

Quick Installation Guide

HSG100 v2.00

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Regulatory Information



FCC Certification

HSG100 has been evaluated and certified according to FCC Rules Part 15 subpart C under one granted FCC-ID: VZ9080001.

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.

Caution:

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

FCC 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.

FCC Class B 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 and uses radio frequency energy and, if not installed and used in accordance with the instructions, may cause interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause 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 or cable input device.
- 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.

**Declaration of Conformity with Regard to the 1999/5/EC (R&TTE Directive) for European Community, Switzerland, Norway, Iceland, and Liechtenstein****Model: HSG100**

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 300.328:2006
- Radio: EN 50392:2004
- EMC: EN 301.489-1:2005, EN 301.489-17:2002,
- EMC: EN 55022:2006 Class B, EN 55024:1998 + A1:2001 + A2:2003 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 60950-1:2001 + A11:2004,

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.

Preface

The **4ipnet HSG100** is the most economical yet feature-rich **Wireless Hotspot Gateway**, targeting mini-size stores who want to provide small, single-point wireless Internet access service. HSG100 is a perfect choice for beginners to run hotspot businesses. It does not cost a fortune to buy a pile of equipment, nor does it take the skills of an expert to glue multiple applications out of multiple freeware. Feature-packed for hotspot operation, HSG100 comes with **built-in 802.11 b/g access point, web server and web pages for clients to login, easy logo-loading for branding a hotspot store, simple user/visitor account management tool, payment plans, PayPal credit card gateway, traffic logs, IP sharing** and etc. HSG100 also brings in an extra advantage - the wall-mountable, dust-proof (IP50) metal housing.

This Quick Installation Guide provides instructions and reference materials for getting started with 4ipnet HSG100.

Package Contents

- | | |
|--|-------------------------------|
| 1. 4ipnet HSG100 x 1 | 6. Power Adapter (DC 12V) x 1 |
| 2. Quick Installation Guide x 1 | 7. Antenna x 2 |
| 3. CD-ROM (with User Manual and QIG) x 1 | 8. Mounting Kit x 1 |
| 4. Console Cable x 1 | 9. Ground Cable x 1 |
| 5. Ethernet Cable x 1 | 10. Null modem connector 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.

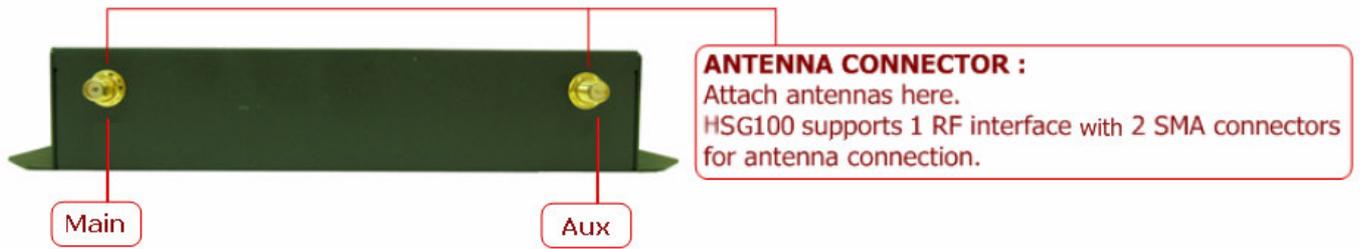
System Overview

Front Panel

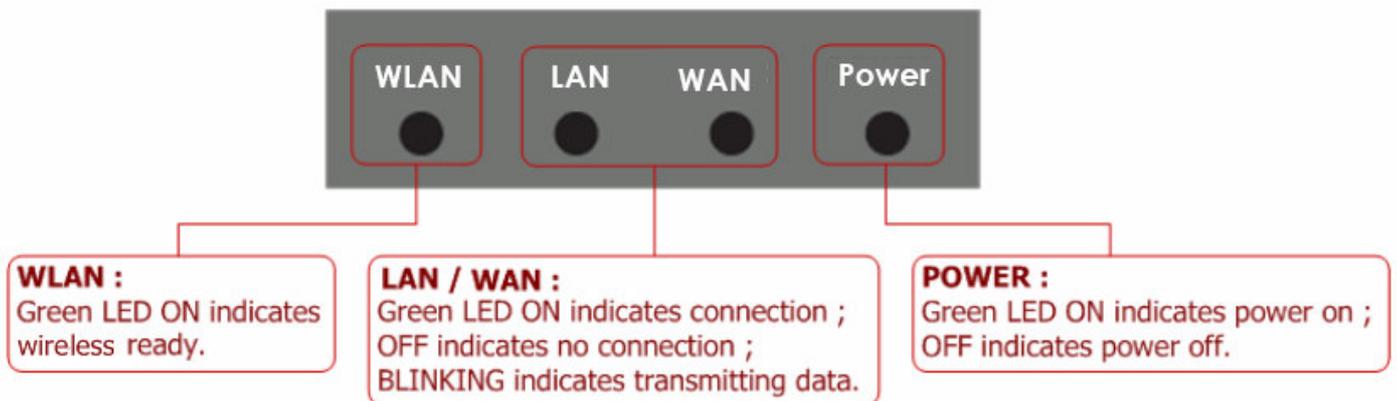


1. **Power SOCKET (12V DC)** : Attach the power socket here.
2. **Reset** :
 - Press the Reset button once to restart the system. The LED except Power indicator will be off before restarting.
 - Press and hold the Reset button for more than 10 seconds to reset the system to default configurations.
3. **WAN (PoE)** : This port is for connection to external network not managed by HSG100. For example, it may connect to the ATU-Router of an ADSL, or the port of a Cable Modem.
4. **LAN** : This port is a Private LAN port that authentication is not required for clients to access network via this port. In addition, administrator can access the WMI (Web Management Interface) via this port.
5. **Console** : The serial RS-232 DB9 cable attaches here.

Rear Panel



Top LED Panel



Hardware Installation

Please follow the steps mentioned below to install the hardware of HSG100:

1. Place the HSG100 at a best location.

The best location for HSG100 is usually at the center of your wireless network.

2. Connect HSG100 to your outbound network device.

Connect one end of the **Ethernet cable** to the WAN port of HSG100 on the front panel. Per your needs, 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.

3. Connect HSG100 to your network device.

Connect one end of the **Ethernet cable** to the LAN port of HSG100 on the front panel. Connect the other end of the cable to a PC for configuring the system. The LAN LED indicator should be ON to indicate a proper connection.

4. There are two ways to supply power over to HSG100.

(a) Connect the **DC power adapter** to the HSG100 power socket on the front panel.



*Please only use the power adapter supplied with the HSG100 package.
Using a different power adapter may damage this system.*

(b) HSG100 is capable of transmitting DC current via its WAN PoE port. Connect an IEEE 802.3af-compliant PSE device, e.g. a PoE-switch, to the WAN port of HSG100 with the Ethernet cable.

Now, the hardware installation is completed.



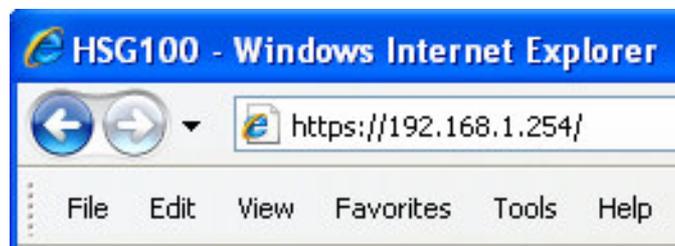
To double verify the wired connection between HSG100 and your switch/router/hub, please check the LED status indication of these network devices.

Getting Started

4ipnet HSG100 supports web-based configuration. Upon the completion of hardware installation, HSG100 can be configured through a PC by using its web browser with JavaScript enabled such as Internet Explorer version 6.0.

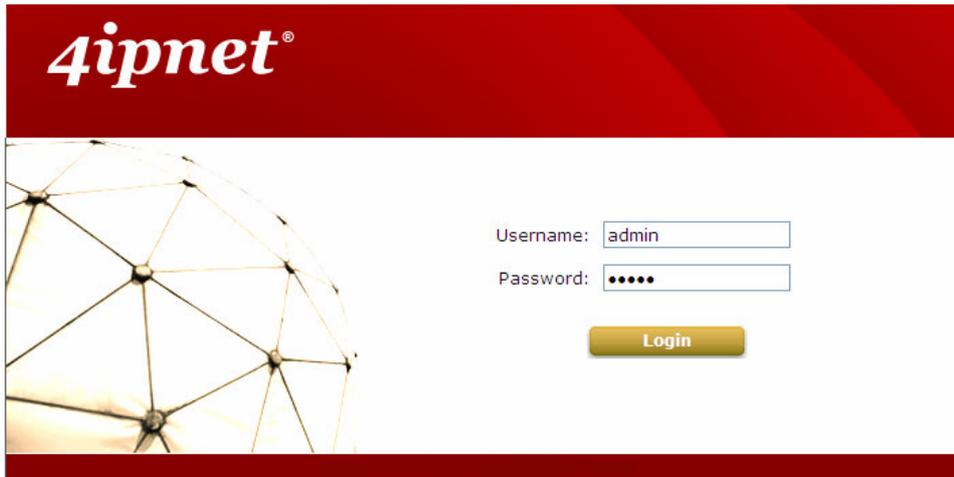
Steps:

1. Once the hardware installation is done, set DHCP in TCP/IP of the administrator PC to get an IP address dynamically. Connect the PC to the LAN Port of HSG100. An IP address will be assigned to the PC automatically via the HSG100 built-in DHCP server.
2. Launch a web browser to access the web management interface of HSG100 by entering “**https://192.168.1.254**” or “**http://192.168.1.254**” in the address field.



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

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

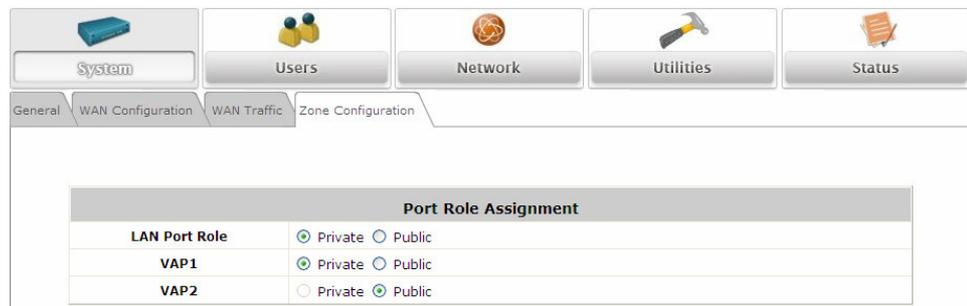
< Setup Wizard >

HSG100 provides a **Setup Wizard** for quick configuration. To quickly configure HSG100 by using the **Setup Wizard**, click on the **Setup Wizard** button to start the configuration process.



HSG100 supports a LAN port plus two Virtual Access Points, VAP1 and VAP2. By default, the role of LAN port is private, the role of VAP1 is private, and the role of VAP2 is public. The role can be configured on **Port Role Assignment** page of **Main Menu >> System >> Zone Configuration**.

▶▶ **Note:**



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 to set up the system time.
- Client's browser will be redirected after logging in the system successfully. The redirected page can be assigned instead of the default setting of client's browser by enabling Homepage Redirect URL and configuring a desired one.
- Click **Next** to continue.

The screenshot shows the 4ipnet Setup Wizard interface. At the top left is the 4ipnet logo, and at the top right are links for Home and Logout. The main heading is "Setup Wizard". On the left side, there is a vertical navigation pane with buttons for Step 1 (highlighted in orange), Step 2, Step 3, Step 4, and Exit. Below Step 1, there is a note: "It is recommended to change administrator's password, and select an appropriate time zone and NTP server for the system." The main content area is titled "Step 1. General" and contains the following fields:

- Administrator's Password:** Two text input fields labeled "New Password" and "Verify Password", both containing five dots.
- Time:** A dropdown menu for "Time Zone" set to "(GMT+08:00)Taipei" and a text input field for "NTP Server" containing "tock.usno.navy.mil" with a red asterisk and the example "(e.g. tock.usno.navy.mil)".
- Portal URL:** A radio button group for "Status" with "Enable" selected and "Disable" unselected, and a text input field for "URL" containing "http://www.google.com".

A yellow "Next" button is located at the bottom right of the form.



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



HSG100 supports NTP time synchronization only, it is strongly recommended to make sure the NTP server is reachable and alive.

Step 2. WAN and Wireless Interfaces

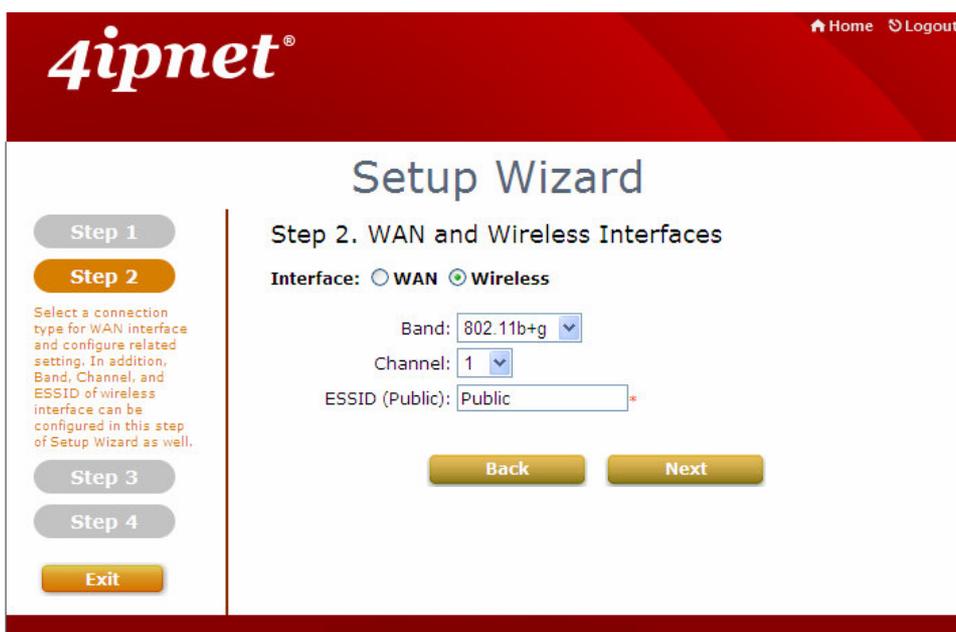
For setting up both wired WAN and Wireless LAN interfaces:

- 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**.



The screenshot shows the 4ipnet Setup Wizard at Step 2, titled "WAN and Wireless Interfaces". On the left, a sidebar contains buttons for Step 1, Step 2 (highlighted), Step 3, Step 4, and Exit. Below Step 2, a text box explains: "Select a connection type for WAN interface and configure related setting. In addition, Band, Channel, and ESSID of wireless interface can be configured in this step of Setup Wizard as well." The main content area shows "Interface:" with radio buttons for WAN (selected), Wireless, and PPPoE. Below this, three radio button options are listed: "Static (Use the following IP settings)", "Dynamic (IP settings assigned automatically)" (selected), and "PPPoE". At the bottom of the main area are "Back" and "Next" buttons. The top right of the page has "Home" and "Logout" links.

- Click **Wireless** radio button.
- Select desired wireless **Band**, **Channel**, and **ESSID** for public zone.

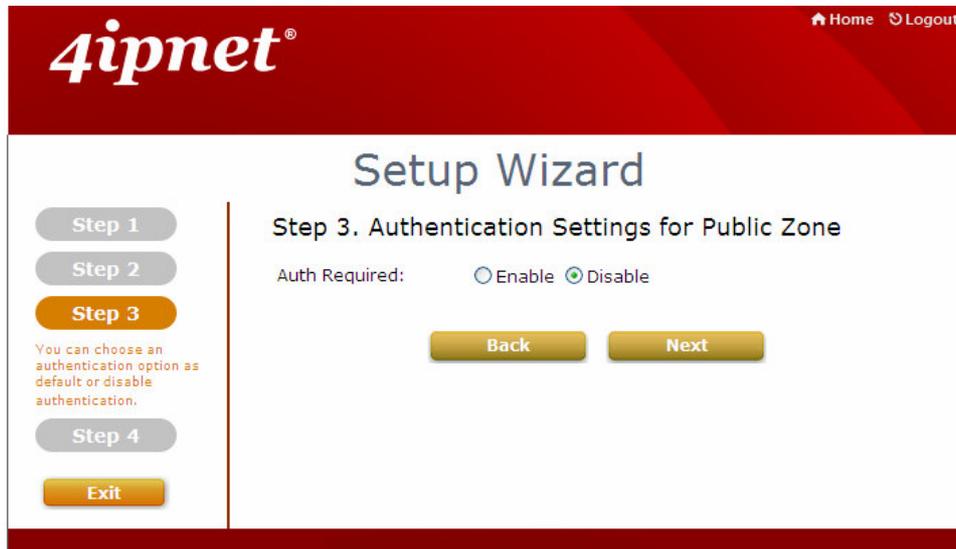


The screenshot shows the 4ipnet Setup Wizard at Step 2, titled "WAN and Wireless Interfaces". On the left, the sidebar is the same as in the previous screenshot. The main content area shows "Interface:" with radio buttons for WAN, Wireless (selected), and PPPoE. Below this, three configuration fields are visible: "Band:" with a dropdown menu showing "802.11b+g", "Channel:" with a dropdown menu showing "1", and "ESSID (Public):" with a text input field containing "Public". At the bottom of the main area are "Back" and "Next" buttons. The top right of the page has "Home" and "Logout" links.

- Click **Next** to continue.

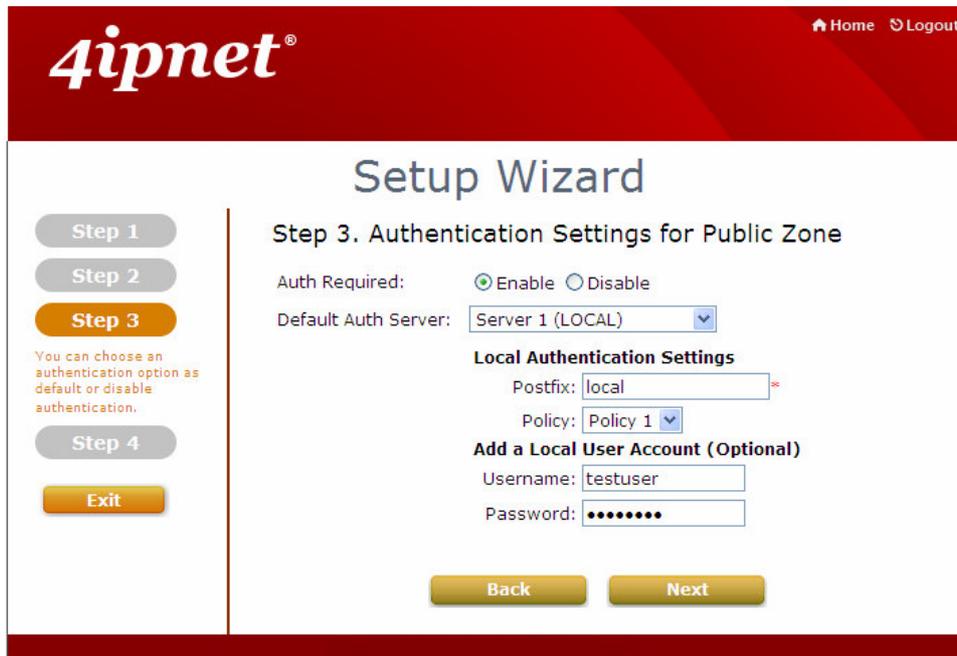
Step 3. Authentication Settings for Public Zone

- For public zone (by default, authentication is enabled), authentication can be enabled or disabled. Clients shall log in the system before using network service if **Auth Required** is enabled.



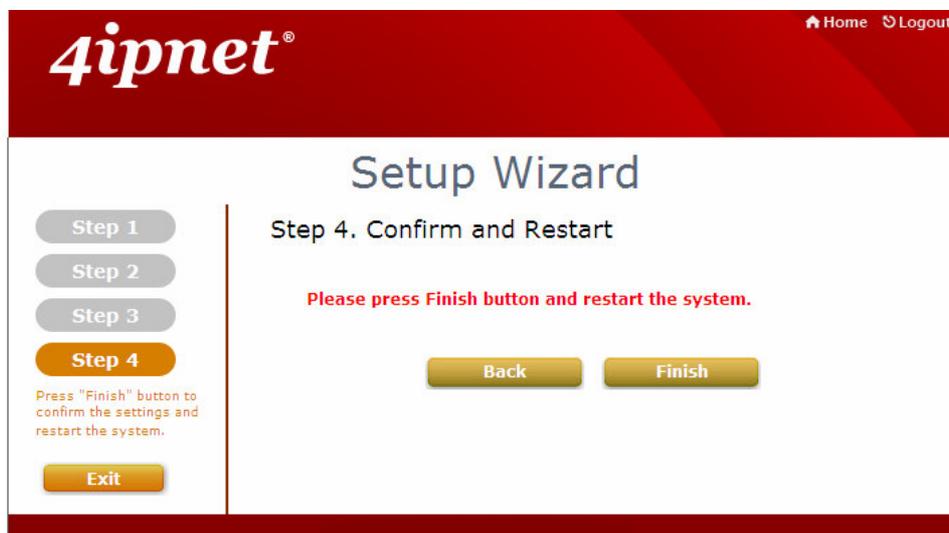
When authentication is enabled, a default authentication server shall be configured. HSG100 supports 4 kinds of authentication servers including Server 1 (LOCAL), Server 2 (RADIUS), Server 3 (RADIUS), and On-demand (ONDEMAND). Below depicts an example for **LOCAL**.

- Select *Server 1 (LOCAL)* in **Default Auth Server**.
- Configure related settings for the selected auth server such as **Postfix** and applied **Policy** if needed.
- A new local account can be created and added into the database via this optional function. If local user accounts are not required, click **Next** to go directly to **Step 4**. However, it is recommended to create a local user account in order to verify the system's readiness upon completion of this **Setup Wizard**.
- Enter the *Username* (e.g. "**testuser**") and *Password* (e.g. "**testuser**") to create a new local account.
- Click **Next** to continue.



Step 4. Confirm and Restart

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



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



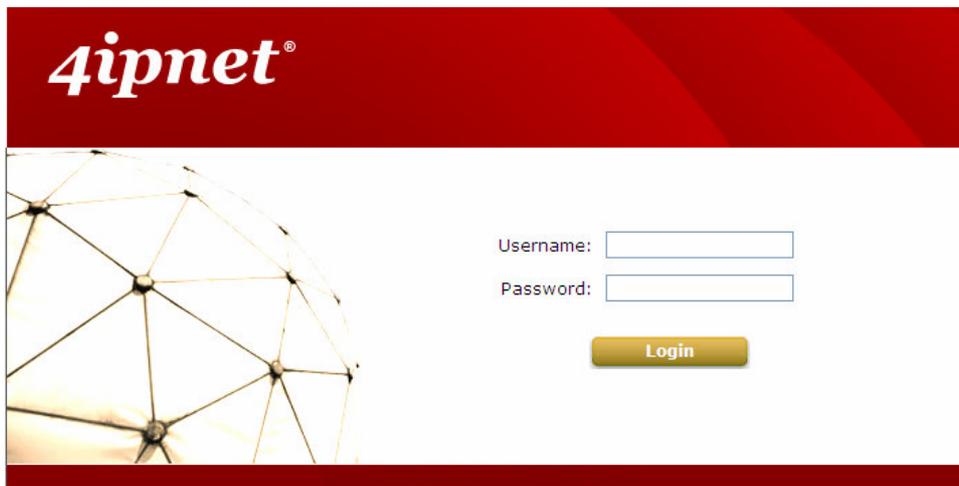
- A **Confirm and Restart** message will appear on the screen during the restarting process. Please do not interrupt the system until the Administrator Login Page appears.



►► **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.



< User Login >

To verify whether the configuration of the new local user account(s) created via the **Setup Wizard** has been completed successfully:

1. Connect a client device (e.g. laptop, PC) with wireless interface to scan the configured ESSID of HSG100 (e.g. “**HSG100**”) and get associated with this ESSID.
2. The client device will obtain an IP address automatically via DHCP from HSG100. Open a web browser on a client device, access any URL, and then the default **User Login Page** will appear.
3. Enter the *Username* and *Password* of a local user account previously generated via Setup Wizard (e.g. “**testuser@local**” as the *Username* and “**testuser**” as the *Password*); then Click **Submit**.

4ipnet® User Login Page

Welcome To User Login Page

Please Enter Your Name and Password to Sign In

Username: testuser@local

Password: ●●●●●●●●

Remember Me

Submit Clear Credit Balance

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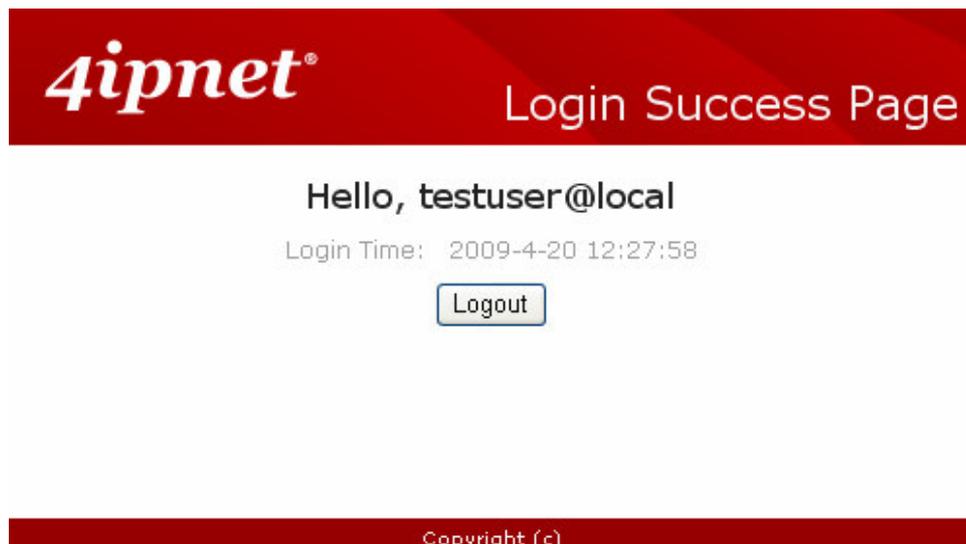
▶ **Note:**

1. HSG100 supports multiple authentication options including built-in local user database and external authentication database (e.g. RADIUS). The system will automatically identify which authentication option is used from the full username entered.
2. The format of a full (valid) username is **userid@postfix**, where “**userid**” is the user ID and “**postfix**” is the name of the selected authentication option.
3. **Exception:** The postfix can be omitted only when the default authentication option is used. For example, “**LOCAL**” is the default authentication option at this system; therefore, you may enter either “**testuser**” or “**testuser@local**” in the *Username* field.

Congratulation!

The Login Success Page will appear after a client has successfully logged into HSG100 and has been authenticated by the system.

The appearance of Login Success Page means that HSG100 has been installed and configured properly.



Deployment Example

< Small Hotspot Network Environment >

Nowadays, wireless network service is common and popular in a hotspot network environment. HSG100 provides wireless network service with authentication required for clients in Public Zone. Clients in the Public Zone are isolated with each other. Using wireless instead of wired service helps hotspot owners to build network service quickly. HSG100 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 HSG100 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 clients are required to get authenticated successfully before surfing the Internet. In addition, only wireless service is supported within the Public Zone. Clients are only allowed to access the network through wireless.



*The switches deployed under HSG100 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 **Zone Configuration** tab.
- Select a desired wireless band from **Band** drop-down list.



System Users Network Utilities Status

General WAN Configuration WAN Traffic Zone Configuration

Port Role Assignment	
LAN Port Role	<input checked="" type="radio"/> Private <input type="radio"/> Public
VAP1	<input checked="" type="radio"/> Private <input type="radio"/> Public
VAP2	<input type="radio"/> Private <input checked="" type="radio"/> Public

Zone Settings				
Name	ESSID	Wireless Security	Default Authen Option	Details
Private	HSG100-1	None	N/A	Configure
Public	HSG100-2	None	On-demand User	Configure

Zone Wireless General Settings	
Band	<input type="text" value="802.11b+g"/>

Step 2: Configure Public Zone Settings

- Click the **System** menu.
- Click the **Zone Configuration** tab.
- Click **Configure** of Public.

General | WAN Configuration | WAN Traffic | **Zone Configuration**

Port Role Assignment	
LAN Port Role	<input checked="" type="radio"/> Private <input type="radio"/> Public
VAP1	<input checked="" type="radio"/> Private <input type="radio"/> Public
VAP2	<input type="radio"/> Private <input checked="" type="radio"/> Public

Zone Settings				
Name	ESSID	Wireless Security	Default Authn Option	Details
Private	HSG100-1	None	N/A	<input type="button" value="Configure"/>
Public	HSG100-2	None	On-demand User	<input type="button" value="Configure"/>

Step 3: Configure ESSID for Public Zone

- Enter a desired **ESSID** for Public Zone in Wireless Settings: **HSG100-2**.
- Click **Apply** at the bottom of this page.

Wireless Settings : VAP 2	
Basic	VAP Status : <input checked="" type="radio"/> Enable <input type="radio"/> Disable
	ESSID : <input type="text" value="HSG100-2"/> *
Security	Security Type : <input type="text" value="None"/>
Advanced	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 checked="" type="radio"/> Enable <input type="radio"/> Disable
	Station Isolation : <input type="radio"/> Enable <input checked="" type="radio"/> Disable
	WMM : <input type="radio"/> Enable <input checked="" type="radio"/> Disable
IAPP : <input type="radio"/> Enable <input checked="" type="radio"/> Disable	

Step 4: Configure ESSID for Private Zone

- Enter a desired **ESSID** for Private Zone in Wireless Settings: **HSG100-1**.
- Select a desired **Security Type** for Private Zone for security enhancement if needed.
- Click **Apply** at the bottom of this page.

General | WAN Configuration | WAN Traffic | **Zone Configuration**

Port Role Assignment	
LAN Port Role	<input checked="" type="radio"/> Private <input type="radio"/> Public
VAP1	<input checked="" type="radio"/> Private <input type="radio"/> Public
VAP2	<input type="radio"/> Private <input checked="" type="radio"/> Public

Zone Settings				
Name	ESSID	Wireless Security	Default Authen Option	Details
Private	HSG100-1	None	N/A	Configure
Public	HSG100-2	None	On-demand User	Configure



Wireless Settings : VAP 1	
Basic	VAP Status : <input checked="" type="radio"/> Enable <input type="radio"/> Disable
	ESSID : <input type="text" value="HSG100-1"/> *
Security	Security Type : <input type="text" value="None"/> ▼
Advanced	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)
	Station Isolation : <input type="radio"/> Enable <input checked="" type="radio"/> Disable
	WMM : <input type="radio"/> Enable <input checked="" type="radio"/> Disable
	IAPP : <input type="radio"/> Enable <input checked="" 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.

P/N: 20020090718