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# Table of Contents

## CHAPTER 1: INTRODUCTION 1

1.1. INTRODUCTION .....	1
1.2. HARDWARE SPECIFICATION .....	2
1.3. NETWORK DIAGRAM.....	3
1.4. LED INDICATORS EXPLAINED.....	4

## CHAPTER 2: HARDWARE SETUP 6

## CHAPTER 3: SOFTWARE & WEB SETUP (FOR ADVANCED USER) 7

3.1. INTRODUCTION .....	7
3.2. HOW TO LOCATE & ACCESS IP SWITCH IN LAN .....	7
3.2.1 <i>Locate IP Switch in LAN using Utility program.</i> .....	7
3.2.2 <i>Locate IP Switch in LAN using fixed IP.</i> .....	8
3.3. HOW TO ACCESS IP SWITCH FROM WAN – USING DDNS .....	9
3.4. HOW TO ACCESS IP SWITCH FROM WAN - USING GOOGLE TALK .....	9
3.4.1 <i>How to Setup Google Talk for the IP Switch</i> .....	9
3.4.2 <i>How to Control IP Switch using Google Talk</i> .....	11
3.5. HOW TO UPGRADE/ RE-FLASH FIRMWARE USING UTILITY PROGRAM .....	12

## CHAPTER 4: IP SWITCH WEB USER INTERFACE 13

4.1. INFORMATION .....	13
4.2 CONFIGURATION .....	14
4.3 LOG INFORMATION.....	26
4.4 HELP .....	27

## CHAPTER 5: TROUBLESHOOTING TIPS 28

## APPENDIX A: ROUTER CONFIGURATION 31

## APPENDIX B: IP ADDRESS, SUBNET AND GATEWAY 34

## APPENDIX C: GLOSSARY 36

## 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.

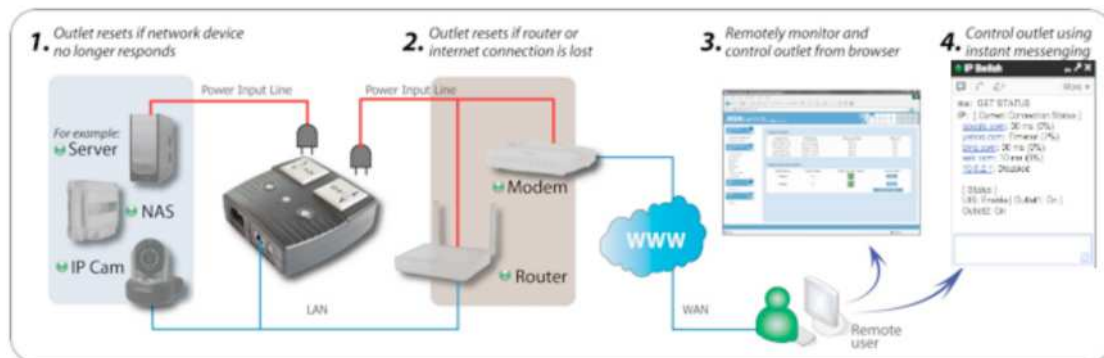
It can also be used to:

- remotely control outlets via instant messaging tool like Google Talk, or a Web User Interface.
- perform scheduled power On / Off / Reset

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 [Ex: Turn on at 9am & turn off at 5pm]

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.
- Operating Temperature: 0°C ~ 60°C; Operating Humidity: 10% ~ 90%
- 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)
Certification	FCC
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	Long press all 3 LED buttons
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.

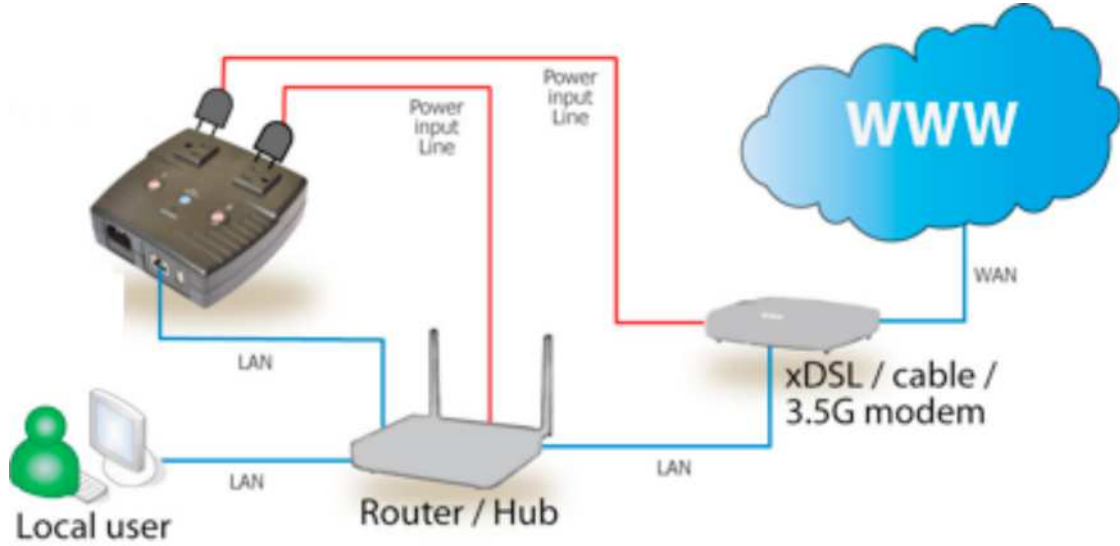


Fig.1 IP Switch setup to perform auto reset of router and modem

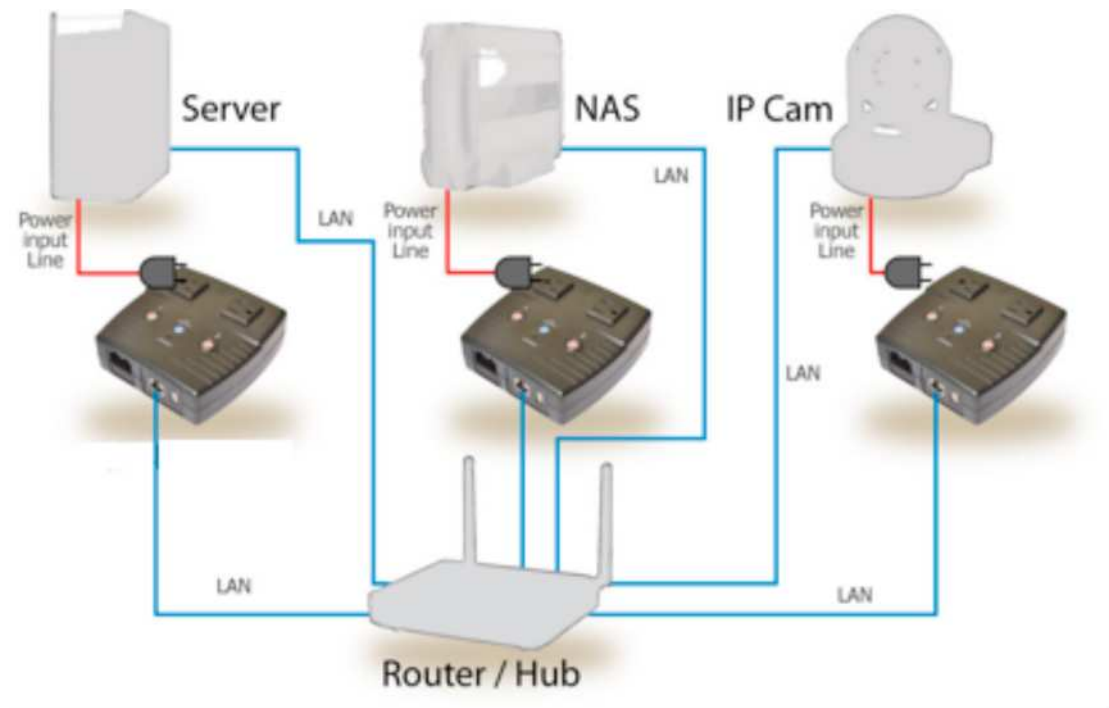


Fig.2 IP Switch setup to keep Internet device alive.

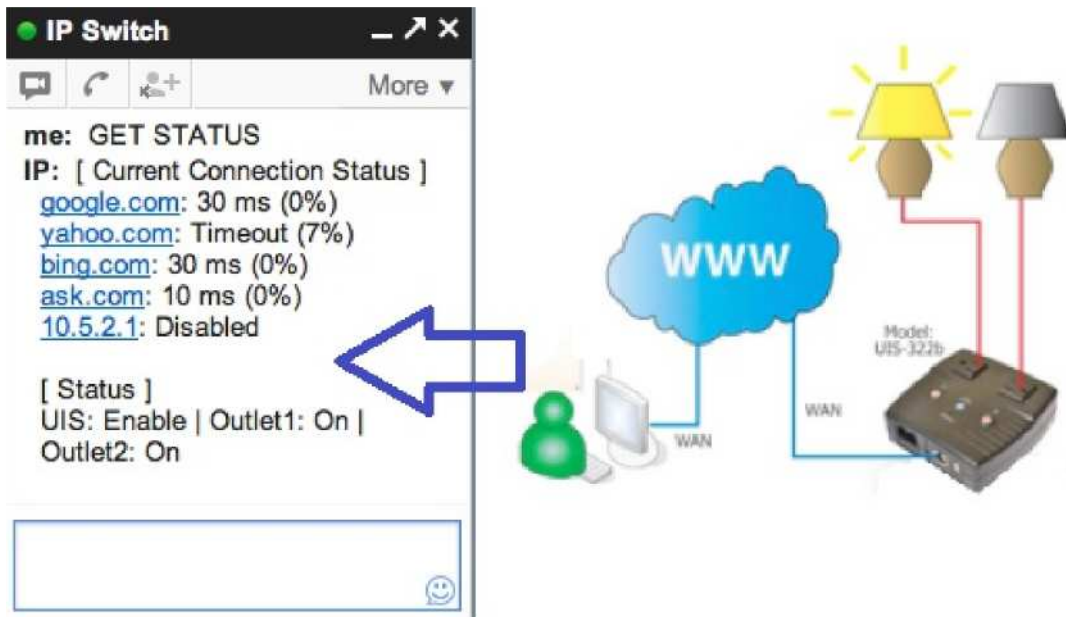


Fig.3 IP Switch setup for remote control via Google Talk or thru Web User Interface.

## 1.4. LED Indicators Explained

LED Status Indicators		
LED	LED status	Condition description
Green	ON	Internet connection available and UIS mode has been activated.
Green	Blinking	There is internet connection. UIS mode button has not been activated.
Green	OFF	There is no internet connection.

Fig.4 LED Indicator

Light indicators 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



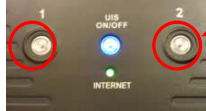
Fig.6 Description

## 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 (2 seconds) the "UIS On/Off" button to activate internet protection. Done.



## 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 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);

- Using DDNS and Port forwarding, see Section 3.3 or;
- Using Google Talk 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**).

- Utility program.
- 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 Device” to run Internet Explorer (or your default browser) and access the IP address of the unit.

A password dialog box will appear.

By default; User name: **admin** (Password field is left blank). Press “OK”.





**Step 3:**

Enter IP Switch main menu.

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

IP Switch will revert to a **fix LAN IP** of **192.168.0.100** if it does not receive a DHCP IP within **3 minutes** from powering up. To reset, power cycle the unit.

To access IP Switch Web interface in this mode:

**Step 1:**

Connect the LAN cable from IP Switch to your PC LAN port

**Step 2:**

Assign a fixed IP within the same subnet to your PC. Example: 192.168.0.20 and subnet of 255.255.255.0

**Step 3:**

On your PC launch a browser, and enter the IP: 192.168.0.100 - **Login: admin, Password: <leave blank>** You can now change this fix IP address to one that you prefer.

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

The IP Switch Web User Interface (Web UI) above can be access remotely from Wide Area Network (WAN). To do so;

- i. Setup port forwarding at your router.
  - a. Login to your router setup / configuration page.
  - b. Goto **Port Forwarding / Virtual server** section and **open (allow)**: WAN Port 80; Type/Protocol: TCP.

*and,*
- ii. Setup a Domain Name for your Dynamic WAN IP. Use 3rd Party free DDNS providers. To do so;
  - a. Browse to these 3<sup>rd</sup> party free DDNS provider website;
    - 3322.org
    - dhs.org
    - DynDNS (Dynamic)
    - DynDNS (Custom)
    - myDDNS
    - Zive.org
  - b. Create a new user account and password.
  - c. Register a Domain Name for your current Dynamic WAN IP.
  - d. Browse to outlet IP Address → Configuration → Network → Dynamic DNS. Select the service provider; enter the registered domain name, user account, and password. Click **Apply**.

IP Switch is now accessible from remote 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

IP Switch supports Google Talk, 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.

Before starting, you will need **firmware version 2.40.MNS.NBU.3314 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 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**

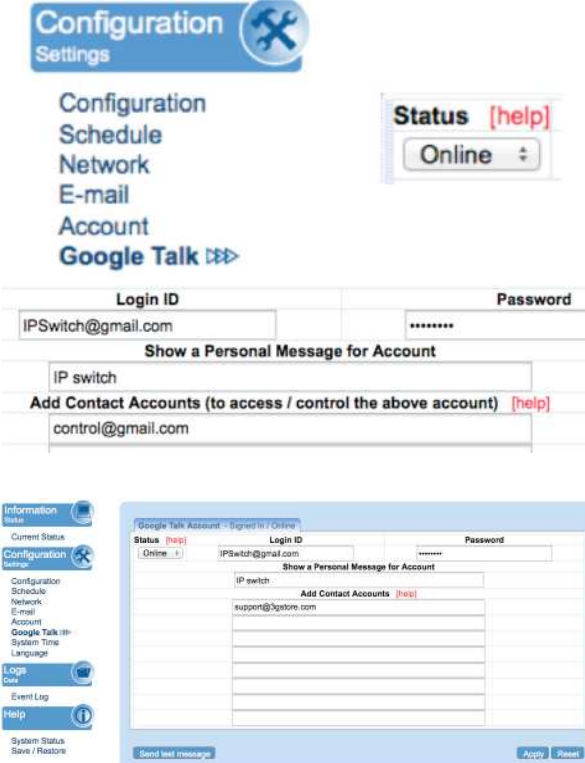
**Password: <leave blank>**



**Step 2:**

Below the 'Configuration Settings' button on the left, select 'Google Talk'

- 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**'



The screenshot shows the 'Configuration Settings' page for Google Talk. The status is 'Online'. The login ID is 'IPSwitch@gmail.com' and the password is masked. The 'Add Contact Accounts' field contains 'control@gmail.com'. The 'Apply' button is visible at the bottom right.

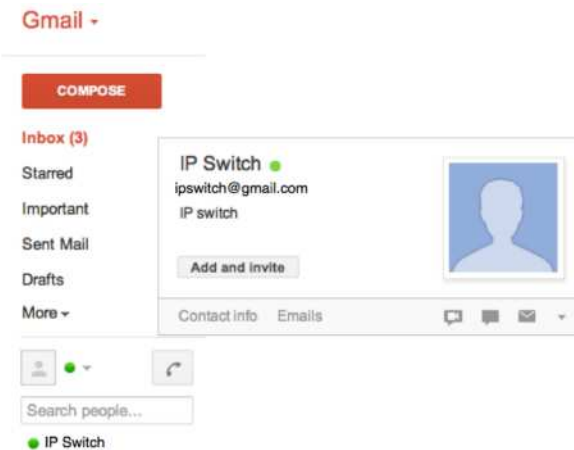
**Step 3:**

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

**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.



The screenshot shows the Gmail 'Compose' screen. The contact list on the left includes 'IP Switch' with a green dot indicating they are online. The 'Add and invite' button is visible next to the contact's name.



**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!

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

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.

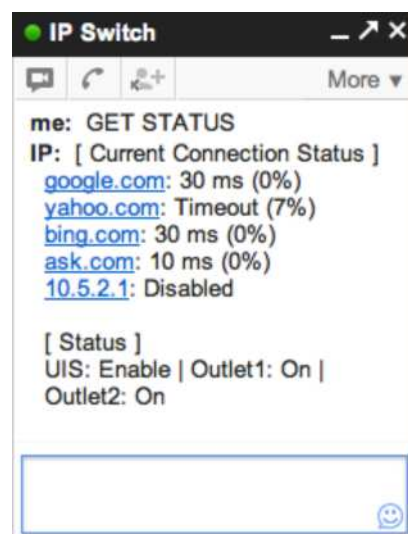
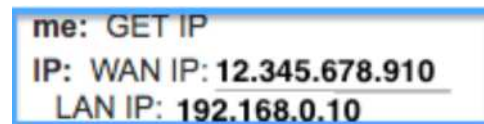
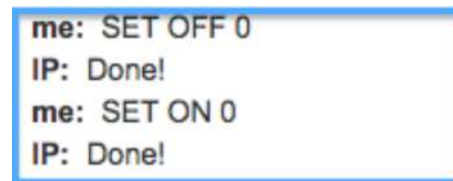
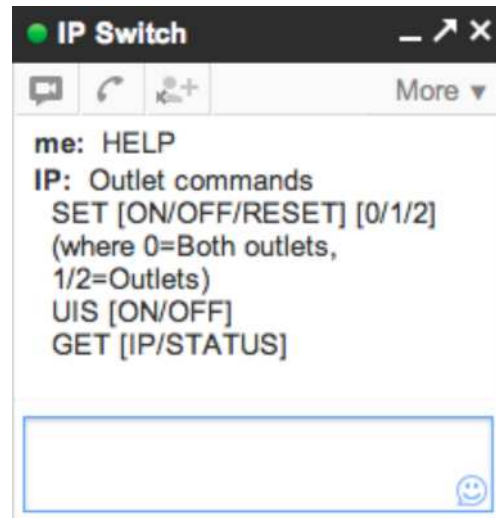
\*If port forwarding is set, but not the domain name, user can still use WAN IP to access the IP Switch Web User Interface from internet.

**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 Using Utility Program

When issues occur with your IP switch, it is best to upgrade firmware (if available) or re-flash the current version of firmware. This must be done with the Utility application. 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:** Firmware upgrades will reset the IP Switch to the factory default settings. Before performing the upgrade, you should save your settings; you can then restore them after the upgrade has taken place. See section 4.4.1 for instructions on the Save / Restore settings.

#### 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.'

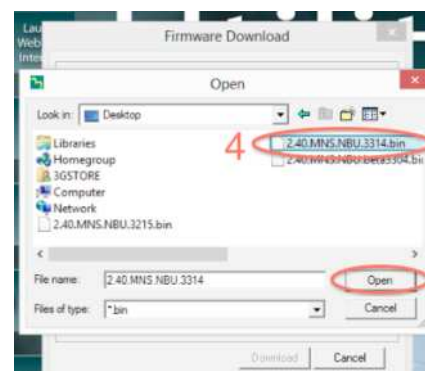


#### Step 4:

Locate the firmware file and open it.

#### Step 5:

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



**Note:** This process takes about 2 minutes, after which you will need to turn on the 'UIS' light.

## 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.

Assign	Site Label	Target Site	IP Address	Response Time	Timeout
Router	Ask	www.ask.com	23.3.96.89	10 ms	0 %
	Google	www.google.com	216.58.218.68	10 ms	0 %
Modem	Yahoo	www.yahoo.com	98.136.180.149	40 ms	0 %
	Bing	www.bing.com	204.76.197.200	10 ms	0 %
None	Router	10.5.2.1	10.5.2.1	1 ms	0 %

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 outlet reset when connection loss is detected.
	The <i>UIS Function</i> is On. IP Switch will perform outlet reset when connection loss is detected.
	The Outlet is Off
	The Outlet is On
	The Outlet is On, but <i>UIS Function</i> 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

### 4.2.7 System Time

### 4.2.8 Language

### 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.

**Website / IP Address** [help]

Assign	Site Label	Website / IP Address	Response Time	Protocol
Modem	Google	www.google.com	10 ms	<input checked="" type="radio"/> UDP <input type="radio"/> TCP
Modem	Yahoo	www.yahoo.com	40 ms	<input checked="" type="radio"/> UDP <input type="radio"/> TCP
Modem	Bing	www.bing.com	10 ms	<input checked="" type="radio"/> UDP <input type="radio"/> TCP
Router	Ask	www.ask.com	10 ms	<input checked="" type="radio"/> UDP <input type="radio"/> TCP
None	Router	10.5.2.1	1 ms	<input checked="" type="radio"/> UDP <input type="radio"/> TCP

\*Note: TCP will send a web page request and UDP will ping the Website/IP Address.

**Outlet Setup** [help]

Outlet 1 Name: Router  
 Outlet 2 Name: Modem  
 Power Reset Delay to Both Outlets: 60 second(s)  
 1 - 120 seconds. Applies to both outlets.  
 Power Reset Delay between Outlets: 60 second(s)  
 0 - 180 seconds.

**Timeout Settings** [help]

Timeout for Each Website / IP Address: 3 second(s)  
 1 - 60 seconds.  
 Number of Continuous Timeout: 2 times  
 1 - 10 times.  
 Set Ping Frequency: 10 second(s)  
 10 - 3600 seconds.  
 Delay before checking Website / IP Address after UIS Reset: 2 minute(s)  
 1 - 30 minutes.  
 Number of UIS Resets: 5 times  
 1 - 30 times.

Apply Reset

#### i. Website / IP Address

**Website / IP Address** [help]

Assign	Site Label	Website / IP Address	Response Time	Protocol
Outlet 1	Google	www.google.com	20 ms	<input checked="" type="radio"/> UDP <input type="radio"/> TCP
Outlet 1	Yahoo	www.yahoo.com	40 ms	<input checked="" type="radio"/> UDP <input type="radio"/> TCP
Outlet 1	Bing	www.bing.com	20 ms	<input checked="" type="radio"/> UDP <input type="radio"/> TCP
Outlet 1	Ask	www.ask.com	10 ms	<input checked="" type="radio"/> UDP <input type="radio"/> TCP
Outlet 2	Router	10.5.2.1	1 ms	<input checked="" type="radio"/> UDP <input type="radio"/> TCP

Enter reliable sites OR local IP addresses to target

#### 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.

ii. **Outlet Setup**
**Outlet 1/ 2 Name:**

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

**Power Reset Delay to Both Outlets:**

Apply a delay (Off > Delay > On) to each outlet's power-cycle sequence. Default 2 seconds.

**Power Reset Delay between Outlets:**

Apply delay to Outlet 2 (in addition to Power Delay to Both Outlets) when both outlets are power-cycled. For example, router to turn On 10 seconds after modem. *Default 10 seconds or set 0 to disable.*

**NOTE:** Power Reset feature only applies to Reset (Off > Delay > On) and outlets that are On. The delay does not apply to schedule or manual turn On. An Off outlet will not power-cycle

iii. **Time-out Settings**



**Set time-out 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 3 seconds.

**Note:**

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

**Number of continuous time-outs before outlet(s) reset**

Number of continuous failed response from assigned websites before the device commence UIS reset. Default is 2 times.

**Set Ping Frequency:**

Administrator can set the website ping or connect interval. Default is 10 seconds.

**Delay before checking Website/IP Address after UIS Reset:**

Delay the ping after a power-cycle to allow connected device (eg. router) time to boot-up.

**Number of UIS Resets:**

Number of times outlet power-cycles when all sites timeout. After the last count, outlet will stop power-cycling but will continue to check all sites for response. All sites within a group must recover in order for a new UIS Reset cycle to start.

**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****Outlet**

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

**Outlet 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.

### i. IP Address

#### 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**.'

#### 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 *	Automatically

#### 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 or use DHCP (default) function to obtain the IP address from the router. Click Apply to save settings.

### iii. Advanced Options

Advanced Options <a href="#">[help]</a>	
HTTP Port Number *	80
STUN Server	Disabled <a href="#">Edit</a>

This will also diable Dynamic DNS function, WAN IP info for GTalk and email notifications.

#### 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**

#### iv. Dynamic DNS

Dynamic DNS [help]	
Other DDNS Provider	DynDNS(Dynamic) ▾
Domain Name	ipswitch.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.

#### 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;

- a. Go to the DDNS provider website listed above.
- b. Register a new user account and password with the DDNS provider.
- c. Choose a Domain Name to point to your current Dynamic IP
- d. 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.

<b>Information</b> Status Current Status <b>Configuration</b> Settings Configuration Schedule Network <b>E-mail</b> ⇨ Account Google Talk System Time Language <b>Logs</b> Data Event Log <b>Help</b> System Status Save / Restore	<b>E-mail Settings</b> E-mail Notification: Enable ▾ E-mail Server: <input type="text"/> E-mail Port: <input type="text"/> Sender's E-mail Address: <input type="text"/> User Name: <input type="text"/> Password: <input type="password"/> [Apply] [Reset]
	<b>E-mail Address Book</b> <input type="text"/> [Add]

i. **E-mail Settings**


E-mail Settings	
E-mail Notification	Enable
E-mail Server	smtp.gmail.com
E-mail Port	465
Sender's E-mail Address	support@3gstore.com
User Name	support@3gstore.com
Password	*****

**E-mail Notification**

Select Enable or Disable (default). When **'Enabled'** and settings are applied, 2 additional sections will appear – **'Test E-mail'** and **'E-mail Address Book'** sections.

**E-mail Server**

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

**E-mail Port**

Default to port 25. User can specify a different port if necessary. *\*Port 465 is frequently used for Gmail accounts.*

**Sender's E-mail Address**

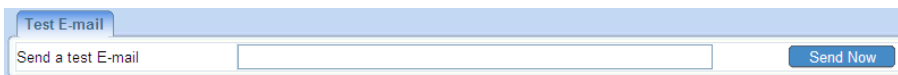
Enter the E-mail address assigned by your e-mail server.

**User Name / Password**

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



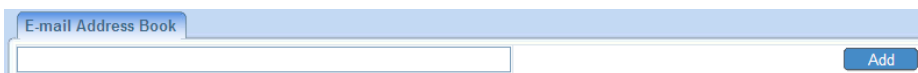
**Note:** If your email is setup with a 2-step authentication, it may not work properly even with the proper credentials. In some cases you may need to remove the additional authentication or check with the Email provider for a work around (e.g. Google's Application Specific Passwords)

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.

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

Apply Reset

#### i. Account Settings

Permission	Login	Password	Confirm Password
Administrator	admin		
None			
Viewer			

#### Permission

**Administrator** account is set up by default. **Viewer** account ('None' by default) can be selected 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 Name is set to **admin** (no password set, just leave it blank and hit enter to login)

#### 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 Google Talk

Setup IP Switch to be controllable via Google Talk.

Fig.8 Google Talk Settings page

### i. Google Account

#### Status

This determines the status of the IP Switch (Google) account. Select either 'Offline' or 'Online' - See the tab labeled "Google Account" above

#### Login ID

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

#### Password

Enter the corresponding password.

#### Show a Personal Message for Account

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

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

The administrator can assign up to 8 Google users who can receive notification, control AND receive IP Switch feedback from their Google account. Once assigned, the respective user must then 'add/invite' the IP Switch to their Contact list. Failing to do so 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 Google Talk.

## 4.2.7 System Time

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

Fig.9 System Time Settings page

### i. System Time

#### 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

#### Using Daylight Saving Time



Enable or Disable this function. Then select when the DST begins or ends for your region.

### iii. Auto Restart System

#### Auto Restart System every ... (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 is to set the language interface.

### i. Language

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

## 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.

**Information**  
Status

**Configuration**  
Settings

Configuration  
Schedule  
Network  
E-mail  
Account  
Google Talk  
System Time  
Language

**Logs**  
Data

Event Log

**Help**

**System Status** >>>  
Save / Restore

System Information			
Hardware Version	UI520	System Time	2015/01/12 16:03:42
Firmware Version	2.40.MNS.NBU.5106	UIS last reset on	--
Serial Number	3926518227		
Uptime	00:00:35		

Network Status			
Hostname	Outlet	Primary DNS Server	208.67.222.222
IP Address	10.5.2.119	Secondary DNS Server	208.67.220.220
Default Gateway	10.5.2.1	Time Server	time.nist.gov
MAC Address	00:03:EA:09:E9:D3		

#### 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 / Restore

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

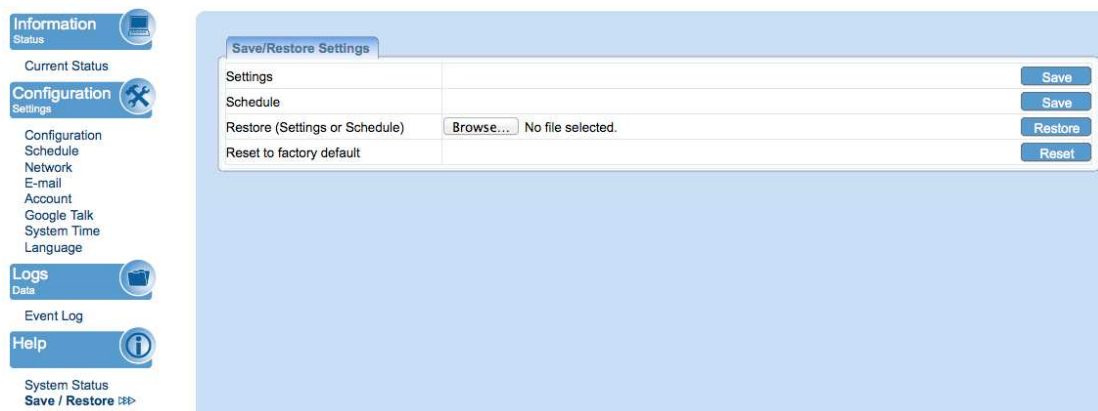


Fig.11 About page

## i. Save / Restore

This shows the Firmware Version, Hardware Version and Serial Number.

## ii. Save / Restore Settings

### Settings

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

### Schedule

Click **Save** to save your schedule information to your PC. The text file will have a default format of **ScheduleYYYYMMDD.cfg**.

### Restore (Settings or Schedule)

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 value.

## 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 '**Time-Out 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:** '*Delay before checking Website/IP Address after UIS reset*' AND '*Power-on delay between Outlet 1 and Outlet 2.*'
  - a. Also, to avoid too many time-outs due to a slow Internet connection, you may want to adjust **Time-Out 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

**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

Save/Apply

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 loose 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.

Class	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

Term	Definition
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.