Controlling the MSNSwitch

Tech Note MSNTN001

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Document Revision History:

Date	Comments
Feb 24, 2023	Updated for changes in firmware MNT-3207 and later. Changes include new default parameter values, firmware updates via ezDevice, and a simplified API.
Oct 2, 2022	Clarified API examples
Sept 22, 2022	Updated screen images with latest software versions. Corrected error in API documentation
June 1, 2021	Added non-DHCP IP assignment feature *[removed in MNT.3207]*
Dec 9, 2020	Updated for API changes in firmware MNT.A624
Jan. 2, 2020	Updated to include model UIS-622b
Aug. 1, 2019	First release

This TechNote Applies Only to MSNSwitch Models:

UIS-622b

Introduction

The MSNSwitch from Mega System Technologies, Inc ("MegaTec") is designed to automatically power-cycle any AC powered device when Internet connectivity is lost. Either of its AC power outlets can also be reset manually or via scheduled actions.

There are 7 ways to access and control the functionality of the MSNSwitch:

1. The MSNSwitch's internal web server screens
2. ezDevice smartphone app
3. Cloud4UIS.com web service
4. Skype
5. Google Hangouts/Chat
6. A REST-ful API for HTTP commands
7. The Netility utility software

IMPORTANT NOTE

Support for the ezDevice app and Cloud4UIS.com web service was added in MSNSwitch firmware version MNT.9319 (04/24/2019). MSNSwitch's running older firmware must be updated - see U*pdating Firmware* on page 15.

In firmware versions MNT.9319 through MNT.2408, the cloud service is **Disabled** by default.

You must use the MSNSwitch's internal web server to enable this function under the Network menu.

Beginning with firmware version MNT.3207, Cloud service is **Enabled** by default and no user action is required.

1. Internal Web Sever

Full access to all of the MSNSwitch's functionality is available via its internal web server pages. To access the web server, enter the MSNSwitch's IP address into any web browser.

http://<ip-address-of-MSNSwitch>   e.g. http://192.168.1.33

When logging into the MSNSwitch for the first time (or after a factory reset), you must create an administrator account and password.

NOTE: For older firmware versions, the default user name is "admin" and the default password is the last 6 characters of the MSNSwitch's MAC address (upper case). See the bottom label for the MAC address.

If you do not know the IP address of your MSNSwitch, check your DHCP server log or use the Netility utility software to scan for the MSNSwitch (see page 14).

2. ezDevice Smartphone App

Download and install the free ezDevice app for iOS from the Apple AppStore or for Android from Google Play.

If possible, connect your smartphone via WiFi to the same LAN as the MSNSwitch. This is the fastest and easiest way to add the MSNSwitch to ezDevice.

Launch the ezDevice app and create a new account. This same account information will be used for the Cloud4UIS.com web service (see page 5).

Tap the plus sign (**+**) on the top right of the screen to add a new device. ezDevice will prompt you to select the device model you have; select UIS-622b. ezDevice will then prompt for the MSNSwitch's serial number – enter the number from the label on the bottom of the MSNSwitch.

To enable "**Add Mode**", remove the Ethernet cable for 1 second then re-insert it. During Add Mode, the three lighted buttons on the top of the MSNSwitch will flash in sequence. Click the **Next** button to begin.

Once ezDevice will prompt you to enter the **Device Key** printed on the bottom label of the MSNSwitch. Tap **Done** to return to the main screen. Tap the name of your MSNSwitch in the list of devices to change settings.

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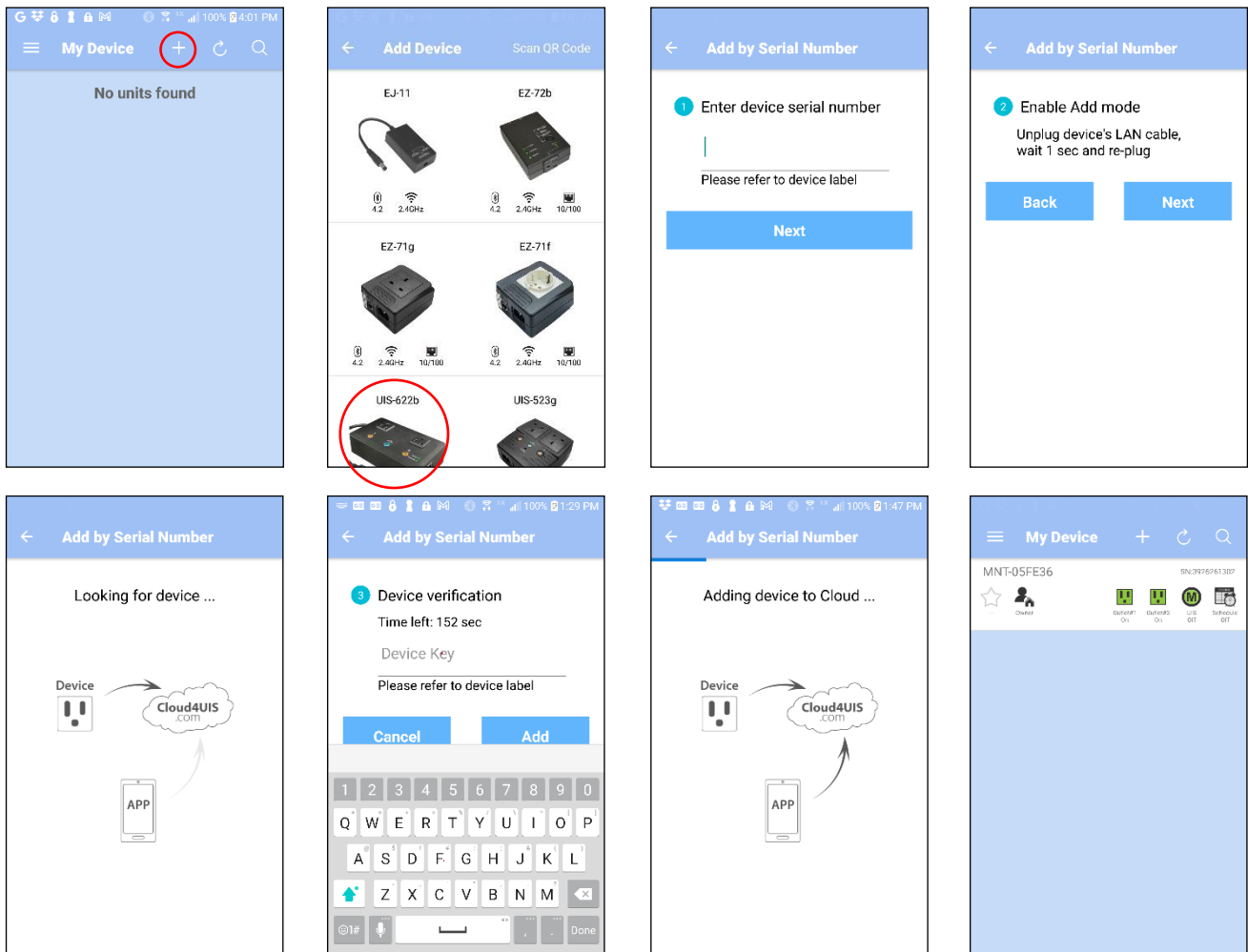
3. Cloud4UIS.com Web Service

Open the Cloud4UIS.com web site using any web browser:

http://Cloud4UIS.com

If you do not yet have an account, create one on the site. If you previously created and account using ezDevice, use the same login credentials for Cloud4UIS.com. The Cloud4UIS service is free.

If you used ezDevice to add devices, they will appear in your Cloud4UIS account automatically.

If you are adding a device for the first time, click the vertical dot icon in the upper right corner and then select the Add icon to open the Add Device screen.

The Add Device screen works the same as it does in the ezDevice smartphone app.

See the ezDevice section on page 4 for instructions on completing the device add procedure. Devices added through Clolud4UIS.com will also be automatically synchronized with the ezDevice app.

4. Skype

In the MSNSwitch's web interface, select the **Skype** menu and enable the Skype function.
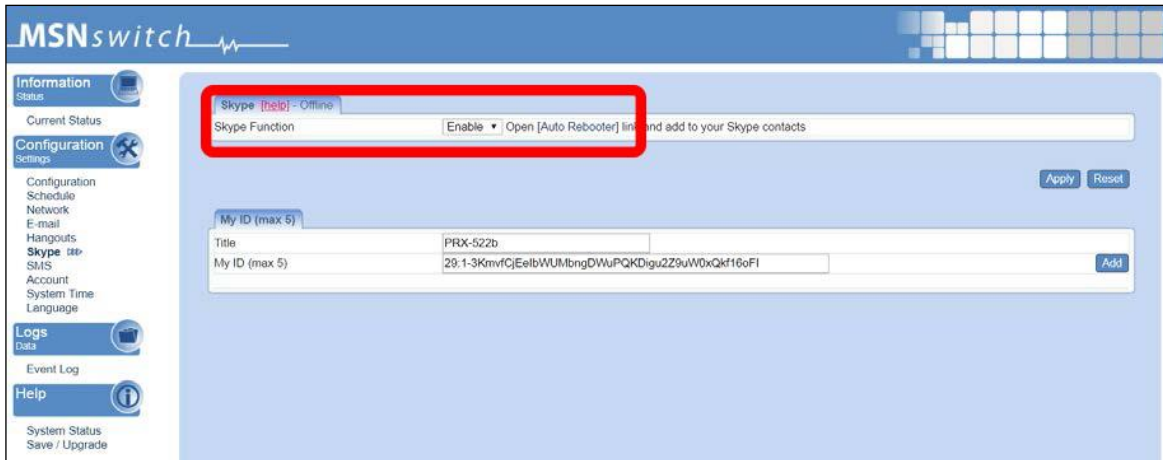
Click the **Auto Rebooter** link to add the Auto Rebooter robot service to your Skype contacts.
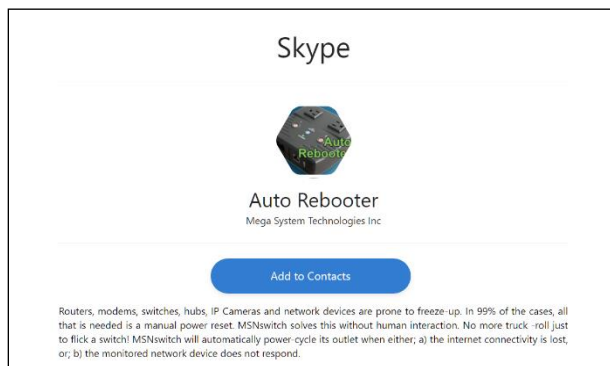
Click the **Get Started** button to add Auto Rebooter to your contacts and begin a messaging session.
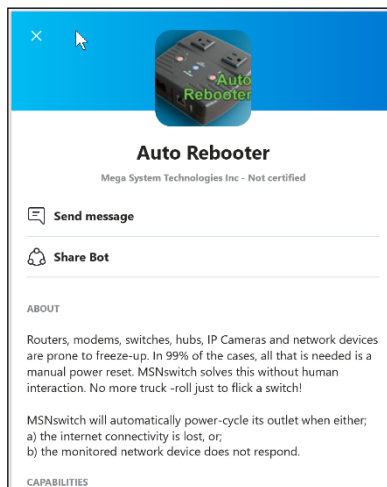
Click **Send Message** to begin a messaging session.

Type **HELP** to see the available commands. Type **Get My ID** to retrieve the security ID required to connect with your MSNSwitch.
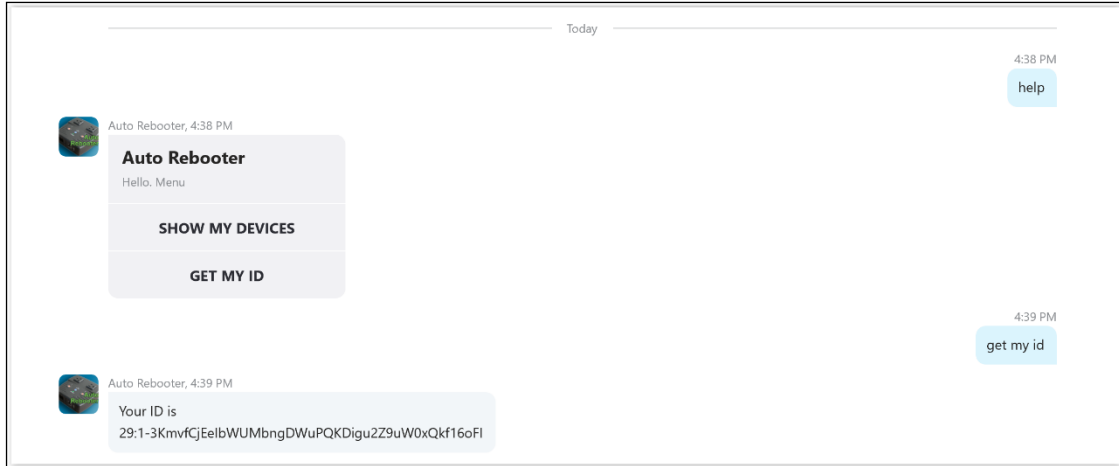
Copy the ID from the Skype response and paste it into the ID field of the MSNSwitch's web interface. Click **ADD** to save the settings.

In Skype, enter the command **Show My Devices** and press Enter. The response will be a menu of your devices and actions you can take. Click any of the menu buttons for more actions.
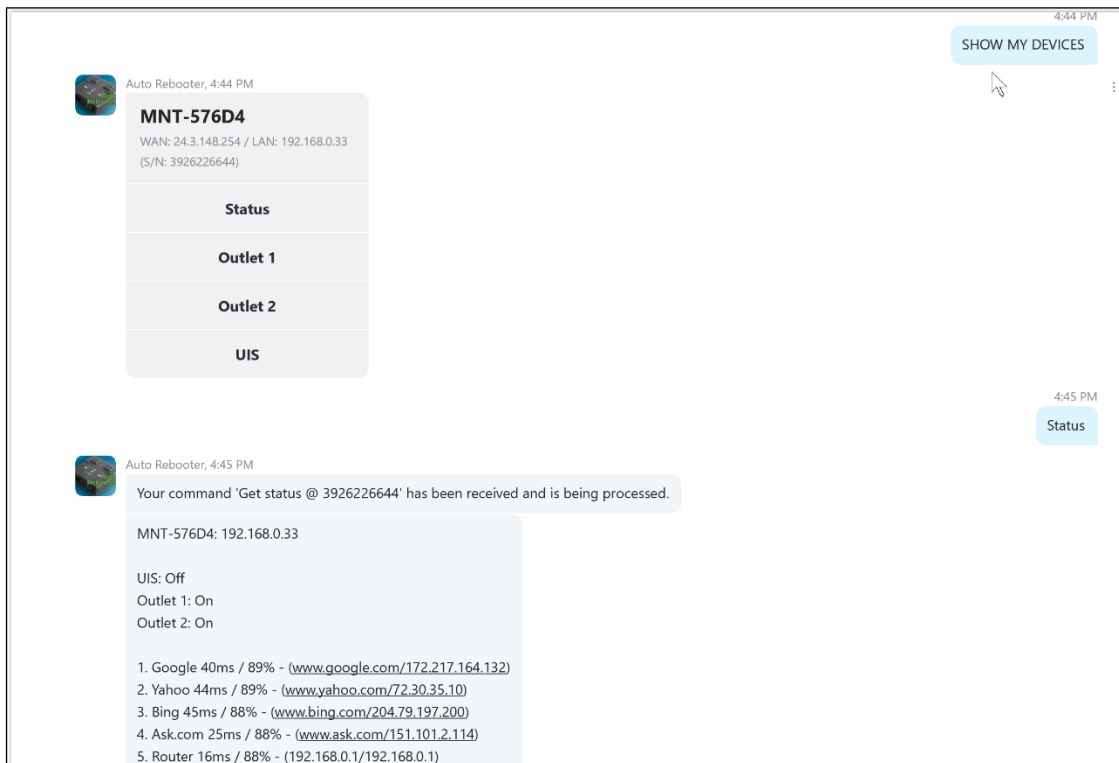
5. Google Hangouts / Chat

Support for Google messaging is being migrated from Google Hangouts to Google Chat.

Google Chat support will be available in an upcoming MSNSwitch firmware release.

6. REST API

<u>For firmware versions MNT.3207 and later only</u>
(For earlier firmware versions, please contact Proxicast for additional documentation.)

Basic functions of the MSNSwitch can be controlled through a series of HTTP Requests. You must first add the IP address of the computer making the requests to the MSNSwitch's API Whitelist on the System menu. If you wish to use HTTPS, you must first import your browser's SSL certificate into the MSNSwitch.

<u>Get the Status of the MSNSwitch</u>

HTTP Request:

URL: "http://<IP>/api/status"

Where
　　　IP = the IP address of the MSNSwitch

Response Data:

JSON format:
```
{
    "connections": [
    {
        "assign": {ASSIGN}
        "label": {LABEL}
        "host": {HOST}
        "ip": {IP}
        "resp": {RESP_TIME}
        "timeout": {TIMEOUT}
        "lost": {LOST}
    },
    …
    ],
    "status": {
        "outlet": [
            {
                "name": {OUTLET1_NAME},
                "status": {OUTLET1_STATUS},
                "reset_only": {OUTLET1_RESET_ONLY}
            },
            {
                "name": {OUTLET2_NAME},
                "status": {OUTLET2_STATUS},
                "reset_only": {OUTLET2_RESET_ONLY}
            }
        ],
        uis": {UIS_STATUS}
    }
}
```

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Where:

ASSIGN:
      string: "NONE", "OUTLET1", "OUTLET2", "BOTH"
LABEL:
      string: Site Label.
HOST:
      string: Website / IP Address.
IP:
      string: IP Address.
RESP_TIME:
      digit: Site response time. (unit: millisecond)
TIMEOUT:
      digit: Count of timeout.
LOST:
      digit: Percent of ping lost.
OUTLET_NAME:
      string: Outlet Name.
OUTLET_STATUS:
      boolean: false means Off, true means On.
OUTLET_RESET_ONLY:
      boolean: false means Off, true means On.
UIS_STATUS:
      boolean: false means Off, true means On.

Examples in this section are shown using cURL for Windows. Any software capable of sending and processing HTTP packets can be used. The API's required "--header" parameters match cURL's defaults and are shown for completeness. They can be omitted if your software defaults to these values as well.

EXAMPLE: Get Status

```
curl --url "http://192.168.0.62/api/status" --data "user=admin&password=WEB_PASSWORD" --http1.1 --
header "Accept-Encoding: gzip, deflate" --header "Accept: */*"
```

OUTPUT

```
{"connections":
[{"assign":"BOTH","label":"Google","host":"www.google.com","ip":"142.251.40.132","resp":21,"timeout":4,"l
ost":0}{"assign":"BOTH","label":"Yahoo","host":"www.yahoo.com","ip":"74.6.143.26","resp":45,"timeout":35,
"lost":0}{"assign":"BOTH","label":"Pingler","host":"www.pingler.com","ip":"69.64.32.114","resp":41,"timeout"
:5,"lost":0}{"assign":"BOTH","label":"Ask.com","host":"www.ask.com","ip":"146.75.38.114","resp":29,"timeo
ut":6,"lost":0}{"assign":"NONE","label":"Router","host":"192.168.0.1","ip":"192.168.0.1","resp":1,"timeout":2,
"lost":0}{"assign":"NONE","label":"","host":"","ip":"null","resp":0,"timeout":0,"lost":0}{"assign":"NONE","label"
:"","host":"","ip":"null","resp":0,"timeout":0,"lost":0}],"status": {"outlet":[{"name":"Outlet
1","status":true,"reset_only":false},{"name":"Outlet 2","status":true,"reset_only":false}],"uis":false}
```

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Control an Outlet

HTTP Request:

HTTP URL: http://<IP>/api/control?target=<TAR>&action=<ACT>
Where:

        IP: The IP address of the MSNSwitch
        TAR: "outlet1", "outlet2", "outlet_all", "uis"
        ACT: "on", "off", "reset"

Response Data:
JSON format:
        {
             "outlet": [{OUTLET1_STATUS}, {OUTLET2_STATUS}],
             "uis": {UIS_STATUS}
        }
OUTLET_STATUS / UIS_STATUS:
        boolean: false means Off, true means On

EXAMPLE: Turn off outlet #2

curl --url "http://192.168.0.62/api/control?target=outlet2&action=off" --data
"user=admin&password=WEB_PASSWORD" --http1.1 --header "Accept-Encoding: gzip, deflate" --header
"Accept: */*"

OUTPUT
{"outlet":[true,false],"uis":false}

---

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<u>Send Heartbeat Trigger</u>

This function must first be configured in the MSNSwitch's web interface. The heartbeat function starts after the first heartbeat trigger command is received.

HTTP Request:

HTTP URL: "http://<IP>/api/heartbeat"

Where
      IP = the IP address of the MSNSwitch

Response Data:
JSON format:
      {
           "heartbeat": "YYYY/MM/DD HH:MM:SS"
      }

Example: Send Hearbeat Packet

curl --url "http://192.168.0.62/api/heartbeat" --data "user=admin&password=WEB_PASSWORD" --http1.1 --header "Accept-Encoding: gzip, deflate" --header "Accept: */*"

OUTPUT
{"heartbeat":"2023/02/21 08:42:48"}

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7. Netility Utility

MegaTec provides a software utility for Windows and MAC called Netility that scan your LAN for compatible devices and allows you to change some configuration settings and upgrade firmware without accessing the internal web server pages.

Download and install the Netility utility (Windows or MAC) from the www.MSNSwitch.com web site's Download page.

Connect the MSNSwitch to the same Ethernet LAN as your PC. Open Netility and it will scan the LAN for any MegaTec devices and list them in its main window.

The **Network Settings** button allows you to configure the IP address and related network parameters of the MSNSwitch as well as set the password. The **Launch Web User** Interface will open the MSNSwitch's internal web server in your default browser.
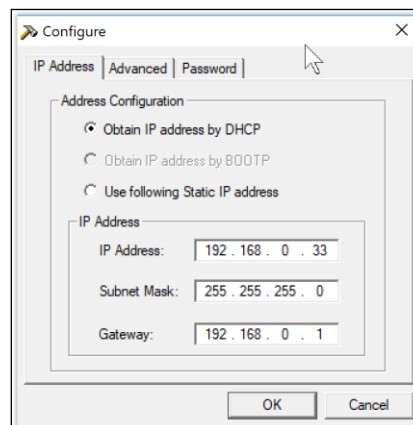
8. Updating Firmware

Download the latest MSNSwitch firmware from the Support / Download page at:

http://www.MSNSwitch.com
or
https://www.proxicast.com/shopping/msnswitch.html

Be sure to download the correct file for your MSNSwitch model. Also download and review the firmware *Release Notes* for important information on the changes and new features.

MSNSwitch firmware is delivered as a compressed .ZIP file – extract the .BIN file from the zip archive. The .BIN file is the actual firmware image file you need to use.

Using the Web Interface

Log into the MSNSwitch's web interface and select the **Save/Upgrade** menu. Click the **Choose File** button to locate the .BIN file you downloaded above. Then click the **Apply** button to begin the update process. Do not power off the MSNSwitch or remove its Ethernet connection until the process is complete.

Once the upgrade is complete and the web page refreshes to show the new firmware version number, we strongly recommend performing a factory reset from this screen to ensure that all new firmware parameters are properly initialized. You should also clear your web browser cache, then reconfigure your MSNSwitch as needed.

Using ezDevice

After you have added the MSNSwitch to your ezDevice/Cloud4UIS account, you can update the firmware.

From the upper lefthand menu. Select **Device Upgrade**. ezDevice will scan all of your devices and indicate which ones have firmware updates available.
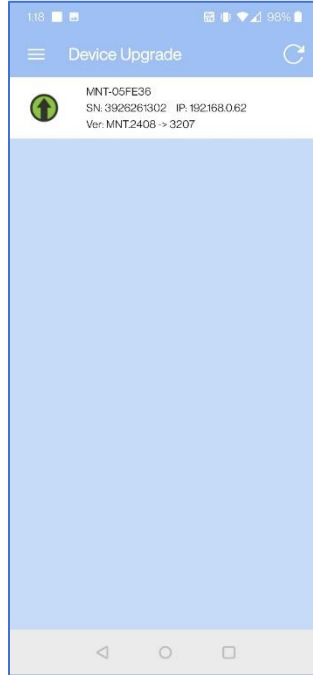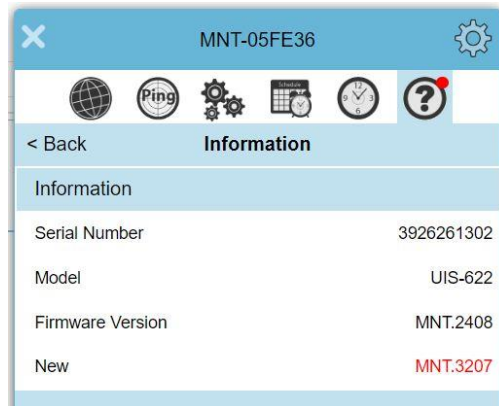

Tap the device you wish to upgrade. ezDevice will display the release notes for the new version highlighting the changes.
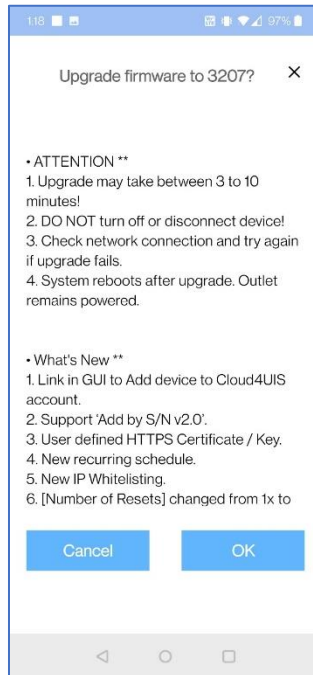
Tap OK to begin the firmware upgrade process. Do not turn off the MSNSwitch until the process is complete. You may tap the refresh arrow to check the upgrade status.

Note: A firmware update indicator is displayed on the Settings option for devices in Cloud4UIS.com, however the firmware must be updated by one of the other methods described in this section.

Using Netility

Launch the Netility software (see page 14).

Select the device you wish to upgrade and click the **Firmware Update** button. Select the .BIN file downloaded earlier and begin the firmware update process.

Do not power off the MSNSwitch or remove its Ethernet connection until the process is complete.

Once the upgrade is complete and the web page refreshes to show the new firmware version number, we strongly recommend performing a factory reset from this screen to ensure that all new firmware parameters are properly initialized. You should also clear your web browser cache, then reconfigure your MSNSwitch as needed.

# # #