




*Remote Power Management Solution for Crashed Network Devices*

# USER MANUAL



Version: 2202 (MNT.NBU.5326 or higher)

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## Chapter 1: Introduction

### 1.1. Introduction

IP Switch is designed to automatically power-cycle *either* one or both of its outlets when either;

- Internet connectivity is lost (resets Router/Modem to restart it), or
- the network device being monitored is no longer responding in LAN.

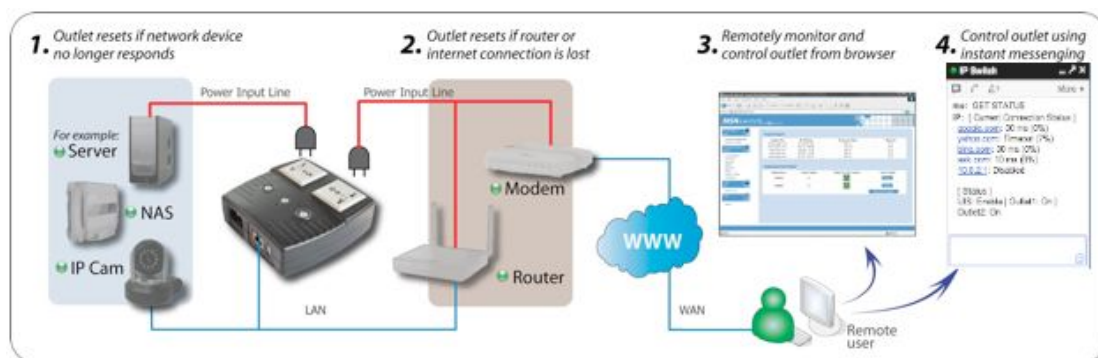
It can also be used to:

- remotely control outlets via instant messaging tool like Google Talk/ Hangouts, or a Web User Interface.
- perform scheduled power On / Off / Reset
- manually control outlets by disabling the UIS (Uninterruptable Internet System) function

IP Switch is useful where the Internet connection and accessibility to a remote site is critical. It can be setup so that when the remote Mobile Broadband / Cable / Satellite / DSL / T1, etc. connection drops or if the remote router freezes-up, it will auto reset the router to re-gain connectivity. IP Switch is also useful for:

- Saving home users the trouble of constantly having to power-cycle their router to re-gain Internet connectivity.
- Resetting unresponsive device (for instance IP camera or NAS servers) which otherwise will be inaccessible from remote.
- IT Professionals who need to automatically or remotely reset devices
- Preventing your connection from timing out or going dormant
- Having devices on an automatic power schedule

Generalized description of network connection:



Hardware Specifications:

- Built-in Web Server with 32-Bit RISC CPU.
- 10/100Mbps Fast Ethernet Network Access.
- Support IE or Java-Enabled Web Browser.
- Network Protocol: HTTP, TCP/IP, UDP, SMTP, Dynamic DNS, DNS Client, SNTP, DHCP.

5. Operating Temperature: 0°C ~ 60°C; Operating Humidity: 10% ~ 90%
6. For indoor use only.

## 1.2. Hardware Specification

Model No:	UIS-322
Socket type	2x of either; a) Universal socket (Type X) b) USA (Type B, NEMA 5-15R) AUST / China (Type I, AS / NZS3112, CCC)
Certifications	CE, FCC (tested to be compliant with FCC 47 CFR Part 2 and Part 15 Class B equipment regulations)
Electrical Rating	Input: 125~250V~50/60Hz Output: 10A (for 2 sockets) & DC5V, 500mA (for USB port)
Breaker	10A (Thermal fuse)
Available Sockets	2x fixed
Internet Control-able	2x fixed socket
Power ON / OFF switch	Individual outlet power ON / OFF LED button (Press & hold 2 seconds)
Power Indicator	Orange LED
Reset to Factory Default	Reset button located to the right of Ethernet port
Internet Indicator	Green LED
Web Server CPU	32-Bit RISC CPU
Supported browser	IE and Java
Supported Network Protocols	HTTP, TCP/IP, UDP, SMTP, Dynamic DNS, DNS Client, SNTP, BOOTP, DHCP.
Network Access	10/100 Base-T, RJ45 (Cat. 5)
Operating Environment	0°C to 60°C at 10% to 90% relative humidity. For indoor use only.
Package	White Box

### 1.3. Network Diagram

The following Network diagrams applies to all IP Switch models.

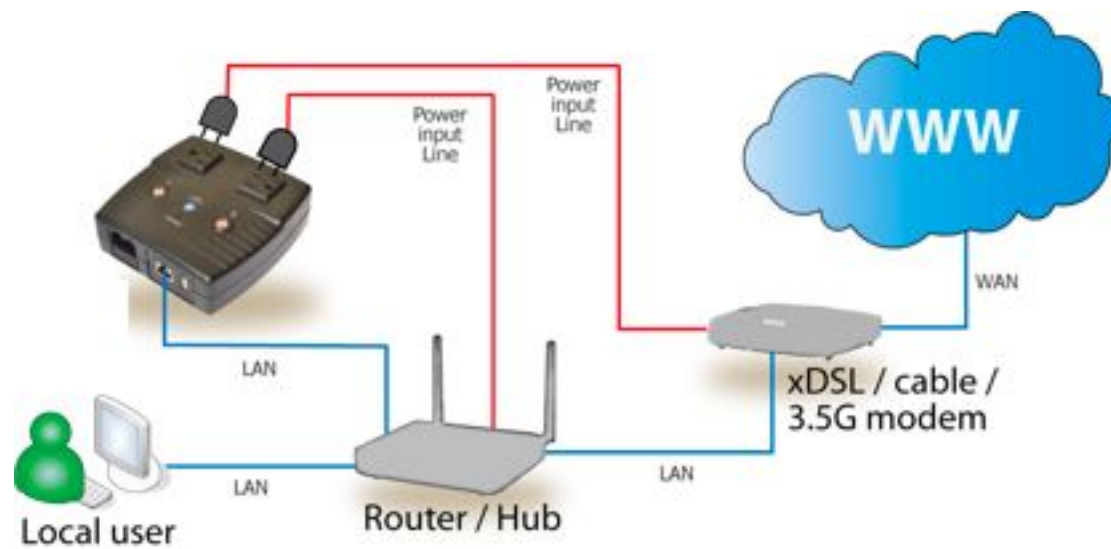


Fig.1 IP Switch setup to perform auto reset of router and modem

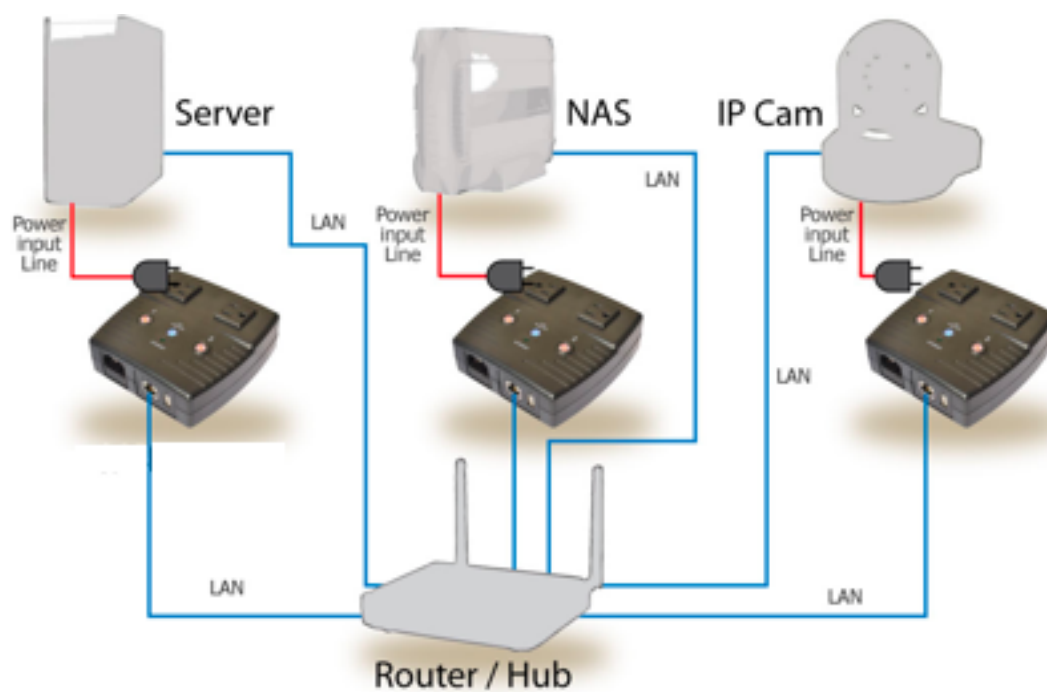


Fig.2 IP Switch setup to keep Internet device alive.

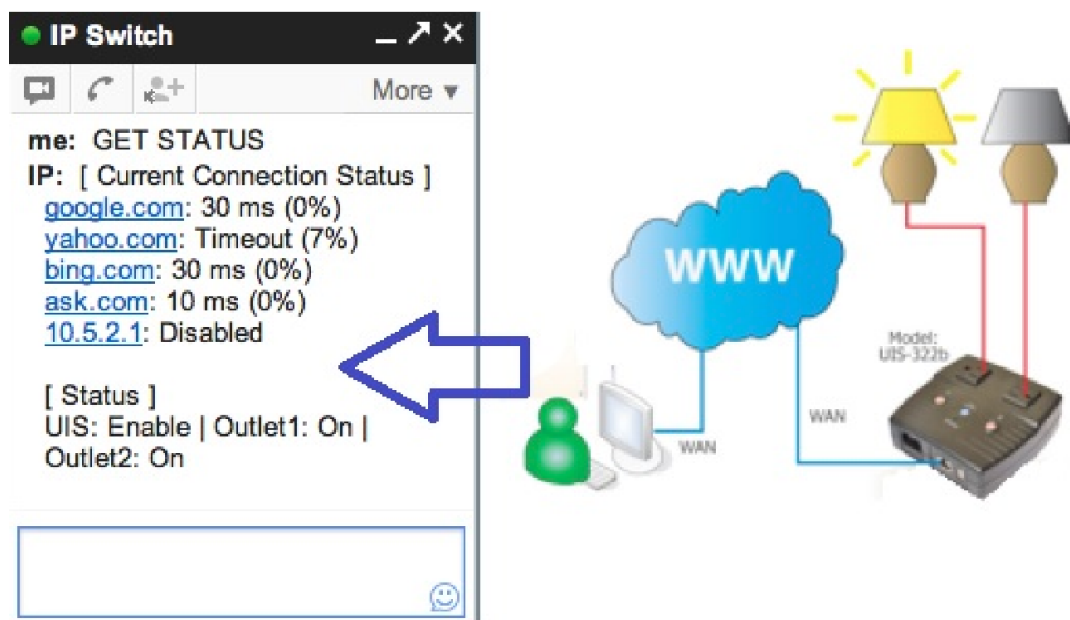


Fig.3 IP Switch setup for remote control via Google Talk/ Hangouts or thru Web User Interface.

## 1.4. LED Indicators Explained

LED Status for Internet & Outlets		
LED	LED status	Condition description
Internet	Solid Green	Internet connection available and UIS (Uninterruptable Internet System) mode has been activated.
Internet	Blinking Green	There is internet connection. UIS mode button has not been activated. With UIS enabled however, this means that at least one of the target sites is not responsive (regardless of being assigned or not)
Internet	OFF	There is no internet connection.
Outlet	Solid Orange	Outlet is powered ON
Outlet	OFF	Outlet is powered OFF

Fig.4 LED Indicator

LED Status on LAN Port	
Light color	Condition description
Green	When On: Internet speed is at 100M When flashing: Data transmitting / receiving
Yellow	On: Internet correspond speed is 10M Flash: Data transmitting / receiving

Fig.5 LAN LED Indicators



Fig.6 Description

## Chapter 2: Hardware Setup

IP Switch hardware installation procedure:

### Step 1:

Connect the power cord to device and wall outlet. The two orange LED will light up, indicating that the individual Outlet is ON.



Press the Orange LED for 2 seconds to turn the Outlet On / Off.

### Step 2:

Connect the power plug to IP Switch outlet.

#### Note:

In order for IP Switch to maintain continuous Internet connection or reset your xDSL modem / Router, the router power input must be connected here.



**Step 3:**

Connect LAN cable from your router.

**Step 4:**

Make sure the Internet LED light is *blinking* to show that the internet connection is ready.



Press and hold the “UIS On/Off” button (about 2 seconds) to activate internet protection, which will allow the switch to auto reset upon loss of connection to the Target sites (i.e web site addresses or local IP addresses). This completes the basic setup.

## Chapter 3: Software & Web Setup (For Advanced User)

### 3.1. Introduction

IP Switch is designed to work without having to install any software (see hardware setup above). However, for the advanced user, the unit can be customized and configured for remote access. This gives the user further control over the power ports.

There are two ways to remotely control the outlets (access from WAN);

- a. Using DDNS and Port forwarding, see Section 3.3 or;
- b. Using Google Talk/ Hangouts instant messaging tool, see Section 3.4.



**Note:** For models UIS-311 and UIS-315, only Outlets 1 and 2 can be remotely controlled. The third outlet is fixed for local use only.

### 3.2. How to Locate & Access IP Switch in LAN

IP Switch comes with a built-in Web User Interface (Web UI) that allows for more advanced control over the unit. There are two ways of accessing the Web UI in LAN **(i.e. when both IP Switch and PC is connected to the same router)**.

1. Utility program.
2. Use a fixed IP (when there's no DHCP server).

**\*Note**—You can also use any LAN program to locate the WebUI URL for example



Mac: LANscan <https://itunes.apple.com/us/app/lanscan/id472226235?mt=12>

Windows: Wireshark or Angry IP Scanner

### 3.2.1 Locate IP Switch in LAN using Utility program.

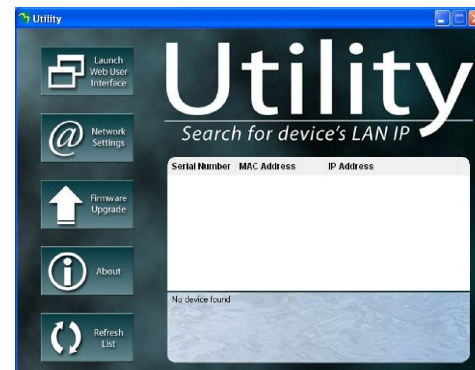
#### Step 1:

Download the Utility program from <http://3gstore.com/ipswitchupdates> and install.

Once installed Utility will locate and list the IP Switch units.

#### Note:

- Utility can only discover **IP Switch** units that are located within the same LAN or network.
- Utility will show LAN IP if units are connected to a Router. Else, user will have to manually assign an IP address.



#### Step 2:

Click “Launch Web User Interface” to run Internet Explorer (or your default browser) and access the IP address of the unit.

A password dialog box will appear.

By default; Username/ password is: **admin/ admin**. Press “OK” to proceed.



#### Step 3:

You will be logged into the IP Switch.



### 3.2.2 Locate IP Switch in LAN using fixed IP.

By default, the IP Switch should obtain an IP address automatically from your router using DHCP. If for some reason it does not, **press and hold the UIS button for 10 seconds** and it will revert to a **fixed LAN IP of 192.168.0.100**.

To access IP Switch Web interface in this mode:

#### Step 1:

Connect the LAN cable from IP Switch to your PC's Ethernet port

**Step 2:**

Assign a fixed IP within the same subnet to your PC. **Example:** IP address - 192.168.0.20; Subnet Mask - 255.255.255.0; Gateway: 192.168.0.1

**Step 3:**

On your PC, launch a web browser and enter the IP: 192.168.0.100 - **Login username/ password: admin/ admin.** You can now change this fixed IP address to one that you prefer by going to **Configuration Settings -> Network.**

### 3.3. How to Access IP Switch from WAN – using DDNS

The IP Switch Web User Interface (Web UI) can be accessed remotely from Wide Area Network (WAN). To do so, you must have a public dynamic IP address from your ISP (Internet Service Provider) - if you're unsure about this, please contact your ISP. Once you've confirmed that, proceed as follows;

- i. Setup port forwarding at your router.
  - a. Log into your router setup / configuration page.
  - b. Most routers will have these settings under the **Firewall / Port Forwarding / Virtual server** section. You will need to **open (allow)**: WAN Port 80; Type/Protocol: TCP. (**NOTE: You may need to forward port 80 to a different port if you have other devices on the network using that port**)

and,
- ii. Setup a Domain Name for your Dynamic WAN IP. Use 3rd Party DDNS providers. To do so;
  - a. The following 3<sup>rd</sup> party DDNS providers below are supported;
    - 3322.org
    - DynDNS (Dynamic)
    - DynDNS (Custom)
    - myDDNS.com
    - No-IP
  - b. Create a new user account and password.
  - c. Register a Domain Name for your current Dynamic WAN IP.
  - d. Log into your outlet via its local IP Address and navigate to → **Configuration Settings** → **Network** → **Dynamic DNS**. Select the service provider; enter the registered domain name, user account, and password. Click **Apply**.

The IP Switch is now accessible remotely using the newly registered Domain Name.

For a description of **Network** → **Dynamic DNS** functions see **section 4.2.3**.

### 3.4. How to Access IP Switch from WAN - using Google Talk/ Hangouts

IP Switch supports Google Talk/ Hangouts, an instant messaging tool. Once setup, user can get notifications and issue commands to check the status, as well as turn on/off power or power-cycle certain ports using Google Talk/ Hangouts.

Before starting, you will need **firmware version MNT.NBU.5326, 2.40.MNS.NBU.6311, or newer**, as well as **2 Gmail accounts** - 1 designated as the IP Switch & 1 as the Control account.

#### 3.4.1. How to Setup Google Talk/ Hangouts for the IP Switch

##### Step 1:

From the Utility application, select



**'Launch Web User Interface'** -

when prompted, log in with the default user name & password:

**User Name: admin**

**Password: admin**

**Step 2:**

Below the **'Configuration Settings'** button on the left, select **'Google Talk'** or **'Hangouts'** (depending on your firmware version)

- Towards the top left corner you'll notice **'Status'** - **by default this is set to 'Offline'** - You will need to change this to **'Online'**
- For the **'Login ID'** enter the Gmail Account associated for the Switch (Example: [IPswitch@gmail.com](mailto:IPswitch@gmail.com)).
- Now, enter the Password for the same Gmail account in the **'Password Field'**
- Under the **'Add Contact Accounts'** enter your control Gmail account that will be used to control the switch (Example: [control@gmail.com](mailto:control@gmail.com))
- Click **'Apply'**

**Configuration Settings**

Configuration Settings

Configuration Schedule Network E-mail Hangouts

Status [help] Online

Login ID Password

IPSwitch@gmail.com \*\*\*\*\*

Show a Personal Message for Account

IP switch

Add Contact Accounts (to access / control the above account) [help]

control@gmail.com

Information

Current Status

Configuration Settings

Configuration Schedule Network E-mail Hangouts Account System Time Language

Log Date

Event Log

Help

System Status Save / Upgrade

Hangouts - Signed Out / Offline

Status [help] Offline

Login ID Password

3pstoreteststore@gmail.com \*\*\*\*\*

Show a Personal Message for Account

IP Switch

Add Contact Accounts [help]

sales@3pstore.com

Send last message

Apply Reset

**Step 3:**

Allow a few moments for IP Switch to connect and Sign in. The connection status will be shown on the heading.

Hangouts - Signed In / Online

Status [help] Online

Login ID

IPSwitch@gmail.com

**Step 4:**

Once connected, you'll want to log into your control Gmail account. The users listed in your **Contact List** will receive a notification to add the IP Switch as a 'contact'.

Once added, you can control the IP Switch by chatting with it.

Gmail -

COMPOSE

Inbox (3)

Starred

Important

Sent Mail

Drafts

More ▾

Contact info Emails

Search people...

IP Switch

**Note 1:** If you do not receive a 'invite' notification, you may need to log-on to your IP Switch's email account to *Add friends* directly from there.

**Note 2:** Only the users listed in *Contact Account* can command IP Switch. If you are removed from this list, you will still be on the IP Switch's contact list within the Gmail account, but you will not be able to send commands to it!

**Note 3:** If you are using Google 2 Step Verification see Page 38 for configuration steps

### 3.4.2. How to Control IP Switch using Google Talk/ Hangouts

After setting up and getting connected as above. Bring up the IP Switch chat window by inviting it to chat.

\*Typing in anything other than the Keywords will invoke IP Switch to respond with "Please type *HELP* to list available commands."

Available commands are (non case sensitive):

**SET [ON/OFF/RESET] [0/1/2]** (where 0=both outlets, 1/2=Outlets)

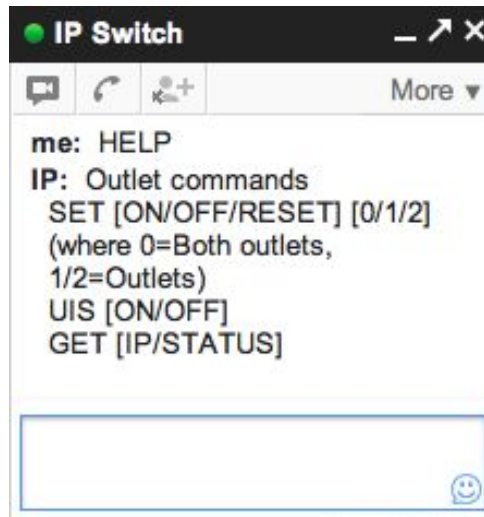
**UIS [ON/OFF]**

**GET [IP/STATUS]**

**SET ON / OFF / RESET** command will return a "Done!" once IP Switch has completed the action.

**GET IP** command will return the WAN IP and the unit's LAN IP address.

\*If port forwarding is set, but not the domain name, user can still use WAN IP to access the IP Switch Web User Interface from internet.



```
me: SET OFF 0
IP: Done!
me: SET ON 0
IP: Done!
```

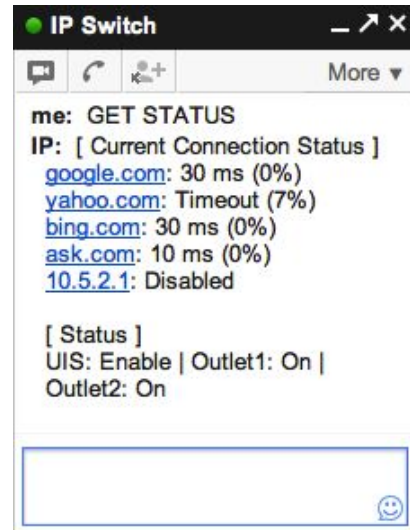
```
me: GET IP
IP: WAN IP: 12.345.678.910
LAN IP: 192.168.0.10
```

**GET STATUS** command will return the following information.

For **[Outlet Status]** the Outlet1 and Outlet2 name can be assigned. This is done via the local IP address of the IP Switch ... → Configuration → Configuration → Outlet Setup.

\*Allow time for the system to respond.

**\*NOTE:** There is also a mobile application called “Hangouts” that can be used in this same manner. It is available for Android and iOS.



### 3.5. How to Upgrade/ Re-Flash Firmware

When issues occur with your IP switch, it is best to upgrade firmware (if available) or re-flash the current version of firmware. This can be done with the Utility application OR via the local web interface page. It can be accomplished with a computer that is connected to the same network as the IP switch or, in certain cases when the IP Switch is unreachable, you may connect it directly to your computer via the Ethernet cable.



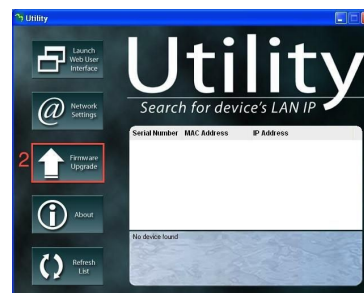
**Note:** Before performing the upgrade, it is recommended that you save your settings, though the upgrade should NOT reset your settings. See section 4.4.1 for instructions on the Save / Restore settings.



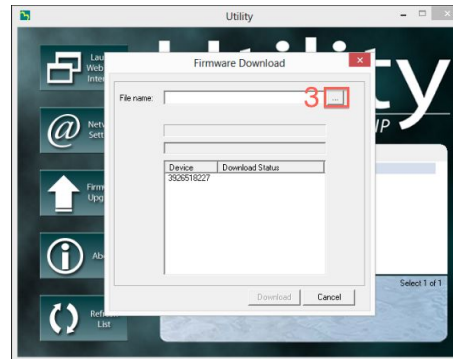
#### Upgrade Using Utility

**Step 1:** Launch the ‘Utility’ Windows Application and let it detect IP switch.

**Step 2:** Click on the ‘Firmware Upgrade’ button.

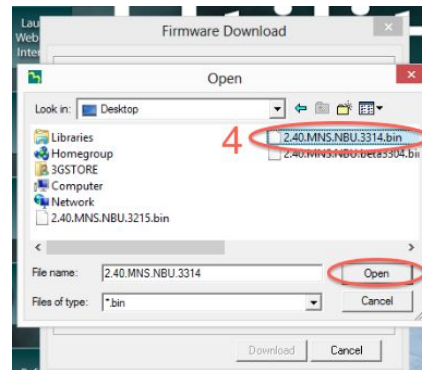


**Step 3:** In the dialog box that opens, select the '...' button to the right of 'File Name.'



**Step 4:** Locate the firmware file and open it.

**Step 5:** The file name should now appear in the appropriate field. Now, select the 'Download' button

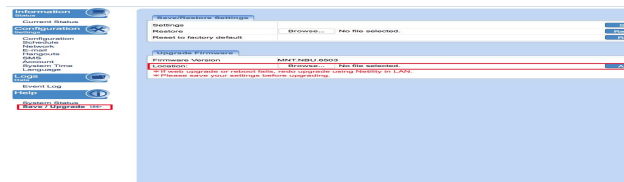


## Upgrade Using Local Web Interface

**Step 1:** Log into the web user interface of your IP Switch

**Step 2:** Navigate to the **Save/Upgrade** section (on the left)

**Step 3:** Under the '**Upgrade Firmware**' section, click on the '**Browse**'/ '**Choose File**' button beside 'Location'



**Step 4:** A window will open to view your computer files. The firmware typically saves to your downloads folder. Select the **.bin** file named and click **Open**

**Step 5:** You'll now see the file appear next to '**Location**' -> Click **Apply** to begin the upgrade



**Note:** The firmware process takes about 2-5 minutes.

## Chapter 4: IP Switch Web User Interface

### 4.1. Information

The Information tab contains the following subsections:

#### 4.1.1 Current Status

##### 4.1.1 Current Status

This section displays the current status of the outlets.

The screenshot displays the 'Current Status' page of the IP Switch Web User Interface. On the left is a navigation menu with sections for Information (Status, Current Status, Configuration), Logs (Data, Event Log), and Help (System Status, Save / Upgrade). The main content area is divided into three sections:

- Connection Status:** A table with columns: Assign, Site Label, Target Site, IP Address, Response Time, and Timeout. It lists target sites like Yahoo, Google, Bing, and Ask.com, along with their IP addresses and response times.
- Status and Control (UIS Reset):** Shows an 'On/Off Control' button (green square) and text explaining that assigned outlets will auto-reset when target site timeout occurs.
- Status and Control (Outlets):** A table with columns: Outlet Name, Status, Control, and a 'Reset' button. It shows two outlets, both 'On'. Red arrows point to the outlet status icons and the 'Reset' buttons with instructions: 'Click on the icon to turn the Outlet ON or OFF' and 'Click either 'Reset' button to send and OFF/ON command to the Outlet(s)'. A 'Reset All' button is also present.

Fig.7 Current Status page

#### i. Connection Status

*Assign:* This shows the outlets that are assigned to the target sites

*Site Label:* A name for the target site

*Target Site:* This is the default target site as listed under Configuration page

*IP Address:* The IP address of the Target Site


*Response Time:* based on UDP / TCP protocol sets in Configuration page

*Timeout:* Number of timeouts as a percentage of total tries since reset.

**Note:** This page will auto refresh every 5 seconds

#### ii. Status and Control

This section shows the current status of the UIS Function and Outlet. User can click to control the Outlets or UIS function from here.

Icon	Description
	The <i>UIS Function</i> is Off. IP Switch will not perform auto outlet reset when connection loss is detected.





The *UIS Function* is On. IP Switch will perform auto outlet reset when connection loss is detected.



The Outlet is Off



The Outlet is On



The Outlet is On, but *UIS Function* is Off. The outlet will not auto reset.

## 4.2 Configuration

The following option allows the user to configure the IP Switch.

### 4.2.1 Configuration

### 4.2.2 Schedule

### 4.2.3 Network

### 4.2.4 E-mail

### 4.2.5 Account

### 4.2.6 Google Talk/ Hangouts

### 4.2.7 System Time

### 4.2.8 Language

### 4.2.9 SMS

### 4.2.1 Configuration

Use this section to configure how IP Switch checks websites. Advance users can use this to customize IP Switch to check network devices.

**Information**  
Status

Current Status

**Configuration**  
Settings

**Configuration**

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

**Logs**  
Data

Event Log

**Help**

System Status  
Save / Upgrade

**Website / IP Address** [\[help\]](#)

Assign	Site Label	Website / IP Address	Response Time	Protocol
Both	Google	www.google.com	9 ms	<input checked="" type="radio"/> UDP <input type="radio"/> TCP
Both	Yahoo	www.yahoo.com	37 ms	<input checked="" type="radio"/> UDP <input type="radio"/> TCP
Both	Bing	www.bing.com	14 ms	<input checked="" type="radio"/> UDP <input type="radio"/> TCP
Both	Ask.com	www.ask.com	9 ms	<input checked="" type="radio"/> UDP <input type="radio"/> TCP
None	Router	10.0.0.1	1 ms	<input checked="" type="radio"/> UDP <input type="radio"/> TCP
None				<input checked="" type="radio"/> UDP <input type="radio"/> TCP
None				<input checked="" type="radio"/> UDP <input type="radio"/> TCP

**Outlet Setup** [\[help\]](#)

Outlet 1 Name	Outlet 1
Outlet 2 Name	Outlet 2
Power-on delay for Outlet1	3 second(s) 1 - 600 seconds.
Power-on delay for Outlet2	13 second(s) 1 - 600 seconds.

**Timeout Settings** [\[help\]](#)

Timeout for Each Website / IP Address	5 second(s) 1 - 60 seconds.
Number of Continuous Timeout	4 times 1 - 10 timeouts.
Set Ping Frequency	10 second(s) 10 - 3600 seconds.
Ping Delay After UIS Reset	5 minute(s) 1 - 30 minutes.
Number of UIS Resets	Limited 1 times 1 - 30 times.
Force UIS Reset after initial power-on	Enable

## i. Website / IP Address

Assign	Site Label	Website / IP Address	Response Time	Protocol
Both	Yahoo	www.yahoo.com	33 ms	<input checked="" type="radio"/> UDP <input type="radio"/> TCP
Both	Google	www.google.com	10 ms	<input checked="" type="radio"/> UDP <input type="radio"/> TCP
Both	Bing	www.bing.com	10 ms	<input checked="" type="radio"/> UDP <input type="radio"/> TCP
Both	Ask.com	www.ask.com	10 ms	<input checked="" type="radio"/> UDP <input type="radio"/> TCP
None	Router	10.0.0.1	2 ms	<input checked="" type="radio"/> UDP <input type="radio"/> TCP
None				<input checked="" type="radio"/> UDP <input type="radio"/> TCP
None				<input checked="" type="radio"/> UDP <input type="radio"/> TCP

### Assign:

Assign either one or both outlets to the website / IP address. Outlet assigned to a group of websites will auto reset, when all sites within that group timeout.

**Note:** Assignment cannot be for a combination of both and single outlets.

### Site Label:

Give the IP address a short and easy to remember nickname. Max 16 characters.

### Website / IP Address:

Enter a reliable website / IP address to ping.

### Response Time:

The time it takes for a website to respond.

### Protocol:

Select a suitable ping method for the website. Either a ping (UDP protocol) or a web request (TCP protocol).

**Note:** The target site can be a Domain Name, IP address or even LAN IP address.  
**Example:** the Router's IP or local device on the router such as an IP Camera.

## ii. Outlet Setup

Outlet Setup [help]	
Outlet 1 Name	Outlet 1
Outlet 2 Name	Outlet 2
Power-on delay for Outlet1	3 second(s) 1 - 600 seconds.
Power-on delay for Outlet2	10 second(s) 1 - 600 seconds.

### Outlet 1/ 2 Name:

Give each outlet a name to easily identify the connected device (eg. router, modem, etc).

### Power-on Delay for Outlet 1:

Apply a delay (Power Off > Delay > Power On) to outlet #1's power-cycle sequence. Default is 3 seconds.

### Power-on Delay for Outlet 2:

Apply delay to Outlet 2, which takes place after Outlet 1 is reset. In default configuration, Outlet 1 resets within 3 seconds and 13 seconds later, Outlet 2 resets. *Default 10 seconds or set 0 to disable.*

**NOTE:** Power Reset feature applies not only to the Reset here (Off > Delay > On), but also to scheduled or manual resets. An Off outlet will not power-cycle upon an auto reset.

### iii. Time-out Settings

Timeout Settings <a href="#">[help]</a>	
Timeout for Each Website / IP Address	5 second(s) 1 - 60 seconds.
Number of Continuous Timeout	4 times 1 - 10 timeouts.
Set Ping Frequency	10 second(s) 10 - 3600 seconds.
Ping Delay After UIS Reset	5 minute(s) 1 - 30 minutes.
Number of UIS Resets	Limited 1 times 1 - 30 times.
Force UIS Reset after initial power-on	Enable

#### Timeout for Each Website / IP Address

Assigned websites must respond within this time else, it timeout. Set a larger value to allow for occasional internet lags. Default is 5 seconds.



**Note:**

A larger time-out will allow for instances of delay or lag from target sites.

#### Number of Continuous Timeout

Number of continuous failed responses from assigned websites before the UIS reset is triggered. Default is 4 times.

#### Set Ping Frequency:

Administrator can set the website ping or connect interval (i.e. how frequently the Switch pings the target sites). Default is 10 seconds.

#### Ping Delay After UIS Reset:

Set how long the Switch waits after a UIS reset BEFORE it starts checking for a connection again.

#### Number of UIS Resets:

Set the number of UIS reset attempts when Internet connection is lost (e.g. If set to 5 times - if connection is not restored after the 5th attempt, Switch will wait in idle state until connection comes back).

#### Force UIS Reset after Initial power-on:

Force the outlets to reset if all target sites are unreachable after power-on (e.g. Router boot failure after a power outage/ black-out. Resets only outlets that were ON (before power off). UIS function MUST be enabled for this to work).

## 4.2.2 Schedule

This option allows the user to schedule the power on / off / reset for each of the two outlets.

### i. New Schedule Event

#### Item

Select to schedule an event for either Outlet 1 or Outlet 2, Both, or UIS Reset.

#### Action

Select action to apply to above Outlets. To turn **ON**, **OFF** or **RESET**.

#### Date (yyyy/mm/dd)

Select the event frequency for the above outlet;

- a. Once (the current date is automatically entered) or;
- b. Reoccurring on a particular day, or a daily event.

#### Time (hh:mm)

Enter the time in 24hr format.



#### Note:

A total of 20 schedules can be assigned. The scheduled events can be edited, disabled or deleted.

### 4.2.3 Network

This option allows the user to configure the IP address, port number and DDNS functions.

**Information**  
Status

**Configuration**  
Settings

Current Status

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

**Logs**  
Data

Event Log

**Help**

System Status  
Save / Upgrade

**IP Address** [help]

Hostname	Outlet
IP Address	10.0.2.253
Subnet Mask	255.255.255.0
Default Gateway	10.0.2.1
Obtain an IP address	DHCP

**DNS Server IP**

Primary DNS Server IP	208.67.222.222
Secondary DNS Server IP	208.67.220.220
Obtain DNS Server	Manually

**Advanced Options** [help]

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

**Dynamic DNS** [help]

DDNS Provider	None
Domain Name	
Name	
Password	

Apply Reset


#### i. IP Address

**IP Address** [help]

Hostname	Outlet
IP Address	10.0.2.253
Subnet Mask	255.255.255.0
Default Gateway	10.0.2.1
Obtain an IP address	DHCP


#### Hostname

By default the hostname (*LAN Domain Name*) is set to **Outlet**. This should allow the unit to be located on your router's client list when determining the LAN IP address.

 **Note:** If you have multiple IP Switch units, you should assign different Hostnames to each unit.

#### IP Address

This determines/ displays the IP Switch's IP address. By default, the LAN IP address assignment method is set to DHCP (IP address assigned by router).


 **Tip:** We suggest changing this to a Fixed/ Static IP, for ease of management. You may do this by selecting '**Manually**' rather than '**Using DHCP.**' **OR, you can leave as DHCP and simply set a DHCP reservation on your router so that the IP address does not change.**

**Subnet Mask**

Displays IP Switch Subnet Mask.


**Default Gateway**

This sets the IP Switch Gateway IP address (this is the IP address of the router the IP Switch is connected to).


 More info at **Appendix A: IP address, Subnet and Gateway**

**Obtain an IP address**

This allows the user to either manually set or use DHCP (default) function to obtain the IP address from the router. Click Apply to save settings.

 **Note:** Remote Power IP Switch will reboot when these settings are changed.

ii. **DNS Server IP**

DNS Server IP	
Primary DNS Server IP	208.67.222.222
Secondary DNS Server IP	208.67.220.220
Obtain DNS Server	Manually 

**Primary DNS Server IP**

The default IP Switch Primary DNS Server IP is 208.67.222.222. User can set their preferred DNS server / one that is assigned by ISP.



**Secondary DNS Server IP**

Use this to set IP Switch **Secondary DNS Server IP** address. IP Switch will use the **Secondary DNS Server IP** address if the **Primary DNS Server IP** address is not working. Secondary DNS Server default IP is 208.67.220.220.

**Obtain DNS Server**

This allows the user to either manually set (default) or use AUTO function to obtain the DNS servers from the router. Click Apply to save settings.

iii. **Advanced Options**

Advanced Options <a href="#">[help]</a>	
HTTP Port Number	80
STUN Server	stun.l.google.com:19302  

**HTTP Port Number**

This determines IP Switch user interface port. By default the LAN port number is **80**. If the port is changed, you will also need to change the manner in which

you access the switch via a web browser – i.e. If the port is changed to 82, then to access IP Switch user interface, the user must type: <http://x.x.x.x:82> (where x.x.x.x is the IP Switch's LAN IP address as shown in Utility).



**Note:** Remote Power IP Switch will reboot when these settings are changed.

### STUN Server

STUN is a standardized network protocol to allow the device to discover its public IP address when it is located behind a NAT. Disabling STUN will do the following:

- Prevent Google Talk “**GET IP**” command from returning the **WAN IP**
- Email notification cannot show the current **WAN IP**
- Dynamic DNS server cannot acquire **WAN IP**

*Default is `stun.l.google.com:19302`*

#### iv. Dynamic DNS

Dynamic DNS <a href="#">[help]</a>	
DDNS Provider	DynDNS(Dynamic) <input type="button" value="v"/>
Domain Name	ipswitch3G.dyndns.org
Name	3gstore
Password	*****

**Dynamic DNS (“DDNS”) is a third party service** – some providers offer free service, others require a fee. It allows the user to alias a dynamic WAN IP address to a WAN hostname. So no matter how many times your ISP changes the IP address, you will be able to locate your unit over WAN using your DDNS hostname.

#### DDNS providers include:

- 3322.org
- dhs.org
- DynDNS (Dynamic)
- DynDNS (Custom)
- myDDNS.com
- Zive.org

In general, to register a Domain Name with one of these sites;

- Go to the DDNS provider website listed above.
- Register a new user account and password with the DDNS provider.
- Choose a Domain Name to point to your current Dynamic IP
- Enter information obtained in (b) and (c) into the corresponding DDNS fields in IP Switch.

### Domain Name

This is the Domain Name you have created from the above selected DDNS provider.

## Name

This is the Login / Account name that you have created with the selected DDNS provider.

## Password

Enter the Password you have assigned to your DDNS Account.

### 4.2.4 E-mail

This function will send event notifications to email accounts listed in the 'E-mail Address Book'. Events are also logged in "Event Log" section.

The screenshot shows the E-mail Settings configuration interface. On the left is a navigation menu with sections: Information (Status), Configuration (Settings), Logs (Data), and Help. The main content area is titled 'E-mail Settings' and contains a table with the following fields:

E-mail Notification	Enable
E-mail Server	smtp.gmail.com
E-mail Port	587
Sender's E-mail Address	support@gmail.com
User Name	support@gmail.com
Password	*****

Below the table are 'Apply' and 'Reset' buttons. Underneath is the 'Test E-mail' section with a text input field and a 'Send Now' button. At the bottom is the 'E-mail Address Book' section, which is a table with columns for Name, Email, and Action. There are 'Add', 'Event', and 'Delete' buttons for each row.

#### i. E-mail Settings

This is a close-up of the E-mail Settings table from the screenshot above. It shows the following data:

E-mail Notification	Enable
E-mail Server	smtp.gmail.com
E-mail Port	587
Sender's E-mail Address	support@gmail.com
User Name	support@gmail.com
Password	*****

#### E-mail Notification

When 'Enabled' and settings are applied, user can receive notifications from the Switch. 2 additional sections will appear that also must be configured – 'Test E-mail' and 'E-mail Address Book'

#### E-mail Server

Only SMTP servers are supported. IMAP & HTTP mail servers are *not* supported. **Example: smtp.gmail.com**

#### E-mail Port

Default is port 25. User can specify a different port if necessary. *\*Port 465 and 587 is frequently used.*



### Sender's E-mail Address

Enter the full E-mail address assigned by your e-mail server.

### User Name / Password

Enter your full E-mail Address and the password associated with it.



**Note:** If you are using Google 2 Step Verification see Page 38 for additional configuration steps

### ii. Test E-mail

### Send a test E-mail

Enter a valid e-mail address to send the test email to. Example of email received:

From: \_\_\_\_\_@3gstore.com  
 Date: Wed, Feb 22, 2012 at 5:15 PM  
 Subject: This is a test mail  
 To: "\_\_\_\_\_@3gstore.com"

If you received this test mail, it means that your mail settings are correct.

### iii. E-mail Address Book

### E-mail Address Book

List the users who shall receive an e-mail notification, as they appear in the Event Log section.

## 4.2.5 Account

This webpage allows you to set an administrator password. You may also set up a 'viewer' account. A viewer account may view the settings, but cannot make changes. *A maximum of 5 user accounts can be configured.*

Permission	Login	Password	Confirm Password
Administrator	admin	****	
None			
None			
None			
None			

## i. Account Settings

Permission	Login	Password	Confirm Password
Administrator	admin	*****	
None			
None			
None			
None			

### Permission

**Administrator** account is set up by default. **Viewer** account can be configured if users want to allow others to view the settings *without* being able to make any changes.

### Login

The administrator can set a name consisting up to 32 case sensitive characters. By default the Administrator Login and Password are both admin / admin.

### Password / Confirm Password

Assign a password to the account. The administrator can set up to a 32 case sensitive password. Enter it a 2<sup>nd</sup> time to confirm password.

## 4.2.6 Hangouts (Previously called Google Talk)

Setup IP Switch to be controllable via Google Hangouts.

Status	Login ID	Password
Online	l@gmail.com	*****

Show a Personal Message for Account

IP Switch

Add Contact Accounts [help]

Send test message

Apply Reset

Fig.8 Hangouts Settings page

## i. Hangouts

Status
Online

## Status

This determines the status of the IP Switch's Gmail account. Select either **'Offline'** or **'Online'** - See the tab labeled "Hangouts" above

Status <a href="#">[help]</a>	Login ID	Password
Online <input type="button" value="v"/>	IPSwitch@gmail.com	*****
<b>Show a Personal Message for Account</b>		
<input type="text" value="IP Switch"/>		
<b>Add Contact Accounts <a href="#">[help]</a></b>		
<input type="text" value="control@gmail.com"/>		

## Login ID

Enter the Login ID that you have created from the Gmail website for the IP Switch.

## Password

Enter the corresponding password with the above account.

## Show a Personal Message for Account

Enter a message here. This message will be visible to anyone that is in the IP Switch's Hangouts contact list.

## Add Contact Accounts (to access / control the above account)

The administrator can assign up to 8 Gmail users who can receive notification, control AND receive IP Switch feedback from their Gmail account. Once assigned, the respective user must then **'add/invite'** the IP Switch to their Contact list - this chat invitation is generated once the Administrator clicks **'Send Test Message'**. Failing to accept the chat invitation will result in the user not being able to communicate with the IP Switch. Once the contact is added, just type a random character and IP Switch will respond with instructions. Refer to **section 3.4.2** above on how to use Hangouts.

## 4.2.7 System Time

Use to set the time zone, apply daylight savings start/end, and configure the system for automatic restarts.

The screenshot shows the 'System Time' settings page. On the left is a navigation menu with categories: Information (Status), Configuration (Settings), Logs (Data), and Help. Under Configuration, the 'System Time' option is selected. The main content area has three sections:

- System Time:**
  - System Time: 2016/06/16 16:22:41
  - Time Between Automatic Updates: 1 Hour
  - Time Server: time.nist.gov (with Edit and Update now buttons)
  - Time Zone: (GMT-6:00) Central Time (US & Canada) (Relative to GMT, with Apply button)
  - System Time: 2016/06/16 16:22:30 (yyyy/mm/dd hh:mm:ss) (with Apply button)
- Daylight Saving Time:**
  - Using Daylight Saving Time: Disable
  - DST begin: (MM/DD/HH)
  - DST end: (MM/DD/HH) (with Apply button)
- Auto Restart System:**
  - Auto Restart System Every: 0 minute(s) (0 = Disable) (with Apply button)
  - Manually Restart the System (with Apply button)

Fig.9 System Time Settings page

i. **System Time**

<b>System Time</b>	
System Time	2013/03/25 16:32:13
Time Between Automatic Updates	1 Hour
Time Server	time.nist.gov <input type="button" value="Edit"/> <input type="button" value="Update now"/>
Time Zone	((GMT-6:00) Central Time (US & Canada)) Relative to GMT <input type="button" value="Apply"/>
System Time	2013/03/25 16:28:31 (yyyy/mm/dd hh:mm:ss) <input type="button" value="Apply"/>

**System Time (yyyy/mm/dd hh:mm:ss)**

This section is to manually set the IP Switch **System Time**. The format is pre-determined to: yyyy/mm/dd hh:mm:ss (in 24hr format). Click **Apply** to save the changes.

**Time Between Automatic Updates**

The user can set an interval for time synchronization. Select from either; none, 1, 3, 12 hours or 1, 10 & 30 days. *Default is 1 Hour.*

**Time Server**

Choose the nearest **Time Server** to your location. The user can choose from the list of a maximum of 30 Time Servers. To add a new **Time Server**, click **Edit**, delete an existing **Time Servers** from the list, then, the **Add** dialog box will appear. Click **Back** to return to the System Time Settings webpage.

**Time Zone (Relative to GMT)**

Select the appropriate time zone. Click **Apply** to save changes.

ii. **Daylight Saving Time**

<b>Daylight Saving Time</b>	
Using Daylight Saving Time	Disable
DST begin	0 / 0 / 0 (MM/DD/HH)
DST end	0 / 0 / 0 (MM/DD/HH) <input type="button" value="Apply"/>

**Using Daylight Saving Time**

Disabled by default. Administrator can configure it to **AUTO** obtain Daylight Saving Time info OR **Manually** enter the DST begin and DST end dates.

iii. **Auto Restart System**

<b>Auto Restart System</b>	
Auto Restart System Every	0 minute(s) 0 = Disable <input type="button" value="Apply"/>
Manually Restart the System*	<input type="checkbox"/> <input type="button" value="Apply"/>

**Auto Restart System every XX minutes/ hours... (0 = Disabled)**

Set the IP Switch server to automatically restart after a pre-set interval. This will reset the server. The power supply to each individual outlet is not disrupted during the server restart process. Use this to guard against system freeze.

**Manually restart the system**

Click **Apply** to manually restart the system immediately.

## 4.2.8 Language

Use this section to set the language interface.

### i. Language

Choose the language for the Web UI and E-mails.

## 4.2.9 SMS

*\*This feature is NOT supported at this time.*

## 4.3 Log Information

### 4.3.1 Event Log

This section will log events that occurred on the IP Switch and categorize them.

Date / Time	Type	Event
2013/03/25 15:44:06	Notification	Test E-mail has been sent
2013/03/25 15:42:19	Notification	Test E-mail has been sent
2013/03/25 15:16:52	Notification	Test E-mail has been sent
2013/03/25 15:12:39	Notification	Test E-mail has been sent
2013/03/25 15:12:16	Notification	Connection to E-mail Server failed
2013/03/25 15:10:43	Notification	Connection to E-mail Server failed
2013/03/21 12:35:20	Status	Outlet2 Manual On
2013/03/21 12:35:20	Status	Outlet1 Manual On
2013/03/21 12:35:13	Status	Outlet2 Manual Off
2013/03/21 12:35:12	Status	Outlet1 Manual Off
2013/03/20 12:09:09	Notification	Server address www.yahoo.com unresolvable
2013/03/15 05:23:46	Status	Outlet2 Auto On
2013/03/15 05:23:36	Status	Outlet1 Auto On
2013/03/15 05:23:34	Status	Outlet2 Auto Off
2013/03/15 05:23:34	Status	Outlet1 Auto Off
2013/03/15 05:23:33	Status	UIS 1 Reset
2013/03/15 05:13:41	Status	Outlet2 Auto On
2013/03/15 05:13:31	Status	Outlet1 Auto On
2013/03/15 05:13:29	Status	Outlet2 Auto Off
2013/03/15 05:13:29	Status	Outlet1 Auto Off
2013/03/15 05:13:28	Status	UIS 1 Reset
2013/03/14 10:21:02	Notification	Server address www.yahoo.com unresolvable
2013/03/14 10:05:18	Status	Outlet2 Manual On
2013/03/14 10:05:08	Status	Outlet1 Manual On
2013/03/14 10:05:06	Status	Outlet2 Manual Off
2013/03/14 10:05:06	Status	Outlet1 Manual Off
2013/03/14 10:04:59	Status	UIS On
2013/03/14 10:04:54	Status	UIS Off
2013/03/14 10:04:36	Status	Outlet2 Manual On
2013/03/14 10:04:31	Status	Outlet2 Manual Off

Fig.10 Event Log

### Event Log Type

Select which type of log to show:

- All (both Status and Notifications are shown)
- Status

*Examples of Status logs:*

UIS On/Off, Outlet Manual On/Off, Outlet Auto On/Off, UIS 1/2 resets

- Notification

*Examples of Notification logs:*

Server address 'xxx' is unresolvable, Test email sent, Connection to Email server failed



**Note:** If the **System Time** is not set up correctly, the event log may display a generic '2001/01/01' in the Date/Time area. Once the System Time is synchronized, it will update all the Event Log times.

## 4.4 Help

### 4.4.1 System Status

This webpage displays System Status Information.

The screenshot shows a web interface with a left-hand navigation menu and a main content area. The navigation menu includes sections for Information (Status), Configuration (Settings), Logs (Data), and Help. The main content area is titled 'System Status' and contains two tables.

**System Information Table:**

Firmware Version	MNT.NBU.6503	System Time	2016/06/16 16:23:35
Serial Number	3926948837	UIS last reset on	--
Uptime	2 day(s) 06:31:22		

**Network Status Table:**

Hostname	Outlet	Primary DNS Server IP	208.67.222.222
IP Address	10.0.2.253	Secondary DNS Server IP	208.67.220.220
Default Gateway	10.0.2.1	Time Server	time.nist.gov
MAC Address	00:03:EA:10:7B:E5		

#### i. System Information

This section shows general hardware information such as the Hardware and Firmware Version, the serial number, Uptime, System Time and when the system last reset.

#### ii. Network Status

This section shows all information relating to the Network environment.

#### Hostname

This is the default hostname. User can rename this by browsing to *Configuration* → *Network page*.

### 4.4.2 Save / Upgrade

The administrator can use this section to check firmware information, save/restore settings, and see manufacturer's details.

The screenshot shows a web interface with a left-hand navigation menu and a main content area. The navigation menu includes sections for Information (Status), Configuration (Settings), Logs (Data), and Help. The main content area is titled 'Save / Upgrade' and contains two sections.

**Save/Restore Settings Section:**

Settings	<input type="button" value="Save"/>
Restore <input type="button" value="Browse..."/> No file selected.	<input type="button" value="Restore"/>
Reset to factory default	<input type="button" value="Reset"/>

**Upgrade Firmware Section:**

Firmware Version	MNT.NBU.6503
Location: <input type="button" value="Browse..."/> No file selected.	<input type="button" value="Apply"/>

\* If web upgrade or reboot fails, redo upgrade using Netility in LAN.  
\* Please save your settings before upgrading.

Fig.11 About page

i. **Save / Restore Settings**

**Settings**

Click **Save** to save the configuration to your PC. The text file will have a default format of **SettingsYYYYMMDD.cfg**.

**Restore**

Use this function to restore a \*.**cfg** configuration that has been saved earlier. Click **Browse...** and locate the file you saved. Click **Restore**.

**Reset to factory default**

This function will reset all settings to its default configuration.

ii. **Upgrade Firmware**

**Firmware Version**

Displays the current firmware version running on the Switch.

**Location**

This is where you would will select a firmware file to upgrade/ flash to the Switch.

## Chapter 5: Troubleshooting Tips

1. **Assign a static IP (manual) address to the Power Switch** rather than using DHCP.
  - a. Like with most LAN connected, remote devices this is a more stable/reliable way of connecting the Switch to your network
  - b. To configure this, we recommend using the Utility program:
    - i. Open **Utility** and search for the Switch (click 'refresh list' if not appearing)
    - ii. Once found, select the '**Network Settings**' button. A window will open.
    - iii. In the IP address tab select '**Use the Following Static IP address.**' Enter an IP address within the same subnet to your PC. **Example:** If your router's default LAN/gateway IP is 192.168.0.1, you can use an IP address of: 192.168.0.10 (or something outside the DHCP range) and subnet mask of 255.255.255.0. Gateway will then be 192.168.0.1
    - iv. Click OK to apply.
2. **Ensure the UIS function is enabled and Internet light is illuminated.** Without UIS enabled, the Switch will not know to monitor the connection. You also need to make sure the Switch is receiving an Internet connection, or else it won't be able to ping web addresses to monitor the connection
3. **Check your Configuration settings.** Specifically, the '**Timeout Settings**' & '**Outlet Setup.**' For users who have a separate modem and router plugged into each port: Typically, you want the modem to power up completely and connect to the Internet prior to the router powering on. We normally recommend at least 1 minute in between these. *\*SEE: 'Ping Delay After UIS reset' AND 'Power-on delay for Outlet 1/ Outlet 2.'*
  - a. Also, to avoid too many timeouts due to a slow Internet connection, you may want to adjust **Timeout Settings** to a higher interval than default. In most cases, you'll need to experiment with settings to see what works best.
4. **Check your router for a setting such as: 'Block ICMP Ping' OR 'Block WAN ICMP Ping' (see example screenshot below).** Most routers from ISPs have built in firewalls, meant to protect from malicious activity and outside intrusion, but these built in firewalls can also block devices from functioning properly when connected to the network. A common feature, "Block ICMP Ping", is typically set to 'Enable,' meaning the router will block the response back to the IP Switch. This means the switch can never properly manage your Internet connection. Depending on your router, this feature can be found in different places, and take a variety of different names. 3Gstore doesn't provide support for 3rd party routers, however you can contact the ISP or manufacturer for this setting. For most users, the IP Switch works just fine with no extra configuration required.



Product Page: DSL-2642B Fir

D-Link

DSL-2642B    SETUP    ADVANCED    MAINTENANCE    STATUS

System  
 Firmware Update  
 Access Controls  
 Diagnostics  
 System Log  
 Logout

ACCESS CONTROL -- SERVICES

A Service Control List ("SCL") enables or disables services from being used.

ACCESS CONTROL SERVICES

Services	LAN	WAN
FTP	<input type="checkbox"/> Enable	<input type="checkbox"/> Enable
HTTP	<input checked="" type="checkbox"/> Enable	<input type="checkbox"/> Enable
ICMP	<input checked="" type="checkbox"/> Enable	<input checked="" type="checkbox"/> Enable
SNMP	<input checked="" type="checkbox"/> Enable	<input type="checkbox"/> Enable
SSH	<input type="checkbox"/> Enable	<input type="checkbox"/> Enable
TELNET	<input type="checkbox"/> Enable	<input type="checkbox"/> Enable
TFTP	<input type="checkbox"/> Enable	<input type="checkbox"/> Enable

- 5. Check the Fuse:** If your IP Switch is not powering ON, it's possible the fuse may be bad. Follow the steps below to change out the fuse with the back up
- a. Remove the Power Cord and Ethernet Cable from your IP Switch before proceeding. Locate the Fuse Door just under where the power cord attaches.



- b. With a flat tipped screwdriver, carefully remove the fuse door by pulling away from the IP Switch.



- c. With the Fuse Door removed, swap the main fuse with the backup.



*(Left - Backup, Right - Main)*

- d. Return the Fuse Door to the IP Switch, making sure it sits flush with the surrounding surface. Reconnect the Power Cord and Ethernet Cable.

6. **FOR TESTING:** In order to simulate an outage [to make sure the Switch is resetting properly], unplug the Ethernet cable from the WAN port of your router. OR, if you have an all-in-one modem/router, unplug the cable that's connecting your cable or DSL line to the modem/router. If you simply remove the LAN cable from the Switch itself, it will lose LAN connectivity and without that, the Switch has nothing to monitor and therefore will do nothing.

## Appendix A: Router Configuration

The following section describes the initial configuration of the router and port forwarding for your router. If your router is not listed here, please refer to the manufacturer's website for assistance with configuring your router to work with IP Switch.

### Port Forwarding for IP Switch

IP Switch requires certain ports to be open on your router to allow other computers on the Internet to view it on your internal network. Normally, your router will have the less common ports disabled or blocked by the router's built-in firewall. In order for IP Switch applications to work properly and not be blocked, the firewall settings need to be configured. In each instance there will be a trigger port and incoming port(s), where traffic on the trigger port tells the Firewall to open the incoming ports. IP Switch requires that TCP Port 80 (default settings) be opened to the Internet. TCP Port 80 is used for accessing the IP Switch homepage.

Change to other port if your Internet service Provider blocks port 80.

Below are some examples of setups, you should refer to your Router's User manual or contact your router manufacturer for assistance in configuring the router.

### D-Link (<http://www.dlink.com>)

#### DI-604/DI – 614+/DI-624

1. Log into your router using your router IP.
2. On the main page, click on **Advanced** at the top of the page.
3. On the left side of the page, click on **Virtual Server**. Note: Make sure DMZ host is disabled. If DMZ is enabled, it will disable all Virtual Server entries.
4. Enter the following information on the page:
 

Enable/Disable:	Enabled
Name:	IP Switch - Webpage
Private IP:	Type in the <b>UIS LAN IP address</b> , for example: 192.168.0.5
Protocol Type:	TCP
Private Port:	80
Public Port:	80
Schedule:	Always
5. Click **Apply** to save the settings. IP Switch should now be configured to work with your router and be accessible from the Internet.

**DI-704/704P**

1. Log into your router using your router IP.
2. On the main page, click on **Advanced** at the top of the page.
3. On the **Virtual Server** page, enter the following information:  
For ID#1:  
Service Port: 80  
Service IP: Type in the **IP Switch IP address**, for example: 192.168.0.5  
Enabled/Disabled: Enabled
4. Save your settings. IP Switch should now be configured to work with your router and be accessible from the Internet.

**Dell (<http://www.dell.com>)****TrueMobile 2300 Wireless Broadband Router**

1. Log into your router using your router IP.
2. On the main page, click on **Advanced Settings** at the top of the page.
3. Go to the Port Forwarding section and select Custom Port Forwarding Settings.
4. Check the **Enable** box.
5. Enter the desired name or description in the **Service Name** field such as **IP Switch Web**.
6. In the **Incoming Ports** field, specify port **80** in both boxes.
7. In the **Destination IP Address** field, enter IP Switch LAN IP address.
8. In the **Destination MAC Address** field, enter IP Switch MAC address. You can find the camera's MAC address by either looking at the MAC address sticker on the bottom of the camera or by utilizing setup utility to display the MAC address.

**Microsoft (<http://www.microsoft.com/hardware/broadbandnetworking>)**

**MN-100 – Wired Base Station****MN-500 – Wireless Base Station**

1. Log into your router using your router IP.
2. Open the Bass Station Management Tool, and then click **Security**.
3. On the Security menu, click **Port Forwarding**, and then click **Set up persistent port forwarding**.
4. In the Enable checkbox, check in the checkbox.
5. In the Description box, type a description of the server field such as: **IP Switch Web**.
6. In the Inbound port boxes, type in: **80 – 80**. (i.e. from Port 80 to Port 80)
7. In the Type box, select the protocol as **TCP**.
8. In the Private IP address box, type in the **IP Address** of IP Switch network. For example, type in: 192.168.0.5.
9. In the Private port boxes, these values are automatically filled in from Step 6 and should already show **80 – 80**.
11. Click **Apply** to save the changes you have made. IP Switch should now be configured to work with your router and be accessible from the internet.

***Appendix B: IP Address, Subnet and Gateway***

This section discusses Gateways, IP Addresses and Subnet masking

**Gateways**

Gateway, also referred to as a router, is any computer with two or more network adapters connecting to different physical networks. Gateways allow for transmission of IP packets among networks on an Internet.

**IP Addresses**

Every device on an Internet must be assigned a unique IP (Internet Protocol) address. An IP address is a 32-bit value comprised of a network ID and a host ID. The network ID identifies the logical network to which a particular device belongs. The host ID identifies the particular device within the logical network. IP addresses

distinguish devices on an Internet from one another so that IP packets are properly transmitted.

IP addresses appear in dotted decimal (rather than in binary) notation. Dotted decimal notation divides the 32-bit value into four 8-bit groups, or octets, and separates each octet with a period. For example, 199.217.132.1 is an IP address in dotted decimal notation.

To accommodate networks of different sizes, the IP address has three divisions – Classes A for large, B for medium and C for small. The difference among the network classes is the number of octets reserved for the network ID and the number of octets reserved for the host ID.

Classes	Value of First Octet	Network ID	Host ID	Number of Hosts
A	1-126	First octet	Last three octets	16,387,064
B	128-191	First two octets	Last two octets	64,516
C	192-223	First three octets	Last octet	254

Any value between 0 and 255 is valid as a host ID octet except for those values the InterNIC reserves for other purposes

Value	Purpose
0, 255	Subnet masking
127	Loopback testing and interprocess communication on local devices
224-254	IGMP multicast and other special protocols.

### Subnetting and Subnet Masks

Subnetting divides a network address into sub-network addresses to accommodate more than one physical network on a logical network.

For example:

A Class B company has 100 LANs (Local Area Networks) with 100 to 200 nodes on each LAN. To classify the nodes by its LANs on one main network, this company segments the network address into 100 sub-network addresses. If the Class B network address is 150.1.x.x, the address can be segmented further from 150.1.1.x through 150.1.100.x

A subnet mask is a 32-bit value that distinguishes the network ID from the host ID for different sub-networks on the same logical network. Like IP addresses, subnet masks consist of four octets in dotted decimal notation. You can use subnet masks to route and filter the transmission of IP packets among your sub-networks. The value “255” is assigned to octets that belong to the network ID, and the value “0” is assigned to octets that belong to the host ID.

For the example above, if you want all the devices on the sub-networks to receive each other’s IP packets, set the subnet mask to 255.255.0.0. If you want the devices on a single sub-network only to receive IP packets from other devices on its own sub-network, set the subnet mask to 255.255.255.0 for the devices on the sub-network.

<b>Subnet Mask</b>	<b>Routing and Filtering</b>
0.0.0.0	IP packets are transmitted to all devices.
255.0.0.0	IP packets are only transmitted to devices that are IP that's first octet matches the sender's IP address's first octet.
255.255.0.0	IP packets are only transmitted to devices that are IP that's first two octets match the sender's IP address's first two octets.
255.255.255.0	IP packets are only transmitted to devices that are IP that's first three octets match the sender's IP address's first three octets.

## **Appendix C: Glossary**

The Glossary section defines the terms used in this User Manual

<b>Term</b>	<b>Definition</b>
Ethernet	Local Area Network technology, originally developed by Xerox Corporation, can link up to 1,024 nodes in a bus network. Ethernet provides raw data transfer in a rate of 10 megabits/sec. with actual throughputs in 2 to 3 megabits/sec. using a baseband (single-channel) communication technique. Ethernet uses carrier sense multiple access collision detection (CSMA/CD) that prevents network failures when two devices attempt to access the network at the same time. LAN hardware manufacturers use Ethernet protocol; their products may not be compatible.
Gateway	A computer that attaches to a number of networks and routes packets between them. The packets can be different protocols at the higher levels.
IP	Internet Protocol – The TCP/IP standard protocol defines the IP datagram as the unit of information passed across a network.
IP Address	Internet Protocol Address – A 32-bit address assigned to hosts participating in a TCP/IP network. The IP address consists of network and host portions. It is assigned to an interconnection of a host to a physical network.
MAC	Medium Access Control - The network layer between the physical and the data link layers. Specifically, the physical (hardware) address exists in this layer.
Router	A computer that manages traffic between different network segments or different network topologies. It directs the destination IP address. The network media can be different, but the higher-level protocols must be the same.
TCP/IP	Transmission Control Protocol/ Internet Protocol – A protocol suite used by more than 15 million users with a UNIX association and widely used to link computers of different kinds.
UIS	Uninterruptable Internet System - This is what controls the auto reset functionality of the Remote Power IP Switch. With this setting enabled, the Switch will monitor the Target Sites and automatically reset power to any outlets the user assigns when the connection is lost.

## Google Talk 2 Step Authentication

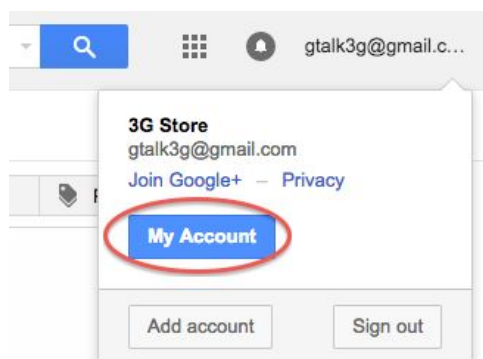
Due to compatibility, we suggest ensuring your IP Switch is running firmware version 2.40.MNS.NBU.5106, or newer. This firmware, as well as the Utility software needed to upload it, can be downloaded at <http://3gstore.com/ipswitchupdates> or by logging into your 3Gstore account at <http://3gstore.com/support>, which is where you can also find our “IP Switch Firmware Upgrade Steps” tip sheet.

### Step Procedures:

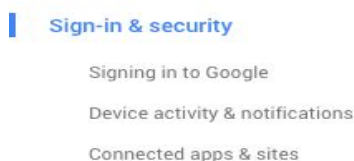
#### Creating a Gmail Account to be used by the IP Switch



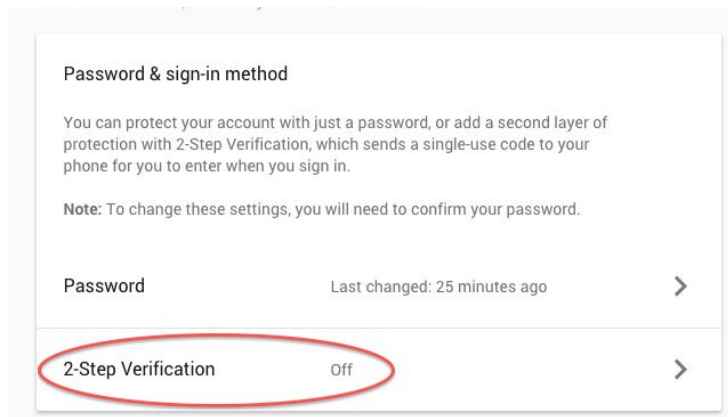
1. Go to <http://gmail.com> and select **Create Account**
2. For this example we have created [gtalk3g@gmail.com](mailto:gtalk3g@gmail.com)
3. Once you log into your new account, you'll need to confirm some settings
4. Click on the email account at the top right and a window will pop out
5. Click the “**My Account**” button



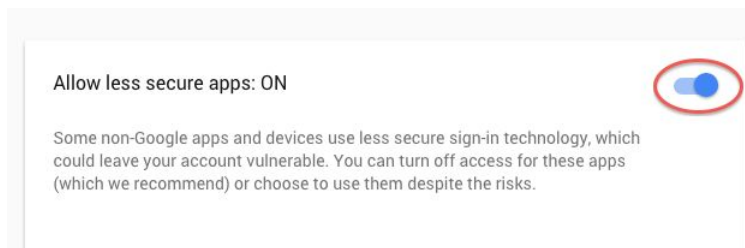
6. A new window will open showing your Account settings
7. Select “**Sign-in & Security**” on the left







8. Scroll down to the **“Signing in to Google”** section
9. Confirm that **2-step Verification** is **Off\*\***
10. Click **“Connected apps & sites”** on the left
11. Scroll down to the **“Allow less secure apps”** section and turn it **ON**

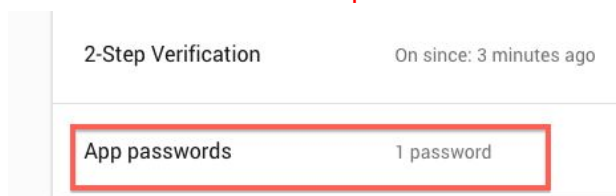


12. You may now close the **My Account** window and sign out of on the Gmail Inbox page

### Step Procedures with 2-Step Verification:

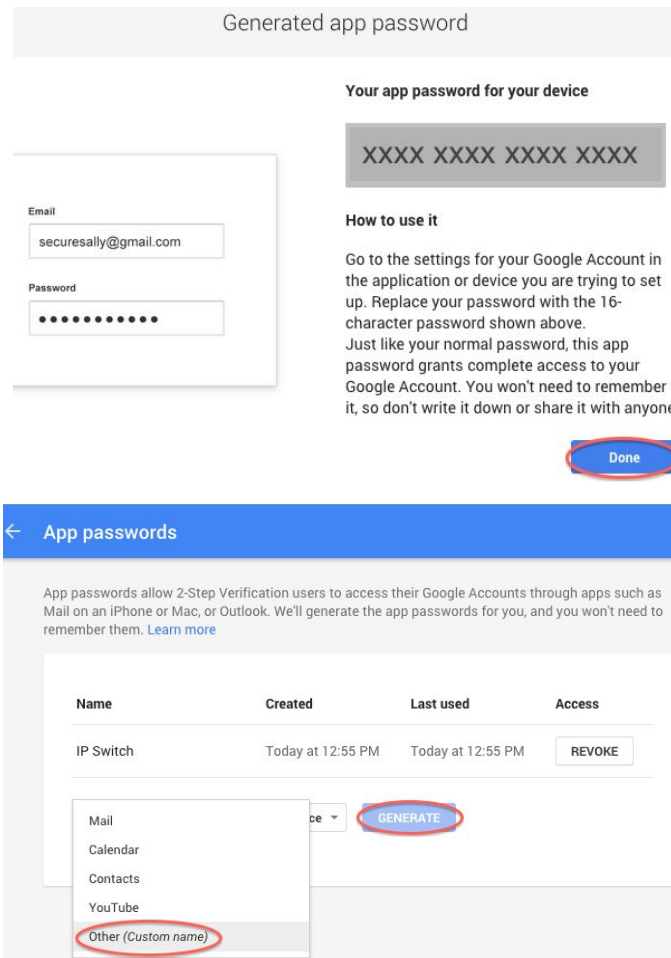
\*\*If you prefer to have 2-step Verification turned ON, skip steps 9-11 above and continue with the additional steps below:

1. Scroll down to the **“Password & Sign-In Method”** section and select **“2-step Verification”**
2. Google will walk you through the steps to add a cell phone number for verification. It will send a code you will need to enter into the Gmail browser to **verify**. Once this is done, it should show 2-step Verification is **ON**.
3. Next, go back to the **“My Account”** -> **“Password & Sign-In Method”** section of Gmail
4. You'll see a new field below 2-step Verification called **“App Passwords”**, click



on this

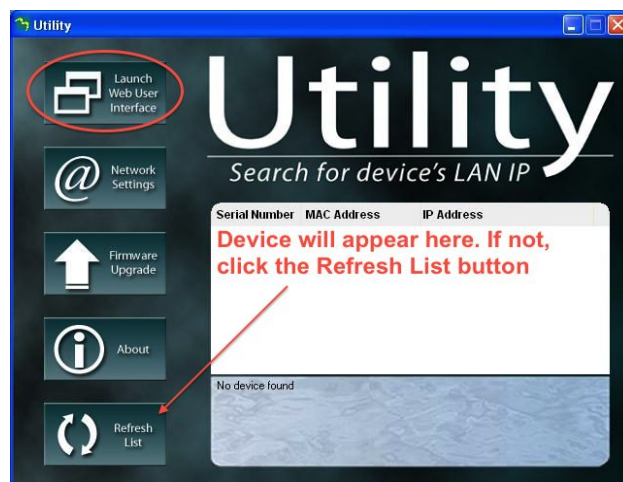
5. Click **“Select Device”** and choose **“Other (Custom Name)”**
6. Give it a unique name to identify it, here we've used **“IP Switch”**
7. Click **“Generate”**
8. Copy/ write the App password down (*pictured, below right*), as you will need it to enter into the IP Switch later, then click **“Done”**



## Applying settings to your IP Switch

**\*NOTE:** If configuring for the first time, steps must be done at the same location and on the same local network as the IP Switch.

1. Use the **Utility** software to locate your IP switch on the network, then click "**Launch Web User Interface**" on the left - OR - enter the local IP address for the IP Switch into your browser (this can be obtained via your router's client list or a LAN scan application such as LANscan for MAC, or Angry IP Scanner for Windows)
2. Log in when prompted

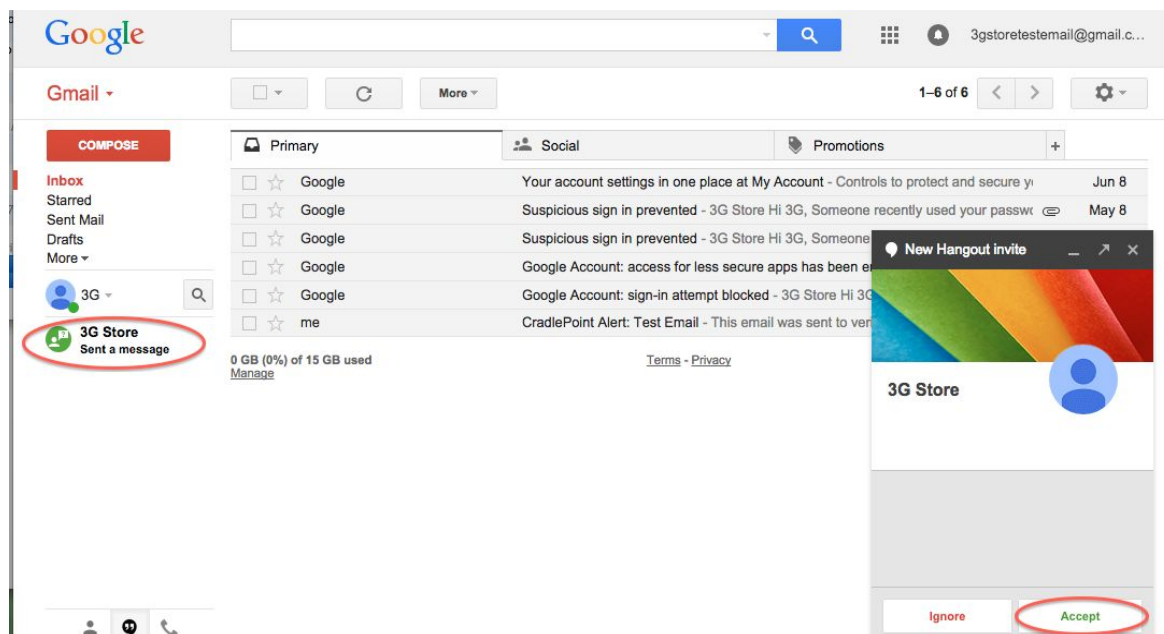


3. Under the '**Configuration Settings**' section on the left click '**Hangouts**'
4. Under '**Status**' at the top left of this page, select '**Online**'
5. For the '**Login ID**' enter the Gmail Account you just created (i.e. [gtalk3g@gmail.com](mailto:gtalk3g@gmail.com) ). This again will act as the IP Switch account.
6. Across from the **Login ID** is where you will enter the **password/ APP password** associated with this new account. *(see step 8 in the 2-step Verification procedure above)*
7. Next, provide a personal message for the Switch to use. Here, we've used **IP Switch**
8. Under the '**Add Contact Accounts**' enter your personal Gmail address (or create a new one if necessary). This will be used to control the switch. *In our example we'll be using [3gstoretestemail@gmail.com](mailto:3gstoretestemail@gmail.com)*
9. Click '**Apply**' at the bottom right corner of the web page. A pop up should come up indicating that the settings have been applied - click **OK**
10. After a moment the Switch should indicate that it it has Signed In and is Online
11. Click "**Send test message**" - this will prompt the IP Switch account to send an **Invitation to Chat/ test message** to the control account

The screenshot shows the 'Hangouts - Signed In / Online' configuration page. On the left sidebar, the 'Hangouts' menu item is circled in red. The main form area has the following elements:

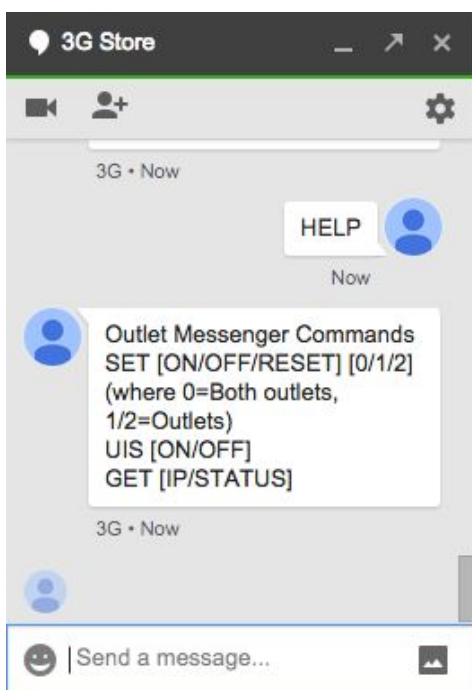
- Status:** A dropdown menu showing 'Online', circled in red with the number '4'.
- Login ID:** A text field containing 'Gtalk3G@gmail.com', with a '5' next to it.
- Password:** A text field with masked characters '.....', with a '6' next to it.
- Show a Personal Message for Account:** A text area containing 'IP Switch', with a '7' next to it.
- Add Contact Accounts:** A table with one row containing '3gstoretestemail@3gstore.com' and a '8' next to it.
- Buttons:** At the bottom, there is a 'Send test message' button circled in red with the number '11', and an 'Apply' button circled in red with the number '9'.

12. Log into the **control** Gmail account through a web browser
13. Once logged in, take a look at the bottom left corner - this is where your chat history, including your chat contacts, is located.
14. Select the IP Switch Account name and you should get a pop up window in the bottom right corner of the browser.
15. Click "**Accept**" to accept the chat invitation. Once accepted, you'll be able to start sending commands\* to your Switch.



### **\*The Commands you will be able to send via Chat are:**

*Note: 0/1/2 = Variables are for specified power outlets 1, 2, or 0 for both ports*



**SET ON 0/1/2** - This turns On the Power to the specified port(s)

**SET OFF 0/1/2** - This turns off the power to the specified port(s)

**SET RESET 0/1/2** – This resets/power-cycles the specific port(s)

**GET IP** – Retrieves current public (WAN) IP address and local (LAN) IP Addresses

**GET STATUS** – Retrieves current status information. Includes current ping times to all target sites; indicates if port 1 or 2 are on/off

**HELP** - provides a list of available commands

### **Hangouts Troubleshooting:**

If you receive an error when trying to get your IP Switch Gmail account to sign in (i.e. errors #501 or #20512), please try the following:

1. Log into the Gmail account through a web browser and confirm there is no 2-step verification set - OR, if it is, that you have the proper **App Password** entered. If you are NOT using 2-step verification, you will also need to confirm the “**Allow Less Secure Apps**” option is turned **ON**. These are both found under the “**My Account**” section of Gmail.

2. Wait at least 5 minutes while the Switch tries to Sign In. It will go back and forth between signing in and showing the connection error - sometimes we've seen this process take longer than a minute.
3. Turn the **Status** on the Google Talk Settings to **Offline** then click **Apply**. Log into the Gmail account through a web browser and turn the "**Allow Less Secure Apps**" option **OFF**, then sign out of the account. Next, sign right back in and turn the "**Allow Less Secure Apps**" option back **ON**. Sign out of the browser. Lastly, go back to the Google Talk settings on your Switch and change the **Status** to **Online**. Click **Apply**. Wait a few minutes while the Switch tries to connect.
4. If you're still not getting the sign in or chats to work, some users have had success reloading the firmware, if current. You may download current firmware here: <http://3gstore.com/ipswitchupdates>