



Controlling the MSNSwitch

Tech Note MSNTN01



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Document Revision History:

Date	Comments
Jan. 2, 2020	Updated to include model UIS-622b
Aug. 1, 2019	First release

This TechNote Applies Only to MSNSwitch Models:

UIS-622b, UIS-522b, UIS-523f, UIS-523g, UIS-523i, UIS-523j, UIS-523k and UIS-523e

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
6. A REST-ful API for HTTP commands
7. The Netility utility software

NOTE: Support for the ezDevice app and Cloud4UIS.com web service was added in MSNSwitch firmware version MNT.9319 (04/24/2019). If your MSNSwitch is running older firmware, please see the *Updating Firmware* section on page 15.

NOTE: Support for the ezDevice app and Cloud4UIS service is **Disabled** in the MSNSwitch by default. You must use the MSNSwitch's internal web server to enable this function under the Network menu.

The screenshot displays the Proxicast MSNTN01 configuration web interface. On the left is a sidebar with navigation links: Information (Status), Configuration (Settings), Logs (Data), and Help (System Status, Save / Upgrade). The main content area is titled 'DNS Server IP' and contains several sections: 'DNS Server IP' with fields for Primary and Secondary DNS Server IP (both set to 8.8.8.8) and a dropdown for Obtain DNS Server (set to AUTO); 'Advanced Options' with fields for HTTP Port Number (80) and STUN Server (stun.l.google.com:19302); 'Dynamic DNS' with a dropdown for DDNS Provider (None) and fields for Domain Name, Name, and Password; and a 'Cloud' section at the bottom, which is highlighted with a red rectangle. The 'Cloud' section has a 'Cloud Service' dropdown set to 'Enable'. At the bottom right of the main area are 'Apply' and 'Reset' buttons.

Information
Status

Configuration
Settings

Configuration
Schedule
Network
E-mail
Hangouts
SMS
Account
System Time
Language

Logs
Data

Event Log

Help

System Status
Save / Upgrade

DNS Server IP

Primary DNS Server IP: 8.8.8.8
Secondary DNS Server IP: 8.8.8.8
Obtain DNS Server: AUTO

Advanced Options [help]

HTTP Port Number: 80
STUN Server: stun.l.google.com:19302 [Edit]

Dynamic DNS [help]

DDNS Provider: None [Update now]
Domain Name:
Name:
Password:

Cloud [help]

Cloud Service: Enable

[Apply] [Reset]

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

The default username for the MSNSwitch is "admin".

The default password for firmware versions prior to MNT.9731 is "admin".

For MNT.9731 and later, the default password is the last 6 characters of the MSNSwitch's MAC address (upper case). See the MSNSwitch 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).

The screenshot displays the MSNSwitch web interface. The left sidebar contains navigation links: Information (Status), Configuration (Settings), Logs (Data), and Help. The main content area is divided into two sections. The top section, 'Connection Status', shows a table of assigned sites. The bottom section, 'Status and Control', shows the 'UIS Reset' status and a table of outlets.

Assign	Site Label	Target Site	IP Address	Response Time	Timeout
Both	Google	www.google.com	172.217.164.164	131 ms	86 %
	Yahoo	www.yahoo.com	98.138.219.232	147 ms	86 %
	Bing	www.bing.com	204.79.197.200	72 ms	86 %
	Ask.com	www.ask.com	151.101.2.114	53 ms	86 %
None	Router	192.168.0.1	192.168.0.1	16 ms	86 %

Item	On/Off Control
UIS Reset	☒

☒ Assigned outlet will auto reset when target site timeout. Only outlets that are On will reset.
☐ Assigned outlet will not reset when connection loss is detected.

Outlet Name	Status	Control
Outlet 1	On	☒ Reset
Outlet 2	On	☒ Reset

☒ Outlet On ☐ Outlet Off ☒ Outlet is On, UIS Reset function is Off

2. ezDevice Smartphone App

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

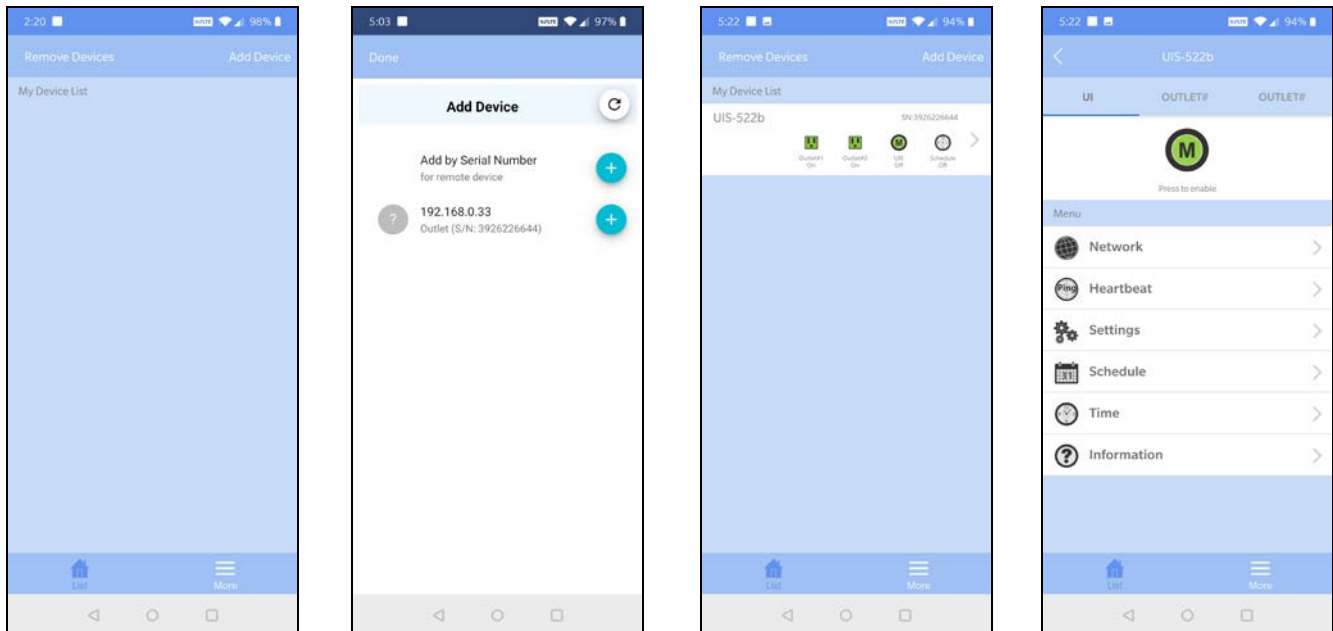


If possible, connect your smartphone via WiFi to the same LAN as the MSNSwitch. This is the fastest and easiest way to add the MSNSwitch to ezDevice.

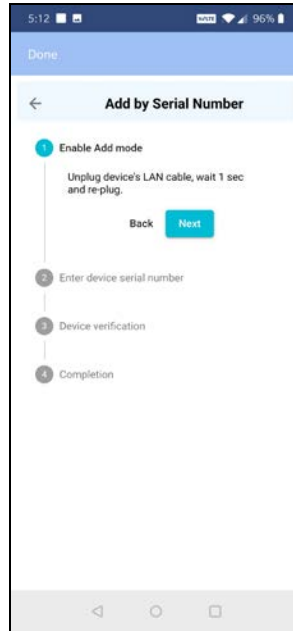
Launch the ezDevice app and create a new account. This same account information will be used for the Cloud4UIS.com web service (see page 6).

Tap **Add Device** on the top right of the screen. ezDevice will scan your LAN for the MSNSwitch. If found, tap the + icon to add the MSNSwitch. Enter the **Device Key** printed on the bottom label of the MSNSwitch. Tap **Done** to return to the main screen.

Once the MSNSwitch has been added, return to the main ezDevice screen. Tap the MSNSwitch in the list of devices to change settings.



If you cannot connect your phone to your LAN, then choose the **Add by Serial Number** option under **Add Device**.



Follow the instructions on the screen. Remove the LAN cable from the MSNSwitch for 1 second, then replace it. Check that the blue UIS button is flashing. This is "Add Mode" which must be active to manually add the MSNSwitch to ezDevice.

Enter the MSNSwitch Serial Number and Device Key when prompted.

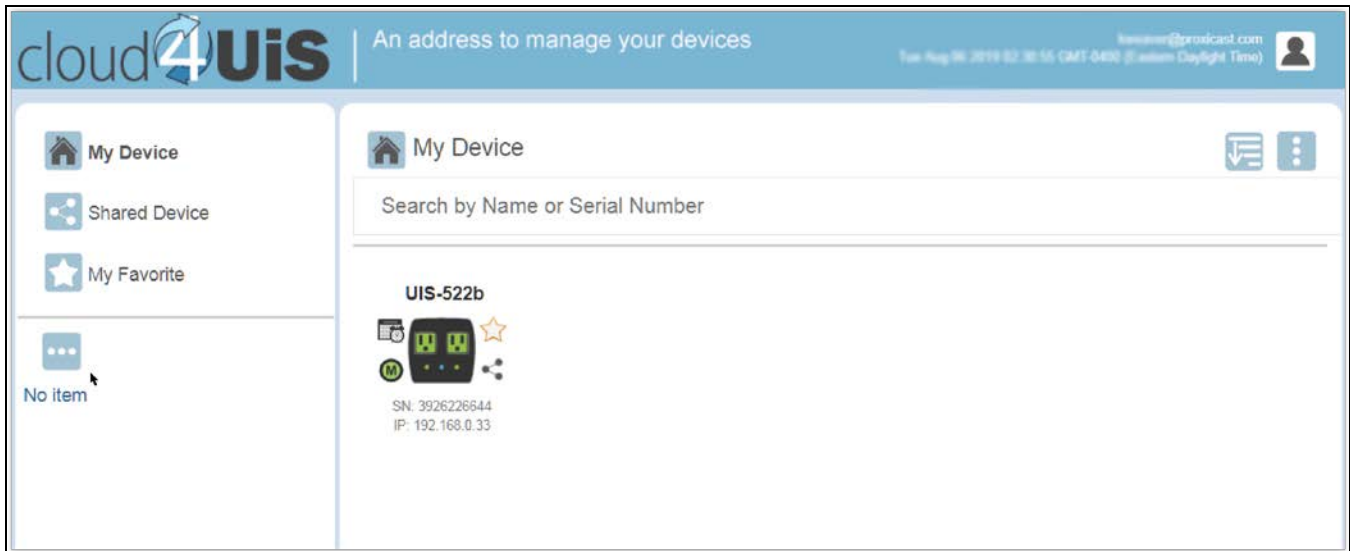
3. Cloud4UIS.com Web Service

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

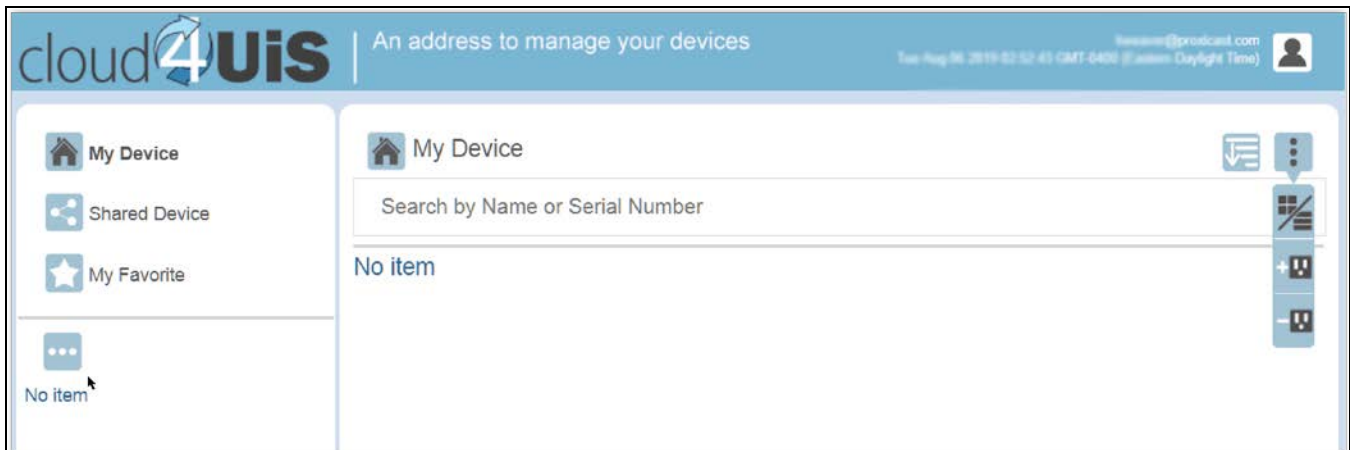
<http://Cloud4UIS.com>

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

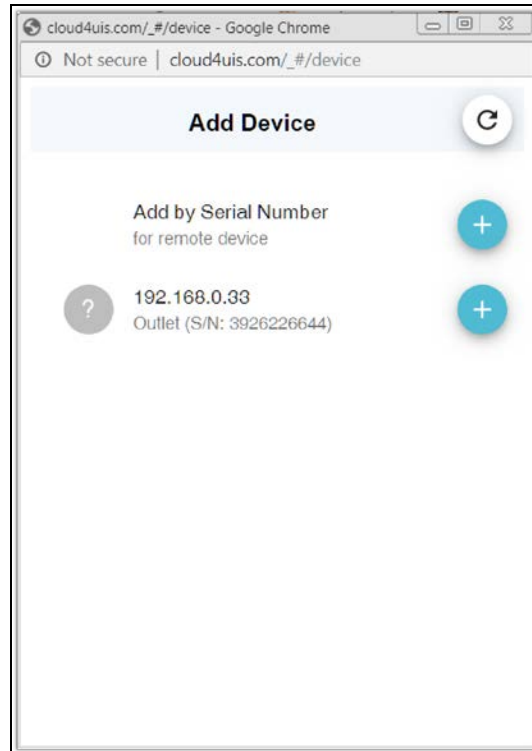
If you used ezDevice to add devices, they will appear in your Cloud4UIS account automatically.



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.



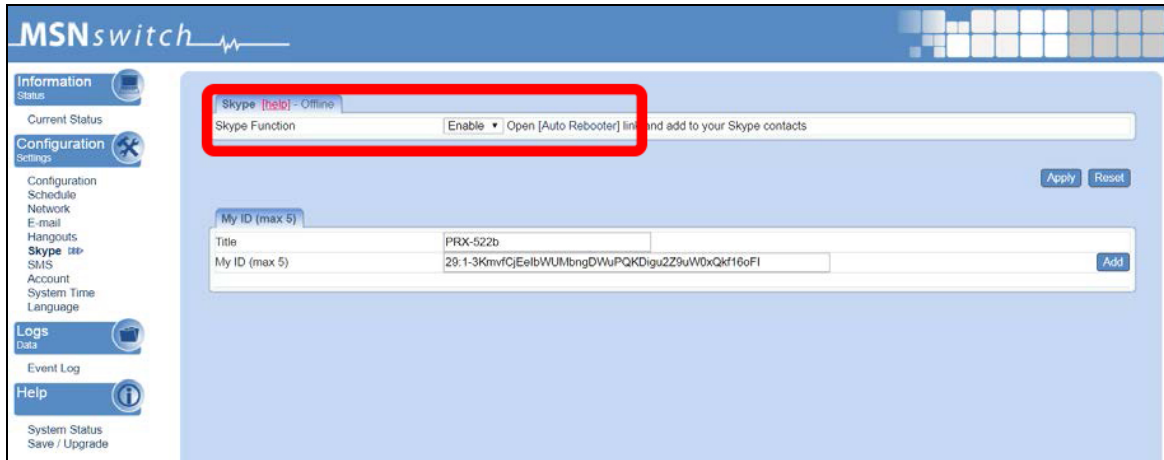
The Add Device screen works the same as it does in the ezDevice smartphone app. If your PC is in the same LAN as the MSNSwitch, you will be able to select it from the list. If your MSNSwitch is not shown, manually enter its serial number to proceed.



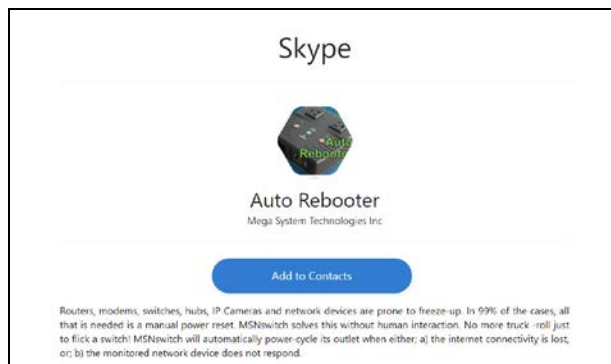
See the ezDevice section on page 4 for instructions on completing the device add procedure. Devices added through Cloud4UIS.com will also be automatically synchronized with the ezDevice app.

4. Skype

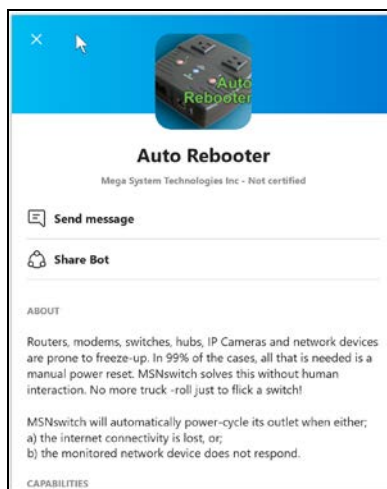
In the MSNSwitch's web interface, select the **Skype** menu and enable the Skype function.



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.



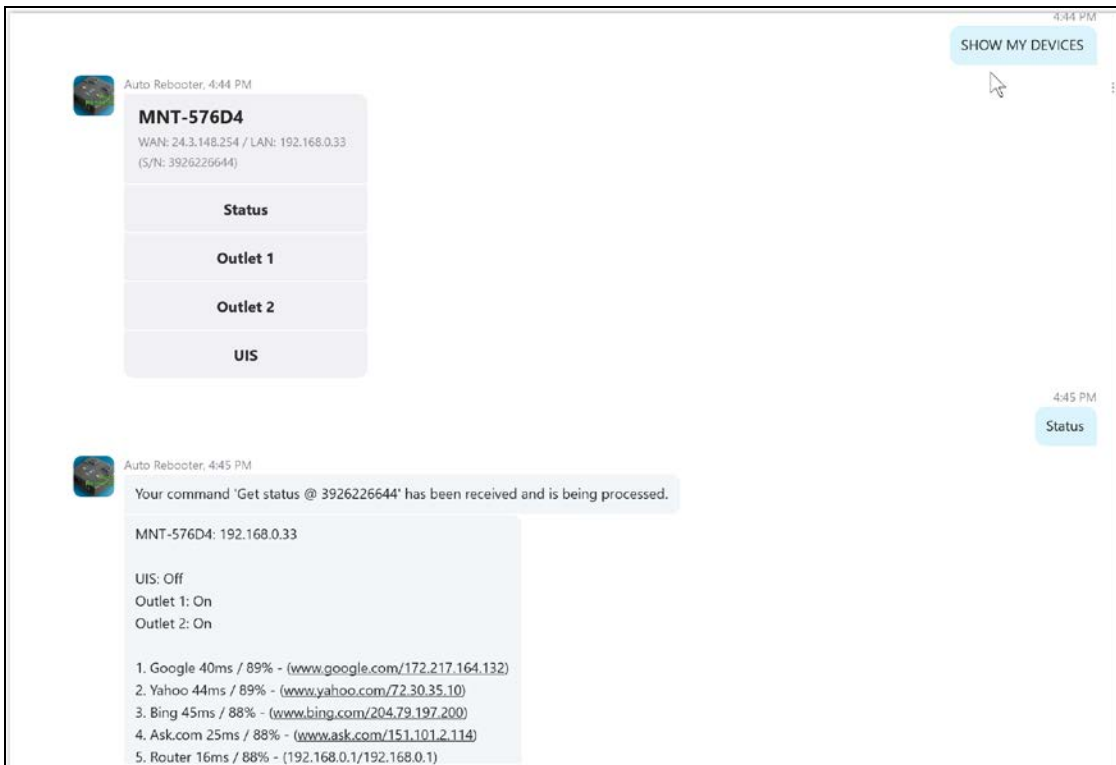
Click **Send Message** to begin a messaging session.

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

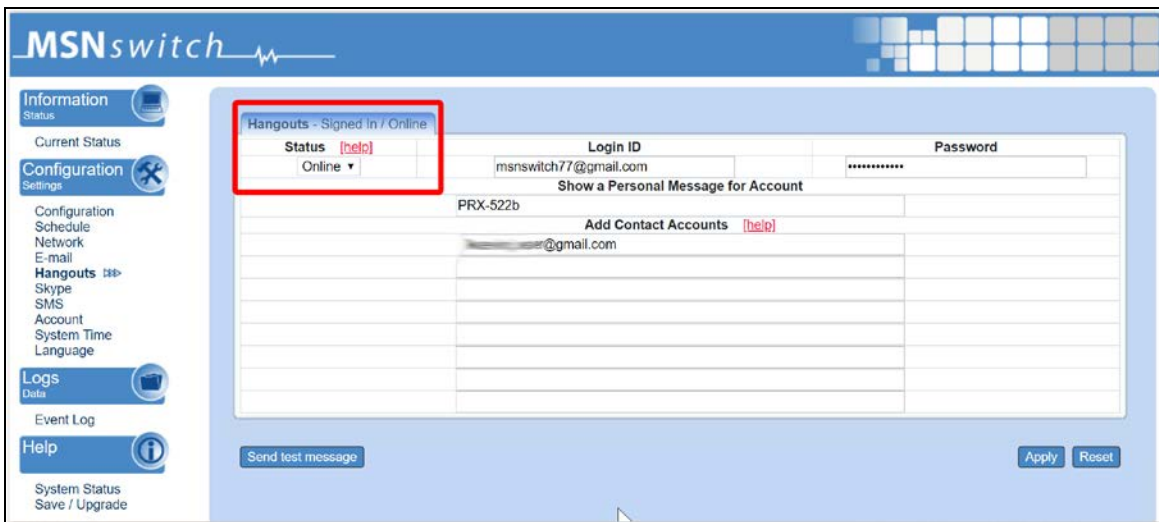
You must first have a Google Hangouts or Gmail account for yourself. You must create a second Google account that the MSNSwitch will use (a unique account for each MSNSwitch you have).

In the MSNSwitch's web interface, select the **Hangouts** menu and enable the Hangouts function. Enter Google credentials for the account you created for the MSNSwitch.

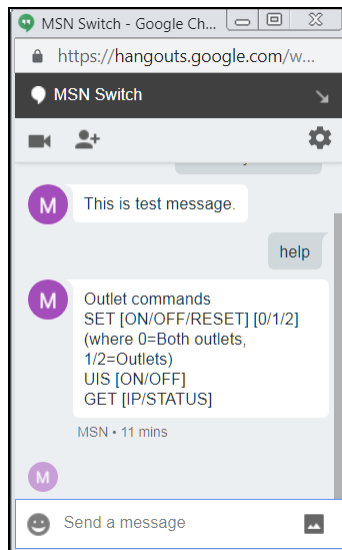
In the **Add Contact Accounts** field, enter all of the Google accounts which will be permitted to interact with and control this MSNSwitch. Click **Apply** to save the settings.

Check the top of the Hangout tab to ensure that the MSNSwitch was successfully able to log into Hangouts.

Click the **Send Test Message** button to send a message to the contact



Open your Google Hangouts account and there should be a test message from your MSNSwitch.



Type **HELP** to see the full list of available commands.

6. REST API

Basic functions of the MSNSwitch can be controlled through a series of HTTP Packet Requests.

Control an Outlet

Packet Request:

"GET" <target> "HTTP/1.1" CRLF

"Host:" <host ip> CRLF

"Keep-Alive: 300" CRLF

"Connection: keep-alive" CRLF

"Authorization:Base" <auth> CRLF CRLF ;auth:encoded account(username:password) with base-64

Request Description:

Target: "/cgi-bin/control.cgi?<action>"

Action:

target=<0/1/2/3>;

0 means UIS,

1 means outlet 1,

2 means outlet 2,

3 means outlet all

control=<0/1/2/3>;

0 means off,

1 means on,

2 means switch (i.e. from On → Off, or from Off → On),

3 means reset (Outlet only)

Packet Response:

XML format:

"<?xml version='1.0'?>"

"<request>"

"<outlet_status>{OUTLET1_STATUS},{OUTLET2_STATUS}</outlet_status>"

"<uis_status>{UIS_STATUS}</uis_status>"

"</request>"

XML Description:

OUTLET1_STATUS / OUTLET2_STATUS / UIS_STATUS

0 means off

1 means on

The action can also be initiated via a simple HTTP URL using control2.cgi:

URL: http://<IP-of-MSNSwitch>/cgi-bin/control2.cgi?<action>&user=admin&passwd=1234

Example:

To force outlet #1 to reset:

`http://<ip-of-MSNSwitch>/cgi-bin/control.cgi?target=1&control=3&user=admin&passwd=1234`

XML Result:

```
<request>
<outlet_status>1,1</outlet_status>
<uis_status>0</uis_status>
</request>
```

Get the Status of the MSNSwitch

Request:

Target: `"/xml/outlet_status.xml"`

XML format:

```
"<?xml version='1.0'?>"
```

```
"<request>"
```

```
"<site_ip>{SITE1}","{SITE2}","{SITE3}","{SITE4}","{SITE5}"</site_ip>"
```

```
"<connect_status>{C1_S}","{C2_S}","{C3_S}","{C4_T}","{C5_S}"</connect_status>"
```

```
"<outlet_status>{O1_S}","{O2_S}"</outlet_status>"
```

```
"<site_lost>{S1_L}","{S2_L}","{S3_L}","{S4_L}","{S5_L}"</site_lost>"
```

```
"<uis_fun>{U_S}"</uis_fun>"
```

```
"<g_target1>{G_T1}"</g_target1>"
```

```
"<g_target2>{G_T2}"</g_target2>"
```

```
"</request>"
```

XML Description:

SITE<n>: (n:number)

string: Site <n> IP Address.

C<n>_S: (n:number)

digit(unit: millisecond): Site <n> response timing.

O<n>_S: (n:number)

digit: 0 means off, 1 means on.

S<n>_L: (n:number)

digit: Percent of ping lost.

uis_fun:

digit: 0 means off, 1 means on.

G_T<n>: (n:number)

digit: 0 means None, 3 means All, 1 means Outlet1, 2 means Outlet2

Example:

To get system status:

`http://admin:1234@<ip-of-MSNSwitch>/xml/outlet_status.xml`

XML Result:

```
<request>
<site_label>Google,Yahoo,Bing,Ask.com,Router,,</site_label>
<site_ip>
172.217.15.68,98.138.219.232,204.79.197.200,151.101.2.114,192.168.0.1,null,null
</site_ip>
<connect_status>30,46,29,29,5,-1,-1</connect_status>
<site_lost>1,1,0,0,0,0,0</site_lost>
<lost_times>3,3,2,0,0,0,0</lost_times>
<outlet_status>1,1</outlet_status>
<uis_fun>0</uis_fun>
<reset_only>0,0</reset_only>
<assign>3,3,3,3,3,3,3</assign>
</request>
```

Get Last Heartbeat Time

URL: `http://<IP-of-MSNSwitch>/cgi-bin/heartbeat.cgi?user=admin&passwd=1234`

Response:

XML format:

`"<?xml version='1.0'?>"`

`"<request>"`

`"<heartbeat>"YYYY/MM/DD HH:MM"</heartbeat>"`

`"</request>"`

Example:

`http://<IP-of-MSNSwitch>/cgi-bin/heartbeat.cgi?user=admin&passwd=1234`

XML Result:

```
<request>
<heartbeat>2019/08/01 04:45</heartbeat>
</request>
```

7. Netility Utility

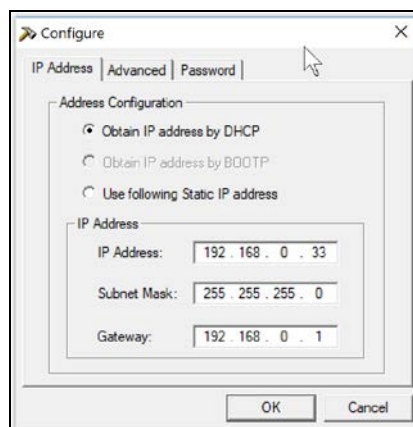
MegaTec provides a software utility for Windows and MAC called Netility that scan your LAN for compatible devices and allows you to change some configuration settings and upgrade firmware without accessing the internal web server pages.

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 Download page at:

<http://www.MSNSwitch.com>

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.

The screenshot displays the MSNSwitch web interface. On the left is a navigation sidebar with sections: Information (Status), Configuration (Settings), Logs (Data), and Help. The Configuration section is expanded, showing options like Configuration, Schedule, Network, E-mail, Hangouts, SMS, Account, System Time, and Language. At the bottom of the sidebar is a 'Save / Upgrade' button. The main content area has two tabs: 'Save/Restore Settings' and 'Upgrade Firmware'. The 'Save/Restore Settings' tab is active, showing 'Settings' (with a 'Save' button), 'Restore' (with a 'Choose File' button and 'No file chosen' text, and a 'Restore' button), and 'Reset to factory default' (with a 'Reset' button). The 'Upgrade Firmware' tab is also visible, showing 'Firmware Version' (MNT.NB.9319), 'Location' (with a 'Choose File' button and 'MNT.9731.bin' text, and an 'Apply' button), and two red warning messages: '✱ If web upgrade or reboot fails, redo upgrade using Utility in LAN.' and '✱ Please save your settings before upgrading.'

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.

#