

# **Controlling the MSNSwitch**

# **Tech Note MSNTN001**



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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	

## **Document Revision History:**

# 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 Updating 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.

Information		
Status	DNS Server IP	
Current Status	Primary DNS Server IP	8.8.8.8
Configuration	Secondary DNS Server IP	
Settings	Obtain DNS Server	AUTO V
Configuration		
Network DB>		
E-mail	Advanced Options [help]	
SMS	HTTP Port Number	80
Account	STUN Server	stun.l.google.com:19302 V Edit
System Time		
Data	Dynamic DNS [neip]	
EventLog	DDNS Provider	None • Update now
Event Log	Domain Name	
Help	Name	
	Password	
System Status Save / Upgrade		
ouver opgrade		
	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

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

Enter new Login
Enter new Password
Confirm Password
1. Set between 1 to 31 characters.

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).

	Connection Status					
rent Status DBD	Assign	Site Label	Target Site	IP Address	Response Time	Timeout
duration		Google	www.google.com	142.250.31.147	21 ms	< 1 %
	Both	Yahoo	www.yahoo.com	74.6.231.21	41 ms	< 1 %
	Dour	Pingler	www.pingler.com	69.64.32.114	41 ms	< 1 %
riguration		Ask.com	www.ask.com	146.75.38.114	17 ms	< 1 %
edule	1152 April 18	Router	192.168.0.1	192.168.0.1	1 ms	< 1 %
JOIK	None					
411						
luage		Item	1	On/Off Control		
nt Log		Item UIS Reset	ndow Ship	On/Off Control		
nt Log	Assigned outlet w	Item UIS Reset will auto reset when target site timeout. vill not reset when connection loss is d	n flow Snip	On/Off Control		
em Status / Upgrade he FAQ	Assigned outlet v	Item UIS Reset will auto reset when target site timeout will not reset when connection loss is d	n cow Snip	On/Off Control		
em Status / Upgrade te FAQ put	Assigned outlet v Assigned outlet v Status and Control Outlet Name	Item UIS Reset Will auto reset when target site timeout will not reset when connection loss is d Status	n flow Ship	On/Off Control		
em Status > / Upgrade te FAQ vut	Assigned outlet v Assigned outlet v Status and Control Outlet Name Outlet 1	Item UIS Reset Will auto reset when target site timeout Will not reset when connection loss is d Status On	n cow Snip	Control Control Reset	Reset All	



## 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.





## 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.

cloud	An address to manage your devices	keesee Constant com MT-0400	2
••• • Folder1	All (0)       Fav (0)       Source (0)         Search by Name or Serial Number		





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.

_ <b>MSN</b> switc	h		
Information Status Current Status Configuration Settings	Skype [held] - Offline Skype Function	Enable   Open [Auto Rebooter] line and add to your Skype contacts	Acate Revel
Configuration Schedule Network E-mail Hangouts Skype tet SMS Account System Time	My ID (max 5) Title My ID (max 5)	PRX-522b 29:1-3KmvfCjEelbWUMbngDWuPQKDigu2Z9uW0xQkf16oFI	(Add
Logs Data Event Log Help			

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.

			Today	Today
	Auto Rebooter, 4:38 PM			
	Auto Rebooter			
	Hello. Menu			
	SHOW MY DEVICES			
	GET MY ID			
199 al	Auto Rebooter, 4:39 PM			
Reput	Your ID is			
	29:1-3KmvfCjEelbWUMbngDWuPQKD	gu2Z9uW0xQkf16oFl		

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.

					4:44 PM
				SHOW MY	DEVICES
and the second	Auto Rebooter, 4:44 PM			R	
	<b>MNT-576D4</b> WAN: 24.3.148.254 / LAN: 192.168.0.33 (S/N: 3926226644)			·	
	Status				
	Outlet 1				
	Outlet 2				
	UIS				
					4:45 PM
	Auto Delegator 4.45 DM				Status
Reporte	Your command 'Get status @ 392622	644' has been received a	nd is being processed.		
	MNT-576D4: 192.168.0.33				
	UIS: Off				
	Outlet 1: On				
	Outlet 2: On				
	1. Google 40ms / 89% - ( <u>www.google</u>	.com/172.217.164.132)			
	2. Yahoo 44ms / 89% - ( <u>www.yahoo.co</u>	m/72.30.35.10)			
	3. Bing 45ms / 88% - ( <u>www.bing.com/</u>	204.79.197.200)			
	4. Ask.com 25ms / 88% - ( <u>www.ask.co</u> 5. Router 16ms / 88% - (192 168 0 1/1	n/151.101.2.114)			



# 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

#### For firmware versions MNT.3207 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 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.

### Get the Status of the MSNSwitch

#### **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}
       }
```



}

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":0},"status": {"outlet":[{"name":"Outlet 1","status":true,"reset\_only":false},("name":"Outlet 2","status":true,"reset\_only":false}],"uis":false}



### 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}



### Send Heartbeat Trigger

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"}



## 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 <u>www.MSNSwitch.com</u> 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.

➢ Configure ×			
IP Address Advanced Password			
Address Configuration			
Obtain IP address by DHCP			
C Obtain IP address by BOOTP			
C Use following Static IP address			
IP Address			
IP Address: 192 . 168 . 0 . 33			
Subnet Mask: 255 . 255 . 255 . 0			
Gateway: 192.168.0.1			
OK Cancel			



## 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.

Information Status Current Status Configuration Settings Configuration Schedule Network E-mail Hangouts	Save/Restore Settings         Settings       Save         Restore       Choose File       No file chosen         Restore       Choose File       No file chosen         Restore       Restore       Restore         Upgrade Firmware       Save       Save
Account System Time Language Logs Data Event Log Help System Status Save / Upgrade IIII	Firmware Version       MNT.NB.9319         Location:       Choose File       MNT.9731.bin       Apply         * If web upgrade or reboot fails, redo upgrade using Utility in LAN.       * Please save your settings before upgrading.



#### 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.

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