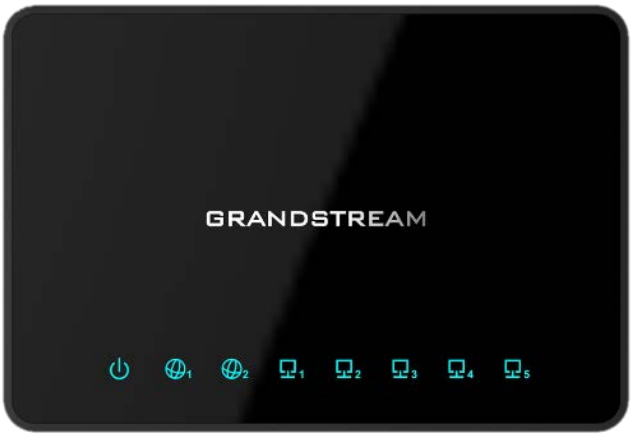
Grandstream Networks, Inc.

GWN7000

Enterprise Router & Access Point Manager

User Manual



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CAUTION

Changes or modifications to this product not expressly approved by Grandstream, or operation of this product in any way other than as detailed by this guide, could void your manufacturer warranty.

WARNING

Please do not use a different power adaptor with devices as it may cause damage to the products and void the manufacturer warranty.

FCC Caution

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CE Compliance:

Hereby, Grandstream declares that this device is in compliance with the essential requirements and other relevant provisions of Directive 2014/30/EU.

GNU GPL INFORMATION

GWN7000 firmware contains third-party software licensed under the GNU General Public License (GPL). Grandstream uses software under the specific terms of the GPL. Please see the GNU General Public License (GPL) for the exact terms and conditions of the license.

Grandstream GNU GPL related source code can be downloaded from Grandstream web site from: http://www.grandstream.com/sites/default/files/Resources/gwn7xxx_gpl.zip

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DOCUMENT PURPOSE

This document describes how to configure the GWN7000 via CLI and Web GUI to fully manipulate router's features. The intended audiences of this document are Network administrators. Please visit http://www.grandstream.com/support to download the latest "GWN7000 User Manual".

This guide covers following topics:

- Product Overview
- Installation
- Getting Started
- Router Configuration
- Setting up a Wireless Network
- Clients Configuration
- VPN
- Upgrading and Provisioning
- Experiencing the GWN7000 VPN Router

CHANGE LOG

This section documents significant changes from previous versions of the GWN7000 user manuals. Only major new features or major document updates are listed here. Minor updates for corrections or editing are not documented here.

FIRMWARE VERSION 1.0.0.8

- This is the initial version.

WELCOME

The GWN7000 is a powerful enterprise-grade router and controller for wireless access points. Ideal for enterprises, office buildings, retail stores, shopping centers, hospitals, hotels, convention centers and more, the GWN7000 allows businesses to build comprehensive VPN networks with up to 500 wireless access points that can be shared across many different physical locations. This enterprise router provides reliable internet access with WAN port load balancing and dual WAN ports to offer a backup connection. Thanks to robust network features, easy web-based configuration and real-time status monitoring tools, the GWN7000 is the ideal router and wireless access point controller for large and multi-site deployments.

Caution:

Changes or modifications to this product not expressly approved by Grandstream, or operation of this product in any way other than as detailed by this User Manual, could void your manufacturer warranty.

Warning:

Please do not use a different power adaptor with the GWN7000 as it may cause damage to the products and void the manufacturer warranty.

PRODUCT OVERVIEW

TECHNICAL SPECIFICATIONS

Table 1: GWN7000 Technical Specifications

Network Interfaces	• 2 x autosensing 10/100/1000 Base-T WAN Ports • 1 x auto-sensing 10/100/1000 Base-T configurable NET Port • 4 x auto-sensing 10/100/1000 Base-T LAN Ports
WAN Features	• DHCP • Static IP • PPPoE • Load balance & failover • Rule based routing
LAN Features	• DHCP server • DNS Cache • Multiple zones • VLAN
Auxiliary Ports	• 2 x USB 2.0 ports • 1 x Reset Pinhole
Routing Performance	Up to 1Mpps with packet size with 64-byte packet size
USB	• 3G/4G/LTE as WAN • Printer sharing • File sharing
Network Protocols	• IPv4, IPv6 (pending), 802.1Q, 802.1p, 802.1x, LLDP
VPN	• Protocols: PPTP, L2TP/IPSec, OpenVPN (Client, Server or pass through) • Performance up to 300Mbps
LED	8 green-color LEDs for device tracking and status indication
Mounting	Indoor wall mount, Desktop
QoS	VLAN, TOS
Firewall	NAT, DMZ, Port Forwarding, SPI, UPnP
DPI	Yes (pending)
Access Points	Up to 500 GWN76xx series APs
Management	Web, CLI, SNMP (pending)
Power	• 802.3at PoE+ • Optional Power Supply: 12V/2A • Max power consumption: 16W
Environmental	• Operation: 0°C to 40°C

	• Storage: -10°C to 60°C • Humidity: 10% to 90% Non-condensing
Package Content	• GWN7000 Enterprise Router • 12V/2A Power Adapter • Quick Installation Guide • GPL License
Compliance	FCC, CE, IC

INSTALLATION

Before deploying and configuring the GWN7000, the device needs to be properly powered up and connected to network. This section describes detailed information on installation, connection and warranty policy of the GWN7000.

EQUIPMENT PACKAGING

Table 2: GWN7000 Equipment Packaging

Main Case	Yes (1)
Power adaptor	Yes (1)
Quick Installation Guide	Yes (1)
GPL License	Yes (1)

CONNECT YOUR GWN7000

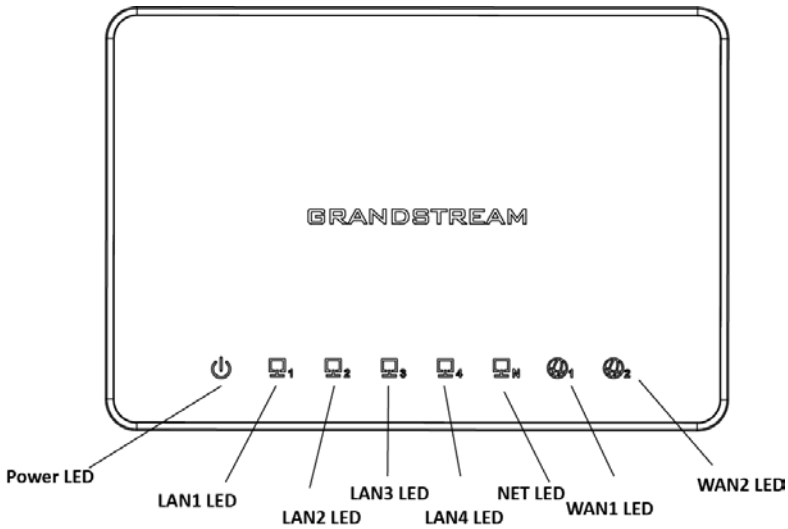


Figure 1: GWN7000 Front View

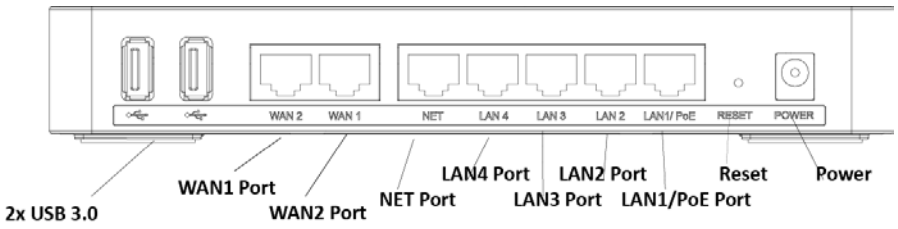


Figure 2: GWN7000 Back View

To set up the GWN7000, follow the steps below:

1. Connect one end of an RJ-45 Ethernet cable into the WAN1 or/and WAN2 port(s) of the GWN7000.
2. Connect the other end of the Ethernet cable(s) into a DSL modem or router(s).
3. Connect the 12V DC power adapter into the power jack on the back of the GWN7000. Insert the main plug of the power adapter into a surge-protected power outlet.
4. Wait for the GWN7000 to boot up and connect to internet/network. In the front of the GWN7000 the Power LED will be in solid green, and the WAN LED will flash in green.
5. Connect one of the LAN ports to your computer, the associated LED ports will flash in green.
6. (Optional) Connect LAN ports to your GWN7610 access points or/and other devices, the associated LED ports will flash in green.

SAFETY COMPLIANCES

The GWN7000 VPN Router complies with FCC/CE and various safety standards. The GWN7000 power adapter is compliant with the UL standard. Use the universal power adapter provided with the GWN7000 package only. The manufacturer's warranty does not cover damages to the device caused by unsupported power adapters.

WARRANTY

If the GWN7000 VPN Router was purchased from a reseller, please contact the company where the device was purchased for replacement, repair or refund. If the device was purchased directly from Grandstream, contact our Technical Support Team for a RMA (Return Materials Authorization) number before the product is returned. Grandstream reserves the right to remedy warranty policy without prior notification.

GETTING STARTED

The GWN7000 VPN Router provides an intuitive web GUI configuration interface for easy management in addition to CLI Interface via SSH to give users access to all the configurations and options for GWN7000 VPN Router setup.

This section provides step-by-step instructions on how to read LED indicators, use CLI Interface and Web GUI of the GWN7000.

LED INDICATORS

The front panel of the GWN7000 has LED indicators for power and interfaces activities, the table below describes the LED indicators status.

Table 3: LED Indicators

LED	Status	Indication
POWER	OFF	GWN700 is powered off or abnormal power supply.
	Solid green	GWN7000 is powered on correctly.
WANs(1,2)	Flashing green	GWN7000 is connected as a client to another network and data is transferring.
	Solid green	GWN7000 is connected as a client to another network and there is no activity.
LANs(1,2,3,4,5)	Flashing green	A device is connected to the corresponding LAN port and data is transferring.
	Solid green	A device is connected to the corresponding LAN port and there is no activity.

USE THE CLI INTERFACE

USE THE WEB GUI

ACCESS WEB GUI

The GWN7000 embedded Web server responds to HTTPS GET/POST requests. Embedded HTML pages allow users to configure the device through a Web browser such as Microsoft IE, Mozilla Firefox, Google Chrome and etc.

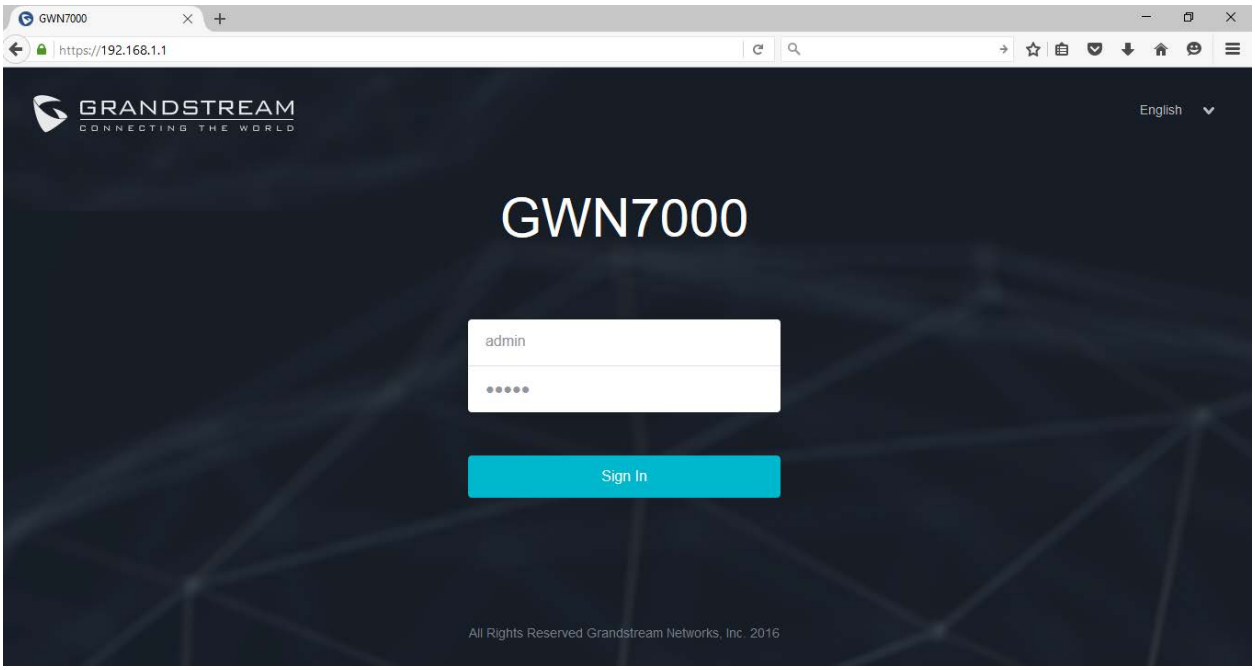


Figure 3: GWN7000 Web GUI Login Page

To access the Web GUI:

1. Connect a computer to a LAN Port of the GWN7000.
2. Ensure the device is properly powered up, and the Power, LAN port LEDs light up in green.
3. Open a Web browser on the computer and enter the web GUI URL in the following format:

   https://192.168.1.1
4. Enter the administrator's login and password to access the Web Configuration Menu. The default administrator's username and password are "admin" and "admin". It is highly recommended to change the default password after login for the first time.

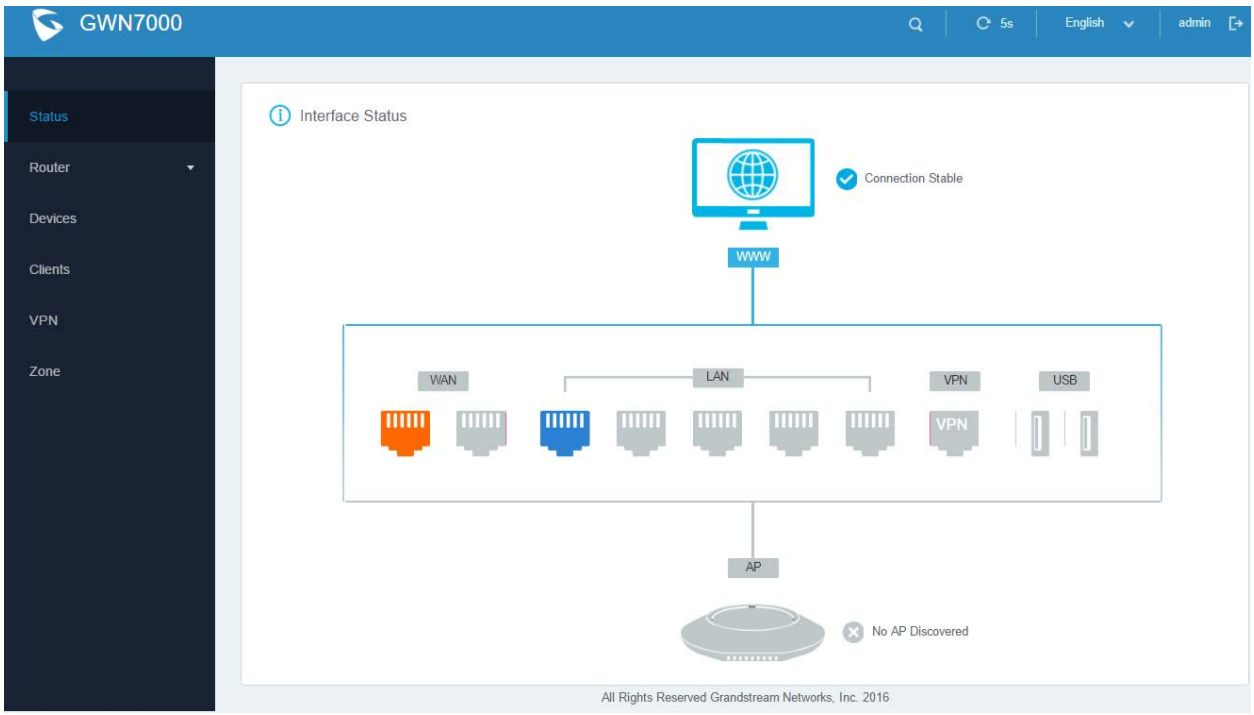


Figure 4: GWN7000 Home Menu

WEB GUI CONFIGURATIONS

There are 6 main sections in the Web GUI for users to view the connection status, configure and manage the Router.

- **Status:** Displays interface status.
- **Router:** To configure WAN Ports settings, check general status of the Router, and Maintenance for upgrade/provisioning
- **Devices:** To add Access points, discover automatically and pair by one click.
- **Clients**: Shows the list of the clients connected to LAN ports of the GWN7000 and wireless clients connected to zones via GWN7610 access points.
- **VPN:** To configure VPN tunnels.
- **Zone:** To add and manage zones for the access points via VLANs.

WEB GUI LANGUAGES

Currently the GWN7000 series web GUI supports ***English and Simplified Chinese.***

Users can select the displayed language at the upper right of the web GUI either before or after logging in.

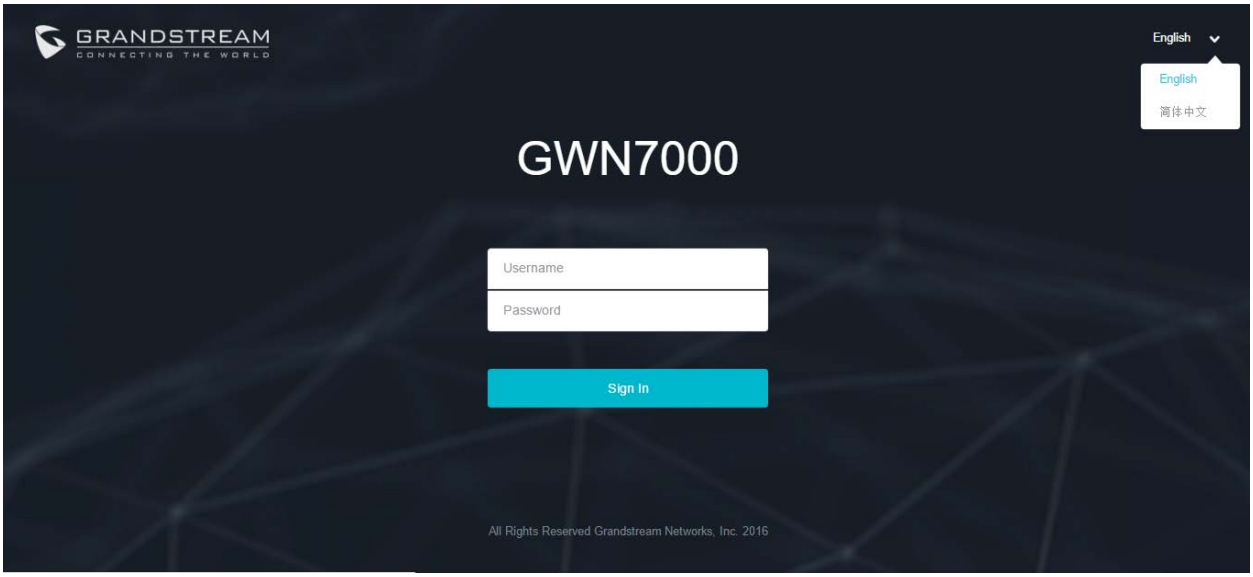


Figure 5: GWN7000 Web GUI Language

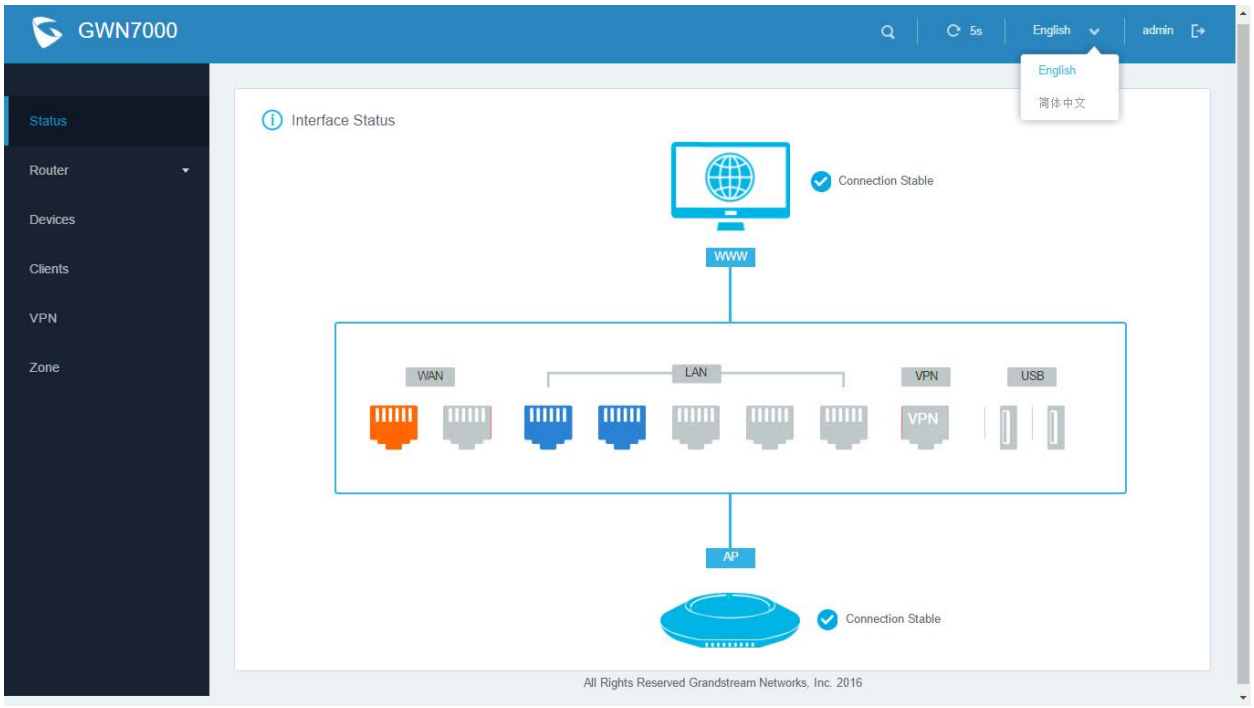


Figure 6: GWN7000 Web GUI Language

SAVE AND APPLY CHANGES

When clicking on "Save" button after configuring or changing any option on the web GUI pages. A message mentioning the number of changes will appear on the upper menu (See Figure 7).

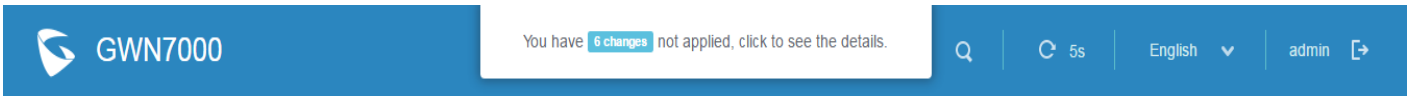


Figure 7: Save Changes

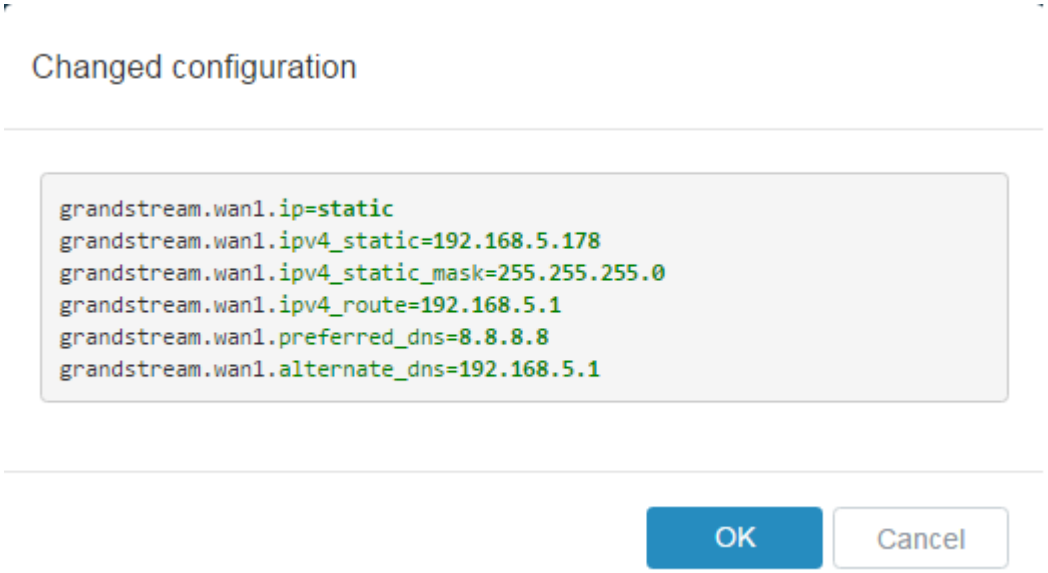


Figure 8: View Changes

Users need to click on that message to view changed configuration (See Figure 8), and click on "OK" button to apply changes.

ROUTER CONFIGURATION

This section explains configurations for network settings, user privileges, and router parameters on the GWN7000 via Web GUI.

STATUS

INTERFACE STATUS AND DASHBOARD

The Interface status shows the connection stability for WAN Ports, access points and status for LAN, USB ports and VPN tunnel.

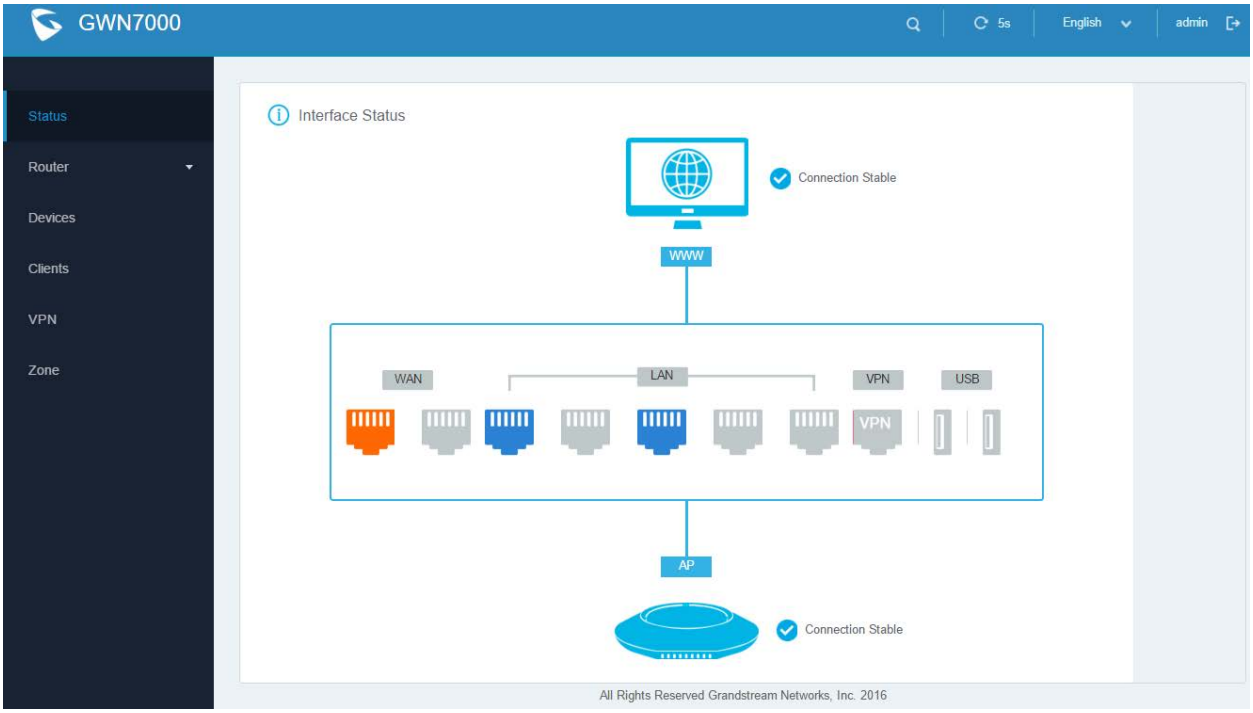


Figure 9: Status Page

ROUTER STATUS

Beside Interface status, users can also view Device status to check MAC address, Part Number, Firmware version and Uptime for the Router.

WAN status shows the uptime, current throughput, aggregate usage, and IP addresses for each WAN port. Router's Status can be accessed from **Web GUI->Router->Status**.

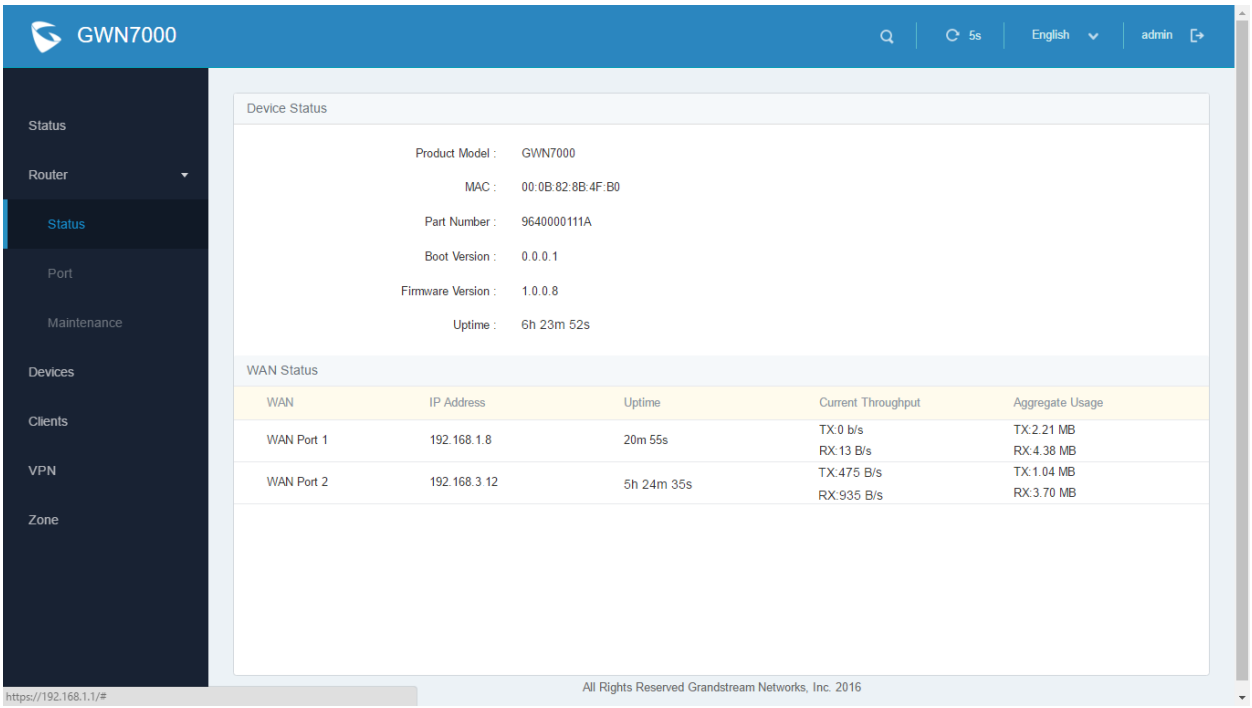


Figure 10: Router's Status

WAN PORTS

The GWN7000 has 2 WAN ports configured as DHCP clients by default to be connected with DSL modem or routers, Users can also set static IPv4/IPv6 address, and configure PPPoE for each WAN port.

Connect to GWN7000's Web GUI from a computer connected to a LAN port and go to **Router**->**Port** page to configure WAN settings.

WAN PORTS CONFIGURATION SETTINGS

Please refer to the following table for basic network configuration parameters on WAN ports for GWN7000.

Table 4: GWN7000 WEB GUI -> Router ->Port -> WAN Port(1,2)

WAN Address Type	Select "DHCP", "Static" or "PPPoE" mode on the WAN interfaces of GWN7000. The default setting is "DHCP". • **DHCP** When selected on a WAN port, it will act as a DHCP client and acquire an IP automatically from the DHCP server. • **Static** When selected the user will have to set a static IPv4 address, Subnet Mask

	and IPv4 Gateway, or set IPv6 address, Prefix and Prefix Length if Enable IPv6 is checked. • **PPPoE** When selected the user will have to set the PPPoE account and password, PPPoE Keep alive interval and Inter-Key Timeout in seconds.
Preferred DNS	Enter the preferred DNS server address. If Preferred DNS is set, GWN7000 will use it in priority.
Alternate DNS	Enter the Alternate DNS server address. If Preferred DNS is set, GWN7000 will use it in when the Preferred DNS fails.

GLOBAL SETTINGS

This sections describes global settings tab for WAN Ports, that will be used for enabling/disabling Failover and Load Balancing on WAN ports.
The following table shows the configuration parameters for WAN Ports global settings

Table 5: GWN7000 WEB GUI->Router->Port->Global Settings

Failover Enabled	If checked failover will be enabled for both WAN ports, forbid login after x attempts ? Default is disabled.
Load Balance Enabled	If checked Load Balance will be used on both ports to optimize the ressource utilization. Please note that for this feature to work, WAN ports should be connected to different networks. Default is disabled.

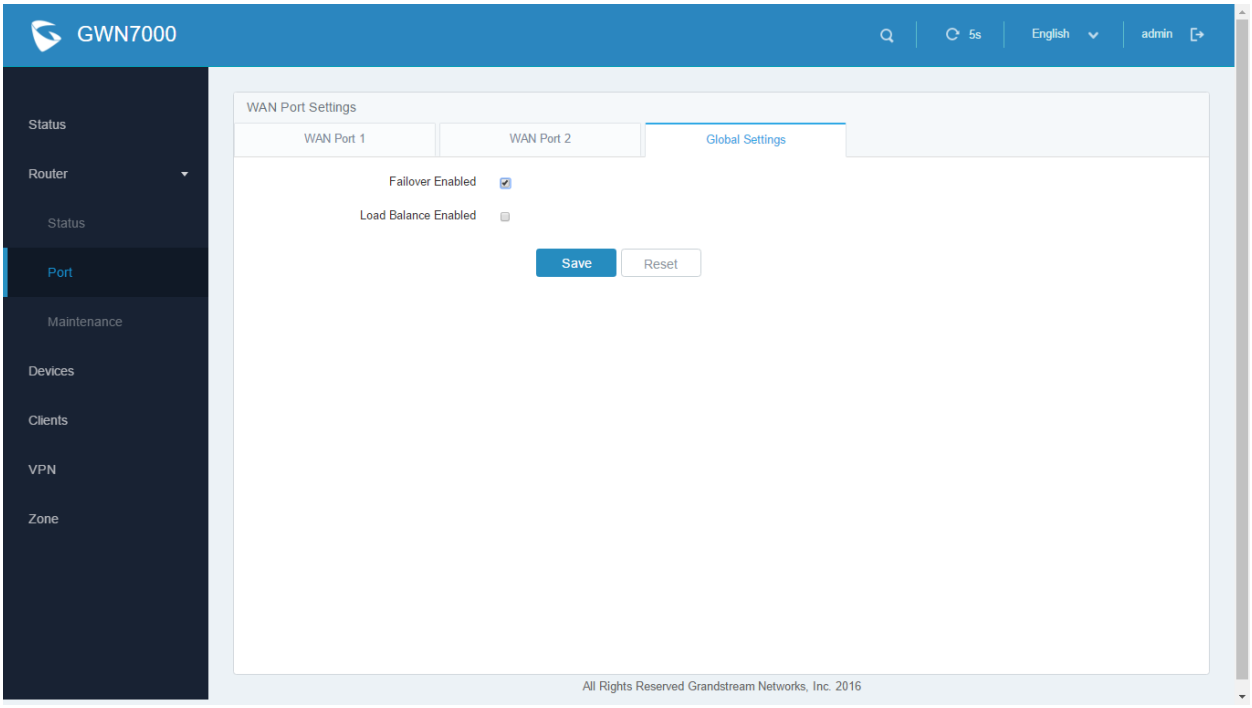


Figure 11: WAN Ports Global Settings

CONNECTING DEVICES TO LAN PORTS

GWN7000 VPN Router with its DHCP server enabled on LAN ports level, will assign automatically an IP address to the devices connected to its LAN ports like a computer or GWN7610 access points.
Please make sure that the device is configured as DHCP client so it can take an address, the GWN7000 will assign 192.168.1.x/24 address to its clients connected to its LAN ports.

DHCP settings on LAN

(Lease time, set static IP for devices, addresses range, IPv4/IPv6 type to assign like Zone and WAN ?)

USER MANAGEMENT

The GWN7000 has two users level (Administrator and user) privileges ? user's username

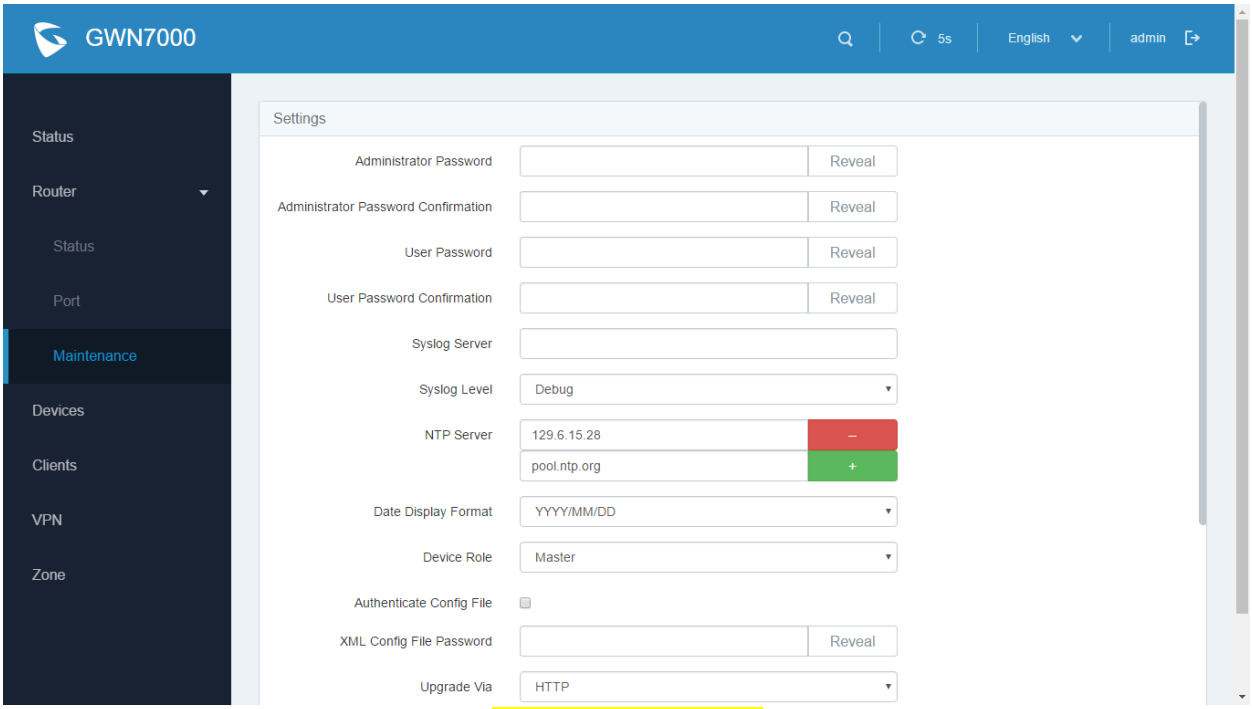


Figure 12: Admin and User

TIME&DATE SETTINGS

The GWN7000 supports configuring date and time settings format as well as configuring it with multiple NTP servers via WAN (how many ?).

Connect to the GWN7000 Web GUI and go to **Router->Maintenance.** User can change the Date Display Format, three options are possible YYYY/MM/DD, MM/DD/YYYY and DD/MM/YYYY

CONFIGURING NTP SERVER

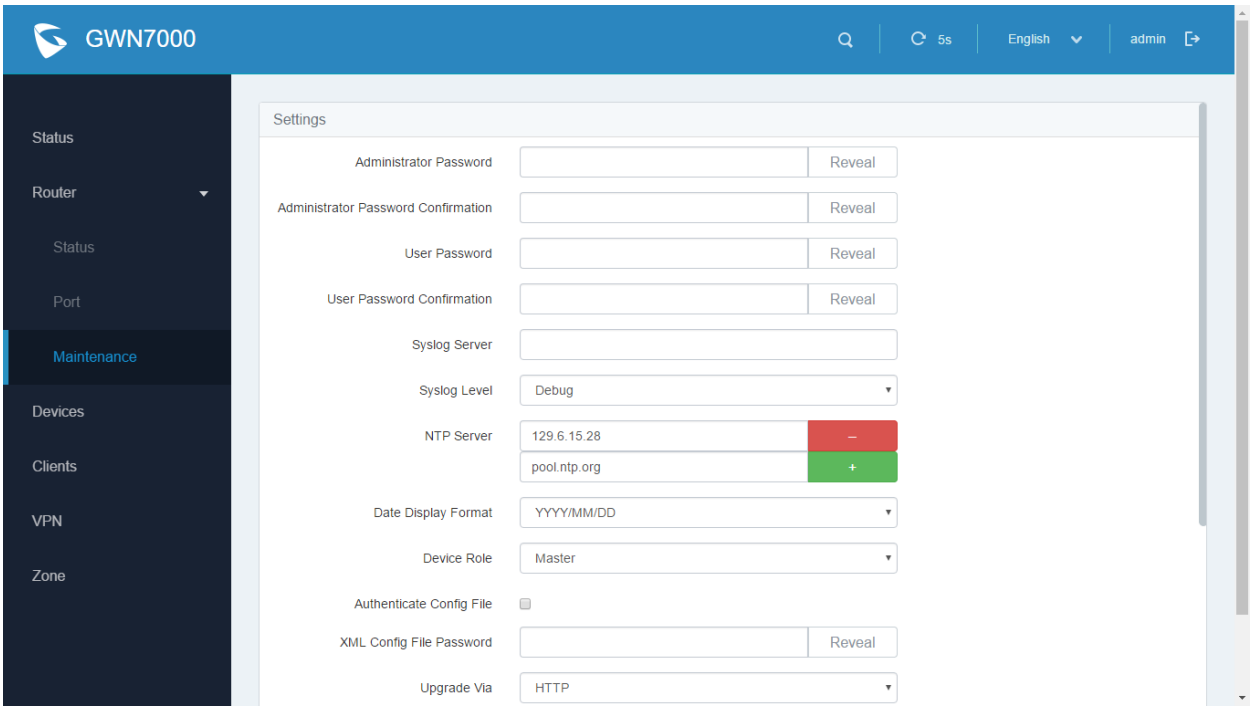


Figure 13: Add an NTP server

DEVICE ROLE(MASTER/SLAVE)

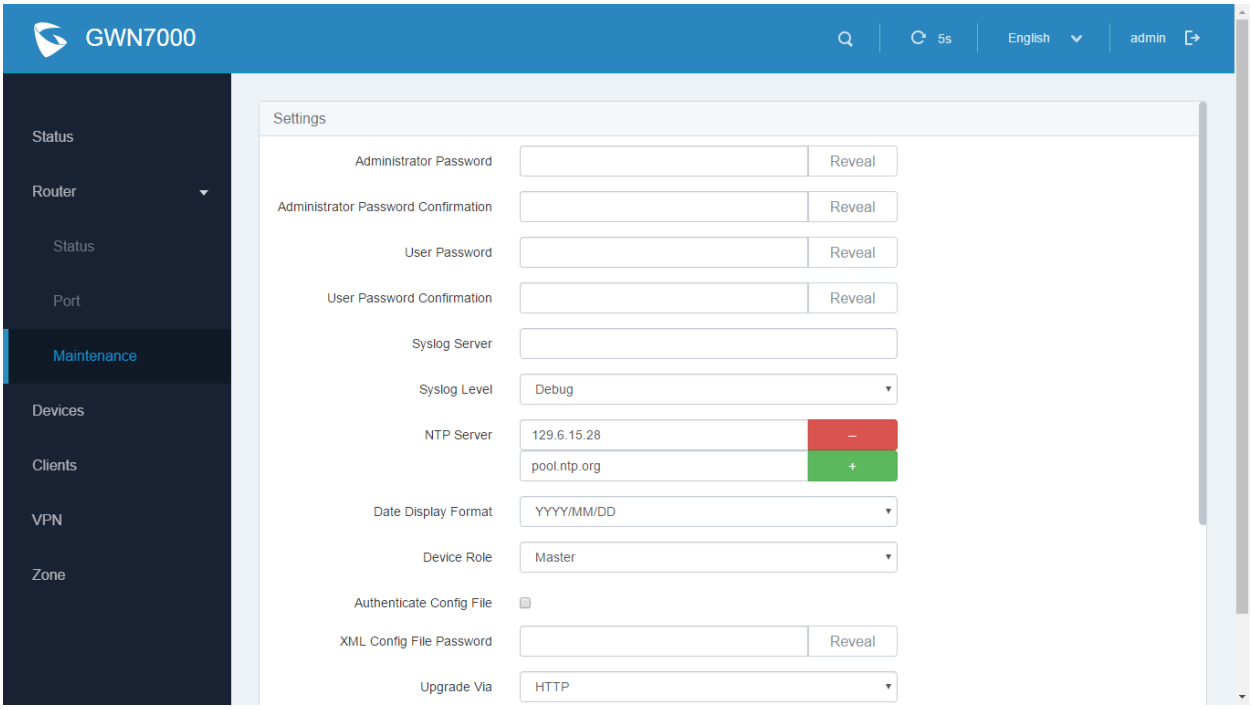


Figure 14: Master Slave

SETTING UP A WIRELESS NETWORK

OVERVIEW

TECHNICAL SPECIFICATIONS

Table 6: GWN7610 Technical Specifications

Protocols/Standards	
Network Interfaces	
Security	
Ports	
Upgrade/ Provisioning	
Power and Green Energy Efficiency	
Physical	
Temperature and Humidity	
Package Content	
Compliance	

CONNECT YOUR GWN7610 ACCESS POINT

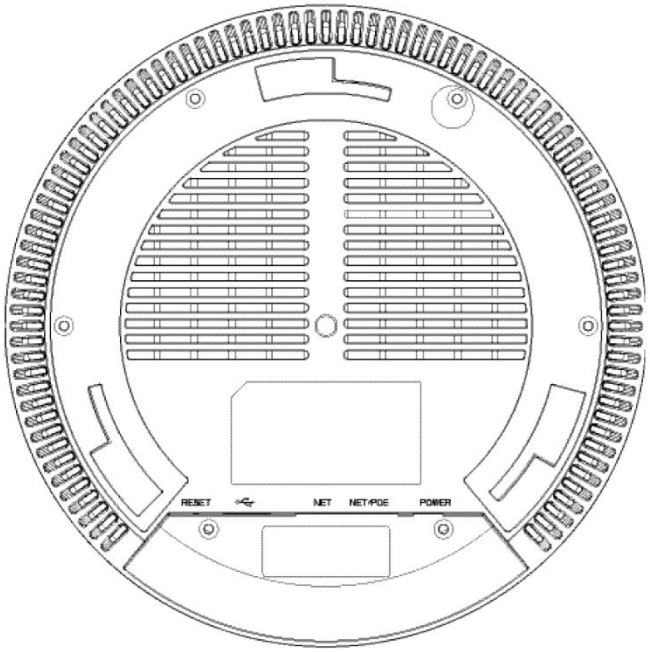


Figure 15: GWN7610 Ports

Table 7: GWN7610 Ports Description

Port	Description
Power	Power adapter connector (12V, 2A)
NET/PoE	Ethernet RJ45 port (10/100/1000Mbps) supporting PoE.
NET	Ethernet RJ45 port (10/100/1000Mbps) to your router or another GWN7600 series
	USB 2.0 port(for future IOT & location based applications)
RESET	Factory reset button. Press for 7 seconds to reset factory default settings.

To connect the GWN7610 access point, follow the steps below:

1. Connect one end of an RJ-45 Ethernet cable into the NET or PoE/NET port of the GWN7610.
2. Connect the other end of the Ethernet cable(s) into a LAN port of the the GWN7000 Router
3. Connect the 12V DC power adapter into the power jack on the back of the GWN7610. Insert the main plug of the power adapter into a surge-protected power outlet.
4. Wait for the GWN7000 to boot up and acquire an IP address from the GWN7000. The above LEDs of the GWN7610 access point will start flashing in blue.

DISCOVER AND PAIR GWN7610 ACCESS POINTS

The GWN7610 is a powerful access point which is fully compatible with the GWN7000 and can be added with one click, provisioned and managed in an easy and intuitive way. Once the GWN7610 is successfully connected and has an IP from the GWN7000 router, user can then pair it to the GWN7000 and associate it with a Wireless Zone.

To Pair the GWN7610 access point please connect to the GWN7000 Web GUI and go to **Devices.**

Users need to click on Pair the selected device under Actions (See Figure 17), in order to pair the discovered access point with the GWN7000 Router.

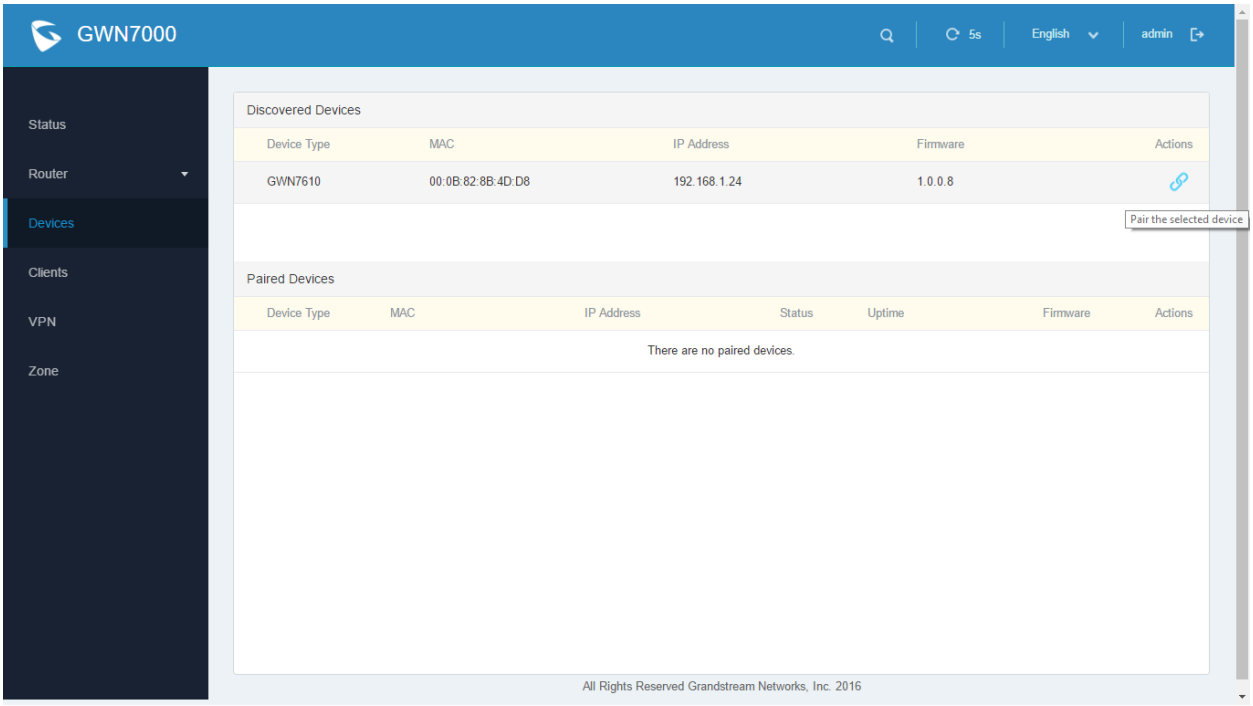


Figure 16: Pair the Discovered GWN7610

Figure 17: GWN7610 Provisioning

Once clicked the GWN7610 will be provisioned and appear online afterwards.

Figure 18: GWN7610 Online

GWN7610 CONFIGURATION

The GWN7610 access point can be easily managed and configured from the GWN7000 Web GUI (CLI Interface)

To configure the paired GWN7610 access point, connect to the GWN7000 Web GUI and go to **Devices,** and click on **Edit** under **Actions** to access GWN7610 Device Configuration.

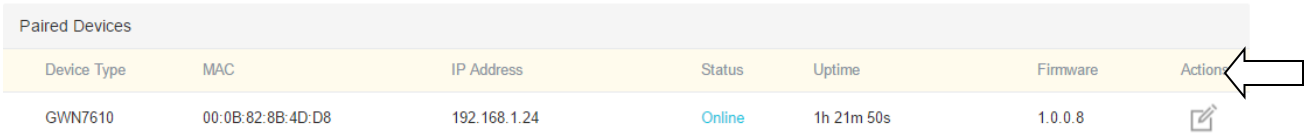


Figure 19: Edit GWN7610 config

Please refer the following table for the GWN7610 Device Configuration

Table 8: GWN7610 Device Configuration

Status	Shows the device's status information such as Firmware version, IP Address, Uptime, and Users/Guests count.
Users	Shows the connected Users to the GWN7610 access point.
Guests	Shows the connected Guests to the GWN7610 access point.
Configuration	• **Device Name:** Set GWN7610's name. Default is GWN7610 • **Fixed IP:** If checked User will have the possibility to set a static IP for the GWN7610, default is unchecked. • **Frequency:** Set the GWN7610's frequency, it can be either 2.4GHz, 5GHz or Dual-band. • **Channel Width:** • **40MHz Channel Location:** • **Channel:** • **Enable Short Guard Interval:** • **Active Spatial Streams:** • **ACS Scan Frequency:** • **Channel Mask:**

	• **Radio Power:** Set the Radio Power, it can be Low, Medium or High • **Disable Beam Forming:** • **Delete Device:** Unpair the access point • **Reboot Device:** Reboot the access point • **Upgrade Device Firmware**: Upgrade the access point's firmware

ZONES

The GWN7000 is able to create different Wireless Zones and can associate one or multiple GWN7600 series access points to each zone separated with Vlans (Doesn't work).
This section will describe how to create and manage zones.
Users need to connect to the GWN7000 Web GUI and go to **Zone**.

CREATE/EDIT ZONE

The GWN7000 has by default a zone configured named zone0, users have the possibility to edit the default zone without the ability to delete it, or add another one (limit of zones ?)

Figure 20: Zone

- To edit a zone users need to click on
- To add a zone users need to click on
- To delete a zone users need to click on

Please refer to the below table for Basic zone settings

Table 9: Zone Basic

Zone Name	Set or Modify the zone's name.
Enabled	If checked the zone will be enabled.
WAN Port Membership	Select WAN port 1 or WAN port 2.
Enable IPv4	If checked IPv4 addressing will be enabled.
IPv4 Static Address	Set a static IPv4 address.
IPv4 Subnet Mask	Set IPv4 subnet mask.
DHCP Enabled for IPv4	If checked DHCP server will be enabled on the zone.
DHCP Start Address	Set the DHCP start address to be assigned for clients connected to the zone
DHCP End Address	Set the DHCP end address to be assigned for clients connected to the zone
DHCP Lease Time	Set the DHCP lease time, default is 12h.
Enable IPv6	If checked IPv6 addressing will be enabled on the zone and set IPv6 address, IPv6 Prefix and IPv6 Prefix length.
Enable Landing Page	If checked landing page will be enabled.
Landing Page URL	Set the landing page URL.
Added Devices	Shows the list of added access points, click on to delete a device from the zone.
Available Devices	Shows the list of paired devices, click on to add a device to the zone.

Table 10: Zone

SSID	Set or modify the SSID name.
SSID Hidden	If checked the SSID will be hidden.
Security Mode	Set the security mode for encryption, 5 options are available: WEP 64-bit, WEP 128-bit, WPA, WPA2 and Open).
Enable Guest Network	If checked guest network will be enabled to create a guest SSID.
Guest SSID	Set on modify the guest SSID name.
Use MAC Filtering	Choose Blacklist/Whitelist to specify MAC addresses to be excluded/included from connecting to the zone's. Default is Disabled.

Client Isolation	If checked client isolation will be enabled in order to forbid wireless clients connected to the zone's from seeing each other.
WMM Enabled	If checked, Multimedia will be enabled, this will help prioritize audio/voice and video over other applications.

PORT FORWARD

Port forwarding maps WAN traffic coming into a specific port to a specific device on the GWN7000's LAN via Ethernet or through the GWN7600 series access points.

- To add a port forwarding rule click on
- To delete a port forwarding rule click on

Refer to the table below for port forward options:

Table 11: Port Forward

Protocol	Select UDP, TCP or Both for incoming traffic protocol.
Port	Set the incoming port number.
WAN Port	Select the WAN Port 0, WAN Port 1 or Both.
Destination	Set the Destination address on the LAN

CLIENTS CONFIGURATION

CLIENTS

Connected clients to different zones can be shown and managed. Users can access clients list from GWN7000's **Web GUI** -> **Clients** to perform different actions to wired.

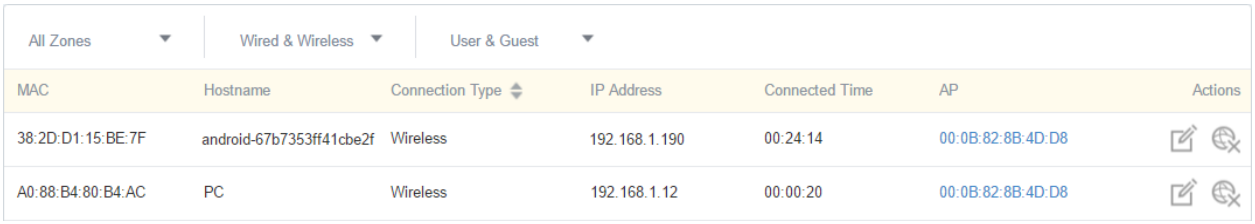


Figure 21: Clients

Click on under Actions to check a client's status and modify its configuration.

1.1.1.1 Status

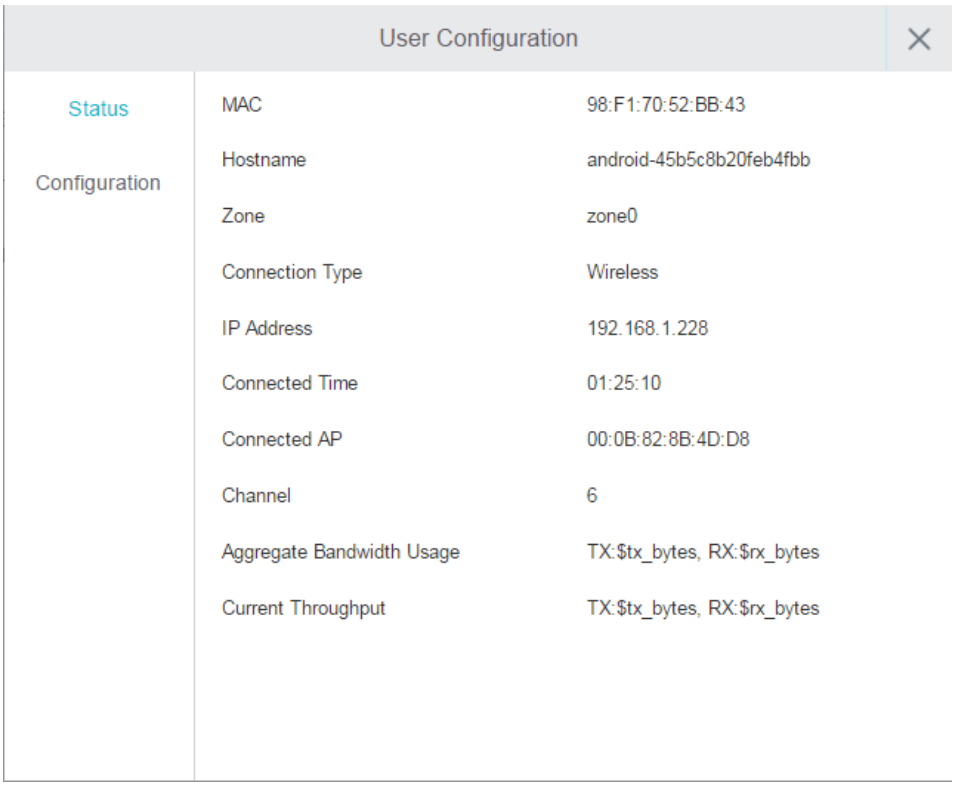


Figure 22: Client's Status

1.1.1.2 Edit IP and Name

Users can set name for a client and set a static IP (need reboot?)

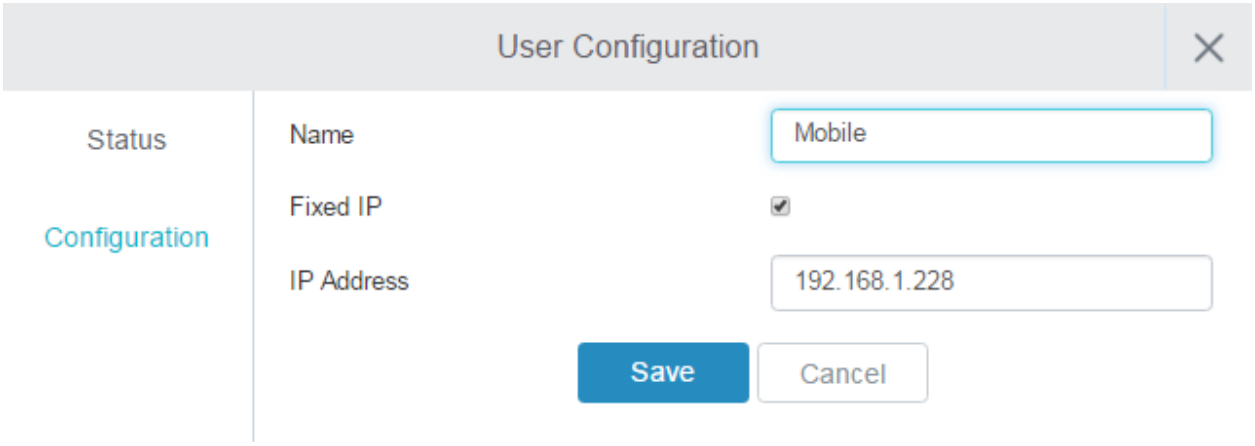


Figure 23: Client's Configuration

1.1.1.3 Block a client

To block a client, click on under actions. (doesn't work to check status and results; and how to unblock?)

VPN

OVERVIEW

Only VPN client, No Server ?

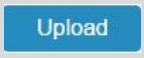
VPN allows the GWN7000 to be connected to a remote VPN server using PPTP, L2TP and OpenVPN protocols, users can access VPN page from the GWN7000 **Web GUI** -> **VPN.**

- To add a VPN tunnel users need to click on
- To edit a VPN tunnel users need to click on
- To delete a VPN tunnel users need to click on

Refer to the below tables depending on which VPN type has been selected.

1.1.1.4 OpenVPN

Table 12: OpenVPN

Enabled	If checked the VPN tunnel will be enabled.
VPN Name	Set the VPN's name.
Zone	Set the Zone that will be using the VPN tunnel.
NAT Enable	If checked NAT will be enabled.
Port Forwarding Rules	
Port Trigger Rules	
OpenVPN Mode	
Local Host	Set the local host IP address. Default is 0.0.0.0
Remote OpenVPN Server:Port	Set the remote OpenVPN server's IP/FQDN and its port.
Protocol	Select UDP or TCP for protocol.
Device Type	Select TUN or TAP for the virtual network kernel device.
Allow Peer to Change IP	If checked, a device using the tunnel will still take control of the session if its IP changes.
LZO Compression	Select Adaptive, Yes or No for LZO compression speed.
Fragment	Set the fragment value.
Mssfix	Set Mssfix value. Default is 1450.
Inactive Timeout	Set the inactivity timeout value (in unit) for restarting the connection.
CA Certificate	Click on  to upload CA certificate.

Client Certificate	Click on Upload to upload client certificate.
Client Private Key	Click on Upload to upload private key.

1.1.1.5 L2TP

Table 13: L2TP

Enabled	If checked the VPN tunnel will be enabled.
VPN Name	Set the VPN's name.
Zone	Set the Zone that will be using the VPN tunnel.
NAT Enable	If checked NAT will be enabled.
Port Forwarding Rules	
Port Trigger Rules	

1.1.1.6 PPTP

Table 14: PPTP

Enabled	If checked the VPN tunnel will be enabled.
VPN Name	Set the VPN's name.
Zone	Set the Zone that will be using the VPN tunnel.
NAT Enable	If checked NAT will be enabled.
Port Forwarding Rules	
Port Trigger Rules	
Remote PPTP Server	Set the remote PPTP server's IP/FQDN.
Username	Set the client's username.
Password	Set the client's password.
Use Tunnel as Default Route	If checked the VPN will be used as default tunnel for all connected devices to the zone.
Use DNS from Server	If checked, all connected devices to the zone will be using DNS from the PPTP server.
Number of Attempts to Reconnect	Set the number of attempts to reconnect to the server if it fails.
Use Built-in IPv6-managment	If checked the tunnel will be used IPv6 addressing.

UPGRADING AND PROVISIONING

UPGRADING FIRMWARE

The GWN7000 can be upgraded to a new firmware version remotely or locally. This section describes how to upgrade your GWN7000 via network or local upload.

UPGRADING VIA WEB GUI

The GWN7000 can be upgraded via TFTP/HTTP/HTTPS by configuring the URL/IP Address for the TFTP/HTTP/HTTPS server and selecting a download method. Configure a valid URL for TFTP, HTTP or HTTPS; the server name can be FQDN or IP address.

Examples of valid URLs:
firmware.grandstream.com/BETA
192.168.5.87

The upgrading configuration can be accessed via **Web GUI**->**Router**->**Maintenance**.

Table 15: Network Upgrade Configuration

Upgrade Via	Allow users to choose the firmware upgrade method: TFTP, HTTP or HTTPS.
Firmware Server	Define the server path for the firmware server.
Check Update on Boot	If checked, the device will check if there is a firmware from the configured firmware server at boot.
Automatic Upgrade check interval(m)	Set the value for automatic upgrade check in minutes.
Upgrade Now	Click on Upgrade button to begin the upgrade. Note that the device will reboot after downloading the firmware.

UPGRADING VIA CLI

Note:

Please do not interrupt or power cycle the GWN7000 during upgrading process.

Service providers should maintain their own firmware upgrade servers. For users who do not have TFTP/HTTP/HTTPS server, some free windows version TFTP servers are available for download from
http://www.solarwinds.com/products/freetools/free_tftp_server.aspx
http://tftpd32.jounin.net

Please check our website at http://www.grandstream.com/support/firmware for latest firmware.

Instructions for local firmware upgrade via TFTP:

1. Unzip the firmware files and put all of them in the root directory of the TFTP server;
2. Connect the PC running the TFTP server and the GWN7000 to the same LAN segment;
3. Launch the TFTP server and go to the File menu->Configure->Security to change the TFTP server's default setting from "Receive Only" to "Transmit Only" for the firmware upgrade;
4. Start the TFTP server and configure the TFTP server in the GWN7000 web configuration interface;
5. Configure the Firmware Server to the IP address of the PC;
6. Update the changes and reboot the GWN7000.

End users can also choose to download a free HTTP server from http://httpd.apache.org/ or use Microsoft IIS web server.

PROVISIONING AND BACKUP

The GWN7000 configuration can be backed up locally or via network. The backup file will be used to restore the configuration on GWN7000 when necessary.

DOWNLOAD CONFIGURATION

Users can download the GWN7000 configurations for restore purpose under **Web GUI**->**Router**-> **Maintenance**

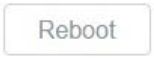
Click on

to download locally the configuration file.

CONFIGURATION SERVER

Users can download and provision the GWN7000 by putting the config file on a TFTP/HTTP or HTTPS server, and set Config Server to the TFTP/HTTP or HTTPS server used in order for the GWN7000 to be provisioned with that config server file.

RESET AND REBOOT

Users could perform a reboot under **Web GUI**->**Router**->**Maintenance** by clicking on 

button.

Factory Reset

SYSLOG

On the GWN7000, users could dump the syslog information to a remote server under **Web GUI** ->**Router**->**Maintenance**. Enter the syslog server hostname or IP address and select the level for the syslog information. Five levels of syslog are available: None, Debug, Info, Warning, and Error.

EXPERIENCING THE GWN7000 VPN ROUTER

Please visit our website: http://www.grandstream.com to receive the most up- to-date updates on firmware releases, additional features, FAQs, documentation and news on new products.

We encourage you to browse our product related documentation, FAQs and User and Developer Forum for answers to your general questions. If you have purchased our products through a Grandstream Certified Partner or Reseller, please contact them directly for immediate support.

Our technical support staff is trained and ready to answer all of your questions. Contact a technical support member or submit a trouble ticket online to receive in-depth support.

Thank you again for purchasing Grandstream GWN7000 Enterprise Router, it will be sure to bring convenience and color to both your business and personal life

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: 1) this device may not cause harmful interference, and 2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
—Reorient or relocate the receiving antenna.
—Increase the separation between the equipment and receiver.
—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
—Consult the dealer or an experienced radio/TV technician for help.

Caution： Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

END OF USER'S MANUAL