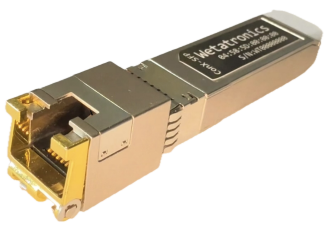
ConX-SFP Quick Start Guide

Quick start guide for the ConX-SFP console server — default settings, connectivity options, CLI reference, pinout, and network device configuration.



Date: 2026-07-02

Contents

Default details

- IP Address setting
- DHCP enabled
- Static IP address 192.168.0.232/24 if DHCP times out
- MAC Address
- Wetatronics range 04-58-5D-00-00-00 to 04-58-5D-0F-FF-FF (hex)
- Login for ssh and telnet
- Username weta
- Password wetatronics
- Serial Ports
- Two serial ports enabled
- Serial Port 1 - 9600 N81 no local echo
- Serial Port 2 - 9600 N81 no local echo
- CLI - Command Line Interface
- ssh enabled - TCP 22
- telnet enabled - TCP 23

Connectivity

Several options for connecting to the serial ports are supported

CLI

Login via ssh or telnet to the CLI and run
`serial 1`

To exit the session enter the break sequence `Ctrl+] Ctrl+]`

To change the serial port BAUD `config serial 1 baud 115200`

Change is applied immediately, optional save the changes to persist
`system save`

Telnet Direct

Telnet to the TCP port to connect directly to the serial port
* Serial 1 - TCP 3001 * Serial 2 - TCP 3002

`telnet 192.168.0.232 3001`

To exit use the local telnet client escape
`Ctrl+] q`

SSH Direct

SSH with a username and append the port [1|2] optionally append a BAUD rate `ssh weta:1:115200@192.168.0.232`

To exit the session enter the break sequence `Ctrl+] Ctrl+]`

SSH ControlMaster Limitation

The ConX-SFP supports one SSH channel per connection. SSH clients using ControlMaster (connection multiplexing) will experience (cosmetic) issues when attempting to open additional sessions.

What is ControlMaster? ControlMaster is an OpenSSH feature that reuses an existing SSH connection for multiple sessions, reducing connection overhead. Often set in `~/.ssh/config`.

Symptoms: - First SSH connection works normally - Second SSH session from same client will see warning messages such as:
`mux_client_request_session: session request failed: Session open refused by peer` `ControlSocket /tmp/sshcontrol-xxxx already exists, disabling multiplexing`

Workarounds:

1. Disable ControlMaster for ConX-SFP - Add to `~/.ssh/config` : `Host 192.168.0.232 ControlMaster no`
2. Override on command line: `bash ssh -o ControlMaster=no weta@192.168.0.232`
3. Close master connection before reconnecting: `bash ssh -O exit weta@192.168.0.232 ssh weta@192.168.0.232`

CLI access via the serial port

Connect a standard Cisco style serial console cable with a roll-over adaptor (flips 1-8 to 8-1)
Use a terminal emulator such as Minicom to connect at 9600 N81 by default - the terminal emulator speed must match the port speed for the break sequence to be detected

Send a serial Break Sequence - Minicom example `Ctrl+A F`
This provides ConX-SFP CLI access to set a static IP address or update firmware

```
** Hardware Break - CLI Active ***
Type 'help' for commands, 'exit' to quit
serial-cli>
```

CLI set a static IP address

Current configuration can be shown

```
serial-cli> show network
Network Status:
  Current Runtime Configuration:
    IP Address: 0.0.0.0
    Netmask: 0.0.0.0
    Gateway: 0.0.0.0

  Configured (Saved) Settings:
    DHCP Enabled: Yes
    IP Address: 192.168.0.232
    Hostname: Wetatronics_0036
    SSH Port: 22
    Primary DNS: 8.8.8.8
    Secondary DNS: 1.1.1.1
```

Use the `config network` command to apply changes

```
serial-cli> config network
Usage: config network <subcommand>
  dhcp [on|off]                    - Configure DHCP
  static <ip> <mask> <gw>          - Set static IP
  hostname <name>                  - Set hostname
  ssh-port <port>                  - Set SSH port
  dns <primary> [secondary]        - Set DNS servers
  dns                              - Show DNS servers
```

Example disabling DHCP and sending static ip address

```
serial-cli> config network dhcp off
DHCP disabled
serial-cli> config network static 192.168.0.10 255.255.255.0 192.168.0.254
Static IP configuration set:
  IP:      192.168.0.10
  Netmask: 255.255.255.0
  Gateway: 192.168.0.254
  DHCP:    disabled
Note: Save configuration with 'system save' and reboot to apply
```

Save the changes and restart the SFP to apply the changes

```
serial-cli> system save

Saving configuration to flash...
Configuration saved to flash successfully
serial-cli> system restart
```

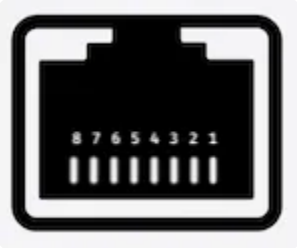
Pinout

The RJ45 connector provides either: * One RS-232 serial port with hardware flow control or * Two RS-232 serial ports without hardware flow control

The Pinout is designed so a straight through Ethernet cable can be used to connect to network device console ports using the Cisco style standard pinout
This works with Cisco, Juniper, Palo Alto, Arista, Mikrotik and many more

A Y splitter cable can be used breaking out the single RJ45 into two RJ45 sockets for two serial ports

Looking at the end of the SFP mounted with the label up in a device



Pin	Function
1	RX2 / CTS - Receive Data Serial 2 or CTS for Serial 1
2	Spare - Future feature
3	RX1 - Receive Data Serial 1
4	GND - Ground
5	GND - Ground
6	TX1 - Transmit Data Serial 1
7	PWR - Power for Future feature
8	TX2 / RTS - Transmit Data Serial 2 or RTS for Serial 1

Network Device support

The ConX-SFP emulates a 1000BASE-LX SFP to the Network device

Currently speed negotiation needs to be disabled, we are working on options so this won't be required in future

Juniper

Disable negotiation and set the interface speed to 1G

```
ge-0/1/0 {
    description "Wetatronics ConX-SFP console server";
    speed 1g;
    ether-options {
        no-auto-negotiation;
    }
    unit 0 {
        family ethernet-switching {
            interface-mode access;
            vlan {
                members management;
            }
        }
    }
}
```

Cisco IOS

Disable speed negotiation on the interface

```
interface GigabitEthernet1/0/49
 description Wetatronics ConX-SFP console server
 switchport access vlan 10
 switchport mode access
 speed nonegotiate
 spanning-tree portfast
```

Mikrotik RouterOS

Disable speed negotiation on the interface

```
/interface ethernet
set [ find default-name=sfp4 ] auto-negotiation=no
```