



## System Commands

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### Revision History

# ConX–SFP CLI Command Reference

Version 1.5 | Document generated from CLI v2 implementation

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## Overview

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This document provides a complete reference of all CLI commands available on the ConX–SFP. Commands are organized by category and include information about required privileges and feature flags.

Access Levels: – Commands without flags are available to all users – `ADMIN` – Requires administrator privileges – Feature flags indicate compile–time or runtime feature requirements

Command Syntax: – `<required>` – Required parameter – `[optional]` – Optional parameter – `a|b|c` – Choose one option – Commands support prefix matching (e.g., `sh stat` = `show status`)

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## Session Commands

| Command  | Description                                      | Flags |
|--|--|-------|
| <code>help</code>                                    | Show top-level command overview by category      | -     |
| <code>help &lt;command&gt;</code>                    | Show subcommands for a primary command           | -     |
| <code>help &lt;command&gt; &lt;subcommand&gt;</code> | Show detailed help for a specific command        | -     |
| <code>?</code>                                       | Show command help (alias for <code>help</code> ) | -     |
| <code>exit</code>                                    | Exit CLI session                                 | -     |

### Tiered Help System

The `help` command uses a tiered approach to keep output concise:

`help` (no arguments) — Shows one line per primary command, grouped by category:

```
conxsfp> help
ConXSFP CLI – Commands:

Session:
  help          Use 'help help'
  exit          - Exit CLI session

Show:
  show          Use 'help show'

Config:
  config        Use 'help config'
  ...

Type 'help <command>' for subcommands.
```

`help <command>` — Shows all subcommands under a primary:

```
conxsfp> help show
'show' commands:
  show  status  - System status overview
  show  network - Network configuration
  show  serial  - Serial port configuration
  show  portal  - Portal status
  ...

Type 'show <subcommand> ?' for detailed help.
```

`help <command> <subcommand>` — Shows detailed help including usage and description:

```
conxsfp> help config network
config network - Network configuration
Usage: config network <dhcp|static|hostname|ssh-port|dns> [args]
```

## Context-Sensitive Help

Append `?` to any command to see available subcommands:

```
conxsfp> show ?
Available 'show' subcommands:
  show status      - System status overview
  show network     - Network configuration and state
  ...
```

## Show Commands

### System Information

| Command                    | Description  | Flags |
|----------------------------|--|-------|
| <code>show status</code>   | System status overview including uptime, firmware version, Serial CLI state, and break detection count | -     |
| <code>show memory</code>   | Memory allocation statistics   | -     |
| <code>show features</code> | Enabled build features   | -     |

### Network Information

| Command                   | Description                           | Flags |
|---------------------------|---------------------------------------|-------|
| <code>show network</code> | Network configuration (IP, DHCP, DNS) | -     |
| <code>show dns</code>     | Cached DNS resolution entries         | TLS   |
| <code>show ping</code>    | Ping test results                     | -     |
| <code>show connect</code> | TCP connect test results              | -     |

## Serial Information

| Command                      | Description   | Flags |
|------------------------------|---|-------|
| <code>show serial</code>     | Serial port configuration (baud, data bits, parity, etc.) | -     |
| <code>show serial-cli</code> | Serial CLI status, break detection stats, and RX health   | -     |

`show serial-cli` Output:

```
Serial CLI:
  Status: Enabled
  State: Monitoring (waiting for hardware break)

Break Detection:
  Breaks detected: 5

Serial1 RX:
  Bytes received: 12345
```

When hardware break CLI is active:

```
Serial CLI:
  Status: Enabled
  State: ACTIVE (CLI session in progress)
  Sessions: 3 Chars: 142
  Use 'clear serial-cli' to force exit

Break Detection:
  Breaks detected: 5

Serial1 RX:
  Bytes received: 12345
```

If baud mismatch detected (framing errors):

```
Break Detection:
  Breaks detected: 2
  WARNING: Disabled due to baud mismatch
  Framing errors/sec: 150

Serial1 RX:
  Bytes received: 500
  Framing errors: 1200 Overruns: 0
```

## User & Session Information

| Command                    | Description                         | Flags |
|----------------------------|-------------------------------------|-------|
| <code>show auth</code>     | Authentication settings             | -     |
| <code>show users</code>    | Configured users with access levels | -     |
| <code>show sessions</code> | Active SSH/Telnet sessions          | -     |
| <code>show keys</code>     | SSH host keys                       | -     |

## TLS & Portal Information

| Command                       | Description  | Flags |
|-------------------------------|--|-------|
| <code>show cert [bank]</code> | TLS certificates (optionally show specific bank details) | TLS   |
| <code>show tls</code>         | TLS module status  | TLS   |
| <code>show portal</code>      | Portal connection status                                 | TLS   |

## Service Status

| Command                  | Description             | Flags   |
|--------------------------|-------------------------|---------|
| <code>show telnet</code> | Telnet server status    | TELNET  |
| <code>show update</code> | Update operation status | -       |
| <code>show boot</code>   | Bootloader status       | BLOADER |

## Debug Information

| Command  | Description                         | Flags      |
|--|-------------------------------------|------------|
| <code>show buffers</code>  | Buffer configuration and statistics | INSTRUMENT |
| <code>show debug</code>  | Debug configuration                 | DEBUG      |
| <code>show debug-log [count] [raw\ test\ index\ callback]</code> | Show debug log entries              | DEBUG      |

# Config Commands

## Network Configuration

Command: `config network <subcommand>`

| Subcommand   | Description                                    |
|--|--|
| <code>dhcp [on\ off]</code>                            | Enable/disable DHCP client                     |
| <code>dhcp vendor [on\ off]</code>                     | Enable/disable DHCP vendor options (43/60/160) |
| <code>static &lt;ip&gt; &lt;mask&gt; &lt;gw&gt;</code> | Set static IP configuration                    |
| <code>hostname &lt;name&gt;</code>                     | Set device hostname (max 31 chars)             |
| <code>ssh-port &lt;port&gt;</code>                     | Set SSH port (1-65535, default: 22)            |
| <code>dns &lt;primary&gt; [secondary]</code>           | Set DNS servers                                |

Examples:

```
config network dhcp off
config network dhcp vendor on
config network dhcp vendor off
config network static 192.168.1.100 255.255.255.0 192.168.1.1
config network hostname my-console-server
config network ssh-port 2222
config network dns 8.8.8.8 1.1.1.1
```

Flags: ADMIN

## System Configuration

Command: `config system <subcommand>`

| Subcommand                                   | Description                           |
|--|---------------------------------------|
| <code>timeout &lt;seconds&gt;</code>         | Set session timeout (30-3600)         |
| <code>power &lt;on\ off&gt;</code>           | Set external power control (pin 7)    |
| <code>break-detection &lt;on\ off&gt;</code> | Enable/disable USART1 break detection |

Examples:

```
config system timeout 600
config system power on
config system break-detection on
```

Flags: ADMIN

## Serial Port Configuration

Command: `config serial <port> <parameter> <value>` Command: `config serial break-seq <0xHH,0xHH,...>`

| Parameter              | Values          | Description                    |
|------------------------|-----------------|--------------------------------|
| <code>baud</code>      | 1200-460800     | Set baud rate                  |
| <code>databits</code>  | 7, 8            | Set data bits                  |
| <code>stopbits</code>  | 1, 2            | Set stop bits                  |
| <code>parity</code>    | none, odd, even | Set parity                     |
| <code>localecho</code> | on, off         | Set local echo                 |
| <code>break-seq</code> | hex bytes       | Set break sequence (1-4 bytes) |

Examples:

```
config serial 1 baud 115200
config serial 1 databits 8
config serial 1 parity none
config serial 2 localecho on
config serial break-seq 0x1D,0x1D
```

Flags: ADMIN

## Serial CLI Configuration

Command: `config serial-cli enable|disable`

| Subcommand           | Description   |
|----------------------|---|
| <code>enable</code>  | Enable serial CLI (hardware break on Serial1 activates CLI) |
| <code>disable</code> | Disable serial CLI monitoring                               |

Examples:

```
config serial-cli enable
Serial CLI enabled
Hardware break on Serial1 will activate CLI session

config serial-cli disable
Serial CLI disabled
Hardware break detection stopped
```

Note: Serial CLI always operates on Serial1 (USART1) using the configured baud rate.

Flags: ADMIN

## User Management

Command: `config user <subcommand>`

| Subcommand   | Description  |
|--|--|
| <code>add &lt;username&gt; &lt;password&gt; [admin\ user]</code>   | Add new user (default: user level)                                 |
| <code>delete &lt;username&gt;</code>                               | Delete user (cannot delete last admin)                             |
| <code>level &lt;username&gt; &lt;admin\ user&gt;</code>            | Change user privilege level  |
| <code>password &lt;username&gt; &lt;newpassword&gt;</code>         | Change an existing user's password                                 |
| <code>key &lt;username&gt; [ssh-ed25519] &lt;base64-key&gt;</code> | Set the user's authorized Ed25519 public key (enables pubkey auth) |

Examples:

```
config user add operator secret123
config user add newadmin password456 admin
config user delete operator
config user level operator admin
config user password operator newsecret
config user key operator ssh-ed25519 AAAAC3NzaC1lZDI1NTE5AAAAI...
system save
```

Important — persistence: User changes ( `add` , `delete` , `level` , `password` , `key` , `secure` ) take effect immediately for live sessions but are RAM-only until you run `system save` — they are lost on reboot otherwise. Each command prints a reminder. Use `show users` to list configured users.

Password change: use `config user password <user> <newpass>` (no longer delete + re-add).

Public-key auth: paste the middle field of an `authorized_keys` line (the base64 blob), optionally with the `ssh-ed25519` prefix. Only `ssh-ed25519` keys are supported. After `system save` the key survives reboot and `ssh -i <key> <user>@<device>` authenticates without a password.

Secure password storage: passwords are always stored as a salted PBKDF2 hash in the options extension area (the `system_options` layout is unchanged, so older firmware still reads the config). Any plaintext password found at boot — e.g. after upgrading from older firmware — is automatically converted to a hash and saved once, before the SSH/Telnet servers start. `show users` reports the per-user state.

Protection Rules: – Cannot delete the last admin user – Cannot demote the last admin user – Cannot change your own access level

Flags: ADMIN

## SSH Key Management

Command: `config keys <subcommand>`

| Subcommand   | Description                    |
|--|--------------------------------|
| <code>regenerate</code>                                | Regenerate SSH host keys       |
| <code>user &lt;username&gt; auth &lt;method&gt;</code> | Set user authentication method |

Flags: ADMIN

## Telnet Configuration

Command: `config telnet <subcommand>`

| Subcommand                          | Description                                   |
|-------------------------------------|---|
| <code>enable</code>                 | Enable all telnet services                    |
| <code>disable</code>                | Disable all telnet services                   |
| <code>port &lt;port&gt;</code>      | Set telnet CLI port (default: 23)             |
| <code>cli [enable\ disable]</code>  | Enable/disable CLI, or show status            |
| <code>serial1 &lt;port&gt;</code>   | Set serial port 1 passthrough (default: 3001) |
| <code>serial1-enable</code>         | Enable serial1 passthrough                    |
| <code>serial1-disable</code>        | Disable serial1 passthrough                   |
| <code>serial2 &lt;port&gt;</code>   | Set serial port 2 passthrough (default: 3002) |
| <code>serial2-enable</code>         | Enable serial2 passthrough                    |
| <code>serial2-disable</code>        | Disable serial2 passthrough                   |
| <code>sessions &lt;count&gt;</code> | Set max sessions (1-10)                       |
| <code>timeout &lt;ms&gt;</code>     | Set session timeout (1000-3600000)            |

Flags: ADMIN, TELNET

## Certificate Configuration

Command: `config cert <subcommand>`

| Subcommand                         | Description                          |
|------------------------------------|--------------------------------------|
| <code>upload</code>                | Show certificate upload instructions |
| <code>erase &lt;bank&gt;</code>    | Erase certificate from bank          |
| <code>validate &lt;bank&gt;</code> | Validate certificate in bank         |

Flags: ADMIN, TLS

## Portal Configuration

Command: `config portal <subcommand> [value]`

| Subcommand   | Description                                  |
|--|--|
| <code>url &lt;host&gt; &lt;port&gt; [path]</code>                      | Set portal URL (path default: /ws/device/)   |
| <code>sni &lt;on\ off&gt;</code>                                       | Enable/disable SNI (Server Name Indication)  |
| <code>reconnect &lt;on\ off&gt;</code>                                 | Enable/disable auto-reconnect                |
| <code>max-attempts &lt;0-255&gt;</code>                                | Max reconnect attempts (0 = infinite)        |
| <code>interval &lt;20-3600&gt;</code>                                  | Reconnect interval in seconds                |
| <code>backoff &lt;1-10&gt;</code>                                      | Backoff multiplier for exponential retry     |
| <code>max-interval &lt;20-3600&gt;</code>                              | Maximum backoff interval in seconds          |
| <code>trust &lt;disable\ exact\ wildcard&gt;</code>                    | Certificate domain trust mode                |
| <code>passthrough-mode &lt;1\ 2&gt; &lt;realtime\ throttled&gt;</code> | Set default passthrough mode per serial port |
| <code>throttle-bytes &lt;64-1024&gt;</code>                            | Set throttle max bytes per send              |
| <code>throttle-interval &lt;10-2000&gt;</code>                         | Set throttle interval in milliseconds        |

Trust Modes: - `disable` - Accept any valid certificate chain - `exact` - Certificate must match portal URL hostname exactly - `wildcard` - Certificate must match \*.base\_domain (derived from URL)

Examples:

```
config portal url devices.example.com 443 /ws/device/
config portal interval 60 # 60 second reconnect interval
config portal max-interval 300 # 5 minute max backoff
config portal trust wildcard
config portal reconnect on
config portal passthrough-mode 2 throttled # Set port 2 default to throttled
config portal throttle-bytes 256 # Throttle max 256 bytes per send
config portal throttle-interval 100 # 100ms throttle interval
```

Note: Use subcommand alone to show current value (e.g., `config portal interval`).

Flags: ADMIN, TLS

## Debug Configuration

Command: `config debug <subcommand>`

| Subcommand   | Description                      |
|--|----------------------------------|
| <code>level &lt;0-6&gt;</code>                       | Set debug level                  |
| <code>dest &lt;destination&gt; &lt;on off&gt;</code> | Enable/disable debug destination |

Flags: ADMIN, DEBUG

## System Commands

| Command                     | Description                 | Flags |
|-----------------------------|-----------------------------|-------|
| <code>system save</code>    | Save configuration to flash | ADMIN |
| <code>system restart</code> | Restart device              | ADMIN |

Important: Always use `system save` after configuration changes to persist them across reboots.

## Network Tools

| Command                                      | Description                   | Flags |
|--|-------------------------------|-------|
| <code>ping &lt;ip-address&gt;</code>         | ICMP ping test                | -     |
| <code>dns &lt;hostname&gt;</code>            | DNS lookup                    | TLS   |
| <code>connect &lt;ip&gt; &lt;port&gt;</code> | TCP connection test           | -     |
| <code>serial &lt;port&gt;</code>             | Enter serial passthrough mode | -     |

### Serial Passthrough

The `serial` command enters passthrough mode where all keyboard input is sent to the serial device and all serial output is displayed.

Exit passthrough: Press `Ctrl+]` twice within 1 second (default break sequence).

## Clear Commands

| Command                                | Description                          | Flags |
|--|--------------------------------------|-------|
| <code>clear ping</code>                | Clear ping test results              | -     |
| <code>clear connect</code>             | Clear TCP connect test results       | -     |
| <code>clear dns</code>                 | Clear cached DNS entries             | TLS   |
| <code>clear session &lt;0-1&gt;</code> | Disconnect an SSH session by index   | ADMIN |
| <code>clear serial-cli</code>          | Force exit active serial CLI session | ADMIN |

### clear serial-cli

Forces termination of an active hardware break CLI session on USART1. This is useful when:

- A serial CLI session was accidentally activated by noise or cable issues
- The serial CLI is blocking normal serial passthrough operation
- Remote recovery is needed when physical access is unavailable

Example:

```
conxsfp> show serial-cli
Serial CLI Status:
  State: ACTIVE (hardware break CLI session)
  ...

conxsfp> clear serial-cli
Forcing serial CLI session exit...
Serial CLI session cleared
USART1 restored to normal operation
```

## Portal Commands

All portal commands require the TLS feature flag.

| Command   | Description  |
|---|--|
| <code>portal connect [url]</code>                 | Connect to portal server   |
| <code>portal disconnect</code>                    | Disconnect portal and stop auto-reconnect                        |
| <code>portal stop</code>                          | Alias for disconnect   |
| <code>portal send &lt;text&gt;</code>             | Send text message over portal connection                         |
| <code>portal status</code>                        | Show portal connection status and diagnostics                    |
| <code>portal serial &lt;port&gt; on [mode]</code> | Start serial passthrough to portal                               |
| <code>portal serial &lt;port&gt; off</code>       | Stop serial passthrough  |
| <code>portal register &lt;email\ OID&gt;</code>   | Register device to user account                                  |
| <code>portal claim [code]</code>                  | Claim device using 6-character portal code, or show claim status |
| <code>portal clear-session</code>                 | Clear cached TLS session ticket                                  |

### portal connect

Connect to the portal server. Uses configured URL if no argument provided.

Syntax: `portal connect [<host> <port> [path]]`

Examples:

```
portal connect # Use configured URL
portal connect devices.example.com 443 /ws/device/ # Explicit host, port, path
```

Notes: – Connection is non-blocking; TLS handshake occurs in background – First connection without cached session takes ~30-60 seconds – Subsequent connections with session resumption are much faster – If no cached session exists, a warning is displayed

### portal serial

Start or stop serial passthrough to the portal connection for remote serial access.

Syntax: `portal serial <port> on [realtime|throttled]` Syntax: `portal serial <port> off`

| Parameter              | Description   |
|------------------------|---|
| <code>port</code>      | Serial port number: 1 (USART1) or 2 (USART3)                          |
| <code>on</code>        | Start serial passthrough  |
| <code>off</code>       | Stop serial passthrough and display transfer statistics               |
| <code>realtime</code>  | Send data immediately (default, used with <code>on</code> )           |
| <code>throttled</code> | Buffer and batch data to reduce overhead (used with <code>on</code> ) |

Examples:

```
portal serial 2 on           # Start port 2 passthrough, realtime mode
portal serial 2 on throttled # Start port 2 passthrough, throttled mode
portal serial 2 off         # Stop port 2 passthrough
```

## portal register

Register this device to a user account on the cloud server.

Syntax: `portal register <email|OID>`

| Parameter          | Description                                   |
|--------------------|---|
| <code>email</code> | User's email address (e.g., user@example.com) |
| <code>OID</code>   | Organization ID (numeric)                     |

Examples:

```
portal register user@example.com
portal register 12345
```

## portal claim

Claim the device using a 6-character code from the Wetatronics cloud portal. With no arguments, shows the current claim status.

Syntax: `portal claim [code]`

Examples:

```
portal claim ABC123      # Submit claim code from portal
portal claim            # Show current claim status
```

## portal clear-session

Clear the cached TLS session ticket. This forces a full TLS handshake on the next connection attempt. Useful when auto-reconnect fails after a server restart due to a stale session ticket.

Syntax: `portal clear-session`

Flags: TLS

## TLS Commands

The `tls test` command was removed in firmware v1.1.0.7 to save flash space. Use `dns <hostname>` to verify DNS resolution and `portal connect` to test TLS connectivity to the cloud platform.

## Certificate Commands

Certificate management is available via `show cert`, `config cert`, and standalone `cert` commands:

| Command  | Description                                  | Flags      |
|--|--|------------|
| <code>show cert</code>                         | List stored certificates                     | TLS        |
| <code>show cert detail &lt;bank&gt;</code>     | Show certificate details for a specific bank | TLS        |
| <code>config cert upload</code>                | Show certificate upload instructions         | ADMIN, TLS |
| <code>config cert erase &lt;bank&gt;</code>    | Erase certificate from bank                  | ADMIN, TLS |
| <code>config cert validate &lt;bank&gt;</code> | Validate certificate in bank                 | ADMIN, TLS |
| <code>cert info &lt;bank&gt;</code>            | Show detailed certificate information        | TLS        |
| <code>cert upload</code>                       | Show certificate upload instructions         | TLS        |
| <code>cert erase &lt;bank&gt;</code>           | Erase certificate from bank                  | ADMIN, TLS |

# Update Commands

## Main Application Update (via Bootloader)

| Command                                     | Description   | Flags |
|---|---|-------|
| <code>update main local</code>              | Reboot into bootloader HTTP server for browser-based firmware upload        | ADMIN |
| <code>update main remote &lt;URL&gt;</code> | Reboot into bootloader to fetch firmware from URL (DNS+TCP preflight check) | ADMIN |

`update main local` — Reboots the device into bootloader mode where an HTTP server is available for browser-based firmware upload. Open your browser to `http://<device-ip>/` after reboot.

`update main remote <URL>` — Performs a DNS lookup and TCP connectivity check before rebooting into bootloader mode. The bootloader then fetches and flashes the firmware from the specified URL.

URL Format: `http://host[:port]/path/firmware.bin`

Examples:

```
update main local # Reboot to bootloader upload mode
update main remote http://192.168.1.100:8080/fw.bin # Preflight check + bootloader fetch
```

Note: Only `.bin` files (ELF format) are supported. The device will reboot into the bootloader.

## Bootloader Update (from Main Application)

| Command                                     | Description   | Flags |
|---|---|-------|
| <code>update boot local [port]</code>       | Start HTTP upload server for bootloader firmware (default port: 8080) | ADMIN |
| <code>update boot remote &lt;URL&gt;</code> | Download and flash bootloader firmware from URL                       | ADMIN |

`update boot local [port]` — Starts an HTTP server on the specified port (default 8080) for browser-based bootloader firmware upload. Use `update abort` to stop the server.

`update boot remote <URL>` — Downloads bootloader firmware from the specified URL and flashes it directly from the main application.

Examples:

```
update boot local # Start upload server on port 8080
update boot local 9090 # Start upload server on port 9090
update boot remote http://192.168.1.100/bootloader.bin
```

## Update Control

| Command                                | Description                                    | Flags |
|--|--|-------|
| <code>update verify &lt;URL&gt;</code> | Download and verify firmware (no flash)        | ADMIN |
| <code>update abort</code>              | Abort update in progress or stop upload server | ADMIN |
| <code>update status</code>             | Show current update status                     | -     |

Examples:

```
update status
update abort
update verify http://192.168.1.100/firmware.bin
```

## Emergency Recovery

| Command              | Description                                      | Flags         |
|----------------------|--|---------------|
| <code>eloader</code> | Jump to emergency bootloader for XMODEM recovery | ADMIN, hidden |

Use `eloader` when normal update methods fail. The device reboots into XMODEM receive mode on Serial1.

## Debug Commands

These commands are only available in debug builds and are hidden from normal help output.

| Command  | Description                        | Flags                     |
|--|------------------------------------|---------------------------|
| <code>debugtoggle</code>                         | Toggle debug serial output         | DEBUG, hidden             |
| <code>muxconfig &lt;port&gt; &lt;baud&gt;</code> | Configure serial port via mux      | DEBUG, hidden             |
| <code>serialstat</code>                          | Show serial multiplexer statistics | DEBUG, hidden             |
| <code>system buffers reset</code>                | Reset buffer statistics            | ADMIN, INSTRUMENT, hidden |

## Feature Flags Reference

| Flag                     | Description                         |
|--------------------------|-------------------------------------|
| <code>ADMIN</code>       | Requires administrator access level |
| <code>TLS</code>         | Requires TLS module enabled         |
| <code>TELNET</code>      | Requires Telnet module enabled      |
| <code>DEBUG</code>       | Requires debug build                |
| <code>BLOADER</code>     | Requires bootloader IPC support     |
| <code>HTTP_SERVER</code> | Requires HTTP update server enabled |
| <code>INSTRUMENT</code>  | Requires instrumentation build      |
| <code>hidden</code>      | Not shown in help output            |

## Quick Reference by Category

---

### Most Common Commands

```
help                # Top-level command overview
help show           # Show all 'show' subcommands
show status         # System overview
show network        # IP configuration
show serial         # Serial port settings
show serial-cli     # Serial CLI status
show dns            # Cached DNS entries
config serial 1 baud 115200
system save
system restart
serial 1            # Enter passthrough
ping 192.168.1.1
portal status       # Cloud connection status
portal claim ABC123 # Claim device with portal code
```

### User Management

```
show users
config user add operator secret123
config user add admin2 adminpass admin
config user delete operator
config user level operator admin
system save
```

### Network Configuration

```
config network dhcp off
config network static 192.168.1.100 255.255.255.0 192.168.1.1
config network dns 8.8.8.8 1.1.1.1
config network hostname my-device
system save
system restart
```

## Serial CLI Management

```
show serial-cli          # Check if hardware break CLI is active
clear serial-cli        # Force exit if stuck
config system break-detection off # Disable break detection
system save
```

## Firmware Update

```
update main local          # Reboot to bootloader upload mode
update main remote http://192.168.1.100/firmware.bin # Preflight + bootloader fetch
update boot local          # Start bootloader upload server
update boot remote http://192.168.1.100/boot.bin    # Download + flash bootloader
update status
update abort
```

## Revision History

| Version | Date       | Changes  |
|---------|------------|--|
| 1.5     | 2026-02-23 | CLI Restructuring: All <code>ws</code> commands renamed to <code>portal</code> ; <code>portal passthrough / passthrough-stop</code> unified to <code>portal serial &lt;port&gt; on off</code> ; <code>config ws bridge-mode</code> renamed to <code>config portal passthrough-mode</code> ; removed <code>bloader</code> commands; <code>update &lt;url&gt;</code> and <code>update server</code> replaced by <code>update main local remote</code> and <code>update boot local remote</code> ; removed Bootloader Commands section; updated Quick Reference   |
| 1.4     | 2026-02-16 | Code Sync & Branding: Standardized product name to ConX-SFP; fixed <code>config user</code> subcommands ( <code>delete not del</code> , added <code>level</code> , removed <code>passwd / list</code> ); added <code>clear session</code> command; added standalone <code>cert</code> commands ( <code>cert info</code> , <code>cert upload</code> , <code>cert erase</code> ); fixed <code>portal connect</code> syntax to <code>[&lt;host&gt; &lt;port&gt; [path]]</code> ; added <code>config portal</code> subcommands ( <code>trust</code> , <code>passthrough-mode</code> , <code>throttle-bytes</code> , <code>throttle-interval</code> ) |
| 1.3     | 2026-02-02 | Help & Command Updates: Documented tiered help system ( <code>help</code> , <code>help &lt;cmd&gt;</code> , <code>help &lt;cmd&gt; &lt;subcmd&gt;</code> ); added <code>portal claim</code> , <code>portal clear-session</code> commands; fixed <code>portal close</code> → <code>portal stop</code> alias; added <code>show dns</code> and <code>clear dns</code> ; removed stale <code>tls test</code> (removed in v1.1.0.7); corrected Certificate Commands to use <code>show cert / config cert</code>   |
| 1.2     | 2026-01-27 | Portal Update: Updated <code>config portal interval</code> and <code>max-interval</code> to use seconds (20-3600 range); added <code>trust</code> subcommand; expanded Portal Commands section with detailed <code>portal connect</code> , <code>portal passthrough</code> , <code>portal passthrough-stop</code> , <code>portal register</code> documentation   |
| 1.1     | 2025-12-12 | Simplified <code>config serial-cli</code> to enable/disable only; updated <code>show serial-cli</code> output format with RX stats   |
| 1.0     | 2025-12-11 | Initial release extracted from User Manual; added <code>clear serial-cli</code> command; enhanced <code>show serial-cli</code> documentation; updated <code>show status</code> description   |

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