QUANTUM NETWORKS

Network Switch CLI Guide

Clock Commands

Contents

Clock Commands

clock dhcp timezone

Syntax	**clock dhcp timezone** **no clock dhcp timezone**
Parameters	N/A.
Default Configuration	Disabled.
Command Mode	Global configuration mode.
Usage	To specify that the time zone and the Summer Time (Daylight Saving Time) of the system can be taken from the DHCP Time zone option, use the **clock dhcp timezone** command in Global Configuration mode. To restore the default configuration, use the **no** form of this command.
Example	switchxxxxxx(config)# **clock dhcp timezone**
User Guideline	The TimeZone taken from the DHCP server has precedence over the staticTimeZone. The Summer Time taken from the DHCP server has precedence over static SummerTime. The TimeZone and SummerTime remain effective after the IP address lease time has expired. The TimeZone and SummerTime that are taken from the DHCP server are cleared after reboot. The **no** form of the command clears the dynamic Time Zone and Summer Time from the DHCP server are cleared. In case of multiple DHCP-enabled interfaces, the following precedence is applied: information received from DHCPv6 precedes information received from DHCPv4 information received from DHCP client running on lower interface precedes information received from DHCP client running on higher interface. Disabling the DHCP client from where the DHCP-TimeZone option was taken, clears the dynamic Time Zone and Summer Time configuration.

clock set

Syntax	**clock set** hh:mm:ss {[day month] | [month day]} year
Parameters	hh:mm:ss–Specifies the current time in hours (military format), minutes, and seconds. (Range: hh: 0-23, mm: 0-59, ss: 0-59) day–Specifies the current day of the month. (Range: 1-31) month–Specifies the current month using the first three letters of the month name. (Range: Jan–Dec) year–Specifies the current year. (Range: 2000–2037)
Default Configuration	The time of the image creation.
Command Mode	Privileged EXEC mode.
Usage	To set the system clock manually, use the **clock set** command in Privileged EXEC mode.
Example	The following example sets the system time to 13:32:00 on March 7th, 2005. switchxxxxxx# **clock set 13:32:00 7 Mar2005**
User Guideline	After boot the system clock is set to the time of the image creation.

clock source

Syntax	**clock source sntp** **no clock source sntp**
Parameters	**sntp**–(Optional) Specifies that an SNTP server is the external clock source.
Default Configuration	There is no external clock source.
Command Mode	Global Configuration mode.
Usage	To configure an external time source for the system clock, use the **clock source** command in Global Configuration mode. To disable the external time source, use the **no** form of this command.
Example	The following example configures an SNTP server as an external time source for the system clock.

	switchxxxxxx(config)#**clocksourcesntp** switchxxxxxx(config)# **exit** switchxxxxxx# **show clock** *10:46:48UTCMay282013 Time source is sntp
User Guideline	After boot the system clock is set to the time of the image creation. If no parameter is specified, SNTP will be configured as the time source.

clock summer-time

Syntax	**clock summer-time** zone **recurring** {**usa** | **eu** | {week day month hh:mm week daymonth hh:mm}} [offset] **clock summer-time** zone **date** day month year hh:mm date month year hh:mm[offset] **clock summer-time** zone **date** month day year hh:mm month day year hh:mm [offset] **no clock summer-time**
Parameters	zone—The acronym of the time zone to be displayed when summer time isin effect. (Range: up to 4 characters) **recurring**—Indicates that summer time starts and ends on the corresponding specified days everyyear. **date**—Indicates that summer time starts on the first date listed in thecommand and ends on the second date in the command. **usa**—The summer time rules are the United States rules. **eu**—The summer time rules are the European Union rules. week—Week of the month. Can be 1–5, first to last. day—Day of the week (first three characters by name, such as Sun). date—Date of the month. (Range: 1–31) month—Month (first three characters by name, such as Feb). year—year (no abbreviation). (Range: 2000–2097) hh:mm—Time (military format) in hours and minutes. (Range: hh:mmhh: 0-23,mm: 0-59) offset—(Optional) Number of minutes to add during summer time (default is60). (Range: 1440)
Default Configuration	Summer time is disabled.
Command Mode	Global Configuration mode.
Usage	To configure the system to automatically switch to summer time (Daylight SavingTime), use the **clock summer-time** command in Global Configuration mode. To restore the default configuration, use the **no** form of this command.

Example	switchxxxxxx(config)# **clock summer-time abc date apr 1 2010 09:00 aug 2 2010 09:00**
User Guideline	In both the **date** and **recurring** forms of the command, the first part of the command specifies when summer time begins, and the second part specifies when it ends. All times are relative to the local time zone. The start time is relative to standard time. The end time is relative to summer time. If the starting month is chronologically after the ending month, the system assumes that you are in the southern hemisphere. USA rules for Daylight Saving Time: From 2007: **Start**: Second Sunday in March **End**: First Sunday in November **Time**: 2 AM localtime Before 2007: **Start**: First Sunday in April **Time**: 2 AM local time EU rules for Daylight Saving Time: **Start**: Last Sunday in March **End**: Last Sunday in October **Time**: 1.00 am (01:00) Greenwich Mean Time (GMT)

clock timezone

Syntax	**clock timezone** zone hours-offset [minutes-offset] **no clock timezone**
Parameters	i zone—The acronym of the time zone. (Range: Up to 4 characters) hours-offset—Hours difference from UTC. (Range: (-12)–(+13)) minutes-offset—(Optional) Minutes difference from UTC. (Range: 0–59)
Default Configuration	Coordinated Universal Time (UTC) or Greenwich Mean Time (GMT), which is the same: Offsets are 0. Acronym is empty.
Command Mode	Global Configuration mode.
Usage	Use the **ip dhcp tftp-server ip address** Global Configuration mode command to set the backup server's IP address. This address server as the default address used by a switch when it has not been received from the DHCP server. Use the **no** form of the command to return to default.

Example	switchxxxxxx(config)# **clock timezone abc +2 minutes32**
User Guideline	The system internally keeps time in UTC, so this command is used only for display purposes and when the time is manually set.

sntp anycast client enable

Syntax	**sntp anycast client enable [both | ipv4 | ipv6]**
Parameters	**both**–(Optional) Specifies the IPv4 and IPv6 SNTP Anycast clients areenabled. If the parameter is not defined it is the default value. **ipv4**–(Optional) Specifies the IPv4 SNTP Anycast clients are enabled. **ipv6**–(Optional) Specifies the IPv6 SNTP Anycast clients are enabled.
Default Configuration	The SNTP anycast client is disabled.
Command Mode	Global Configuration mode.
Usage	To enable the SNTP Any cast client, use the **sntp anycast client enable** command in Global Configuration mode. To restore the default configuration, use the **no** form of this command.
Example	The following example enables SNTP Anycast clients. switchxxxxxx(config)# **sntp anycast client enable**
User Guideline	Use this command to enable the SNTP Anycast client.

sntp authenticate

Syntax	**sntp authenticate** **no sntp authenticate**
Parameters	N/A.
Default Configuration	Authentication is disabled.
Command Mode	Global Configuration mode.
Usage	To enable authentication for received SNTP traffic from servers, use the **sntp authenticate** command in Global Configuration mode. To restore the default configuration, use the **no** form of this command.
Example	The following example enables authentication for received SNTP traffic and setsthe key and encryption key. switchxxxxxx(config)# **sntp authenticate** switchxxxxxx(config)#**sntpauthentication-key8d5ClkKey** switchxxxxxx(config)# **sntp trusted-key8**
User Guideline	-

sntp authentication-key

Syntax	**sntp authentication-key *key-number* md5 *key-value*** **no sntp authentication-key *key-number***
Parameters	***key-number***—Specifies the key number. (Range: 1–4294967295) ***key-value***—Specifies the key value. (Length: 1–8 characters)
Default Configuration	No authentication key is defined.
Command Mode	Global Configuration mode.
Usage	To define an authentication key for Simple Network Time Protocol (SNTP), use the **sntp authentication-key** command in Global Configuration mode. To restore the default configuration, use the **no** form of this command.

Example	switchxxxxxx(config)#**sntpauthentication-key8md5ClkKey** switchxxxxxx(config)#**sntpauthentication-key8md5ClkKey** switchxxxxxx(config)# **sntp trusted-key 8** switchxxxxxx(config)# **sntp authenticate**
User Guideline	-

sntp broadcast client enable

Syntax	**sntp broadcast client enable [both | ipv4 | ipv6]** **no sntp broadcast clientenable**
Parameters	**both**–(Optional) Specifies the IPv4 and IPv6 SNTP Broadcast clients areenabled. If the parameter is not defined it is the default value. **ipv4**–(Optional) Specifies the IPv4 SNTP Broadcast clients are enabled. **ipv6**–(Optional) Specifies the IPv6 SNTP Broadcast clients are enabled.
Default Configuration	The SNTP Broadcast client is disabled.
Command Mode	Global Configuration mode.
Usage	To enable SNTP Broadcast clients, use the **sntp broadcast client enable** command in Global Configuration mode. To restore the default configuration, use the **no** form of this command.
Example	The following example enables SNTP Broadcast clients. switchxxxxxx(config)# **sntp broadcast client enable**
User Guideline	Use the **sntp broadcast client enable** Interface Configuration mode command to enable the SNTP Broadcast client on a specific interface. After entering this command, you must enter the **clock source** command with the **sntp** keyword for the command to be run. If this command is not run, the switch will not synchronize with Broadcast servers.

sntp client enable

Syntax	**sntp client enable** *interface-id* **no sntp client enable** *interface-id*
Parameters	***interface-id***—Specifies an interface ID, which can be one of the following types: Ethernet port, Port-channel or VLAN.
Default Configuration	The SNTP client is disabled.
Command Mode	Global Configuration mode.
Usage	To enable the SNTP Broadcast and Anycast client, use the **sntp client enable** command in Global Configuration mode. To restore the default configuration, use the **no** form of this command.
Example	The following example enables the SNTP Broadcast and Anycast clients on VLAN100: switchxxxxxx(config)# **sntp client enable vlan 100**
User Guideline	Use the sntp client enable command to enable SNTP Broadcast and Anycast clients.

sntp client enable (interface)

Syntax	**sntp client enable** **no sntp client enable**
Parameters	N/A.
Default Configuration	The SNTP client is disabled.
Command Mode	Interface Configuration mode.
Usage	To enable the SNTP Broadcast and Anycast client on an interface, use the **sntpclient enable** command in Interface Configuration mode. To restore the default configuration, use the **no** form of this command.
Example	The following example enables the SNTP broadcast and anycast client on aninterface.

	switchxxxxxx(config)# **interface vlan 100** switchxxxxxx(config-if)#**sntpclientenable** switchxxxxxx(config-if)# **exit**
User Guideline	This command enables the SNTP Broadcast and Anycast client on an interface. Use the **no** form of this command to disable the SNTP client.

sntp server

Syntax	**sntp server** {*ip-address* | *hostname*} [**poll**] [**key** *keyid*] **no sntp server** [*ip-address* |*hostname*]
Parameters	***ip-address***—Specifies the server IP address. This can be an IPv4, IPv6 or IPv6z address. ***hostname***—Specifies the server hostname. Only translation to IPv4 addresses is supported. (Length: 1–158 characters. Maximum label lengthfor each part of the hostname: 63 characters) **poll**—(Optional) Enables polling. **key** *keyid*—(Optional) Specifies the Authentication key to use when sending packets to this peer.(Range:1–4294967295)
Default Configuration	No servers are defined.
Command Mode	Global Configuration mode.
Usage	To configure the device to use the SNTP to request and accept Network Time Protocol (NTP) traffic from a specified server (meaning to accept system time from an SNTP server), use the **sntp server** command in Global Configuration mode. To remove a server from the list of SNTP servers, use the **no** form of this command.
Example	The following example configures the device to accept SNTP traffic from theserver on 192.1.1.1 with polling. switchxxxxxx(config)# **sntp server 192.1.1.1 poll**
User Guideline	Use the **sntp server** {*ip-address* | *hostname*} [**poll**] [**key** *keyid*] command to define aSNTP server. The switch supports up to 8 SNTP servers. Use the **no sntp server** *ip-address* | *hostname* command to remove one SNTPserver. Use the **no sntp server** to remove all SNTP servers.

sntp source-interface

Syntax	**sntp source-interface** *interface-id* **no sntp source-interface**
Parameters	***interface-id***—Specifies the source interface.
Default Configuration	The source IPv4 address is the IPv4 address defined on the outgoing interface and belonging to next hop IPv4 subnet.
Command Mode	Global Configuration mode.
Usage	To specify the source interface whose IPv4 address will be used as the sourceIPv4 address for communication with IPv4 SNTP servers, use the **sntp source-interface** command in Global Configuration mode. To restore the default configuration, use the **no** form of this command.
Example	The following example configures the VLAN 10 as the source interface. switchxxxxxx(config)# **sntp source-interface vlan 10**
User Guideline	If the source interface is the outgoing interface, the interface IP address belonging to next hop IPv4 subnet is applied. If the source interface is not the outgoing interface, the minimal IPv4 address defined on the interface is applied. If there is no available IPv4 source address, a SYSLOG message is issued when attempting to communicate with an IPv4 SNTP server. OOB cannot be defined as a source interface.

sntp source-interface-ipv6

Syntax	**sntp source-interface-ipv6** *interface-id* **no sntp source-interface-ipv6**
Parameters	***interface-id***—Specifies the source interface.
Default Configuration	The IPv6 source address is the IPv6 address defined of the outgoing interface and selected in accordance with RFC6724.
Command Mode	Global Configuration mode.

Usage	To specify the source interface whose IPv6 address will be used as the Source IPv6 address for communication with IPv6 SNTP servers, use the **sntp source-interface-ipv6** command in Global Configuration mode. To restore the default configuration, use the **no** form of this command.
Example	The following example configures the VLAN 10 as the source interface. switchxxxxxx(config)# **sntp source-interface-ipv6 vlan 10**
User Guideline	The outgoing interface is selected based on the SNTP server's IP address. If the source interface is the outgoing interface, the IPv6 address defined on the interfaces and selected in accordance with RFC 6724. If the source interface is not the outgoing interface, the minimal IPv4 address defined on the interface and with the scope of the destination IPv6 address is applied. If there is no available IPv6 source address, a SYSLOG message is issued when attempting to communicate with an IPv6 SNTP server.

sntp trusted-key

Syntax	**sntp trusted-key** *key-number* **no sntp trusted-key** *key-number*
Parameters	***key-number***—Specifies the key number of the authentication key to be trusted. (Range: 1–4294967295).
Default Configuration	No keys are trusted.
Command Mode	Global Configuration mode.
Usage	To define the trusted key, use the **sntp trusted-key** command in Global Configuration mode. To restore the default configuration, use the **no** form of this command.
Example	The following example authenticates key 8. switchxxxxxx(config)# **sntp trusted-key 8** switchxxxxxx(config)#**sntpauthentication-key8md5ClkKey** switchxxxxxx(config)# **sntp trusted-key 8** switchxxxxxx(config)# **sntpauthenticate**

User Guideline	The trusted key is used for authentication of all servers not having personal keys assigned by the **sntp server** command.

sntp unicast client enable

Syntax	**sntp unicast client** enable **no sntp unicast client** enable
Parameters	N/A.
Default Configuration	The SNTP unicast clients are disabled.
Command Mode	Global Configuration mode.
Usage	To enable the device to use Simple Network Time Protocol (SNTP) Unicast clients,use the **sntp unicast client enable** command in Global Configuration mode. To disable the SNTP Unicast clients, use the **no** form of this command.
Example	The following example enables the device to use SNTP Unicast clients. switchxxxxxx(config)# **sntp unicast client enable**
User Guideline	Use the **sntp server** Global Configuration mode command to define SNTP servers.

sntp unicast client poll

Syntax	**sntp unicast client poll** **no sntp unicast client poll**
Parameters	N/A.
Default Configuration	Polling is disabled.
Command Mode	Global Configuration mode.
Usage	To enable polling for the SNTP Unicast clients, use the **sntp unicast client poll** command in Global Configuration mode. To disable the polling, use the **no** form ofthis command.

Example	The following example enables polling for SNTP unicast clients. switchxxxxxx(config)# **sntp unicast client poll**
User Guideline	The polling interval is 1024 seconds.

show clock

Syntax	**show clock [detail]**
Parameters	**detail**—(Optional) Displays the time zone and summer time configuration.
Default Configuration	Polling is disabled.
Command Mode	User EXEC mode.
Usage	To display the time and date from the system clock, use the **show clock** commandin User EXEC mode.
Example	**Example 1 -** The following example displays the system time and date. switchxxxxxx# **show clock** 15:29:03 PDT(UTC-7) Jun 17 2002 Time source is SNTP **Example 2 -** The following example displays the system time and date along withthe time zone and summer time configuration. switchxxxxxx# **show clock detail** 15:22:55 SUN Apr 23 2012 Time source is sntp Timezone(DHCPv4onVLAN1):Acronym is RAIN Offset is UTC+2 Timezone (Static):Offset is UTC+0 Summertime(DHCPv4onVLAN1):Acronym is SUN Recurring everyyear. BeginsatfirstSundayofAprat02:00.Endsatfirst TuesdayofSepat02:00. Offset is 60minutes. Summertime (Static):Acronym is GMT Recurring everyyear. BeginsatfirstSundayofMarat10:00.Endsatfirst SundayofSep at10:00. Offset is 60 minutes. DHCPtimezone:Enabled
User Guideline	Before the time, there is displayed either a star (*), period (.), or blank: star (*)—The clock is invalid. period (.)—The clock was set manually. blank—The clock was set by SNTP.

show sntp configuration

Syntax	show sntp configuration
Parameters	N/A.
Default Configuration	N/A.
Command Mode	Privileged EXEC mode.
Usage	To display the SNTP configuration on the device, use the **show sntp configuration** command in Privileged EXEC mode.
Example	The following example displays the device's current SNTP configuration. switchxxxxxx# **show sntp configuration** SNTP port : 123 Pollinginterval:1024secondsMD5 ---------- Authentication Keys 2 John123 3 Alice456 ---------- Authenticationisnotrequiredforsynchronization. No trusted keys Unicast Clients: enabled UnicastClients Polling:enabledServer: 1.1.1.121 Polling: disabled Encryption Key:disabled Server: 3001:1:1::1 Polling: enabled Encryption Key:disabled Server: dns_server1.comapany.comPolling: enabled Encryption Key: disabled Server:dns_server2.comapany.com Polling: enabled Encryption Key:disabled BroadcastClients:enabledforIPv4andIPv6Anycast Clients: disabled No Broadcast Interfaces Source IPv4 interface: vlan 1 Source IPv6 interface: vlan 10
User Guideline	-

show sntp status

Syntax	**show sntp status**
Parameters	N/A.
Default Configuration	N/A.
Command Mode	Privileged EXEC mode.
Usage	To display the SNTP servers status, use the **show sntp status** command in Privileged EXEC mode.
Example	The following example displays the SNTP servers status: Clock is synchronized, stratum 4, reference is 176.1.1.8, unicast Reference time is afe2525e.70597b34 (00:10:22.438 PDT Jul 5 1993) Unicast servers: Server: 176.1.1.8 Source: DHCPv4 on VLAN 1Status: Up Last response: 19:58:22.289 PDT Feb 192005 Stratum Level: 1 Offset: 7.33mSec Delay:117.79mSec Server: dns_server.comapany.com Source: static Status: Unknown Last response: 12:17.17.987 PDT Feb 192005 Stratum Level: 1 Offset: 8.98mSec Delay:189.19mSec Server: 3001:1:1::1 Source: DHCPv6 on VLAN 2Status: Unknown Last response: Offset:mSec Delay: mSec Server: dns1.company.com Source: DHCPv6 on VLAN 20 Status: Unknown Last response: Offset: mSec Delay: mSec Anycast servers: Server: 176.1.11.8 Interface: VLAN 112 Status: Up Last response: 9:53:21.789 PDT Feb 192005Stratum Level:10 Offset: 9.98mSec Delay: 289.19mSec Broadcast servers: Server: 3001:1::12

	Interface: VLAN 101 Last response: 9:53:21.789 PDT Feb 192005 Stratum Level: 255
User Guideline	-