MeshCore CLI Commands Reference

CLI Commands

This document provides an overview of CLI commands that can be sent to MeshCore Repeaters, Room Servers and Sensors.

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Operational

Reboot the node

Usage:

- `reboot`

Reset the clock and reboot

Usage:

- `clkreboot`

Sync the clock with the remote device

Usage:

- `clock sync`

Display current time in UTC

Usage:

- `clock`

Set the time to a specific timestamp

Usage:

- `time `

Parameters:

- `epoch_seconds`: Unix epoch time

Send a flood advert

Usage:

- `advert`

Send a zero-hop advert

Usage:

- `advert.zerohop`

Start an Over-The-Air (OTA) firmware update

Usage:

- `start ota`

Erase/Factory Reset

Usage:

- `erase`

Serial Only: Yes

Warning: _This is destructive!_

Neighbors (Repeater Only)

List nearby neighbors

Usage:

- `neighbors`

Note: The output of this command is limited to the 8 most recent adverts.

Note: Each line is encoded as `{pubkey-prefix}:{timestamp}:{snr*4}`

Remove a neighbor

Usage:

- `neighbor.remove`

Parameters:

- `pubkey_prefix`: The public key of the node to remove from the neighbors list. This can be a short prefix or the full key. All neighbors matching the provided prefix will be removed.

Note: You can remove all neighbors by sending a space character as the prefix. The space indicates an empty prefix, which matches all existing neighbors.

Discover zero hop neighbors

Usage:

- `discover.neighbors`

Statistics

Clear Stats

Usage: `clear stats`

System Stats - Battery, Uptime, Queue Length and Debug Flags

Usage:

- `stats-core`

Serial Only: Yes

Radio Stats - Noise floor, Last RSSI/SNR, Airtime, Receive errors

Usage: `stats-radio`

Serial Only: Yes

Packet stats - Packet counters: Received, Sent

Usage: `stats-packets`

Serial Only: Yes

Logging

Begin capture of rx log to node storage

Usage: `log start`

End capture of rx log to node storage

Usage: `log stop`

Erase captured log

Usage: `log erase`

Print the captured log to the serial terminal

Usage: `log`

Serial Only: Yes

Info

Get the Version

Usage: `ver`

Show the hardware name

Usage: `board`

Configuration

Radio

View or change this node's radio parameters

Usage:

- `get radio`
- `set radio ,,,`

Parameters:

- `freq`: Frequency in MHz
- `bw`: Bandwidth in kHz
- `sf`: Spreading factor (5-12)
- `cr`: Coding rate (5-8)

Set by build flag: `LORA_FREQ`, `LORA_BW`, `LORA_SF`, `LORA_CR`

Default: `869.525,250,11,5`

Note: Requires reboot to apply

View or change this node's transmit power

Usage:

- `get tx`
- `set tx`

Parameters:

- `dbm`: Power level in dBm (1-22)

Set by build flag: `LORA_TX_POWER`

Default: Varies by board

Notes: This setting only controls the power level of the LoRa chip. Some nodes have an additional power amplifier stage which increases the total output. Refer to the node's manual for the correct setting to use. **Setting a value too high may violate the laws in your country.**

View or change the boosted receive gain mode

Usage:

- `get radio.rxgain`
- `set radio.rxgain`

Parameters:

- `state`: `on`|`off`

Default: `on`

Note: Available on SX12xx and LR1110 based boards (v1.14.1+).

Change the radio parameters for a set duration

Usage:

- `tempradio ,,,,`

Parameters:

- `freq`: Frequency in MHz (300-2500)
- `bw`: Bandwidth in kHz (7.8-500)
- `sf`: Spreading factor (5-12)
- `cr`: Coding rate (5-8)
- `timeout_mins`: Duration in minutes (must be > 0)

Note: This is not saved to preferences and will clear on reboot

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View or change this node's frequency

Usage:

- `get freq`
- `set freq `

Parameters:

- `frequency`: Frequency in MHz

Default: `869.525`

Note: Requires reboot to apply

Serial Only: `set freq `

View or change this node's rx boosted gain mode (SX12xx and LR1110, v1.14.1+)

Usage:

- `get radio.rxgain`
- `set radio.rxgain `

Parameters:

- `state`: `on`|`off`

Default: `on`

Temporary Note: If you upgraded from an older version to 1.14.1 without erasing flash, this setting is `off` because of #2118

System

View or change this node's name

Usage:

- `get name`
- `set name `

Parameters:

- `name`: Node name

Set by build flag: `ADVERT_NAME`

Default: Varies by board

Note: Max length varies. If a location is set, the max length is 24 bytes; 32 otherwise. Emoji and unicode characters may take more than one byte.

View or change this node's latitude

Usage:

- `get lat`
- `set lat `

Set by build flag: `ADVERT_LAT`

Default: `0`

Parameters:

- `degrees`: Latitude in degrees

View or change this node's longitude

Usage:

- `get lon`
- `set lon `

Set by build flag: `ADVERT_LON`

Default: `0`

Parameters:

- `degrees`: Longitude in degrees

View or change this node's identity (Private Key)

Usage:

- `get prv.key`
- `set prv.key `

Parameters:

- `private_key`: Private key in hex format (64 hex characters)

Serial Only:

- `get prv.key`: Yes
- `set prv.key`: No

Note: Requires reboot to take effect after setting

Change this node's admin password

Usage:

- `password `

Parameters:

- `new_password`: New admin password

Set by build flag: `ADMIN_PASSWORD`

Default: `password`

Note: Command reply echoes the updated password for confirmation.

Note: Any node using this password will be added to the admin ACL list.

View or change this node's guest password

Usage:

- `get guest.password`
- `set guest.password `

Parameters:

- `password`: Guest password

Set by build flag: `ROOM_PASSWORD` (Room Server only)

Default:

View or change this node's owner info

Usage:

- `get owner.info`
- `set owner.info `

Parameters:

- `text`: Owner information text

Default:

Note: `|` characters are translated to newlines

Note: Requires firmware 1.12.+

Fine-tune the battery reading

Usage:

- `get adc.multiplier`
- `set adc.multiplier `

Parameters:

- `value`: ADC multiplier (0.0-10.0)

Default: `0.0` (value defined by board)

Note: Returns "Error: unsupported by this board" if hardware doesn't support it

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View this node's public key

Usage: `get public.key`

View this node's configured role

Usage: `get role`

View or change this node's power saving flag (Repeater Only)

Usage:

- `powersaving`
- `powersaving on`
- `powersaving off`

Parameters:

- `on`: enable power saving
- `off`: disable power saving

Default: `off`

Note: When enabled, device enters sleep mode between radio transmissions

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Routing

View or change this node's repeat flag

Usage:

- `get repeat`
- `set repeat `

Parameters:

- `state`: `on`|`off`

Default: `on`

View or change this node's advert path hash size

Usage:

- `get path.hash.mode`
- `set path.hash.mode`

Parameters:

- `value`: Path hash size (0-2)
- `0`: 1 Byte hash size (256 unique ids)[64 max flood]
- `1`: 2 Byte hash size (65,536 unique ids)[32 max flood]
- `2`: 3 Byte hash size (16,777,216 unique ids)[21 max flood]
- `3`: DO NOT USE (Reserved)

Default: `0`

Note: the 'path.hash.mode' sets the low-level ID/hash encoding size used when the repeater adverts. This setting has no impact on what packet ID/hash size this repeater forwards, all sizes should be forwarded on firmware >= 1.14. This feature was added in firmware 1.14

Temporary Note: adverts with ID/hash sizes of 2 or 3 bytes may have limited flood propogation in your network while this feature is new as v1.13.0 firmware and older will drop packets with multibyte path ID/hashes as only 1-byte hashes are suppored. Consider your install base of firmware >=1.14 has reached a criticality for effective network flooding before implementing higher ID/hash sizes.

View or change this node's loop detection

Usage:

- `get loop.detect`
- `set loop.detect`

Parameters:

- `state`:
- `off`: no loop detection is performed
- `minimal`: packets are dropped if repeater's ID/hash appears 4 or more times (1-byte), 2 or more (2-byte), 1 or more (3-byte)
- `moderate`: packets are dropped if repeater's ID/hash appears 2 or more times (1-byte), 1 or more (2-byte), 1 or more (3-byte)
- `strict`: packets are dropped if repeater's ID/hash appears 1 or more times (1-byte), 1 or more (2-byte), 1 or more (3-byte)

Default: `off`

Note: When it is enabled, repeaters will now reject flood packets which look like they are in a loop. This has been happening recently in some meshes when there is just a single 'bad' repeater firmware out there (prob some forked or custom firmware). If the payload is messed with, then forwarded, the same packet ends up causing a packet storm, repeated up to the max 64 hops. This feature was added in firmware 1.14

Example: If preference is `loop.detect minimal`, and a 1-byte path size packet is received, the repeater will see if its own ID/hash is already in the path. If it's already encoded 4 times, it will reject the packet. If the packet uses 2-byte path size, and repeater's own ID/hash is already encoded 2 times, it rejects. If the packet uses 3-byte path size, and the repeater's own ID/hash is already encoded 1 time, it rejects.

View or change the retransmit delay factor for flood traffic

Usage:

- `get txdelay`
- `set txdelay `

Parameters:

- `value`: Transmit delay factor (0-2)

Default: `0.5`

View or change the retransmit delay factor for direct traffic

Usage:

- `get direct.txdelay`
- `set direct.txdelay `

Parameters:

- `value`: Direct transmit delay factor (0-2)

Default: `0.2`

[Experimental] View or change the processing delay for received traffic

Usage:

- `get rxdelay`
- `set rxdelay `

Parameters:

- `value`: Receive delay base (0-20)

Default: `0.0`

View or change the duty cycle limit

Usage:

- `get dutycycle`
- `set dutycycle `

Parameters:

- `value`: Duty cycle percentage (1-100)

Default: `50%` (equivalent to airtime factor 1.0)

Examples:

- `set dutycycle 100` - no duty cycle limit
- `set dutycycle 50` - 50% duty cycle (default)
- `set dutycycle 10` - 10% duty cycle
- `set dutycycle 1` - 1% duty cycle (strictest EU requirement)

> **Note:** Added in firmware v1.15.0

View or change the airtime factor (duty cycle limit)

> **Deprecated** as of firmware v1.15.0. Use `get/set dutycycle` instead.

Usage:

- `get af`
- `set af`

Parameters:

- `value`: Airtime factor (0-9). After each transmission, the repeater enforces a silent period of approximately the on-air transmission time multiplied by the value. This results in a long-term duty cycle of roughly 1 divided by (1 plus the value). For example:
- `af = 1` → ~50% duty
- `af = 2` → ~33% duty
- `af = 3` → ~25% duty
- `af = 9` → ~10% duty

You are responsible for choosing a value that is appropriate for your jurisdiction and channel plan (for example EU 868 Mhz 10% duty cycle regulation).

Default: `1.0`

View or change the local interference threshold

Usage:

- `get int.thresh`
- `set int.thresh`

Parameters:

- `value`: Interference threshold value

Default: `0.0`

View or change the AGC Reset Interval

Usage:

- `get agc.reset.interval`
- `set agc.reset.interval`

Parameters:

- `value`: Interval in seconds rounded down to a multiple of 4 (17 becomes 16). 0 to disable.

Default: `0.0`

Enable or disable Multi-Acks support

Usage:

- `get multi.acks`
- `set multi.acks `

Parameters:

- `state`: `0` (disable) or `1` (enable)

Default: `0`

View or change the flood advert interval

Usage:

- `get flood.advert.interval`
- `set flood.advert.interval `

Parameters:

- `hours`: Interval in hours (3-168)

Default: `12` (Repeater) - `0` (Sensor)

View or change the zero-hop advert interval

Usage:

- `get advert.interval`
- `set advert.interval `

Parameters:

- `minutes`: Interval in minutes rounded down to the nearest multiple of 2 (61 becomes 60) (60-240)

Default: `0`

Limit the number of hops for a flood message

Usage:

- `get flood.max`
- `set flood.max `

Parameters:

- `value`: Maximum flood hop count (0-64)

Default: `64`

ACL

Add, update or remove permissions for a companion

Usage:

- `setperm `

Parameters:

- `pubkey`: Companion public key
- `permissions`:
- `0`: Guest
- `1`: Read-only
- `2`: Read-write
- `3`: Admin

Note: Removes the entry when `permissions` is omitted

View the current ACL

Usage:

- `get acl`

Serial Only: Yes

View or change this room server's 'read-only' flag

Usage:

- `get allow.read.only`
- `set allow.read.only `

Parameters:

- `state`: `on` (enable) or `off` (disable)

Default: `off`

Region Management (v1.10.+)

Bulk-load region lists

Usage:

- `region load`
- `region load [flood_flag]`

Parameters:

- `name`: A name of a region. `*` represents the wildcard region

Note: `flood_flag`: Optional `F` to allow flooding

Note: Indentation creates parent-child relationships (max 8 levels)

Note: `region load` with an empty name will not work remotely (it's interactive)

Save any changes to regions made since reboot

Usage:

- `region save`

Allow a region

Usage:

- `region allowf `

Parameters:

- `name`: Region name (or `*` for wildcard)

Note: Setting on wildcard `*` allows packets without region transport codes

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Block a region

Usage:

- `region denyf `

Parameters:

- `name`: Region name (or `*` for wildcard)

Note: Setting on wildcard `*` drops packets without region transport codes

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Show information for a region

Usage:

- `region get `

Parameters:

- `name`: Region name (or `*` for wildcard)

View or change the home region for this node

Usage:

- `region home`
- `region home `

Parameters:

- `name`: Region name

View or change the default scope region for this node

Usage:

- `region default`
- `region default {name|}`

Parameters:

- `name`: Region name, or to reset/clear

Create a new region

Usage:

- `region put [parent_name]`

Parameters:

- `name`: Region name
- `parent_name`: Parent region name (optional, defaults to wildcard)

Remove a region

Usage:

- `region remove `

Parameters:

- `name`: Region name

Note: Must remove all child regions before the region can be removed

---

View all regions

Usage:

- `region list `

Serial Only: Yes

Parameters:

- `filter`: `allowed`|`denied`

Note: Requires firmware 1.12.+

Dump all defined regions and flood permissions

Usage:

- `region`

Serial Only: For firmware older than 1.12.0

Region Examples

Example 1: Using F Flag with Named Public Region

```
region load
#Europe F
<blank line to end region load>
region save
```

Explanation:

- Creates a region named `#Europe` with flooding enabled
- Packets from this region will be flooded to other nodes

Example 2: Using Wildcard with F Flag

```
region load
* F
<blank line to end region load>
region save
```

Explanation:

- Creates a wildcard region `*` with flooding enabled
- Enables flooding for all regions automatically
- Applies only to packets without transport codes

Example 3: Using Wildcard Without F Flag

```
region load
*
<blank line to end region load>
region save
```

Explanation:

- Creates a wildcard region `*` without flooding
- This region exists but doesn't affect packet distribution
- Used as a default/empty region

Example 4: Nested Public Region with F Flag

```
region load
#Europe F
 #UK
 #London
 #Manchester
 #France
 #Paris
 #Lyon
<blank line to end region load>
region save
```

Explanation:

- Creates `#Europe` region with flooding enabled
- Adds nested child regions (`#UK`, `#France`)
- All nested regions inherit the flooding flag from parent

Example 5: Wildcard with Nested Public Regions

```
region load
* F
 #NorthAmerica
```

```
 #USA
 #NewYork
 #California
 #Canada
 #Ontario
 #Quebec
<blank line to end region load>
region save
```

Explanation:

- Creates wildcard region `*` with flooding enabled
- Adds nested `#NorthAmerica` hierarchy
- Enables flooding for all child regions automatically
- Useful for global networks with specific regional rules

GPS (When GPS support is compiled in)

View or change GPS state

Usage:

- `gps`
- `gps `

Parameters:

- `state`: `on`|`off`

Default: `off`

Note: Output format:

- `off` when the GPS hardware is disabled
- `on, {active|deactivated}, {fix|no fix}, {sat count} sats` when the GPS hardware is enabled

Sync this node's clock with GPS time

Usage:

- `gps sync`

Set this node's location based on the GPS coordinates

Usage:

- `gps setloc`

View or change the GPS advert policy

Usage:

- `gps advert`
- `gps advert `

Parameters:

- `policy`: `none`|`share`|`prefs`
- `none`: don't include location in adverts
- `share`: share gps location (from SensorManager)
- `prefs`: location stored in node's lat and lon settings

Default: `prefs`

Sensors (When sensor support is compiled in)

View the list of sensors on this node

Usage: `sensor list [start]`

Parameters:

- `start`: Optional starting index (defaults to 0)

Note: Output format: `=\n`

View or change thevalue of a sensor

Usage:

- `sensor get`
- `sensor set`

Parameters:

- `key`: Sensor setting name
- `value`: The value to set the sensor to

Bridge (When bridge support is compiled in)

View the compiled bridge type

Usage: `get bridge.type`

View or change the bridge enabled flag

Usage:

- `get bridge.enabled`
- `set bridge.enabled`

Parameters:

- `state`: `on` | `off`

Default: `off`

Add a delay to packets routed through this bridge

Usage:

- `get bridge.delay`
- `set bridge.delay`

Parameters:

- `ms`: Delay in milliseconds (0-10000)

Default: `500`

View or change the source of packets bridged to the external interface

Usage:

- `get bridge.source`
- `set bridge.source `

Parameters:

- `source`:
- `logRx`: bridges received packets
- `logTx`: bridges transmitted packets

Default: `logTx`

View or change the speed of the bridge (RS-232 only)

Usage:

- `get bridge.baud`
- `set bridge.baud `

Parameters:

- `rate`: Baud rate (`9600`, `19200`, `38400`, `57600`, or `115200`)

Default: `115200`

View or change the channel used for bridging (ESPNow only)

Usage:

- `get bridge.channel`
- `set bridge.channel `

Parameters:

- `channel`: Channel number (1-14)

Set the ESP-Now secret

Usage:

- `get bridge.secret`
- `set bridge.secret `

Parameters:

- `secret`: ESP-NOW bridge secret, up to 15 characters

Default: Varies by board

View the bootloader version (nRF52 only)

Usage: `get bootloader.ver`

View power management support

Usage: `get pwrmgt.support`

View the current power source

Usage: `get pwrmgt.source`

Note: Returns an error on boards without power management support.

View the boot reset and shutdown reasons

Usage: `get pwrmgt.bootreason`

Note: Returns an error on boards without power management support.

View the boot voltage

Usage: `get pwrmgt.bootmv`

Note: Returns an error on boards without power management support.

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