

meshdesk file

Background

- MESHdesk use the LEDs of the device it is installed on to signal about the environment.
 - During startup one LED signals about the method it uses to try and fetch settings from the controller.
 - After startup, if the device is used in a mesh network it, this LED signals how many neighboring nodes it sees.
 - A second LED is used to indicate if the device has proper contact with the controller. (The LED can be either ON or OFF in such a case)
 - Finally on mesh networks we can also specify a third LED that will indicate mesh traffic flowing through a node.

Exploring our hardware

- Lets look at the Xiaomi 4A 100M as a sample.

```
#change directory to where the LEDs are
cd /sys/class/leds/
ls
#These are the LEDs available
blue:power    mt76-phy0    mt76-phy1    yellow:power
#turn it off
echo "0" > yellow\:power/brightness
#turn it on
echo "1" > yellow\:power/brightness
#turn it off
echo "0" > blue\:power/brightness
#turn it on
echo "1" > blue\:power/brightness
```

- We can use the blue LED to signal during startup and neighbor counts.
- We can also use the yellow LED to light up if communication to the controller is broken.
- There is however not a third LED so we will not define one for the mesh traffic.

Add a hardware section for our device

- With this info we can create a hardware section in /etc/config/meshdesk

```
config hardware 'xiaomi_4a_100'
  option morse_led '/sys/class/leds/blue:power/brightness'
  option internet_led '/sys/class/leds/yellow:power/brightness'
  option wifi_led 'led0'
```

Adjust the settings section accordingly

- There are two important options here to adjust
 - **hardware** - have to match the value of a hardware definition under the settings section.

- **id_if** - have to match the interface specified in the **wan_network** file.

```
config settings 'settings'
  option hardware 'xiaomi_4a_100'
  option id_if 'eth0'
  option lan_up_file '/tmp/lan_up'
```



- Don't make the name of the hardware section more than 14 characters. Longer names break things during deployment.
- Devices where the interface used in wan_network is eth0.1 simply use eth0 here.

- Later we will also use the value of **xiaomi_4a_100** to define the hardware on the controller.

Alarm On or Alarm Off?

- We use the yellow LED as an alarm which means it has to light up when communication to the controller is down.
- Since we want the **yellow LED** to be off when the communication to the controller is fine we need to check what the current setup is.

```
vi /etc/MESHdesk/reporting/report_to_server.lua
#Look for this section
  if(ok_flag)then
    internetLED('0'); -- NOTE Here we can swap them around eg make it 0
to turn off a red LED when the internet is OK
    checkForContollerReboot('1');
  else
    internetLED('1');
    checkForContollerReboot('0');
  end
```

Review new hardware

- The following table lists the important items with comments

Item	Typical value	Comment
settings → hardware	xiaomi_4a_100	Must match a hw definition in the file itself
settings → id_if	eth0	eg eth0, eth1 or wan - NOT eth0.1 (for those boards its just eth0)
settings → skip_radio_0	0	set to 1 when radio0 is a 5G radio and you don't want to use it for config SSID

Remember Your Environment

- Finally you need to adjust some items to match up with your controller and its environment.
- The following table lists some of the important items with comments

Item	Typical value	Comment
internet1 → disabled	1	change it to 0 in order for the device to be centrally controlled
internet1 → dns	cloud.radiusdesk.com	Supply Dummy Value If Not Using DNS System e.g. nohost.radiusdesk.com
internet1 → protocol	https	Can be http or https
internet1 → ip	176.31.15.210	Fallback when FQDN does not resolve on FQDN not used

- We are nearly done. The last stop is to edit the **captive_config.json** file to fit our specific hardware.

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