System Maintenance

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Monitoring the System Status

Use the following commands in privileged EXEC mode to monitor the system status.

Note Forwarding database table is an Address Resolution Protocol (ARP) table which is issued to the three-tier switching chip, that is a hardware ARP table. The Layer 2 device does not have this entry.

Command	Purpose
show version	Displays version information.
show system	Displays system information.
show memory	Displays memory information.
show cpu-utilization	Displays CPU utilization.
show cpu-statistics ethernet *port-num*	Displays the statistics of CPU packets, according to port statistics.
show cpu-classification interface ethernet *port-num*	Displays the statistics of CPU packet types.
show username	Displays the information of the administrator who can log in to the system.
show users	Displays the information of the administrator who has logged in to the system.
show clock	Displays the system clock.

Command	Purpose
show ip fdb	Displays all forwarding database tables.
show ip fdb *ip*	Displays the forwarding database table of the specified IP address.
show ip fdb *ip mask*	Displays the forwarding database table of the specified IP address segment.

Configuring The System Clock

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **hostname** *host-name*
4. **no hostname** *host-name*
5. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Device> enable`	Enables privileged EXEC mode. Enter your password if prompted.
Step 2	**configure terminal** **Example:** `Device# configure terminal`	Enters global configuration mode.
Step 3	**hostname** *host-name* **Example:** `Device(config)# hostname host1`	Sets the system command line interface prompt.
Step 4	**no hostname** *host-name* **Example:** `Device(config)# no hostname host1`	(Optional) Cancels the system command line interface prompt.
Step 5	**end** **Example:** `Device(config)# end`	(Optional) Exits the global configuration mode and returns to privileged EXEC mode.

Testing the Network Connection

SUMMARY STEPS

1. **enable**
2. **ping** {**-i** *ttl* | **-l** *packet length* | **-n** *packet number* | **-s** *source ip* | **-t** *timeout*} *ip_host_address*
3. **ping6** {**-a** *ipv6 source address* | **-c** *count* | **-h** *hop limit* | **-s** *packet length* | **-t** | **-w** *time out*} *ipv6_host_address*

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Device> enable`	Enables privileged EXEC mode. Enter your password if prompted.
Step 2	**ping** {**-i** *ttl* | **-l** *packet length* | **-n** *packet number* | **-s** *source ip* | **-t** *timeout*} *ip_host_address* **Example:** `Device# ping 10.1.1.10`	Runs the ping command. • **-i** *ttl*: TTL value to be sent. • **-l** *packet length*: Length of the sent packet, in bytes. • **-n** *packet number*: Number of sent packets. • **-s** *source ip*: Source IP address of the sent packet. • **-t** *timeout*: The timeout to wait for the response after sending the packet, in seconds.
Step 3	**ping6** {**-a** *ipv6 source address* | **-c** *count* | **-h** *hop limit* | **-s** *packet length* | **-t** | **-w** *time out*} *ipv6_host_address* **Example:** `Device# ping6 2001:DB8::10`	Runs the ping command. • **-a** *ipv6 source address*: The source IPV6 address to be sent. • **-c** *count*: Number of sent packets. • **-h** *hop limit*: Hop limit. • **-s** *packet length*: Length of the sent packet, in bytes. • **-w** *time out*: The timeout to wait for the response after sending the packet, in seconds.

Perform Route Tracking

Tracert is mainly used for route tracking and checking network connections. Run the following configurations in privileged EXEC user mode.

SUMMARY STEPS

1. **enable**

2. **tracert** {**-u** | **-c**} {**-p** *udpport* | **-f** *first_ttl* | **-h** *maximum_hops* | **-w** *time_out* | **-t** *timeout*} *ip_host_address*
3. **tracert6** {**-c** | **-h** *maximum_hops* | **-w** *time_out* } *ipv6_host_address*

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Device> enable`	Enables privileged EXEC mode. Enter your password if prompted.
Step 2	**tracert** {**-u**	**-c**} {**-p** *udpport*	**-f** *first_ttl*	**-h** *maximum_hops*	**-w** *time_out*	**-t** *timeout*} *ip_host_address* **Example:** `Device# tracert -c 10.1.1.10`	Performs IPv4 route tracking. • **-u**: Sends UDP packets. • **-c**: Sends ICMP echo packets. This is the default. • **-p** *udpport*: Destination port address for sending UDP packets. It ranges from 1 to 65535. The default port is 62929. • **-f** *first_ttl*: Initial TTL value of the sent packets, in the range of 1 to 255. The default is 1. • **-h** *maximum_hops*: Maximum TTL value of the sent packets, in the range of 1 to 255. The default is 30. • **-w** *time_out*: The timeout to wait for the response after sending the packet, in the range of 10 to 60, in seconds. The default value is 10 seconds. • *ip_host_address*: Destination IP host address.
Step 3	**tracert6** {**-c**	**-h** *maximum_hops*	**-w** *time_out* } *ipv6_host_address* **Example:** `Device# tracert6 -c 333 -h 33 -w 22 2001:DB8::1`	Performs IPv6 route tracking. • **-c**: Sends ICMP echo packets. This is the default. • **-f** *first_ttl*: Initial TTL value of the sent packets, in the range of 1 to 255. The default is 1. • **-w** *time_out*: The timeout to wait for the response after sending the packet, in the range of 10 to 60, in seconds. The default value is 10 seconds. • *ip6_host_address*: Destination IPv6 host address.

Configuring a Banner

After setting the banner, the manufacturer information will appear when the device is logged in.

SUMMARY STEPS

1. **enable**

2. **configure terminal**
3. **banner** {**line1** | **line2** | **line3** | **line4**} *banner_string*
4. **screen-rows per-page** *number*
5. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Device> enable`	Enables privileged EXEC mode. Enter your password if prompted.
Step 2	**configure terminal** **Example:** `Device# configure terminal`	Enters global configuration mode.
Step 3	**banner** {**line1**	**line2**	**line3**	**line4**} *banner_string* **Example:** `Device(config)# banner line3 hello`	Customizes the selected line of the banner. The banner string ranges from 1 to 78.
Step 4	**screen-rows per-page** *number* **Example:** `Device(config)# screen-rows per-page 20`	(Optional) Enables the banner function and displays device information. You can display up to 25 lines of information at one time by default when viewing device information. The range of per-page is 0 to 256, and 0 means that all information is displayed.
Step 5	**end** **Example:** `Device(config)# end`	(Optional) Exits the global configuration mode and returns to privileged EXEC mode.