

# Quick Installation Guide

HSG320 v1.00

Wireless Hotspot Gateway

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## **FCC CAUTION**

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.

This equipment has been tested and proven 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.

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

**This device meets the government's requirements for exposure to radio waves. This device is designed and manufactured not to exceed the emission limits for exposure to radio frequency (RF) energy set by the Federal Communications Commission of the U.S. Government.**

**The device contains a low power transmitter which will send out Radio Frequency (RF) signal when transmitting. This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.**

## **CE CAUTION**

### **Declaration of Conformity with Regard to the 1999/5/EC (R&TTE Directive) for European Community, Switzerland, Norway, Iceland, and Liechtenstein**

#### **Model: HSG320**

For 2.4 GHz radios, the device has been tested and passed the requirements of the following standards, and hence fulfills the EMC and safety requirements of R&TTE Directive within the CE marking requirement.

- Radio: EN 300.328.
- EMC: EN 301.489-1, EN 301.489-17,
- EMC: EN 55022 Class B, EN 55024,+ A1 + A2 including the followings:
  - EN 61000-3-2, EN 61000-3-3.
  - EN 61000-4-2, EN 61000-4-3, EN 61000-4-4,
  - EN 61000-4-5, EN 61000-4-6, EN 61000-4-11
- Safety: EN 60950-1 + A11,

#### **Caution:**

- This declaration is only valid for configurations (combinations of software, firmware, and hardware) provided and supported by 4ipnet Inc. The use of software or firmware not provided and supported by 4ipnet Inc. may result in the equipment no longer being compliant with the regulatory requirements.

European standards dictate maximum radiated transmit power of 100mW EIRP and frequency range 2.400-2.4835 GHz. This equipment is intended to be used in all EU and EFTA countries. Outdoor use may be restricted to certain frequencies and/or may require a license for operation. Contact your local regulatory authority for compliance.

### **Taiwan NCC Statement**

根據 NCC 低功率電波輻射性電機管理辦法 規定:

- |      |   |
|------|---|
| 第十二條 | 經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。   |
| 第十四條 | 低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時應立即停用，並改善至無干擾時方得繼續使用。<br>前項合法通信，指依電信法規定作業之無線電通信。<br>低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之擾。 |

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## Preface

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The **4ipnet HSG320** is the most economical yet feature-rich metal housing, high speed (2 x 300Mbps), high capacity **Wireless Hotspot Gateway**, targeting small-to-medium-sized store owners who want to provide wireless Internet access services. The HSG320 is a perfect choice for hotspot operation, in terms of cost-effectiveness, deployment time, and user management.

This feature-rich product goes beyond what an operator could think of. Not only does it come with two built-in access point compliant with **IEEE 802.11 a/b/g/n**, it also offers an integrated billing system, including 10 billing templates based on 4 billing alternatives, flexible means to authenticate customers, real-time monitoring of current users, as well as customizable billing reports sent to an administrator's email boxes or FTP server periodically; designing an exclusive Web pages that interact with the users is also possible, whether by means of external URLs, HTML files, etc.

This Quick Installation Guide provides instructions and reference materials for getting started with HSG320.

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## Package Contents

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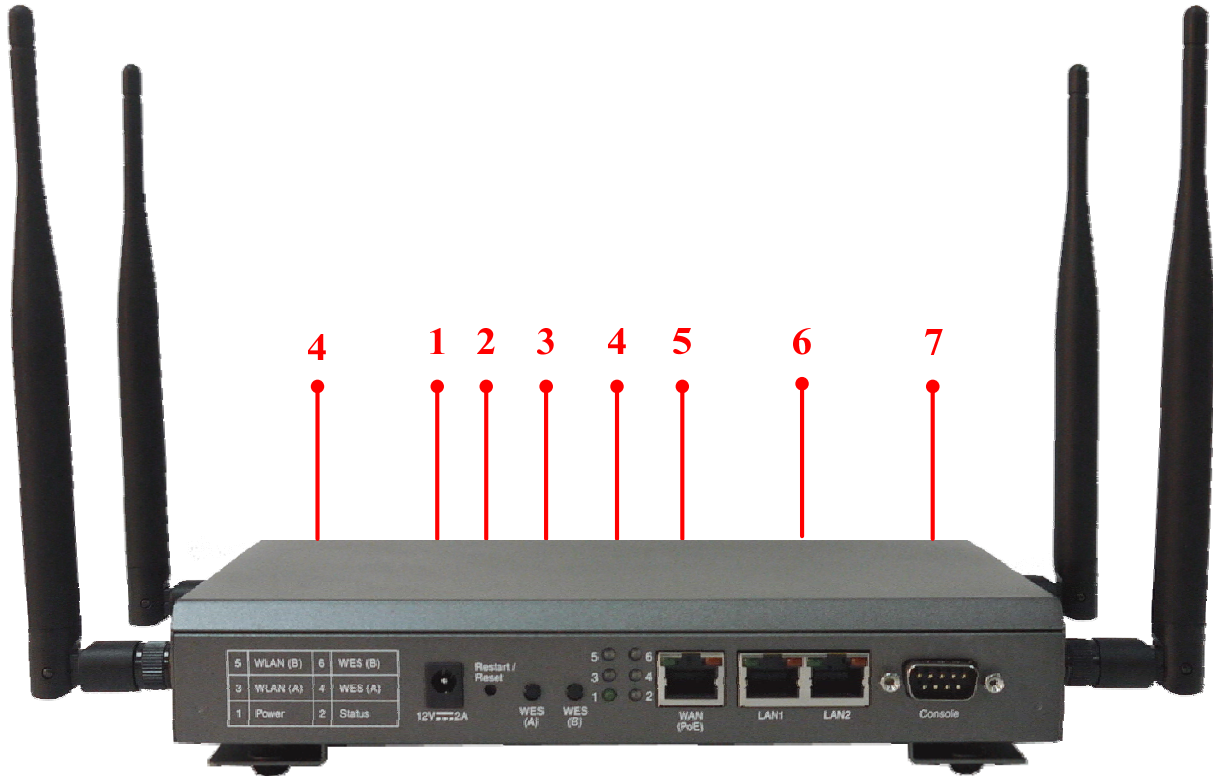
- |  |                           |
|--|---------------------------|
| 1. HSG320 x 1                            | 7. Detachable Antenna x 4 |
| 2. Quick Installation Guide x 1          |                           |
| 3. CD-ROM (with User Manual and QIG) x 1 |                           |
| 4. Console Cable x 1                     |                           |
| 5. Ethernet Cable x 1                    |                           |
| 6. Power Adapter (DC 12V) x 1            |                           |



*It is recommended to keep the original packing material for possible future shipment when repair or maintenance is required. Any returned product should be packed in its original packaging to prevent damage during delivery.*

## System Overview

### Rear Panel



1	12V 2A	Power Jack Socket for the power adaptor.
2	Restart / Reset	Press once to restart the system; Press and hold for more than 5 seconds to reset to factory default.
3	WES Button (A / B)	WDS Easy Setup. Press the button to build up a WDS link with another peer. 2 WDS links can be set up per RF card.
4	LED Indicators	6 indicators that displays the states of 6 various functions or progresses. The numbers are explained on the leftmost side of the rear panel.
5	WAN	For attaching an Ethernet cable to an uplink service. PoE (Power over Ethernet) is supported for the WAN port.
6	LAN Ports 1 - 2	The ports for connections with LAN side devices.

<b>7</b>	<b>Console</b>	To access HSG320 via the console interface.	
<b>9</b>	<b>WES LED</b>	For indicating WDS connection status.	
		Master (Press for more than 3 seconds)	Slave (Press once and then release right away)
	WES Start	LED (Green) OFF and then BLINKING SLOWLY	LED (Red) OFF and then BLINKING SLOWLY
	WES Negotiate	BLINKING NORMALLY (Green)	BLINKING NORMALLY (Red)
	WES Timeout	LED (Green) ON	LED (Red) ON
	WES Success	LED (Red) ON	LED (Green) ON
	WES Fail	LED (Green) ON	LED (Red) ON

**Right-Side Panel**



There is a hole on the right side for Kensington lock. If it is not used, admin can fill the hole with the rubber plug given.

## Hardware Installation

Please follow the steps mentioned below to install the hardware of HSG320:

### 1. Place the HSG320 at a best location.

The best location for HSG320 is usually at the center of your wireless network.

### 2. To supply power over to HSG320.

(a) Connect the **DC power adapter** to the HSG320 power socket on the front panel.



*Please only use the power adapter supplied with the HSG320 package. Using a different power adapter may damage this system.*

### 3. Connect HSG320 to your outbound network device.

Connect one end of the **Ethernet cable** to the WAN port of HSG320 on the rear panel. Depending on the type of Internet service provided by your ISP, connect the other end of the cable to the ATU-Router of an ADSL, a cable modem, a switch or a hub. The WAN LED indicator should be ON to indicate a proper connection.

### 4. Connect HSG320 to your network device.

Connect one end of the **Ethernet cable** to the LAN1 port of HSG320 on the rear panel. Connect the other end of the cable to a PC for configuring the system. The LAN1 LED indicator should be ON to indicate a proper connection.

» **Note:**

HSG320 has two virtual zones **Private** and **Public** which are mapped to LAN1 (192.168.1.254) and LAN2 (192.168.11.254) respectively.

Now, the hardware installation is complete.



*To double verify the wired connection between HSG320 and your switch/router/hub, please check the LED status indication of these network devices.*



## Getting Started

HSG320 supports web-based configuration. Upon the completion of hardware installation, HSG320 can be configured through a PC by using its web browser with JavaScript enabled such as Internet Explorer version 6.0.

Default LAN interface IP address:

LAN1 (**192.168.1.254**) are mapped to Private Zone, no authentication required for users.

LAN2 (**192.168.11.254**) are mapped to Public Zone, authentication required for users.

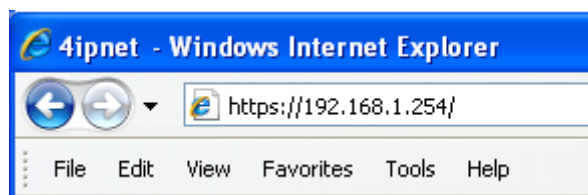
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» **Note:** The instructions below are illustrated with the administrator PC connected to LAN1.

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### Steps:

1. Once the hardware installation is complete, set DHCP in TCP/IP settings of the administrator PC to “Obtain an IP address automatically”. Connect the PC to the LAN1 Port of HSG320. An IP address will be assigned to the PC automatically via the HSG320 built-in DHCP server.
2. Launch a web browser to access the web management interface of HSG320 by entering “**https://192.168.1.254**” or “**http://192.168.1.254**” in the address field.



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» **Note:** “**https**” is used for a secured connection.

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3. The following Administrator Login Page will then appear. Enter “**admin**” (the default value) in the *Username* and *Password* fields, and then click **Login** to log in.



4. The **Home Page** will appear after a successful login.



►► **Note:** To logout, simply click **Logout** at the upper right hand corner of the interface to return to the Administrator Login Page.

## ***Common Settings***

### **< Setup Wizard >**

HSG320 provides a **Setup Wizard** for quick configuration. To quickly configure HSG320 by using the **Setup Wizard**, click on the **Setup Wizard** button to start the configuration process.



## Step 1. General

- Enter a new administrator's password in the **New Password** field, and re-enter it again in the **Verify Password** field (a maximum of 20 characters and no spaces allowed in between).
- Select an appropriate time zone from the **Time Zone** drop-down list box and enter the URL of a valid NTP server to set up the system time.
- Click **Next** to continue.

The screenshot shows the 'Setup Wizard' interface. The title is 'Setup Wizard'. On the left, there are buttons for 'Step 1', 'Step 2', 'Step 3', 'Step 4', and 'Exit'. The 'Step 1' button is highlighted. Below it, text reads: 'It is recommended to change administrator's password and select an appropriate time zone for the system.' The main area is titled 'General' and contains three input fields: 'New Password:' with an asterisk, 'Verify Password:' with an asterisk, and 'Time Zone:' with a dropdown menu showing '(GMT+08:00)Taipei'. A 'Next' button is located at the bottom right.



For security concern, it is strongly recommended to change the administrator's password.



HSG320 supports NTP time synchronization. If NTP is the option selected, it is strongly recommended to make sure the NTP server is reachable and alive.

## Step 2. WAN and Wireless Interfaces

For setting up both wired WAN and Wireless LAN interfaces:

- Select a proper type of Internet connection for WAN interface from the following three available connections: **Static**, **Dynamic**, or **PPPoE**. Your ISP or network administrator can advise on the connection type available to you. Below depicts an example for **Dynamic**.



- Click **Next** to continue.

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► **Note:**

HSG320 supports two Virtual Access Points, one under **Private** zone and one under **Public** zone, with ESSID “HSG320-1” and “HSG320-2” respectively by default. The ESSID for VAP under Private is not broadcasted by default.

Detailed configurations for these two VAP can be performed under **Main Menu >> System >> Zone Configuration**.

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### Step 3. Add Local User Account (Optional)

- A new user can be added to the Local User database. To add a user here, enter the **Username** (e.g. testuser), **Password** (e.g. testuser), **MAC Address** (optional, to specify the valid MAC address of this user) and assign an **Applied Group** to this particular user (or use the default **None**).
- Click **Next** to continue.

The screenshot shows the 'Setup Wizard' interface for adding a local user account. The page has a red header with the 4ipnet logo and navigation links for Home, Logout, and Help. On the left, a vertical sidebar contains buttons for Step 1, Step 2, Step 3 (highlighted in orange), Step 4, and Exit. Below Step 3, a note reads: 'You can choose to add local user accounts for a quick configuration.' The main content area is titled 'Local User Account (Optional)' and contains three input fields: 'Username' with 'testuser' entered, 'Password' with masked characters, and 'class' with a dropdown menu set to 'Group 1'. At the bottom of the main area are three buttons: 'Back', 'Skip', and 'Next'.

### Step 4. Confirm and Restart

- Click **Finish** to save current settings and restart the system.

The screenshot shows the 'Setup Wizard' interface for the 'Confirm and Restart' step. The page has the same red header as the previous screen. The left sidebar now highlights 'Step 4' in orange. Below it, a note reads: 'Press "Finish" button to confirm the settings and restart the system.' The main content area is titled 'Confirm and Restart' and features a red instruction: 'Please press Finish button and restart the system.' At the bottom of the main area are two buttons: 'Back' and 'Finish'. The footer of the page contains the text: 'Copyright © 2009 4IPNET, INC. All rights reserved.'

- A confirmation dialog box will then appear. Click **OK** to continue.



- The **Confirm and Restart** message will appear on the screen during the restarting process. Please do not interrupt the system until the Administrator Login Page appears.



» **Note:** The system is trying to locate a DNS server at this stage. Therefore, a longer startup time is required if the configured DNS cannot be found.

- When the following Administrator Login Page appears, it means the restart process is now completed.



## Deployment Example

### < Small Hotspot Network Environment >

Nowadays, wireless network service is common and popular in a hotspot network environment. HSG320 provides wireless network service with authentication required for clients in Public Zone. Wireless clients in the Public Zone and Private Zone are isolated from other wireless clients within the same zone when **Station Isolation** feature is enabled. Using wireless instead of wired service helps hotspot owners to build network service quickly.

HSG320 supports two zones, **Private** and **Public**. In the **Private Zone**, authentication is not required to access the network via wired and wireless. Administrator can access the Web Management Interface (WMI) of HSG320 through the wired LAN port. Waiters or waitresses can send orders back to the electrical menu system via wireless hand set devices. In **Public Zone**, by default, **Authentication Required** is enabled, so wired and wireless clients in Public Zone are required to get authenticated successfully before surfing the Internet.



The switches deployed under HSG320 must be **Layer 2 switches** only.

### Configuration Steps:

#### Step 1: Configure Wireless Band for the Wireless interface

- Click **Main Menu** in the homepage. Click the **System** menu, then **Service Zones** tab.
- Select a desired wireless band from **Band** drop-down list.



System Users Network Utilities Status

General WAN WAN Traffic IPv6 LAN Port Mapping Service Zones

Main Menu > System > Service Zone

Service Zone Settings						
Service Zone Name	Applied Policy	IP Address	Network Alias	DHCP Pool	LAN Port Mapping	Details
	Default Authn Option	IPv6 Address			Status	
Private	Policy 1	192.168.1.254	N/A	192.168.1.1 ~ 192.168.1.100	<input checked="" type="checkbox"/> <input type="checkbox"/>	Configure
	Disabled	N/A			Enabled	
Public	Policy 1	192.168.11.254	N/A	192.168.11.1 ~ 192.168.11.100	<input type="checkbox"/> <input checked="" type="checkbox"/>	Configure
	Server 1	N/A			Enabled	

Wireless General Settings	
RF Card	RF Card1
Band	802.11g+802.11n <input type="checkbox"/> Pure 11n
Short Preamble	<input checked="" type="radio"/> Enabled <input type="radio"/> Disabled
Short Guard Interval	<input checked="" type="radio"/> Enabled <input type="radio"/> Disabled
Channel Width	20 MHz
Channel	6
Max Transmit Rate	Auto
Transmit Power	Highest
DTIM Period	1 (1-255ms)
ACK Timeout	0 (0-255ms)

Apply Cancel



## Step 2: Configure Public Zone Settings

- Click the **System** menu.
- Click the **Service Zones** tab.
- Click the **Configure** button for Public.

Service Zone Settings						
Service Zone Name	Applied Policy	IP Address	Network Alias	DHCP Pool	LAN Port Mapping	Details
	Default Authen Option	IPv6 Address			Status	
Private	Policy 1	192.168.1.254	N/A	192.168.1.1 ~ 192.168.1.100		<a href="#">Configure</a>
	Disabled	N/A			Enabled	
Public	Policy 1	192.168.11.254	N/A	192.168.11.1 ~ 192.168.11.100		<a href="#">Configure</a>
	Server 1	N/A			Enabled	

## Step 3: Configure ESSID for Public Zone

- Enter a desired **ESSID** for Public Zone in Wireless Settings for both RF cards **RF1** and **RF2: HSG320-2**.
- Click **Apply** at the bottom of this page.

Wireless Settings :RF1 VAP 2	
<b>Basic</b>	VAP Status : <input checked="" type="radio"/> Enable <input type="radio"/> Disable ESSID : <span style="border: 1px solid red; padding: 2px;">HSG320-2</span> *
<b>Security</b>	Security Type : <span style="border: 1px solid #ccc; padding: 2px;">None</span> ▼
<b>Advanced</b>	Beacon Interval : <span style="border: 1px solid #ccc; padding: 2px;">100</span> (25-500ms) RTS Threshold : <span style="border: 1px solid #ccc; padding: 2px;">2346</span> (1-2346) Fragment Threshold : <span style="border: 1px solid #ccc; padding: 2px;">2346</span> (256-2346) Broadcast SSID : <input checked="" type="radio"/> Enable <input type="radio"/> Disable Station Isolation : <input type="radio"/> Enable <input checked="" type="radio"/> Disable WMM : <input checked="" type="radio"/> Enable <input type="radio"/> Disable IGMP Snooping : <input checked="" type="radio"/> Enable <input type="radio"/> Disable

Wireless Settings :RF2 VAP 2	
<b>Basic</b>	VAP Status : <input checked="" type="radio"/> Enable <input type="radio"/> Disable ESSID : <span style="border: 1px solid red; padding: 2px;">HSG320-2</span> *
<b>Security</b>	Security Type : <span style="border: 1px solid #ccc; padding: 2px;">None</span> ▼
<b>Advanced</b>	Beacon Interval : <span style="border: 1px solid #ccc; padding: 2px;">100</span> (25-500ms) RTS Threshold : <span style="border: 1px solid #ccc; padding: 2px;">2346</span> (1-2346) Fragment Threshold : <span style="border: 1px solid #ccc; padding: 2px;">2346</span> (256-2346) Broadcast SSID : <input checked="" type="radio"/> Enable <input type="radio"/> Disable Station Isolation : <input type="radio"/> Enable <input checked="" type="radio"/> Disable WMM : <input checked="" type="radio"/> Enable <input type="radio"/> Disable IGMP Snooping : <input checked="" type="radio"/> Enable <input type="radio"/> Disable

#### Step 4: Configure ESSID for Private Zone

- Enter a desired **ESSID** for Private Zone in Wireless Settings: **HSG320-1**. *Note: Private Zone ESSID is not broadcasted by default but can be Enabled.*
- Select a desired **Security Type** for Private Zone for security enhancement if needed.
- Click **Apply** at the bottom of this page.

Service Zone Settings						
Service Zone Name	Applied Policy	IP Address	Network Alias	DHCP Pool	LAN Port Mapping	Details
	Default Authen Option	IPv6 Address			Status	
Private	Policy 1	192.168.1.254	N/A	192.168.1.1 ~ 192.168.1.100		<a href="#">Configure</a>
	Disabled	N/A			Enabled	
Public	Policy 1	192.168.11.254	N/A	192.168.11.1 ~ 192.168.11.100		<a href="#">Configure</a>
	Server 1	N/A			Enabled	



Wireless Settings :RF1 VAP 1	
<b>Basic</b>	VAP Status : <input checked="" type="radio"/> Enable <input type="radio"/> Disable ESSID : <input type="text" value="HSG320-1"/> *
<b>Security</b>	Security Type : <input type="text" value="None"/>
<b>Advanced</b>	Beacon Interval : <input type="text" value="100"/> (25-500ms) RTS Threshold : <input type="text" value="2346"/> (1-2346) Fragment Threshold : <input type="text" value="2346"/> (256-2346) Broadcast SSID : <input type="radio"/> Enable <input checked="" type="radio"/> Disable Station Isolation : <input type="radio"/> Enable <input checked="" type="radio"/> Disable WMM : <input checked="" type="radio"/> Enable <input type="radio"/> Disable IGMP Snooping : <input checked="" type="radio"/> Enable <input type="radio"/> Disable

Wireless Settings :RF2 VAP 1	
<b>Basic</b>	VAP Status : <input checked="" type="radio"/> Enable <input type="radio"/> Disable ESSID : <input type="text" value="HSG320-1"/> *
<b>Security</b>	Security Type : <input type="text" value="None"/>
<b>Advanced</b>	Beacon Interval : <input type="text" value="100"/> (25-500ms) RTS Threshold : <input type="text" value="2346"/> (1-2346) Fragment Threshold : <input type="text" value="2346"/> (256-2346) Broadcast SSID : <input type="radio"/> Enable <input checked="" type="radio"/> Disable Station Isolation : <input type="radio"/> Enable <input checked="" type="radio"/> Disable WMM : <input checked="" type="radio"/> Enable <input type="radio"/> Disable IGMP Snooping : <input checked="" type="radio"/> Enable <input type="radio"/> Disable

## Step 5: Confirm Configuration and Restart

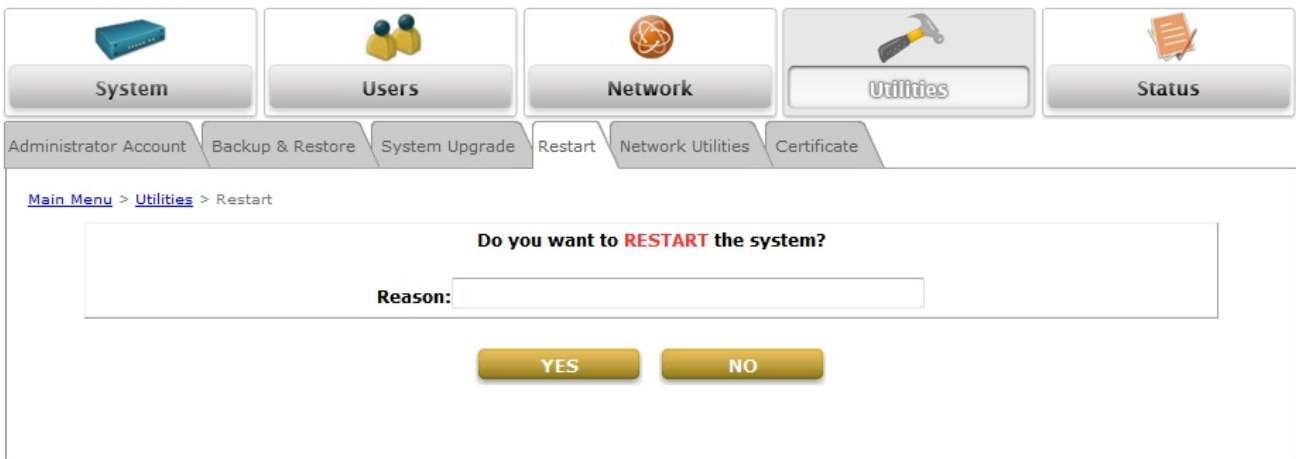
- Click **Restart** once all configurations are done.

You should restart the system to activate the changes. [Restart.](#)



## Step 6: Restart the System

A confirmation message of “**Do you want to restart the system?**” will appear. Click **YES** to start the restarting process. A confirmation dialog box will then pop out. Click **OK** to continue.



Please do not interrupt the system during the restarting process.

**For further configuration and information, please refer to the User's Manual.**

If you have purchased **4ipnet's Wireless Ticket Generator** and/or **4ipnet's POS Printer** and wish to incorporate it into your Hotspot, please follow the Connection Guide of Wireless Ticket Generator after you have installed and configured your HSG320.

**For further information on HSG320-WTG/HSG320-WTG2, please refer to Appendix G of the User's Manual.**