Controlling the MSNSwitch

Tech Note MSNTN01

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Document Revision History:

Date	Comments
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, 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

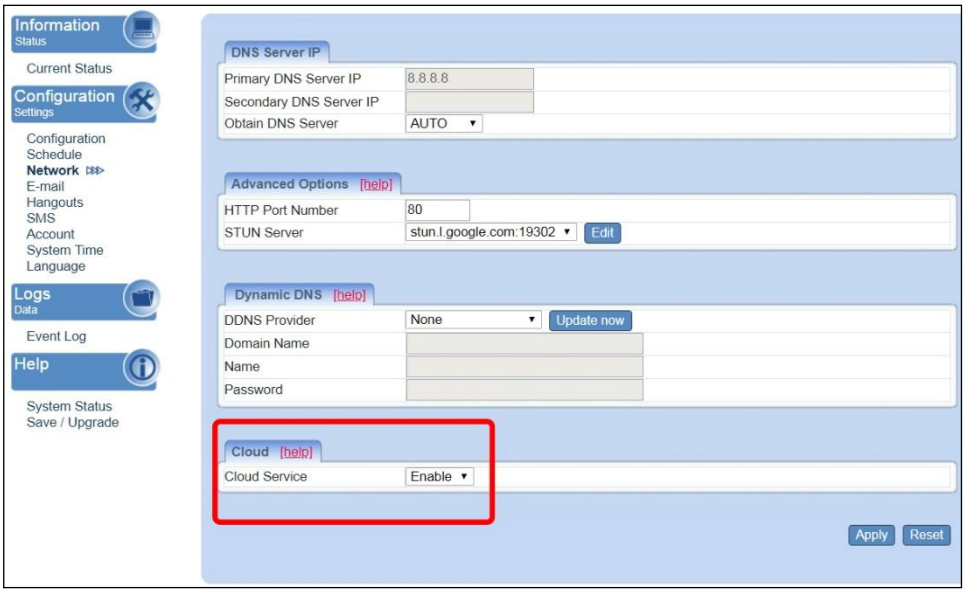
IMPORTANT NOTE

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 17.

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.



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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 16).

2. ezDevice Smartphone App

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

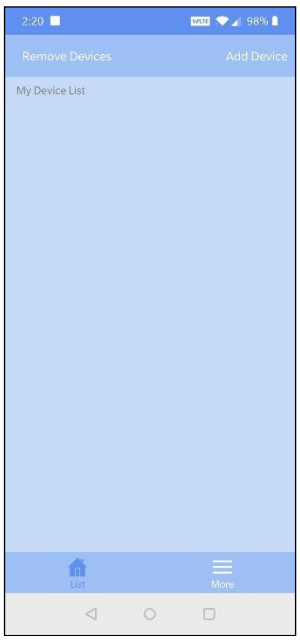
ezDevice
MegaTec
Free

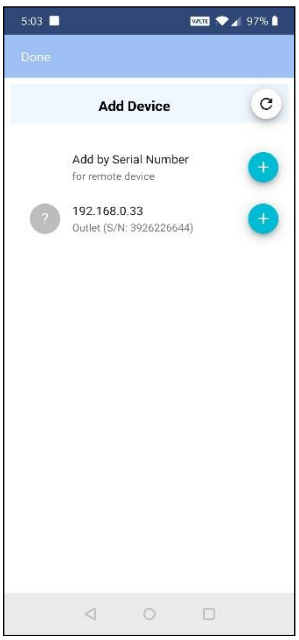
If possible, connect your smartphone via WiFi to the same LAN as the MSNSwitch. This is the fastest and easiest way to add the MSNSwitch to ezDevice.

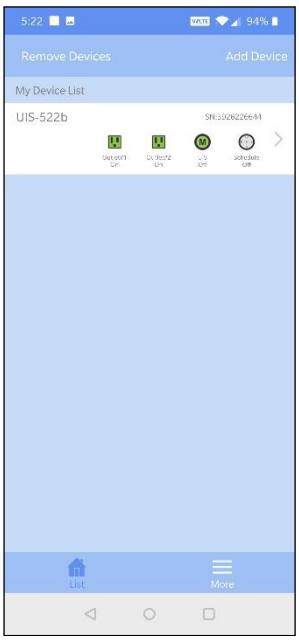
Launch the ezDevice app and create a new account. This same account information will be used for the Cloud4UIS.com web service (see page 5).

Tap **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.







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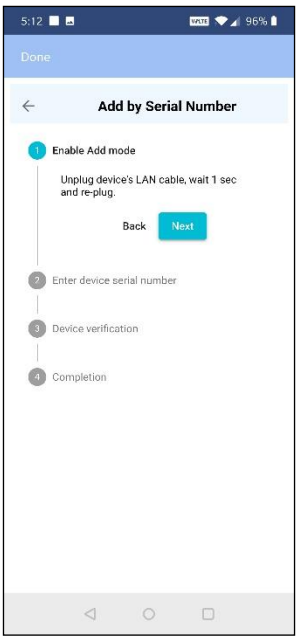
If you cannot connect your phone to your LAN, then choose the **Add by Serial Number** option under **Add Device**.



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.

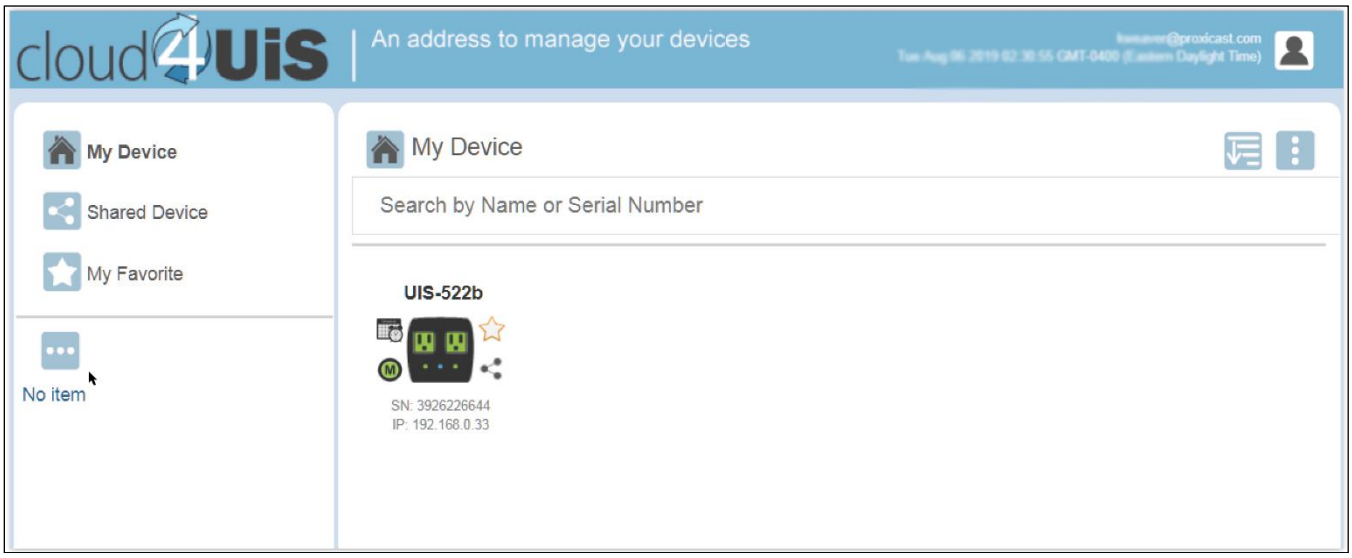
3. Cloud4UIS.com Web Service

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

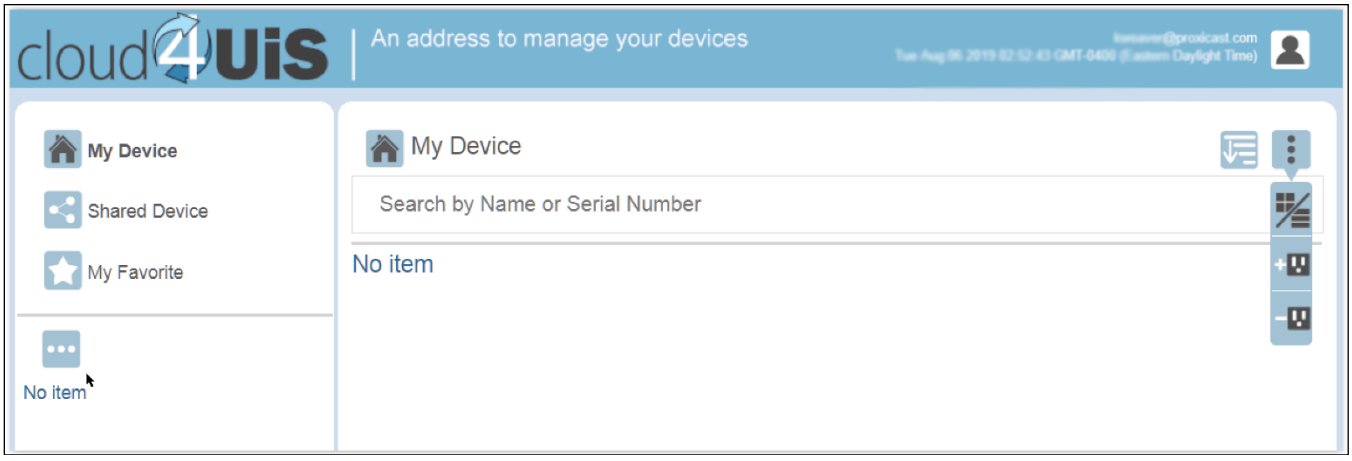
http://Cloud4UIS.com

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

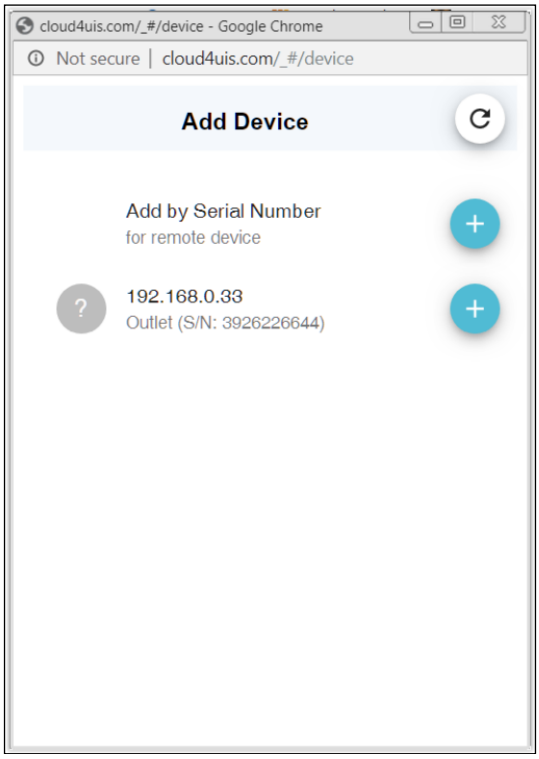
If you used ezDevice to add devices, they will appear in your Cloud4UIS account automatically.



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.



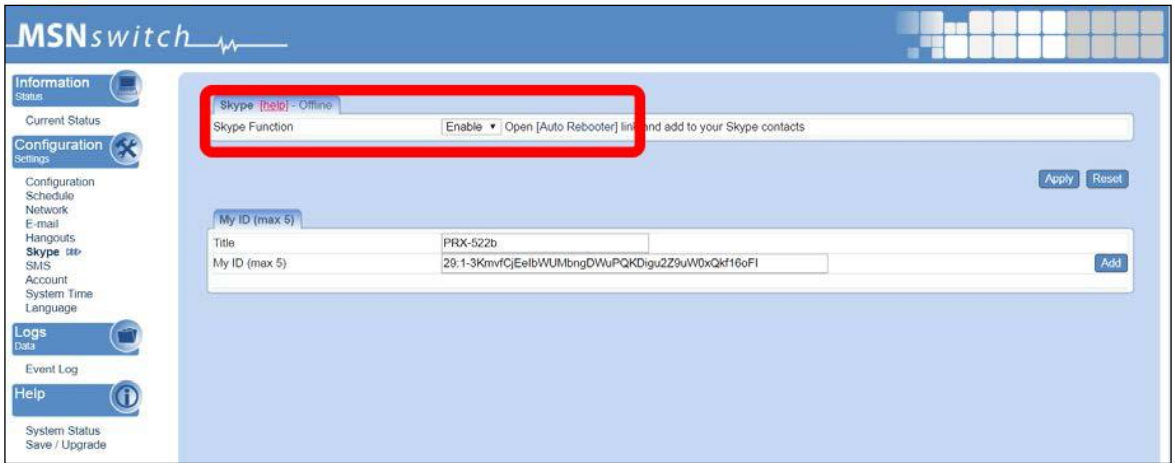
The Add Device screen works the same as it does in the ezDevice smartphone app. If your PC is in the same LAN as the MSNSwitch, you will be able to select it from the list. If your MSNSwitch is not shown, manually enter its serial number to proceed.



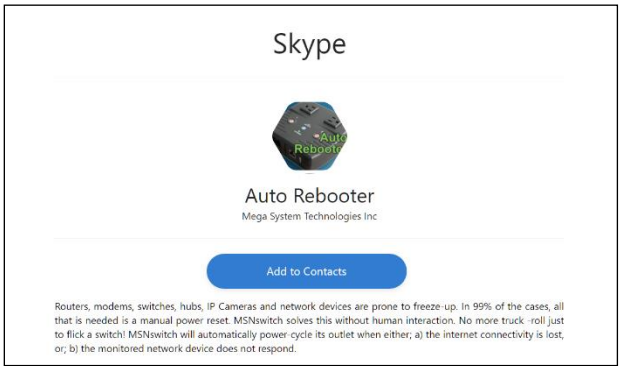
See the ezDevice section on page 3 for instructions on completing the device add procedure. Devices added through Clolud4UIS.com will also be automatically synchronized with the ezDevice app.

4. Skype

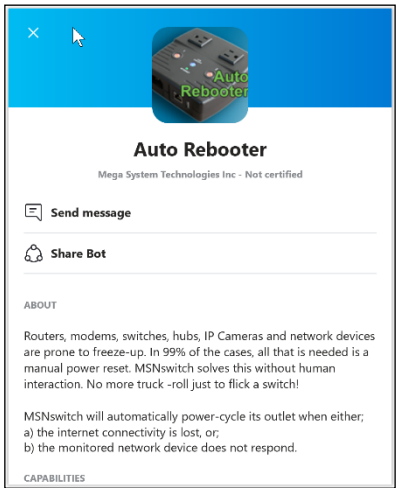
In the MSNSwitch's web interface, select the **Skype** menu and enable the Skype function.



Click the **Auto Rebooter** link to add the Auto Rebooter robot service to your Skype contacts.

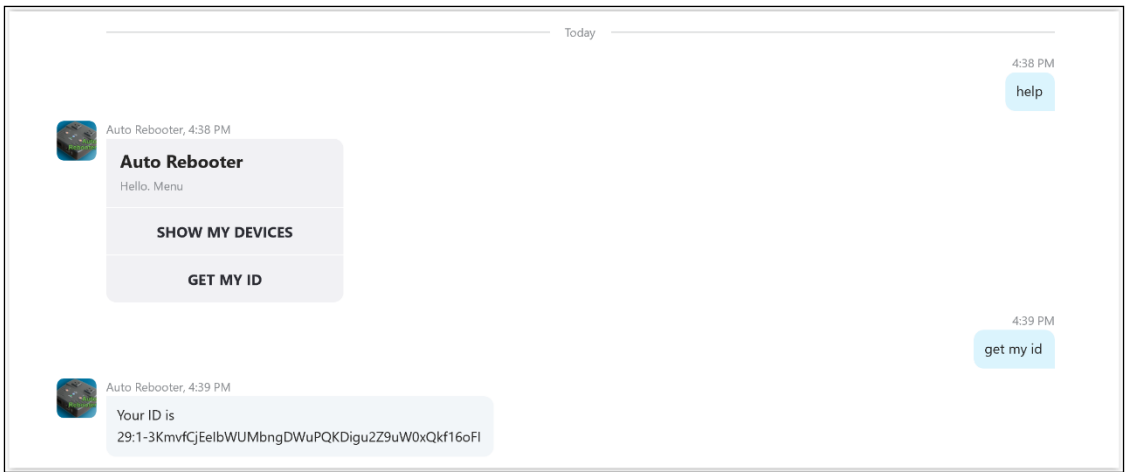


Click the **Get Started** button to add Auto Rebooter to your contacts and begin a messaging session.



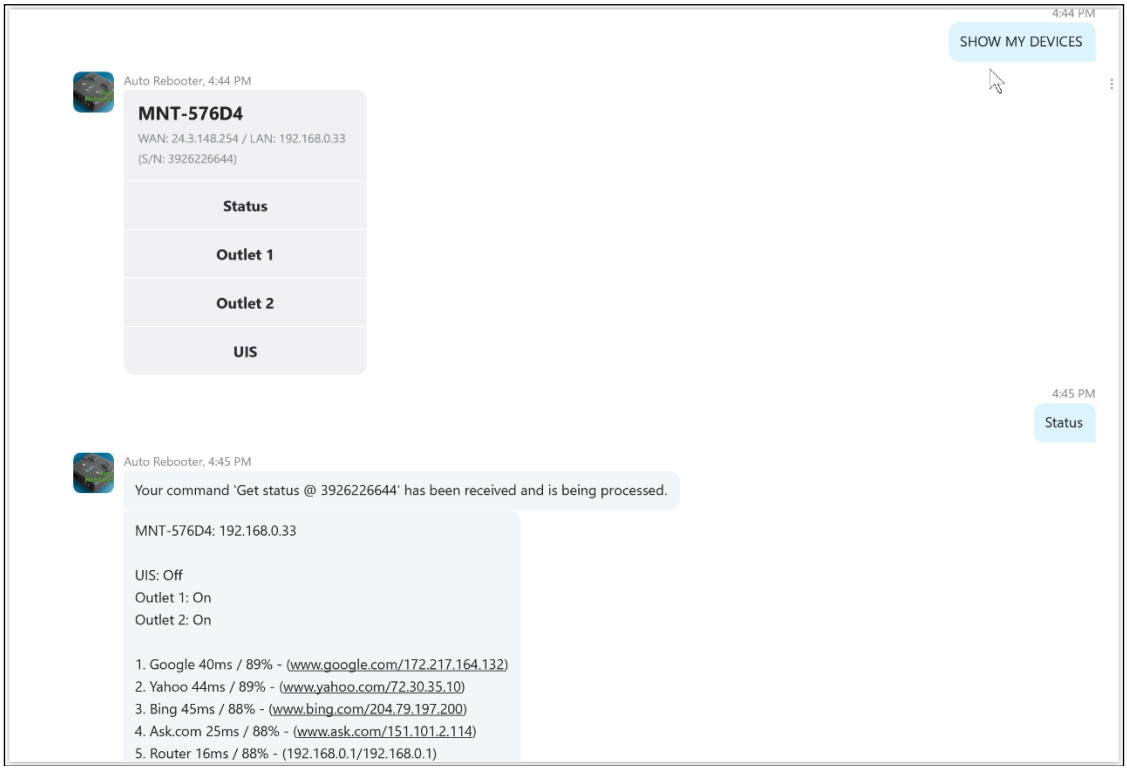
Click **Send Message** to begin a messaging session.

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

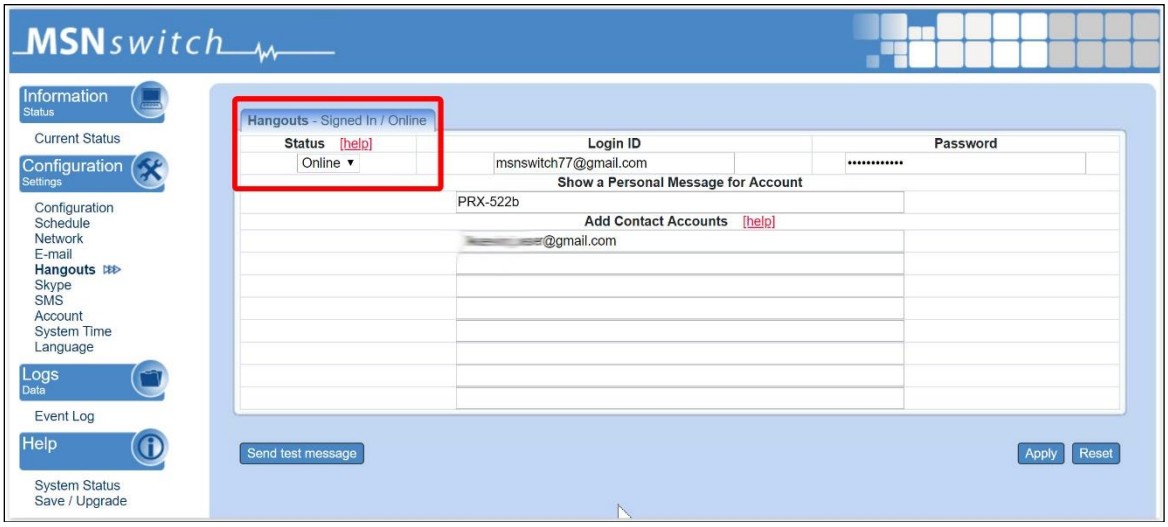
You must first have a Google Hangouts or Gmail account for yourself. You must create a second Google account that the MSNSwitch will use (a unique account for each MSNSwitch you have).

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.

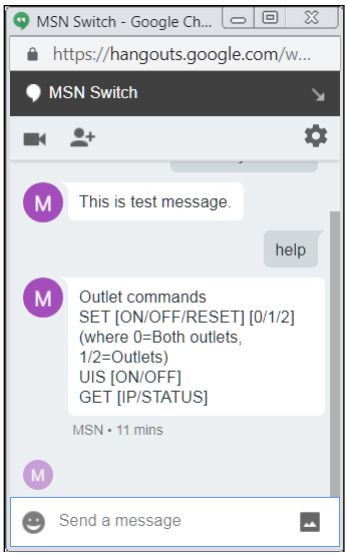
In the **Add Contact Accounts** field, enter all of the Google accounts which will be permitted to interact with and control this MSNSwitch. Click **Apply** to save the settings.

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

For firmware versions MNT.A624 and later only
(For earlier firmware versions, please contact Proxicast for additional documentation)

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

Generate a Cookie-Token for User Login:

HTTP Packet Request

"POST /goform/login HTTP/1.1”CRLF
“Accept: */*”CRLF
“Accept-Encoding: gzip, deflate”CRLF
"Content-Type: application/x-www-form-urlencoded"CRLF
CRLF
“user=“<Web Account> “&password=“<Web Password>

HTTP Packet Response

“Pragma: no-cache”CRLF
“Set-Cookie: WQKJhuEcnAVA3t7WE+ug6A=<token>; HttpOnly; Path=/“CRLF
“Content-Type: text/html”CRLF
“Server: GoAhead-Webs”CRLF
“Location: /index.asp”CRLF
“Date: Thu Jul 1 01:01:01 2020”CRLF
“Cache-Control: no-cache”CRLF
CRLF

NOTE: The generated access token <token> is valid for 24 hours only.

Examples in this section are shown using cURL for Windows. Any software capable of sending and processing HTTP packets can be used.

EXAMPLE: Show Cookie

curl --url "http://192.168.0.42/goform/login" --http1.1 --verbose --cookie- --header "Accept-Encoding: gzip, deflate" --header "Accept: */*" --header "Content-Type: application/x-www-form-urlencoded" --data "user=admin&password=05FE36"

OUTPUT:

```
*   Trying 192.168.0.42...
* TCP_NODELAY set
* Connected to 192.168.0.42 (192.168.0.42) port 80 (#0)
> POST /goform/login HTTP/1.1
> Host: 192.168.0.42
> User-Agent: curl/7.55.1
> Accept: */*
> Content-Type: application/x-www-form-urlencoded
> Content-Length: 26
>
* upload completely sent off: 26 out of 26 bytes
* HTTP 1.0, assume close after body
< HTTP/1.0 200 Data follows
< Server: GoAhead-Webs
< Date: Wed Dec  9 05:15:42 2020
* Added cookie WQKJhuEcnAVA3t7WE+ug6A="2ZZeUIu0LxPi80nEd" for domain 192.168.0.42, path /, expire 0
< Set-Cookie: WQKJhuEcnAVA3t7WE+ug6A=2ZZeUIu0LxPi80nEd; HttpOnly; Path=/
< Pragma: no-cache
< Cache-Control: no-cache
< Content-Type: text/html
< Location: /index.asp
<
<html><head>
            <meta http-equiv=Content-Type content='text/html; charset=utf-8'>
            <script language='JavaScript'>
            window.top.location.href='/index.asp';
            </script>
            </body></html>

* Closing connection 0
```

Get the Status of the MSNSwitch

HTTP Packet Request

“GET /xml/outlet_status.xml HTTP/1.1"CRLF
“Accept: */*”CRLF
“Accept-Encoding: gzip, deflate”CRLF
"Cookie: WQKJhuEcnAVA3t7WE+ug6A=“<token>CRLF
CRLF

HTTP Packet Response

XML format:
"<?xml version='1.0'?>"
"<request>"
“<site_ip>”{SITE_IP}”</site_ip>”
“<connect_status>”{CONNECT_STATUS}”</connect_status>”
“<outlet_status>”{OUTLET_STATUS}”</outlet_status>”
“<site_lost>”{SITE_LOST}”</site_lost>”
“<uis_fun>”{UIS_RESET}”</uis_fun>”
“<reset_only>{RESET_ONLY}”</reset_only>”
“<assign>”{ASSIGN}”</assign>”
“</request>”
XML Description:
SITE_IP:
string: Site IP Address.
CONNECT_STATUS:
digit(unit: millisecond): Site response time.
OUTLET_STATUS:
digit: 0 means Off, 1 means On.
SITE_LOST:
digit: Percent of ping lost.
UIS_RESET:
digit: 0 means Off, 1 means Auto Reset.
RESET_ONLY:
digit: 0 means Disable, 1 means Reset Only.
ASSIGN:
digit: 0 means None, 1 means Outlet1, 2 means Outlet2, 3 means All

EXAMPLE: Get Status

curl --url "http://192.168.0.42/xml/outlet_status.xml" --http1.1 --verbose --header "Accept-Encoding: gzip, deflate" --header "Accept: */*" --cookie "WQKJhuEcnAVA3t7WE+ug6A=**2ZZeUIu0LxPi80nEd**"

OUTPUT

<?xml version="1.0"?><request><site_label>Google,Yahoo,Bing,Ask.com,Router,,</site_label><site_ip>172.217.7.196,74.6.143.25,204.79.197.200,199.232.66.114,192.168.0.1,null,null</site_ip><connect_status>21,42,21,20,1,-1,-1</connect_status><site_lost>0,0,0,0,0,0,0</site_lost><lost_times>0,0,0,0,0,0,0</lost_times><outlet_status>1,0</outlet_status><uis_fun>1</uis_fun><reset_only>0,0</reset_only><assign>3,3,3,3,3,3,3</assign></request>

Control an Outlet

HTTP Packet Request

Packet Request:
"GET" <target> "HTTP/1.1"CRLF
"Host:" <host ip>CRLF
"Keep-Alive: 300"CRLF
"Connection: keep-alive"CRLF
"Authorization:Base" <auth>CRLFCRLF ;auth:encoded account(username:password) with base-64

HTTP URL: “http://< IP>/cgi-bin/control.cgi?<auth>&<action>”

IP:
The IP Address of the MSNSwitch.
Auth:
user=<Web Account>
passwd=<Web Password>
Action:
target=<0/1/2/3>;
0 means UIS (Auto Reset function),
1 means Outlet1,
2 means Outlet2,
3 means All_Outlets
control=<0/1/2/3>;
0 means Off,
1 means On,
2 means Toggle (supported in next firmware release),
3 means Reset Outlet (applies to Outlets that are On only)

HTTP Packet Response

XML format:
"<?xml version='1.0'?>"
"<request>"
“<outlet_status>”{OUTLET_STATUS}”</outlet_status>”
"<uis_status>”{UIS_STATUS}”</uis_status>”
"</request>"
XML Description:
OUTLET_STATUS / UIS_STATUS: 0 means Off, 1 means On

EXAMPLE: Turn off outlet #2

curl --url "http://192.168.0.42//cgi-bin/control.cgi?user=admin&passwd=05FE36&target=2&control=0" --http1.1 --verbose --header "Accept-Encoding: gzip, deflate" --header "Accept: */*" --cookie "WQKJhuEcnAVA3t7WE+ug6A=**2ZZeUlu0LxPi80nEd**"

OUTPUT
<?xml version="1.0"?><request><outlet_status>1,0</outlet_status><uis_status>1</uis_status></request>

Get Last Heartbeat Time

HTTP Packet Request

Packet Request:
"GET" <target> "HTTP/1.1"CRLF
"Host:" <host ip>CRLF
"Keep-Alive: 300"CRLF
"Connection: keep-alive"CRLF
"Authorization:Base" <auth>CRLFCRLF ;auth:encoded account(username:password) with base-64

URL: http://<IP>/cgi-bin/heartbeat.cgi? <auth>

IP:
The IP Address of the MSNSwitch.
Auth:
user=<Web Account>
passwd=<Web Password>

HTTP Packet Response

XML format:
"<?xml version='1.0'?>"
"<request>"
“<heartbeat>”YYYY/MM/DD HH:MM”</heartbeat>”
“</request>

Example: Get Last Hearbeat TIme

curl --url "http://192.168.0.42//cgi-bin/heartbeat.cgi?user=admin&passwd=05FE36" --http1.1 --header "Accept-Encoding: gzip, deflate" --header "Accept: */*" --cookie "WQKJhuEcnAVA3t7WE+ug6A=**2ZZeUlu0LxPi80nEd**"

OUTPUT
<?xml version="1.0"?><request><heartbeat>2020/12/09 06:42</heartbeat></request>

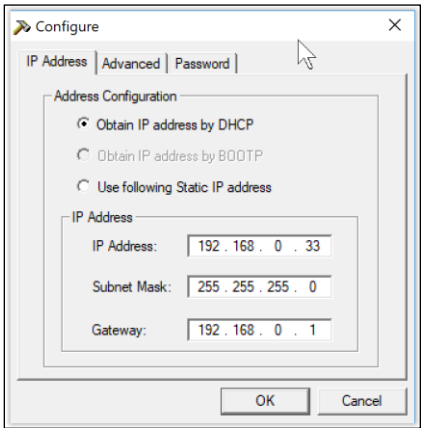
7. Netility Utility

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

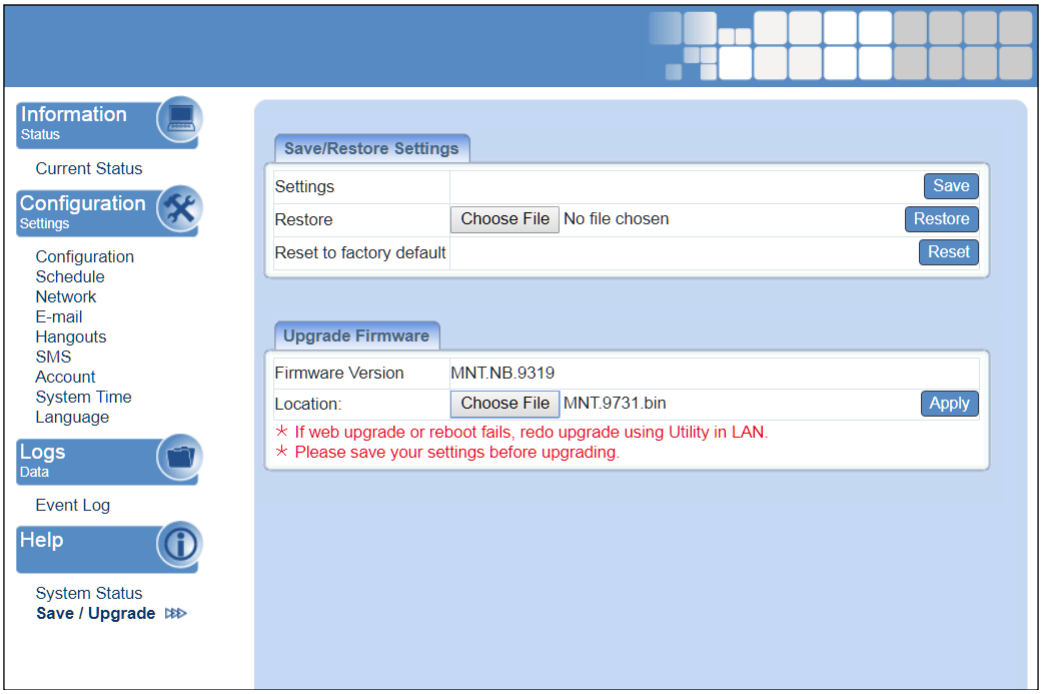
Be sure to download the correct file for your MSNSwitch model. Also download and review the firmware *Release Notes* for important information on the changes and new features.

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.



Using Netility

Launch the Netility software (see page 16).

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.

# # #