

CTP Series Circuit to Packet Platform

CTPOS Command Line Reference Guide

Published
2020-01-29

Release
9.1

Juniper Networks, Inc.
1133 Innovation Way
Sunnyvale, California 94089
USA
408-745-2000
www.juniper.net

Copyright © 2020, Juniper Networks, Inc. All rights reserved.

Juniper Networks, Junos, Steel-Belted Radius, NetScreen, and ScreenOS are registered trademarks of Juniper Networks, Inc. in the United States and other countries. The Juniper Networks Logo, the Junos logo, and JunosE are trademarks of Juniper Networks, Inc. All other trademarks, service marks, registered trademarks, or registered service marks are the property of their respective owners.

Juniper Networks assumes no responsibility for any inaccuracies in this document. Juniper Networks reserves the right to change, modify, transfer, or otherwise revise this publication without notice.

Products made or sold by Juniper Networks or components thereof might be covered by one or more of the following patents that are owned by or licensed to Juniper Networks: U.S. Patent Nos. 5,473,599, 5,905,725, 5,909,440, 6,192,051, 6,333,650, 6,359,479, 6,406,312, 6,429,706, 6,459,579, 6,493,347, 6,538,518, 6,538,899, 6,552,918, 6,567,902, 6,578,186, and 6,590,785.

CTP Series Circuit to Packet Platform CTPOS Command Line Reference Guide, CTP Release 9.1
Copyright © 2019 Juniper Networks, Inc. All rights reserved.

Revision History

February 2020—CTPOS Command Line Reference Guide, CTP Release 9.1

The information in this document is current as of the date on the title page.

END USER LICENSE AGREEMENT

The Juniper Networks product that is the subject of this technical documentation consists of (or is intended for use with) Juniper Networks software. Use of such software is subject to the terms and conditions of the End User License Agreement ("EULA") posted at <https://support.juniper.net/support/eula/>. By downloading, installing or using such software, you agree to the terms and conditions of that EULA.

Table of Contents

1

Command Line Considerations

1

System Commands

Syslog Commands | 11

To view help | 11

To read current configured settings | 11

To set syslog to output to a specific destination and enable | 12

To disable syslog | 12

SNMP Commands | 13

To view SNMP help output | 13

To view current system configuration for SNMP | 14

To enable SNMP to allow access from any IP address | 14

To disable SNMP | 15

SNMP Traps Commands | 17

To view SNMPTrap configuration help | 17

To read current SNMPTrap configuration | 18

To enable SNMPTraps to be sent to specific Trap receiver. | 18

To disable SNMP | 18

SNMP Traps | 19

To view SNMP Trap configuration help | 19

To read current SNMPTrap configuration | 19

To enable SNMPTraps to be sent to specific Trap receiver | 20

To disable SNMP | 20

NTP | 21

To view NTP configuration help | 21

To read current NTP configuration | 21

To enable NTP for specific server | 22

To Disable NTP | 22

Virtual IP Configuration | 23

To view configured Virtual IP addresses (with expected output after reboot) | 23

To delete a Virtual IP address | 24

8

Bundle Configuration Commands

To add a bundle, define bundle number and type | 27

To configure a bundle | 27

To configure remote IP address | 28

To configure remote cid and local cid | 28

To Configure packet size (in bytes) | 28

To configure buffer min/set/max (in milliseconds) | 28

To configure the Time to Live in the IP packet (range 0-255) | 29

To Configure the IP TOS byte in the IP packet (range 0-255) | 29

To configure the IP TOS byte in the OAM packet (range 0-255) | 29

To configure the OAM packet settings | 29

To configure the port associated with the bundle | 30

To configure the port interface type | 30

To configure the port interface mode (DCE or DTE) | 31

To configure the port interface encoding | 31

To configure the port interface encoding | 31

To configure the port interface speed | 31

To configure the port interface clocking | 32

To configure port Y-cable redundancy | 33

To configure port high TT checking only | 33

To configure bundle for direct drive | 33

9

Bundle State Commands

To activate bundle | 37

To disable bundle | 37

To delete bundle | 37

To recenter a buffer for bundle | 37

10

Bundle Statistics Commands

To show bundle statistics | 41

To clear port statistics | 42

11

Port Statistics Commands

To query all on a port | 45

To clear port statistics | 46

12

Port Diagnostic Commands

To set serial loops on ports | 49

To query serial loops on ports | 49

To set BERTs on ports | 49

To query BERT status on port: | 50

13

Node Reference Commands

To display node summary | 53

To configure node for external reference source | 53

To configure node for external reference rate | 54

14

Node Summary Commands

| 57

To get a summary of all cards installed | 57

To get a summary of all daughter cards installed | 58

To get a summary of all ports | 58

To get a summary of all bundles | 59

15

TACACS

Viewing the Current TACACS+ Configuration | 63

16

Set Reclock RD to align RD/RT

| 67

17

Ethernet Autoswitch Configuration

Configuring Ethernet Autoswitch From the CLI | 71

18

Appendix

Working with syscfg | 77

Accessing help for a Particular Utility | 78

Viewing the Current NTP Configuration | 79

Activating NTP on a CTP to a server | 80

1

CHAPTER

Command Line Considerations

1

PART

System Commands

Syslog Commands | **11**

SNMP Commands | **13**

SNMP Traps Commands | **17**

SNMP Traps | **19**

NTP | **21**

Virtual IP Configuration | **23**

Syslog Commands

IN THIS CHAPTER

- To view help | 11
- To read current configured settings | 11
- To set syslog to output to a specific destination and enable | 12
- To disable syslog | 12

To view help

- ```
[ctp_cmd@nova_45 ~ 1]> syscfg -h -u netlog
Useage: syscfg -s -u netlog -v SIP<ip>:ST
Configures network syslog with server ip <ip>, and state either on =1 or off =0.
Useage: syscfg -r -u netlog
Prints out the netlog configuration in above format.
```

## To read current configured settings

- ```
syscfg -r -u netlog

Example (with expected results)
[ctp_cmd@nova_45 ~ 1]> syscfg -r -u netlog
SIP10.0.0.0:ST0
```

To set syslog to output to a specific destination and enable

-

```
syscfg -s -u netlog -v SIP<ip>:ST1
Example (with expected results)
[ctp_cmd@nova_45 ~ 2]> syscfg -s -u netlog -v SIP172.25.61.123:ST1
Shutting down kernel logger: [ OK ]
Shutting down system logger: [ OK ]
Starting system logger: [ OK ]
Starting kernel logger: [ OK ]
[ctp_cmd@nova_45 ~ 3]>
```

To disable syslog

-

```
syscfg -s -u netlog -v SIP<ip>:ST0
```

Example (with expected results)

```
[ctp_cmd@nova_45 ~ 3]> syscfg -s -u netlog -v SIP0.0.0.0:ST0
Shutting down kernel logger: [ OK ]
Shutting down system logger: [ OK ]
Starting system logger: [ OK ]
Starting kernel logger: [ OK ]
[ctp_cmd@nova_45 ~ 4]>
```

Log Events

```
Jan 23 15:47:47 nova_45 kernel: Kernel logging (proc) stopped.
Jan 23 15:47:47 nova_45 kernel: Kernel log daemon terminating.
Jan 23 15:47:48 nova_45 syslog: klogd shutdown succeeded
Jan 23 15:47:48 nova_45 exiting on signal 15
Jan 23 15:47:48 nova_45 syslogd 1.4.1: restart.
Jan 23 15:47:48 nova_45 syslog: syslogd startup succeeded
Jan 23 15:47:48 nova_45 kernel: klogd 1.4.1, log source = /proc/kmsg started.
Jan 23 15:47:48 nova_45 syslog: klogd startup succeeded
```

SNMP Commands

IN THIS CHAPTER

- To view SNMP help output | 13
- To view current system configuration for SNMP | 14
- To enable SNMP to allow access from any IP address | 14
- To disable SNMP | 15

To view SNMP help output

```
[ctp_cmd@nova_47 ~ 1]> syscfg -h -u snmpdconf
```

```
Usage: syscfg -s -u snmpdconf [-o interactive] [-v '[:<token>:[<token>:]]'
```

```
-o interactive option will ask the user for input (menu mode)
```

```
-v strings begin and end with a ":", and have one or more tokens
```

```
Valid tokens are:
```

```
CO,<string> = Contact String. Alphanum, -, _ or space
```

```
LO,<string> = Location String. Alphanum, -, _ or space
```

```
STx = Enable or disable SNMP daemon (1=enable,0=disable).
```

```
USR,rw|ro,2,4|6,comm,ip,
```

```
    rw|ro - read/write or read-only snmp user
```

```
    2      - SNMPv2 user (SNMPv1 also)
```

```
    4|6    - IPv4 or IPv6 user
```

```
    comm  - community string (alphanum,_,-,!,@ or #)
```

```
    ip    - IP access for specific IP address, or "default" for any IP
```

```
            - IP (v4&v6) Subnet access is OK using CIDR notation
```

```
USR,ro,3,user,pass,
```

```
    ro    - read-only snmp user
```

```
    3     - SNMPv3 user
```

```
    user  - username
```

```
    pass  - password (must be at least 8 chars)
```

Notes:

- Leaving out C0 and L0 tokens will result in those fields being set to "Unset" in the config file
- Only USR tokens specified will exist on the system after config
All previous SNMP users will be deleted
SNMPv3 users are fixed to any IP access

Usage: syscfg -r -u snmpdconf
Dumps current SNMP config in above -v format

To view current system configuration for SNMP

Example:

```
[ctp_cmd@nova_47 ~ 2]> syscfg -r -u snmpdconf
```

Example results:

```
:ST0:L0, Lab:C0, System  
Administrator:USR,ro,2,4,acom,default,:USR,ro,2,6,acom,default,:USR,rw,2,4,acomw,default,:USR,rw,2,6,acomw,default,:
```

To enable SNMP to allow access from any IP address

Usage:

```
syscfg -s -u snmpdconf -v :ST1:L0<location string>:C0<contact  
string>:USR,rw|ro,2,4|6,comm,ip,: USR,ro,3,user,pass,:
```

Example (with expected results)

```
[ctp_cmd@nova_47 log 19]> syscfg -s -u snmpdconf -v :ST1:L0,"Lab":C0,"System  
Administrator":USR,ro,2,4,acom,default,:USR,ro,2,6,acom,default,:USR,rw,2,4,acomw,default,:USR,ro,3,acom3,password,:  
Shutting down snmpd: [ OK ]  
Starting snmpd:      [ OK ]
```

Log Events

```
Feb 11 16:44:07 nova_47 snmpd: snmpd startup succeeded
```

To disable SNMP

-

Usage:

```
syscfg -s -u snmpdconf -v :ST0:L0<location string>:C0<contact
string>:USR,rw|ro,2,4|6,comm,ip,: USR,ro,3,user,pass,:
```

Example (with expected results)

```
[ctp_cmd@nova_47 log 21]> syscfg -s -u snmpdconf -v :ST0:L0,"Lab":C0,"System
Administrator":USR,ro,2,4,acom,default,:USR,ro,2,6,acom,default,:USR,rw,2,4,acomw,default,:USR,ro,3,acom3,password,:
Shutting down snmpd: [ OK ]
```

Log Events

```
Feb 11 16:47:54 nova_47 snmpd: snmpd shutdown succeeded
```

SNMP Traps Commands

IN THIS CHAPTER

- To view SNMPTrap configuration help | 17
- To read current SNMPTrap configuration | 18
- To enable SNMPTraps to be sent to specific Trap receiver. | 18
- To disable SNMP | 18

To view SNMPTrap configuration help

-

Example SNMP Trap help command

```
[ctp_cmd@nova_47 ~ 1]> syscfg -h -u snmptrap
```

```
Useage: syscfg -s -u snmptrap [-o interactive] [-v '<token>:[<token>:][<token>:]']
```

-o interactive option will ask the user for input (menu mode)

-v strings begin and end with a ":", and have one or more tokens

Valid tokens are:

STx x = Enable or disable SNMP traps (1=enable,0=disable).

TRx x = SNMP trap community string.

IP,x, x = trap host IP (IPv4 or IPv6 format)

Notes:

- Leaving out TR token will set it to "none".

To read current SNMPTrap configuration

- ```
[ctp_cmd@nova_47 ~ 3]> syscfg -r -u snmptrap
:ST0:TRnone:IP,10.0.0.0,:
```

## To enable SNMPTraps to be sent to specific Trap receiver.

- Usage:

```
syscfg -s -u snmptrap -v :TR<community name>:IP,<ip>,<ip>,:ST<0|1>:
```

Example (with expected results):

```
[ctp_cmd@nova_47 log 15]> syscfg -s -u snmptrap -v
:TRacorn_trap:ST1:IP,172.25.60.64,:
```

Log Events

|                                 |                                 |
|---------------------------------|---------------------------------|
| Jan 23 15:36:02 nova_45 ctpd: 6 | Trap: Got TrapComm acorn_trap   |
| Jan 23 15:36:02 nova_45 ctpd: 6 | Trap: Got TrapHost 172.25.60.64 |
| Jan 23 15:36:02 nova_45 ctpd: 6 | Trap: SNMP traps enabled        |

## To disable SNMP

- Example (with expected results):

```
[ctp_cmd@nova_47 ~ 3]> syscfg -s -u snmptrap -v :ST0:
```

Log Events

|                                 |                               |
|---------------------------------|-------------------------------|
| Jan 23 15:35:26 nova_45 ctpd: 6 | Trap: Got TrapComm acorn_trap |
| Jan 23 15:35:26 nova_45 ctpd: 6 | Trap: Got TrapHost none       |
| Jan 23 15:35:26 nova_45 ctpd: 6 | Trap: SNMP traps disabled     |

# SNMP Traps

## IN THIS CHAPTER

- To view SNMP Trap configuration help | 19
- To read current SNMPTrap configuration | 19
- To enable SNMPTraps to be sent to specific Trap receiver | 20
- To disable SNMP | 20

## To view SNMP Trap configuration help

- ```
[ctp_cmd@nova_47 ~ 1]> syscfg -h -u snmptrap
```


 Usage: syscfg -s -u snmptrap [-o interactive] [-v ':<token>:[<token>:][<token>:]']

 -o interactive option will ask the user for input (menu mode)
 -v strings begin and end with a ":", and have one or more tokens
 Valid tokens are:
 STx x = Enable or disable SNMP traps (1=enable,0=disable).
 TRx x = SNMP trap community string.
 IP,x, x = trap host IP (IPv4 or IPv6 format)

 Notes:
 - Leaving out TR token will set it to "none".

To read current SNMPTrap configuration

- ```
[ctp_cmd@nova_47 ~ 3]> syscfg -r -u snmptrap
```

  
 :ST0:TRnone:IP,10.0.0.0,:

## To enable SNMPTraps to be sent to specific Trap receiver

- `syscfg -s -u snmptrap -v :TR<community name>:IP,<ip>,<ip>,:ST<0|1>:`

Example (with expected results):

```
[ctp_cmd@nova_47 log 15]> syscfg -s -u snmptrap -v
:TRacorn_trap:ST1:IP,172.25.60.64,:
```

Log Events

```
Jan 23 15:36:02 nova_45 ctpd: 6 Trap: Got TrapComm acorn_trap
Jan 23 15:36:02 nova_45 ctpd: 6 Trap: Got TrapHost 172.25.60.64
Jan 23 15:36:02 nova_45 ctpd: 6 Trap: SNMP traps enabled
```

## To disable SNMP

- `[ctp_cmd@nova_47 ~ 3]> syscfg -s -u snmptrap -v :ST0:`

Log Events

```
Jan 23 15:35:26 nova_45 ctpd: 6 Trap: Got TrapComm acorn_trap
Jan 23 15:35:26 nova_45 ctpd: 6 Trap: Got TrapHost none
Jan 23 15:35:26 nova_45 ctpd: 6 Trap: SNMP traps disabled
```

# NTP

## IN THIS CHAPTER

- To view NTP configuration help | 21
- To read current NTP configuration | 21
- To enable NTP for specific server | 22
- To Disable NTP | 22

## To view NTP configuration help

- ```
[ctp_cmd@nova_47 ~ 3]> syscfg -h -u ntp
```

Useage: syscfg -s -u ntp -v SIP<ip>:ST:S1IP<ip>
Configures ntp with server ip <ip>, and state either
on =1 or off =0.

Useage: syscfg -r -u ntp
Prints out the ntp configuration in above format.

To read current NTP configuration

- ```
[ctp_cmd@nova_45 ~ 4]> syscfg -r -u ntp
```

SIP10.0.0.0:ST0

## To enable NTP for specific server

- ```
syscfg -s -u ntp -v SIP<ip>:ST<b>
```

Example (with expected results):

```
[ctp_cmd@nova_45 ~ 5]> syscfg -s -u ntp -v SIP172.25.61.26:ST1
Looking for host 172.25.61.26 and service ntp
host found : 172.25.61.26
14 Jan 15:30:29 ntpdate[1401]: step time server 172.25.61.26 offset -440.413128
sec
Starting ntpd: [ OK ]
```

Log Events:

```
Jan 23 15:51:21 nova_45 ntpd[24783]: ntpd 4.2.0@1.1161-r Fri Sep  8 13:23:07 EDT
2006 (1)
Jan 23 15:51:21 nova_45 ntpd: ntpd startup succeeded
Jan 23 15:51:21 nova_45 ntpd[24783]: precision = 1.000 usec
Jan 23 15:51:21 nova_45 ntpd[24783]: kernel time sync status 0040
Jan 23 15:51:21 nova_45 ntpd[24783]: configure: keyword "authenticate" unknown,
line ignored
```

To Disable NTP

- ```
syscfg -s -u ntp -v SIP<ip>:ST
```

Example (with expected results)

```
[ctp_cmd@nova_45 ~ 6]> syscfg -s -u ntp -v SIP0.0.0.0:ST0
Shutting down ntpd: [OK]
```

### Log Events

```
Jan 23 15:52:09 nova_45 ntpd[24783]: ntpd exiting on signal 15
Jan 23 15:52:09 nova_45 ntpd: ntpd shutdown succeeded
```

# Virtual IP Configuration

## IN THIS CHAPTER

- To view configured Virtual IP addresses (with expected output after reboot) | 23
- To delete a Virtual IP address | 24

**NOTE:** The system reboots after entering this command.

Usage: syscfg -s -o vip -u net\_cfg -v <num>:<vip\_1>:...<vip\_n>

<num> - defines how many VIPs are configured

<vip\_1> - enter first VIP

<vip\_n> - enter last VIP

Example:

To set 6 Virtual IP address

syscfg -s -o vip -u net\_cfg -v

6:172.25.61.115:172.25.61.116:172.25.61.135:172.25.61.147:172.25.61.165:172.25.61.166

## To view configured Virtual IP addresses (with expected output after reboot)

- 

```
[ctp_cmd@nova_57 ~ 1]> syscfg -r -o VIP -u net_cfg
```

List of configured virtual IPs in the system :

Vip #1 :172.25.61.115

Vip #2 :172.25.61.116

Vip #3 :172.25.61.135

```
Vip #4 :172.25.61.147
Vip #5 :172.25.61.165
Vip #6 :172.25.61.166
Vip #7 :172.25.61.167
```

## To delete a Virtual IP address

**NOTE:** The system reboots after entering this command.

You will need to run the command excluding the VIP that you want to delete. In this example we will remove VIP #6 172.25.61.166 from the above table.

- ```
syscfg -s -o vip -u net_cfg -v
6:172.25.61.115:172.25.61.116:172.25.61.135:172.25.61.147:172.25.61.165:172.25.61.167
```

You can see from the example below, VIP 172.25.61.166 is now removed from the table.

```
[ctp_cmd@nova_57 ~ 1]> syscfg -r -o vip -u net_cfg
```

List of configured virtual IPs in the system :

```
Vip #1 :172.25.61.115
Vip #2 :172.25.61.116
Vip #3 :172.25.61.135
Vip #4 :172.25.61.147
Vip #5 :172.25.61.165
Vip #6 :172.25.61.167
```

8

CHAPTER

Bundle Configuration Commands

- To add a bundle, define bundle number and type | **27**
- To configure a bundle | **27**
- To configure remote IP address | **28**
- To configure remote cid and local cid | **28**
- To Configure packet size (in bytes) | **28**
- To configure buffer min/set/max (in milliseconds) | **28**
- To configure the Time to Live in the IP packet (range 0-255) | **29**
- To Configure the IP TOS byte in the IP packet (range 0-255) | **29**
- To configure the IP TOS byte in the OAM packet (range 0-255) | **29**
- To configure the OAM packet settings | **29**
- To configure the port associated with the bundle | **30**
- To configure the port interface type | **30**
- To configure the port interface mode (DCE or DTE) | **31**
- To configure the port interface encoding | **31**
- To configure the port interface encoding | **31**

To configure the port interface speed | **31**

To configure the port interface clocking | **32**

To configure port Y-cable redundancy | **33**

To configure port high TT checking only | **33**

To configure bundle for direct drive | **33**

To add a bundle, define bundle number and type

- ```
[ctp_cmd@nova_47 ~ 6]> cmd bndl 0 add CTP se-1/0
```

Bundle number range (0-63)

Bundle types:

  - 1) CTP
  - 2) SAToP
  - 3) CESoPSN
  - 4) VCOMP

Port specification format 'TY-S/P'

TY is a 2 character card type specifier, eg

'se' - Serial.

'te' - T1E1.

'S' is the slot where the card resides.

'P' is the port on the card.

eg 'se-1/4'

## To configure a bundle

- ```
[ctp_cmd@nova_47 ~ 18]> cmd bndl 0 cfg
```

Valid subsequent tokens are:

 - rem_ip
 - cid
 - loccid
 - pktsize
 - tsMask
 - buf
 - flags
 - ip_ttl
 - ip_tos
 - oam_ip_tos
 - oam
 - pm_rx

```
pm_tx  
codec
```

To configure remote IP address

- ```
[ctp_cmd@nova_47 ~ 18]> cmd bndl 0 cfg rem_ip 172.25.61.45
```

## To configure remote cid and local cid

- ```
[ctp_cmd@nova_47 ~ 20]> cmd bndl 0 cfg cid 0  
[ctp_cmd@nova_47 ~ 21]> cmd bndl 0 cfg loccid 0
```

To Configure packet size (in bytes)

- ```
cmd bndl 0 cfg pktsize 256
```

## To configure buffer min/set/max (in milliseconds)

- ```
[ctp_cmd@nova_47 ~ 32]> cmd bndl 0 cfg buf set 20  
[ctp_cmd@nova_47 ~ 33]> cmd bndl 0 cfg buf min 10  
[ctp_cmd@nova_47 ~ 34]> cmd bndl 0 cfg buf max 30
```

To configure the Time to Live in the IP packet (range 0-255)

- ```
[ctp_cmd@nova_47 ~ 37]> cmd bndl 0 cfg ip_ttl 25
```

## To Configure the IP TOS byte in the IP packet (range 0-255)

This value configures the entire byte, DSCP is only 6 of the 8 bits. Example: setting the TOS for 184 = 46 DSCP (EF)

- ```
[ctp_cmd@nova_47 ~ 39]> cmd bndl 0 cfg ip_tos 184
```

To configure the IP TOS byte in the OAM packet (range 0-255)

- ```
[ctp_cmd@nova_47 ~ 59]> cmd bndl 0 cfg oam_ip_tos 184
```

## To configure the OAM packet settings

Seconds per OAM packet rate

- ```
[ctp_cmd@nova_47 ~ 61]> cmd bndl 0 cfg oam sec_per_pkt 1
```

Consecutive OAM packets to be in-sync:

```
[ctp_cmd@nova_47 ~ 62]> cmd bndl 0 cfg oam in_sync 2
```

Consecutive OAM packets to be out-of-sync

```
[ctp_cmd@nova_47 ~ 63]> cmd bndl 0 cfg oam out_sync 5
```

To configure the port associated with the bundle

Port = physical interfaces

- ```
[ctp_cmd@nova_47 ~ 44]> cmd port se-1/0 cfg
```

Valid subsequent tokens are:

```

mode
if_type
if_mode
if_enc
speed
sig
clk
flags
dc_flags
dc_cfg
adaptive
frac_chan
tdm_func
tdm_rate

```

## To configure the port interface type

Parameter choices:

OFF LOOP EIA-530A RS-232 V.35

T1-AMI T1-B8ZS E1-RJ48 E1-COAX

IRIG-B

- ```
[ctp_cmd@nova_47 ~ 46]> cmd port se-1/0 cfg if_type EIA-530A
```

To configure the port interface mode (DCE or DTE)

- ```
[ctp_cmd@nova_47 ~ 49]> cmd port se-1/0 cfg if_mode DCE
```

## To configure the port interface encoding

- ```
[ctp_cmd@nova_47 ~ 49]> cmd port se-1/0 cfg if_mode DCE
```

To configure the port interface encoding

Parameter choices: NRZ ISOCH CDI MSTAR TRANS TDM

- ```
[ctp_cmd@nova_47 ~ 51]> cmd port se-1/0 cfg if_enc NRZ
```

## To configure the port interface speed

Parameter Range: 0.0000 - 12288.0000

- ```
[ctp_cmd@nova_47 ~ 53]> cmd port se-1/0 cfg speed 512
```

To configure the port interface clocking

Valid subsequent tokens are:

- dds_no_tt
- dds_tt
- all_tt
- adap_no_tt
- adap_tt
- auto_tt
- auto_no_tt
- ctp_clk_src
- ctp_looped
- ctp_clk_src_adap
- 4wto_mstr
- 4wto_adap
- isoch_mstr
- isoch_adap
- cdi_mstr
- cdi_adap
- mstar_mstr
- mstar_adap
- trans_mstr
- trans_adap
- dte_strt
- tdm_tdc
- custom

- ```
[ctp_cmd@nova_47 ~ 56]> cmd port se-1/0 cfg clk dds_no_tt
```

## To configure port Y-cable redundancy

- Parameter expected  
Value choices: 1 (yes) or 0 (no)

```
[ctp_cmd@nova_47 ~ 67]> cmd port se-1/0 cfg flags y_redund 1
```

## To configure port high TT checking only

- Parameter expected  
Value choices: 1 (yes) or 0 (no)

```
[ctp_cmd@nova_47 ~ 4]> cmd port se-1/0 cfg flags hi_tt_check 1
```

## To configure bundle for direct drive

- Parameter expected  
Value choices: 1 (yes) or 0 (no)

```
[ctp_cmd@nova_47 ~ 10]> cmd bndl 0 cfg flags no_dir_drv 1
```

# 9

CHAPTER

## Bundle State Commands

---

To activate bundle | **37**

To disable bundle | **37**

To delete bundle | **37**

To recenter a buffer for bundle | **37**

---



## To activate bundle

- ```
[ctp_cmd@nova_47 ~ 12]> cmd bndl 0 activate
```

To disable bundle

- ```
[ctp_cmd@nova_47 ~ 13]> cmd bndl 0 disable
```

## To delete bundle

- ```
[ctp_cmd@nova_47 ~ 13]> cmd bndl 0 delete
```

To recenter a buffer for bundle

- ```
[ctp_cmd@nova_47 ~ 13]> cmd bndl 0 recenter
```

# 10

CHAPTER

## Bundle Statistics Commands

---

To show bundle statistics | **41**

To clear port statistics | **42**

---



## To show bundle statistics

```
[ctp_cmd@nova_47 ~ 22]> cmd bndl 0 qry all
```

Example (to display all port statistics)

```
Bundle 0 type CTP
```

```
Bundle 0 is transporting Port se-1/0
```

```
----- Bundle 0 Config -----
```

```
DBase State: ACTIVE
Remote Addr: 172.25.61.45
Remote CID: 0
Local CID: 0
Packet size: 256
Port Speed (kHz): 512.000000
Buf Max/Set/Min(ms): 30.000/20.000/10.000
IP Hdr TOS: 184 (decimal)
IP Proto/OAM Port: 47/16
Port(s) in bundle: se-1/0
Bndl Config Flags: NotDirDrv
```

```
----- Port se-1/0 Config -----
```

```
Interface type: EIA-530A/DCE/NRZ
Port Speed (kHz): 512.000000
Clock Config: Configured Rate, w/o User Clk (TT)
Port Config Flags: YCableRdnt HiTTCheck
```

```
----- Bundle 0 State -----
```

```
Run State: NoSYNC
TT (Ext Clock): 0.000000 kHz
Input Signals: | RL=1 | RTS=0 | DTR=1 | LL=1 |
Output Signals: | DSR=0 | CTS=0 | DCD=0 | TM=1 |
Checked out PPS: Bndl: 250, All Bndl: 250, Sys Max: 12500
```

```
----- Bundle 0 Counters -----
```

```
I/F bound packets: 0
NET bound packets: 0
Last counter clear: 0wk, 0d, 0h, 6m, 10s
[ctp_cmd@nova_47 ~ 23]>
```

## To clear port statistics

- ```
[ctp_cmd@nova_47 ~ 25]> cmd bndl 0 clear all
```

11

CHAPTER

Port Statistics Commands

To query all on a port | **45**

To clear port statistics | **46**

To query all on a port

```
[ctp_cmd@nova_47 ~ 33]> cmd port se-1/0 qry all

----- Port se-1/0 Database -----
ID:
DBase State:      ACTIVE
Interface type:    EIA-530A/DCE/NRZ
Port Speed (kHz):  512.000000
Clock Config:      Configured Rate, w/o User Clk (TT)
Adaptive Config:   N/A (Disabled)
##### Port se-1/0 Runtime Config #####
ID:
DBase State:      ACTIVE
Interface type:    EIA-530A/DCE/NRZ
Port Speed (kHz):  512.000000
Clock Config:      Configured Rate, w/o User Clk (TT)
IP Proto/OAM Port: 47/16
Port Config Flags: YCableRdnt HiTTCheck
##### Port se-1/0 Status #####
Run State:        NoSYNC
TT (Ext Clock):    0.000000 kHz
Input  Signals:    | RL=1 | RTS=0 | DTR=1 | LL=1 |
Output Signals:    | DSR=0 | CTS=0 | DCD=0 | TM=1 |
##### Port se-1/0 Counters #####
I/F bound packets: 0
NET bound packets: 0
Late pkts:          0
Missing pkts:        0
Buffer restarts:     0
Buffer underflows:   0
Buffer overflows:    0
Buffer starves:      0
Buffer max samples:  0
Buff Max/Avg/Min:    0.00/0.00/0.00
Buff Last Minute:    0.00/0.00/0.00
Last counter clear:  0wk, 0d, 0h, 2m, 51s
```

To clear port statistics

- ```
[ctp_cmd@nova_47 ~ 35]> cmd port se-1/0 clear all
```

# 12

CHAPTER

## Port Diagnostic Commands

---

To set serial loops on ports | **49**

To query serial loops on ports | **49**

To set BERTs on ports | **49**

To query BERT status on port: | **50**

---



## To set serial loops on ports

Parameter expected

Parameter choices: Off ToNet ToIf

Example setting serial loop toward the IP network:

- ```
[ctp_cmd@nova_47 ~ 39]> cmd port se-1/0 diag ser_loop ToNet
```

Example setting serial loop toward the customer interface:

```
[ctp_cmd@nova_47 ~ 39]> cmd port se-1/0 diag ser_loop ToIf
```

To query serial loops on ports

- ```
[ctp_cmd@nova_47 ~ 54]> cmd port se-1/0 qry loops
Serial Loop: To NET
```

## To set BERTs on ports

Example injecting a BERT toward the IP network

Parameter expected

Parameter choices: Off ToNet ToIf

```
[ctp_cmd@nova_47 ~ 43]> cmd port se-1/0 diag bert_tx ToNet
```

Example receiving a BERT from the IP network

Parameter expected

Parameter choices: Off FromNet FromIf

```
[ctp_cmd@nova_47 ~ 43]> cmd port se-1/0 diag bert_rx FromNet
```

Example setting the BERT pattern

Parameter expected

Parameter choices: MARK ALT 511 2047 2^15-1 2^20-1 2^23-1 2^29-1 2^31-1 2^4-1

```
[ctp_cmd@nova_47 ~ 49]> cmd port se-1/0 diag bert_pat 2^15-1
```

Example injecting a single error into the BERT

```
[ctp_cmd@nova_47 ~ 50]> cmd port se-1/0 diag bert_inj
```

## To query BERT status on port:

```
[ctp_cmd@nova_47 ~ 57]> cmd port se-1/0 qry bert all
BERT running sec: 571
BERT sync sec: 0
BERT error sec: 571
BERT error cnt: 0
BERT sync loss cnt: 0
BERT in sync: No
Last counter clear: 0wk, 0d, 0h, 33m, 36s
Run State: NoSYNC
```

# 13

CHAPTER

## Node Reference Commands

---

To display node summary | **53**

To configure node for external reference source | **53**

To configure node for external reference rate | **54**

---



## To display node summary

Command syntax

cmd summary clks

Example with results

```
[ctp_cmd@ctp_48 ~ 22]> cmd summary clks
```

Node Synchronization Info  
=====

PLL Monitor Runtime: 622  
PLL Locked: YES  
PLL Loss Seconds: 330  
Reference in use: External

| Reference Info |          |           |       |     |       | HoldOver Info |       |       |
|----------------|----------|-----------|-------|-----|-------|---------------|-------|-------|
| Ref            | Source   | Frequency | Valid | PPM | Count | Valid         | Value | Count |
| 0:             | External | 32        | YES   | --- | 5     | YES           | 2116  | 5     |
| 1:             | Disabled | 32        | NO    | 0.0 | 0     | -----         | ----- | ----- |
| 2:             | Disabled | 32        | NO    | 0.0 | 0     | -----         | ----- | ----- |
| 3:             | Disabled | 32        | NO    | 0.0 | 0     | -----         | ----- | ----- |
| 4:             | Disabled | 32        | NO    | 0.0 | 0     | -----         | ----- | ----- |

## To configure node for external reference source

Command syntax

cmd node cfg ref # source #

Parameter expected for ref #

Parameter Range: 0 - 4

Parameter expected for source #

Parameter Range: 0 - 5

0-3: Port X TT input

4: External (BNC) reference input

5: Disabled

```
[ctp_cmd@ctp_48 ~ 28]> cmd node cfg ref 0 source 4
```

## To configure node for external reference rate

Command syntax

cmd node cfg ref #

rate # Parameter expected for ref #

Parameter Range: 0 – 4

Parameter expected for source #

N, where  $N * 32$  is the reference frequency in KHz.

Valid values for N are:

1 for 32 KHz.

Even numbers from 2 to 126 (64 to 4032 KHz)

65537 for T1 (1544 KHz)

```
[ctp_cmd@ctp_48 ~ 29]> cmd node cfg ref 0 rate 1
```

# 14

CHAPTER

## Node Summary Commands

---

| **57**

To get a summary of all cards installed | **57**

To get a summary of all daughter cards installed | **58**

To get a summary of all ports | **58**

To get a summary of all bundles | **59**

---



```
[ctp_cmd@nova_47 ~ 70]> cmd summary
```

Token expected.

Valid subsequent tokens are

- cards
- dcards
- ports
- bndls
- clks
- cnts
- bcnts
- clrcnts
- clrbcnts
- cards\_help
- dcards\_help
- ports\_help
- bndls\_help
- bcnts\_help

## To get a summary of all cards installed

```
[ctp_cmd@nova_47 ~ 71]> cmd summary cards
```

| Card | Type | S/N      | PCA | PLD    | FPGA   | VCX0_r*  | VCX0_c* | SCC | WPR | RTM |
|------|------|----------|-----|--------|--------|----------|---------|-----|-----|-----|
| 0    | T1E1 | 00002311 | 0   | 0x0005 | 0x00ea | 80       | 1925    | 8   | 0   |     |
| 1    | SERL | 06032701 | 2   | 0x0104 | 0x0072 | 75       | 1886    | 0   | --- |     |
| 2    | VCMP | 13719    | 3   | 4      | ---    | 30023080 | 0       | --- | --- | --- |

## To get a summary of all daughter cards installed

```
[ctp_cmd@nova_47 ~ 72]> cmd summary dcards
```

| Port   | Type  | PCA  | PLD  |
|--------|-------|------|------|
| te-0/0 | T1/E1 | 0x 1 | 0x 3 |
| te-0/1 | T1/E1 | 0x 1 | 0x 3 |
| te-0/2 | T1/E1 | 0x 1 | 0x 3 |
| te-0/3 | T1/E1 | 0x 1 | 0x 3 |
| te-0/4 | T1/E1 | 0x 1 | 0x 3 |
| te-0/5 | T1/E1 | 0x 1 | 0x 3 |
| te-0/6 | T1/E1 | 0x 1 | 0x 3 |
| te-0/7 | T1/E1 | 0x 1 | 0x 3 |

## To get a summary of all ports

```
[ctp_cmd@nova_47 ~ 74]> cmd summary ports
```

```
>>>>> Circuit Emulation Ports <<<<<
```

| Port   | Bndl | Rate        | Clock_Config | Dcrd | I/F_Config       |
|--------|------|-------------|--------------|------|------------------|
| te-0/0 | --   | 1544.000000 | ctp_clk_src  | T1E1 | T1-B8ZS          |
| te-0/1 | --   | 1544.000000 | ctp_clk_src  | T1E1 | T1-B8ZS          |
| te-0/2 | --   | 1544.000000 | ctp_clk_src  | T1E1 | T1-B8ZS          |
| te-0/3 | --   | 1544.000000 | ctp_clk_src  | T1E1 | T1-B8ZS          |
| te-0/4 | --   | 1544.000000 | ctp_clk_src  | T1E1 | T1-B8ZS          |
| te-0/5 | --   | 1544.000000 | ctp_clk_src  | T1E1 | T1-B8ZS          |
| te-0/6 | --   | 1544.000000 | ctp_clk_src  | T1E1 | T1-B8ZS          |
| te-0/7 | --   | 1544.000000 | ctp_clk_src  | T1E1 | T1-B8ZS          |
| se-1/0 | 0    | 512.000000  | dds_no_tt    |      | EIA-530A/DCE/NRZ |
| se-1/1 | --   | 1024.000000 | dds_no_tt    |      | EIA-530A/DCE/NRZ |
| se-1/2 | --   | 1024.000000 | dds_no_tt    |      | EIA-530A/DCE/NRZ |
| se-1/3 | --   | 1024.000000 | dds_no_tt    |      | EIA-530A/DCE/NRZ |
| se-1/4 | --   | 1024.000000 | dds_no_tt    |      | EIA-530A/DCE/NRZ |
| se-1/5 | --   | 1024.000000 | dds_no_tt    |      | EIA-530A/DCE/NRZ |

```
se-1/6 -- 1024.000000 dds_no_tt EIA-530A/DCE/NRZ
se-1/7 -- 1024.000000 dds_no_tt EIA-530A/DCE/NRZ
```

## To get a summary of all bundles

```
[ctp_cmd@nova_47 ~ 76]> cmd summary bndls

>>>>> Circuit Emulation Bundles <<<<<
Bndl BndlTyp Port TS RemAddr CID LCID RunState npps ipps RCtrl
=====
 0 CTP se-1/0 N/A 172.25.61.45 0 0 NoSYNC 0 0 0
=====
Checked out PPS - All Bundles: 250, System Maximum: 12500
(1 PPS = full duplex packet transfer, Bundle <---> IP network)
```

# 15

CHAPTER

## TACACS

---

Viewing the Current TACACS+ Configuration | **63**

---



## Viewing the Current TACACS+ Configuration

To read the current TACACS+ configuration, use the following command

```
[ctp_cmd@gluon_50 ~ 7]> syscfg -r -u tacplus_cfg
SIP10.0.0.0:SSnone:T05:ST0:RP49:OLF1:RF1
[ctp_cmd@gluon_50 ~ 8]>
```

Using the above help, the commands will be issued with the following set up:

```
First TACACS+ server IP: 1.2.3.4
First TACACS+ shared secret IP: secret
Timeout period: 15
Enable TACACS+: Yes
TACACS+ server port: 49
Offline Failover: No
Reject Failover: No
Second TACACS+ server IP: 1.2.3.5
Second TACACS+ shared secret IP: secret1
Third TACACS+ server IP: 1.2.3.6
Third TACACS+ shared secret IP: secret2

[ctp_cmd@gluon_50 ~ 8]> syscfg -s -u tacplus_cfg -v
"SIP1.2.3.4:SSsecret:T015:ST1:RP49:OLF0:RF0:N1SIP1.2.3.5:N1SSsecret1:N2SIP1.2.3.6:N2SSsecret2"

Stopping sshd: [OK]
Starting sshd: [OK]
[ctp_cmd@gluon_50 ~ 4]> syscfg -r -u tacplus_cfg

SIP1.2.3.4:SSsecret:T015:ST1:RP49:OLF0:RF0:N1SIP1.2.3.5:N1SSsecret1:N2SIP1.2.3.6:N2SSsecret2

[ctp_cmd@gluon_50 ~ 5]>
```

Note that, when I read back the config string, it comes back exactly as configured, which is a good way to verify that the configuration was accepted.

At this point, if you want to keep the configuration, but disable TACACS+, all you need to do is read the config, set ST1 to ST0, and write it back.

# 16

CHAPTER

Set Reclock RD to allign RD/RT

---

| 67

---



There is more than one way to set flags for a port using the CLI. The first method is with the specific command, if it is available.

```
[ctp_cmd@gluon_50 ~ 10]> cmd port se-0/0 cfg flags reclk_rd 0
[ctp_cmd@gluon_50 ~ 11]> cmd port se-0/0 qry all | fgrep "Port Config Flags"
Port Config Flags: NoRdReclk
[ctp_cmd@gluon_50 ~ 12]> cmd port se-0/0 cfg flags reclk_rd 1
[ctp_cmd@gluon_50 ~ 13]> cmd port se-0/0 qry all | fgrep "Port Config Flags"
[ctp_cmd@gluon_50 ~ 14]>
```

**NOTE:** The reclk\_rd flag is currently the only flag that shows up in the config flag query display when it is disabled (reverse logic). This is because that function is normally enabled, and the flag display is set up to have nothing display when all flags are "normal".

| flag            | mask       | Description                                    |
|-----------------|------------|------------------------------------------------|
| =====           | =====      | =====                                          |
| trans_st_fifo   | 0x00000001 | TRANS[8] ST alignment FIFO enable              |
| y_redund        | 0x00000002 | Y Cable redundancy enable                      |
| s_ended         | 0x00000004 | Enable Single Ended outputs for RD/RT          |
| reclk_rd        | 0x00000008 | Reclock RD with RT for alignment               |
| tfifo_wrclk_inv | 0x00000010 | TRANS ST FIFO Write Clock invert               |
| tfifo_rdclk_inv | 0x00000020 | TRANS ST FIFO Read Clock invert                |
| y_mstr          | 0x00000040 | Enable Y Cable master flag                     |
| tt_subst        | 0x00000080 | Substitute internal clock when TT missing      |
| dcd_unclamp     | 0x00000400 | Allow DCD to toggle when DCARD installed       |
| trans_st_in     | 0x00000800 | TRANS[8] ST is an input                        |
| trans_st_out    | 0x00001000 | TRANS[8] ST is an output                       |
| no_tt_check     | 0x00002000 | Don't check TT frequency at all                |
| hi_tt_check     | 0x00004000 | Only check for TT freq too high                |
| clk_gate        | 0x00008000 | Substitute internal clk for TT when RTS active |
| clk_gate_inv    | 0x00010000 | Invert sense of RTS for above feature          |
| data_inv        | 0x00040000 | Inverts input and output data                  |
| y_fast          | 0x00080000 | Enable high speed Y cable switching            |
| y_cts_ctrl      | 0x00100000 | Multimaster - Control Y cable drive with CTS   |
| y_cts_inv       | 0x00200000 | Invert sense of CTS for above feature          |
| hi_spd          | 0x00400000 | Enable high speed data rates                   |
| tx_phase_inv    | 0x00800000 | Invert ST/SD phase relationship                |

Any of the items in the "flag" column can be used in a command. But you can also set the flag using the value in the mask column. This is done with the command "cmd port X cfg www\_db "<string>". For example

```
[ctp_cmd@gluon_50 ~ 33]> cmd port se-0/0 qry www_db
20;6;5;1;-rc4;;P;0;0;0;0;1024.000000;
;1,134217728,0,0,0,4,1,1,1,1,1,20,45,5,20,200,200,2000,0x0,0x0,0x8,1,0,0,0x1,1,
[ctp_cmd@gluon_50 ~ 34]>
```

The flags element is near the end of the string (in this case it is the 0x8). When Multiple flags are active, the appropriate bit position is active according to the mask definitions in the table above:

```
[ctp_cmd@gluon_50 ~ 48]> cmd port se-0/0 qry www_db
20;6;5;1;-rc4;;P;0;0;0;0;1024.000000;
;1,134217728,0,0,0,4,1,1,1,1,1,20,45,5,20,200,200,2000,0x0,0x0,0x8,1,0,0,0x1,1,
[ctp_cmd@gluon_50 ~ 49]> cmd port se-0/0 qry all | fgrep "Port Config Flags"
<<< No output, so all flags are "normal" and flags field is 0x8>>>
[ctp_cmd@gluon_50 ~ 50]> cmd port se-0/0 cfg flags trans_st_fifo 1
[ctp_cmd@gluon_50 ~ 51]> cmd port se-0/0 cfg flags tfifo_wrclk_inv 1
[ctp_cmd@gluon_50 ~ 52]> cmd port se-0/0 cfg flags tfifo_rdclk_inv 1
[ctp_cmd@gluon_50 ~ 53]> cmd port se-0/0 qry all | fgrep "Port Config Flags"
Port Config Flags: TransFifo TransWrInv TransRdInv
[ctp_cmd@gluon_50 ~ 55]> cmd port se-0/0 qry www_db
20;6;5;1;-rc4;;P;0;0;0;0;1024.000000;
;1,134217728,0,0,0,4,1,1,1,1,1,20,45,5,20,200,200,2000,0x0,0x0,0x39,1,0,0,0x1,1,
[ctp_cmd@gluon_50 ~ 56]>
```

Notice that the flags field in the www\_db string is 0x39, which is correct if you reference the table above and combine the masks for all the active flags. Likewise, you can set a group of flags with the www\_db config string:

```
[ctp_cmd@gluon_50 ~ 59]> cmd port se-0/0 qry www_db
20;6;5;1;-rc4;;P;0;0;0;0;1024.000000;
;1,134217728,0,0,0,4,1,1,1,1,1,20,45,5,20,200,200,2000,0x0,0x0,0x8,1,0,0,0x1,1,
[ctp_cmd@gluon_50 ~ 60]> cmd port se-0/0 qry all | fgrep "Port Config Flags"
<<< No output, so all flags are "normal" and flags field is 0x8>>>
[ctp_cmd@gluon_50 ~ 61]> cmd port se-0/0 cfg www_db
"20;6;5;1;-rc4;;P;0;0;0;0;1024.000000;
;1,134217728,0,0,0,4,1,1,1,1,1,20,45,5,20,200,200,2000,0x0,0x0,0x8004a,1,0,0,0x1,1, "

[ctp_cmd@gluon_50 ~ 62]> cmd port se-0/0 qry all | fgrep "Port Config
Flags" Port Config Flags: YCableRdnt YCableFast YCableMstr
[ctp_cmd@gluon_50 ~ 63]>
```

Where 0x8004a is the flag field value.

# 17

CHAPTER

## Ethernet Autoswitch Configuration

---

Configuring Ethernet Autoswitch From the CLI | **71**

---



# Configuring Ethernet Autoswitch From the CLI

AAS (AcornAutoSwitch, which controls Ethernet failover) is controlled by the syscfg utility. The best first command to execute for Ethernet AAS is the syscfg command that dumps "all", so that you can see how many Ethernet interfaces are supported on the CTP. For example, for a CTP150:

```
[root@gluon_50 ~ 50]# syscfg -r -u all
V10
SL60:AAS0:LOG1:CTPD0:CMDD1
SIP10.0.0.0:SSnone:T02:ST0:RP1812:RT0:OLF1:RF1

SIP1.2.3.4:SSsecret:T015:ST0:RP49:OLF0:RF0:N1SIP1.2.3.5:N1SSsecret1:N2SIP1.2.3.6:N2SSsecret2

SIP172.25.61.12:ST0:S1IP
SIP10.0.0.0:ST0:S1IP

:ST0:LO,Lab:CO,System_Administrator:USR,ro,2,4,acorn,default,:USR,rw,2,4,acornw,default,:

:ST0:TRacorn_trap:IP,10.0.0.0,:
SIP10.0.0.0:DNdc=example,dc=com:ST0
--start_block AAS_BUNDLE_FAILOVER
--start_block AAS_ETH_FAILOVER
eth0:AVAILABLE1:USE1:10/100/1000 Copper (right)
eth1:AVAILABLE1:USE0:10/100/1000 Copper (left)
--start_block AAS_ARM
ARM0:RR_RVT0:PRIMARY_ROUTEeth0:10.0.0.1/24:FORCE_SWITCH0
--start_block CLEAR
[root@gluon_50 ~ 51]#
```

Looking in the "start\_block AAS\_ETH\_FAILOVER" section, you can see that there are 2 Ethernets available. For comparison, here is a CTP2000 with a PMC Ethernet:

```
[root@ctp_pp833 ctp_cmd 2]# syscfg -r -u all
V9
SL60:AAS0:LOG1:CTPD0:CMDD1
SIP10.0.0.0:SSnone:T02:ST0:RP1812:RT0:OLF1:RF1
SIP10.0.0.0:SSnone:T05:ST0:RP49:OLF1:RF1
SIP10.0.0.0:ST0:S1IP
SIP10.0.0.0:ST0:S1IP

:ST0:LO,Lab:CO,System_Administrator:USR,ro,2,4,acorn,default,:USR,rw,2,4,acornw,default,:

```

```

:ST0:TRacorn_trap:IP,10.0.0.0,:
SIP10.0.0.0:DNdc=example,dc=com:ST0
--start_block AAS_BUNDLE_FAILOVER
BNDL0;CBS2;PIP172.25.62.54;PP8;SIP172.25.62.42;SP8;CP20;ST0;RVT1
--start_block AAS_ETH_FAILOVER
eth0:AVAILABLE1:USE1:10/100/1000 Copper (right)
eth1:AVAILABLE1:USE0:10/100/1000 Copper (left)
eth2:AVAILABLE1:USE1:10/100/1000 Copper (right back)
eth3:AVAILABLE1:USE0:10/100/1000 Copper (left back)
eth4:AVAILABLE1:USE0:100 Fiber (right)
eth5:AVAILABLE1:USE0:100 Fiber (left)
--start_block AAS_ARM
ARM 0
--start_block CLEAR
[root@ctp_pp833 ctp_cmd 3]#

```

So you can see that the number of Ethernets available will vary based on the platform and options. But based on this information, configuration decisions can be made. The basic information shown in the AAS\_ETH\_FAILOVER output is relatively self explanatory. It is possible to determine if a particular Ethernet interface is available for use in AAS on the CTP, and also whether or not it is currently participating in AAS Ethernet failover. For example, looking at the CTP150 query, eth0 is available and in use, but eth1 is not. But since it is available, we can add it to the list of AAS participating interfaces. To do this, we use the syscfg utility-specific commands are used:

```

[root@n72 ctp_cmd 11]# syscfg -h -u AAS

For PORT level qry/cfg:
Usage: syscfg -s -u AAS -o <bndl#> -v "cfg_string"

```

Sets the AcornAutoSwitch parameters for <bndl#>.

cfg\_string is of the form:

```
CBS<d>;PIP<ip>;PP<port>;SIP<ip>;SP<port>;CP<time>;ST;RVT
```

NOTE: The config string is encapsulated with double quotes, due to the use of semicolon as a field separator. Care must be used to avoid semicolon/shell interaction.

CBS<d>: sets the number of times the primary must be down to <d> before AcornAutoSwitch will switch to the secondary circuit.  
 PIP<ip>: sets the ip of the primary circuit to be <ip>.  
 PP<cid>: sets the remote cid of the primary circuit to be <cid>.

SIP<ip>: sets the ip of the secondary circuit to be <ip>.  
 SP<cid>: sets the remote cid of the secondary circuit to be <cid>.  
 CP<time>: sets the check period to be <time> seconds.  
 ST<b> turns on (b=1) or off (b=0) AcornAutoSwitch watching this bundle.

RVT<b> on (1) or off (0) Revert back to primary when it is available.

Usage: syscfg -r -u AAS -o <bndl#>

Prints out the configuration for <bndl#> in above format.

For route redundancy support:

Usage: syscfg -r -u AAS -o ARM

Usage: syscfg -s -u AAS -o ARM -v ARM<b>:RR\_RVT<c>

set route redundancy on (<b>=1) or off (<b>=0)

set route redundancy revert on (<c>=1) or off (<c>=0)

Usage: syscfg -s -u AAS -o ARM -v FORCE\_SWITCH<b>

set forcefull revert from secondary to primary route on (<b>=1)

For ethernet device level qry/cfg:

Usage: syscfg -s -u AAS -o eth<#> -v USE<1|0>

Set AcornAutoSwitch to either use (1) or not to use (0) ethernet device eth#.

Usage: syscfg -r -u AAS -o eth<#>

Prints out ethernet device info for AcornAutoSwitch

Usage: syscfg -r -u AAS -o TEST<remote\_ip>

Tests that user root can ssh to ctp\_cmd@<remote\_ip> without password.

For check period only:

Usage: syscfg -r -u AAS -o CP

Usage: syscfg -s -u AAS -o CP -v <dd>

set <dd> to 3, 5, 10, 15, 20, 30, 45, 60, 120 seconds

[root@n72 ctp\_cmd 12]#

Lots of stuff there. For the purposes of this subject, the command we are interested in is:

```
[root@gluon_50 ~ 8]# syscfg -r -u AAS -o eth1
eth1:AVAILABLE1:USE0:10/100/1000 Copper (left)
[root@gluon_50 ~ 9]#
```

To add this interface to AAS failover, all we need to do is run the set command on this string with "USE0" changed to "USE1":

```
[root@gluon_50 ~ 8]# syscfg -r -u AAS -o eth1
eth1:AVAILABLE1:USE0:10/100/1000 Copper (left)
[root@gluon_50 ~ 9]# syscfg -s -u AAS -o eth1 -v USE1
[root@gluon_50 ~ 10]# syscfg -r -u AAS -o eth1
eth1:AVAILABLE1:USE1:10/100/1000 Copper (left)
[root@gluon_50 ~ 11]#
```

# 18

CHAPTER

## Appendix

---

Working with syscfg | 77

Accessing help for a Particular Utility | 78

Viewing the Current NTP Configuration | 79

Activating NTP on a CTP to a server | 80

---



# Working with syscfg

syscfg is a perl script utility for managing CTP system configuration that is separate from CTPOS and circuit (bundle) management. It is the centralized configuration management utility for the CTP functions that are mainly associated with the underlying Linux OS, or other CTP functions which are controlled by separate processes.

Although syscfg does have some built-in help, it can be tricky to use, and was not specifically intended for interactive use. But with a little training, it can be used successfully at the command prompt or with scripts. For starters, let's just show the help display for syscfg:

**NOTE:** You can access syscfg as root or a system admin level account on a CTP.

```
[root@gluon_50 ~ 10]# syscfg -h

CTP system configuration utility

Usage: syscfg [-D][-V][-r or -s] -u <utility> [-o <options>] [-v <value(s)>]
[-h]

-D: Enable DEBUG flag
-V: Enable VDEBUG flag
-r: Reads and returns setting of <utility>
-s: Set the <utility> settings using <value(s)>.
-h: Prints this usage message.

Valid <utilities> are:
ASM: Acorn System monitor.
AAS: AcornAutoSwitch.
chk_eepr: chk_eepr.
Radius: Read/Set Radius configuration.
tacplus_cfg: Read/Set Tacplus configuration.
ldap: Read/Set ldap configuration.
ntp: Read/Set ntp configuration.
netlog: Read/Set network syslog configuration.
xinetd: Enable/disable xinetd services.
daemon: Enable/disable daemons.
banner: Load a banner file for display during login.
ethernet: Config & Display the ethernet media settings.
eth_dev: Config & Display the default ethernet device in use.
```

```

flush: Flush a user's home directory to nonvolatile storage.
clock: Set the system & hardware clocks.
snmpdconf: Configure communities, location & contact info.
snmptrap: Configure receiver community and ip address.
pbs_cfg: Query and Config ports for packet-based serial mode.
ctp_cfg: Query and Config protocol & OAM port for IP and IPv6.
users: Query and Config CTP users.
log_user: Manage processes included in logs.
iptables: Adds and deletes rules to iptables.
copy_logs: Manage copying of logs for 3rd party use.
net_cfg: Manage IP network configuration.
ctp_allow: Manage IP access to this CTP.
set_sec_lvl: Set the security level for the node.
systype_biosver: Query the SYSTEM TYPE and BIOS Version.
passwd_req: Query the current password requirements.

```

## Accessing help for a Particular Utility

To access help for a particular utility:

```
syscfg -h -u <utility>
```

The list of utilities will give you an idea of the types of functions that are controlled by syscfg. As it indicates, you can get more help on a particular utility with by specifying that utility. For this demo, let's work with the NTP utility:

```

[root@gluon_50 ~ 12]# syscfg -h -u ntp

Usage: syscfg -s -u ntp -v SIP<ip>:ST:S1IP<ip>
 Configures ntp with server ip <ip>, and state either
 on =1 or off =0.

Usage: syscfg -r -u ntp
 Prints out the ntp configuration in above format.

[root@gluon_50 ~ 13]#

```

## Viewing the Current NTP Configuration

To read the current NTP configuration, we use the -r option:

```
[root@gluon_50 ~ 13]# syscfg -r -u ntp
SIP10.0.0.0:ST0:S1IP
[root@gluon_50 ~ 14]#
```

Decoding the fields according to the help, the NTP service is off for this CTP, and the server IP is set to 10.0.0.0 (which is a default bogus IP). As a general rule, you can take the same string that is returned from a read operation, and use it as the basis for a set operation, and it should accept the configuration. And if you can then read it back, you know that it was accepted by syscfg and applied:

```
[root@gluon_50 ~ 13]# syscfg -r -u ntp
SIP10.0.0.0:ST0:S1IP
[root@gluon_50 ~ 14]# syscfg -s -u ntp -v "SIP10.0.0.0:ST0:S1IP"
[root@gluon_50 ~ 15]# syscfg -r -u ntp
SIP10.0.0.0:ST0:S1IP
[root@gluon_50 ~ 16]#
```

So if we want to activate NTP on this CTP to a server IP of 172.25.61.12:

```
[root@gluon_50 ~ 16]# proc ntp
[root@gluon_50 ~ 17]# syscfg -s -u ntp -v "SIP172.25.61.12:ST1:S1IP"
<<< messages here associated with NTP startup >>>
[root@gluon_50 ~ 18]# proc ntp
32673 ? SNL 0:00 ntpd -p /var/run/ntpd.pid -g
[root@gluon_50 ~ 19]# syscfg -r -u ntp
SIP172.25.61.12:ST1:S1IP
[root@gluon_50 ~ 20]# t
```

Note that, when I read back the config string, it comes back exactly as configured, which is a good way to verify that the configuration was accepted.

(FYI, The "proc" alias just searches running processes on the CTP, and is used to show that the ntp daemon was not running before, and starts up based on the syscfg command.)

At this point, if you want to keep the configuration, but disable NTP, all you need to do is read the config, set ST1 to ST0, and write it back.

```
[root@gluon_50 ~ 21]# syscfg -r -u ntp
SIP172.25.61.12:ST1:S1IP
[root@gluon_50 ~ 22]# syscfg -s -u ntp -v "SIP172.25.61.12:ST0:S1IP"
Shutting down ntpd: [OK]
[root@gluon_50 ~ 23]# syscfg -r -u ntp
SIP172.25.61.12:ST0:S1IP
[root@gluon_50 ~ 24]#
```

These basic rules apply to many of the syscfg utilities.

## Activating NTP on a CTP to a server

to activate NTP on this CTP to a server