

Zero Touch Provisioning (ZTP) Commands

This chapter describes the commands that can be used to manually invoke Zero Touch Provisioning (ZTP).

Manually invoking ZTP helps you to provision the router in stages and it is ideal to test configurations without having to restart a router.

For more information about ZTP, see ZTP chapter in the *System Management Configuration Guide for Cisco NCS 5500 Series RoutersSystem Management Configuration Guide for Cisco NCS 540 Series RoutersSystem Management Configuration Guide for Cisco NCS 560 Series Routers*.

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ztp bootz

To configure VRF for the Bootz operations, use the **ztp bootz** command in the XR Config mode.

ztp bootz vrf *vrf-name*
ztp bootz interface *interface-name*

Syntax Description

vrf *vrf-name*	Specifies the custom VRF on which the Bootz operations run.
interface *interface-name*	Specifies the interface that runs the Bootz operations.

Command Default

None

Command Modes

XR Config mode

Command History

Release	Modification
Release 24.4.1	This command was introduced.

Usage Guidelines

Use this command if the interface used for the Bootz operations is configured under a new VRF. To run Bootz under the new VRF, you should configure the domain name servers and static routes, if any, under the same VRF to ensure reachability.

Examples

This example shows how to configure the **ztp bootz** command by providing the VRF name and interface name.

```
RP/0/RP0/CPU0:ios# config
RP/0/RP0/CPU0:ios(config)# ztp bootz
RP/0/RP0/CPU0:ios(config-bootz)# vrf mgmt
RP/0/RP0/CPU0:ios(config-bootz)# interface MgmtEth 0/RP0/CPU0/0
```

ztp bootz-server

To store the bootstrap server information that the router receives from the Bootz server during the initial boot process, use the **ztp bootz-server** command in XR Config mode.

When the standby control cards or line cards are inserted dynamically on the router, the ZTP-Bootz workflow uses this server information to communicate with the Bootz server and obtain the ownership vouchers for the standby control cards or line cards based on the serial number of the cards.

ztp bootz-server ip *ip-address* **port** *port* { **trust-anchor** *trust-anchor* }

Syntax Description

ip *ip-address*	Specifies the IPv4 or IPv6 address or hostname of the Bootz server.
port *port*	Specifies the port number of the Bootz server.
trust-anchor *trust-anchor*	Specifies the trust anchor certificate path for the Bootz server.

Command Default

No default behavior or values

Command Modes

XR Config mode

Command History

Release	Modification
Release 24.3.1	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Examples

This example shows how to configure the **ztp bootz-server** command by providing the trust anchor certificate path for the Bootz server.

```
RP/0/RP0/CPU0:ios(config)#ztp bootz-server ip 1.1.1.1 port 5000 trust-anchor
/misc/disk1/ta.cert
```

This example shows the stored server information.

```
RP/0/RP0/CPU0:ios#show running-config ztp
Thu Aug 29 12:35:07.013 IST
ztp
 bootz-server ip 1.1.1.1 port 5000 trust-anchor /misc/disk1/ta.cert action none
!
```

ztp breakout

Manual Zeo Touch Provisioning (ZTP) invocation using CLI commands allows ZTP to run over more interfaces.

To invoke platform interface discovery before invoking DHCP, use the **ztp breakout** command in EXEC mode.

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ztp breakout [debug] [verbose]{[nosignal-stay-in-breakout-mode] | **[nosignal-stay-in-state-noshut]** | **[hostname]** | **[apply** *configuration* **]}**

Syntax Description

debug	Run with additional logging to the console(cisco-support)
verbose	Run with logging to the console(cisco-support).
apply *configuration*	XR configuration commands to apply(cisco-support)
hostname	XR hostname to set(cisco-support)
nosignal-stay-in-breakout-mode	On no signal, prefer interfaces to remain in breakout mode(cisco-support)
nosignal-stay-in-state-noshut	On no signal, prefer interfaces to be noshut(cisco-support)

Command Default

No default behavior or values

Command Modes

EXEC

Command History

Release	Modification
Release 7.0.1	This command was introduced.

Usage Guidelines

Use the **ztp breakout** command to perform a 4x10 breakout detection on all 40 Gigabit ports. By default if no link is detected on any of the four 10Gigabit interfaces, the port will remain in 40 Gig mode. The **nosignal-stay-in-breakout-mode** argument will force the port in breakout mode when all breakout interfaces from the same physical port have no signal locked, and place the four 10Gigabitinterfaces in shutdown mode. The **nosignal-stay-in-state-noshut** argument will leave the port in breakout mode and place the four 10Gigabit interfaces in no shutdown mode.

No progress logs are shown by default, although there will be XR syslogs for important events. If you wish to see more logs, add **verbose** after the **ztp terminate** command. If these logs are not enough, add **debug** before **verbose**.

Logs can be found in **disk0:/ztp/ztp.log**.

ztp clean

Manual Zeo Touch Provisioning (ZTP) invocation using CLI commands allows ZTP to run over more interfaces.

To remove all Zero Touch Provisioning (ZTP) logs and settings saved on disk, use the **ztp clean** command in EXEC mode.

ztp clean [debug] [verbose]

Syntax Description

debug	Run with additional logging to the console(cisco-support).
verbose	Run with logging to the console(cisco-support)

Command Default

No default behavior or values

Command Modes

EXEC

Command History

Release	Modification
Release 7.0.1	This command was introduced.

Usage Guidelines

If you wish to run ZTP as if from a clean boot, use the **ztp clean** command to remove all ZTP logs and settings. Use **commit replace** to reload, and then ZTP will run again as if from first boot.

No progress logs are shown by default, although there will be XR syslogs for important events. If you wish to see more logs, add **verbose** after the **ztp clean** command. If these logs are not enough, add **debug** before **verbose**.

Logs can be found in **disk0:/ztp/ztp.log**.

This example shows how to remove all ZTP files saved on disk:

```
RP/0/RP0/CPU0:router#ztp clean verbose
Mon Oct 10 17:03:43.581 UTC
Remove all ZTP temporary files and logs? [confirm] [y/n] :y
All ZTP files have been removed.
If you now wish ZTP to run again from boot, do 'conf t/commit replace' followed by reload.
```

ztp initiate

To invoke a new ZTP DHCP session, use the **ztp initiate** command in EXEC mode.

ztp initiate {[apply *configuration* **]** | **[dataport]** | **[dhcp4]** | **[dhcp6]** | **[dhcp4-client-identifier]** | **[dhcp6-client-identifier]** | **[dscp** *value* **]** | **[dscp6** *value* **]** | **[hostname]** | **[interface]** | **[management]** | **[noprompt]} [debug] [verbose]**

Syntax Description

debug	Run with additional logging to the console(cisco-support)
verbose	Run with logging to the console(cisco-support)
apply *configuration*	XR configuration commands to apply(cisco-support)
dataport	Send DHCP requests on all ADMIN UP physical LC interfaces.
dhcp4	Send only DHCP IPv4 requests(cisco-support)
dhcp6	Send only DHCP IPv6 requests(cisco-support)
dhcp4-client-identifier	Override default dhcp-client-identifier(cisco-support)
dhcp6-client-identifier	Override default dhcp6-client-id(cisco-support)
dscp *value*	DSCP/Prec Value(cisco-support)
dscp6 *value*	DSCP6/Prec Value(cisco-support)
hostname	XR hostname to set(cisco-support)
interface	Send DHCP requests only on the given interface(cisco-support)
management	Send DHCP requests on the platforms management interface(cisco-support)
noprompt	Run without prompting(cisco-support)

Command Default

No default behavior or values

Command Modes

EXEC

Command History

Release	Modification
Release 7.0.1	This command was introduced.

Usage Guidelines

Use the **ztp initiate** command to forceably inititate the ZTP, ignoring username configuration. **ztp initiate** allows the execution of a script even when the system has already been configured. This command is useful for testing ZTP without forcing a reload. This command is particularly useful to test scripts or if some manual operations are required before provisioning the box. **ztp initiate** can specify any data interfaces and management interface on the system to be used for the whole ZTP process. If you don't specify an interface, ztp will be invoked on management interface only.

No progress logs are shown by default, although there will be XR syslogs for important events. If you wish to see more logs, add **verbose** after the **ztp initiate** command. For more details, add **debug** before **verbose**.

Logs can be found in **disk0:/ztp/ztp.log**.

Example

This example shows how to bring up the interface manually:

```
RP/0/RP0/CPU0:router#ztp initiate debug verbose interface TenGigE 0/0/0/0
Invoke ZTP? (this may change your configuration) [confirm] [y/n] :
```

This example shows how to get rid of the prompting:

```
RP/0/RP0/CPU0:router#ztp initiate noprompt
Mon Jun 27 20:40:10.353 UTC
ZTP will now run in the background.
Please use "show logging" or look at /disk0:/ztp/ztp.log to check progress.
```

This example shows how to invoke the breakout discovery and ZTP, ZTP is invoked on the interfaces which are up:

```
RP/0/RP0/CPU0:router# ztp breakout debug verbose
RP/0/RP0/CPU0:router# ztp initiate dataport debug verbose
Invoke ZTP? (this may change your configuration) [confirm] [y/n] :
```

ztp terminate

To terminate all existing Zero Touch Provisioning (ZTP) processes, use the **ztp terminate** command in EXEC mode.

ztp terminate [debug] [verbose] [noprompt]

Syntax Description

debug	Run with additional logging to the console(cisco-support).
verbose	Run with logging to the console(cisco-support)
noprompt	Run without prompting(cisco-support)

Command Default

No default behavior or values

Command Modes

EXEC

Command History

Release	Modification
Release 7.0.1	This command was introduced.

Usage Guidelines

If you want to terminate an already running ZTP process, use the **ztp terminate** command. Be careful to use the **ztp terminate** command because unproperly usage of this command may leave your system in a partially configured state.

No progress logs are shown by default, although there will be XR syslogs for important events. If you wish to see more logs, add **verbose** after the **ztp terminate** command. If these logs are not enough, add **debug** before **verbose**.

Logs can be found in **disk0:/ztp/ztp.log**.

Note Unproperly cleanup of the interface IP configuration in Linux in the XR namespace may cause the same IP present in the global Virtual Routing and Forwarding (VRF) and XR namespace at the same time.

Example

This example shows how to terminate the ZTP sessions in progress:

```
RP/0/RP0/CPU0:router#ztp terminate verbose
Mon Oct 10 16:52:38.507 UTC
Terminate ZTP? (this may leave your system in a partially configured state) [confirm] [y/n]
 :y
ZTP terminated
```