



DigiStar Ethernet over COAX (EoC) Command Line Interface (CLI) User Guide

Notices

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Important Safety Instructions

Read and Retain Instructions

Carefully read all safety and operating instructions before operating this equipment, and retain them for future reference.

Follow Instructions and Heed Warnings

Follow all operating and use instructions. Pay attention to all warnings and cautions in the operating instructions, as well as those that are affixed to this equipment.

Terminology

The terms defined below are used in this document. The definitions given are based on those found in safety standards.

Service Personnel - The term *service personnel* applies to trained and qualified individuals who are allowed to install, replace, or service electrical equipment. The service personnel are expected to use their experience and technical skills to avoid possible injury to themselves and others due to hazards that exist in service and restricted access areas.

User and Operator - The terms *user* and *operator* apply to persons other than service personnel.

Ground(ing) and Earth(ing) - The terms *ground(ing)* and *earth(ing)* are synonymous. This document uses *ground(ing)* for clarity, but it can be interpreted as having the same meaning as *earth(ing)*.

Electric Shock Hazard

This equipment meets applicable safety standards.



To reduce risk of electric shock, perform only the instructions that are included in the operating instructions. Refer all servicing to qualified service personnel only.

Electric shock can cause personal injury or even death. Avoid direct contact with dangerous voltages at all times. The protective ground connection, where provided, is essential to safe operation and must be verified before connecting the power supply.

Know the following safety warnings and guidelines:

- **Dangerous Voltages**
 - Only qualified service personnel are allowed to perform equipment installation or replacement.
 - Only qualified service personnel are allowed to remove chassis covers and access any of the components inside the chassis.
- **Grounding**
 - Do not violate the protective grounding by using an extension cable, power cable, or autotransformer without a protective ground conductor.
 - Take care to maintain the protective grounding of this equipment during service or repair and to re-establish the protective grounding before putting this equipment back into operation.

Continued on next page

Important Safety Instructions, Continued

Installation Site

When selecting the installation site, comply with the following:

- **Protective Ground** - The protective ground lead of the building's electrical installation should comply with national and local requirements.
- **Environmental Condition** - The installation site should be dry, clean, and ventilated. Do not use this equipment where it could be at risk of contact with water. Ensure that this equipment is operated in an environment that meets the requirements as stated in this equipment's technical specifications, which may be found on this equipment's data sheet.

Installation Requirements



WARNING:

Allow only qualified service personnel to install this equipment. The installation must conform to all local codes and regulations.

Equipment Placement



WARNING:

Avoid personal injury and damage to this equipment. An unstable mounting surface may cause this equipment to fall.

To protect against equipment damage or injury to personnel, comply with the following:

- Install this equipment in a restricted access location.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other equipment (including amplifiers) that produce heat.
- Place this equipment close enough to a mains AC outlet to accommodate the length of this equipment's power cord.
- Route all power cords so that people cannot walk on, place objects on, or lean objects against them. This may pinch or damage the power cords. Pay particular attention to power cords at plugs, outlets, and the points where the power cords exit this equipment.
- Use only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with this equipment.
- Make sure the mounting surface or rack is stable and can support the size and weight of this equipment.
- The mounting surface or rack should be appropriately anchored according to manufacturer's specifications. Ensure this equipment is securely fastened to the mounting surface or rack where necessary to protect against damage due to any disturbance and subsequent fall.

Ventilation

This equipment has openings for ventilation to protect it from overheating. To ensure equipment reliability and safe operation, do not block or cover any of the ventilation openings. Install the equipment in accordance with the manufacturer's instructions.

Continued on next page

Important Safety Instructions, Continued

Rack Mounting Safety Precautions

Mechanical Loading

Make sure that the rack is placed on a stable surface. If the rack has stabilizing devices, install these stabilizing devices before mounting any equipment in the rack.



WARNING:

Avoid personal injury and damage to this equipment. Mounting this equipment in the rack should be such that a hazardous condition is not caused due to uneven mechanical loading.

Reduced Airflow

When mounting this equipment in the rack, do not obstruct the cooling airflow through the rack. Be sure to mount the blanking plates to cover unused rack space. Additional components such as combiners and net strips should be mounted at the back of the rack, so that the free airflow is not restricted.



CAUTION:

Installation of this equipment in a rack should be such that the amount of airflow required for safe operation of this equipment is not compromised.

Elevated Operating Ambient Temperature

Only install this equipment in a humidity- and temperature-controlled environment that meets the requirements given in this equipment's technical specifications.



CAUTION:

If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient temperature. Therefore, install this equipment in an environment compatible with the manufacturer's maximum rated ambient temperature.

Handling Precautions

When moving a cart that contains this equipment, check for any of the following possible hazards:



WARNING:



Avoid personal injury and damage to this equipment! Move any equipment and cart combination with care. Quick stops, excessive force, and uneven surfaces may cause this equipment and cart to overturn.

- Use caution when moving this equipment/cart combination to avoid injury from tip-over.
- If the cart does not move easily, this condition may indicate obstructions or cables that may need to be disconnected before moving this equipment to another location.
- Avoid quick stops and starts when moving the cart.
- Check for uneven floor surfaces such as cracks or cables and cords.

Continued on next page

Important Safety Instructions, Continued

Grounding

This section provides instructions for verifying that the equipment is properly grounded.

Safety Plugs (USA Only)

This equipment is equipped with a 3-terminal (grounding-type) safety plug. The wide blade or the third terminal is provided for safety. Do not defeat the safety purpose of the grounding-type or polarized safety plug.

To properly ground this equipment, follow these safety guidelines:

- **Grounding-Type Plug** - For a 3-terminal plug (one terminal on this plug is a protective grounding pin), insert the plug into a grounded mains, 3-terminal outlet.

Note: This plug fits only one way. If this plug cannot be fully inserted into the outlet, contact an electrician to replace the obsolete 3-terminal outlet.

Grounding Terminal


If this equipment is equipped with an external grounding terminal, attach one end of an 18-gauge wire (or larger) to the grounding terminal; then, attach the other end of the wire to a ground, such as a grounded equipment rack.

Safety Plugs (European Union)

- **Class I Mains Powered Equipment** – Provided with a 3-terminal AC inlet and requires connection to a 3-terminal mains supply outlet via a 3-terminal power cord for proper connection to the protective ground.

Note: The equipotential bonding terminal provided on some equipment is not designed to function as a protective ground connection.

Equipotential Bonding

If this equipment is equipped with an external chassis terminal marked with the IEC 60417-5020 chassis icon () , the installer should refer to CENELEC standard EN 50083-1 or IEC standard IEC 60728-11 for correct equipotential bonding connection instructions.

AC Power

Important: If this equipment is a Class I equipment, it must be grounded.

- If this equipment plugs into an outlet, the outlet must be near this equipment, and must be easily accessible.
- Connect this equipment only to the power sources that are identified on the equipment-rating label normally located close to the power inlet connector(s).
- This equipment may have two power sources. Be sure to disconnect all power sources before working on this equipment.
- If this equipment **does not** have a main power switch, the power cord connector serves as the disconnect device.
- Always pull on the plug or the connector to disconnect a cable. Never pull on the cable itself.
- Unplug this equipment when unused for long periods of time.

Continued on next page

Important Safety Instructions, Continued

Circuit Overload

Know the effects of circuit overloading before connecting this equipment to the power supply.



CAUTION:

Consider the connection of this equipment to the supply circuit and the effect that overloading of circuits might have on overcurrent protection and supply wiring. Refer to the information on the equipment-rating label when addressing this concern.

General Servicing Precautions



WARNING:

Avoid electric shock! Opening or removing this equipment's cover may expose you to dangerous voltages.

Be aware of the following general precautions and guidelines:

- **Servicing** - Refer all servicing to qualified service personnel. Servicing is required when this equipment has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into this equipment, this equipment has been exposed to rain or moisture, does not operate normally, or has been dropped.
- **Wristwatch and Jewelry** - For personal safety and to avoid damage of this equipment during service and repair, do not wear electrically conducting objects such as a wristwatch or jewelry.
- **Lightning** - Do not work on this equipment, or connect or disconnect cables, during periods of lightning.
- **Labels** - Do not remove any warning labels. Replace damaged or illegible warning labels with new ones.
- **Covers** - Do not open the cover of this equipment and attempt service unless instructed to do so in the instructions. Refer all servicing to qualified service personnel only.
- **Moisture** - Do not allow moisture to enter this equipment.
- **Cleaning** - Use a damp cloth for cleaning.
- **Safety Checks** - After service, assemble this equipment and perform safety checks to ensure it is safe to use before putting it back into operation.

Electrostatic Discharge

Electrostatic discharge (ESD) results from the static electricity buildup on the human body and other objects. This static discharge can degrade components and cause failures.

Take the following precautions against electrostatic discharge:

- Use an anti-static bench mat and a wrist strap or ankle strap designed to safely ground ESD potentials through a resistive element.
- Keep components in their anti-static packaging until installed.
- Avoid touching electronic components when installing a module.

Continued on next page

Important Safety Instructions, Continued

Electromagnetic Compatibility Regulatory Requirements

This equipment meets applicable electromagnetic compatibility (EMC) regulatory requirements. EMC performance is dependent upon the use of correctly shielded cables of good quality for all external connections, except the power source, when installing this equipment.

- Ensure compliance with cable/connector specifications and associated installation instructions were given elsewhere in this guide.

Otherwise, comply with the following good practices:

- Multi-conductor cables should be of single-braided, shielded type and have conductive connector bodies and backshells with cable clamps that are conductively bonded to the backshell and capable of making 360° connection to the cable shielding. Exceptions from this general rule will be clearly stated in the connector description for the excepted connector in question.
- Ethernet cables should be of single-shielded or double-shielded type.
- Coaxial cables should be of the double-braided shielded type.

EMC

Where this equipment is subject to USA FCC and/or Industry Canada rules, the following statements apply:

FCC Statement for Class B Equipment

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Industry Canada – Industrie Canadienne Statement

This apparatus complies with Canadian ICES-003.
Cet appareil est conforme à la norme NMB-003 du Canada.

Fuse Replacement

To replace a fuse, comply with the following:

- Disconnect the power before changing fuses.
- Identify and clear the condition that caused the original fuse failure.
- Always use a fuse of the correct type and rating. The correct type and rating are indicated on this equipment.

Continued on next page

Important Safety Instructions, Continued

Modifications

This equipment has been designed and tested to comply with applicable safety, laser safety, and EMC regulations, codes, and standards to ensure safe operation in its intended environment.

Do not make modifications to this equipment. Any changes or modifications could void the user's authority to operate this equipment.

Modifications have the potential to degrade the level of protection built into this equipment, putting people and property at risk of injury or damage. Those persons making any modifications expose themselves to the penalties arising from proven non-compliance with regulatory requirements and to civil litigation for compensation in respect of consequential damages or injury.

Accessories

Use only attachments or accessories specified by the manufacturer.

Chapter 1

Preface

Overview

About This Guide

This guide provides information on how to operate the Command Line Interface (CLI) on the DigiStar EoC Aggregation Point (AP) and End Point (EP).

CLI is used for local craft device management through connecting your device (AP or EP) through Ethernet.

This guide includes information on how to use the laptop or computer to configure your device (AP or EP) through command line interface.

This guide covers the following chapters:

Chapter 1 Preface - This chapter briefly introduces the CLI commands and this document.

Chapter 2 Operation - This chapter describes all the CLI commands, account privilege and switching and how to perform operations like viewing certain parameters, EP dynamic configuration and firmware upgrade.

Chapter 3 Customer Technical Support Information - This chapter provides information on technical support.

Additional Documentation

If you have a Product Support Agreement (PSA), you can access, find and download the most current documentation which provides additional information at the Cisco public website at:

http://www.cisco.com/en/US/products/ps10125/tsd_products_support_series_home.html

Note: You can download these guides separately, or find them on the CD that comes packaged with the master and end-point devices.

Chapter 2

Command Line Interface Operation

Overview

Introduction

This chapter provides a brief overview of the Command Line Interface (CLI).

In This Chapter

This chapter contains the following topics.

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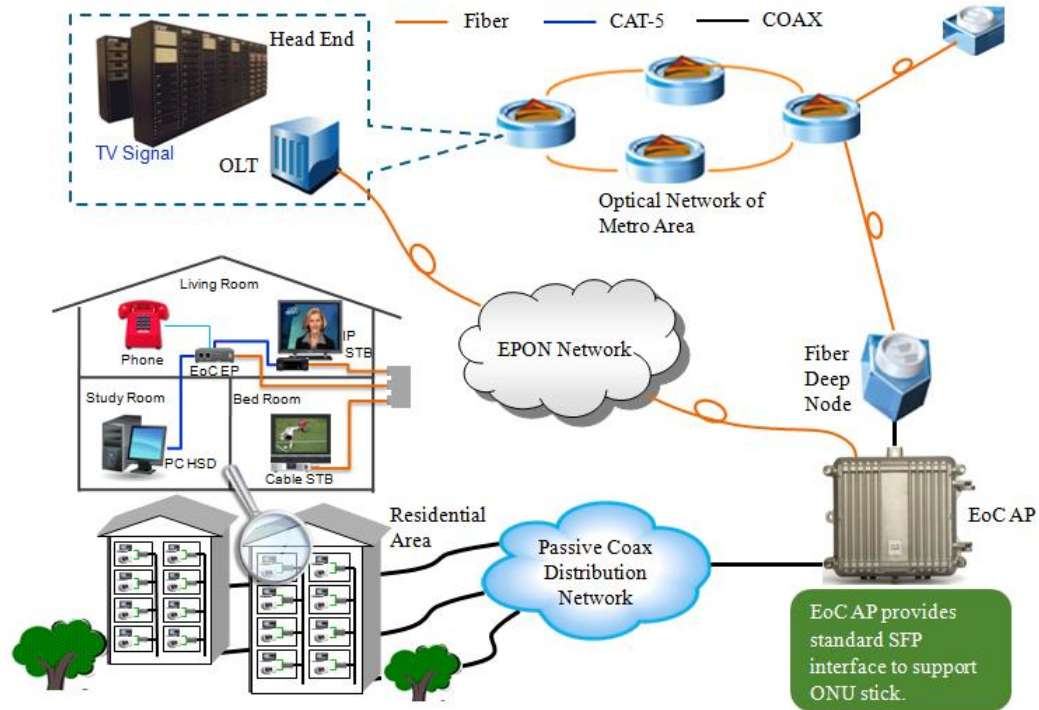
Remote Management Introduction

Remote Management Architecture

CLI can remotely manage all online Access-Points (AP) and end-points (EP) devices in an EoC network system via Ethernet network.

The following illustration shows the typical remote management architecture.

AP with ONU module inside:



Note:

1. In the above application, the master devices are connected via LAN interface, and are responsible for providing Ethernet and video signals to one MDU. The end-point devices should be deployed in each subscriber's apartment in the unit.
2. The end-point device can provide both Ethernet and CATV services to subscribers.
3. Be sure that network resources are sufficient to provide the required number of master and end-point devices in each MDU, and to ensure adequate bandwidth for each subscriber.

Connection Setup

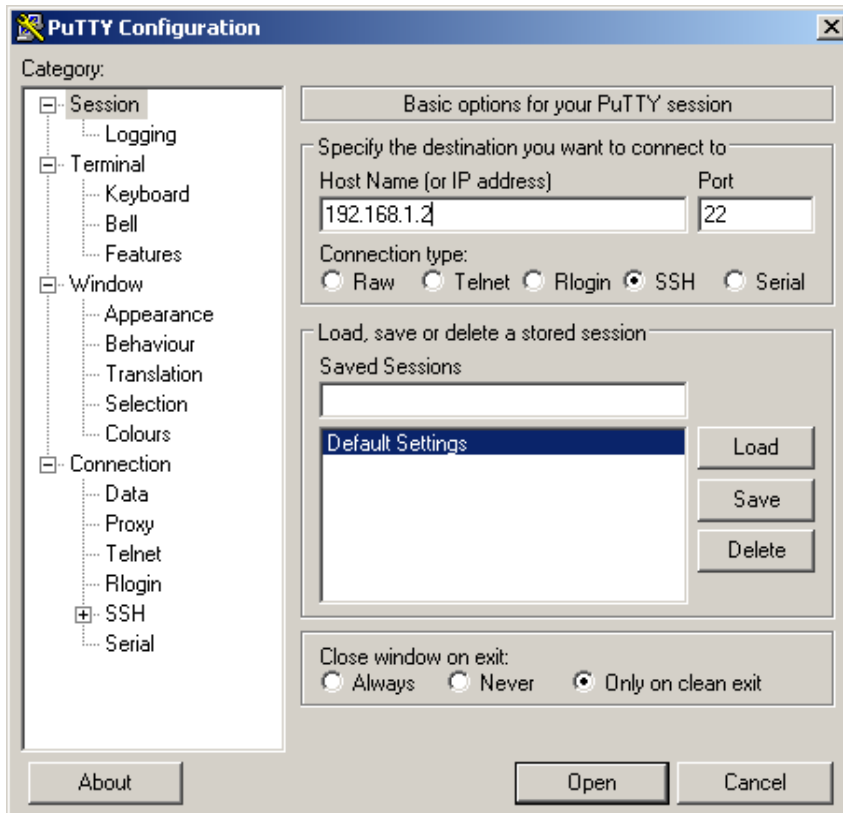
The CLI interface supports connecting your computer to the EoC device through Secure Shell (SSH) connection.

Follow the steps below to configure network connection using the third party open source software PuTTY before log into the CLI.

1. Click on the following link to download PuTTY from its official website, <http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html>
2. Double-click on the execution file to activate the software interface.



3. Input the host-name or IP address of the desired AP.



4. Click Open to build the SSH connection.
-

Account Privilege and Account Switching

Account Privilege

CLI supports the following 3 types of accounts. Their privileges are described as the following table.

Account	Definition	Applicable CLI	Privilege Description
admin	Administrator	All CLI commands. Including: Show Config Upgrade Reboot...etc	Account with highest level of privilege. This type of account is able to display or configure device parameters, configurable environment information and upgrade device firmware.
user	Operator	Some CLI commands. Including: Show Config	Account with necessary privilege as an operator. This type of account is able to display or configure device parameters, configurable environment information.
viewer	Read-Only User	Some CLI commands. Including: Show	This type of account is able to display device parameters, configurable environment information.

To Switch Between Accounts

The following commands are used to enable, disable an account or switch between accounts.

Command	Description
enable/disable	Enable or disable an operator account.
exit	Exit from administrator account and switch to an operator account.
config terminal	Switch to administrator account.

Typical EP Configurations

To Configure VLAN of the EP

Follow the steps below to configure VLAN of the EP.

1. Input “ep vlan-config <MAC address of the device>” and press the **Tab** button.
2. Input “(ep-<MAC address of the device>)\$port <port number> [allow | native] vlanid <id>”.
3. Input “ep-<MAC address of the device>)\$apply-configuration”
4. Press the **Enter** button.

```
CLI(config)$ ep vlan-config f4:3e:61:da:b1:2b
(ep-f4:3e:61:da:b1:2b)$sh config
ep vlan-trunk- (f4:3e:61:da:b1:2b)

(ep-f4:3e:61:da:b1:2b)$port 1 native vlanid 100
(ep-f4:3e:61:da:b1:2b)$port 1 allow vlanid 200
(ep-f4:3e:61:da:b1:2b)$port 1 allow vlanid 300
(ep-f4:3e:61:da:b1:2b)$port 1 allow vlanid 400
(ep-f4:3e:61:da:b1:2b)$port 1 allow vlanid 500
(ep-f4:3e:61:da:b1:2b)$apply-configuration
Please wait a moment for applying the configuration...
Applying succeeded! Please wait a while for EP rebooting!
(ep-f4:3e:61:da:b1:2b)$sh config
ep vlan-trunk- (f4:3e:61:da:b1:2b)
    port 1 native vlanid 100
    port 1 allow vlanid 200
    port 1 allow vlanid 300
    port 1 allow vlanid 400
    port 1 allow vlanid 500
```

Use [no] in the command to delete this command from the applying set before apply the configuration. For example:

1. Input “ep vlan-config f4:3e:61:da:b1:2b” and press the **Tab** button.
2. Input “(ep-f4:3e:61:da:b1:2b)\$port 1 native vlanid 100”, and “(ep-f4:3e:61:da:b1:2b)\$port 1 allow vlanid 200”.
3. Input “(ep-f4:3e:61:da:b1:2b)\$no port 1 native vlanid 100”
4. Input “(ep-f4:3e:61:da:b1:2b)\$apply-configuration”
5. Press the **Enter** button.

Wait until the EP reboot is finished, then input “(ep-f4:3e:61:da:b1:2b)\$sh config”, there is only one row in the list “port 1 allow vlanid 200”, the vlanid 100 setting is canceled before applying the configuration.

To Configure Priority of the EP

Follow the steps below to configure priority of the EP.

1. Input “config priority” and press the **Tab** button.
2. Input “config priority + MAC address of the device” to locate the desired EP.
3. Input “config priority + port number of the device” to locate the desired port.
4. Press the **Enter** button.

```
CLI(config)$ config priority
<MACADDR:mac>
CLI(config)$ config priority f4:3e:61:d7:fd:d2
<UINT:port>
CLI(config)$ config priority f4:3e:61:d7:fd:d2 2
<UINT:priority>
CLI(config)$ config priority f4:3e:61:d7:fd:d2 2 0
<LF>
CLI(config)$ config priority f4:3e:61:d7:fd:d2 2 0
```

To Configure Upstream Limit of the EP

Follow the steps below to configure upstream limit of the EP.

1. Input “config upstream-limit” and press the **Tab** button.
2. Input “config upstream-limit + MAC address of the device” to locate the desired EP.
3. Input “config upstream-limit + MAC address of the device + upstream limit value”.
4. Press the **Enter** button.

```
CLI(config)$ config upstream-limit
<MACADDR:mac>
CLI(config)$ config upstream-limit f4:3e:61:d7:fd:d2
<UINT:limit>
CLI(config)$ config upstream-limit f4:3e:61:d7:fd:d2 10
<LF>
CLI(config)$ config upstream-limit f4:3e:61:d7:fd:d2 10
```

Typical AP Configurations

To Configure Network Configuration of the AP

Follow the steps below to configure VLAN of the AP.

1. Input “config network-configuration” and press the **Tab** button.
2. Input “config network-configuration + dhcp/static/vlan termination” to configure the work mode into DHCP, Static IP, or VLAN termination.
3. Input “config network-configuration + static” for this case.
4. Input “config network-configuration + static + IP address” to configure the static IP address of the device.
5. Input “config network-configuration + static + IP address + subnet mask” to configure the static subnet mask of the device.
6. Input “config network-configuration + static + IP address + subnet mask + gateway IP address” to configure the gateway IP address of the device.
7. Press the **Enter** button.

```
CLI(config)# config network-configuration
dhcp
static
vlantermination
CLI(config)# config network-configuration static
<IPV4ADDR:ip>
CLI(config)# config network-configuration static 10.54.128.10
<IPV4ADDR:submask>
CLI(config)# config network-configuration static 10.54.128.10 255.255.128.0
<LF>
<IPV4ADDR:gateway>
CLI(config)# config network-configuration static 10.54.128.10 255.255.128.0 10.54.0.1
<LF>
CLI(config)# config network-configuration static 10.54.128.10 255.255.128.0 10.54.0.1
```

To Configure the Status of each AP Port

Follow the steps below to configure port status of the AP.

1. Input “config gateway” and press the **Tab** button.
2. Input “config gateway-port-management + lan-port” to enable or disable the LAN port of the AP.
3. Input “config gateway-port-management + wan-port” to enable or disable the WAN port of the AP.
4. Input “config gateway-port-management + onu-port” to enable or disable the ONU port of the AP.
5. Input “config gateway-port-management + lan/wan isolation” to enable or disable the isolation on the LAN/WAN port of the AP.
6. Input “config gateway-port-management + reset TxRxcounters” to clear the transmitting and receiving counter of the AP.
7. Press the **Enter** button.

Continued on next page

Typical AP Configurations, Continued

```
CLI>> config gateway-port-management
lan-port
wan-port
onu-port
lan-wan-isolation
reset-TxRxCounters
CLI>> config gateway-port-management lan-port
<STRING:enable>
CLI>> config gateway-port-management wan-port
<STRING:enable>
CLI>> config gateway-port-management onu-port
<STRING:enable>
CLI>> config gateway-port-management lan-
lan-port
lan-wan-isolation
CLI>> config gateway-port-management lan-port
<STRING:enable>
CLI>> config gateway-port-management lan-port -ioslation
<LF>
CLI>> config gateway-port-management reset-TxRxCounters
<STRING:port>
CLI>> config gateway-port-management reset-TxRxCounters
```

Typical Viewing Application

To View device List

The “show adjacency” command is used to view device list.

Example:

```
CLI(config)# show adjacency
<LF>
CLI(config)# show adjacency
AP f4:5f:d4:9f:7b:3f
    EP f4:3e:61:d7:fd:d2
```

Note:

- When applied on to the AP, the displayed topology includes the related AP and all the EPs connected to it.
- When applied on to the EP, the displayed topology includes the related EP and the AP connected to it. (All other EPs will not be shown.)

To View Device Version Information

The “show version-device” command is used to view version information of a specific device.

Example:

```
CLI(config)# show version-device
<MACADDR:mac>
CLI(config)# show version-device f4:5f:d4:9f:7b:3f
MAC.:F4:5F:D4:9F:7B:3F.Chip.:INT7400.MDU.:Master.PIB.
CLI(config)# show version-device f4:3e:61:d7:fd:d2
MAC.:F4:3E:61:D7:FD:D2.Chip.:INT7400.MDU.:Slave.PIB.:
```

To View Physical Connection Status

The “show link-stat” command is used to view physical link status of a specific device.

Example:

```
CLI(config)# show link-stat
<MACADDR:start>
CLI(config)# show link-stat f4:5f:d4:9f:7b:3f
<MACADDR:end>
CLI(config)# show link-stat f4:5f:d4:9f:7b:3f f4:3e:61:d7:fd:d2
<LF>
CLI(config)# show link-stat f4:5f:d4:9f:7b:3f f4:3e:61:d7:fd:d2
link-stat: "01)f4:5f:d4:9f:7b:3f-->f4:3e:61:d7:fd:d2 :Receiver rate=N
```

Continued on next page

Typical Viewing Application, Continued

To View System Status

The “show system-status” command is used to view system status of a specific device.

Example:

```
CLI(config)$ show system-status
System:
Manufacturer: Cisco System Inc.
Product Model:HomePlug-74XX
Firmware Version:0.04.16-b4
Firmware Date:Fri Oct 21 10:57:11 CST 2011
Local Time:Fri Oct 21 02:59:11 PDT 2011
Uptime: 0d 21h 0min 19s
Bootloader Version: 0.04.11
```

```
Status:
IP Address:192.168.1.1
Subnet Mask:255.255.255.0
Mac Address:60:2A:DO:FF:C6:85
Default Gateway:
Module 1:f4:5f:d4:9f:7b:3f
Module 2:
RF Isolation: Mode 1
lan: Enabled=true; Link_status=up; Rx_bytes=294022; Tx_bytes=77077;
wan: Enabled=true; Link_status=down; Rx_bytes=0; Tx_bytes=0;
onu: Enabled=true; Link_status=down; Rx_bytes=0; Tx_bytes=0;
CLI>>
```

EP Dynamic Configuration

Introduction

The commands are used to complete the following tasks when connecting CLI to EP.

- Display the configuration parameters of the EP.
- Configure the configuration parameters of the EP.
- Other network management functions.

EP Dynamic Configuration

The following command is used to check the configuration parameters of the EP.

Command	Description	Applicable Device
show ep-config <mac>	Show the dynamic configuration information of the connected device. MAC: MAC address of the device.	EP
show global-option	Show the global options of the AP.	AP

The following commands are used to configure dynamic configurations of the EP.

Command	Description	Applicable Device
?	Show help information	-
config host-limit <MAC>	Configure the host limit number for the EP. MAC: MAC address of the EP for “MAC”. NUM: The maximum host number of the EP.	EP
config upstream-limit <MAC> <NUM>	Configure the upstream limit for the EP. MAC: MAC address of the EP for “MAC”. NUM: The maximum upstream limit per sec number. (eg. 1024, 0 stands for unlimited).	EP
config downstream-limit <MAC> <PORT> <NUM>	Configure the downstream limit for each EP port. MAC: MAC address of the EP for “MAC”. PORT: Port number (e.g. 2 for port 2) NUM: The maximum upstream limit per port per sec. (eg. 1024, 0 stands for unlimited).	EP
config priority <MAC> <PORT> <NUM>	Configure priority for each EP port. MAC: MAC address of the EP for “MAC”. PORT: Port number (e.g. 2 for port 2) NUM: The priority sequence number.	EP
config global-option ep-default-configuration enable/disable	Enable/disable the default configuration of the device.	EP
config global-option white-list-persistence enable/disable	Enable/disable the white list persistence of the device after AP power cycling.	EP
config global-option ep-auth-trap enable/disable	Enable/disable the authentication trap of the device.	EP

Firmware Upgrade

Introduction

The command is used to upgrade the firmware of the device when connecting CLI to AP or EP.

Firmware Upgrade

The following commands are used to attain the file for firmware upgrade and perform firmware upgrade operations using it.

Command	Description	Applicable Device
upgrade <FTPServerIp> <FTPServerPort> <FTPServerUsername> <FTPServerPW> <FTPServerRemoteFile> <FileMD5> <FWType> {MAC}	Upgrade the firmware of the device. FTPServerIp: IP address of the FTP server. FTPServerPort: Port of the FTP server. FTPServerUsername: User name to log onto the FTP server. FTPServerPW: Password to log onto the FTP server. FTPServerRemoteFile: The file name used for firmware upgrade. FileMD5 The MD5 used for firmware upgrade. FWType: The firmware type, including: bootloader/ runtime/ AP/ EP. (FWType can be ignored when upgrading firmware for bootloader or runtime.) MAC: MAC address of the device for firmware upgrade.	AP and EP

CLI Commands Summary

Introduction

The following section lists the main commands used in Command Line Interface with their correspondent description.

Show Commands

The “show” command is used to show certain system information.

Command	Description
?	Show HELP information.
adjacency	Show the adjacent nodes around the connected device.
version-device <mac>	Show the firmware version and the bootloader version information of the connected device. MAC: MAC address of the device.
ep-config <mac>	Show the dynamic configuration information of the connected device. MAC: MAC address of the device.
link-stat <start> <end>	Show the detailed connection status of a certain address field. Start: Mac address of the starting point of a data stream. End: Mac address of the ending point.
system-status	Show current gateway status information.
acl	Show the status of current Access Control List (ACL) of the connected device.
network-configuration	Show the current network configuration of the connected device.
clock	Show the system time.
nms	Show the status of the Network Management System (NMS) on the connected device.
oss	Show the OSS settings.
.system-log	Show system event log list.
NTP	Show NTP relevant information.
gateway-port-management	Show gateway port management status, the ports including “lan”/”wan”/”onu”, each representing LAN port, WAN port and the ONU connection port. The “lan-wan-isolation” shows the isolation status.
snmpd-parameters	Show the snmpd-port parameter, read/write community
bcmp-status	Show the bcmp status.
frequency-band <MAC>	Show the frequency band of a specific device. MAC: MAC address of the device.

Continued on next page

CLI Commands Summary, Continued

Configure Commands

The “config” command is used to configure certain system information.

Command	Description
?	Show HELP information.
host-limit <MAC> <NUM>	Configure the host limit number for the EP. MAC: MAC address of the EP for “MAC”. NUM: The maximum host number of the EP.
upstream-limit <MAC> <NUM>	Configure the upstream limit for the EP. MAC: MAC address of the EP for “MAC”. NUM: The maximum upstream limit per sec number. (eg. 1024, 0 stands for unlimited).
downstream-limit <MAC> <PORT> <NUM>	Configure the downstream limit for each EP port. MAC: MAC address of the EP for “MAC”. PORT: Port number (e.g. 2 for port 2) NUM: The maximum upstream limit per port per sec. (eg. 1024, 0 stands for unlimited).
priority <MAC> <PORT> <NUM>	Configure priority for each EP port. MAC: MAC address of the EP for “MAC”. PORT: Port number (e.g. 2 for port 2) NUM: The priority sequence number.
network-configuration vlantermination <VLAN ID> <IP> <NETMASK> { <GATEWAY> }	Configure the status of VLAN termination function. VLAN ID: VLAN identification number. It defines the ID to implement VLAN termination on. NETMASK: Subnet Mask IP address. GATEWAY: Gateway IP address.

Continued on next page

CLI Commands Summary, Continued

To configure the VLAN trunk mode	
ep vlan-config <mac>	Enter ep_vlan_trunk submode.
(ep-<mac>)\$sh config	Read VLAN configuration.
(ep-<mac>)\$show applying-set	Show VLAN configuration in applying set that will be applied.
(ep-<mac>)\$[no] port <n> [allow native] vlanid <id>	Add trunk VLAN (allowed or native) for one port, enable trunk mode. Add [no] in this command means delete this command from the applying set before apply the configuration.
(ep-<mac>)\$[no] delete port <n> [allowed native] vlanid <id>	Delete VLAN (allowed or native) for one port. Add [no] in this command means delete this command from the applying set before apply the configuration.
(ep-<mac>)\$apply-configuration	Apply the configuration of applying set.
(ep-<mac>)\$exit	Exit ep_vlan_trunk submode.
network-configuration dhcp	Set network-configuration as dhcp mode.
network-configuration static <IP> <NETMASK> { <GATEWAY> }	Configure the static network configuration status. NETMASK: Subnet Mask IP address. GATEWAY: Gateway IP address.
nms <IP> <PORT>	Configure the Network Management Service (NMS) settings. IP: IP address of the NMS. PORT: Port number for NMS.
oss <IP> <PORT>	Configure the Operation Supporting System (OSS) related settings. IP: IP address of the NMS. PORT: Port number for NMS.

Continued on next page

CLI Commands Summary, Continued

To configure the gateway ports using gateway-port-management [Options Below]	
lan-port <ENABLE>	Enable/Disable the LAN port of the gateway.
wan-port <ENABLE>	Enable/Disable the WAN port of the gateway.
onu-port <ENABLE>	Enable/Disable the ONU port of the gateway.
lan-wan-isolation <ENABLE>	Enable/Disable the isolation between the WAN port and the LAN port.LAN.
reset-TxRxCounters <PORT>	Reset the transmit and receive counter of the chosen port. PORT: Type of the port, including lan/wan/onu.
config acl enable <STRING:action> <STRING:io> <STRING:protocol> <STRING:src_ip> <STRING:des_ip> { <UINT:src_port> } { <UINT:des_port> }	Configure the Access Control List (ACL) rules. ACTION: Permit/Deny I/O: IN/OUT to prohibit access of input or output PROTOCOL: IP/TCP/UDP/ICMP SOURCE_IP: source IP address SOURCE_PORT: Source port number DESTINATION_IP: Destination IP address DESTINATION_PORT: Destination port
config acl disable <UINT:rule_number>	Disable certain ACL. Rule_number: The ID number of the ACL rule.
clock <HOUR> <MINUTE> <SECOND> <MONTH> <DAY> <YEAR>	Configure the current system time.
NTP <ENABLE> {SERVER IP} {INTERVAL}	Configure the Network Time Protocol (NTP) parameters. SERVER IP: IP address of the NTP server INTERVAL: Interval for NTP update
To configure the password of the CLI using cli-password [Options Below]	
user < PASSWORD > < CONFIRMATION >	To modify password for the user account with read-only privileges.
operator < PASSWORD > < CONFIRMATION >	To modify password for the operator account with operator privileges.
administrator < PASSWORD > < CONFIRMATION >	To modify password for the administrator account with administrator privileges. Contact your system administrator before operation.

Continued on next page

CLI Commands Summary, Continued

terminal	Switch to administrator account.
To configure SNMP related settings using snmpd [Options Below]	
port <PORT>	Configure the port number for SNMP.
read-community <READ>	Configure the read-only community of the SNMP.
write-community <WRITE>	Configure the read-write community of the SNMP.
To configure BCMP related settings using bcmp [Options Below]	
enable	Enable bcmp
disable	Disable bcmp
To configure frequency band related settings using frequency-band [Options Below]	
frequency-band <MAC> < OFFSET > <END>	<p>Configure the frequency band of a device specified by its MAC address.</p> <p>MAC: MAC address of the device.</p> <p>OFFSET: The offset of RF frequency band, in KHz.</p> <p>The value of the offset must be smaller than the eocRFFreqBandEnd value.</p> <p>End: The end of RF frequency band, in KHz.</p> <p>The value of the frequency end point must be bigger than eocRFFreqBandOffset value.</p>

Continued on next page

CLI Commands Summary, Continued

Upgrade Commands

The “upgrade” command is used to upgrade device firmware.

Command	Description
<FTPServerIp> <FTPServerPort> <FTPServerUsername> <FTPServerPW> <FTPServerRemoteFile> <FileMD5> <FWType> {MAC}	Upgrade the firmware of the device. FTPServerIp: IP address of the FTP server. FTPServerPort: Port of the FTP server. FTPServerUsername: User name to log onto the FTP server. FTPServerPW: Password to log onto the FTP server. FTPServerRemoteFile: The file name used for firmware upgrade. FileMD5 The MD5 used for firmware upgrade. FWType: The firmware type, including: bootloader/ runtime/ AP/ EP. (FWType can be ignored when upgrading firmware for bootloader or runtime.) MAC: MAC address of the device for firmware upgrade.

Reboot Commands

The “reboot” command is used to restart the device.

Command	Description
gateway	Restart the gateway.
module <MAC>	Restart the specific module of the gateway. MAC: MAC address of the module.

Other Commands

There are also other commands include:

Command	Description
enable/disable	Enable or disable an operator account.
exit	Exit from administrator account and switch to an operator account.
quit	Quit the CLI program.

Chapter 3

Customer Support Information

Overview

Introduction

This chapter contains information on obtaining technical support.

Obtaining Product Support

IF...	THEN...
you have general questions about this product	contact your distributor or sales agent for product information or refer to product data sheets on www.cisco.com .
you have technical questions about this product	call the nearest Technical Service center.
you have customer service questions about this product	call the nearest Customer Service Center.

In This Chapter

This chapter contains the following topics

Topic	See Page
Support Telephone Numbers	3-2

Support Telephone Numbers

This table lists the Technical Support and Customer Service numbers for your area.

Region	Centers	Telephone and Fax Numbers
North America	Cisco Services Atlanta, Georgia United States	For <i>Technical Support</i> , call: <ul style="list-style-type: none"> ■ Toll-free: 1-800-722-2009 ■ Local: 678-277-1120 (Press 2 at the prompt) For <i>Customer Service</i> , call: <ul style="list-style-type: none"> ■ Toll-free: 1-800-722-2009 ■ Local: 678-277-1120 (Press 3 at the prompt) ■ Fax: 770-236-5477 ■ E-mail: customer-service@cisco.com
Europe, Middle East, Africa	Belgium	For <i>Technical Support</i> , call: <ul style="list-style-type: none"> ■ Telephone: 32-56-445-197 or 32-56-445-155 ■ Fax: 32-56-445-061 For <i>Customer Service</i> , call: <ul style="list-style-type: none"> ■ Telephone: 32-56-445-444 ■ Fax: 32-56-445-051 ■ E-mail: service-elc@cisco.com
Japan	Japan	<ul style="list-style-type: none"> ■ Telephone: 81-3-5908-2153 or +81-3-5908-2154 ■ Fax: 81-3-5908-2155
Korea	Korea	<ul style="list-style-type: none"> ■ Telephone: 82-2-3429-8800 ■ Fax: 82-2-3452-9748 ■ E-mail: songk@cisco.com
China (mainland)	China	<ul style="list-style-type: none"> ■ Telephone: 86-400-8108886 ■ Press 4 at the prompt ■ E-mail: eoc-support@cisco.com
All other Asia-Pacific countries & Australia	Hong Kong	<ul style="list-style-type: none"> ■ Telephone: 852-2588-4746 ■ Fax: 852-2588-3139 ■ E-mail: support.apr@sciatl.com
Brazil	Brazil	<ul style="list-style-type: none"> ■ Telephone: 11-55-08-9999 ■ Fax: 11-55-08-9998 ■ E-mail: fattinl@cisco.com or ecavalhe@cisco.com

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Support Telephone Numbers, Continued

Mexico, Central America, Caribbean	Mexico	For <i>Technical Support</i> , call: <ul style="list-style-type: none">■ Telephone: 52-3515152599■ Fax: 52-3515152599 For <i>Customer Service</i> , call: <ul style="list-style-type: none">■ Telephone: 52-55-50-81-8425■ Fax: 52-55-52-61-0893
All other Latin America countries	Argentina	For <i>Technical Support</i> , call: <ul style="list-style-type: none">■ Telephone: 54-23-20-403340 ext 109■ Fax: 54-23-20-403340 ext 103 For <i>Customer Service</i> , call: <ul style="list-style-type: none">■ Telephone: 770-236-5662■ Fax: 770-236-5888■ E-mail: keillov@cisco.com



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July 2013

Part Number OL-29787-01