# Configuration by the Serial Console

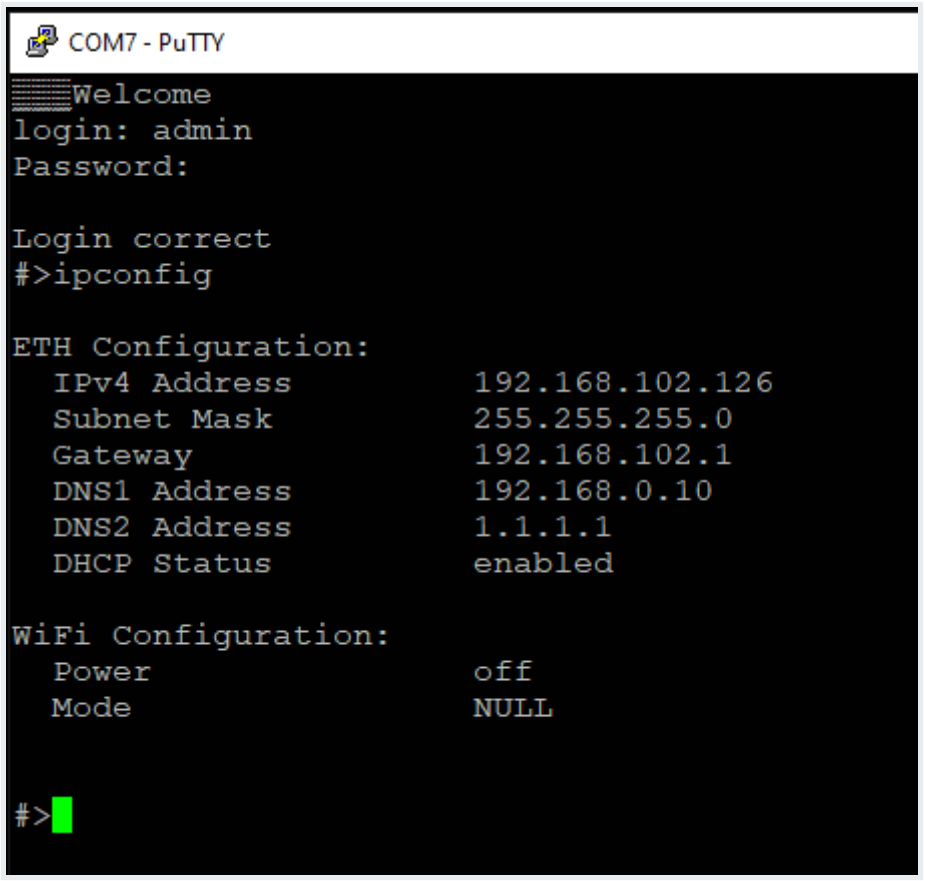
# Serial Port Server w/ Wi-Fi® (C30 - C32)

Another way to configure the device is via a serial console. C30 - C32 require a dedicated USB/UART converter connected to the USB micro-B connector on the front of the device (check our converters).

## Procedure to enter serial console mode on C30 - C32

- Turn off the power of the device.
- Connect Ethernet converter to the dedicated USB/UART converter via the microUSB port.
- Connect USB/UART converter to the PC.
- Open the serial console (default baud rate is 115200 bps).
- Short the FG and GND ports.
- Turn on the power.
- Wait until the ST indicator (orange LED) lights up (it should light up after red light - service mode).
- Open the the DI and GND ports.
- Login using user’s personal credentials or default login details.
- If the process is successful, configuration commands can be typed into the terminal.

Once this is done, log in using the default username and password, then change the network settings using "ipconfig" command.




# List of all commands

| Command | Description |
|---|---|
| help | Print the help. |
| conn | Print active TCP connections. |
| eth_mac | Print or change MAC address. |
| exit | Close current CLI session. |
| http_port | Print or change default http port. |
| ipconfig | Print or change the network configuration. |
| net_stat | Print lwIP statistics. |
| ping | Check internet connection with the desired host. |
| restart | Restart the system. |
| reboot | Same as restart. |
| sys_heap_usage | Print current heap usage. |
| telnet_port | Print or change default telnet port. |
| uart | Print or change uart configuration. |
| uart_service | Print or change uart_service configuration. |

| Command | Description |
| --- | --- |
| user | Print or change user configuration. |
| wificonf | Print or change the Wi-Fi configuration |
| wifi_mac | Print or change Wi-Fi MAC address. |

## Ports configuration commands

In terms of ports configuration it is possible to change parameters like: service, baud rate, data bits, parity, stop bits and so on. UART commands are provided below.

- **uart**
  - **uart help**
    Print the help message.

  - **uart list**
    List available uarts in the system.

    Example:
    uart list
    0: baud: 9600 bits: 8 stop_bits: 1 parity: none (service console)
    1: baud: 115200 bits: 8 stop_bits: 2 parity: odd (covered by cons.)
    2: baud: 9600 bits: 8 stop_bits: 1 parity: none
    3: baud: 1200 bits: 8 stop_bits: 2 parity: even termination: ON (R-COM)
    3: baud: 38400 bits: 8 stop_bits: 2 parity: none termination: OFF

  - **uart PORT_NUMBER baud BAUD**
    Set PORT_NUMBER baudrate to BAUD. BAUD value can be one of the following:
    2400, 4800, 9600, 14400, 19200, 38400, 57600, 115200.

    Example:
    uart 1 baud 9600

    WARNING: UART covered by console. Changes will take place after the reset.

  - **uart PORT_NUMBER bits BITS**
    Set bit length to BITS. BITS value can be one only 8.

    Example:
    uart 2 bits 8

  - **uart PORT_NUMBER stop_bits STOP_BITS**
    Set stop_bits length to STOP_BITS. STOP_BITS value can be only 1 or 2.

    Example:

uart 2 stop_bits 1

- **uart PORT_NUMBER parity PARITY**
  Set uart parity to PARITY. PARITY value can be one of the following: none, odd, even.

  Example:
  uart 3 parity even

- **uart PORT_NUMBER termination STATE**
  Set uart termination to new STATE. STATE can be only ON or OFF.

  Example:
  uart 3 termination ON

- **uart_service**
  - **uart_service help**
    Print the help message.

  - **uart_service list**
    List of uarts services status.

    Example:
    uart_service list
    1 state: ON service: Remote COM port: 1504 enc: YES
    2 state: OFF service: TCP Socket port: 1510
    3 state: OFF service: UDP Socket port: 1510

  - **uart_service UART_NUMBER state STATE**
    Set UART_NUMBER state to STATE. STATE value can be only ON or OFF.

    Example:
    uart_service 1 state ON

  - **uart_service UART_NUMBER service SERVICE**
    Set UART_NUMBER service to SERVICE. SERVICE value can be one of the following: Remote COM, TCP Socket, UDP Socket.

    Example:
    uart_service 1 service TCP Socket

- **uart_service UART_NUMBER port PORT_NUMBER**
  Set UART_NUMBER port to PORT_NUMBER. PORT_NUMBER value can be any in the range: 1-65535.

  Example:
  uart_service 1 port 1501

- **uart_service UART_NUMBER enc ENC_STATE**
  Set UART_NUMBER encryption to ENC_STATE. ENC_STATE can be only YES or NO.

  Example:
  uart_service 1 enc YES

  If ENC_STATE is YES then it will ask for a new password for encryption.

## Network settings

The following commands might be helpful to change network settings according to target LAN parameters.

- **ipconfig**
  - **ipconfig addr ADDRESS**
    Set IP address to ADDRESS.

    Example:
    ipconfig addr 192.168.0.10

  - **ipconfig mask NETMASK**
    Set subnet mask to NETMASK (in dot-decimal format).

    Example:
    ipconfig mask 255.255.255.0

  - **ipconfig mask BIT_COUNT**
    Set subnet mask to BIT_COUNT bits.

    Example:
    ipconfig mask 24

- **ipconfig gateway GATEWAY_IP**
  Set network gateway to GATEWAY_IP.

  Example:
  ipconfig gateway 192.168.0.1

- **ipconfig dhcp enable/disable**
  Enable or disable DHCP client.

  Example:
  ipconfig dhcp enable

- **ipconfig dns1 ADDRESS**
  Set primary DNS to ADDRESS, disable getting DNS from DHCP if enabled.

  Example:
  ipconfig dns1 192.168.100.1

- **ipconfig dns2 ADDRESS**
  Set secondary DNS to ADDRESS, disable getting DNS from DHCP if enabled.

  Example:
  ipconfig dns2 1.1.1.1

- **ipconfig -w**
  Show information about Wi-Fi connection

- **eth_mac**
  - **eth_mac help**
    Print the help message.

  - **eth_mac default**
    Set device’s MAC address to factory-default one.

  - **eth_mac set MAC_ADDR**
    Set device’s MAC address to MAC_ADDR. Accepts both dash and colon-separated formats.

    Example:
    eth_mac set 01-02-03-04-05-06

    Example:
    eth_mac set 01:02:03:04:05:06

- **http_port**

- **http_port help**
  Print the help message.

- **http_port PORT_NUMBER**
  Set http port to PORT_NUMBER. A PORT_NUMBER value must be in range: 1-65535.

  Example:
  http_port 80

- **http_port status**
  Print current http port.

  Example:
  http_port status
  A current http port is 80

- **telnet_port**
  - **telnet_port help**
    Print the help message.

  - **telnet_port PORT_NUMBER**
    Set Telnet port to PORT_NUMBER. A PORT_NUMBER value must be in range: 1-65535.

    Example:
    telnet_port 23

  - **telnet_port status**
    Print current Telnet port.

    Example:
    telnet_port status
    A current telnet port is 23

- **wificonf**
  - **wificonf help**
    Print the help message
  - **wificonf ssid SSID**
    Type SSID of target access point

    Example:
    wificonf ssid SSID

  - **wificonf password PASSWORD**
    Type password of target AP.

Example:
wificonf password PASSWORD

- **wificonf connect**
  Try to connect to the configured Access Point. A result of the connection can be checked by '**wificonf status**'.

- **wificonf disconnect**
  Disconnect from the AP.
- **wificonf status**
  Show the current connection status.

- **wificonf scan**
  Scan Wi-Fi networks.

- **wifi_mac**
  - **wifi_mac help**
    Print the help message
  - **wifi_mac default**
    Set device's MAC address to factory-default one.

  - **wifi_mac set MAC_ADDR**
    Set device's MAC address to MAC_ADDR. Accepts both dash- and colon-separated formats.

    Example:
    wifi_mac set 01-02-03-04-05-06

  - without any parameter print current MAC state

## Changing username or password

To change username or password, use user command. Available commands:

- **user help**
  Print the help message.

- **user mod_name USER_NAME NEW_NAME**
  Change the user name to NEW_NAME. It fails if the name is used by another user.

  Example:
  user mod_name admin john

- **user passwd USER_NAME**
  Change USER_NAME's password.

Example:
user passwd admin
****** <- here is entered password, but '*' appears instead

Note: Everyone can change the password for themselves.

# Service mode

## Procedure to enter service mode for C30 - C32 converters

- Turn off the power of the device.
- Connect Ethernet converter to the dedicated USB/UART converter via the microUSB port.
- Connect the USB/UART converter to the PC.
- Open the serial console (default baud rate is 115200 bps).
- Short the DI and GND ports.
- Turn on the power.
- Wait until the ST indicator (red LED) lights up.
- Open the the DI and GND ports.
- If the process is successful, service commands can be typed into the terminal.

## List of commands in the service mode

| Command | Description |
|---|---|
| help | Print the help. |
| credits | Print current credits value for this device. |
| dev_ident | Print the device identification value. |
| restart | Restart the system. |
| serial_num | Print the serial number of this device. |
| version | Display the bootloader version. |
| xmodem | Download image to the internal flash using xmodem. |
| defaults | Reset application variables to defaults. |
| ipconfig | Print or change the network configuration. |
| flash_read | Read bytes from flash memory. |
| md | Read bytes from memory address. |

> In the service mode, the “ipconfig” command can only show a last static IP address.

## Factory reset

To restore default settings, type “defaults”. After that, user will be asked to type “default network” to reset the network settings as well. Then user will be informed if the process is successful.

# Additional notes

In order to avoid issues like connecting to host, type “help” to get more information.

To get more details about every particular command, append “help” after each commands (example: "ipconfig help").

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