# 4.2 System Setup

The following sections explain the features and functionality of the ENS200 in access point mode, client bridge mode, WDS access point mode, WDS bridge mode, WDS station mode and client router mode.

# 4.2.1 Configuring Operation Mode

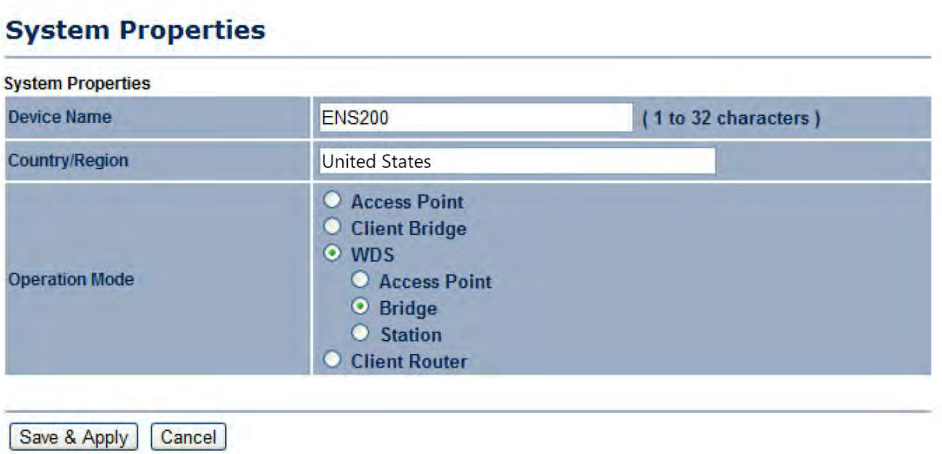
Set the primary function of the device. The function that is selected affects which items are available in the main menu.

**Device Name** Enter a name for the device. The name you type appears in SNMP management. This name is not the SSID and is not broadcast to other devices.

**Country/Region** United States

**Operation Mode** Use the radio button to select an operating mode.

Click `Save & Apply` to save changes or `Cancel` to abort.



# 4.2.2 Configuring IP Settings

Configure the LAN settings for the ENS200 using a static or dynamic IP address.

**IP Network Setting** Configure the network connection type using either a static IP or dynamic IP.

**IP Address** Enter the LAN IP address of the ENS200.

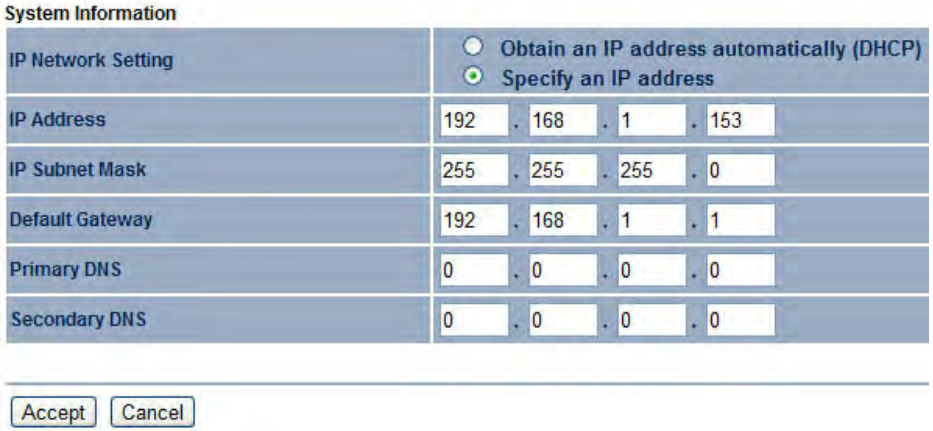
**Subnet Mask** Enter the subnet mask of the ENS200.

**Default Gateway** Enter the default gateway of the ENS200.

**Primary DNS** Enter the primary DNS address of the ENS200.

**Secondary DNS** Enter the secondary DNS address of the ENS200.

Click `Apply` to save the settings or `Cancel` to discard changes.



# 4.2.3 Configuring Spanning Tree Settings

**Spanning Tree Status** Enable or disable the ENS200 Spanning Tree function.

**Bridge Hello Time** Specify Bridge Hello Time, in seconds. This value determines how often the ENS200 sends hello packets to communicate information about the topology throughout the entire Bridged Local Area Network

**Bridge Max Age** Specify Bridge Max Age, in seconds. If another bridge in the spanning tree does not send a hello packet for a long period of time, it is assumed to be dead.

**Bridge Forward Delay** Specify Bridge Forward Delay, in seconds. Forwarding delay time is the time spent in each of the Listening and Learning states before the Forwarding state is entered. This delay is provided so that when a new bridge comes onto a busy network, it looks at some traffic before participating.

**Priority** Specify the Priority number. Smaller numbers have greater priority.

Click `Accept` to confirm the changes or `Cancel` to cancel and return previous settings.

# 4.3 Router Setup

# 4.3.1 Configuring WAN Settings

Configure the WAN settings for the ENS200 using a static or dynamic IP address, PPPoE or PPTP.

## Static IP

Setting a static IP address allows an administrator to set a specific IP address for the router and guarantees that it can not be assigned a different address.

**Account Name** Enter the account name provided by your ISP

**Domain Name** Enter the domain name provided by your ISP

**MTU** The maximum transmission unit (MTU) specifies the largest packet size permitted for an internet transmission. The factory default MTU size for static IP is 1500. The MTU size can be set between 512 and 1500.

**IP Address** Enter the router's WAN IP address.

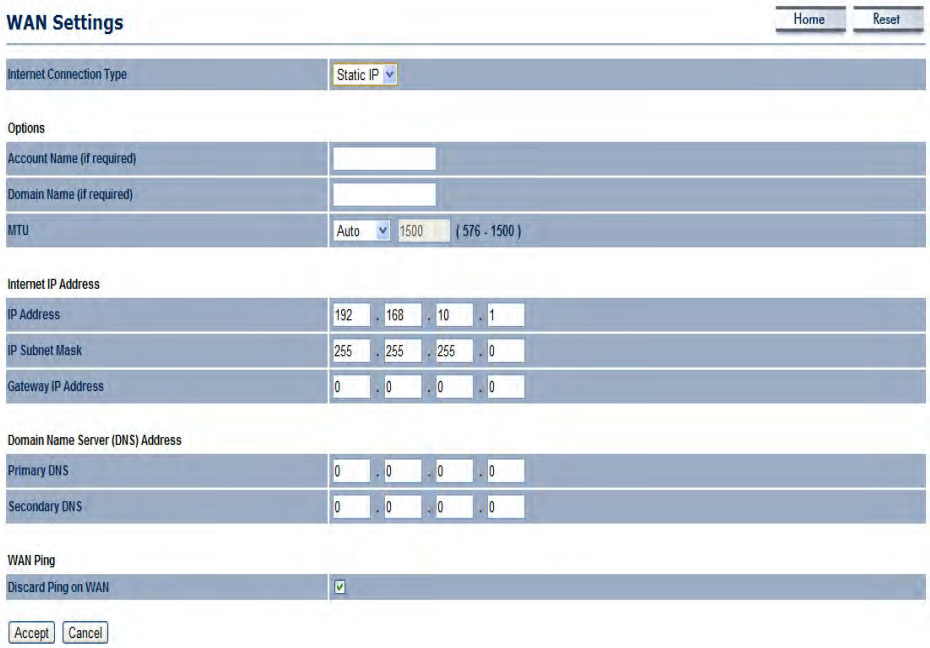
**Subnet Mask** Enter the router's WAN subnet mask.

**Default Gateway** Enter the WAN gateway address.

**Primary DNS** Enter the primary DNS server address.

**Secondary DNS** Enter the secondary DNS server address.

**Discard Ping on WAN** Check to Enable to recognize pings on the ENS200 WAN interface or Disable to block pings on the

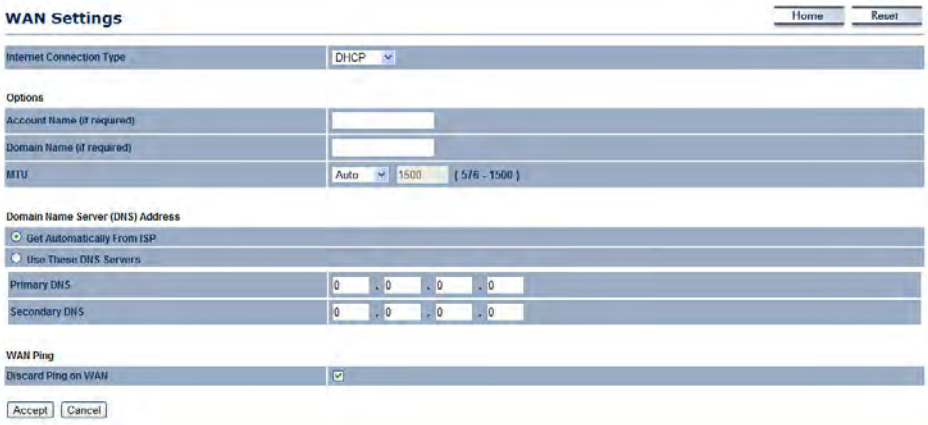


ENS200 WAN interface. Note: Pinging IP addresses is a common method used by hackers to test whether the IP address is valid. Blocking pings provides some extra security from hackers.

Click `Accept` to save the settings or `Cancel` to discard changes.

# Dynamic IP

Dynamic IP addressing assigns a different IP address each time a device connects to an ISP service provider. The service is most commonly used by ISP cable providers.




**Account Name** Enter the account name provided by your ISP

**Domain Name** Enter the domain name provided by your ISP

**MTU** The maximum transmission unit (MTU) specifies the largest packet size permitted for an internet transmission. The factory default MTU size for static IP is 1500. The MTU size can be set between 512 and 1500.

**Get Automatically From ISP** Click the radio button to obtain the DNS automatically from the DHCP server.

**Use These DNS Servers** Click the radio button to set up the Primary DNS and Secondary DNS servers manually.

**Discard Ping on WAN** Check to Enable to recognize pings on the ENS200 WAN interface or Disable to block pings on the ENS200 WAN interface. Note: Pinging IP addresses is a common method used by hackers to test whether the IP address is valid. Blocking pings provides some extra security from hackers.

Click `Accept` to save the settings or `Cancel` to discard changes.

# Point-to-Point Protocol over Ethernet (PPPoE)

Point-to-Point Protocol over Ethernet (PPPoE) is used mainly by ISPs that provide DSL modems to connect to the Internet.

**MTU** Enter the maximum transmission unit (MTU). The MTU specifies the largest packet size permitted for an internet transmission (PPPoE default: 1492). The MTU size can be set between 512 and 1492.

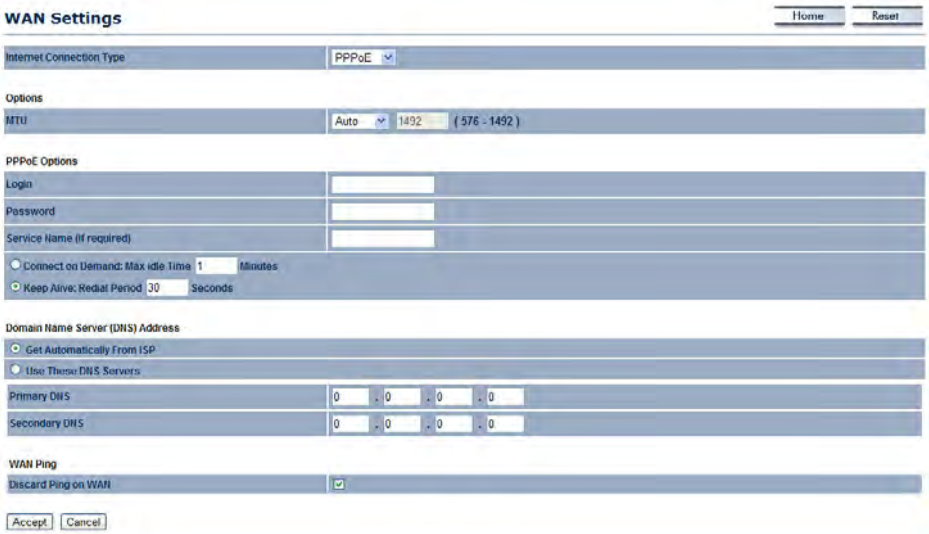
**Login** Enter the username assigned by an ISP.

**Password** Enter the password assigned by an ISP.

**Service Name** Enter the service name of an ISP (optional).

**Connect on Demand** Select the radio button to specify the maximum idle time. Internet connection will disconnect when it reach the maximum idle time, but it will automatically connect when user tries to access the network.

**Keep Alive** Select whether to keep the Internet connection always on, or enter a redial period once the internet lose connection.



**Get Automatically From ISP** Click the radio button to obtain the DNS automatically from the DHCP server.

**Use These DNS Servers** Click the radio button to set up the Primary DNS and Secondary DNS servers manually.

**Discard Ping on WAN** Check to Enable to recognize pings on the ENS200 WAN interface or Disable to block pings on the ENS200 WAN interface. Note: Pinging IP addresses is a common method used by hackers to test whether the IP address is valid. Blocking pings provides some extra security from hackers.

Click `Accept` to save the settings or `Cancel` to discard changes.

# Point-to-Point Tunnelling Protocol (PPTP)

The point-to-point tunnelling protocol (PPTP) is used in association with virtual private networks (VPNs). There a two parts to a PPTP connection: the WAN interface settings and the PPTP settings.

**MTU** Enter the maximum transmission unit (MTU). The MTU specifies the largest packet size permitted for an internet transmission (PPPoE default: 1492). The MTU size can be set between 512 and 1492.

**IP Address** Enter the router's WAN IP address.

**Subnet Mask** Enter the router's WAN subnet IP address.

**Default Gateway** Enter the router's WAN gateway IP address.

**PPTP Server** Enter the IP address of the PPTP server.

**Username** Enter the username provided by your ISP.

**Password** Enter the password provided by your ISP.

**Connect on Demand** If you want the ENS200 to end the Internet connection after it has been inactive for a period of time, select this option and enter the number of minutes you want that period of inactivity to last.

**Keep Alive** If you want the ENS200 to periodically check your Internet connection, select this option. Then specify how often you want the ENS200 to check the Internet connection. If the connection is down, the ENS200 automatically re-establishes your connection

**Get Automatically From ISP** Obtains the DNS automatically from DHCP server.

**Use These DNS Servers** Click the radio button to set up the Primary DNS and Secondary DNS servers manually.

**Discard Ping on WAN** Check to Enable to recognize pings on the ENS200 WAN interface or Disable to block pings on the ENS200 WAN interface. Note: Pinging IP addresses is a common method used by hackers to test whether the IP address is valid. Blocking pings provides some extra security from hackers.

Click `Accept` to save the settings or `Cancel` to discard changes.

# 4.3.2 Configuring LAN Settings

**IP Address** Enter the LAN port IP address.

**IP Subnet Mask** Enter the LAN IP subnet mask.

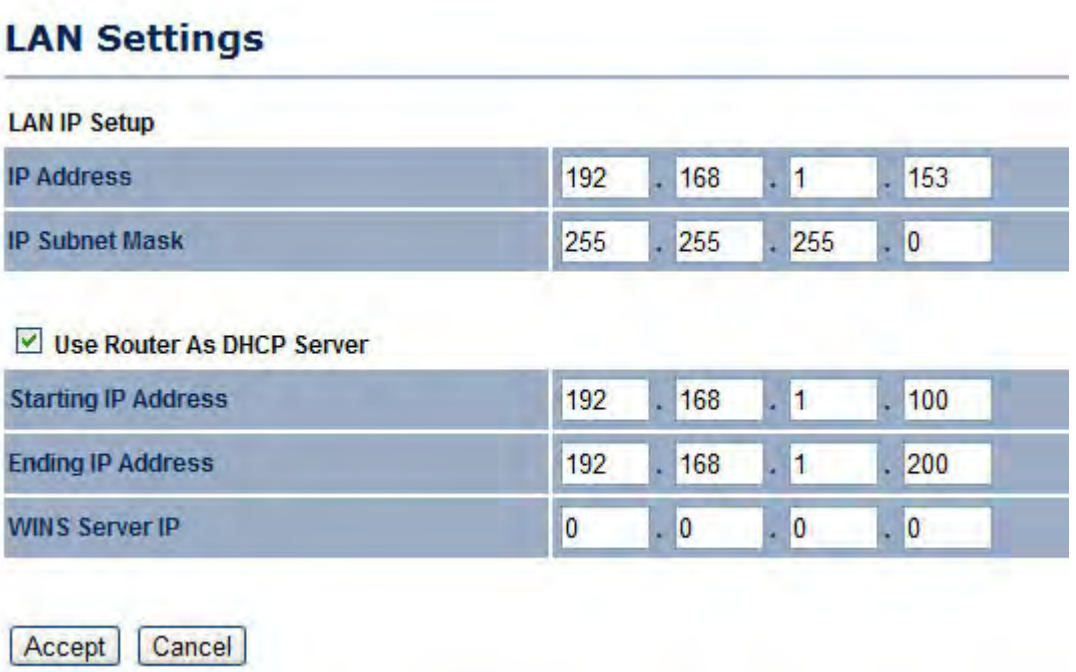
**WINS Server IP** Enter the WINS Server IP.

**Use Router As DHCP Server** Check this option to enable the ENS200 internal DHCP server.

**Starting IP Address** Specify the starting IP address range for the pool of allocated for private IP addresses. The starting IP address must be on the same subnet as the ending IP address; that is the first three octets specified here must be the same as the first three octets in End IP Address.

**Ending IP Address** Specify the ending IP address range for the pool of allocated for private IP addresses. The ending IP address must be on the same subnet as the starting IP address; that is the first three octets specified here must be the same as the first three octets in Start IP Address.

**WINS Server IP** Enter the IP address of the WINS server.




Click `Accept` to confirm the changes or `Cancel` to cancel and return previous settings.

# 4.3.3 Configuring VPN Pass-Through

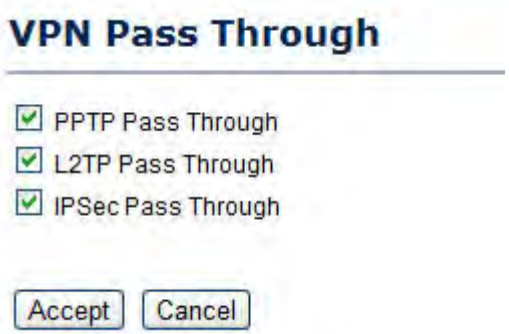
VPN Pass-through allows a secure virtual private network (VPN) connection between two computers. Enabling the options on this page opens a VPN port and enables connections to pass through the ENS200 without interruption.

**PPTP Pass-through** Check this option to enable PPTP pass-through mode.

**L2TP Pass-through** Check this option to enable L2TP pass-through mode.

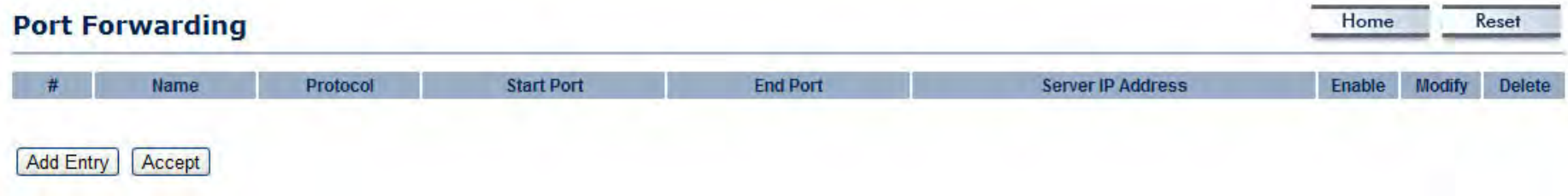
**IPSec Pass-through** Check this option to enable IPSec pass-through mode.

Click `Accept` to confirm the changes or `Cancel` to cancel and return previous settings.



# 4.3.4 Configuring Port Forwarding

Port forwarding enables multiple server applications on a LAN to serve clients on a WAN over a single WAN IP address. The router accepts incoming client packets, filters them based on the destination WAN, or public, port and protocol and forwards the packets to the appropriate LAN, or local, port. Unlike the DMZ feature, port forwarding protects LAN devices behind the firewall.




**NO.** Displays the sequence number of the forwarded port.

**Name** Displays the name of the forwarded port.

**Protocol** Displays the protocol to use for mapping from the following: TCP, UDP or Both.

**Start Port** Displays the LAN port number that WAN client packets will be forward to.

**End Port** Displays the port number that the WAN client packets are received.

**Server IP** Displays the IP address of the server for the forwarded port.

**Enable** Click to enable or disable the forwarded port profile

**Modify** Click to modify the forwarded port profile

**Delete** Click to delete the forwarded port profile

Click Add Entry to add port forwarding rules

Click Accept to confirm the changes.

**Service Name** Enter a name for the port forwarding rule.

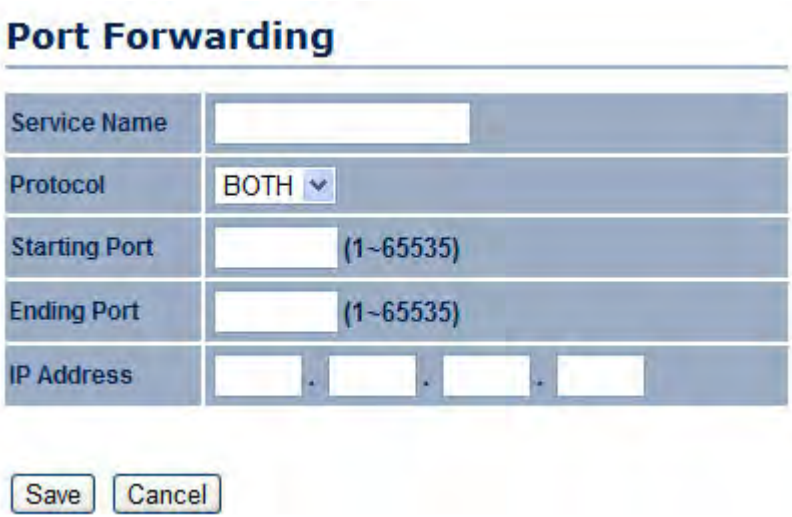
**Protocol** Select a protocol for the application: Choices are Both, TCP, and UDP.

**Starting Port** Enter a starting port number.

**Ending Port** Enter an ending port number. All ports numbers between the starting and ending ports will forward users to the IP address specified in the IP Address field.

**IP Address** Enter the IP address of the server computer on the LAN network where users will be redirected.

Click `Save` to apply the changes or `Cancel` to return previous settings.



# 4.3.5 Configuring Demilitarized Zone

Configuring a device on the LAN as a demilitarized zone (DMZ) host allows unrestricted two-way Internet access for Internet applications, such as online video games, to run from behind the NAT firewall. The DMZ function allows the router to redirect all packets going to the WAN port IP address to a particular IP address on the LAN. The difference between the virtual server and the DMZ function is that a virtual server redirects a particular service or Internet application, such as FTP, to a particular LAN client or server, whereas a DMZ redirects all packets, regardless of the service, going to the WAN IP address to a particular LAN client or server.

**WARNING!**
The PC defined as a DMZ host is not protected by the firewall and is vulnerable to malicious network attacks. Do not store or manage sensitive information on the DMZ host.

**DMZ Hosting** Select `Enable` DMZ to activate DMZ functionality.

**DMZ Address** Enter an IP address of a device on the LAN.

Click `Accept` to confirm the changes or `Cancel` to cancel and return previous settings.

# 4.4 Configuring Wireless LAN

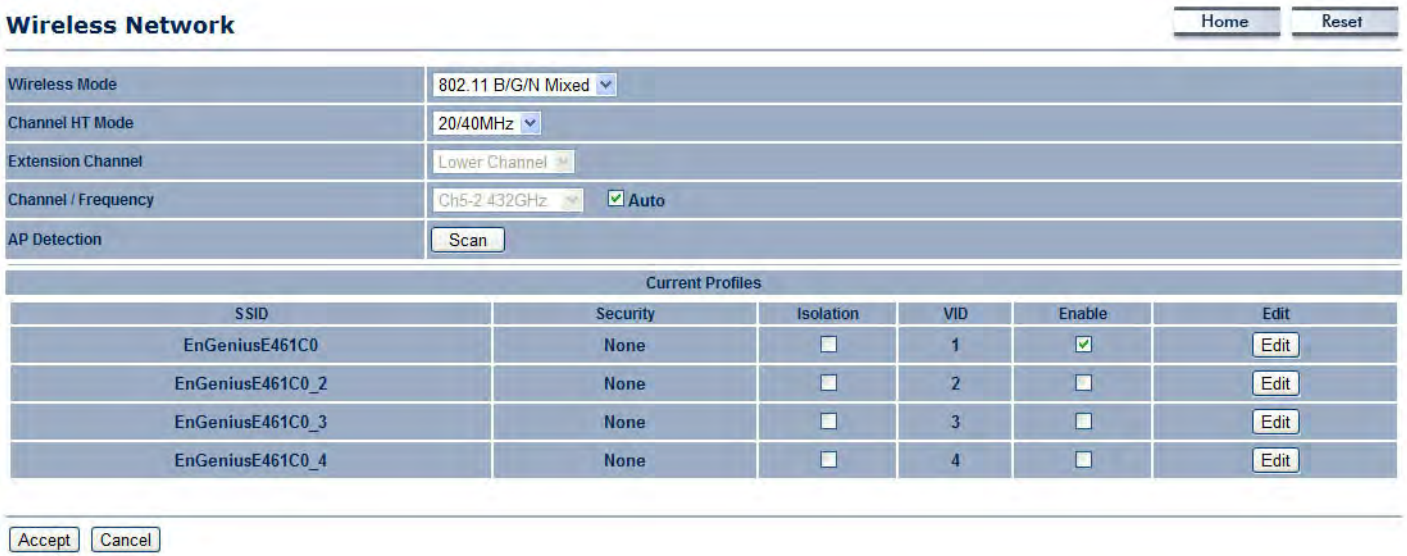
## 4.4.1 Configuring Wireless Settings

Instructions on how to configure the wireless and security settings for each of the possible operating modes.

**WARNING!**
Incorrectly changing these settings may cause the device to stop functioning. Do not modify the settings in this section without a thorough understanding of the parameters.

### Access Point Mode

The ENS200 supports Access Point Mode. In this mode, users with a wireless client device within range can connect to the ENS200 to access the WLAN




**Wireless Mode** Wireless mode supports 802.11b/g/n mixed modes.

**Channel HT Mode** The default channel bandwidth is 40 MHz. The larger the channel, the better the transmission quality and speed.

**Extension Channel** Select upper or lower channel. Your selection may affect the Auto channel function.

**Channel / Frequency** Select the channel and frequency appropriate for your country's regulation.

**Auto** Check this option to enable auto-channel selection.

**AP Detection** AP Detection can select the best channel to use by scanning nearby areas for Access Points.

**Current Profile** Configure up to four different SSIDs. If many client devices will be accessing the network, you can arrange the devices into SSID groups. Click `Edit` to configure the profile and check whether you want to enable extra SSIDs.

Click `Accept` to confirm the changes or `Cancel` to cancel and return previous settings.

**SSID** Specify the SSID for the current profile.

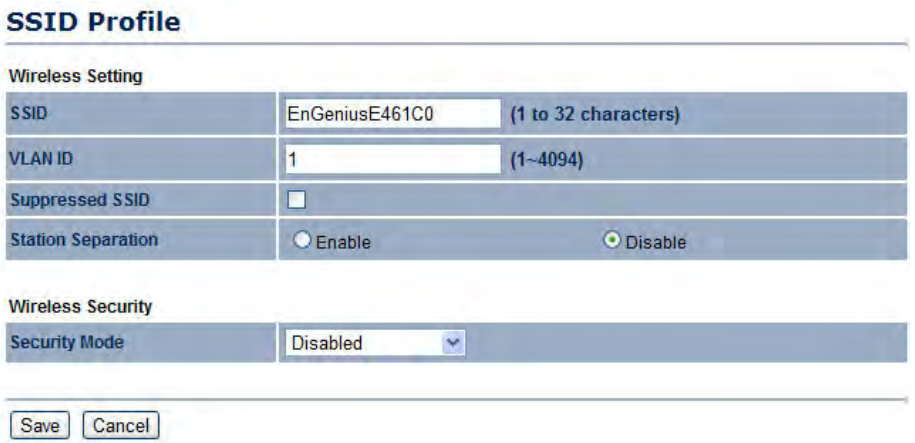
**VLAN ID** Specify the VLAN tag for the current profile.

**Suppressed SSID** Check this option to hide the SSID from clients. If checked, the SSID will not appear in the site survey.

**Station Separation** Click the appropriate radio button to allow or prevent communication between client devices.

**Wireless Security** See the Wireless Security section.

Click `Save` to accept the changes or `Cancel` to cancel and return previous settings.



# Client Bridge Mode

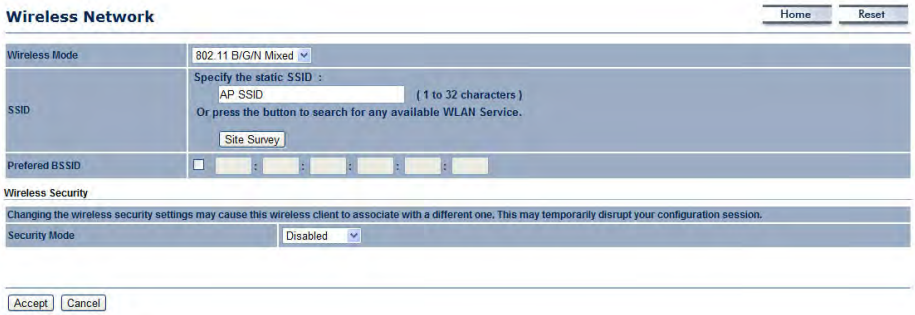
Client Bridge Mode lets you connect two LAN segments via a wireless link as though they are on the same physical network. Since the computers are on the same subnet, broadcasts reach all machines. As a result, DHCP information generated by the server reach all client computers as though the clients residing on one physical network.

**Wireless Mode** Wireless mode supports 802.11b/g/n mixed modes.

**SSID** Specify the SSID if known. This field is completed automatically if you select an Access Point in the Site Survey.

**Site Survey** Scans nearby locations for Access Points. You can select a discovered Access Point to establish a connection.

**Prefer BSSID** Enter the MAC address if known. If you select an Access Point in the Site Survey, this field is completed automatically.



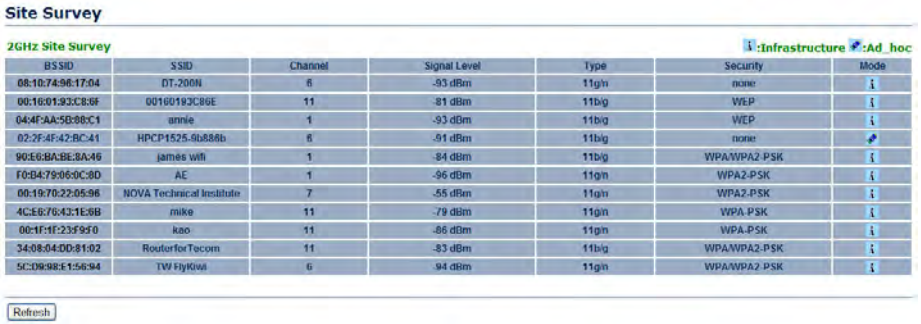

**Wireless Security** See section 8.2 for information.

Click `Accept` to confirm the changes or `Cancel` to cancel and return previous settings.

**Profile** If you used the Site Survey, the Web Configurator shows nearby Access Points. To connect to an Access Point, click the Access Point's BSSID.

**Wireless Security** See *Configuring Wireless Security*.

Click `Refresh` to scan again.



# WDS Bridge Mode

Unlike traditional bridging. WDS Bridge Mode allows you to create large wireless networks by linking several wireless access points with WDS links. WDS is normally used in large, open areas, where pulling wires is cost prohibitive, restricted or physically impossible.

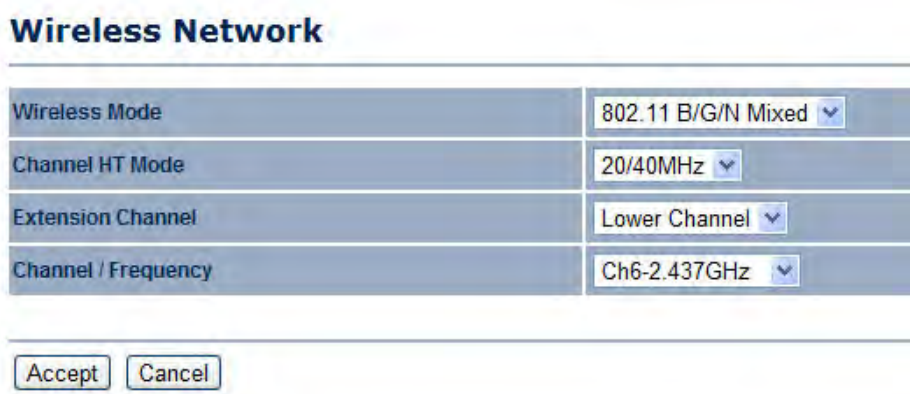
**Wireless Mode** Wireless mode supports 802.11b/g/n mixed modes.

**Channel HT Mode** The default channel bandwidth is 40 MHz. The larger the channel, the better the transmission quality and speed.

**Extension Channel** Select upper or lower channel. Your selection may affect the Auto channel function.

**Channel / Frequency** Select the channel and frequency appropriate for your country's regulation.

Click `Accept` to confirm the changes or `Cancel` to cancel and return previous settings.




**Security** Select the type of WDS security: WEP or AES.

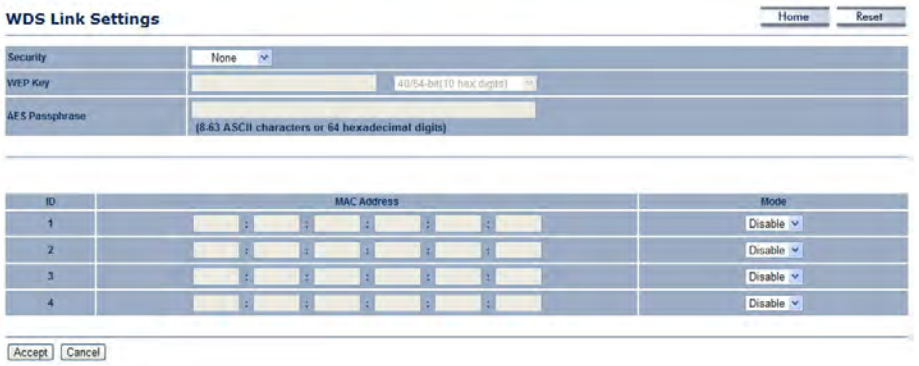
**WEP Key** Enter the WEP key.

**AES Pass phrase** Enter the AES pass phrase.

**MAC Address** Enter the MAC address of the Access Point to which you want to extend wireless connectivity.

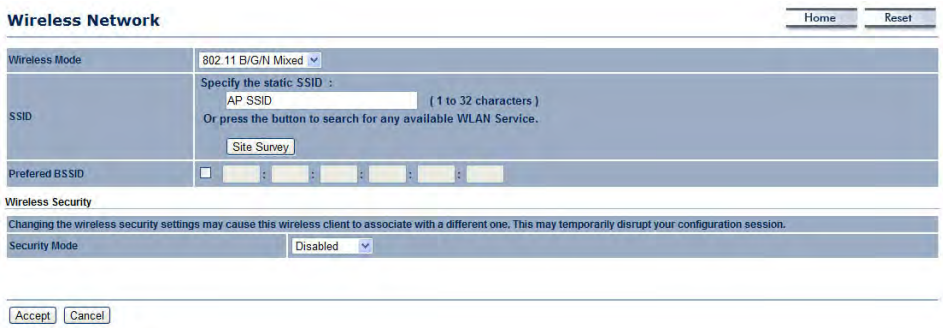
**Mode** Select Disable or Enable to disable or enable WDS.

Click `Accept` to confirm the changes or `Cancel` to cancel and return previous settings.



# Client Router Mode

In Client Router Mode, you can access the Internet wirelessly with the support of a WISP. In AP Router Mode, the ENS200 can access the Internet via a cable or DSL modem. In this mode, the ENS200 can be configured to turn off the wireless network name (SSID) broadcast, so that only stations that have the SSID can be connected. The ENS200 also provides wireless LAN 64/128/156-bit WEP encryption security, WPA/WPA2, and WPA-PSK/WPA2-PSK authentication, as well as TKIP/AES encryption security. It also supports VPN pass-through for sensitive data secure transmission.




**Wireless Mode** Wireless mode supports 802.11b/g/n mixed modes.

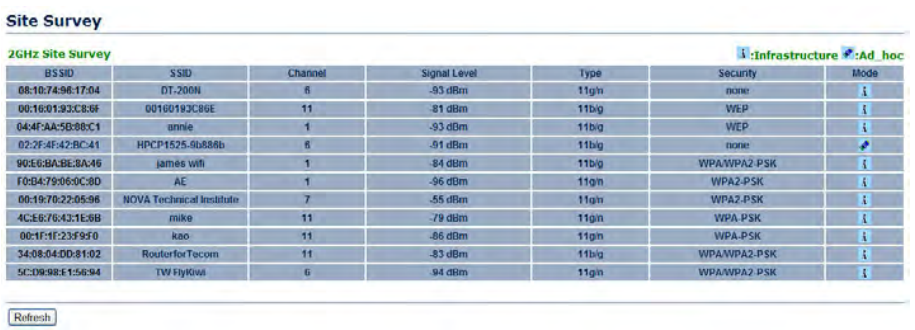
**SSID** Specify the SSID if known. This field is completed automatically if you select an Access Point in the Site Survey.

**Site Survey** Scans nearby locations for Access Points. You can select a discovered Access Point to establish a connection.

**Prefer BSSID** Enter the MAC address if known. If you select an Access Point in the Site Survey, this field is completed automatically.

**Wireless Security** See *Configuring Wireless Security*.

Click `Accept` to confirm the changes or `Cancel` to cancel and return previous settings.




**Profile** If you used the Site Survey, the Web Configurator shows nearby Access Points. To connect to an Access Point, click the Access Point's BSSID.

**Wireless Security** See *Configuring Wireless Security*.

Click `Refresh` to scan again.

# 4.4.2 Configuring Wireless Security

The Wireless Security Settings section lets you configure the ENS200's security modes: WEP, WPA-PSK, WPA2-PSK, WPA-PSK Mixed, WPA, WPA2, and WPA Mixed. We strongly recommend you use WPA2-PSK.

## Wired Equivalent Privacy (WEP)

**Security Mode** Select WEP from the drop-down list to begin the configuration.

**Auth Type** Select Open System or Shared.

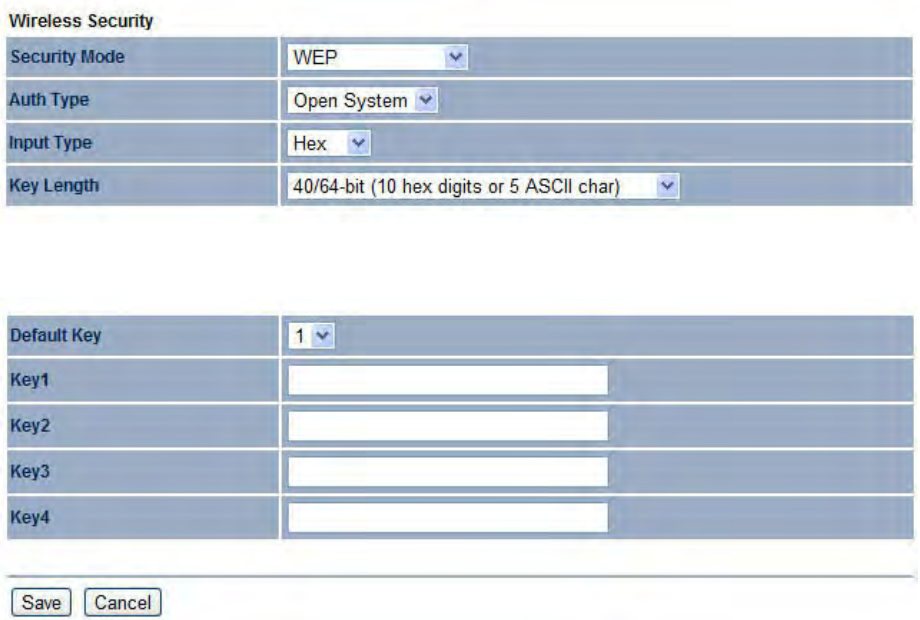
**Input Type** Select an input type of Hex or ASCII.

**Key Length** Level of WEP encryption applied to all WEP keys. Select a 64/128/152-bit password lengths.

**Default Key** Specify which of the four WEP keys the ENS200 uses as its default.

**Key1 - Key4** Specify a password for the security key index. For security, each typed character is masked by a dot.

Click `Save` to save the changes or `Cancel` to cancel and return previous settings.




**Note:**

802.11n does not allow WEP/WPA-PSK/WPA-PSK TKIP security mode. The connection mode will drop from 802.11n to 802.11g.

# Wi-Fi Protected Access Pre-Shared Key (WPA-PSK)

**Security Mode** Select WPA-PSK from the drop-down list to begin the configuration.

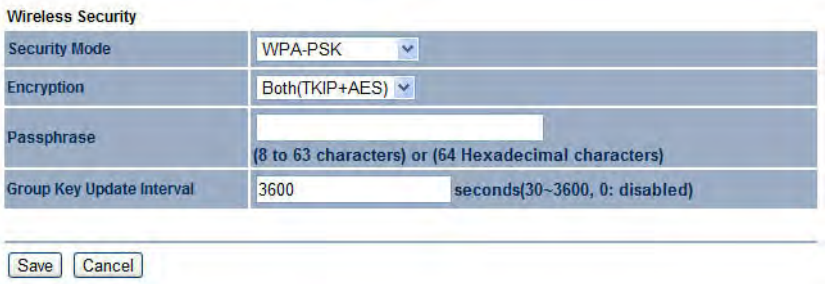
**Encryption** Select Both, TKIP, or AES as the encryption type.

- Both = uses TKIP and AES.
- TKIP = automatic encryption with WPA-PSK; requires passphrase.
- AES = automatic encryption with WPA2-PSK; requires passphrase.

**Passphrase** Specify the security password. For security, each typed character is masked by a dot.

**Group Key Update Interval** Specify how often, in seconds, the group key changes.

Click `Save` to save the changes or `Cancel` to cancel and return previous settings.




## Note:

802.11n does not allow WEP/WPA-PSK/WPA-PSK TKIP security mode. The connection mode will drops from 802.11n to 802.11g.

# Wi-Fi Protected Access 2 Pre-Shared Key (WPA2-PSK)

**Security Mode** Select WPA2-PSK from the drop-down list to begin the configuration.

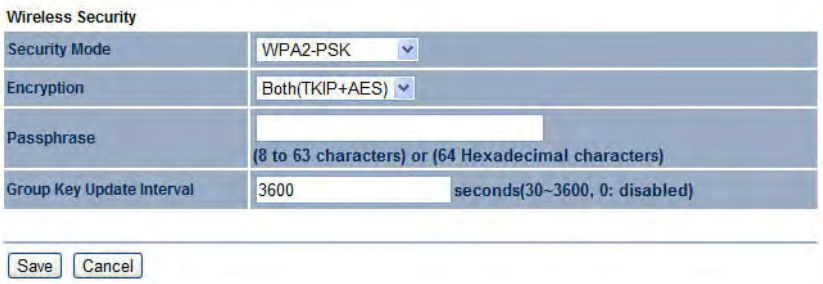
**Encryption** Select Both, TKIP, or AES as the encryption type.

- Both = uses TKIP and AES
- TKIP = automatic encryption with WPA-PSK; requires passphrase.
- AES = automatic encryption with WPA2-PSK; requires passphrase.

**Passphrase** Specify the security password. For security, each typed character is masked by a dot.

**Group Key Update Interval** Specify how often, in seconds, the group key changes.

Click `Save` to save the changes or `Cancel` to cancel and return previous settings.




## Note:

802.11n does not allow WEP/WPA-PSK/WPA-PSK TKIP security mode. The connection mode will change from 802.11n to 802.11g.

# Wi-Fi Protected Access Pre-Shared Key (WPA-PSK) Mixed

**Security Mode** Select WPA2-PSK Mixed from the drop-down list to begin the configuration.

**Encryption** Select Both, TKIP, or AES as the encryption type.

- Both = uses TKIP and AES
- TKIP = automatic encryption with WPA-PSK; requires passphrase.
- AES = automatic encryption with WPA2-PSK; requires passphrase.

**Radius Server** Specify the IP address of the RADIUS server.

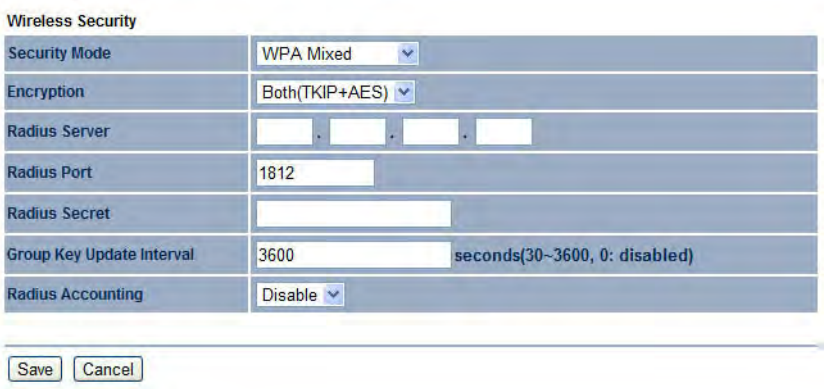
**Radius Port** Specify the port number that your RADIUS server uses for authentication. Default port is 1812.

**Radius Secret** Specify RADIUS secret furnished by the RADIUS server.

**Group Key Update Interval** Specify how often, in seconds, the group key changes.

**Radius Accounting**

Click `Save` to save the changes or `Cancel` to cancel and return previous settings.




## Note:

WPA-PSK Mixed can allow multiple security modes at the same time. 802.11n does not allow WEP/WPA-PSK/WPA-PSK TKIP security mode. The connection mode will change from 802.11n to 802.11g.

# Wi-Fi Protected Access (WPA)

**Security Mode** Select WPA from the drop-down list to begin the configuration.

**Encryption** Select Both, TKIP, or AES as the encryption type.

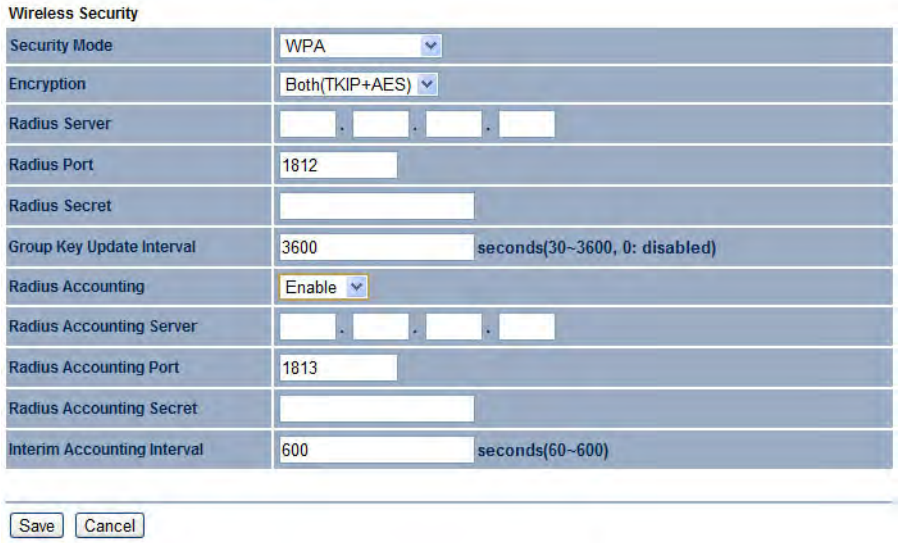
- Both = uses TKIP and AES
- TKIP = automatic encryption with WPA-PSK; requires passphrase.
- AES = automatic encryption with WPA2-PSK; requires passphrase.

**Radius Server** Specify the IP address of the RADIUS server.

**Radius Port** Specify the port number that your RADIUS server uses for authentication. Default port is 1812.

**Radius Secret** Specify RADIUS secret furnished by the RADIUS server.

**Group Key Update Interval** Specify how often, in seconds, the group key changes.



**Radius Accounting** Select to enable or disable RADIUS accounting.

**Radius Accounting Port** Specify the port number that your RADIUS accounting server uses for authentication. Default port is 1812.

**Radius Accounting Secret** Specify RADIUS accounting secret furnished by the RADIUS server.

**Interem Accounting Interval** Specify the interem accounting interval (60 - 600 seconds).

Click `Save` to save the changes or `Cancel` to cancel and return previous settings.

## Note:

802.11n does not allow WEP/WPA-PSK/WPA-PSK TKIP security mode. The connection mode will drops from 802.11n to 802.11g.

# Wi-Fi Protected Access 2 (WPA2)

**Security Mode** Select WPA from the drop-down list to begin the configuration.

**Encryption** Select Both, TKIP, or AES as the encryption type.

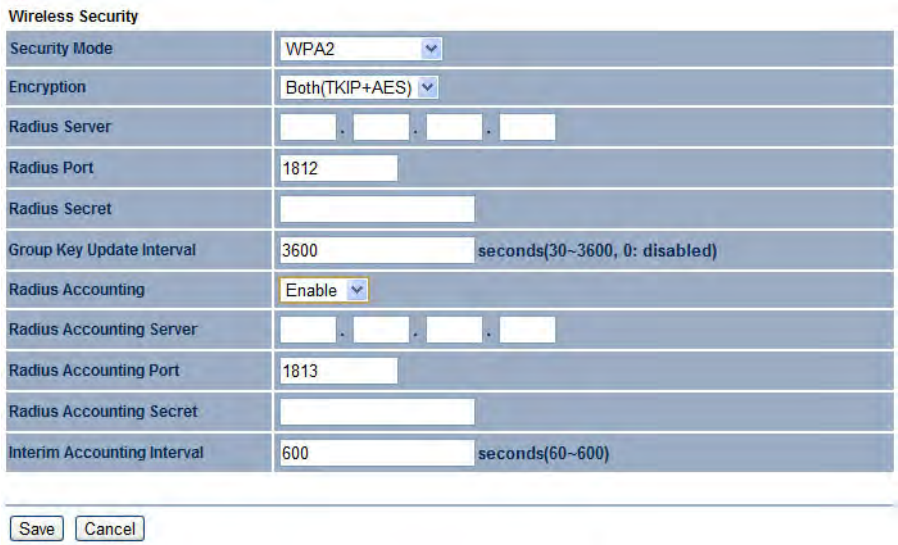
- Both = uses TKIP and AES
- TKIP = automatic encryption with WPA-PSK; requires passphrase.
- AES = automatic encryption with WPA2-PSK; requires passphrase.

**Radius Server** Specify the IP address of the RADIUS server.

**Radius Port** Specify the port number that your RADIUS server uses for authentication. Default port is 1812.

**Radius Secret** Specify RADIUS secret furnished by the RADIUS server.

**Group Key Update Interval** Specify how often, in seconds, the group key changes.



**Radius Accounting** Select to enable or disable RADIUS accounting.

**Radius Accounting Port** Specify the port number that your RADIUS accounting server uses for authentication. Default port is 1812.

**Radius Accounting Secret** Specify RADIUS accounting secret furnished by the RADIUS server.

**Interem Accounting Interval** Specify the interem accounting interval (60 - 600 seconds).

Click `Save` to save the changes or `Cancel` to cancel and return previous settings.

## Note:

802.11n does not allow WEP/WPA-PSK/WPA-PSK TKIP security mode. The connection mode will drops from 802.11n to 802.11g.

# Wi-Fi Protected Access (WPA) Mixed

**Security Mode** Select WPA from the drop-down list to begin the configuration.

**Encryption** Select Both, TKIP, or AES as the encryption type.

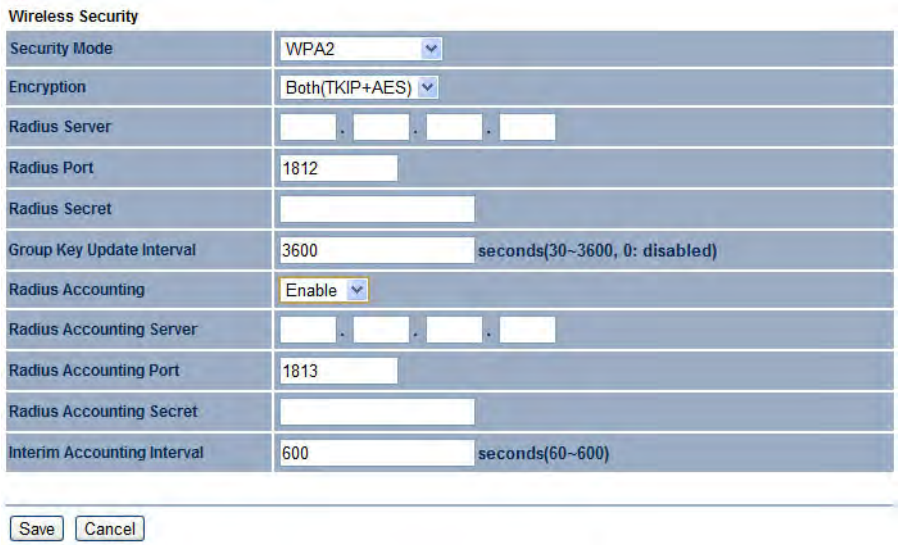
- Both = uses TKIP and AES
- TKIP = automatic encryption with WPA-PSK; requires passphrase.
- AES = automatic encryption with WPA2-PSK; requires passphrase.

**Radius Server** Specify the IP address of the RADIUS server.

**Radius Port** Specify the port number that your RADIUS server uses for authentication. Default port is 1812.

**Radius Secret** Specify RADIUS secret furnished by the RADIUS server.

**Group Key Update Interval** Specify how often, in seconds, the group key changes.



**Radius Accounting** Select to enable or disable RADIUS accounting.

**Radius Accounting Port** Specify the port number that your RADIUS accounting server uses for authentication. Default port is 1812.

**Radius Accounting Secret** Specify RADIUS accounting secret furnished by the RADIUS server.

**Interem Accounting Interval** Specify the interem accounting interval (60 - 600 seconds).

Click `Save` to save the changes or `Cancel` to cancel and return previous settings.

## Note:

802.11n does not allow WEP/WPA-PSK/WPA-PSK TKIP security mode. The connection mode will drops from 802.11n to 802.11g.

# 4.4.3 Configuring Wireless MAC Filter

**Note:**
This section applies to Access Point and WDS Access point mode.

Wireless MAC Filters are used to allow or deny network access to wireless clients according to their MAC addresses. You can manually add a MAC address to restrict the permission to access ENS200. The default setting is Disable Wireless MAC Filters.

**ACL Mode** Determines whether network access is granted or denied to clients whose MAC addresses appear in the MAC Address table on this page. Choices are Disable, Deny MAC in the list, or Allow MAC in the list.

**MAC Address Filter** Enter the MAC address of the device.

Click Add to add the MAC address to the MAC Address table.

Click Apply to apply the changes.

# 4.4.4 Configuring WDS Link Settings

Using WDS Link Settings, you can create a wireless backbone link between multiple access points that are part of the same wireless network. This allows a wireless network to be expanded using multiple Access Points without the need for a wired backbone to link them, as is traditionally required.

**Security** Select the type of WDS security: WEP or AES.

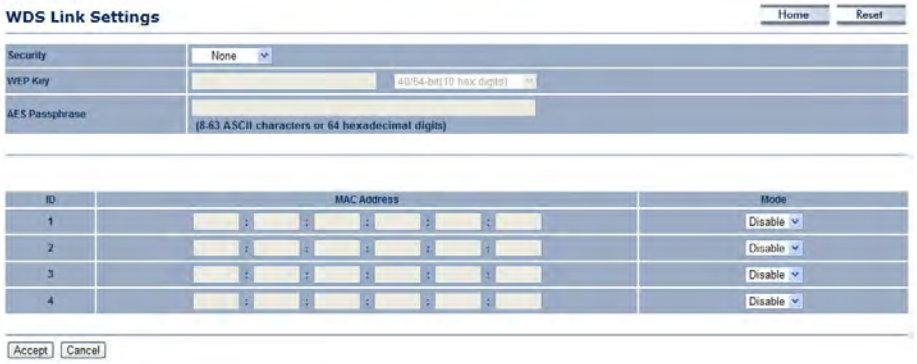
**WEP Key** Enter the WEP key.

**AES Passphrase** Enter the AES passphrase.

**MAC Address** Enter the MAC address of the Access Point to which you want to extend wireless connectivity.

**Mode** Select Disable or Enable to disable or enable WDS.

Click `Accept` to confirm the changes or `Cancel` to cancel and return previous settings.




## Note:

The Access Point to which you want to extend wireless connectivity must enter the ENS200's MAC address into its configuration. For more information, refer to the documentation for the Access Point. Not all Access Point supports this feature.

# 4.4.5 Configuring Advanced Network Settings

Network address translation (NAT) allows users on the LAN to access the Internet through a single or multiple Public IP Addresses. NAT provides firewall protection from hacker attacks and allows for mapping LAN IP addresses to WAN IP addresses with key services such as websites, FTP, video game servers, etc.

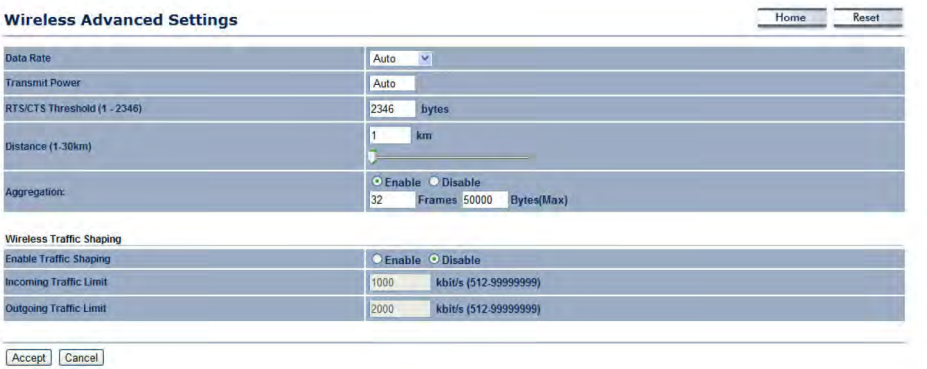
**Data Rate** Select a data rate from the drop-down list. The data rate affects throughput. If you select a low data rate value, for example, the throughput is reduced but the transmission distance increases.

**Transmit Power** Transmit Power is selected automatically

**RTS/CTS Threshold** Specify the threshold package size for RTC/CTS. A small number causes RTS/CTS packets to be sent more often and consumes more bandwidth.

**Distance** Specify the distance between Access Points and clients. Longer distances may drop high-speed connections.

**Aggregation** Merges data packets into one packet. This option reduces the number of packets, but increases packet sizes.



**Enable Traffic Shaping** Check this option to enable wireless traffic shaping. Traffic shaping regulates the flow of packets leaving an interface to deliver improved Quality of Service.

**Incoming Traffic Limit** Specify the wireless transmission speed used for downloading.

**Outgoing Traffic Limit** Specify the wireless transmission speed used for uploading.

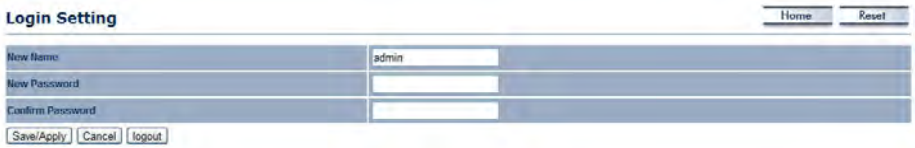
Click `Accept` to confirm the changes or `Cancel` to cancel and return previous settings.

# 4.5 Management Setup

The Management section lets you configure administration, management VLAN, SNMP settings, backup/restore settings, firmware upgrade, time settings, and log settings. This chapter describes these settings.

# 4.5.1 Configuring Administrator Account

Click the Administration link under the Management menu to change the user name and password used to log on to the ENS200 Web Configurator. The default user name is `admin` and the default password is `admin`. Changing these settings protects the ENS200 configuration settings from being accessed by unauthorized users.




**Name** Enter a new username for logging in to the Web Configurator.

**Password** Enter a new password for logging in to the Web Configurator

**Confirm Password** Re-enter the new password for confirmation.

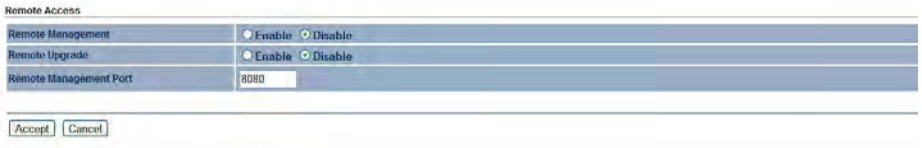
Click `Save/Apply` to apply the changes or `Cancel` to return previous settings.

**Remote Management** Enable or disable remote management.

**Remote Upgrade** Specify whether the ENS200 firmware can be upgraded remotely.

**Remote Management Port** If remote management is enabled, enter the port number to be used for remote management. For example: If you specify the port number 8080, enter **`http://<IP address>:8080`** to access the ENS200 Web Configurator.

Click `Accept` to apply the changes or `Cancel` to return previous settings.

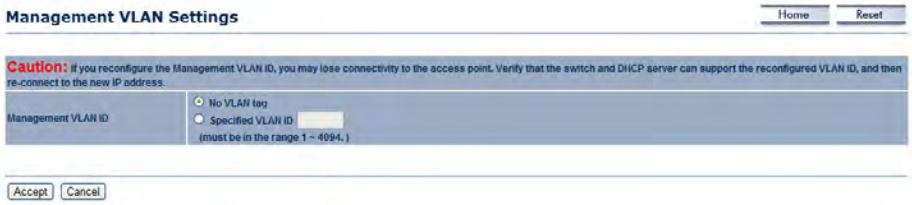


# 4.5.2 Configuring Management VLAN

Click the Management VLAN link under the Management menu to assign a VLAN tag to the packets. A VLAN is a group of computers on a network whose software has been configured so that they behave as if they were on a separate Local Area Network (LAN). Computers on VLAN do not have to be physically located next to one another on the LAN

**Management VLAN ID** If your network includes VLANs and if tagged packets need to pass through the Access Point, enter the VLAN ID. Otherwise, click No VLAN tag.

Click `Accept` to confirm the changes or `Cancel` to cancel and return previous settings.




## Note:

If you reconfigure the Management VLAN ID, you may lose your connection to the ENS200. Verify that the DHCP server supports the reconfigured VLAN ID and then reconnect to the ENS200 using the new IP address.

# 4.5.3 Configuring SNMP

SNMP is used in network management systems to monitor network-attached devices for conditions that warrant administrative attention.

**SNMP** Enable or disable the ENS200 SNMP function.

**Contact** Enter the contact details of the device.

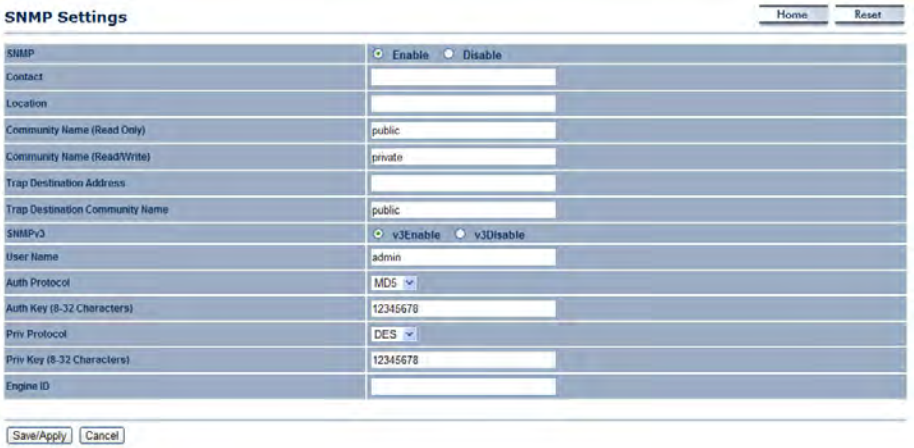
**Location** Enter the location of the device.

**Community Name (read only)** Enter the password for accessing the SNMP community for read-only access.

**Community Name (read/write)** Enter the password for accessing the SNMP community for read and write access.

**Trap Destination Address** Enter the IP address where SNMP traps are to be sent.

**Trap Destination Community Name** Enter the password of the SNMP trap community.



**SNMPv3**

**User Name**

**Auth Protocol**

**Auth Key (8-32 characters)**

**Priv Protocol**

**Priv Key (8-32 characters)**

**Engine ID**

Click `Save/Apply` to apply the changes or `Cancel` to return previous settings.

# 4.5.4 Configuring Backup/Restore Settings

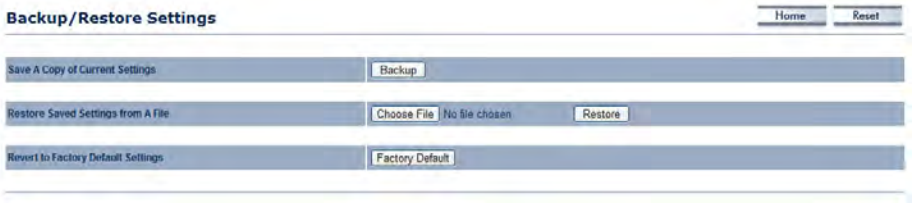
Click the Backup/Restore Setting link under the Management menu to save the ENS200's current settings in a file on your local disk or load settings onto the device from a local disk. This feature is particularly convenient administrators who have several ENS200 devices that need to be configured with the same settings.

This page also lets you return the ENS200 to its factory default settings. If you perform this procedure, any changes made to the ENS200 default settings will be lost.

**Save A Copy of Current Settings** Click Backup to save the current configured settings.

**Restore Saved Settings from a File** To restore settings that have been previously backed up, click Browse, select the file, and click Restore.

**Revert to Factory Default Settings** Click this button to restore the ENS200 to its factory default settings.



# 4.5.5 Configuring Firmware Upgrade

Firmware is system software that operates and allows the administrator to interact with the router.

**WARNING!**

Upgrading firmware through a wireless connection is not recommended. Firmware upgrading must be performed while connected to an Ethernet (LAN port) with all other clients disconnected.

The firmware upgrade procedure can take several minutes. Do not power off the ENS200 during the firmware upgrade, as it can cause the device to crash or become unusable.

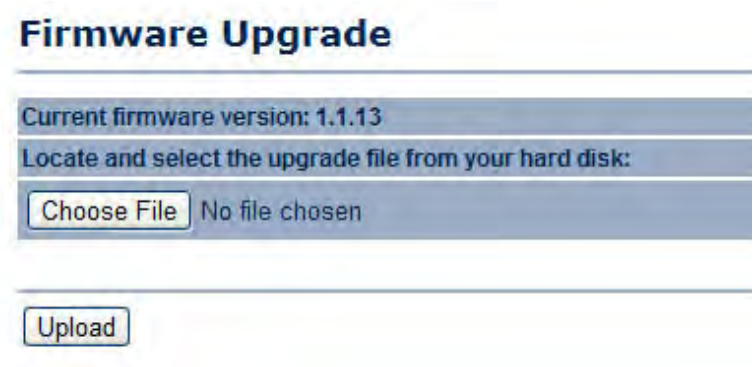
To update the firmware version, follow these steps:

1. Download the appropriate firmware approved by EnGenius Networks from an approved web site.

**Note:**

Save the firmware file to a local hard drive.

2. Click `Choose File`.
3. Browse the file system and select the firmware file.
4. Click `Upload`.
5. The ENS200 restarts automatically after the upgrade completes.



# 4.5.6 Configuring System Time

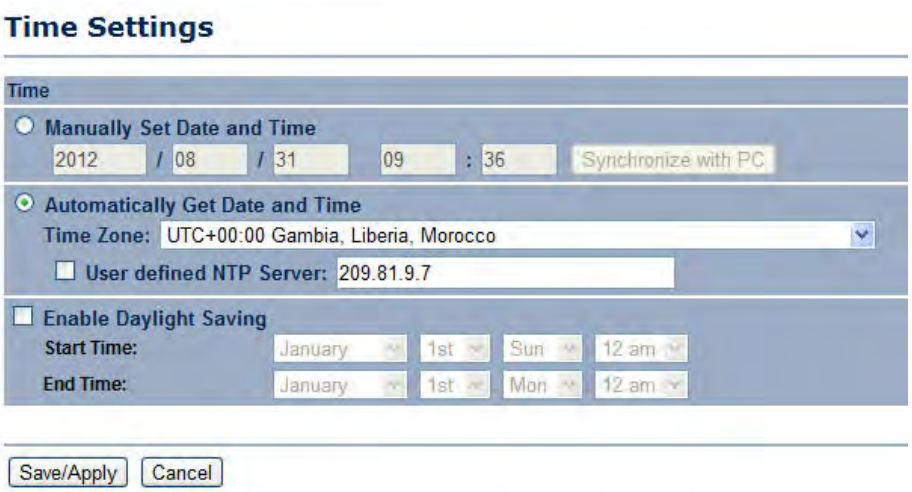
Change the system time of the ENS200 and setup automatic updates through a network time (NTP) protocol server or through a PC.

**Manually Set Date and Time** Manually specify the date and time.

**Synchronize with PC** Click this button to get the date and time settings from the administrator's PC.

**Automatically Get Date and Time** Select a time zone from the drop-down list and check whether you want to enter the IP address of an NTP server or use the default NTP server.

Click `Save/Apply` to apply the changes or `Cancel` to return previous settings.



# 4.5.7 Configuring Command Line Interface

Most users will configure the ENS200 through the graphical user interface (GUI). However, for those who prefer an alternative method there is the command line interface (CLI). The CLI can be access through a command console, modem or Telnet connection.

**CLI** Select to enable or disable the ability to modify the ENS200 via a command line interface (CLI).

Click `Save/Apply` to apply the changes or `Cancel` to return previous settings.

# 4.5.8 Configuring Logging

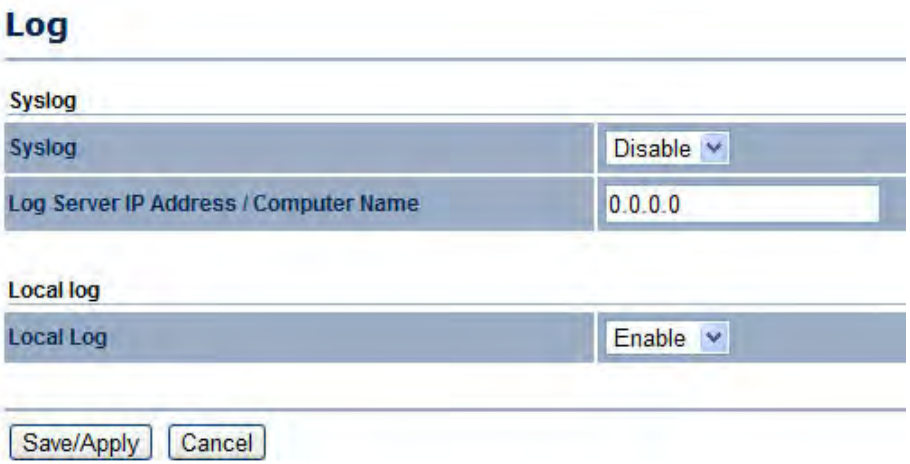
Display a list of events that are triggered on the ENS200 Ethernet and wireless interfaces. You can consult this log if an unknown error occurs on the system or when a report needs to be sent to the technical support department for debugging purposes.

**Syslog** Enable or disable the ENS200 syslog function.

**Log Server IP Address** Enter the IP address of the log server.

**Local Log** Enable or disable the local log service.

Click `Save/Apply` to apply the changes or `Cancel` to return previous settings.



# 4.5.9 Configuring Diagnostics

The diagnosis feature allow the administrator to verify that another device is available on the network and is accepting request packets. If the ping result returns a `live`, it means a device is on line. This feature does not work if the target device is behind a firewall or has security software installed.

**Target IP** Enter the IP address you would like to search.

**Ping Packet Size** Enter the packet size of each ping.

**Number of Pings** Enter the number of times you want to ping.

**Start Ping** Click Start Ping to begin pinging.

**Trace route Target** Enter an IP address or domain name you want to trace.

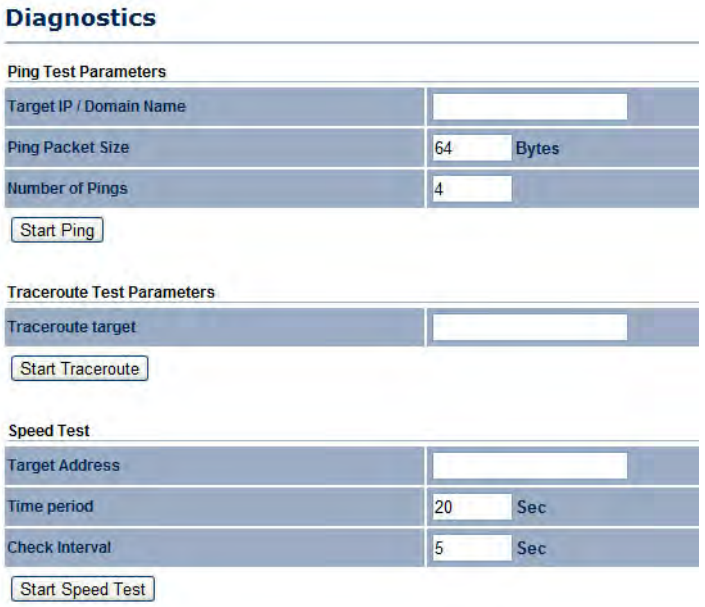
**Start Trace route** Click Start Trace route to begin the trace route operation.

**Target Address** Enter the IP address of the target PC.

**Time Period** Enter time period for the speed test.

**Check Interval** Enter the interval for the speed test.

**Start Speed Test** Click Start Speed Test to begin the speed test operation.



# 4.5.10 Viewing Device Discovery

**Device Name** Displays the name of the devices connected to the network of the ENS200.

**Operation Mode** Displays the operation mode of the devices connected to the network of the ENS200.

**IP Address** Displays the IP address of the devices connected to the network of the ENS200.

**System MAC Address** Displays the system MAC address of the devices connected to the network of the ENS200.

**Firmware Version** Displays the firmware version of the devices connected to the network of the ENS200.

# 4.5.11 Configure Denial of Service Protection

**Use TCP SYN Cookies Protection** Click to enable TCP SYN cookies protection.

**SYN Flood Attack Protection** Click to enable or disable SYN Flood Attack Protection.

**Match Interval Per Second** Enter the allowed number of packets per second.

**Limit Packets** Enter the maximum number of packets allowed per request.

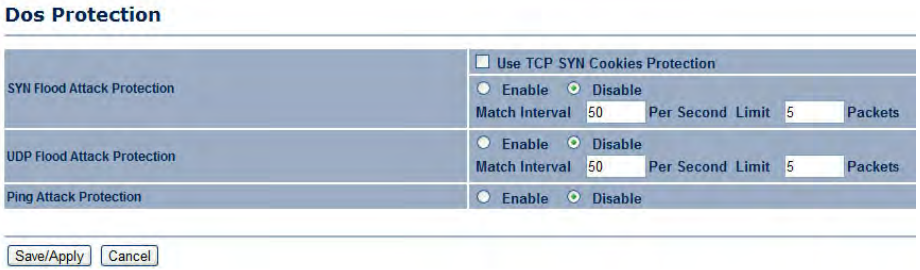
**UDP Flood Attack Protection** Click to enable or disable UDP Flood Attack Protection.

**Match Interval Per Second** Enter the allowed number of packets per second.

**Limit Packets** Enter the maximum number of packets allowed per request.

**Ping Attack Protection** Click to enable or disable ping attack protection.

Click `Save/Apply` to apply the changes or `Cancel` to return previous settings.



# 4.5 Logging Out

Click `Logout` to logout from the ENS200.

# Appendix A

## Federal Communication Commission Interference Statement

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 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.

**WARNING!**
Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this 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.

**FCC Radiation Exposure Statement**

**Important:**

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.
This device complies with FCC RF Exposure limits set forth for an uncontrolled environment, under 47 CFR 2.1093 paragraph (d)(2).
This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Radiation Exposure Statement:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body

# Appendix B

## Industry Canada Statement

This device complies with RSS-210 of the Industry Canada 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.

Ce dispositif est conforme à la norme CNR-210 d'Industrie Canada applicable aux appareils radio exempts de licence. Son fonctionnement est sujet aux deux conditions suivantes: (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

**Important:**

**Radiation Exposure Statement:**

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

**Déclaration d'exposition aux radiations:**

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

# Appendix C

## WorldWide Technical Support

| REGION/COUNTRY OF PURCHASE | SERVICE CENTRE | | SERVICE INFORMATION |
|---|---|---|---|
| Canada | CANADA | web site | www.engeniuscanada.com |
| | | email | rma@engeniuscanada.com |
| | | contact numbers | Toll Free: (+1) 888-397-2788<br>Local: (+1) 905-940-8181 |
| | | hours of operation | Monday - Friday<br>9:00AM to 5:30PM EST (GMT-5) |
| USA | LOS ANGELES, USA | web site | www.engeniustech.com |
| | | email | support@engeniustech.com |
| | | contact numbers | Toll Free: (+1) 888-735-7888<br>Local: (+1) 714-432-8668 |
| | | hours of operation | Monday - Friday<br>8:00 AM to 4:30 PM PST (GMT-8) |
| Mexico, Central and Southern America | MIAMI, USA | web site | [ES] es.engeniustech.com<br>[PT] pg.engeniustech.com |
| | | email | miamisupport@engeniustech.com |

| REGION/COUNTRY OF PURCHASE | SERVICE CENTRE | | SERVICE INFORMATION |
|---|---|---|---|
| | | contact numbers | Miami: (+1) 305-887-7378<br>Sao Paulo, Brazil: (+55)11-3957-0303<br>D.F., Mexico:(+52)55-1163-8894 |
| | | hours of operation | Monday - Friday<br>8:00 AM to 5:30PM EST (GMT-5) |
| Europe | NETHERLANDS | web site | www.engeniusnetworks.eu |
| | | email | support@engeniusnetworks.eu |
| | | contact numbers | (+31) 40-8200-887 |
| | | hours of operation | Monday - Friday<br>9:00 AM - 5:00 PM (GMT+1) |
| Africa<br>Middle East<br>Russia<br>CIS / Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Tajikistan, Turkmenistan, Ukraine, Uzbekistan<br>Turkey<br>Afghanistan<br>Pakistan<br>Bangladesh, Maldives, Nepal, Bhutan, Sri Lanka | DUBAI, UAE | web site | www.engenius-me.com |
| | | email | support@engenius-me.com |
| | | contact numbers | Toll Free:<br>U.A.E.: 800-EnGenius<br>800-364-364-87<br>General:<br>(+971) 4357-5599 |
| | | hours of operation | Sunday - Thursday<br>9:00 AM - 6:00 PM (GMT+4) |

| REGION/COUNTRY OF PURCHASE | SERVICE CENTRE | | SERVICE INFORMATION |
|---|---|---|---|
| Singapore, Cambodia, Indonesia, Malaysia, Thailand, Philippines, Vietnam<br>China, Hong Kong, Korea<br>India<br>South Africa<br>Oceania | SINGAPORE | web site | www.engeniustech.com.sg/e_warranty_form |
| | | email | techsupport@engeniustech.com.sg |
| | | contact numbers | Toll Free:<br>Singapore: 1800-364-3648 |
| | | hours of operation | Monday - Friday<br>9:00 AM - 6:00 PM (GMT+8) |
| Others | TAIWAN, R.O.C. | web site | www.engeniusnetworks.com |
| | | email | technology@senao.com |

**Note:**

* Service hours are based on the local time of the service center.

* Please visit the website for the latest information about customer service.