enter profile number (1-5,7,16)[1]:`

3. Enter the number of the profile that you wish to assign to the port.

The Switch 4226T (3C17300), Switch 4250T (3C17302), and Switch 4228G (3C17304) use QoS profiles on a per port basis; the profile will be applied only to the ports specified. The Switch 4200 26-Port (3C17300A), Switch 4200 50-Port (3C17302A), and Switch 4200 28-Port (3C17304A) use QoS profiles on a per unit basis; the CLI will still prompt for a port number but will apply the profile across all ports on the unit.

Related Commands

addClassifier	Adding a Classifier to a QoS Profile
create	Creating a QoS Profile
delete	Deleting a QoS Profile
detail	Displaying Detailed Information for a QoS Profile
listPorts	Listing All Ports With Their Associated QoS Profiles
modify	Modifying a QoS Profile

removeClassifier	Removing a Classifier from a QoS Profile
summary	Displaying a Summary of QoS Profiles

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trafficManagement qos profile create

Creating a QoS Profile

You can create a new QoS profile for the Switch using the `create` command on the profile menu.

A QoS profile is a set of QoS rules that classify packets and then impose a service level on that traffic. A QoS profile is applied on a per-port basis.

To create a new profile for the Switch:

1. From the Top-level menu, enter:

   `trafficManagement qos profile create`

   The following prompt is displayed:

   ```
   Enter profile number (11-1000)[11]:
   ```

2. Enter the number that you wish to use to identify the new profile. The default provides the lowest unused identity.

   The following prompt is displayed:

   ```
   Enter profile name:
   ```

3. Enter the name that you wish to use to identify the new profile.

Related Commands

addClassifier	Adding a Classifier to a QoS Profile
assign	Assigning QoS Profiles to Ports
delete	Deleting a QoS Profile
detail	Displaying Detailed Information for a QoS Profile
listPorts	Listing All Ports With Their Associated QoS Profiles
modify	Modifying a QoS Profile
removeClassifier	Removing a Classifier from a QoS Profile
summary	Displaying a Summary of QoS Profiles



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trafficManagement qos profile delete

Deleting a QoS Profile

You can delete an existing QoS profile from the Switch using the `delete` command on the profile menu.

When a QoS profile is deleted, all ports that were using that profile will return to their factory default QoS settings.

To delete an existing QoS profile from the Switch:

1. From the Top-level menu, enter:

   `trafficManagement qos profile delete`

   The following prompt is displayed:

   `Select classifier number (2-5,7,16):`

2. Enter the QoS profile number that you wish to delete.

You can only delete a profile if it is empty i.e. it does not have any classifiers.

Related Commands

addClassifier	Adding a Classifier to a QoS Profile
assign	Assigning QoS Profiles to Ports
create	Creating a QoS Profile
detail	Displaying Detailed Information for a QoS Profile
listPorts	Listing All Ports With Their Associated QoS Profiles
modify	Modifying a QoS Profile
removeClassifier	Removing a Classifier from a QoS Profile
summary	Displaying a Summary of QoS Profiles

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trafficManagement qos profile detail

Displaying Detailed Information for a QoS Profile

You can display detailed information about a single QoS profile using the `detail` command on the profile menu.

To display detailed information:

1. From the Top-level menu, enter:

   trafficManagement qos profile detail

   The following prompt is displayed:

   ```
   Select profile number (1-5,7,16):
   ```

2. Enter the profile number that you wish to display information about.
3. The QoS profile information is displayed as shown in the example below.

```
Profile Number: 2      Profile Name: Default

Classifier             ServiceLevel          Rate Limit Excess
                                                        ServiceLevel
Name(Num)              Name(Num)             (Num)      Name(Num)
-------------------------------------------------------------------
3Com NBX Voice-IP(3)   Voice Applications(5) none       -

Internetwork           Internetwork
Control(7)             Control(6)            none       -
Network Control(8)     Network Control(7)    none       -


Unit  Ports
-------------------------------
1     1-26
```



The classifiers are listed from top to bottom in order of importance. If two or more classifiers match a specific packet, the service level of the more important classifier will be applied. You cannot configure the order of importance of the classifiers.



The Switch 4226T (3C17300), Switch 4250T (3C17302), and Switch 4228G (3C17304) use QoS profiles on a per port basis. The Switch 4200 26-Port (3C17300A), Switch 4200 50-Port (3C17302A), and Switch 4200 28-Port (3C17304A) use QoS profiles on a per unit basis.

Related Commands

addClassifier	Adding a Classifier to a QoS Profile

assign	Assigning QoS Profiles to Ports
create	Creating a QoS Profile
delete	Deleting a QoS Profile
listPorts	Listing All Ports With Their Associated QoS Profiles
modify	Modifying a QoS Profile
removeClassifier	Removing a Classifier from a QoS Profile
summary	Displaying a Summary of QoS Profiles

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trafficManagement qos profile listPorts

Listing All Ports With Their Associated QoS Profiles

You can view all ports and their associated QoS profiles using the `listPorts` command on the profile menu.

To view all ports and their associated QoS profiles:

1. From the Top-level menu, enter:

   `trafficManagement qos profile listPorts`

2. The QoS profile information is displayed as shown in the example below.

```
Unit        Ports       Profile Name(Index)
-------------------------------------------
1           1-12        NotLoggedIn(16)
1           13          Student(3)
1           14-17       FinalYearStudent(4)
1           18-24       NoLoggedIn(19)
2           1           Teacher(7)
2           2-24        Student(3)
```

 *The Switch 4226T (3C17300), Switch 4250T (3C17302), and Switch 4228G (3C17304) use QoS profiles on a per port basis. The Switch 4200 26-Port (3C17300A), Switch 4200 50-Port (3C17302A), and Switch 4200 28-Port (3C17304A) use QoS profiles on a per unit basis.*

Related Commands

addClassifier	Adding a Classifier to a QoS Profile
assign	Assigning QoS Profiles to Ports
create	Creating a QoS Profile
delete	Deleting a QoS Profile
detail	Displaying Detailed Information for a QoS Profile
modify	Modifying a QoS Profile
removeClassifier	Removing a Classifier from a QoS Profile
summary	Displaying a Summary of QoS Profiles



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trafficManagement qos profile modify

Modifying a QoS Profile

You can modify an existing QoS profile using the `modify` command on the profile menu.

To modify a QoS profile:

1. From the Top-level menu, enter:

   `trafficManagement qos profile modify`

   The following prompt is displayed:

   `Select profile number (2-5,7,16):`

2. Enter the number of the profile that you wish to modify.

   The following prompt is displayed:

   `Enter profile name:`

3. Enter the name that you wish to use to identify the new profile.

Related Commands

addClassifier	Adding a Classifier to a QoS Profile
assign	Assigning QoS Profiles to Ports
create	Creating a QoS Profile
delete	Deleting a QoS Profile
detail	Displaying Detailed Information for a QoS Profile
listPorts	Listing All Ports With Their Associated QoS Profiles
removeClassifier	Removing a Classifier from a QoS Profile
summary	Displaying a Summary of QoS Profiles

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trafficManagement qos profile removeClassifier

Removing a Classifier from a QoS Profile

You can remove a classifier from a QoS profile using the `removeClassifier` command on the profile menu.

To remove a classifier:

1. From the Top-level menu, enter:

   `trafficManagement qos profile removeClassifier`

   The following prompt is displayed:

   ```
   Select profile number (1-5,7,16,all)[all]:
   ```

2. Enter the number of the QoS profile that you wish to remove the classifier from.

   The following prompt is displayed:

   ```
   Select classifier number (1-5,13,22):
   ```

3. Enter the number of the classifier that you wish to remove from the QoS profile.

Related Commands

addClassifier	Adding a Classifier to a QoS Profile
assign	Assigning QoS Profiles to Ports
create	Creating a QoS Profile
delete	Deleting a QoS Profile
detail	Displaying Detailed Information for a QoS Profile
listPorts	Listing All Ports With Their Associated QoS Profiles
modify	Modifying a QoS Profile
summary	Displaying a Summary of QoS Profiles

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trafficManagement qos profile summary

Displaying a Summary of QoS Profiles

You can display summary information for all existing QoS profiles using the summary command on the profile menu.

To display summary information:

1. From the Top-level menu, enter:

   trafficManagement qos profile summary

2. The summary information is displayed as shown in the example below.

```
Profile                        Classifier          Service Levels
Index   Name                   No.s                No.s

1       Default                1,2,6               1
2       NoClassifiers          none                none
3       Student                4,6,7               24
4       FinalYearStudent       4,6,7               1,2
5       Teacher                4,6                 1,2,11
7       Administrator          1                   2,11
16      NotLoggedIn            1,8,7               1,2,11,19
```

Related Commands

addClassifier	Adding a Classifier to a QoS Profile
assign	Assigning QoS Profiles to Ports
create	Creating a QoS Profile
delete	Deleting a QoS Profile
detail	Displaying Detailed Information for a QoS Profile
listPorts	Listing All Ports With Their Associated QoS Profiles
modify	Modifying a QoS Profile
removeClassifier	Removing a Classifier from a QoS Profile











trafficManagement qos serviceLevel summary

Displaying Service Level Information

You can display summary information for all service levels on the Switch using the summary command on the serviceLevel menu.

To display service level summary information for the Switch:

1. From the Top-level menu, enter:

   trafficManagement qos serviceLevel summary

2. The summary information is displayed as shown in the example below.

```
Service level                Conforming     Used in
Num   Name                   Pri  DSCP      QoS profile
-------------------------------------------------------
2     Best Effort            -    -         none
3     Business Critical      -    -         none
4     Video Applications     -    -         none
5     Voice Applications     -    -         2
6     Internetwork
      Control                -    -         2
7     Network Control        -    -         2
```

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trafficManagement qos trafficQueue holProtection

Adjusting the Head of Line Blocking Settings

You can change the Head of Line blocking settings using the `holProtection` command on the trafficQueue menu.

Head of Line blocking settings operate across a whole stack and affect the Switch 4226T (3C17300), Switch 4250T (3C17302), and Switch 4228G (3C17304).

To change the Head of Line blocking settings:

1. From the Top-level menu, enter:

   `trafficManagement qos trafficQueue`

   The following prompt is displayed:

   ```
   Enter new value (QOS,Data,Advanced)[QOS]:
   ```

2. Enter one of the following values

   - **QOS** — sets the Switch to use a maximum of 12 packets of egress buffering per port (potentially 18k Bytes) for normal priority traffic. This setting (which is the default), provides the flexibility to ensure that high priority traffic can be provided with sufficient extra buffering. Ingress flow control will not normally be required with this setting. Data protocols operating window sizes greater than 18k Bytes will not work efficiently with this setting.
   - **Data** — increases the maximum egress buffer per port to 32K Bytes, or 27 packets. This setting is suitable if data applications require a window size of up to 32k Bytes. Under these circumstances, high priority traffic may not always be able to access sufficient Switch buffers to guarantee the expected QOS.
   - **Advanced** — allows you to set custom values for Head of Line Protection or desiable HOL protection completely.

3. If you entered **Advanced** the following prompt will be displayed:

   ```
   Head Of Line Blocking Protection (enable,disable)[enable]:
   ```

   Enter **enable** to apply a custom window size for Head of Line Protection or **disable** to turn off Head of Line Protection conpletely.

   If you entered **enable** the following prompt is displayed:

   ```
   Port Transmit buffer limit in KBytes (10-50)[18]:
   ```

   Enter the size to which you want to set the Head of Line Protection buffer.

 *The CLI* `physicalInterface ethernet flowControl` *command should be set to* `enable` *if you are disabling the Head Of Line Blocking protection or using large HOL buffer values and you wish flow control to operate.*

 *If very large HOL values are used, the stacking protocol may be affected and Switch stacking may be disrupted.*

Related Commands

summary	Displaying Authentication Statistics

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trafficManagement qos trafficQueue summary

Displaying Traffic Queue Information

You can display the traffic queues for the Switch using the summary command on the trafficQueue menu.

To display the traffic queues for the Switch:

1. From the Top-level menu, enter:

   trafficManagement qos trafficQueue summary

2. The summary traffic queue information is displayed as shown in the example below.

```
Priority   Queue Index
0          1 (lowest)
1          1 (lowest)
2          1 (lowest)
3          2 (highest)
4          2 (highest)
5          2 (highest)
6          2 (highest)
7          2 (highest)
```

Related Commands

holProtection	Adjusting the Head of Line Blocking Settings

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