ADMINISTRATION GUIDE

Cisco Small Business

RV315W Broadband Wireless VPN Router

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OL-25648-01

Federal Communication Commission Interference Statement

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 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.

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

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Radiation Exposure Statement:

1. 20cm minimum when the product is operated alone without co-transmitting with a plug-in 3G USB dongle device.
2. 33 cm minimum when the product is operated with a plug-in 3G USB device which has maximum of 7W ERP output power.
3. For co-transmission scenario which is not covered above, please consult the RF technician or device supplier.

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Getting Started

This chapter provides information to familiarize you with the product features, guide you through the installation process, and get started using web-based Configuration Utility. It includes the following sections:

- **Product Overview**
- **Mounting the RV315W**
- **Connecting the RV315W**
- **Getting Started with the Configuration**
- **Performing Basic Configuration Tasks**

Product Overview

Thank you for choosing the Cisco RV315W Broadband Wireless VPN Router. The RV315W provides routing, switching, security, wireless, 3G, Virtual Private Network (VPN), quality of service (QoS), and flow-control capabilities for small businesses.

Before you use the RV315W, become familiar with the lights on the front panel and the ports on the rear panel.

Front Panel

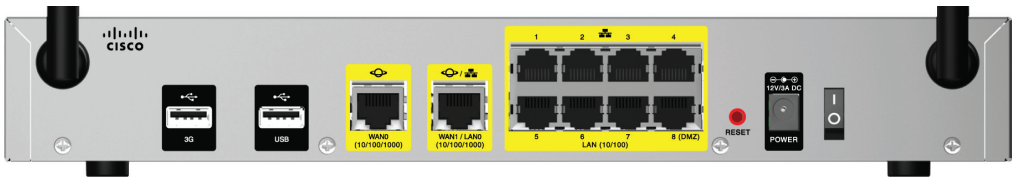
The lights are located on the front panel of the RV315W.

POWER	▪ Solid green when the RV315W is powered on and is operating normally. ▪ Off when the RV315W is powered off or the power has problems.
SYS	▪ Solid green when the RV315W is connected to the Internet through your cable or DSL modem. ▪ Flashes green when the RV315W is attempting to connect to the Internet, the RV315W cannot connect to the Internet, or the system is upgrading the firmware. ▪ Solid red when the system has problems. ▪ Flashes red when the system is overloaded, such as the CPU utilization or the memory utilization exceeds the limitation. ▪ Off when there is no Internet connection.
WAN0	▪ Solid green when the RV315W is connected to the Internet through the WAN0 port, but there is no traffic over this port. ▪ Flashes green when the RV315W is sending or receiving data over the WAN0 port. ▪ Off when the WAN0 port has no connection.
WAN1	If the WAN1/LAN0 port on the back panel is set to a secondary WAN interface (WAN1): ▪ Solid green when the RV315W is connected to the Internet through the WAN1 port, but there is no traffic over this port. ▪ Flashes green when the RV315W is sending or receiving data over the WAN1 port. ▪ Off when the WAN1 port has no connection.
LAN0	If the WAN1/LAN0 port on the back panel is set to an additional LAN interface (LAN0): ▪ Solid green when the RV315W is connected to a device through the LAN0 port, but there is no traffic over this port. ▪ Flashes green when the RV315W is sending or receiving data over the LAN0 port. ▪ Off when the LAN0 port has no connection.

LAN1-8	The numbered lights correspond to the LAN ports on the back panel of the RV315W. ▪ Solid green when the RV315W is connected to a device through the corresponding port (LAN1 to 8), but there is no traffic over that port. ▪ Flashes green when the RV315W is sending or receiving data over the corresponding LAN port. ▪ Off when the corresponding LAN port has no connection.
USB	▪ Solid green when a USB device is detected, but has no read and write operations. ▪ Flashes green when a USB device is detected and has read and write operations. ▪ Off when the RV315W does not detect a USB device.
3G	▪ Solid green when the RV315W is connected to a 3G wireless network, but there is no traffic over the 3G USB port. ▪ Flashes green when the RV315W is sending or receiving data over the 3G USB port. ▪ Off when the RV315W does not connect to a 3G wireless network.
WLAN	▪ Solid green when the wireless module is enabled, but there is no traffic over the wireless network. ▪ Flashes green when the RV315W is sending or receiving data on the wireless module. ▪ Off when the wireless module is disabled.

VPN	▪ Solid green when there are active VPN tunnels, but there is no VPN traffic. ▪ Flashes green when the RV315W is sending or receiving data over the VPN tunnels. ▪ Flashes green once per two seconds when the RV315W is attempting to establish a VPN tunnel, or the attempt of establishing a new VPN tunnel fails. ▪ Off when there is no VPN connection.
NMS	▪ Solid green when the RV315W is connected to an upper-level Network Management System (NMS) but has no operations. ▪ Flashes green when the RV315W is connected to an upper-level NMS and has operations. ▪ Off when the RV315W does not connect to an upper-level NMS.

Back Panel



WARNING 33 cm minimum when the product is operated with a plug-in 3G USB device which has maximum of 7 W ERP output power.

3G USB Port	Insert a 3G USB device into this port to connect your RV315W to a 3G wireless network.
USB Port	Reserved for future use.
WAN0 Port	The WAN0 (Internet) port is connected to your Internet device, such as a cable or DSL modem.
WAN1/LAN0 Port	The WAN1/LAN0 port can be set to a secondary WAN interface (WAN1) or an additional LAN interface (LAN0).

LAN1-8 Ports	These ports provide a LAN connection to network devices, such as PCs, print servers, or switches.
RESET	The **RESET** button has two functions: ▪ **Reboot:** Press the **RESET** button for at least 1, but no more than 5 seconds with a paper clip or a pencil tip to reboot the unit. ▪ **Restore to Factory Defaults:** Press and hold the **RESET** button for more than 5 seconds to reboot the unit and restore to factory defaults. Changes that you have previously made to the RV315W settings are lost.
POWER (12VDC)	The POWER port is where you connect the supplied power adapter (12 V/3 A).
Power Switch	Powers the unit on or off.

Default Settings

These are the default settings used when configuring your RV315W for the first time.

Parameter	Default Value
Username	cisco
Password	cisco
LAN IP	192.168.1.1
DHCP Range	192.168.1.100 to 192.168.1.200

NOTE Press and hold the **RESET** button for more than 5 seconds with a paper clip or a pencil tip to reboot the unit and restore the factory defaults. Changes that you have previously made to the RV315W settings are lost.

Mounting the RV315W

You can place your RV315W on a desktop or mount it on a wall.

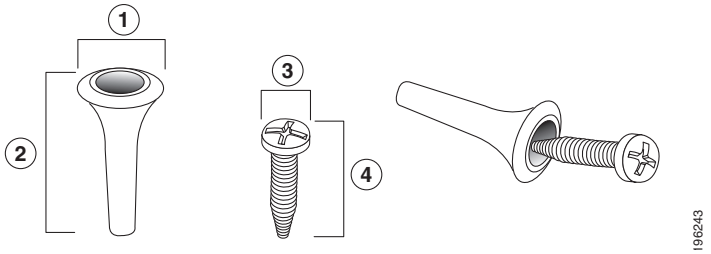
Placement Tips

- **Ambient Temperature**—To prevent the RV315W from overheating, do not operate it in an area that exceeds an ambient temperature of 104°F (40°C).
- **Air Flow**—Be sure that there is adequate air flow around the RV315W.
- **Mechanical Loading**—Be sure that the RV315W is level and stable to avoid any hazardous conditions.

Place the RV315W horizontally on a flat surface so that it sits on its four rubber feet.

Wall-Mounting

The RV315W can be wall-mounted. The wall-mounting hardware is user-supplied. The ports on the back panel must face either upward or downward when mounting the RV315W to the wall. The recommended dimensions for the mount kit are as follows:



1 8 mm/0.31 in **2** 25 mm/0.98 in **3** 6.5 mm/0.26 in **4** 17.9 mm/0.7 in

WARNING Insecure mounting might damage the device or cause injury. Cisco is not responsible for damages incurred by insecure wall-mounting.

To mount the RV315W to the wall:

STEP 1 Determine where you want to mount the RV315W. Verify that the surface is smooth, flat, dry, and sturdy.

STEP 2 Drill two pilot holes into the surface 5.9 inches (150 mm) apart.

STEP 3 Insert a screw into each hole, leaving a gap between the surface and the base of the screw head of at least 0.1 inches (3 mm).

STEP 4 Place the RV315W wall-mount slots over the screws and slide the RV315W down until the screws fit snugly into the wall-mount slots.

Connecting the RV315W

NOTE The wireless module of the RV315W is enabled by default. You can connect one PC with an Ethernet cable or through a wireless connection to perform the initial configuration. Use the default wireless network name (SSID) and pre-shared key that are provided on the product label at the bottom of the RV315W to connect the PC to your wireless network for the first time.

STEP 1 Power off all equipment, including the cable or DSL modem, the PC that you will use to connect to the RV315W, and the RV315W.

STEP 2 Connect one end of an Ethernet cable to your cable or DSL modem. Connect the other end to the WAN0 port on the back panel of the RV315W.

STEP 3 Connect one end of a different Ethernet cable to one of the LAN ports on the back panel. Connect the other end to an Ethernet port on the PC that you will use to run web-based Configuration Utility.

NOTE Skip this step if you want to connect the PC to the RV315W through a wireless connection.

STEP 4 Connect the supplied power adapter to the **POWER** port on the back panel. Plug the other end of the power adapter into an electrical outlet. Make sure that the power switch is turned off.

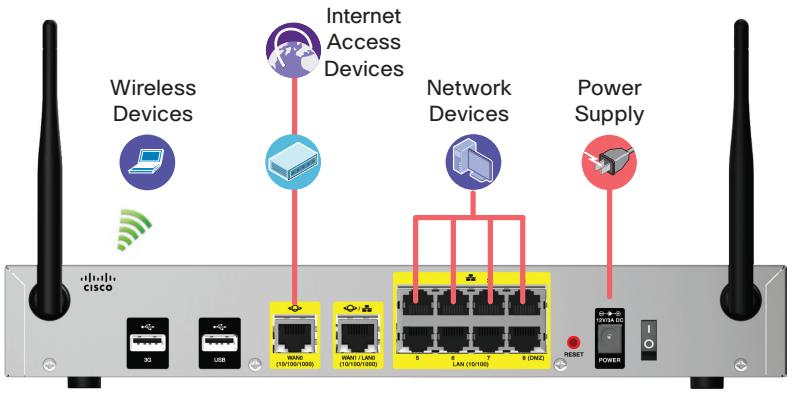
NOTE Use only the power adapter that is supplied with the unit. Using a different power adapter could damage the unit.

STEP 5 Power on all connected devices including the cable or DSL modem and the PC and wait until the connections are active.

STEP 6 Power on the RV315W.

STEP 7 To connect the PC to your wireless network for the first time, you can configure the wireless connection using the default SSID name and pre-shared key that are provided on the product label.

A sample configuration is illustrated here.



Getting Started with the Configuration

You can use web-based Configuration Utility of the RV315W to view the system information, configure the key parameters, upgrade system firmware, reboot the unit, or restore the unit to its factory default settings.

Before You Begin

Before you begin to use web-based Configuration Utility, make sure that you have a computer with Microsoft Internet Explorer 6.0 (or later) or Mozilla Firefox 3.0 (or later).

NOTE The minimum recommended display resolution for the PC running the web browser used to access the utility is 1024 x 768.

Logging in to the Configuration Utility

To log in to the utility and launch the Setup Wizard to complete the initial configuration:

STEP 1 Connect a computer to an available LAN port on the back panel. After you power on the PC, your PC becomes a DHCP client of the RV315W and receives an IP address in the 192.168.1.xxx range.

STEP 2 Start a web browser. In the Address bar, enter the default IP address of the RV315W: **192.168.1.1**.

STEP 3 When the login page appears, choose the language that you prefer to use in the utility, and then enter the username and password.

The default administrator username is **cisco**. The default administrator password is **cisco**. Both usernames and passwords are case sensitive.

For security purposes, change the default administrator password as soon as possible. See **Changing the Default Administrator Password** for more information.

STEP 4 Click **Login**.

STEP 5 Click **Setup Wizard** in the left-hand navigation pane. The Setup Wizard launches.

STEP 6 Follow the on-screen prompts to complete the initial configuration.

After the initial configuration is complete, you can configure other advanced features. See the help pages for more information.

Using the Help System

The Configuration Utility provides a context-sensitive help file for all configuration tasks. To view the Help page, click the **Help** link in the top right corner of the screen. A new window opens with information about the page that you are currently viewing.

Performing Basic Configuration Tasks

We recommend that you complete the tasks in this section before you configure the RV315W.

Changing the Default Administrator Password

The default administrator account (admin) has full privilege to set the configuration and read the system status. For security purposes, we recommend that you change the default administrator password after your first login.

To change the default administrative password:

STEP 1 Click **System Management** > **User Management**. The User Management page opens.

STEP 2 Check the default administrator account (admin) and click **Change Password**.

STEP 3 Enter the following information:

- **Old Password:** Enter the current administrator password.
- **New Password:** Enter a new administrator password. Passwords are case sensitive.
- **Password Confirm:** Enter the password again for confirmation.

STEP 4 Click **OK** to save your settings.

Upgrading Your Firmware After Your First Login

After you log in to web-based Configuration Utility for the first time, we recommend that you upgrade your firmware to the latest version before you do any other tasks.

NOTE This feature requires that you have an active WAN connection to access the Internet.

To upgrade the firmware:

STEP 1 Choose **System Management** > **Firmware Upgrade**. The Firmware Upgrade page opens.

The following information is displayed:

- **Device Model:** Displays the device model.
- **PID VID:** Displays the product ID and version ID.
- **Current Firmware Version:** Displays the firmware version (primary firmware) that the RV315W is currently using.
- **Backup Firmware Version:** Displays the firmware version (secondary firmware) that is used as a backup. When you upgrade the firmware to a newer version, the system first overwrites the secondary firmware with the new version in the flash, and then reboots with the new firmware. The new firmware becomes the primary firmware and the previous primary firmware becomes the secondary firmware.

STEP 2 In the **Download the latest firmware** field, click **Download** to download the latest version of the firmware from the specified website to your local PC. Make sure that you have an active WAN connection.

STEP 3 In the **Locate & select the upgrade file** field, click **Browse** to locate and select the downloaded firmware image from your local PC.

STEP 4 Click **Upgrade**.

After the new firmware image is validated, the new image is written to flash. The RV315W will be automatically rebooted with the new firmware.

Backing Up Your Configuration

At any point during the configuration process, you can back up your configuration. Later, if you make changes that you want to abandon, you can easily restore the saved configuration.

To back up your configuration:

STEP 1 Click **System Management** > **Configuration Management**. The Configuration Management page opens.

STEP 2 To back up the settings currently used on your RV315W, click **Backup Configuration**.

STEP 3 Select where to locate the configuration file, and then click **OK**.

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Using the Setup Wizard

This chapter describes how to use the Setup Wizard to quickly configure the initial settings of your RV315W. It includes the following sections:

- Starting the Setup Wizard
- Configuring WAN Connection
- Configuring Default LAN Settings
- Configuring Wireless Connection
- Completing the Setup Wizard

Starting the Setup Wizard

STEP 1 Click **Setup Wizard** in the left-hand navigation pane. The Setup Wizard launches.

STEP 2 If you are an expert, you can exit the Setup Wizard and click the menu in the left-hand navigation pane to configure the specific feature directly. If you want to continue, click **Next** to proceed to the WAN Configuration page. Or you can click **Exit** to exit the Setup Wizard.

Configuring WAN Connection

From the WAN Configuration page you can configure the WAN connection by using the information provided by your Internet Service Provider (ISP).

Depending on the requirements of your ISP, choose the Internet connection type and configure the corresponding fields. The RV315W supports four types of network addressing modes: DHCP, Static IP, PPPoE, and L2TP.

STEP 3 Choose **WAN0** or **WAN1** (only available when the WAN1/LAN0 port on the back panel is set to a secondary WAN port) from the **WAN Interface** drop-down menu to connect to the Internet.

STEP 4 Choose a proper network addressing method from the **Internet Connection Type** drop-down menu and specify the corresponding settings.

The following table provides the configuration instruction for each Internet connection type. Confirm that you have proper network information from your ISP or a peer router to configure the RV315W to access the Internet.

Internet Connection Type	Configuration
DHCP	Connection type often used with cable modems. Choose this option if your ISP dynamically assigns an IP address on connection.
Static IP	Choose this option if your ISP provides you with a static (permanent) IP address and does not assign it dynamically. Use the corresponding information from your ISP to complete the following fields: ▪ **IP Address:** Enter the IP address of the WAN port that can be accessible from the Internet. ▪ **Subnet Mask:** Enter the IP address of the subnet mask. ▪ **Default Gateway:** Enter the IP address of default gateway. ▪ **Primary DNS Server:** DNS servers map Internet domain names to IP addresses. Enter the IP address of the primary DNS server. You can get the DNS server address from your ISP. ▪ **Secondary DNS Server:** (Optional) Enter the IP address of the secondary DNS server.

Internet Connection Type	Configuration
PPPoE	PPPoE uses Point-to-Point Protocol over Ethernet (PPPoE) to connect to the Internet. Choose this option if your ISP provides you with client software, username, and password. ▪ **User Name:** Enter the username that is required to log into the ISP. ▪ **Password:** Enter the password that is required to log into the ISP. ▪ **Service Name:** Enter the name for the PPPoE service. ▪ **Keep Alive:** Choose one of the following options: - **Connect Idle Time:** Let the RV315W disconnect from the Internet after a specified period of inactivity (Idle Time). This option is recommended if your ISP fees are based on the time that you spend online. If you choose this option, enter the idle time in the field. The default value is 300 seconds. - **Keep Alive:** Keep the connection always on, regardless of the level of activity. This option is recommended if you pay a flat fee for your Internet service. If you choose this option, enter the interval to automatically reestablish the WAN connection after the connection is down. The default value is 30 seconds.

Internet Connection Type	Configuration
L2TP	Choose this option if you want to use Layer 2 Tunneling Protocol (L2TP) to connect to the Internet. Use the necessary information from your ISP to complete the L2TP configuration: ▪ **Auto Get IP:** Enable or disable to automatically obtain an IP address. ▪ **L2TP Server IP Address:** Enter the IP address of the L2TP server. ▪ **User Name:** Enter the username that is required to log into the L2TP server. ▪ **Password:** Enter the password that is required to log into the L2TP server. ▪ **Keep Alive:** Choose one of the following options: - **Connect Idle Time:** Let the RV315W disconnect from the Internet after a specified period of inactivity (Idle Time). This option is recommended if your ISP fees are based on the time that you spend online. If you choose this option, enter the idle time in the field. The default value is 300 seconds. - **Keep Alive:** Keep the connection always on, regardless of the level of activity. This option is recommended if you pay a flat fee for your Internet service. If you choose this option, enter the interval to automatically reestablish the WAN connection after the connection is down. The default value is 30 seconds.

STEP 5 In the **Enable VLAN** area, click **Enable** when the ISP uses the VLAN ID to add the tag to the users, and then enter the following information:

- **VLAN ID:** Enter the tag of the VLAN ID.
- **802.1p Priority:** Enter the value of the 802.1p priority.

STEP 6 If you want to continue, click **Next** to proceed to the LAN Configuration page. If you want to return to the previous page, click **Back**. If you want to exit the Setup Wizard, click **Exit**.

Configuring Default LAN Settings

From the LAN Configuration page you can configure the default LAN settings of the RV315W.

STEP 7 Enter the following information:

- **VLAN:** Select a VLAN from the drop-down menu. See **Configuring LAN Interfaces** for more information on configuring the VLANs.
- **IP Address:** Enter the subnet IP address of the default LAN.
- **Subnet Mask:** Enter the subnet mask of the default LAN.
- **DHCP Service:** Check **Enable** to allow the RV315W to act as a DHCP server and assign IP addresses to all devices that are connected to the LAN. Any new DHCP client joining the LAN is assigned an IP address of the DHCP pool. Check **Disable** to disable the DHCP server on the RV315W.
- **Start IP:** Enter the starting IP address of the DHCP pool if you enable the DHCP server.
- **End IP:** Enter the ending IP address of the DHCP pool if you enable the DHCP server.
- **Lease Time:** Enter the maximum connection time in minutes that a dynamic IP address is "leased" to a network user. When the time elapses, the dynamic IP address of the user is automatically renewed. The default is 0, indicates that the lease time is 1 day.

STEP 8 If you want to continue, click **Next** to proceed to the Wireless Configuration page. If you want to return to the previous page, click **Back**. If you want to exit the Setup Wizard, click **Exit**.

Configuring Wireless Connection

From the Wireless Configuration page you can configure the wireless network of the RV315W and the security settings for the selected SSID.

STEP 9 Enter the following information:

- **Current SSID:** Select a SSID as the default wireless access point of the RV315W.
- **SSID Name:** Displays the name of the selected SSID. You can edit the SSID name. Enter a unique name for the SSID for identification.
- **Enable Current SSID:** Check **Enable** to enable this SSID, or check **Disable** to disable the SSID.
- **Security Mode:** Choose the security mode and configure the corresponding security settings. For security purposes, we strongly recommend that you use WPA2 for wireless security. The following table lists all available security modes:

Security Mode	Configuration
Open	Any wireless device that is in range can connect to the SSID. This is the default setting but not recommended.

Security Mode	Configuration
WEP	WEP encryption is an older encryption method that is not considered to be secure and can easily be broken. Choose this option only if you need to allow access to devices that do not support WPA or WPA2. If you choose this option, enter the following information: ▪ **Authentication Type:** Choose either **Open System** or **Shared key**. The default is Open System. ▪ **Key Length:** Choose either **64 bits** or **128 bits**. The default is 64 bits. The larger size keys provide stronger encryption, which makes the key more difficult to crack. ▪ **Passphrase:** If you want to generate WEP keys by using a Passphrase, enter any alphanumeric phrase (between 4 to 63 characters) and then click **Generate** to generate 4 unique WEP keys. Select one key to use as the key that devices must have to use the wireless network. ▪ **Key Index:** Choose a key index as the default transmit key. Key indexes 1 through 4 are available. ▪ **Key 1-4:** If a WEP Passphrase is not specified, a key can be entered directly into one of the Key boxes. The length of the key should be 5 ASCII characters (or 10 hex characters) for 64-bit encryption and 13 ASCII characters (or 26 hex characters) for 128-bit encryption.

Security Mode	Configuration
WPA-Personal	Wi-Fi Protected Access (WPA) provides better security than WEP because it uses dynamic key encryption. This standard was implemented as an intermediate measure to replace WEP, pending final completion of the 802.11i standard for WPA2. WPA-Personal supports Temporal Key Integrity Protocol (TKIP) or Advanced Encryption System (AES) encryption mechanisms for data encryption (default is TKIP). TKIP uses dynamic keys and incorporates Message Integrity Code (MIC) to provide protection against hackers. AES uses symmetric 128-bit block data encryption. If you choose this option, enter the following information: ▪ **WPA Pre-Shared Key:** The Pre-shared Key (PSK) is the shared secret key for WPA. Enter a string of at least 8 characters to a maximum of 63 characters. ▪ **WPA Key Renewal Timeout:** Enter a value to set the interval at which the key is refreshed for clients associated to this SSID. A value of zero (0) indicates that the key is not refreshed. The default value is 3600 seconds. ▪ **WPA Encryption:** Choose TKIP, AES, or TKIP+AES as the encryption algorithm for data encryption. The default is TKIP.

Security Mode	Configuration
WPA2-Personal	WPA2 provides the best security for wireless transmissions. This method implements the security standards specified in the final version of 802.11i. WPA2-Personal always uses AES encryption mechanism for data encryption. If you choose this option, enter the following information: ▪ **WPA Pre-Shared:** The Pre-shared Key (PSK) is the shared secret key for WPA. Enter a string of at least 8 characters to a maximum of 63 characters. ▪ **WPA Key Renewal Timeout:** Enter a value to set the interval at which the key is refreshed for clients associated to this SSID. A value of zero (0) indicates that the key is not refreshed. The default value is 3600 seconds. ▪ **WPA Encryption:** Choose TKIP, AES, or TKIP+AES as the encryption algorithm for data encryption. The default is AES.

Security Mode	Configuration
WPA-Enterprise	WPA-Enterprise uses WPA with RADIUS authentication. This mode supports TKIP and AES encryption mechanisms (default is TKIP) and requires the use of a RADIUS server to authenticate users. If you choose this option, enter the following information: ▪ **WPA Key Renewal Timeout:** Enter a value to set the interval at which the key is refreshed for clients associated to this SSID. A value of zero (0) indicates that the key is not refreshed. The default value is 3600 seconds. ▪ **WPA Encryption:** Choose TKIP, AES, or TKIP+AES as the encryption algorithm for data encryption. The default is TKIP+AES. ▪ **RADIUS Server IP Address:** Enter the IP address of the RADIUS server. ▪ **RADIUS Server Port:** Enter the port number of the primary RADIUS server. The default value is 1812. ▪ **RADIUS Server Key:** Enter the key for authentication used by the RADIUS server and the RV315W.

Security Mode	Configuration
WPA2-Enterprise	WPA2-Enterprise uses WPA2 with RADIUS authentication. This mode always uses AES encryption mechanism for data encryption and requires the use of a RADIUS server to authenticate users. If you choose this option, enter the following information: ▪ **WPA Key Renewal Timeout:** Enter a value to set the interval at which the key is refreshed for clients associated to this SSID. A value of zero (0) indicates that the key is not refreshed. The default value is 3600 seconds. ▪ **WPA Encryption:** Choose TKIP, AES, or TKIP+AES as the encryption algorithm for data encryption. The default is AES. ▪ **RADIUS Server IP Address:** Enter the IP address of the RADIUS server. ▪ **RADIUS Server Port:** Enter the port number of the primary RADIUS server. The default value is 1812. ▪ **RADIUS Server Key:** Enter the key for authentication used by the RADIUS server and the RV315W.

STEP 10 If you want to continue, click **Next** to proceed to the Complete Setup Wizard page. If you want to return to the previous page, click **Back**. If you want to exit the Setup Wizard, click **Exit**.

Completing the Setup Wizard

From the Complete Setup Wizard page you can see the summary information for all configurations.

STEP 11 If you want to return to the previous page, click **Back**. If you want to exit the Setup Wizard, click **Exit**.

STEP 12 If the configuration is correct, click **Finish** to apply the settings and complete the Setup Wizard configuration.

3

Viewing System Status

This chapter describes how to view real-time statistics and other information about the RV315W. It includes the following sections:

- Device Information
- WAN Connection
- 3G Wireless Connection
- LAN Interfaces
- Application Information
- Refresh Rate

Click **System Summary**. The System Summary page opens.

Device Information

The **Device Information** area displays the following information:

- **Product Name:** Product name of the unit.
- **Model:** Product model of the unit.
- **VID:** Version ID of the unit.
- **PID:** Product ID of the unit.
- **Hardware Version:** Hardware version that the device is currently using.
- **Software Version:** Firmware version that the device is currently using.
- **System Up Time:** Duration for which the system has been running.
- **CPU Utilization:** Current CPU utilization in percentage of the unit.
- **Memory Utilization:** Current memory utilization in percentage of the unit.

WAN Connection

The **WAN Connection** area displays the following information:

- **WANx Connection Status:** Shows if the WAN interface or the WAN subinterface is active or inactive for routing.
- **WAN Connection Name:** WAN connection name through a WAN interface or a WAN subinterface.
- **IP address:** IP address of the WAN interface or the WAN subinterface.

3G Wireless Connection

The **3G Wireless Connection** area displays the following information:

- **3G Wireless Network:** Displays whether the RV315W is connected to a 3G wireless network or not.
- **3G Modem Status:** Displays whether a 3G USB dongle is detected or not. The 3G USB dongle should be inserted into the 3G USB port on the back panel.
- **UIM Card Status:** Displays whether the UIM card is detected or not. The UIM card should be inserted into the 3G USB dongle.
- **Signal Strength:** Current 3G wireless signal strength if the RV315W is connected to a 3G wireless network.

To see complete details of the 3G wireless connection:

STEP 1 Click **More**. The following information is displayed:

- **3G Modem Information:**
  - **3G Modem Status:** Displays whether the RV315W is connected to a 3G wireless network or not.
  - **Device Model:** Model number of the detected 3G USB dongle.
  - **Manufacturer:** Manufacturer name of the detected 3G USB dongle.
  - **Network Access License:** Identification number of the network access certificate.

- **Series Number:** Series number of the 3G USB dongle.
- **Hardware Version:** Hardware version of the 3G USB dongle.
- **Software Version:** Software version that the 3G USB dongle is currently using.
- **PRL Version:** PRL version of the 3G USB dongle.

- **UIM Card Information:**
  - **UIM Card Status:** Current status of the UIM card.
  - **IMSI:** IMSI number of the UIM card.
  - **Voltage:** Current voltage of the UIM card.
- **3G Network Information:**
  - **Service Operator:** Name of the 3G network service provider.
  - **Operating Status:** Displays whether the RV315W is connected to a 3G wireless network or not.
  - **Flow Rate:** Current flow rate of the 3G wireless network.
  - **Transfer Rate:** Current transfer rate of the 3G wireless network.
  - **Uptime:** Duration for which the 3G wireless connection has been running.
  - **Signal Strength:** The Wi-Fi signal strength of the 3G wireless connection.

STEP 2 Click **Back** to return to the System Summary page.

LAN Interfaces

The **LAN Interfaces** area displays the connection status for each LAN port.

WLAN Connection

The **WLAN Connection** area displays the following information:

- **SSID:** Name of the wireless access point.

- **Status:** Shows if the SSID is enabled or disabled.
- **Number of Connected PCs:** Number of the client stations that are connected to the SSID.

The wireless module of the RV315W is enabled by default. The RV315W provides four virtual wireless networks, or four SSIDs (Service Set Identifiers).

To see complete details for all wireless clients that are connected to the RV315W:

STEP 1 Click **View Connected Devices**. The following information is displayed:

- **Hostname:** Hostname of the connected device.
- **IP Address**: IP address of the connected device.
- **MAC Address:** MAC address of the connected device.
- **Lease Time:** Duration for which the IP address is leased to the connected device.
- **Interface**: Shows how the client is connected to the RV315W.

STEP 2 Click **Back** to return to the System Summary page.

Application Information

The **Application Information** area displays the following information for the applications that are running on the RV315W, such as IPsec VPN:

- **Application Name:** Name of the running service or application.
- **Status:** Shows if the service or application is enabled or disabled.

Refresh Rate

Choose a refresh rate from the **Refresh Rate** drop-down menu, or choose **Manual** to manually refresh the page at any time by clicking **Refresh**. This operation causes the page to re-read the statistics from the RV315W and refresh the page.

4

Port Management

This chapter describes how to configure your Internet connection, LAN, wireless network, and 3G wireless network. It includes the following sections:

- Configuring WAN Connections
- Configuring LAN
- Configuring Wireless Settings
- Configuring 3G Wireless Connection

Configuring WAN Connections

By default, the RV315W is configured to receive a public IP address from your ISP automatically through DHCP. Depending on the requirements of your ISP, you may need to modify the WAN settings to ensure the Internet connectivity.

Viewing WAN Connection Information

Click **Port Settings** > **WAN** > **WAN Interface Settings**. The WAN Interface Settings page opens.

This page displays the following information:

Parameter	Description
Port	Number of the physical WAN interface, such as WAN0 or WAN1.
Connection Name	WAN connection name through the physical WAN interface or its subinterface.

Parameter	Description
Internet Connection Type	Network addressing mode used to connect to the Internet. See **Configuring WAN Connection** for more information.
IP Address	IP address of the WAN interface.
DNS	IP address of the DNS server for the WAN interface.
Status	Shows if the WAN interface is active or inactive for routing.

Configuring WAN Connections

By default, the WAN1/LAN0 port on the back panel of the RV315W is set to a secondary WAN interface so that the RV315W can support a second Internet connection to ensure continuous connectivity or to increase available bandwidth and balance traffic.

The RV315W allows you to add multiple subinterfaces on a physical WAN interface. Each WAN subinterface can be used to set up an Internet connection but only one of these connections can be used as the default route of the physical WAN interface. Up to eight WAN subinterfaces can be added on the physical WAN interfaces.

To configure a WAN connection through a physical WAN interface or its subinterface:

STEP 1 Click **Port Settings** > **WAN** > **WAN Interface Settings**. The WAN Interface Settings page opens.

STEP 2 To add a WAN subinterface on a physical WAN interface, click **Create**. The Add WAN page opens.

NOTE To edit the settings of a physical WAN interface, click the **Edit** icon of the corresponding WAN interface. The Edit WAN page opens.

STEP 3 In the **Internet Connection Type** area, select either **Route Mode** or **Bridge Mode** for a WAN subinterface. The Route Mode is always selected for a physical WAN interface.

STEP 4 If Route Mode is selected, select the radio button of the Internet connection type that you use to connect to the Internet depending on your ISP requirements and specify the corresponding settings of the selected Internet connection type.

The following table provides the configuration instruction for each Internet connection type. Confirm that you have proper network information from your ISP or a peer router to configure the RV315W to access the Internet.

Internet Connection Type	Configuration
DHCP	Connection type often used with cable modems. Choose this option if your ISP dynamically assigns an IP address on connection.
PPPoE	PPPoE uses Point-to-Point Protocol over Ethernet (PPPoE) to connect to the Internet. Choose this option if your ISP provides you with client software, username, and password. Use the necessary PPPoE information from your ISP to complete the PPPoE configuration. ▪ **User Name:** Enter the username that is required to log into the ISP. ▪ **Password:** Enter the password that is required to log into the ISP. ▪ **Service Name:** Enter the name for the PPPoE service. ▪ **Keep Alive:** Choose one of the following options: - **Connect Idle Time:** Choose this option to let the RV315W disconnect from the Internet after a specified period of inactivity (Idle Time). This option is recommended if your ISP fees are based on the time that you spend online. Enter the idle time in the **Maximum Idle Time** field. The default value is 300 seconds. - **Keep Alive:** Choose this option to keep the connection always on, regardless of the level of activity. This option is recommended if you pay a flat fee for your Internet service. You can specify the interval to automatically reestablish the WAN connection after the connection is down. The default value is 30 seconds.

PPPoE	PPPoE uses Point-to-Point Protocol over Ethernet (PPPoE) to connect to the Internet. Choose this option if your ISP provides you with client software, username, and password. Use the necessary PPPoE information from your ISP to complete the PPPoE configuration. ▪ **User Name:** Enter the username that is required to log into the ISP. ▪ **Password:** Enter the password that is required to log into the ISP. ▪ **Service Name:** Enter the name for the PPPoE service. ▪ **Keep Alive:** Choose one of the following options: - **Connect Idle Time:** Choose this option to let the RV315W disconnect from the Internet after a specified period of inactivity (Idle Time). This option is recommended if your ISP fees are based on the time that you spend online. Enter the idle time in the **Maximum Idle Time** field. The default value is 300 seconds. - **Keep Alive:** Choose this option to keep the connection always on, regardless of the level of activity. This option is recommended if you pay a flat fee for your Internet service. You can specify the interval to automatically reestablish the WAN connection after the connection is down. The default value is 30 seconds.

Internet Connection Type	Configuration
Static IP	Choose this option if the ISP provides you with a static (permanent) IP address and does not assign it dynamically. Use the corresponding information from your ISP to complete the following fields: ▪ **IP Address:** Enter the IP address of the WAN port that can be accessible from the Internet. ▪ **Subnet Mask:** Enter the IP address of the subnet mask. ▪ **Default Gateway:** Enter the IP address of default gateway. ▪ **Primary DNS Server:** DNS servers map Internet domain names to IP addresses. Enter the IP address of the primary DNS server. You can get the DNS server addresses from your ISP. ▪ **Secondary DNS Server:** Enter the IP address of the secondary DNS server.

Internet Connection Type	Configuration
L2TP	Choose this option if you want to use Layer 2 Tunneling Protocol (L2TP) to connect to the Internet. Use the necessary information from your ISP to complete the L2TP configuration: ▪ **L2TP Server IP Address:** Enter the IP address of the L2TP server. ▪ **User Name:** Enter the username that is required to log into the L2TP server. ▪ **Password:** Enter the password that is required to log into the L2TP server. ▪ **Keep Alive:** Choose one of the following options: - **Connect Idle Time:** Let the RV315W disconnect from the Internet after a specified period of inactivity (Idle Time). This option is recommended if your ISP fees are based on the time that you spend online. Enter the idle time in the **Maximum Idle Time** field. The default value is 300 seconds. - **Keep Alive:** Keep the connection always on, regardless of the level of activity. This option is recommended if you pay a flat fee for your Internet service. You can specify the interval to automatically reestablish the WAN connection after the connection is down. The default value is 30 seconds.

STEP 5 In the **Enable NAT** field, check **Enable** to enable NAT, or check Disable to disable NAT. Disable this feature if the WAN connection is only used for management purpose.

STEP 6 In the **Enable VLAN** field, check **Enable** to enable VLAN if your ISP uses the VLAN ID to identify the users. If you enable this feature, specify the VLAN ID and the 802.1p priority.

STEP 7 In the **MTU** field, choose **Auto** to use the default MTU size, or choose **Manual** if you want to specify another size. If you choose **Manual**, enter the custom MTU size in bytes.

STEP 8 In the **Service Binding** field, select one of the following service types for the WAN connection:

- **Management:** Only use for management purpose.
- **Internet:** Only use for Internet access purpose.
- **Management_Internet:** Use for both management and Internet access purposes.
- **VoIP:** Only use for VoIP traffic.
- **IPTV:** Only use for IPTV traffic.
- **Other:** Use for other purposes.

STEP 9 If you choose Bridge Mode, enter the following information:

- In the **Enable VLAN** filed, check the box to enable VLAN if your ISP uses the VLAN ID to identify the users. If you enable this feature, specify the VLAN ID and the 802.1p priority.
- In the **Bridging Port** area, specify the port as the subinterface's downstream path.

STEP 10 Click **OK** to save your settings and return to the WAN Interface Settings page.

STEP 11 To edit the settings of a WAN connection, click **Edit**. To delete a WAN connection through a WAN subinterface, click **Delete**.

Configuring Default Route of the Physical WAN Interface

If multiple WAN connections are defined on a physical WAN interface, you must choose the default route of the physical WAN interface.

To configure the default route of the physical WAN interface:

STEP 1 Click **Port Settings** > **WAN** > **WAN Interface Settings**. The WAN Interface Settings page opens.

STEP 2 In the **Configure WAN Interface's Default Route** area, select the default route interface for each physical WAN interface.

STEP 3 Click **OK** to save your settings.

Configuring Dual WAN

If you have two ISP links, one for WAN0 and another for WAN1, you can configure the WAN redundancy to determine how the two ISP links are used.

NOTE Dual WAN is only available when the WAN0/LAN1 port on the back panel is set to a secondary WAN port (WAN1).

To configure dual WAN:

STEP 1 Click **Port Settings** > **WAN** > **Dual WAN**. The Dual WAN page opens.

STEP 2 In the **Dual WAN** area, enter the following information:

- **Dual WAN:** Click **Enable** to enable the Dual WAN feature, or click **Disable** to disable it.
- **Link Query Interval:** The RV315W detects the WAN failure by pinging the specified IP address. Enter the interval in seconds between two ping detections. The default value is 60 seconds.
- **Ping Timeout:** If the connection to the ISP is down, the RV315W tries to connect to the ISP after a specified timeout. Enter the timeout, in seconds, to reconnect to the ISP. The default value is 5 seconds.
- **Number of Ping Detections:** Enter the number of pings. The default is 1.
- **Recover the connection after x connection queries:** Enter the number of successful ping detections to recover the connection. The WAN connection with the higher priority will be recovered.

STEP 3 In the **Failover Detection** area, specify the IP address used to detect the WAN failure. By default, the RV315W pings the IP address of default WAN gateway with the higher priority. If the default WAN gateway can be detected, the network connection is active. You can also ping a specific remote host to detect the WAN failure.

STEP 4 In the **WAN Interface** area, specify the priorities for the WAN interfaces, including the 3G USB port:

- **Interface:** Name of the WAN interface.
- **Status:** Connection status of the WAN interface.
- **Priority:** Specify the priority of the WAN interface.

STEP 5 In the **WAN Interface Details** area, view the following information of the WAN interfaces:

- **Interface:** Name of the WAN interface.
- **IP Address:** IP address of the WAN interface.
- **Subnet Mask:** Subnet mask of the WAN interface.
- **Gateway:** Default gateway IP address of the WAN interface.

STEP 6 In the **Load Balancing** area, check **Enable** to enable Load Balancing to distribute the bandwidth to two WAN ports by the weighted percentages.

STEP 7 In the **Load Balancing Control** area, specify the weighted percentage for each WAN, such as 50% bandwidth for WAN0, 50% bandwidth for WAN1, and 0% for USB_3G, which indicates that 50% bandwidth is distributed to WAN0 and 50% bandwidth is distributed to WAN1. The value of zero (0) indicates that Load Balancing is disabled on the 3G USB interface.

STEP 8 Click **OK** to apply your settings.

Configuring WAN1/LAN0 Interface

The WAN1/LAN0 port on the back panel of the RV315W can be configured to a secondary WAN port (WAN1) or an additional LAN port (LAN0).

STEP 1 Click **Port Settings** > **WAN** > **WAN1/LAN0 Interface Settings**. The WAN1/LAN0 Interface Settings page opens.

STEP 2 Select **LAN0** to set this port to an additional LAN port, or select **WAN1** to set this port to a secondary WAN port.

STEP 3 Click **OK** to apply your settings.

CAUTION Changing the port type of the WAN1/LAN0 ports requires the RV315W to be rebooted. Note that changing the port type from WAN1 to LAN0 will reboot the RV315W with the factory default settings. The previous settings that you made on the RV315W will be lost.

Configuring LAN

A virtual LAN (VLAN) is a group of endpoints in a network that are associated by function or other shared characteristics. Unlike LANs, which are usually geographically based, VLANs can group endpoints without regard to the physical location of the equipment or users.

The VLANs allow you to segregate the network into LANs that are isolated from one another. Any PC that is connected to the specified LAN port is on a separate VLAN and cannot access other VLANs.

Configuring LAN Interfaces

Use the LAN Interface Settings page to configure the settings of the LAN interfaces.

To configure the LAN interface settings:

STEP 1 Click **Port Settings** > **LAN** > **LAN Interface Settings**. The LAN Interface Settings page opens.

STEP 2 In the **VLAN Interface Settings** area, enter the following information:

- **Select VLAN:** Select a VLAN that you want to configure from the drop-down menu. The default is VLAN1. You can add new VLANs in the VLAN Settings page and assign the physical LAN ports to the specified VLANs. See Configuring LAN Interfaces for more information.
- **IP Address:** Enter the subnet IP address for the VLAN.
- **Netmask:** Enter the subnet mask for the VLAN.
- **DHCP Server:** Check **Enable** to allow the RV315W to act as a DHCP server and assign IP addresses to all devices that are connected to the LAN. Any new DHCP client joining the LAN is assigned an IP address of the DHCP pool. Check **Disable** to disable the DHCP server on the RV315W.
- **Starting IP:** Enter the starting IP address of the DHCP pool if you enable the DHCP server.
- **Ending IP:** Enter the ending IP address of the DHCP pool if you enable the DHCP server.

- **Lease Time:** Enter the maximum connection time that a dynamic IP address is “leased” to a network user. When the time elapses, the user is automatically renewed the dynamic IP address. The default value is 1 day.
- **Default Gateway:** Enter the IP address for default gateway.
- **DNS Agent:** Check **Enable** to enable the DNS agent feature, or check **Disable** to disable this feature.
- **DNS1:** Enter the IP address of the primary DNS server.
- **DNS2:** Optionally, enter the IP address of the secondary DNS server.
- **Address Reservation:** Check **Enable** to allow you to reserve some IP addresses of the DHCP pool for specific hosts, or check **Disable** to disable this feature. If you enable this feature, enter the following information:
  - **Host Name:** Enter the name of the host for identification.
  - **Reserved IP Address:** Enter the IP address that you want to reserve for the specific host.
  - **MAC Address:** Enter the MAC address of the host.

    Click **Add** to add it in the list of the Reserved Hosts.

STEP 3 Click **OK** to apply your settings.

Configuring VLAN Settings

Use the VLAN Settings page to create new VLANs and assign physical LAN ports to the specified VLANs.

To create a new VLAN:

STEP 1 Click **Port Settings** > **LAN** > **VLAN Settings**. The VLAN Settings page opens.

STEP 2 To create a new VLAN, click **Create** and enter a unique identification number for the VLAN in the **VLAN ID** field. The VLAN1 and VLAN2 are reserved.

STEP 3 In the **VLAN Settings** area, assign physical LAN ports to the specified VLAN.

STEP 4 Click **OK** to apply your settings.

STEP 5 To edit the settings of the VLAN, select the VLAN from the drop-down menu, and then change the physical ports that are mapped to the VLAN. To delete a VLAN,

click **Delete**, enter the VLAN ID in the **VLAN ID** field, and then click **OK**. The reserved VLAN1 and VLAN2 cannot be deleted.

Configuring Wireless Settings

The wireless module of the RV315W is enabled by default. To connect to the default wireless network of the RV315W for the first time, use the default wireless network name (SSID) and pre-shared key that are provided on the product label at the bottom of the RV315W.

Configuring Wireless Radio Settings

To configure the wireless radio settings:

STEP 1 Click **Port Settings** > **WLAN Settings**. The WLAN Settings page opens.

STEP 2 In the **WLAN Radio Settings** area, enter the following information:

- **Radio:** Check **Enable** to turn the wireless radio on, or check **Disable** to turn the wireless radio off. The wireless radio is turned on by default.
- **Wireless Network Mode:** Choose one of the following options:
  - **802.11b/g/n Mixed:** Choose this option if you have Wireless-N, Wireless-B, and Wireless-G devices in your network. This is the default setting (recommended).
  - **802.11b/g Mixed:** Choose this option if you have Wireless-B and Wireless-G devices in your network.
  - **802.11b:** Choose this option if you have only Wireless-B devices in your network.
  - **802.11g:** Choose this option if you have only Wireless-G devices in your network.
  - **802.11n:** Choose this option if you have only Wireless-N devices in your network.
- **Wireless Band Selection:** Select the wireless bandwidth on your network (**20 MHz**, **40 MHz**, or **Auto**).

- **Wireless Channel:** Choose the wireless channel from the drop-down menu or choose **Auto** to let the system determine the optimal channel to use based on the environmental noise levels for the available channels.
  - Select any channel from 1 to 13 channels when the wireless bandwidth is set to 20 MHz.
  - Select any channel from 3 to 11 channels when the wireless bandwidth is set to 40 MHz (the default is 11 channel).
- **Wi-Fi Power:** Select the Wi-Fi power on your network. The default value is High.
- **Station Isolation:** Check so that the wireless clients on the same SSID will be unable to see each other.
- **Wireless QoS:** Check to enable WiFi MultiMedia (WMM), or uncheck to disable this feature.

STEP 3 Click **OK** to apply your settings.

Configuring Wireless Security

The RV315W provides four virtual wireless networks.

To configure the settings for a wireless network:

STEP 1 Click **Port Settings** > **WLAN Settings**. The WLAN Settings page opens.

The Wireless table displays the following information for a wireless network:

- **SSID Name:** Name of the SSID.
- **Security Mode:** Security settings of the SSID.
- **Status:** Shows whether the SSID is enabled or disabled.

STEP 2 To enable a SSID, check the corresponding SSID and click **Enable**.

STEP 3 To disable a SSID, check the corresponding SSID and click **Disable**.

STEP 4 To edit the settings of a SSID, check the corresponding SSID and click **Edit**.

STEP 5 Enter the following information:

- **SSID Name:** Enter the name of the wireless network.

- **SSID Broadcast:** Check to enable SSID broadcast and broadcast the SSID in its beacon frames. All wireless devices within range are able to see the SSID when they scan for available networks. Uncheck to prevent auto-detection of the SSID. In this case, users must know the SSID to set up a wireless connection to this SSID.
- **Allow Remote Management:** Check to allow you to remotely access the RV315W through the wireless network and configure the settings of the RV315W.
- **User Limit:** Specify the maximum number of users that can simultaneously connect to this SSID. Enter a value in the range of 0 to 30. The default value is zero (0), which indicates that there is no limit for this SSID.
- **Security Mode:** Select one of the following security modes for the wireless network and configure the corresponding security settings. For security purposes, we strongly recommend that you use WPA2 for wireless security.

Security Mode	Configuration
Open	Any wireless device that is in range can connect to the SSID. This is the default setting but not recommended.

Security Mode	Configuration
WEP	Wired Equivalent Privacy (WEP) is a data encryption protocol for 802.11 wireless networks. All wireless stations and SSIDs on the network are configured with a static 64-bit or 128-bit Shared Key for data encryption. The higher the bit for data encryption, the more secure for your network. WEP encryption is an older encryption method that is not considered to be secure and can easily be broken. Choose this option only if you need to allow access to devices that do not support WPA or WPA2. If you choose this option, enter the following information: ▪ **Authentication Type:** Choose either **Open System** or **Shared key**. The default is Open System. ▪ **Encryption:** Choose the encryption type: 64 bits (10 hex digits), 64 bits (5 ASCII), 128 bits (26 hex digits), or 128 bits (13 ASCII). The default is 64 bits (10 hex digits). The larger size keys provide stronger encryption, thus making the key more difficult to crack. ▪ **Passphrase:** If you want to generate WEP keys by using a Passphrase, enter any alphanumeric phrase (between 4 to 63 characters) and then click **Generate** to generate 4 unique WEP keys. Select one key to use as the key that devices must have to use the wireless network. ▪ **Default Transmit Key:** Choose a key index as the default transmit key. Key indexes 1 through 4 are available. ▪ **Key 1-4:** If a WEP Passphrase is not specified, a key can be entered directly into one of the Key boxes. The length of the key should be 5 ASCII characters (or 10 hex characters) for 64-bit encryption and 13 ASCII characters (or 26 hex characters) for 128-bit encryption.

Security Mode	Configuration
WPA-Personal	Wi-Fi Protected Access (WPA) provides better security than WEP because it uses dynamic key encryption. This standard was implemented as an intermediate measure to replace WEP, pending final completion of the 802.11i standard for WPA2. WPA-Personal supports Temporal Key Integrity Protocol (TKIP) or Advanced Encryption System (AES) encryption mechanisms for data encryption (default is TKIP). TKIP uses dynamic keys and incorporates Message Integrity Code (MIC) to provide protection against hackers. AES uses symmetric 128-bit block data encryption. If you choose this option, enter the following information: ▪ **WPA Pre-Shared:** The Pre-shared Key (PSK) is the shared secret key for WPA. Enter a string of at least 8 characters to a maximum of 63 characters. ▪ **Key Renewal Timeout:** Enter a value to set the interval at which the key is refreshed for clients associated to this SSID. A value of zero (0) indicates that the key is not refreshed. The default value is 3600 seconds. ▪ **Encryption:** Choose TKIP, AES, or TKIP+AES as the encryption algorithm for data encryption. The default is TKIP.

Security Mode	Configuration
WPA2-Personal	WPA2 provides the best security for wireless transmissions. This method implements the security standards specified in the final version of 802.11i. WPA2-Personal always uses AES encryption mechanism for data encryption. If you choose this option, enter the following information: ▪ **WPA Pre-Shared:** The Pre-shared Key (PSK) is the shared secret key for WPA. Enter a string of at least 8 characters to a maximum of 63 characters. ▪ **Key Renewal Timeout:** Enter a value to set the interval at which the key is refreshed for clients associated to this SSID. A value of zero (0) indicates that the key is not refreshed. The default value is 3600 seconds. ▪ **Encryption:** Choose TKIP, AES, or TKIP+AES as the encryption algorithm for data encryption. The default is AES.

Security Mode	Configuration
WPA-Enterprise	WPA-Enterprise uses WPA with RADIUS authentication. This mode supports TKIP and AES encryption mechanisms (default is TKIP) and requires the use of a RADIUS server to authenticate users. If you choose this option, enter the following information: ▪ **Key Renewal Timeout:** Enter a value to set the interval at which the key is refreshed for clients associated to this SSID. A value of zero (0) indicates that the key is not refreshed. The default value is 3600 seconds. ▪ **Encryption:** Choose TKIP, AES, or TKIP+AES as the encryption algorithm for data encryption. The default is TKIP+AES. ▪ **RADIUS Server IP Address:** Enter the IP address of the RADIUS server. ▪ **RADIUS Server Port:** Enter the port number of the primary RADIUS server. The default value is 1812. ▪ **RADIUS Server Key:** Enter the key for authentication used by the RADIUS server and the RV315W.

Security Mode	Configuration
WPA2-Enterprise	WPA2-Enterprise uses WPA2 with RADIUS authentication. This mode always uses AES encryption mechanism for data encryption and requires the use of a RADIUS server to authenticate users. If you choose this option, enter the following information: ▪ **Key Renewal Timeout:** Enter a value to set the interval at which the key is refreshed for clients associated to this SSID. A value of zero (0) indicates that the key is not refreshed. The default value is 3600 seconds. ▪ **Encryption:** Choose TKIP, AES, or TKIP+AES as the encryption algorithm for data encryption. The default is AES. ▪ **RADIUS Server IP Address:** Enter the IP address of the RADIUS server. ▪ **RADIUS Server Port:** Enter the port number of the primary RADIUS server. The default value is 1812. ▪ **RADIUS Server Key:** Enter the key for authentication used by the RADIUS server and the RV315W.

STEP 6 Click **OK** to apply your settings.

Configuring 3G Wireless Connection

The RV315W supports the 3G wireless connection capability. To connect to a 3G wireless network, insert an applicable 3G USB dongle into the 3G interface on the back panel of the RV315W, and then configure the settings of the 3G wireless network through web-based Configuration Utility. See the latest datasheet to get the list of 3G USB dongle models supported by the RV315W.

To configure the settings of the 3G wireless network:

STEP 1 Click **Port Settings** > **3G Interface Settings**. The 3G Interface Settings page opens.

STEP 2 Enter the following information:

- **3G Modem:** Displays whether the RV315W is detected a 3G USB dongle. The 3G USB dongle should be inserted into the 3G USB port on the back panel.
- **Dial Settings:** Select either **Auto** or **Manual** to detect the settings of the 3G USB dongle. If you select Auto, the RV315W automatically detects the settings of the 3G USB dongle. If you select Manual, you need to manually specify the following settings:
  - **APN:** Enter the APN provided by the 3G wireless network service provider.
  - **Username:** Enter the username provided by the 3G wireless network service provider.
  - **Password:** Enter the password provided by the 3G wireless network service provider.
  - **Dial String:** Enter the dial string provided by the 3G wireless network service provider.
- **Dial Method:** Select either **Auto** or **Manual** to dial in the 3G wireless network.
- **Keep Alive:** If you select Auto, choose one of the following options:
  - **Connect Idle Time:** Choose this option to let the RV315W disconnect from the 3G wireless network after a specified period of inactivity (Idle Time). This option is recommended if your ISP fees are based on the time that you spend online. Enter the idle time in the **Maximum Idle Time** field. The default value is 5 seconds.

- **Keep Alive:** Choose this option to keep the connection always on, regardless of the level of activity. This option is recommended if you pay a flat fee for your Internet service. You can specify the interval to automatically re-dial in the 3G wireless network after the connection is down. The default value is 30 seconds.

- **Manual Dial:** If you select **Manual**, click **Connect** to manually dial in the 3G wireless network. To manually disconnect the 3G wireless connection, click **Disconnect**.

- **Status:** Shows whether the RV315W is connected to a 3G wireless network or not.

STEP 3 Click **OK** to apply your settings.

5

Networking

This chapter describes how to configure other network settings of the RV315W. It includes the following sections:

- Configuring DDNS
- Configuring ALG
- Configuring Port Forwarding
- Configuring Port Triggering
- Configuring DMZ
- Configuring UPnP
- Configuring Port Mirroring
- Configuring Routing
- Configuring IGMP

Configuring DDNS

Dynamic DNS (DDNS) is an Internet service that allows routers with varying public IP addresses to be located using Internet domain names. If your ISP has not provided you with a static IP and your WAN connection is configured to use DHCP to obtain an IP address dynamically, then DDNS provides the domain name to map the dynamic IP address for your website. To use DDNS, you must set up an account with a DDNS provider such as DynDNS.org or TZO.

To configure a DDNS service:

STEP 1 Click **Networking** > **DDNS**. The DDNS page opens.

STEP 2 Click **Create** to add a DDNS service.

STEP 3 Enter the following information:

- **Service Provider:** Specify the provider for your DDNS service. You can choose either DynDNS.org or TZO.
- **Domain Name:** Enter the complete domain name of the DDNS service.
- **Username:** Enter the username of the account that you registered in the DDNS provider.
- **Password:** Enter the password of the account that you registered in the DDNS provider.

STEP 4 Click **OK** to save your settings.

STEP 5 To edit a DDNS service, select the corresponding DDNS service and click the **Edit** icon. To delete a DDNS service, select the corresponding DDNS service and click the **Delete** icon.

Configuring ALG

The RV315W can function as an Application Level Gateway (ALG) to allow certain NAT incompatible applications (such as SIP or H.323) to operate properly through the RV315W.

To configure ALG:

STEP 1 Click **Networking** > **ALG**. The ALG page opens.

STEP 2 Check the box of a protocol to enable the ALG support. The RV315W supports ALG for GRE, SIP, H.323, IPSEC, L2TP, RTSP and NAT Passthrough.

STEP 3 Click **OK** to save your settings.

Configuring Port Forwarding

Port forwarding forwards a TCP/IP packet traversing a Network Address Translator (NAT) gateway to a predetermined network port on a host within a NAT-masqueraded, typically private network based on the port number on which it was received at the gateway from the originating host.

Configuring Single Port Forwarding

To add a single port forwarding rule:

STEP 1 Click **Networking** > **Port Forwarding** > **Single Port Forwarding**. The Single Port Forwarding page opens.

STEP 2 Enter the following information:

- **Interface:** Select a WAN interface or the 3G interface for this single port forwarding rule.
- **Protocol:** Select either TCP or UDP protocol for this single port forwarding rule.
- **External Port:** Specify the port number that triggers this rule when a connection request from outgoing traffic is made. You can choose a predefined option (such as finger, ftp, nntppop3, smtp, telnet, or http) to use its default port value or choose **Other** to manually specify the external port used by the application.
- **Internal IP Address:** Enter the IP address of the internal server.
- **Internal Port:** Specify the port number used by the remote system to respond to the request that it receives. You can choose a predefined option (such as finger, ftp, nntppop3, smtp, telnet, or http) to use its default port value or choose **Other** to manually specify the internal port used by the application.
- **Status:** Check **Enable** to enable this single port forwarding rule, or check **Disable** to disable this rule.

STEP 3 Click **Add** to add this single port forwarding rule in the list.

STEP 4 To edit a single port forwarding rule, select the corresponding rule and click the **Edit** icon. To delete a single port forwarding rule, select the corresponding rule

and click the **Delete** icon. To delete multiple single port forwarding rules at a time, select the corresponding rules and click the **Delete** button.

Configuring Port Range Forwarding

To configure a port range forwarding rule:

STEP 1 Click **Networking** > **Port Forwarding** > **Port Range Forwarding**. The Port Range Forwarding page opens.

STEP 2 Enter the following information:

- **Interface:** Select a WAN interface or the 3G interface for this port range forwarding rule.
- **Protocol:** Select either TCP or UDP protocol for this port range forwarding rule.
- **Port Range:** Specify the starting port and ending port to forward.
- **Internal IP Address:** Enter the IP address of the internal server.
- **Status:** Check **Enable** to enable this port range forwarding rule, or check **Disable** to disable this rule.

STEP 3 Click **Add** to add this port range forwarding rule in the list.

STEP 4 To edit a port range forwarding rule, select the corresponding rule and click the **Edit** icon. To delete a port range forwarding rule, select the corresponding rule and click the **Delete** icon. To delete multiple port range forwarding rules at a time, select the corresponding rules and click the **Delete** button.

Configuring Port Triggering

Port triggering allows devices on the LAN or DMZ to request one or more ports to be forwarded to them. Port triggering waits for an outbound request from the LAN/DMZ on one of the defined outgoing ports, and then opens an incoming port for that specified type of traffic.

Port triggering is a form of dynamic port forwarding while an application is transmitting data over the opened outgoing or incoming ports. Port triggering opens an incoming port for a specific type of traffic on a defined outgoing port. Port triggering is more flexible than static port forwarding (available when configuring firewall rules) because a rule does not have to reference a specific LAN IP or IP range. Ports are also not left open when not in use, which provides a level of security that port forwarding does not offer.

To add a port triggering rule:

STEP 1 Click **Networking** > **Port Triggering**. The Port Triggering page opens.

STEP 2 Enter the following information:

- **WAN Port:** Select the WAN interface to configure port triggering for.
- **LAN Port:** Select the LAN port to configure port triggering for.
- **Protocol:** Select either TCP or UDP protocol.
- **Triggering Range:** Enter the port number or a range of port numbers that will trigger this rule when a connection request from outgoing traffic is made. If the outgoing connection uses only one port, enter the same port number in both fields.
- **Forwarding Range:** Enter the port number or a range of port numbers used by the remote system to respond to the request that it receives. If the incoming connection uses only one port, then specify the same port number in both fields.
- **Status:** Check **Enable** to enable the port triggering rule, or check **Disable** to disable this rule.

STEP 3 Click **Add** to add this port triggering rule in the list.

STEP 4 To edit a port triggering rule, select the corresponding rule and click the **Edit** icon. To delete a port triggering rule, select the corresponding rule and click the **Delete**

icon. To delete multiple port triggering rules at a time, select the corresponding rules and click the **Delete** button.

Configuring DMZ

This section describes how to configure the software DMZ and hardware DMZ features.

Configuring Software DMZ

To configure software DMZ:

STEP 1 Click **Networking** > **DMZ** > **Software DMZ**. The Software DMZ page opens.

STEP 2 To create a DMZ rule, enter the following information:

- **DMZ Status:** Check **Enable** to enable this DMZ rule, or check **Disable** to disable this DMZ rule.
- **External IP:** Enter the external IP address.
- **Internal IP:** Enter the IP address of the internal server in the DMZ network.
- **Binding Interface:** Select the interface for this DMZ rule.

STEP 3 Click **OK** to save your settings.

STEP 4 To edit a software DMZ rule, select the corresponding rule and click the **Edit** icon. To delete a software DMZ rule, select the corresponding rule and click the **Delete** icon.

Configuring Hardware DMZ

The hardware DMZ feature sets the LAN8 port on the back panel to a DMZ port. This feature is only available when you use Static IP or DHCP to connect to the Internet.

To configure the hardware DMZ:

STEP 1 Click **Networking** > **DMZ** > **Hardware DMZ**. The Hardware DMZ page opens.

STEP 2 Check **Enable** to enable the hardware DMZ feature and set the LAN8 part on the back panel to a DMZ port.

STEP 3 Click **Create** to create a DMZ rule.

STEP 4 Enter the following information:

- **Status:** Check **Enable** to enable this DMZ rule, or check **Disable** to disable this DMZ rule.
- **Public IP:** Enter the public IP address.
- **WAN Interface:** Select a WAN interface for this DMZ rule.

STEP 5 Click **OK** to save your settings.

STEP 6 To edit a hardware DMZ rule, select the corresponding rule and click the **Edit** icon. To delete a hardware DMZ rule, select the corresponding rule and click the **Delete** icon.

Configuring UPnP

Universal Plug and Play (UPnP) allows for automatic discovery of devices that can communicate with your RV315W.

To enable or disable UPnP on the RV315W:

STEP 1 Click **Networking** > **UPnP**. The UPnP page opens.

STEP 2 Click **Enable** to enable UPnP, or click **Disable** to disable UPnP. If UPnP is disabled, the RV315W will not allow for automatic device configuration.

STEP 3 Click **OK** to save your settings.

Configuring Port Mirroring

Port Mirroring allows traffic on one port to be visible on other ports. This feature is useful for debugging or traffic monitoring.

To configure Port Mirroring:

STEP 1 Click **Networking** > **Port Mirroring**. The Port Mirroring page opens.

STEP 2 Click **Enable** to enable Port Mirroring, or click **Disable** to disable Port Mirroring.

STEP 3 If Port Mirroring is enabled, enter the following information:

- **Mirror Destination Port:** Choose the port that monitors the transmitted (TX) or received (RX) traffic for other ports.
- **Mirror Source Port:** Check the ports that are monitored. The port that you set as a TX Destination port cannot be selected as a monitored port.

STEP 4 Click **OK** to save your settings.

Configuring Routing

This section provides information on configuring the routing mode between WAN and LAN, viewing the routing table, and configuring the static routing, dynamic routing, and policy-based routing settings.

Configuring Basic Routing Settings

Depending on the requirements of your ISP, you can configure the RV315W to operate in NAT mode or Routing mode. By default, NAT mode is enabled.

Configuring Routing Mode

To configure the routing mode:

STEP 1 Click **Networking** > **Routing** > **Basic Routing**. The Basic Routing page opens.

STEP 2 In the **Routing Mode** area, configure the routing mode between WAN and LAN.

- If your ISP assigns an IP address for each of the computers that you use, click **Routing** to enable the Routing mode.
- If you are sharing IP addresses across several devices such as your LAN and using other dedicated devices for the DMZ, click **Gateway** to enable the Gateway mode.

STEP 3 Click **OK** to save your settings.

Configuring Inter-VLAN Routing

To configure inter-VLAN routing:

STEP 1 Click **Networking** > **Routing** > **Basic Routing**. The Basic Routing page opens.

STEP 2 In the **Inter-VLAN Routing** area, check **Enable** to enable inter-VLAN routing.

STEP 3 Click **OK** to save your settings.

Configuring Static Routing

To configure static routes, specify the IP address and related information for the destination.

STEP 1 Click **Networking** > **Routing** > **Basic Routing**. The Basic Routing page opens.

STEP 2 In the **Static Route** area, click **Add** to add a new static route.

STEP 3 Enter the following information:

- **Destination Address:** Choose an existing address object for the host or for the network that the route leads to.
- **Subnet Mask:** Enter the subnet mask of the destination network.
- **Next Hop:** Enter the IP address of the gateway through which the destination host or network can be reached.

STEP 4 Click **OK** to save your settings.

Configuring Policy-based Routing

Policy- based routing (PBR) allows users to specify the internal IP and/or service going through a specified WAN port to provide more flexible and granular traffic handling capabilities.

This feature can be used to segregate traffic between links that are not of the same speed. High volume traffic can be routed through the port connected to a high-speed link and low-volume traffic can be routed through the port connected to the slow link.

To configure policy- based routing:

STEP 1 Click **Networking** > **Routing** > **Policy-based Routing**. The Policy-based Routing page opens.

STEP 2 To create a policy-based routing rule, click **Add**.

STEP 3 Enter the following information:

- **Name:** Enter a unique name of the policy-based routing rule for identification.
- **Interface:** Select an interface for this the policy-based routing rule.
- **Source IP:** Enter the source IP address for outbound traffic.
- **Subnet Mask:** Enter the subnet mask of the source network.
- **Destination IP:** Enter the destination IP address for outbound traffic.
- **Port Number:** Select the port number that the policy-based routing sends out the packages.
  - Select **Any** to automatically select a routing port.
  - Select **Single** to manually set the port number.

  - Or select **Range** to manually set a port range.
- **Protocol:** Select **Any**, or select either TCP or UDP.
- **DSCP:** Enter the value of DSCP.
- **Next Hop:** Select one of the following options as the next hop:
  - **IPSec Tunnel:** Select an IPsec VPN tunnel as the next hop.
  - **Interface:** Select a WAN interface as the next hop.
  - **Disable this rule if the interface is down:** Check to disable this rule when the selected WAN interface is down.

STEP 4 Click **OK** to save your settings and return to the Policy-based Routing page.

STEP 5 To edit the settings a policy-based routing rule, select the corresponding rule and click the **Edit** icon. To delete a policy-based routing rule, select the corresponding rule and click the **Delete** icon.

Configuring Dynamic Routing

Dynamic routing is an Interior Gateway Protocol (IGP) that is commonly used in internal networks. It allows a router to exchange its routing information automatically with other routers, and allows it to dynamically adjust its routing tables and adapt to changes in the network.

Dynamic routing enables the RV315W to automatically adjust to physical changes in the network's layout and exchange routing tables with the other routers.

The RV315W determines the network packets' route based on the fewest number of hops between the source and the destination.

To configure dynamic routing:

STEP 1 Click **Networking** > **Routing** > **RIP**. The RIP page opens.

STEP 2 Enter the following information:

- **RIP:** Click **Enable** to enable RIP, or click **Enable** to disable it. By default, RIP is disabled.
- **RIP Version:** If you enable RIP, specify the RIP version. The RV315W supports RIP Version 1 and RIP Version 2.

- **RIP Time:** Enter the values for the RIP refresh time, RIP timeout, and Flush time.
- **RIP Settings:** Select an interface or a RIP network for routing.

STEP 3 In the **RIP Members** area, if RIPv2 is enabled, you can check **RIP Enabled** to enable the RIP settings on the port. To specify the RIP settings for each available interface, click the **Edit** icon.

STEP 4 Enter the following information:

- **RIP:** Displays whether RIP is enabled or disabled on this interface.
- **Port Passive:** Determines how the RV315W receives RIP packets. Check **Enable** to enable this feature on the port.
- **Authentication:** Specify the authentication method for the port.
  - **None:** Choose this option to invalidate the authentication.
  - **Simple Password Authentication:** Choose this option to validate the simple password authentication. Enter the password in the field.
  - **MD5 Authentication:** Choose this option to validate the MD5 authentication.

STEP 5 In the **RIP Networks** area, you can manually add RIP networks. To add a new RIP network, click **Add**.

STEP 6 Click **OK** to save your settings.

STEP 7 To edit the settings of a RIP network, select the corresponding entry and click the **Edit** icon. To delete a RIP network, select the corresponding entry and click the **Delete** icon.

Viewing the Routing Table

To open the Routing Table page, click **Networking** > **Routing** > **Routing Table**. The following information is displayed:

- **Destination Address:** The IP address of the host or the network that the route leads to.
- **Subnetwork Mask:** The subnet mask of the destination network.
- **Gateway:** The IP address of the gateway through which the destination host or network can be reached.

- **Interface:** The physical port through which this route is accessible.

Configuring IGMP

Internet Group Management Protocol (IGMP) is a communication protocol used by hosts and adjacent routers on IP networks to establish multicast group memberships. IGMP can be used for online streaming video and gaming, and can allow more efficient use of resources when supporting these types of applications.

IGMP Proxy enables hosts that are not directly connected to a downstream router to join a multicast group sourced from an upstream network. IGMP Snooping constrains IPv4 multicast traffic at Layer 2 by configuring Layer 2 LAN ports dynamically to forward IPv4 multicast traffic only to those ports that want to receive it.

To configure IGMP:

STEP 1 Click **Networking** > **IGMP**. The IGMP page opens.

STEP 2 Enter the following information:

- **IGMP Version:** Choose either IGMP v1 or IGMP v2.
- **IGMP Proxy:** Click **Enable** to enable IGMP Proxy so that the RV315W can act as a proxy for all IGMP requests and communicate with the IGMP servers of the ISP, or click **Disable** to disable it.
- **IGMP Snooping:** You can use IGMP Snooping in subnets that receive IGMP queries from either IGMP or IGMP Snooping querier. Click **Enable** to enable IGMP Snooping, or click **Disable** to disable it.

STEP 3 Click **Apply** to apply your settings.

6

VPN

The RV315W supports the IPsec VPN feature to set up a single gateway-to-gateway VPN tunnel or a client-to-gateway VPN tunnel. In this configuration, the RV315W creates a secure VPN connection to another VPN-enabled router or a remote PC that installs third-party VPN client software. For example, you can configure the RV315W at a branch site to connect to the VPN router at the corporate site so that the branch site can securely access the corporate network.

This chapter describes how to configure IPsec Virtual Private Networks (VPNs) that allow remote workers to access your network resources. It includes the following sections:

- **Viewing IPSec VPN Status**
- **Configuring IPsec VPN Policies**

Viewing IPSec VPN Status

The IPsec VPN page allows you to view the status of all IPsec VPN connections of the RV315W.

To view information for an IPsec VPN connection:

STEP 1 Click **VPN** > **IPsec VPN**. The IPsec VPN page opens.

The **IPsec Connections** table lists all existing IPsec VPN policies specified on the RV315W. The following fields are displayed:

- **Connection Name:** Displays the name of the IPsec VPN policy.
- **Enable:** Displays whether the IPsec VPN policy is enabled or disabled.
- **Interface:** Displays the interface used for the IPsec VPN policy.
- **Connection Type:** Displays the type of VPN connection, such as site-to-site or pc-to-site.

  - *site-to-site VPN:* Allows you to set up a secure VPN tunnel between the RV315W and a remote VPN router.
  - *pc-to-site VPN:* Allows you to set up a secure VPN tunnel between the RV315W and a remote PC that installs a third-party client software.
- **Remote Gateway Address/Hostname:** Displays the hostname or IP address of the remote network.
  - For a site-to-site VPN, the hostname or IP address of the remote gateway is displayed.
  - For a pc-to-site VPN, the hostname or IP address of the remote PC is displayed. Separate multiple IP addresses with commas (,).
- **Local Gateway Address:** Displays the IP address of the local network.
- **Authentication Method:** Displays the authentication method.
- **Connection Status:** Displays whether the IPsec VPN tunnel is connected or disconnected.

STEP 2 To edit the settings of an IPsec VPN policy, select the corresponding policy and click the **Edit** icon. See **Configuring IPsec VPN Policies**.

STEP 3 To delete an IPsec VPN policy, select the corresponding policy and click the **Delete** icon.

Configuring IPsec VPN Policies

An IPsec VPN policy is used to establish a VPN connection between two peers. The RV315W allows you to configure up to 50 IPsec VPN policies.

Setting Up a Site-to-Site VPN

A site-to-site VPN policy is used to create a new tunnel between two VPN devices, such as a Cisco RV315W router at your office and a Cisco RV315W router at a remote office.

To create a site-to-site (gateway-to-gateway) VPN policy:

STEP 1 Click **VPN** > **IPsec VPN**. The IPsec VPN page opens.

STEP 2 Click **Create** to create an IPsec VPN policy.

STEP 3 Enter the following information:

- **Enable:** Check to enable the IPsec VPN policy, or uncheck to disable the policy.
- **Policy Number:** Select the identification for the IPsec VPN policy.
- **IPsec Connection Name:** Enter a unique name for the IPsec VPN policy.
- **Interface:** Select a WAN interface that traffic passes through over the IPsec VPN tunnel.
- **Connection Type:** Select **site-to-site** as the type of the VPN connection.
- **VPN Redundant:** VPN Redundant allows the backup connection to be active automatically when the connection of the remote gateway fails. Click **Enable** to enable this feature and enter the following information:
  - **Primary:** Enter the IP address or hostname of the primary remote gateway.
  - **Backup:** Enter the IP address or hostname of the secondary remote gateway.
  - **Switch from backup to primary:** Enabling this feature allows the primary VPN connection to be active automatically when the primary connection is recovered. If you disable this feature, the backup connection still becomes active even though the primary connection is recovered. Click **Enable** to enable this feature, or click **Disable** to disable it. This feature is disabled by default.
- **Local Gateway Address:** Displays the IP address of the local network. In general, the local gateway address is the public IP address obtained by the selected WAN interface.
- **Authentication Method:** The IPsec VPN uses a simple, password-based key to authenticate. Enter the desired value that the peer device must provide to establish a connection in the **Pre-shared Key** field. The pre-shared key must be entered exactly the same here and on the remote peer.
- **Filter Method:** Select one of the following options:

- **Route:** Select the IP address and subnet mask protected by the IPsec VPN.
- **Flow Characteristic:** Enter the source IP address/wildcard and destination IP address/wildcard.

STEP 4 Click **Advanced Settings** to configure the advanced settings of the IPsec VPN policy.

- **1st Phase:** Enter the following information:
  - **Exchange Mode:** Select either **Main Mode** or **Active Mode**. The main mode has a higher priority than the active mode.
  - **Authentication Algorithm:** Specify the authentication algorithm for the VPN header. There are two hash algorithms supported by the RV315W: SHA1 and MD5. The default is SHA1.
  - **Encryption Algorithm:** Choose the algorithm used to negotiate the security association. The encryption standard supports DES, 3DES, AES-128, AES-192, and AES-256. The default is DES.
  - **DH:** Choose the Diffie-Hellman group identifier, which the two IPsec peers use to derive a shared secret without transmitting it to each other. The DH Group sets the strength of the algorithm in bits. The lower the Diffie-Hellman group number, the less CPU time it requires to be executed. The higher the Diffie-Hellman group number, the greater the security.
  - **SA Lifetime:** Enter the lifetime of the IPsec Security Association (SA). The IPsec SA lifetime represents the interval after which the IPsec SA becomes invalid. The IPsec SA is renegotiated after this interval. The default value is 86400 seconds.
- **2rd Phase:** Enter the following information:
  - **ESP Authentication Algorithm:** Choose either SHA1 or MD5 as the ESP authentication algorithm. The default is MD5.
  - **ESP Encryption Algorithm:** Choose the symmetric encryption algorithm that protects data transmission between two IPsec peers. The advanced encryption standard supports DES, 3DES, AES-128, AES-192, and AES-256. The default is DES.
  - **PFS:** Click **Enable** to enable Perfect Forward Secrecy (PFS) to improve security, or click **Disable** to disable it. If you enable PFS, a Diffie-Hellman exchange is performed for every phase-2 negotiation. PFS is desired on the keying channel of the VPN connection.

- **SA Lifetime:** Specify the values for the time-based lifetime and the flow-based lifetime.
- **DPD:** Click **Enable** to enable Dead Peer Detection (DPD), or click **Disable** to disable it. DPD is a method of detecting a dead Internet Key Exchange (IKE) peer. This method uses IPsec traffic patterns to minimize the number of messages required to confirm the availability of a peer. DPD is used to reclaim the lost resources in case a peer is found dead and it is also used to perform IKE peer failover. If you enable DPD, specify the delay time and DPD timeout.

  DPD Delay Time: Enter the value of delay time in seconds between consecutive DPD R-U-THERE messages. DPD R-U-THERE messages are sent only when IPsec traffic is idle.

  DPD Timeout: Enter the value of detection timeout in seconds. If no response and no traffic over the timeout, declare the peer dead.

STEP 5 Click **OK** to save your settings.

Setting up a PC to Site VPN

A PC-to-Site VPN policy is used to create a VPN tunnel to allow teleworkers and business travelers to access to your network by using third-party VPN client software, such as TheGreenBow IPsec VPN client 5.1 and Shrewsoft VPN client 2.17.

To create a PC-to-Site (client-to-gateway) VPN policy:

STEP 1 Click **VPN** > **IPsec VPN**. The IPsec VPN page opens.

STEP 2 Click **Create** to create an IPsec VPN policy.

STEP 3 Enter the following information:

- **Enable:** Check to enable the IPsec VPN policy, or uncheck to disable the policy.
- **Policy Number:** Select the identification for the IPsec VPN policy.
- **IPsec Connection Name:** Enter a unique name for the IPsec VPN policy.
- **Interface:** Select a WAN interface that traffic passes through over the IPsec VPN tunnel.
- **Connection Type:** Select **pc-to-site** as the type of the VPN connection.

- **Local Gateway Address:** Displays the IP address of the local network. In general, the local gateway address is the public IP address obtained by the selected WAN interface.
- **Authentication Method:** The IPsec VPN uses a simple, password-based key to authenticate. Enter the desired value that the peer device must provide to establish a connection in the **Pre-shared Key** field. The pre-shared key must be entered exactly the same here and on the remote peer.

STEP 4 Click **Advanced Settings** to configure the advanced settings of the IPsec VPN policy.

- **1st Phase:** Enter the following information:
  - **Exchange Mode:** Select either **Main Mode** or **Active Mode**. The main mode has a higher priority than the active mode.
  - **Authentication Algorithm:** Specify the authentication algorithm for the VPN header. There are two hash algorithms supported by the RV315W: SHA1 and MD5. The default is SHA1.
  - **Encryption Algorithm:** Choose the algorithm used to negotiate the security association. The encryption standard supports DES, 3DES, AES-128, AES-192, and AES-256. The default is DES.
  - **DH:** Choose the Diffie-Hellman group identifier, which the two IPsec peers use to derive a shared secret without transmitting it to each other. The DH Group sets the strength of the algorithm in bits. The lower the Diffie-Hellman group number, the less CPU time it requires to be executed. The higher the Diffie-Hellman group number, the greater the security.
  - **SA Lifetime:** Enter the lifetime of the IPsec Security Association (SA). The IPsec SA lifetime represents the interval after which the IPsec SA becomes invalid. The IPsec SA is renegotiated after this interval. The default value is 86400 seconds.
- **2rd Phase:** Enter the following information:
  - **ESP Authentication Algorithm:** Choose either SHA1 or MD5 as the ESP authentication algorithm. The default is MD5.
  - **ESP Encryption Algorithm:** Choose the symmetric encryption algorithm that protects data transmission between two IPsec peers. The advanced encryption standard supports DES, 3DES, AES-128, AES-192, and AES-256. The default is DES.

- **PFS:** Click **Enable** to enable Perfect Forward Secrecy (PFS) to improve security, or click **Disable** to disable it. If you enable PFS, a Diffie-Hellman exchange is performed for every phase-2 negotiation. PFS is desired on the keying channel of the VPN connection.
- **SA Lifetime:** Specify the values for the time-based lifetime and the flow-based lifetime.
- **DPD:** Click **Enable** to enable Dead Peer Detection (DPD), or click **Disable** to disable it. DPD is a method of detecting a dead Internet Key Exchange (IKE) peer. This method uses IPsec traffic patterns to minimize the number of messages required to confirm the availability of a peer. DPD is used to reclaim the lost resources in case a peer is found dead and it is also used to perform IKE peer failover. If you enable DPD, specify the delay time and DPD timeout.

  DPD Delay Time: Enter the value of delay time in seconds between consecutive DPD R-U-THERE messages. DPD R-U-THERE messages are sent only when IPsec traffic is idle.

  DPD Timeout: Enter the value of detection timeout in seconds. If no response and no traffic over the timeout, declare the peer dead.

STEP 5 Click **OK** to save your settings.

Modifying or Deleting an IPsec VPN Policy

STEP 1 Click **VPN** > **IPsec VPN**. The IPsec VPN page opens.

STEP 2 To edit the settings of an IPsec VPN policy, select the corresponding policy and click the **Edit** icon. See **Setting Up a Site-to-Site VPN** or **Setting up a PC to Site VPN** for more information.

STEP 3 To delete an IPsec VPN policy, select the corresponding policy and click the **Delete** icon.

7

Quality of Service (QoS)

This chapter describes how to configure the quality of service (QoS) feature. It includes the following sections:

- Configuring Bandwidth Management
- Configuring Flow Control Policies
- Configuring Session Limits

Configuring Bandwidth Management

Use the Bandwidth Control page to specify the maximum bandwidth for upstream traffic allowed on each WAN interface, including the 3G WAN interface.

To set the upstream bandwidth:

STEP 1 Click **QoS** > **Bandwidth Control**. The Bandwidth Control page opens.

STEP 2 Check **Enable** to limit the upstream bandwidth on the WAN interface.

STEP 3 Click **OK** to save your settings.

STEP 4 Click **Edit** to modify the rate limit settings for the WAN interface.

STEP 5 In the **Rate Limit** field, enter the amount of maximum bandwidth in Kbps for upstream traffic allowed on the WAN interface. The values range from 64 to 100,000 Kbps.

STEP 6 In the **Interface Queue Settings** area, specify the amount of minimum and maximum upstream bandwidths for each interface queue.

- **Queue Name:** Name of the queue.
- **Guaranteed Rate:** Enter the amount of minimum bandwidth in Kbps for upstream traffic allowed on the interface queue.

- **Maximum Rate:** Enter the amount of maximum bandwidth in Kbps for upstream traffic allowed on the interface queue.

STEP 7 Click **OK** to save your settings.

Configuring Flow Control Policies

Use the Flow Control Policies page to configure the flow control policies. Up to 25 flow control policies can be configured on the RV315W.

To create a flow control policy:

STEP 1 Click **QoS** > **Flow Control Policies**. The Flow Control Policies page opens.

STEP 2 To create a new flow control policy, click **Create**. The Flow Control Policy Settings page opens.

STEP 3 Enter the following information:

- **Policy Name:** Enter a unique name for the flow control policy.
- **Policy Type:** Select one of the following options for flow control.
  - **Destination Port:** Controls flow based on the specified destination port. If you select this option, enter the values in the **Application Protocol**, **LAN Interface**, and **Destination Port** fileds. You can select a predefined application that specifies the destination port, or manually specify the application protocol and port range.
  - **MAC Address:** Controls flow based on the specified MAC address. If you select this option, enter the values in the **MAC Address** and **LAN Interface** fields.
  - **Physical Port:** Controls flow based on the specified physical port. If you select this option, enter the values in the **LAN Interface** and **Physical Port** fileds.
  - **VLAN:** Controls flow based on the specified VLAN. If you select this option, select a VLAN from the **VLAN** drop-down menu.

  - **IP Address:** Controls flow based on the specified IP addresses of the hosts. If you select this option, enter the starting and ending IP addresses in the **Start Address** and **End Address** fields and select a LAN interface from the **LAN Interface** drop-down menu.

- **Application Queue:** Applies this flow control policy to an interface queue. Select a queue from the drop-down menu.
- **Tag Type:** Check **Enable** to enable Tag Type, or check **Disable** to disable this feature.
- **New Tag Value:** If you enable Tag Type, specify the method how to assign the priority for traffic:
  - **CoS:** Choose the CoS remarking value to assign the priority for traffic.
  - **DSCP:** Choose the DSCP remarking value to assign the priority for traffic.

STEP 4 Click **OK** to save your settings and return to the Flow Control Policies page.

Configuring Session Limits

Use the Session Limits page to configure the maximum number of connection sessions for the complete system, for a range of IP addresses, or for each physical port. When the connection table is full, the new sessions that access the RV315W are dropped.

To limit the maximum number of connection sessions:

STEP 1 Click **QoS** > **Session Limits**. The Session Limits page opens.

STEP 2 Check **Enable** to limit the number of connection sessions, or check **Disable** to disable this feature.

STEP 3 If you enable this feature, enter the following information:

- **IP-based Limit:** Specify the maximum number of connection sessions allowed on each IP address and/or the range of IP addresses.
- **Port-based Limit:** Specify the maximum number of connection sessions allowed on each physical port.
- **Maximum Sessions:** Specify the maximum number of connection sessions allowed on the complete system.

STEP 4 Click **OK** to save your settings.

8

Security

This chapter describes how to configure the firewall, content filtering, and access control features. It includes the following sections:

- Configuring Firewall
- Configuring DDoS
- Configuring Content Filtering
- Configuring Access Control
- Configuring MAC Address Filtering
- Preventing ARP Attacks

Configuring Firewall

To configure basic firewall settings:

STEP 1 Click **Security** > **Firewall**. The Firewall page opens.

STEP 2 Check **Enable** to enable the firewall feature (recommended), or check **Disable** to disable this feature.

STEP 3 Enter the following information:

Proxy	Check to block proxy servers. A proxy server (or proxy) allows computers to route the connections to other computers through the proxy, thus circumventing certain firewall rules. For example, if the connections to a specific IP address are blocked by a firewall rule, the requests can be routed through a proxy that is not blocked by the rule, rendering the restriction ineffective.
Java	Check to block Java applets. Java applets are small programs embedded in web pages that enable dynamic functionality of the page. A malicious applet can be used to compromise or infect computers.
Cookies	Check to block cookies. Cookies are used to store session information by websites that usually require login. However, several websites use cookies to store tracking information and browsing habits. Many websites require that cookies be accepted in order for the site to be accessed properly. Blocking cookies can cause many websites to not function properly.
ActiveX	Check to block ActiveX content. Similar to Java applets, ActiveX controls are installed on a Windows computer while running Internet Explorer. A malicious ActiveX control can be used to compromise or infect computers.
Filter Port	Enter the port number that is used for filtering HTTP traffic. The firewall only monitors and controls the website visits through this HTTP port.

STEP 4 Click **OK** to save your settings.

Configuring DDoS

Use the DDoS page to specify how to protect your network against common types of DoS attacks.

To configure DoS prevention:

STEP 1 Click **Security** > **DDoS**. The DDoS page opens.

STEP 2 The RV315W supports three types of DoS preventions: SYN Flood, UDP Flood, and ICMP Flood. Check **Enable** to enable DoS Prevention, or check **Disable** to disable this feature.

STEP 3 Specify the threshold for each enabled DoS attacks to trigger the prevention. The default value is 1000 attacks per second.

STEP 4 Click **OK** to save your settings.

Configuring Content Filtering

Content filtering blocks or allows HTTP access to websites containing specific keywords or domains. It controls access to certain Internet sites based on analysis of its content (domain), rather than its source or other criteria. It is most widely used on the Internet to filter web access.

To configure content filtering:

STEP 1 Click **Security** > **Content Filtering**. The Content Filtering page opens.

STEP 2 Specify the type of filtering:

- **Blacklist:** Select this option to block HTTP access to websites in the list and allow HTTP access for other websites.
- **Whitelist:** Select this option to allow HTTP access to websites in the list and block HTTP access for other websites.

STEP 3 To add a filtering rule, enter the following information:

- **URL/Keyword:** Enter the domain name or a keyword of a website that you want to permit or block. If you enter a keyword, HTTP access to a website that contains this keyword can be blocked or allowed.

- **File Type:** Enter the type of files that you want to permit or block.

STEP 4 Click **Add** to add this rule in the list of **Filtering Rules**.

STEP 5 You can edit the settings of a content filtering rule, delete an existing filtering rule, or export the specified content filtering rules to your local PC.

- **Select All:** Click to select all content filtering rules in the list.
- **Cancel All:** Click to cancel all selected content filtering rules.
- **Delete:** Click to delete all selected content filtering rules.
- **Export:** Click to export all selected content filtering rules to your local PC in .txt format.

STEP 6 In the **Import File Filtering List** area, you can import a mass of content filtering rules from your local PC. Click **Browse** to locate and select the file, and then click **Import**.

Configuring Access Control

Use the Access Control page to configure the access control objects and the access control policies.

Configuring Access Control Objects

To configure an access control object:

STEP 1 Click **Security** > **Access Control**. The Access Control page opens.

In the **Access Control Objects** area, all existing access control objects are listed.

STEP 2 To create a new access control object, click **Create**. The Access Control Object Settings page opens.

STEP 3 Enter the following information:

- **Time Range:** Enter the starting time and ending time.
- **Interface Name:** Select the interface used by the access control object.

- **Destination IP Address:** Enter the IP address of the host that you want to control.
- **Protocol:** Select a protocol from the drop-down menu for the access control object.

STEP 4 Click **OK** to save your settings and return to the Access Control page.

STEP 5 To edit the settings of an access control object, select the corresponding object and click the **Edit** icon. To delete an access control object, select the corresponding object and click the **Delete** icon.

Configuring Access Control Policies

The access control policy can permit or block access to a specific destination IP address.

To configure an access control policy:

STEP 1 Click **Security** > **Access Control**. The Access Control page opens.

In the **Access Control Policies** area, all existing access control policies are listed.

STEP 2 To create a new access control policy, click **Create**. The Access Control Policy Settings page opens.

STEP 3 Enter the following information:

- **Time Range:** Enter the starting time and ending time to keep the access control policy active at specific times.
- **Week:** Check the days to keep the access control policy active at specific days.
- **Protocol:** Select a protocol from the drop-down menu for the access control policy.
- **Object:** Select the object to which the access control policy applies.
- **Source IP Address:** Enter the source IP address to which the access control policy applies.
- **Destination Port:** Enter the destination port to which the access control policy applies.
- **Action:** Select **Enable** to enable this policy.

STEP 4 Click **OK** to save your settings and return to the Access Control page.

STEP 5 To edit the settings of an access control policy, select the corresponding policy and click the **Edit** icon. To delete an access control policy, select the corresponding policy and click the **Delete** icon.

Configuring MAC Address Filtering

MAC address filtering permits and blocks network access from specific devices through the use of MAC address list.

To configure MAC address filtering:

STEP 1 Click **Security** > **MAC Address Filtering**. The MAC Address Filtering page opens.

STEP 2 Select one of the following filtering policies:

- **Block Access Network:** The MAC addresses in the list are blocked and all other MAC addresses not included in the list are permitted.
- **Allow Access Network:** Only the MAC addresses in the list are permitted and all other MAC addresses not included in the list are blocked.

STEP 3 In the **MAC Addresses List** area, specify the list of MAC addresses. To add a MAC address, click **Create.** The MAC Address Filtering Policy page opens.

Up to 20 MAC addresses can be configured on the RV315W.

STEP 4 Enter the following information:

- **MAC Address:** Enter the MAC address that you want to filter.
- **Time Range:** Enter the starting time and ending time to keep the MAC address filtering rule active at specific times.
- **Week:** Check the days to keep the MAC address filtering rule active at specific days.

STEP 5 Click **OK** to save your settings and return to the MAC Address Filtering page.

STEP 6 To edit the settings of a MAC address filtering rule, select the corresponding rule and click the **Edit** icon. To delete a MAC address filtering rule, select the corresponding rule and click the **Delete** icon.

Preventing ARP Attacks

Use the ARP Attack Protection page to specify how to protect your network against common types of ARP attacks.

To prevent ARP attacks:

STEP 1 Click **Security** > **ARP Attack Protection**. The ARP Attack Protection page opens.

STEP 2 Enter the following information:

- **ARP Attack Protection:** Check **Enable** to enable ARP Attack Protection, or check **Disable** to disable this feature.
- **Enable Auto Learning:** Check **Enable** to enable Auto Learning, or check **Disable** to disable this feature. Enabling this feature allows the system to determine whether the IP address and MAC address of the user are valid or not.
- **ARP Flooding Threshold:** Enter the threshold value of ARP Flooding attacks. This value determines the amount of ARP packets that the system allows to receive per second. The greater value, the more ARP packets can be allowed to receive.
- **ARP Broadcast Interval:** Enter the interval for ARP broadcasting. The value of zero indicates that this feature is disabled.

STEP 3 Click **OK** to save your settings.

STEP 4 In the **Manual IP&MAC Binding** area, you can manually add the IP&MAC binding rule. To create a new IP&MAC binding rule, click **Create**. The IP&MAC Binding Rule page opens.

IP&MAC Binding allows you to bind an IP address to a MAC address and vice versa. It only allows traffic when the host IP address matches a specified MAC address. By requiring the gateway to validate the source traffic's IP address with the unique MAC address of device, this ensures that traffic from the specified IP address is not spoofed.

STEP 5 Enter the following information:

- **IP Address:** Enter the IP address that you want to bind with a MAC address.
- **MAC Address:** Enter the MAC address.

STEP 6 Click **OK** to save your settings and return to the ARP Attack Protection page.

STEP 7 To edit the settings of an IP&MAC binding rule, select the corresponding rule and click the **Edit** icon. To delete an IP&MAC binding rule, select the corresponding rule and click the **Delete** icon.

9

System Management

This chapter describes the administration features of the RV315W, including user management, remote management, system diagnostics and logs, date and time, and other settings. It includes the following sections:

- Rebooting the RV315W
- Configuring User Accounts
- Restoring Factory Default Settings
- Managing System Configuration
- Upgrading the Firmware
- Using Diagnostic Utilities
- Configuring System Time
- Configuring TR-069
- Configuring SNMP
- Configuring Remote Management

Rebooting the RV315W

To reboot the RV315W, you can press and release the **RESET** button on the back panel for less than 5 seconds, or perform the **Reboot** operation from web-based Configuration Utility.

To reboot the RV315W through web-based Configuration Utility:

STEP 1 Click **System Management** > **Reboot**. The Reboot page opens.

STEP 2 Click **Reboot**.

STEP 3 Click **OK** to reboot the unit. Rebooting the unit will close all current sessions and the system will be down for several seconds.

Configuring User Accounts

Use the User Management page to manage the user accounts.

Viewing User Information

The RV315W predefines an administrative account (admin) and a normal user (cisco). The administrative account has full privilege to set the configuration and read the system status. The normal users can only read the system status after they login.

The usernames of the default system administrator (admin) and normal user (cisco) cannot be modified, but their passwords can be changed. For security purposes, we recommend that you change the default administrator password at the first login.

To view user information, click **System Management** > **User Management**. The User Management page opens.

All existing users are listed in the **Local User List**. The following information is displayed:

- **Username:** Displays the name of the user account.
  - **admin:** Default system administrator. Its default password is **admin**.
  - **cisco:** Default normal user. Its default password is **cisco**.
- **Privilege:** Displays the privilege of the user account, such as Administrator and Normal User. The administrator has full privilege to set the configuration and read the system status. The normal users can only read the system status after they login. They cannot edit any configuration.

Creating a New User

To create a normal user, you must log in to web-based Configuration Utility using the system administrator account. Up to 5 user accounts can be configured on the RV315W, including the default system administrator (admin) and normal user (cisco).

To create a new user account:

STEP 1 Click **System Management** > **User Management**. The User Management page opens.

STEP 2 In the **Add Local User** area, enter the following information:

- **Username:** Enter the username for the user.
- **Password:** Enter the password for the user. Passwords are case sensitive.
- **Password Confirm:** Enter the password again for confirmation.

STEP 3 Click **Add** to save your settings.

The new user is added in the Local User List.

Changing User Password

For security purposes, we recommend that you change the default administrator password at the first login.

To change the password of a user:

STEP 1 Click **System Management** > **User Management**. The User Management page opens.

STEP 2 In the **Local User List** area, check the corresponding user and click **Change Password**.

STEP 3 Enter the following information:

- **Old Password:** Enter the current administrator password.
- **New Password:** Enter a new administrator password. Passwords are case sensitive.
- **Password Confirm:** Enter the password again for confirmation.

STEP 4 Click **OK** to save your settings.

Deleting a Local User

The system administrator can remove a new added local user from the local user database.

To delete a local user:

STEP 1 Click **System Management** > **User Management**. The User Management page opens.

STEP 2 In the **Local User List** area, check the corresponding user and click **Delete**.

STEP 3 Click **OK** to delete it from the local user database.

Restoring Factory Default Settings

To restore the RV315W to the factory default settings, you can press and hold the **RESET** button on the back panel for more than 5 seconds, or perform the **Reset to Factory Defaults** operation from web-based Configuration Utility.

CAUTION During restoring to factory defaults, do NOT turn off the device, shut down the PC, remove the cable, or interrupt the process in any way until the operation is complete. This process should take several minutes including the reboot process.

CAUTION The Reset To Factory Defaults operation will wipe out the current settings used on the RV315W. We recommend that you back up your current settings before restoring the RV315W to the factory default settings.

To restore the RV315W to the factory default settings through the utility:

STEP 1 Click **System Management** > **Reset To Factory Defaults**. The Reset To Factory Defaults page opens.

STEP 2 Click **Reset to Factory Defaults**.

STEP 3 This operation reboots the unit and restores the RV315W to the factory default settings. The settings that you have previously made to the RV315W are lost. Click **OK**.

Managing System Configuration

This section describes how to work with the configuration. You can perform the following tasks to maintain system configuration:

- Back up the settings currently used on your RV315W.
- Restore your settings from a saved configuration file.
- Upload the configuration to an upper-level Network Management System (NMS).

To manage system configuration:

STEP 1 Click **System Management** > **Configuration Management**. The Configuration Management page opens.

STEP 2 To back up the settings currently used on your RV315W, click **Backup Configuration**. Select where to locate the configuration file, and then click **OK**.

STEP 3 To restore your setting from a saved configuration file, click **Browse** to locate and select a saved configuration file, and then click **Import**. The system will be rebooted with the loaded configuration file.

STEP 4 To upload the configuration to an upper-level Network Management System (NMS), you must first configure the TR069 settings on your RV315W (see Configuring TR-069), and then click **Upload Configuration**.

The RV315W first sends a message to the upper-level NMS. The upper-level NMS automatically gets the configuration file of the RV315W after the NMS receives the requesting message.

Upgrading the Firmware

CAUTION During a firmware upgrade, do NOT turn off the device, shut down the PC, remove the cable, or interrupt the process in any way until the operation is complete. This process should take several minutes including the reboot process. Interrupting the upgrade process at specific points when the flash is being written to can corrupt the flash memory and render the RV315W unusable.

To upgrade the RV315W to a newer firmware:

STEP 1 Choose **System Management** > **Firmware Upgrade**. The Firmware Upgrade page opens.

The following information is displayed:

- **Device Model:** Displays the device model.
- **PID VID:** Displays the product ID and version ID.
- **Current Firmware Version:** Displays the firmware version (primary firmware) that the RV315W is currently using.
- **Backup Firmware Version:** Displays the firmware version (secondary firmware) that is used as a backup. When you upgrade the firmware to a newer version, the system first overwrites the secondary firmware with the new version in the flash, and then reboots with the new firmware. The new firmware becomes the primary firmware and the previous primary fimware becomes the secondary firmware.

STEP 2 In the **Download the latest firmware** field, click **Download** to download the latest version of the firmware from the specified website to your local PC. Make sure that you have an active WAN connection.

STEP 3 In the **Locate & select the upgrade file** field, click **Browse** to locate and select the downloaded firmware image from your local PC.

STEP 4 Click **Upgrade**.

After the new firmware image is validated, the new image is written to flash and the RV315W is automatically rebooted with the new firmware.

Using Diagnostic Utilities

Use the following diagnostic utilities to access configuration of the RV315W and to monitor the overall network health.

Ping

Use the Ping page to test the connectivity between the RV315W and a connected device on the network.

STEP 1 Click **System Management** > **Diagnostic Utilities** > **Ping**. The Ping page opens.

STEP 2 In the Destination IP Address or Hostname area, enter the IP address or domain name to ping.

STEP 3 Click **Start** to ping the IP address or the domain name.

Traceroute

Use the Traceroute page to view the route between the RV315W and a destination.

STEP 1 Click **System Management** > **Diagnostic Utilities** > **Traceroute**. The Traceroute page opens.

STEP 2 Enter the IP address or URL of the destination.

STEP 3 Click **Start** to trace the route of the IP address or URL, or click **Stop** to stop tracing.

HTTP Get

Use the HTTP Get page to query the URL information of a website.

STEP 1 Click **System Management** > **Diagnostic Utilities** > **HTTP Get**. The HTTP Get page opens.

STEP 2 Enter the IP address or URL of the website.

STEP 3 Click **Start**.

DNS Query

Use the DNS Query page to retrieve the IP address of any server on the Internet.

STEP 1 Click **System Management** > **Diagnostic Utilities** > **DNS Query**. The DNS Query page opens.

STEP 2 In the **Domain Name** field, enter the IP address or domain name that you want to look up.

STEP 3 Click **Run** to query the server on the Internet. If the host or domain name exists, you will see a response with the IP address.

Configuring System Time

Use the Time Settings page to manually configure the system time, or to dynamically synchronize the system time with a Network Time Protocol (NTP) server.

To configure the system time:

STEP 1 Click **System Management** > **Time Settings**. The Time Settings page opens.

The **Current System Time** field displays the current date and time.

STEP 2 In the **Set System Time** area, select the **Manually** radio button to manually set the date and time. Enter the values in the **Date** and **Time** fields.

STEP 3 In the **Set System Time** area, select the **Dynamically** radio button to automatically synchronize the date and time with the specified NTP servers:

- **NTP Server 1:** Enter the IP address or domain name of the primary NTP server.
- **NTP Server 2:** Enter the IP address or domain name of the secondary NTP server.

STEP 4 Click **OK** to save your settings.

Configuring TR-069

TR-069 is a DSL Forum specification for CPE WAN Management Protocol (CWMP). It defines an application layer protocol for remote management of end-user devices. As a bidirectional SOAP/HTTP-based protocol, it provides the communication between customer-premises equipment (CPE) and Auto Configuration Servers (ACS).

Configuring TR-069 Settings

To configure general TR-069 properties:

STEP 1 Click **System Management** > **TR-069 Settings** > **TR-069 Settings**. The TR-069 Settings page opens.

STEP 2 Enter the following information:

- **TR-069:** Click **Enable** to enable the TR-069 server, or click **Disable** to disable it.
- **ACS:** Specify the following settings of the ACS remote management server:
  - **URL:** Enter the URL of the ACS remote management server.
  - **Username:** Enter the username to log in to the ACS remote management server.
  - **Password:** Enter the password to log in to the ACS remote management server.
- **CPE:** Specify the CPE settings for TR-069 remote management:

- **Username:** Enter the username of the remote management server in order to send the connection requests to CPE.
- **Password:** Enter the password of the remote management server in order to send the connection requests to CPE.
- **Send Inform Packets:** (Optional) Click **Enable** to enable the Send Inform Packets feature, or click **Disable** to disable this feature.
- **Send Interval:** If you enable the Send Inform Packets feature, set the interval in seconds to send the inform packets. The default value is 1800 seconds.
- **Request Connection Port:** Enter the port number used to request the connection to TR-069.
- **Download Request:** (Optional) Specify the type of download request. Select **Firmware** to send a request to download the firmware of the RV315W to the TR-069 server, or select **Vendor Configuration** to send a request to download the configuration file with the factory default settings, then click **OK** to send the corresponding download request to the TR-069 server.
- **Upload Request:** (Optional) Specify the type of upload request. Select **Configuration File** to send a request to upload the current configuration file of the RV315W to the TR-069 server, or select **Vendor Configuration** to send a request to upload the configuration file with the factory default settings of the RV315W to the TR-069 server. Then click **OK** to send the corresponding upload request to the TR-069 server.
- **Change Account Request:** Click **OK** to send a request of changing the administrative password to the TR-069 server.

STEP 3 Click **OK** to save your settings.

Configuring Logic ID Authentication

To configure Logic ID (LOID) Authentication:

STEP 1 Click **System Management** > **TR-069 Settings** > **Logic ID Authentication**. The Logic ID Authentication page opens.

STEP 2 Enter the following information:

- **Username:** Enter the username for LOID authentication.

- **Password:** Enter the password for LOID authentication.
- **Ask for binding:** Click **Request Authentication** to send the request of LOID authentication management.
  - **Status:** Indicates no authentication results.
  - **Result:** Indicates no uploading results.
  - **Limit:** Displays the maximum amount of retries and the current number of retries.

STEP 3 Click **OK** to save your settings.

Configuring SNMP

Simple Network Management Protocol (SNMP) is a network protocol used over User Datagram Protocol (UDP) that lets you monitor and manage the RV315W from a SNMP manager. SNMP provides a remote means to monitor and control the network devices, and to manage the configuration, statistics collection, performance, and security.

To configure SNMP:

STEP 1 Click **System Management** > **SNMP**. The SNMP page opens.

STEP 2 Enter the following information:

- **SNMP:** Click **Enable** to enable SNMP, or click **Disable** to disable SNMP. By default, SNMP is disabled.
- **SNMP Version:** If you enable SNMP, specify the SNMP version. The RV315W provides support for network monitoring using SNMP Versions 1, 2c, and 3. By default, SNMP v1&2 is selected.
- **System Contact:** Enter the name of the contact person for your RV315W.
- **System Name:** Enter the device name for easy identification of your RV315W.
- **System Location:** Enter the physical location of your RV315W.

- **Security Username:** Enter the name of the administrator account with the ability to access and manage the SNMP MIB objects. This is only available for SNMPv3.
- **Authentication Password:** Enter the password of the administrator account for authentication (the minimum length of password is 8 characters). This is only available for SNMPv3.
- **Authentication Method:** Select either None or CBC-DES as the authentication method.
- **Encrypted Password:** Enter the password for data encryption (the minimum length of password is 8 characters). This is only available for SNMPv3.
- **Encryption Method:** (Optional) Select either None or CBC-DES as the encryption method.
- **SNMP Read-Only Community:** Enter the read-only community used to access the SNMP entity.
- **SNMP Read-Write Community:** Enter the read-write community used to access the SNMP entity.
- **Trap Community:** Enter the community that the remote trap receiver host receives the traps or notifications sent by the SNMP entity.
- **SNMP Trusted Host:** Enter the IP address or domain name of the host trusted by the SNMP entity. The trusted host can access the SNMP entity. Entering 0.0.0.0 in this field allows any host to access the SNMP entity.
- **Trap Receiver Host:** Enter the IP address or domain name of the remote host that is used to receive the SNMP traps.

STEP 3 Click **OK** to save your settings.

Configuring Remote Management

You can access web-based Configuration Utility from the LAN side by using the RV315W's LAN IP address and HTTP, or from the WAN side by using the RV315W's WAN IP address and HTTPS (HTTP over SSL) or HTTP.

Configuring Remote Access Protocols and Ports

The RV315W allows remote management securely by using HTTPS or HTTP, for example, https://xxx.xxx.xxx.xxx:443.

To configure the protocol and port number for remote management:

STEP 1 Click **System Management** > **Remote Management** > **Remote Access Protocols and Ports**. The Remote Access Protocols and Ports page opens.

STEP 2 Enter the following information:

- **HTTP:** Click **Enable** to enable remote management by using HTTP, or click **disable** to disable it.
- **HTTP Listen Port Number:** If you enable remote management by using HTTP, enter the port number. By default, the listen port number for HTTP is 80.
- **HTTPS:** Click **Enable** to enable remote management by using HTTPS, or click **disable** to disable it. We recommend that you use HTTPS for secure remote management.
- **HTTPS Listen Port Number:** If you enable remote management by using HTTPS, enter the port number. By default, the listen port number for HTTP is 443.

STEP 3 Click **OK** to save your settings.

Configuring Trusted Remote Hosts

Only the trusted hosts can be allowed to access the RV315W by using HTTPS or HTTP from the WAN side.

To specify the trusted hosts:

STEP 1 Click **System Management** > **Remote Management** > **Trusted Remote Hosts**. The Trusted Remote Hosts page opens.

STEP 2 Click the **Any IP Address** radio button to allow all hosts from the WAN side to access the RV315W remotely.

STEP 3 Or click the **Host IP Address** radio bottun to allow a specific host to access the RV315W remotely. Enter the IP address of the trusted host and click **Add**. This host is added in the list of Trusted host IP addresses.

STEP 4 You can edit the settings of the specified trusted remote hosts, or delete the selected trusted remote hosts.

- **Select All:** Click to select all trusted hosts in the list.
- **Cancel All:** Click to cancel all selected trusted hosts.
- **Delete:** Click to delete all selected trusted hosts.

A

Where to Go From Here

Cisco provides a wide range of resources to help you and your customer obtain the full benefits of the Cisco RV315W Broadband Wireless VPN Router.

Cisco Small Business Support Community	www.cisco.com/go/smallbizsupport
Cisco Small Business Support and Resources	www.cisco.com/go/smallbizhelp
Phone Support Contacts	www.cisco.com/go/sbsc
Cisco Small Business Firmware Downloads	www.cisco.com/go/smallbizfirmware Select a link to download firmware for Cisco Small Business Products. No login is required.
Cisco RV315W Technical Documentation	www.cisco.com/go/smallbizrouters
Cisco Partner Central for Small Business (Partner Login Required)	www.cisco.com/web/partners/sell/smb
Cisco Small Business Home	www.cisco.com/smb