ZebOS-XP®
Network Platform

Version 1.4
Extended Performance

Synchronous Ethernet
Command Reference

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Contents

Preface

This document describes the ZebOS-XP commands for Synchronous Ethernet (SynchE).

Audience

This document is intended for network administrators and other engineering professionals who configure and manage Synchronous Ethernet.

Conventions

Table P-1 shows the conventions used in this guide.

Table P-1: Conventions

Convention	Description
Italics	Emphasized terms; titles of books
Note:	Special instructions, suggestions, or warnings
`monospaced type`	Code elements such as commands, functions, parameters, files, and directories

Contents

This document contains these chapters:

- Chapter 1, *Command Line Interface*
- Chapter 2, *SyncE Configuration Commands*
- Chapter 3, *SyncE Show Commands*

Related Documents

The following guides are related to this document:

- *Synchronous Ethernet Configuration Guide*
- *Synchronous Ethernet Developer Guide*
- *Installation Guide*

Note: All ZebOS-XP technical manuals are available to licensed customers at http://www.ipinfusion.com/support/document_list.

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CHAPTER 1 Command Line Interface

This chapter introduces the ZebOS-XP Command Line Interface (CLI) and how to use its features.

Overview

You use the CLI to configure, monitor, and maintain ZebOS-XP devices. The CLI is text-based and each command is usually associated with a specific task.

You can give the commands described in this manual locally from the console of a device running ZebOS-XP or remotely from a terminal emulator such as `putty` or `xterm`. You can also use the commands in scripts to automate configuration tasks.

Starting the Command Line Interface

You must start daemons as described in this section before you can use the CLI. The general steps are listed below. For details about the ZebOS-XP daemons, see the *Installation Guide.*

1. Start your terminal emulator and connect to the device or go to the console of the device running ZebOS-XP.
2. Connect to the directory where you installed the ZebOS-XP executables.
3. Start the Network Services Module (NSM).
   ```
   # ./nsm -d
   ```
4. Start the protocol module daemons that your organization uses, such as `mstpd`, `ospf6d`, or `ripd`.
   ```
   # ./mstpd -d
   ```
5. Start the Integrated Management Interface (IMI) daemon.
   ```
   # ./imi -d
   ```
6. Start the IMI shell.
   ```
   # ./imish
   ```
   Note: Your organization may use a ZebOS-XP build that does not include `imish`. If that is the case, you must connect to a port on which a protocol daemon is listening. For details, see the *Installation Guide.*

You can now begin using the CLI.

Command Line Interface Help

You access the CLI help by entering a full or partial command string and a question mark “?”. The CLI displays the command keywords or parameters along with a short description. For example, at the CLI command prompt, type:

```
> show ?
```

The CLI displays this keyword list with short descriptions for each keyword:

```
show ?
  application-priority            Application Priority
```

```
  arp                             Internet Protocol (IP)
  bfd                             Bidirectional Forwarding Detection (BFD)
  bgp                             Border Gateway Protocol (BGP)
  bi-lsp                          Bi-directional lsp status and configuration
  bridge                          Bridge group commands
  ce-vlan                         COS Preservation for Customer Edge VLAN
  class-map                       Class map entry
  cli                             Show CLI tree of current mode
  clns                            Connectionless-Mode Network Service (CLNS)
  control-adjacency               Control Adjacency status and configuration
  control-channel                 Control Channel status and configuration
  cspf                            CSPF Information
  customer                        Display Customer spanning-tree
  cvlan                           Display CVLAN information
  debugging                       Debugging functions (see also 'undebug')
  dot1x                           IEEE 802.1X Port-Based Access Control
  etherchannel                    LACP etherchannel
  ethernet                        Layer-2
...
```

If you type the ? in the middle of a keyword, the CLI displays help for that keyword only.

```
> show de?
debugging  Debugging functions (see also 'undebug')
```

If you type the ? in the middle of a keyword, but the incomplete keyword matches several other keywords, ZebOS-XP displays help for all matching keywords.

```
> show i? (CLI does not display the question mark).
interface  Interface status and configuration
ip         IP information
isis       ISIS information
```

Command Completion

The CLI can complete the spelling of a command or a parameter. Begin typing the command or parameter and then press the tab key. For example, at the CLI command prompt type `sh`:

```
> sh
```

Press the tab key. The CLI displays:

```
> show
```

If the spelling of a command or parameter is ambiguous, the CLI displays the choices that match the abbreviation. Type `show i` and press the tab key. The CLI displays:

```
> show i
  interface  ip         ipv6       isis
> show i
```

The CLI displays the `interface` and `ip` keywords. Type `n` to select `interface` and press the tab key. The CLI displays:

```
> show in
> show interface
```

Type ? and the CLI displays the list of parameters for the `show interface` command.

```
> show interface
  IFNAME  Interface name
  |       Output modifiers
```

```
>       Output redirection
<cr>
```

The CLI displays the only parameter associated with this command, the `IFNAME` parameter.

Command Abbreviations

The CLI accepts abbreviations that uniquely identify a keyword in commands. For example:

```
> sh in eth0
```

is an abbreviation for:

```
> show interface eth0
```

Command Line Errors

Any unknown spelling causes the CLI to display the error `Unrecognized command` in response to the ?. The CLI displays the command again as last entered.

```
> show dd?
% Unrecognized command
> show dd
```

When you press the Enter key after typing an invalid command, the CLI displays:

```
(config)#router ospf here
                           ^
% Invalid input detected at '^' marker.
```

where the ^ points to the first character in error in the command.

If a command is incomplete, the CLI displays the following message:

```
> show
% Incomplete command.
```

Some commands are too long for the display line and can wrap mid-parameter or mid-keyword, as shown below. This does *not* cause an error and the command performs as expected:

```
area 10.10.0.18 virtual-link 10.10.0.19 authent
ication-key 57393
```

Command Negation

Many commands have a `no` form that resets a feature to its default value or disables the feature. For example:

- The `ip address` command assigns an IPv4 address to an interface
- The `no ip address` command removes an IPv4 address from an interface

Syntax Conventions

Table 1-1 describes the conventions used to represent command syntax in this reference.

Table 1-1: Syntax conventions

Convention	Description	Example
`monospaced font`	Command strings entered on a command line	`show esmc counters`
`lowercase`	Keywords that you enter exactly as shown in the command syntax.	`show esmc counters`
`UPPERCASE`	See Variable Placeholders	`IFNAME`
`()`	Optional parameters, from which you must select one. Vertical bars delimit the selections. Do not enter the parentheses or vertical bars as part of the command.	`(A.B.C.D|<0-4294967295>)`
`()`	Optional parameters, from which you select one or none. Vertical bars delimit the selections. Do not enter the parentheses or vertical bars as part of the command.	`(A.B.C.D|<0-4294967295>|)`
`()`	Optional parameter which you can specify or omit. Do not enter the parentheses or vertical bar as part of the command.	`(IFNAME|)`
`{}`	Optional parameters, from which you must select one or more. Vertical bars delimit the selections. Do not enter the braces or vertical bars as part of the command.	`{intra-area <1-255>|inter-area <1-255>|external <1-255>}`
`[]`	Optional parameters, from which you select zero or more. Vertical bars delimit the selections. Do not enter the brackets or vertical bars as part of the command. A '?' before a parameter in square brackets limits that parameter to one occurrence in a command string.	`[<1-65535>|AA:NN|internet|local-AS|no-advertise|no-export]`
`.`	Repeatable parameter. The parameter that follows a period can be repeated more than once. Do not enter the period as part of the command.	`set as-path prepend .<1-65535>`

Variable Placeholders

Table 1-2 shows the tokens used in command syntax use to represent variables for which you supply a value.

Table 1-2: Variable placeholders

Token	Description
WORD	A contiguous text string (excluding spaces)
LINE	A text string, including spaces; no other parameters can follow this parameter
IFNAME	Interface name whose format varies depending on the platform; examples are: eth0, Ethernet0, ethernet0, xe0
A.B.C.D	IPv4 address
A.B.C.D/M	IPv4 address and mask/prefix
X:X::X:X	IPv6 address
X:X::X:X/M	IPv6 address and mask/prefix
HH:MM:SS	Time format
AA:NN	BGP community value
XX:XX:XX:XX:XX:XX	MAC address
<1-5> <1-65535> <0-2147483647> <0-4294967295>	Numeric range

Command Description Format

Table 1-3 explains the sections used to describe each command in this reference.

Table 1-3: Command descriptions

Section	Description
Command Name	The name of the command, followed by what the command does and when should it be used
Command Syntax	The syntax of the command
Parameters	Parameters and options for the command
Default	The state before the command is executed
Command Mode	The mode in which the command runs; see Command Modes
Example	An example of the command being executed

Keyboard Operations

Table 1-4 lists the operations you can perform from the keyboard.

Table 1-4: Keyboard operations

Key combination	Operation
Left arrow or Ctrl+b	Moves one character to the left. When a command extends beyond a single line, you can press left arrow or Ctrl+b repeatedly to scroll toward the beginning of the line, or you can press Ctrl+a to go directly to the beginning of the line.
Right arrow or Ctrl-f	Moves one character to the right. When a command extends beyond a single line, you can press right arrow or Ctrl+f repeatedly to scroll toward the end of the line, or you can press Ctrl+e to go directly to the end of the line.
Esc, b	Moves back one word
Esc, f	Moves forward one word
Ctrl+e	Moves to end of the line
Ctrl+a	Moves to the beginning of the line
Ctrl+u	Deletes the line
Ctrl+w	Deletes from the cursor to the previous whitespace
Alt+d	Deletes the current word
Ctrl+k	Deletes from the cursor to the end of line
Ctrl+y	Pastes text previously deleted with Ctrl+k, Alt+d, Ctrl+w, or Ctrl+u at the cursor

Table 1-4: Keyboard operations (Continued)

Key combination	Operation
Ctrl+t	Transposes the current character with the previous character
Ctrl+c	Ignores the current line and redisplays the command prompt
Ctrl+z	Ends configuration mode and returns to exec mode
Ctrl+l	Clears the screen
Up Arrow or Ctrl+p	Scroll backward through command history
Down Arrow or Ctrl+n	Scroll forward through command history

Show Command Modifiers

You can use two tokens to modify the output of a `show` command. Enter a question mark to display these tokens:

```
# show users ?
  | Output modifiers
  > Output redirection
```

You can type the | (vertical bar character) to use output modifiers. For example:

```
> show rsvp | ?
  begin     Begin with the line that matches
  exclude   Exclude lines that match
  include   Include lines that match
  redirect  Redirect output
```

Begin Modifier

The `begin` modifier displays the output beginning with the first line that contains the input string (everything typed after the `begin` keyword). For example:

```
# show run | begin eth1
...skipping
interface eth1
 ipv6 address fe80::204:75ff:fee6:5393/64
!
interface eth2
 ipv6 address fe80::20d:56ff:fe96:725a/64
!
line con 0
 login
!
end
```

You can specify a regular expression after the `begin` keyword, This example begins the output at a line with either “eth3” or “eth4”:

```
# show run | begin eth[3-4]

...skipping
interface eth3
```

```
 shutdown
!
interface eth4
 shutdown
!
interface svlan0.1
 no shutdown
!
route-map myroute permit 3
!
route-map mymap1 permit 10
!
route-map rmap1 permit 3
!
line con 0
 login
line vty 0 4
 login
!
end
```

Include Modifier

The `include` modifier includes only those lines of output that contain the input string. In the output below, all lines containing the word “input” are included:

```
# show interface eth1 | include input
    input packets 80434552, bytes 2147483647, dropped 0, multicast packets 0
    input errors 0, length 0, overrun 0, CRC 0, frame 0, fifo 1, missed 0
```

You can specify a regular expression after the `include` keyword. This examples includes all lines with “input” or “output”:

```
#show int eth0 | include (in|out)put
    input packets 597058, bytes 338081476, dropped 0, multicast packets 0
    input errors 0, length 0, overrun 0, CRC 0, frame 0, fifo 0, missed 0
    output packets 613147, bytes 126055987, dropped 0
    output errors 0, aborted 0, carrier 0, fifo 0, heartbeat 0, window 0
```

Exclude Modifier

The `exclude` modifier excludes all lines of output that contain the input string. In the following output example, all lines containing the word “input” are excluded:

```
# show interface eth1 | exclude input
Interface eth1
  Scope: both
  Hardware is Ethernet, address is 0004.75e6.5393
  index 3 metric 1 mtu 1500 <UP,BROADCAST,RUNNING,MULTICAST>
  VRF Binding: Not bound
  Administrative Group(s): None
  DSTE Bandwidth Constraint Mode is MAM
  inet6 fe80::204:75ff:fee6:5393/64
    output packets 4438, bytes 394940, dropped 0
    output errors 0, aborted 0, carrier 0, fifo 0, heartbeat 0, window 0
    collisions 0
```

You can specify a regular expression after the `exclude` keyword. This example excludes lines with “output” or “input”:


```
# show interface eth0 | exclude (in|out)put
Interface eth0
  Scope: both
  Hardware is Ethernet  Current HW addr: 001b.2139.6c4a
  Physical:001b.2139.6c4a  Logical:(not set)
  index 2 metric 1 mtu 1500 duplex-full arp ageing timeout 3000
  <UP,BROADCAST,RUNNING,MULTICAST>
  VRF Binding: Not bound
  Bandwidth 100m
  DHCP client is disabled.
  inet 10.1.2.173/24 broadcast 10.1.2.255
  VRRP Master of :  VRRP is not configured on this interface.
  inet6 fe80::21b:21ff:fe39:6c4a/64
    collisions 0
```

Redirect Modifier

The `redirect` modifier writes the output into a file. The output is not displayed.

```
# show history | redirect /var/frame.txt
```

The output redirection token (>) does the same thing:

```
# show history >/var/frame.txt
```

Command Modes

Commands are grouped into modes arranged in a hierarchy. Each mode has its own set of commands. Table 1-5 lists the command modes common to all protocols.

Table 1-5: Common command modes

Name	Description
Executive mode	Also called *view* mode, this is the first mode to appear after you start the CLI. It is a base mode from where you can perform basic commands such as `show`, `exit`, `quit`, `help`, `list`, and `enable`.
Privileged executive mode	Also called *enable* mode, in this mode you can run additional basic commands such as `debug`, `write`, and `show`.
Configure mode	Also called *configure terminal* mode, in this mode you can run configuration commands and go into other modes such as interface, router, route map, key chain, and address family.
Interface mode	In this mode you can configure protocol-specific settings for a particular interface. Any setting you configure in this mode overrides a setting configured in router mode.
Router mode	This mode is used to configure router-specific settings for a protocol such as RIP or OSPF.

Command Mode Tree

The diagram below shows the common command mode hierarchy.

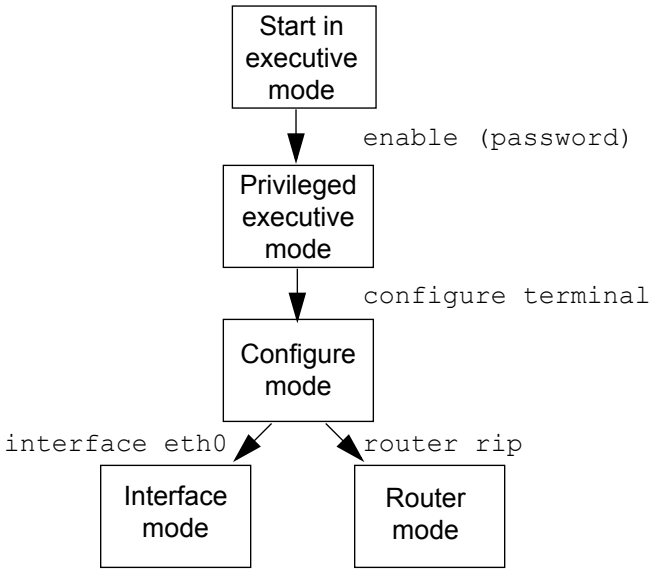

Figure 1-1: Common command modes

To change modes:

1. Enter privileged executive mode by entering `enable` in Executive mode.
2. Enter configure mode by entering `configure terminal` in Privileged Executive mode.

The example below shows starting `imish` and then moving from executive mode to privileged executive mode to configure mode and finally to router mode:

```
# ./imish
> enable mypassword
# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
(config)# router rip
(config-router)#
```

Note: Each protocol can have modes in addition to the common command modes. See the command reference for the respective protocol for details.

Debug Command

Whether the settings you make for a `debug` command persist between sessions depends on the mode where you make the settings:

- When you make settings for a `debug` command in executive mode, the configuration is valid for the current session only and is not saved in the `ZebOS.conf` file.
- When you make settings for a `debug` command in configuration mode, the configuration is retained and saved in `ZebOS.conf` and used even after the session restarts.

CHAPTER 2 SyncE Configuration Commands

This chapter describes the Synchronous Ethernet configuration commands:

clear switch-source

Use this command to clear the switch-source setting (forced or manual).

You can use this command in two modes:

- In *interface Synchronous Ethernet mode*, this command clears the switch-source setting for the interface
- In *configure Synchronous Ethernet mode*, this command clears the switch-source setting for an external timing source

Command Syntax

```
clear switch-source
clear switch-source external
```

Parameters

`external`	Clear the switch-source setting for an external timing source

Command Mode

Interface Synchronous Ethernet mode

Configure Synchronous Ethernet mode

Example

```
(config)#interface eth1
(config-if)#synce
(config-if-synce)#clear switch-source

(config)#synce
(config-synce)#clear switch-source external
```

clock-selection mode

Use this command to determine whether to use the quality level (QL) as a criteria when selecting a clock.

Command Syntax

```
clock-selection mode (ql-enabled|ql-disabled)
```

Parameters

`ql-enabled`	Use the quality level as a criteria when selecting a clock
`ql-disabled`	Do not use the quality level as a criteria when selecting a clock

Command Mode

Configure Synchronous Ethernet mode

Example

```
(config)#synce
(config-synce)#clock-selection mode ql-enabled
```

hold-off

Use this command to set the hold-off time. The hold-off time ensures that short activation of signal fail is not passed to the selection process.

You can use this command in two modes:

- In *interface Synchronous Ethernet mode*, this command sets the hold-off time for the interface
- In *configure Synchronous Ethernet mode*, this command sets the hold-off time for an external timing source

Command syntax

```
hold-off HOLDOFFVAL
hold-off HOLDOFFVAL external
```

Parameters

`HOLDOFFVAL`	Hold-off time in milliseconds <300-1800>
`external`	Set the hold-off time for an external timing source

Default

The default value is 300 milliseconds.

Command Mode

Interface Synchronous Ethernet mode

Configure Synchronous Ethernet mode

Examples

```
(config)#interface eth1
(config-if)#synce
(config-if-synce)#hold-off 500

(config)#synce
(config-synce)#hold-off 500 external
```

input-source

Use this command to set an input timing source. Synchronization packets are received from this source and sent to the clock selection algorithm.

You can use this command in two modes:

- In *interface Synchronous Ethernet mode*, this command sets the input source as the interface
- In *configure Synchronous Ethernet mode*, this command sets an external input source (BITS)

Use the `no` form of this command to delete an input source.

Command Syntax

```
input-source <0-255>
input-source PRIORITY external
no input-source
no input-source external
```

Parameters

`<0-255>`	Priority: 1 is the highest, 255 is the lowest; 0 means the source will not be considered by the clock selection algorithm
`PRIORITY`	Priority: 1 is the highest, 255 is the lowest; 0 means the source will not be considered by the clock selection algorithm
`external`	Set an external input timing source

Default

The default value is 0 meaning the interface will not be considered by the clock selection algorithm.

Command Mode

Interface Synchronous Ethernet mode

Configure Synchronous Ethernet mode

Example

```
(config)#interface eth1
(config-if)#synce
(config-if-synce)#input-source 1

(config)#synce
(config-synce)#input-source 1 external
```

lockout

Use this command to set or clear the lockout for a clock source. A clock source flagged as lockout is not considered by the clock selection algorithm.

You can use this command in two modes:

- In *interface Synchronous Ethernet mode*, this command sets or clears the lockout for the interface
- In *configure Synchronous Ethernet mode*, this command sets or clears the lockout for an external timing source

Command Syntax

```
set lockout
set lockout external
clear lockout
clear lockout external
```

Parameters

`set`	Set lockout for a timing source
`clear`	Clear lockout for a timing source
`external`	Set or clear lockout for an external timing source

Command Mode

Interface Synchronous Ethernet mode

Configure Synchronous Ethernet mode

Example

```
(config)#interface eth1
(config-if)#synce
(config-if-synce)#set lockout

(config)#synce
(config-synce)#set lockout external
```

mode

Use this command to configure the interface as synchronous or non-synchronous:

- A synchronous interface extracts the frequency of its input signal from synchronization packets and passes it to the internal clock
- A non-synchronous interface does not participate in the synchronization process

Command Syntax

```
mode (synchronous | non-synchronous)
```

Parameters

`synchronous`	Synchronous mode
`non-synchronous`	Non-synchronous mode

Command Mode

Interface Synchronous Ethernet mode

Example

```
(config)#interface eth1
(config-if)#synce
(config-if-synce)#mode synchronous
```

output-source

Use this command to set a timing output source.

You can use this command in two modes:

- In *interface Synchronous Ethernet mode*, this command sets the interface as the output source
- In *configure Synchronous Ethernet mode*, this command sets an external output source

Use the `no` form of this command to delete a timing output source.

Command Syntax

```
output-source
output-source external
no output-source
no output-source external
```

Parameters

`external`	Set an external timing output source

Command Mode

Interface Synchronous Ethernet mode

Configure Synchronous Ethernet mode

Example

```
(config)#interface eth1
(config-if)#synce
(config-if-synce)#output-source

(config)#synce
(config-synce)#output-source external
```

quality-level

Use this command to set the quality level (QL) for the for a timing source.

You can use this command in two modes:

- In *interface Synchronous Ethernet mode*, this command sets the quality level for the interface
- In *configure Synchronous Ethernet mode*, this command sets the quality level for an external timing source

Use the `no` form of this command to set the quality level to its default value (-1).

Command Syntax

```
quality-level QL_VAL
quality-level QL_VAL external
no quality-level
```

Parameters

`QL_VAL`	Quality level. The quality level you can specify depends on setting of the synchronization option command. See ITU-T Rec. G.781 for details.
`QL_PRC`	Primary Reference Clock
`QL_SSU_A`	Types I or V slave clock
`QL_SSU_B`	Type VI slave clock
`QL_SEC`	SDH Equipment Clock
`QL_DNU`	Do not use this signal for synchronization
`QL_STU`	Synchronized – traceability unknown
`QL_ST2`	Traceable to stratum 2
`QL_ST3`	Traceable to stratum 3
`QL_ST3E`	Traceable to stratum 3E
`QL_SMC`	Traceable to SONET clock self timed
`QL_TNC`	Traceable to Transit Node Clock
`QL_PROV`	Provisionable by the network operator
`QL_DUS`	Do not use this signal for synchronization
`external`	Set the quality level for an external timing source

Default

The default value is -1.

Command Mode

Interface Synchronous Ethernet mode

Configure Synchronous Ethernet mode

Examples

```
(config)#interface eth1
(config-if)#synce
```

```
(config-if-synce)#quality-level 10

(config)#synce
(config-synce)#quality-level 10 external
```

switch-source

Use this command to forcefully or manually select a synchronization source.

You can use this command in two modes:

- In *interface Synchronous Ethernet mode*, this command forcefully or manually selects an interface timing source
- In *configure Synchronous Ethernet mode*, this command forcefully or manually selects an external timing source

Command Syntax

```
switch-source (force | manual)
switch-source (force | manual) external
```

Parameters

`force`	Forcefully select a synchronization source
`manual`	Manually select a synchronization source
`external`	External synchronization source

Command Mode

Interface Synchronous Ethernet mode

Configure Synchronous Ethernet mode

Example

```
(config)#interface eth1
(config-if)#synce
(config-if-synce)#switch-source manual

(config)#synce
(config-synce)#switch-source manual external
```

synce (configure mode)

Use this command to configure Synchronous Ethernet.

This command changes the mode from configure mode to configure Synchronous Ethernet mode and initializes the global Synchronous Ethernet parameters.

Command Syntax

```
synce
```

Parameters

None

Command Mode

Configure mode

Example

```
(config)#synce
(config-synce)
```

synce (interface mode)

Use this command to enable Synchronous Ethernet for an interface.

This command changes the mode from interface mode to interface Synchronous Ethernet mode.

This command does not automatically start synchronization distribution. You must explicitly give the mode command, specifying the `synchronous` option.

Use the `no` form of this command disable Synchronous Ethernet for an interface.

Command Syntax

```
synce
no synce
```

Parameters

None

Command Mode

Interface mode

Example

```
(config)#interface eth1
(config-if)#synce
(config-if-synce)#
```

synce debug

Use this command to turn on debugging.

Use the `no` from of this command to turn off debugging

Command Syntax

```
synce debug (event|recvd|trans)
no synce debug (event|recvd|trans)
```

Parameters

`event`	Enable event debugging
`recvd`	Enable reception debugging
`trans`	Enable transmission debugging

Command Mode

Privileged Exec mode

Example

```
#synce debug event
```

synchronization option

Use this command to set the synchronization option for the internal clock that is locked in frequency to an incoming signal.

Command Syntax

```
synchronization option (1 | 2 (gen1 | gen2) | 3)
```

Parameters

1		Networks optimized for the 2048 kbit/s hierarchy
2		Networks optimized for the 1544 kbit/s hierarchy that includes the rates 1544 kbit/s, 6312 kbit/s, and 44 736 kbit/s
	gen1	First generation (7 quality level set)
	gen2	Second generation (9 quality level set)
3		Networks optimized for the 1544 kbit/s hierarchy that includes the rates 1544 kbit/s, 6312 kbit/s, 33 064 kbit/s, 44 736 kbit/s, and 97 728 kbit/s

Default

The default value is 1.

Command Mode

Configure Synchronous Ethernet mode

Example

```
(config)#synce
(config-synce)#synchronization option 2 gen1
```

wait-to-restore

Use this command to set the wait-to-restore time. The wait-to-restore time ensures that a synchronization source that previously failed is considered by the selection process again only if it is fault free for a certain time.

You can use this command in two modes:

- In *interface Synchronous Ethernet mode*, this command sets the wait-to-restore time for the interface
- In *configure Synchronous Ethernet mode*, this command sets the wait-to-restore time for an external timing source

Command syntax

```
wait-to-restore <0-12>
wait-to-restore WTRVAL external
```

Parameters

`<0-12>`	Wait-to-restore time in minutes
`WTRVAL`	Wait-to-restore time in minutes <0-12>
`external`	Set the wait-to-restore time for an external timing source

Default

The default value is 5 minutes.

Command Mode

Interface Synchronous Ethernet mode

Configure Synchronous Ethernet mode

Examples

```
(config)#interface eth1
(config-if)#synce
(config-if-synce)#wait-to-restore 1

(config)#synce
(config-synce)#wait-to-restore 1 external
```

CHAPTER 3 SyncE Show Commands

This chapter describes the Synchronous Ethernet show commands:

show esmc counters

Use this command to display ESMC counters.

Command Syntax

```
show esmc counters
```

Parameters

None

Command Mode

Privileged Exec mode

Example

```
#show esmc counters
```

show synce details

Use this command to display details of the clock most recently selected by the clock selection algorithm (CSA).

Command Syntax

```
show synce details
```

Parameters

None

Command Mode

Privileged Exec mode

Example

```
#show synce details
```

show synce input-sources

Use this command to display details of all interfaces that are configured as Synchronous Ethernet input sources.

Command Syntax

```
show synce input-sources
```

Parameters

None

Command Mode

Privileged Exec mode

Example

```
#show synce input-sources
```

show sync output-sources

Use this command to display details of all interfaces that are configured as Synchronous Ethernet output sources.

Command Syntax

```
show synce output-sources
```

Parameters

None

Command Mode

Privileged Exec mode

Example

```
#show synce output-sources
```

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