Cisco Model VEN401 and VEN402 User Guide

Draft

Please Read

Important

Please read this entire guide. If this guide provides installation or operation instructions, give particular attention to all safety statements included in this guide.

Notices

Trademark Acknowledgments

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Disclaimer

The maximum performance for wireless is derived from IEEE Standard 802.11 specifications. Actual performance can vary, including lower wireless network capacity, data throughput rate, range and coverage. Performance depends on many factors, conditions and variables, including distance from the access point, volume of network traffic, building materials and construction, operating system used, mix of wireless products used, interference and other adverse conditions.

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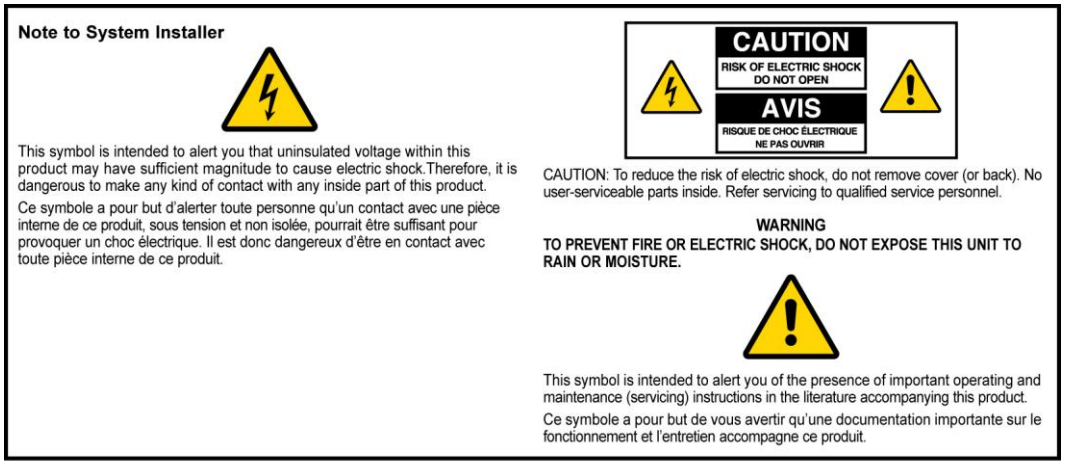
Copyright

Contents

IMPORTANT SAFETY INSTRUCTIONS

Notice to Installers

The servicing instructions in this notice are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions, unless you are qualified to do so.



1) Read these instructions.
2) Keep these instructions.
3) Heed all warnings.
4) Follow all instructions.
5) Do not use this apparatus near water.
6) Clean only with dry cloth.
7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11) Only use attachments/accessories specified by the manufacturer.
12)  Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13) Unplug this apparatus during lightning storms or when unused for long periods of time.

14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as a power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

Power Source Warning

A label on this product indicates the correct power source for this product. Operate this product only from an electrical outlet with the voltage and frequency indicated on the product label. If you are uncertain of the type of power supply to your home or business, consult your service provider or your local power company.

The AC inlet on the unit must remain accessible and operable at all times.

Ground the Product

WARNING: Avoid electric shock and fire hazard! If this product connects to coaxial cable wiring, be sure the cable system is grounded (earthed). Grounding provides some protection against voltage surges and built-up static charges.

WARNING: Avoid electric shock and fire hazard! Do not locate an outside antenna system in the vicinity of overhead power lines or power circuits. Touching power lines or circuits might be fatal.

This product may contain a tuner capable of receiving off-the-air broadcasts.

Protect the Product from Lightning

In addition to disconnecting the AC power from the wall outlet, disconnect the signal inputs.

Verify the Power Source from the On/Off Power Light

When the on/off power light is not illuminated, the apparatus may still be connected to the power source. The light may go out when the apparatus is turned off, regardless of whether it is still plugged into an AC power source.

Eliminate AC Mains Overloads

WARNING: Avoid electric shock and fire hazard! Do not overload AC mains, outlets, extension cords, or integral convenience receptacles. For products that require battery power or other power sources to operate them, refer to the operating instructions for those products.

Provide Ventilation and Select a Location

- Remove all packaging material before applying power to the product.
- Do not place this apparatus on a bed, sofa, rug, or similar surface.
- Do not place this apparatus on an unstable surface.
- Do not install this apparatus in an enclosure, such as a bookcase or rack, unless the installation provides proper ventilation.
- Do not place entertainment devices (such as VCRs or DVDs), lamps, books, vases with liquids, or other objects on top of this product.
- Do not block ventilation openings.

Protect from Exposure to Moisture and Foreign Objects

WARNING: Avoid electric shock and fire hazard! Do not expose this product to dripping or splashing liquids, rain, or moisture. Objects filled with liquids, such as vases, should not be placed on this apparatus.

WARNING: Avoid electric shock and fire hazard! Unplug this product before cleaning. Do not use a liquid cleaner or an aerosol cleaner. Do not use a magnetic/static cleaning device (dust remover) to clean this product.

WARNING: Avoid electric shock and fire hazard! Never push objects through the openings in this product. Foreign objects can cause electrical shorts that can result in electric shock or fire.

Service Warnings

WARNING: Avoid electric shock! Do not open the cover of this product. Opening or removing the cover may expose you to dangerous voltages. If you open the cover, your warranty will be void. This product contains no user-serviceable parts.

Check Product Safety

Upon completion of any service or repairs to this product, the service technician must perform safety checks to determine that this product is in proper operating condition.

Protect the Product When Moving It

Always disconnect the power source when moving the apparatus or connecting or disconnecting cables.

20090915_IP with Tuner_Safety

Compliance Information

United States FCC Compliance

This device 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 such interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment OFF and ON, the user is encouraged to try to correct the interference by one or more of the following measures:

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

Any changes or modifications not expressly approved by Cisco Systems, Inc., could void the user's authority to operate the equipment.

The information shown in the FCC Declaration of Conformity paragraph below is a requirement of the FCC and is intended to supply you with information regarding the FCC approval of this device. *The phone numbers listed are for FCC-related questions only and not intended for questions regarding the connection or operation for this device. Please contact your service provider for any questions you may have regarding the operation or installation of this device.*

FC Declaration of Conformity

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

Model(s): VEN401 and VEN402
Manufactured by:
Cisco Systems, Inc.
5030 Sugarloaf Parkway
Lawrenceville, Georgia 30044 USA
Telephone: 770 236-1077

Canada EMI Regulation

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la class B est conforme à la norme NMB-003 du Canada.

Dynamic Frequency Selection (DFS) Dual Band Frequencies

Some configurations of this product may operate in the 5150-5250 MHz and 5470-5725 MHz bands. If you select any channel in these frequency ranges, the product is restricted to indoor operation only per FCC guidance. The use of this product on the affected frequencies when outside is in non compliance of the FCC regulations and guidelines.

RF Exposure Statements

Note: This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter. This equipment should be installed and operated with a minimum distance of 7.9 inches (20 cm) between the radiator and your body.

US

This system has been evaluated for RF exposure for humans in reference to ANSI C 95.1 (American National Standards Institute) limits. The evaluation was based in accordance with FCC OET Bulletin 65C rev 01.01 in compliance with Part 2.1091 and Part 15.27. The minimum separation distance from the antenna to general bystander is 7.9 inches (20 cm) to maintain compliance.

Canada

This system has been evaluated for RF exposure for humans in reference to Canada Health Code 6 (2009) limits. The evaluation was based on evaluation per RSS-102 Rev 4. The minimum separation distance from the antenna to general bystander is 7.9 inches (20 cm) to maintain compliance.

EU

This system has been evaluated for RF exposure for humans in reference to the ICNIRP (International Commission on Non-Ionizing Radiation Protection) limits. The evaluation was based on the EN 50385 Product Standard to Demonstrate Compliance of Radio Base Stations and Fixed Terminals for Wireless Telecommunications Systems with basic restrictions or reference levels related to Human Exposure to Radio Frequency Electromagnetic Fields from 300 MHz to 40 GHz. The minimum separation distance from the antenna to general bystander is 20 cm (7.9 inches).

CE Compliance

Declaration of Conformity with Regard to the EU Directive 1999/5/EC (R&TTE Directive)

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

Български [Bulgarian]	Това оборудване отговаря на съществените изисквания и приложими клаузи на Директива 1999/5/EC.
Česky [Czech]:	Toto zařízení je v souladu se základními požadavky a ostatními odpovídajícími ustanoveními Směrnice 1999/5/EC.
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Eesti [Estonian]:	See seade vastab direktiivi 1999/5/EÜ olulistele nõuetele ja teistele asjakohastele sätetele.
English:	This equipment is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
Español [Spanish]:	Este equipo cumple con los requisitos esenciales asi como con otras disposiciones de la Directiva 1999/5/CE.
Ελληνική [Greek]:	Αυτός ο εξοπλισμός είναι σε συμμόρφωση με τις ουσιώδεις απαιτήσεις και άλλες σχετικές διατάξεις της Οδηγίας 1999/5/EC.
Français [French]:	Cet appareil est conforme aux exigences essentielles et aux autres dispositions pertinentes de la Directive 1999/5/EC.
Íslenska [Icelandic]:	Þetta tæki er samkvæmt grunnkröfum og öðrum viðeigandi ákvæðum Tilskipunar 1999/5/EC.
Italiano [Italian]:	Questo apparato é conforme ai requisiti essenziali ed agli altri principi sanciti dalla Direttiva 1999/5/CE.
Latviski [Latvian]:	Šī iekārta atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.
Lietuvių [Lithuanian]:	Šis įrenginys tenkina 1999/5/EB Direktyvos esminius reikalavimus ir kitas šios direktyvos nuostatas.
Nederlands [Dutch]:	Dit apparaat voldoet aan de essentiele eisen en andere van toepassing zijnde bepalingen van de Richtlijn 1999/5/EC.
Malti [Maltese]:	Dan l-apparat huwa konformi mal-ħtiġiet essenzjali u l-provedimenti l-oħra rilevanti tad-Direttiva 1999/5/EC.
Magyar [Hungarian]:	Ez a készülék teljesíti az alapvető követelményeket és más 1999/5/EK irányelvben meghatározott vonatkozó rendelkezéseket.
Norsk [Norwegian]:	Dette utstyret er i samsvar med de grunnleggende krav og andre relevante bestemmelser i EU-direktiv 1999/5/EF.
Polski [Polish]:	Urządzenie jest zgodne z ogólnymi wymaganiami oraz szczególnymi warunkami określonymi Dyrektywą UE: 1999/5/EC.
Português [Portuguese]:	Este equipamento está em conformidade com os requisitos essenciais e outras provisões relevantes da Directiva 1999/5/EC.
Română [Romanian]	Acest echipament este in conformitate cu cerintele esentiale si cu alte prevederi relevante ale Directivei 1999/5/EC.
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Slovensky [Slovak]:	Toto zariadenie je v zhode so základnými požiadavkami a inými príslušnými nariadeniami direktív: 1999/5/EC.
Suomi [Finnish]:	Tämä laite täyttää direktiivin 1999/5/EY olennaiset vaatimukset ja on siinä asetettujen muiden laitetta koskevien määräysten mukainen.
Svenska [Swedish]:	Denna utrustning är i överensstämmelse med de väsentliga kraven och andra relevanta bestämmelser i Direktiv 1999/5/EC.

Europe

The CE mark and class-2 identifier are affixed to the product and its packaging. This product conforms to the following European directives:

 -1999/5/EC

National Restrictions

This product operates in the 5 GHz Wi-Fi bands and shall only be used indoors.

Disclaimer

Cisco Systems, Inc. assumes no responsibility for errors or omissions that may appear in this manual. We reserve the right to change this manual at any time without notice.

Note: The VEN401 and VEN402 have disabled the 5600-5650M band by S/W to avoid 5600-5650M band for IC certification.

Compliance Statement

Draft Note: The following paragraph is under construction until full product release. The URL addresses are not actual addresses, but placeholder examples in this draft.

To find additional information regarding compliance information for the Cisco VEN401 and VEN402 models, please go to: (i) for North America **http://www.cisco.com/web/consumer/support/<TBD>.html**, or (ii) for outside North America **http://www.cisco.com/web/consumer/support/<TBD>.html#~international**. Once at the site, search for the product listing and click on the related items identified. If you have any questions or problems accessing any of the links, please contact: **spvtg-external-<TBD>-requests@cisco.com**.

Open Source GNU GPL Statement

Cisco VEN401 and VEN402 models contain, in part, certain free/open source software ("Free Software") under licenses which generally make the source code available for free copy, modification, and redistribution. Examples of such licenses include all the licenses sponsored by the Free Software Foundation (e.g. GNU General Public License (GPL), GNU Lesser General Public License (LGPL), Berkeley Software Distribution (BSD), the MIT licenses and different versions of the Mozilla and Apache licenses). To find additional information regarding the Free Software, including a copy of the applicable license and related information, please go to: (i) for North America **http://www.cisco.com/web/consumer/support/open_source.html**, or (ii) for outside North America **http://www.cisco.com/web/consumer/support/open_source.html#~international**. Once at the site, search for the product listing and click on the related items identified. If you have any questions or problems accessing any of the links, please contact: **spvtg-external-opensource-requests@cisco.com**.

About This Guide

Introduction

Congratulations on choosing the Cisco® VEN401 plus VEN402 Video Bridge Solution for the Connected Home experience. By connecting your video devices wirelessly, you are now free to place your televisions and video devices almost anywhere in the home.

The small shape and unique design of the VEN401 plus VEN402 devices provide a stylish solution without pulling wires through walls or along floorboards. The VEN401 plus VEN402 devices are also ideal for sharing music, photos, movies, and other files wirelessly inside the home.

Scope

This guide provides instructions and recommendations for installing and configuring the VEN401 plus VEN402 Video Bridge Solution.

Audience

This guide is written for the home subscriber.

Document Version

This is the first formal release of this document.

1

Installing the Devices

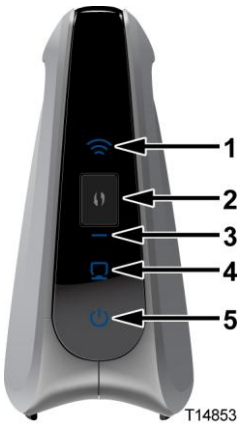
Introduction

This chapter provides information to install the VEN401 Access Point and VEN402 Client devices in home network.

In This Chapter

Front Panel

The front panel of your devices have the following indicators and functions:

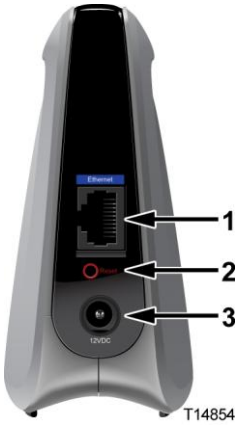


Note: This illustration may vary from the actual product.

1	Wireless LED
2	Wi-Fi Protected Setup (WPS) button
3	Wi-Fi Protected Setup (WPS) LED
4	Ethernet LED
5	Power LED

Back Panel

The back panel of your devices have the following ports and functions:



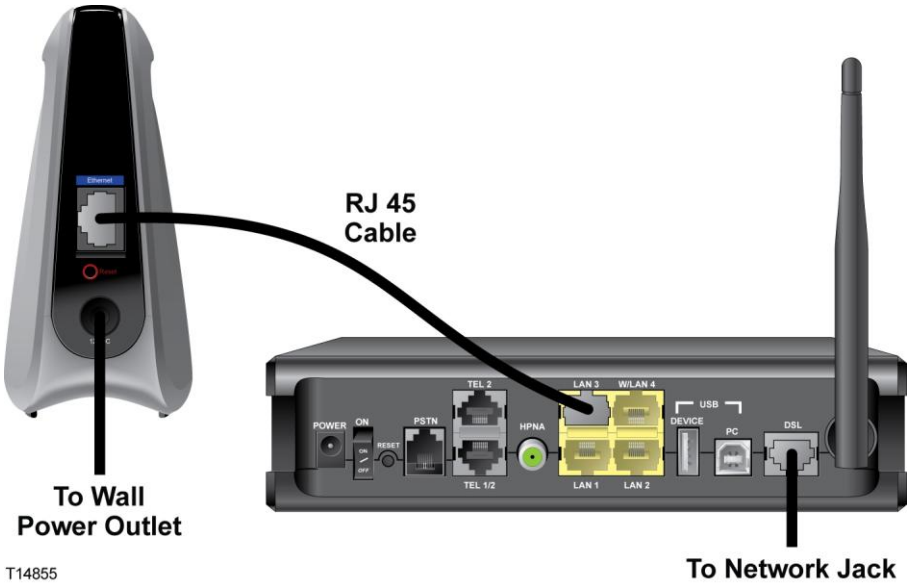
Note: This illustration may vary from the actual product.

1	**Ethernet Port**	■ Connects the VEN401 Access Point to a residential gateway or router ■ Connects the VEN402 Client to a set-top, DVR, or DMA
2	**Reset**	Restores factory default settings when held for more than 5 seconds
3	**Power**	Connects device to the external 12 VDC power supply

Connecting the VEN401 Access Point to a Residential Gateway or Router

Complete the following steps to connect the VEN401 Access Point to a residential gateway or router.

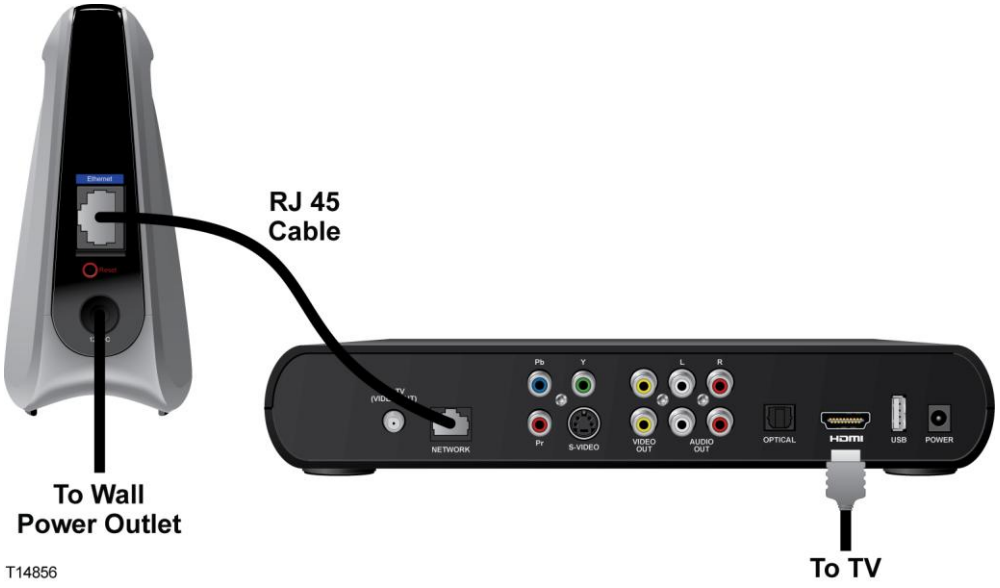
1. Connect the 12 VDC Power Supply plug to the wall power outlet. Use only the power adapter provided with this product.
2. Connect the power jack to the power port on the VEN401.
3. Connect one end of the RJ-45 Ethernet cable to the Ethernet port on the VEN401.
4. Connect the other end of the RJ-45 Ethernet cable to an available Ethernet port on your residential gateway or router.



Connecting the VEN402 Client to a Set-Top, DVR, or DMA

Complete the following steps to connect the VEN402 Client to a set-top, DVR, or DMA.

1. Connect the 12 VDC Power Supply plug to the wall power outlet. Use only the power adapter provided with this product.
2. Connect the power jack to the power port on the VEN402.
3. Connect one end of the RJ-45 Ethernet cable to the Ethernet port on the VEN402.
4. Connect the other end of the RJ-45 Ethernet cable to an available Ethernet port on a set-top, DVR, or DMA.



Pair Devices

Pairing a VEN402 Client Device

Complete the following steps to pair the VEN401 access point with a VEN402 client device.

Note: The VEN402 can only be paired with a VEN401.

1. Press the WPS button on the client device. The WPS LED flashes.

   Note: You have 2 minutes to perform step 2.

2. Click the WPS button on the VEN401 Access Point. The WPS LED flashes. When the devices are paired, the WPS LED remains lit for a short time.

   Note: The WPS LED indicator remains off when the WPS is idle. This is a normal condition.

Pairing Other Client Devices

If you wish to pair the VEN401 access point with another client device, such as a Cisco wireless set-top, refer to the documentation for that device for instructions.

2

Web-Based User Interface

Introduction

To facilitate in-home customization and troubleshooting, the VEN401 plus VEN402 Video Bridge Solution includes a web-based user interface. The web-based user interface allows you to customize your Wi-Fi security and access other configurable features.

The parameters accessed from the user interface are typically managed by your service provider. This chapter provides information for advanced users to manage some of the parameters for basic and wireless setup, including wireless security. If you are not familiar with the terms or features described in this chapter, contact your service provider for assistance.

Notes:

- The parameters discussed in this chapter can be configured for both the VEN401 and VEN402 devices unless noted otherwise.
- The illustrations in this chapter may vary from your actual product.

In This Chapter

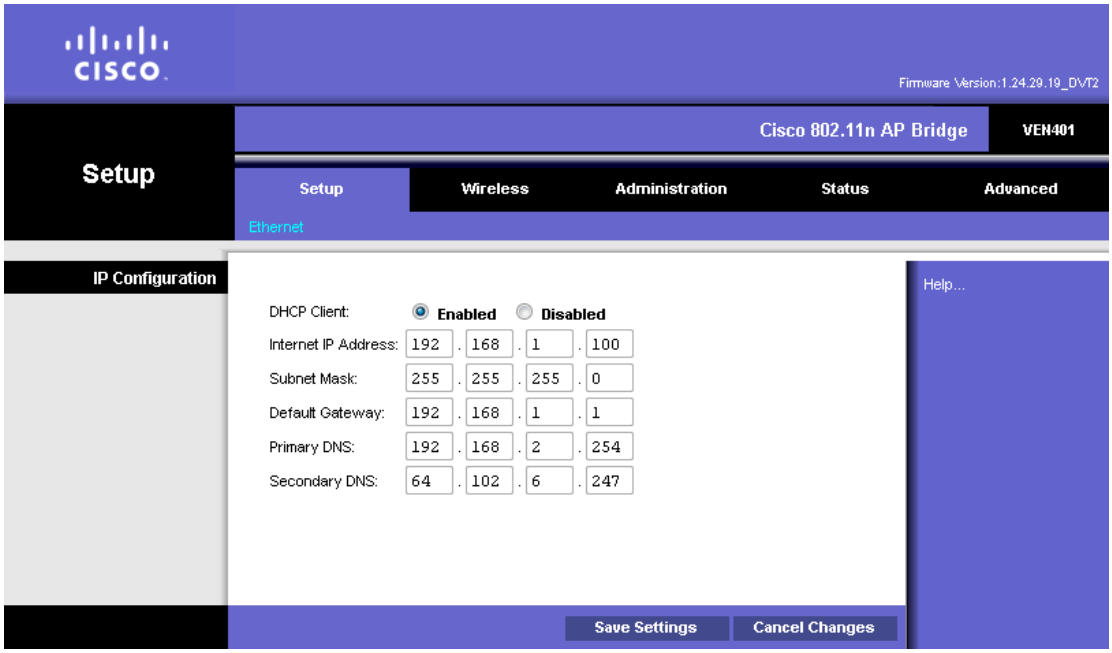
Login

Complete the following steps to determine the IP address of your device and log in to the web-based user interface for your device.

1. The VEN 401/402 receive their IP addresses via DHCP from the connected router or gateway. Please, refer to your router or gateway documentation to determine the IP address.
2. Open a web browser on your computer.
3. Type the DHCP-provided IP address in the URL address field and then press **Enter**.
   A pop-up window appears prompting you to provide login information.
4. Is this your first time logging in?
   - If **yes**, leave the **Login ID** field empty and type `admin` in the **Password** field. Then, press **Continue**.
   - If **no**, type the ID and Password you used or saved last time you logged in. Then, press **Continue**.

Basic Setup

Use the Setup screen to define the Internet Protocol (IP) configuration for your device.



1 Choose your Dynamic Host Configuration Protocol (DHCP) option per the following guidelines:

- **Enabled**: If your network includes a DHCP server for dynamic allocation of IP addresses, choose this option if you want DHCP to assign an IP address and subnet mask to the device. Depending on your router, the default gateway, primary DNS server, and secondary DNS server may also be assigned.
- **Disabled:** Choose this option if you want to manually enter IP configuration information.

2 Did you select the **Disabled** option?

- If **yes**, complete the fields on the screen per the following guidelines:
  - **Internet IP Address**: If you configure the device for a static IP address, enter that IP address.
  - **Subnet Mask**: If you configure the device for a static IP address, enter the subnet mask. Use the same value that is configured for the personal computers (PCs) on your network.
  - **Default Gateway**: If you configure the device for a static IP address, enter the gateway IP address. Use the same value that is configured for the PCs on your network.

- **Primary DNS** (Optional): Enter the IP address of the primary the Domain Name System (DNS) server that is used in your network. Use the same value that is used for the PCs on your local area network (LAN). Typically, your service provider provides this address. This address is required if you use a host name instead of an IP address in any configuration field in the configuration windows.
- **Secondary DNS** (Optional): Enter the IP address of a secondary (backup) DNS server to use if the primary DNS server is unavailable. This address is required to support a secondary DNS server if you use a host name instead of an IP address in any configuration field of the configuration windows.

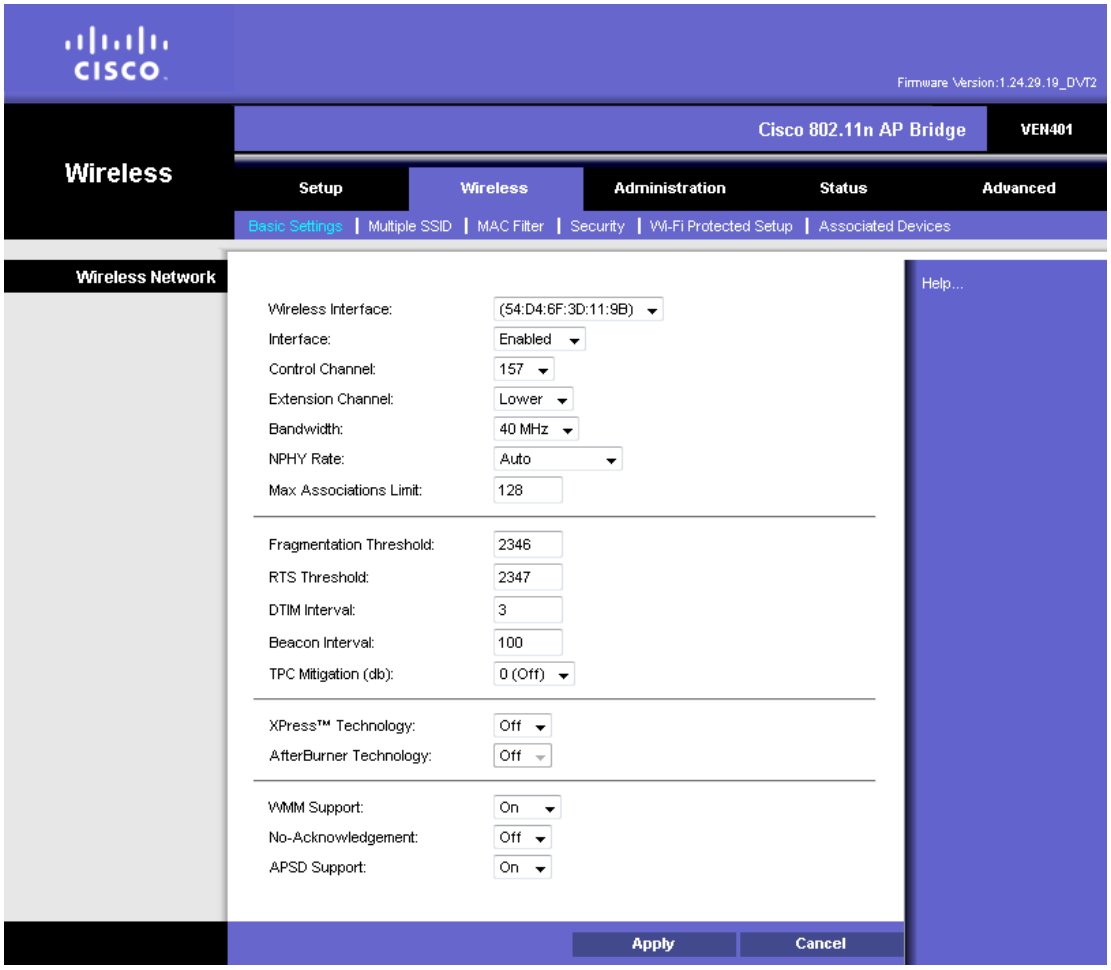
If **no**, continue with step 3.

3 Click the **Save Settings** button to apply your changes or **Cancel Changes** button to cancel.

Wireless Setup

Basic Wireless Settings

Use the Basic Settings screen to the wireless interface for your device.



1. If you are configuring a VEN402 client device, you may enter the Network Name (SSID) for the wireless network you want to join in the field provided. Otherwise, go to step 2.
2. From the **Wireless Network Wireless Interface** field, select which wireless interface you want to configure.
3. Do you have any Wireless-N (5GHz) devices in your network?
   - If **yes**, select **Enabled** for the **Interface** field to run wireless on your network.
   - If **no**, select **Disabled**.

4 Your device selects the optimum **Control Channel** for Wireless-N(5GHz) networking by default. If you want to configure the Control Channel manually, select another setting form the drop-down menu.

5 Use the following guidelines to configure the remaining fields:
Note: This list below varies based on the code version on your device. If you have a question about any field, please contact your service provider.

- **Extension Channel**: If you selected 40MHz Channel for the Bandwidth setting, then this setting will be available for your primary Wireless-N (5GHz) channel. If you are not sure which channel to select, keep the default setting of Upper/Lower.
- **Bandwidth**: You can select the channel bandwidth manually for Wireless-N connections. When it is set to 20MHz, only the 20MHz channel is used. When it is set to 40MHz, Wireless-N connections will use the 40MHz channel.
- **Max Associations Limit**: Enter the maximum number of wireless clients that can be connected at a time. The acceptable range is 1 through 128.
- **Fragmentation Threshold**: Enter a the maximum packet byte size to allow. Packets that exceed this value will be subdivided. This value specifies the maximum size for a packet before data is fragmented into multiple packets. If you experience a high packet error rate, you may slightly increase the Fragmentation Threshold. Setting the Fragmentation Threshold too low may result in poor network performance. Only minor reduction of the default value is recommended. In most cases, it should remain at its default value of 2346.The acceptable range is 256 through 2346.
- **RTS Threshold**: Enter the maximum bytes allowed for the Request to Send (RTS) Threshold to define how often RTS packets will be sent. Should you encounter inconsistent data flow, only minor reduction of the default, 2346, is recommended. If a network packet is smaller than the preset RTS threshold size, the RTS/CTS mechanism will not be enabled. The device sends Request to Send (RTS) frames to a particular receiving station and negotiates the sending of a data frame. After receiving an RTS, the wireless station responds with a Clear to Send (CTS) frame to acknowledge the right to begin transmission. The RTS Threshold value should remain at its default value of 2346.The acceptable range is 256 through 2346.
- **DTIM Interval**: Enter a value between 1 and 255 to set the interval of the Delivery Traffic Indication Message (DTIM). A DTIM field is a countdown field informing clients of the next window for listening to broadcast and multicast messages. When the device has buffered broadcast or multicast messages for associated clients, it sends the next DTIM with a DTIM Interval value. Its clients hear the beacons and awaken to receive the broadcast and multicast messages. The default value is 1.
- **Beacon Interval**: Enter a value between 1 and 65,535 milliseconds to set the frequency of the beacon interval for the device. A beacon is a packet broadcast by the device to synchronize the wireless network(s). The default value is 100.

- **TPC Mitigation (db)**: Power Mitigation factor (in db).
- **WMM Support**: The device supports Wi-Fi Multimedia (WMM) for Quality of Service (QoS). When WMM Support is enabled, it provides four priority queues for different types of traffic. It automatically maps the incoming packets to the appropriate queues based on QoS settings (in the IP or layer 2 header). WMM provides the capability to prioritize traffic in your environment. If you have other devices on your network that support WMM, select **On**. The default is On.
- **No-Acknowledgement**: When enabled, wireless devices will not acknowledge each transmitted packet. This may cause more efficient throughput in low RF noise environments, but will degrade performance in noisy environments. The default is Off.
- **APSD Suppor**t: Automatic Power Save Delivery (APSD) is a special power-saving mode to achieve end-to-end QoS. This option is available if you enabled WMM Support. Select **On** to enable Automatic Power Save Delivery (APSD) or **Off** to disable this feature.

6 Click the **Apply** button to apply your changes or **Cancel** button to cancel.

Multiple SSID Settings

The Multiple SSID Settings screen allows you to manage your wireless network if your Access Point will be used to support multiple stations.

Note: The mutiple SSID parameters are applicable only to the VEN401 Access Point device. The VEN402 client device does not support multiple SSIDs.

1. From the **BSS-MAC(SSID)** field, select the wireless BSSID interface you want to configure.
2. Do you want to enable this interface?
   a. If **yes**, select **Enabled** for the **BSS-Enabled** field and continue with step 3.
   b. If **no**, select **Disabled** and skip to the last step.
3. For added security, you should change the default SSID (Cisco) in the **Network Name (SSID)** field to a unique name.
   Note: The SSID is the network name shared among all points in a wireless network. The SSID must be identical for all devices in the wireless network. It is case-sensitive and must not exceed 32 characters (use any of the characters on the keyboard). Make sure this setting is the same for all points in your wireless network.
4. When wireless clients survey the local area for wireless networks to associate with, they will detect the SSID broadcast by the Access Point. Do you want to broadcast the Access Point's SSID?
   - If **yes**, keep the default setting, **Enabled,** for the **Broadcast SSID** field.
   - If **no**, then select **Disabled**.
5. Do you want to prevent stations (STAs) associated with your Access Point from communicating with each other?
   - If **yes**, select **On** for the **AP Isolation** field.
   - If **no**, select **Off**.
6. Enter a value in the **BSS Max Associations Limit** field to set the number of associations the device can accept.
7. Do you want to allow WMM to be advertised in beacons and probes for this interface?
   - If **yes**, select **Advertise** for the **WMM Advertise** field.
   - If **no**, select **Do Not Advertise**.
8. Click the **Apply** button to apply your changes or the **Cancel** button to cancel.

MAC Filter Settings

Wireless access can be filtered by using the MAC addresses of the wireless devices transmitting within your network.

1 From the **Select BSSID** field, select the device you want to configure.

2 Do you want to use the Wireless MAC Filter feature for the device selected?

   a If **yes**, select **Enabled** and continue with step 3.

   b If **no**, select **Disabled** and skip to the last step.

3 Select the **Access Restriction** method you want to use as follows:

- **Filter As White List** - Select this option to allow only PCs whose MAC addresses are listed on this screen access to the wireless network.
- **Filter As Black List** - Select this option to block the PCs whose MAC addresses are listed on this screen from accessing the wireless network.

4 Enter the MAC Addresses whose wireless access you want to control in the fields provided.

5 Click the **Save Settings** button to apply your changes or **Cancel Changes** button to cancel.

Security Settings

Use this screen to configure the security of your wireless network.

Complete the following steps to select a security mode for a specific BSSID.

1 Are you configuring a VEN401 or VEN402 device?

- If you are configuring a VEN401, select the wireless BSSID interface you wish to configure from the **Select BSSID** drop-down menu.
- If you are configuring a VEN402, the Network Name (SSID) field appears in a non-editable field.

2 Select the **Security Mode** setting desired per the guidelines below:

- **Off—**This option turns the security feature off. **Off**: This option features no security on your wireless network. If you select this option, skip to the last step.
  Note: Some countries require by law for wireless networks to be secured. Cisco is not responsible for users who do not adhere to country-specific regulations. Contact your service provider to find out what your country requires.
- **WEP—**WEP is a basic encryption method, which is not as secure as the other methods available.
- **WPA-Personal—**This method offers three encryption methods, **TKIP**, **AES**, and **TKIP or AES**, with dynamic encryption keys.

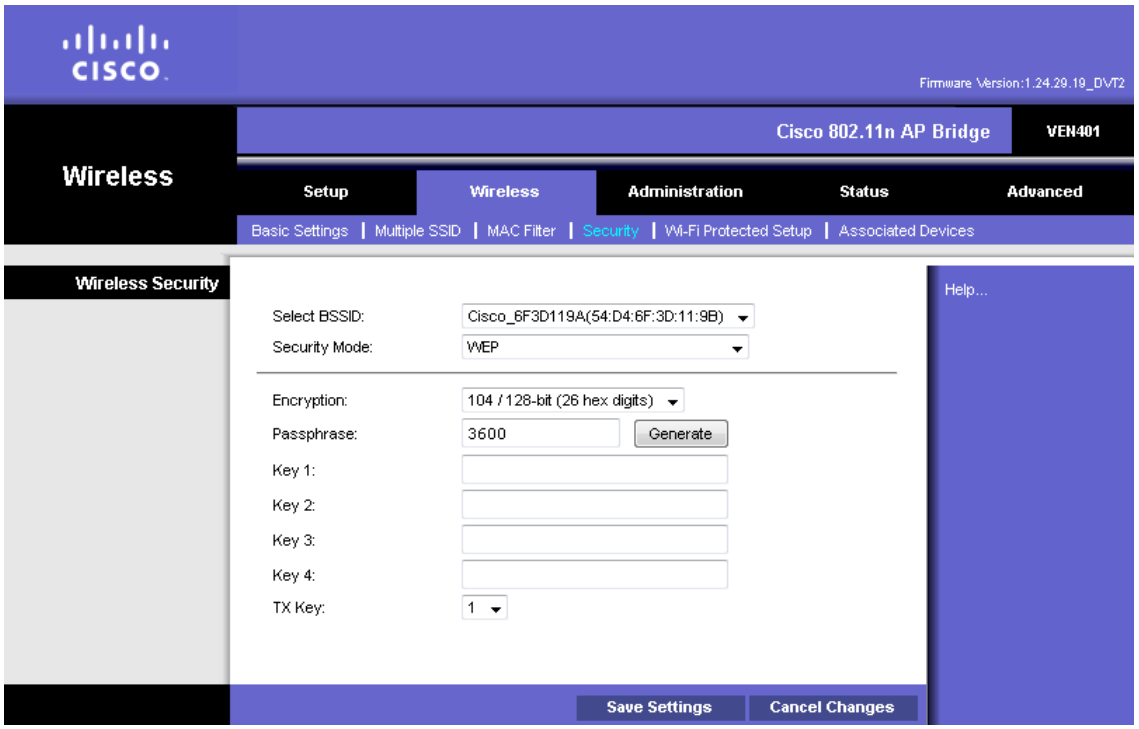
- **WPA2-Personal**—WPA2-Personal is a stronger encryption method than WPA-Personal. This method offers three encryption methods, **TKIP**, **AES**, and **TKIP or AES**, with dynamic encryption keys.
- **Mixed WPA2 Personal/WPA Personal**—This options supports both WPA and WPA2 clients.

3 Did you select WEP?

- If **yes**, continue with the ***WEP Settings*** (on page 17) section to complete your security setup.
- If **no**, continue with the ***Other Security Mode Settings*** (on page 18) section to complete your security setup.

4 Click the **Save Settings** button to apply your changes or **Cancel Changes** button to cancel.

WEP Settings



Complete the following steps if you select WEP for the Security Mode.

1 Select a level of WEP encryption, 40/64-bit (10 hex digits) or 104/128-bit (26 hex digits).

2 If you want to use a Passphrase to automatically generate WEP keys?

- If **yes**, enter the Passphrase in the field field and click the **Generate** button. Skip to the last step.
  Note: The WEP Passphrase is compatible with Cisco wireless products only. If you are using non-Cisco products, manually enter the appropriate WEP key on those devices.

- If **no**, leave the Passphrase field empty and continue with step 3.

3 Enter the WEP key(s) manually in the fields provided (Key 1-4).

4 To indicate which WEP key to use, select the appropriate Transmit (TX) Key number from the drop-down menu.

5 Click the **Save Settings** button to apply your changes or **Cancel Changes** button to cancel.

Other Security Mode Settings

Complete the following steps if you select WPA-Personal, WPA2-Personal, or Mixed WPA2 Personal/WPA Personal for the Security Mode.

1 Select the type of encryption method you want to use, **TKIP**, **AES**, or **TKIP or AES**.

2 Enter the **Pre-shared Key** (also known as a Passphrase), which can have 8 to 63 characters.
Note: The **Click here to display** link opens a text file with the key in clear text.

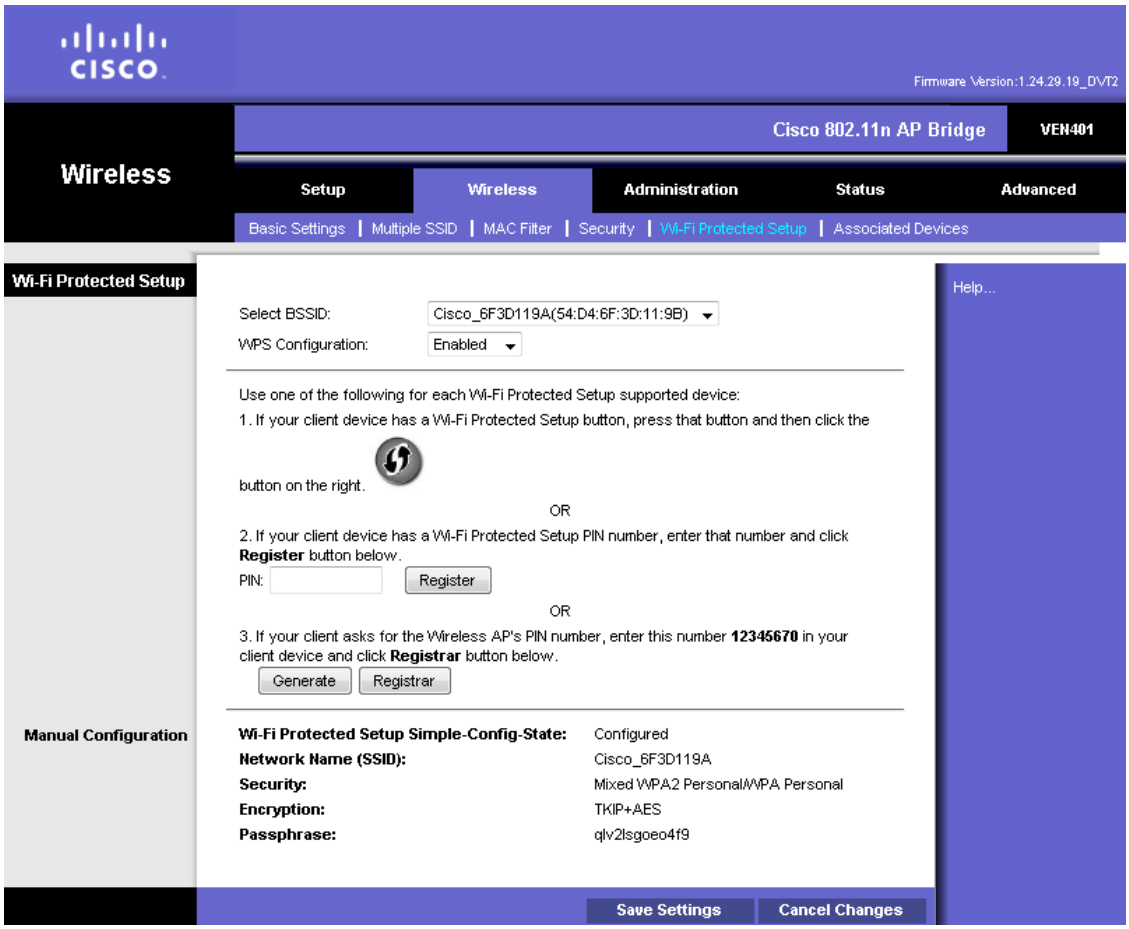
3 Enter the **Key Renewal** period, which configures how often the Router changes the encryption keys.

4 Click the **Save Settings** button to apply your changes or **Cancel Changes** button to cancel.

Wi-Fi Protected Setup

Set Up WPS on the VEN401

Use this screen to enable the Wi-Fi Protected Setup (WPS) feature on your VEN401 Access Point device.



1. From the **Select BSSID** drop-down menu select the wireless BSSID interface you want to configure.
2. From the **WPS Configuration** drop-down menu select **Enabled** to enable the WPS feature.
3. If your client device has a WPS button, complete the steps below to pair your devices. Otherwise, skip to step 4.
   - **a** Click or press the WPS button on the client device.
   - **b** Click the WPS button on this screen.
   - **c** After the client devices have been paired, click the **OK** button.
   - **d** Skip to step 5.

4 If your client device has a WPS PIN or passcode, complete the steps below:
   a Enter your PIN in the field provided.
   b Click the **Register** button.
   c After the client devices has been configured, click the **OK** button.
5 Click the **Save Settings** button to apply your changes or **Cancel Changes** button to cancel.
6 Refer back to your client device or its documentation for further instructions.

Set Up WPS on the VEN402

Use this screen to use the Wi-Fi Protected Setup (WPS) feature on the VEN402 client device. The Network Name (SSID) and BSSID are identified in non-editable fields.

1 From the **WPS Configuration** menu select **Enabled** to enable the WPS feature.
2 From the **WPS AP List** menu, select the desired access point from the list of available options. If necessary, click the **Rescan** button to refresh the list. The WPS Current Status field indicates that the scan is in process or complete.
3 If your access point device has a WPS button, complete the steps below to pair your devices. Otherwise, skip to step 4.
   a Click or press the WPS button on the client device.
   b Click the **WPS** button on this screen.
   c After the client devices have been paired, click the **OK** button.

d Skip to the last step.

4 If your client device has a WPS PIN or passcode, complete the steps below:

a Enter your PIN in the field provided.

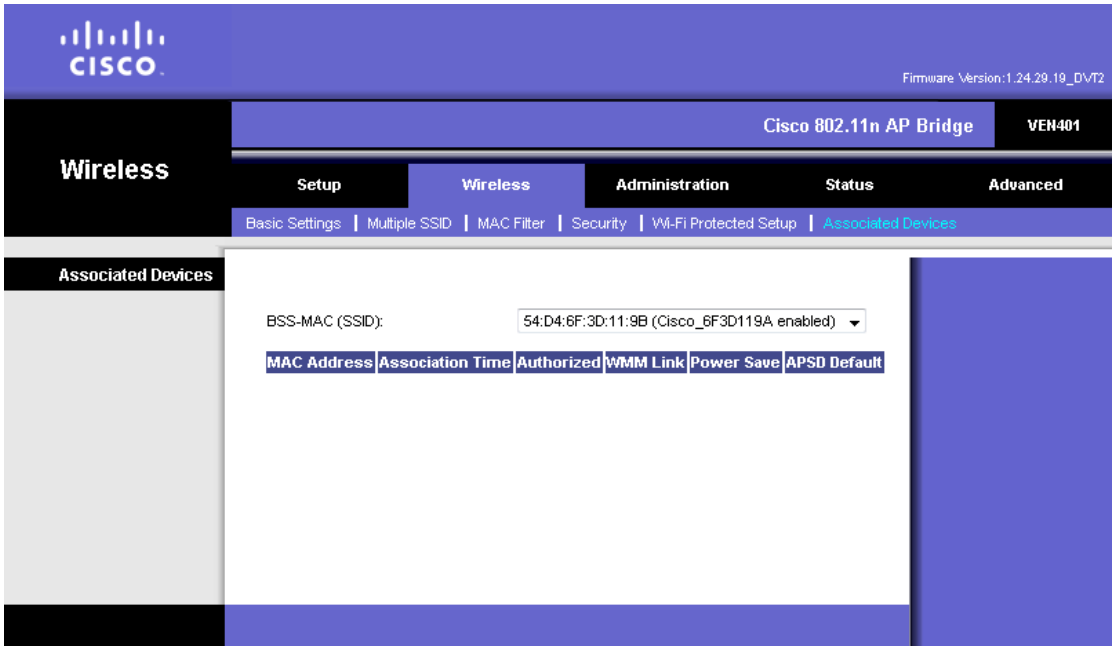
b Click the **Register** button.

c After the client devices has been configured, click the **OK** button.

5 Click the **Save Settings** button to apply your changes or **Cancel Changes** button to cancel.

Associated Devices

Use this screen to list the devices associated with a specific SSID.

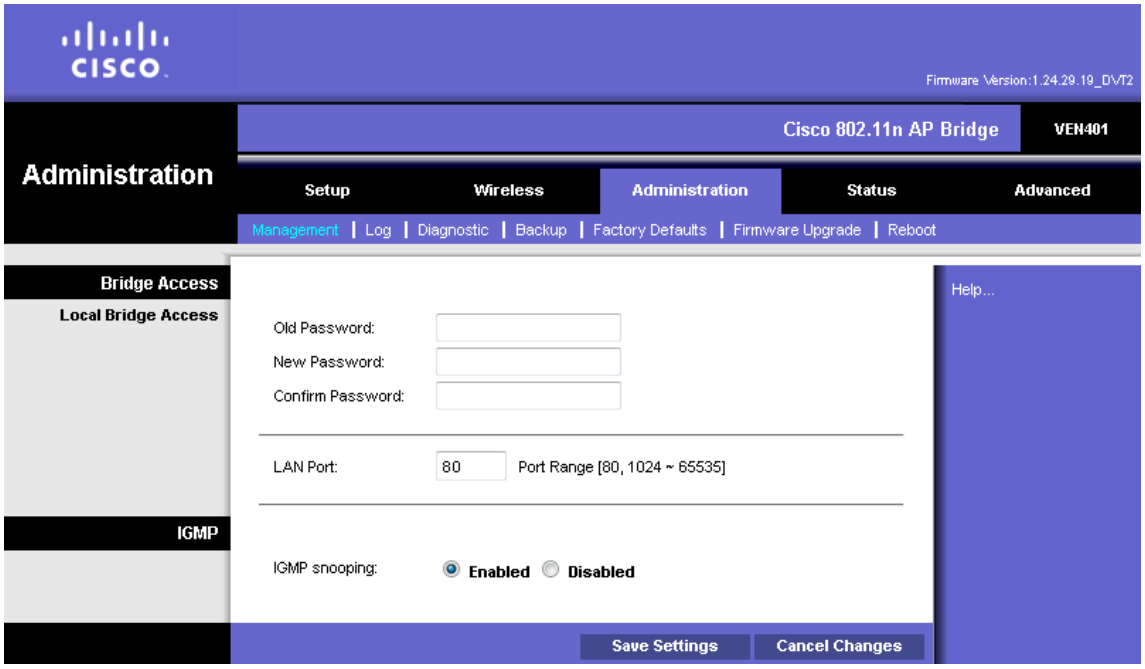


To view details for an associated device, select the SSID from the drop-down menu. The page refreshes with a list of devices associated with the selected SSID and general information for each device found.

Administration Setup

Management Settings

Use this screen setup or change your password, LAN Port, or IGMP setting.



Password

Complete the following steps to setup or change the password you are prompted to provide when you access the web-based utility.

Note: The default password is **admin**.

1 Enter the current password in the **Old Password** field.

2 Enter the new password in the **New Password** field.

3 Re-enter the new password in the **Confirm Password** field.

4 Click the **Save Settings** button to apply your changes or **Cancel Changes** button to cancel.

LAN Port

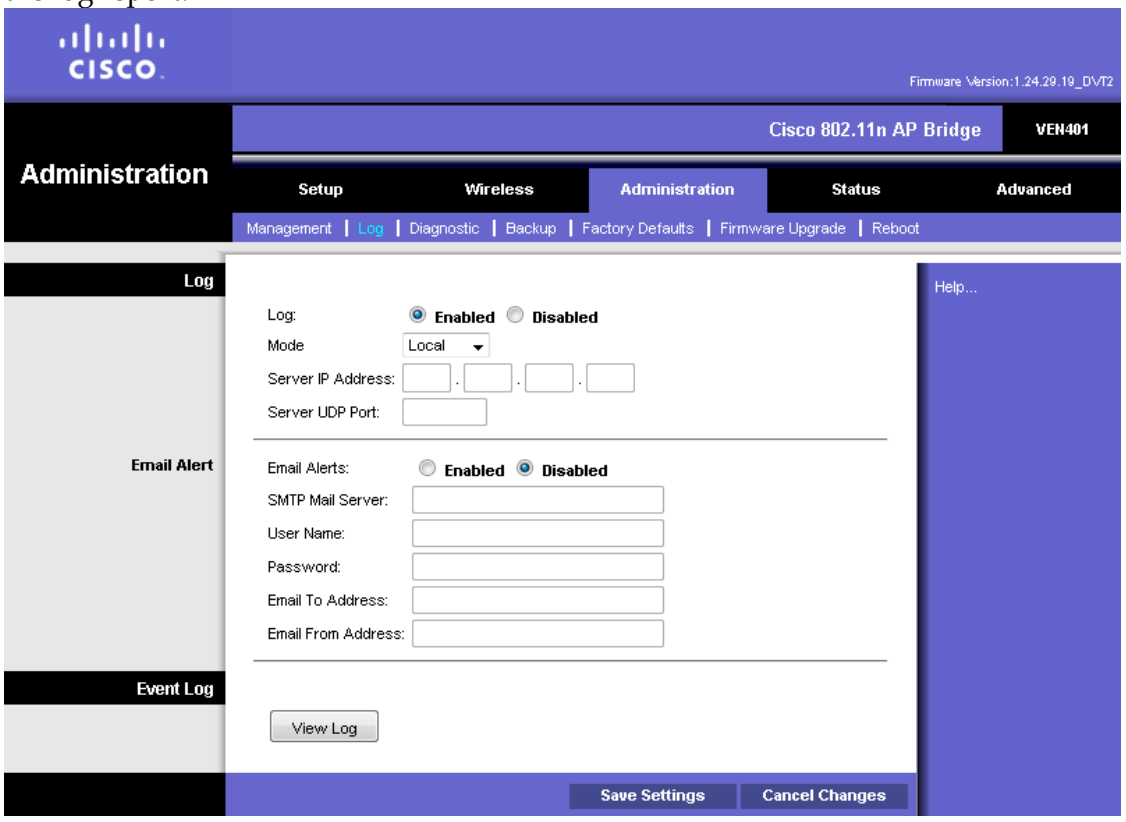
Enter the desired TCP port for the device's web-based utility in the **LAN Port** field. Click the **Save Settings** button to apply your changes or **Cancel Changes** button to cancel.

IGMP

The Internet Group Membership Protocol (IGMP) feature improves multicasting for LAN-side clients. Select **Enabled** if your clients support IGMP, otherwise, select **Disabled**. Click the **Save Settings** button to apply your changes or **Cancel Changes** button to cancel.

Log Settings

Use this screen to configure the device to record system activity in a log or to view the log report.



Configure Log Settings

Complete the following steps to enable or disable log reporting.

1 Do you wish to enable log reporting?

- If **yes**, select the **Enabled** radio button for the **Log** field and continue with step 2.
- If **no**, select the **Disabled** radio button for the **Log** field and skip to the last step.

2 Select one of the following options from the Mode drop-down menu:

- **Local**—Select this option to retrieve logs from the local server. When this option is selected, the Server IP and Server UDP Port fields are not applicable.
- **Remote**—Select this option to send logs to a system server. When this option is selected, the Server IP and Server UDP Port fields are required.

3 Enter the **Server IP Address** of your syslog server.

4 Enter the **Server UDP Port** of your syslog server.

5 Do you wish to receive email alerts if a log message is detected?

- If yes, select the Enabled radio button for the **Email Alerts** field and complete the following fields:
  - **SMTP Mail Server**—Enter the address (domain name) or IP address of the SMTP (Simple Mail Transport Protocol) Server you use for outgoing E-mail.
  - **Email To Address**—Enter the E-mail address the alert is to be sent to.
  - **Email From Address**—Enter the E-mail will show this address as the Sender's address.
- If **no**, select the **Disabled** radio button for the **Email Alerts** field and skip to the last step.

6 Click the **Save Settings** button to apply your changes or **Cancel Changes** button to cancel.

View Log

Complete the following steps to view the logs.

1 Click the **View Log** button. A new window appears with the log data.

2 Click the **Refresh** button to update the log.

3 Click the **Clear** button to clear all the information in the current log.

4 Click the **Close** button to close window.

Diagnostics

Use this screen to execute a ping test or trace route request. The ping test allows you to check the connections of your network devices, including connection to the Internet.

Ping Test

Complete the following steps to execute a ping test.

1. Enter the IP address or Fully Qualified Domain Name (FQDN) that you want to ping in the **Target IP/FQDN** field. This can be either a local (LAN) or Internet (WAN) IP address.
2. Enter the packet size you want to use in the **Ping Size** field. The default is 32 bytes.
3. Enter how many times you want to ping in the **Number of Pings** field. The default is 3.
4. Enter the number of milliseconds before the ping test will time out in the **Ping Timeout** field. The default is 5000 milliseconds.
5. Click the **Start Test** button. The results of the ping test are displayed.
6. Click **Refresh** to update the on-screen information.

Trace Route Parameters

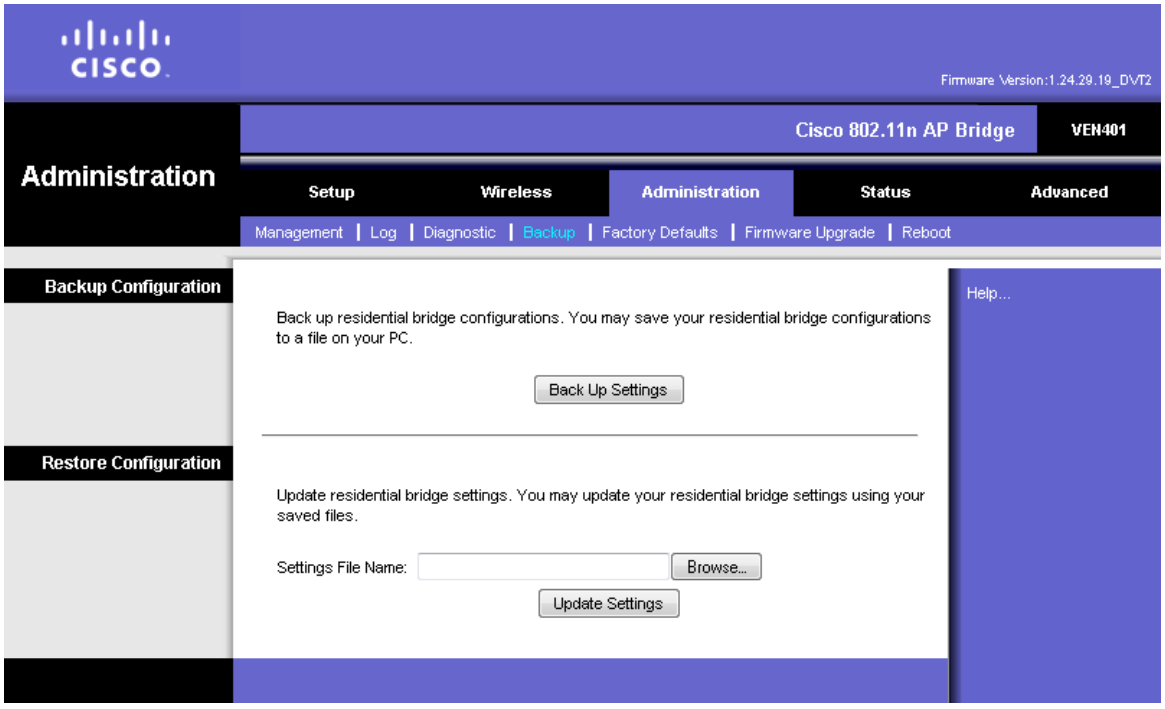
Complete the following steps to execute a trace route request.

1. Enter the desired IP address or Fully Qualified Domain Name (FQDN) in the **Target IP/FQDN** field. This can be either a local (LAN) or Internet (WAN) IP address.
2. Click the **Start Trace Route** button. The results are displayed.

Backup Settings

The Backup screen allows you to back up or restore the device's settings using a configuration file.

Path: Administration > Backup



Backup Configuration

Back Up Settings—To save the device's settings in a configuration file, click this button and follow the on-screen instructions.

Restore Configuration

To use this option, you must have previously backed up its configuration settings.

Settings File Name—Click Browse and select the device's configuration file.

Update Settings—To restore the device's configuration settings, click this button and follow the on-screen instructions.

Factory Default Settings

The Factory Defaults screen allows you to restore the device's configuration to its factory default settings. (An alternative method is to press and hold the Reset button on the back panel of your device for approximately ten seconds.)

Path: Administration > Factory Defaults

Restore Default Settings—Click this button to restore settings to the factory default values. You will be prompted to confirm or cancel the restore request.

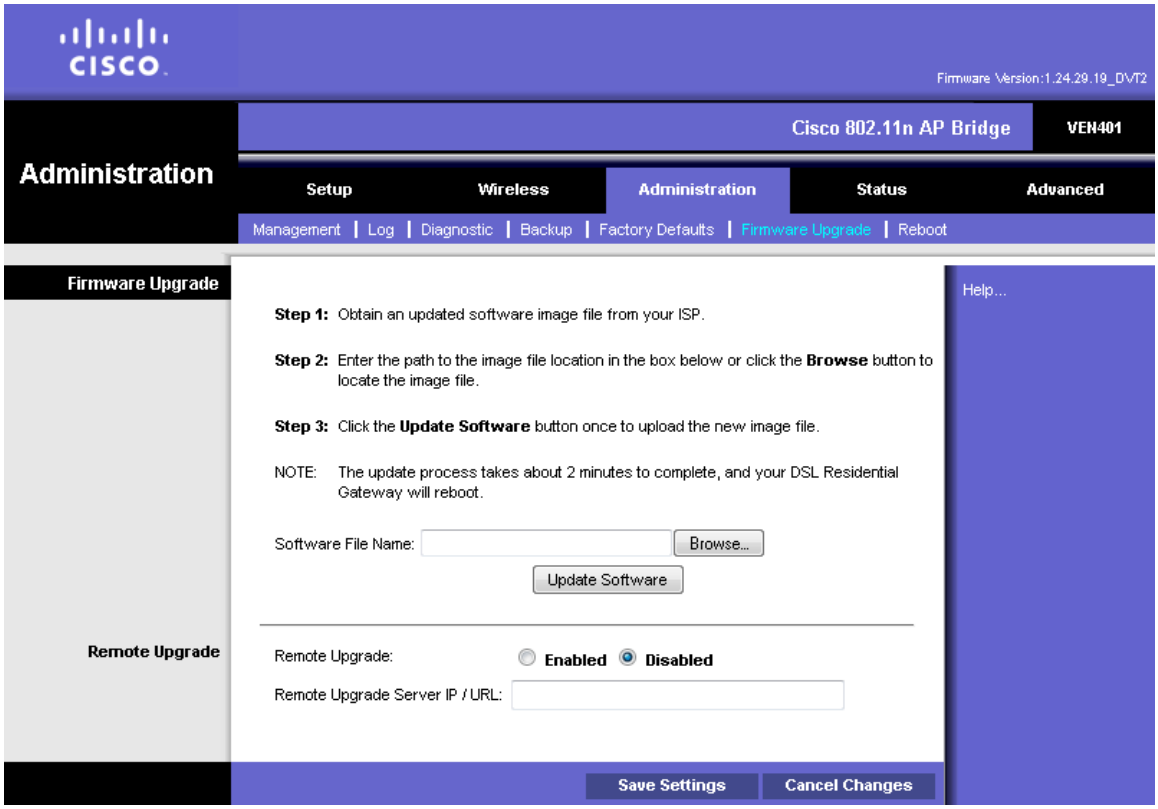
Note: Restoring factory defaults on the device deletes custom settings. Record your custom settings before clicking the Restore Factory Defaults button.

Firmware Upgrade

The Firmware Upgrade screen allows you to upgrade the firmware. Do not upgrade the firmware unless you are experiencing problems with the device or the new firmware has a feature you want to use.

Note: When up upgrade, the device may lose the settings you have customized. Before you upgrade its firmware, write down all of your custom settings. After you upgrade its firmware, you will have to re-enter all of your configuration settings.

Path: Administration > Upgrade



Upgrade Firmware

Follow the on-screen instructions to upgrade the firmware manually.

Software File Name—Click the **Browse** button and select the firmware upgrade file.

Update Software—After you have selected the appropriate file, click this button, and follow the on-screen instructions.

Reboot

The Reboot screen allows you to gracefully stop and restart the device. Performing a reboot allows you to save any configuration changes and to reboot the device to make the changes take effect.

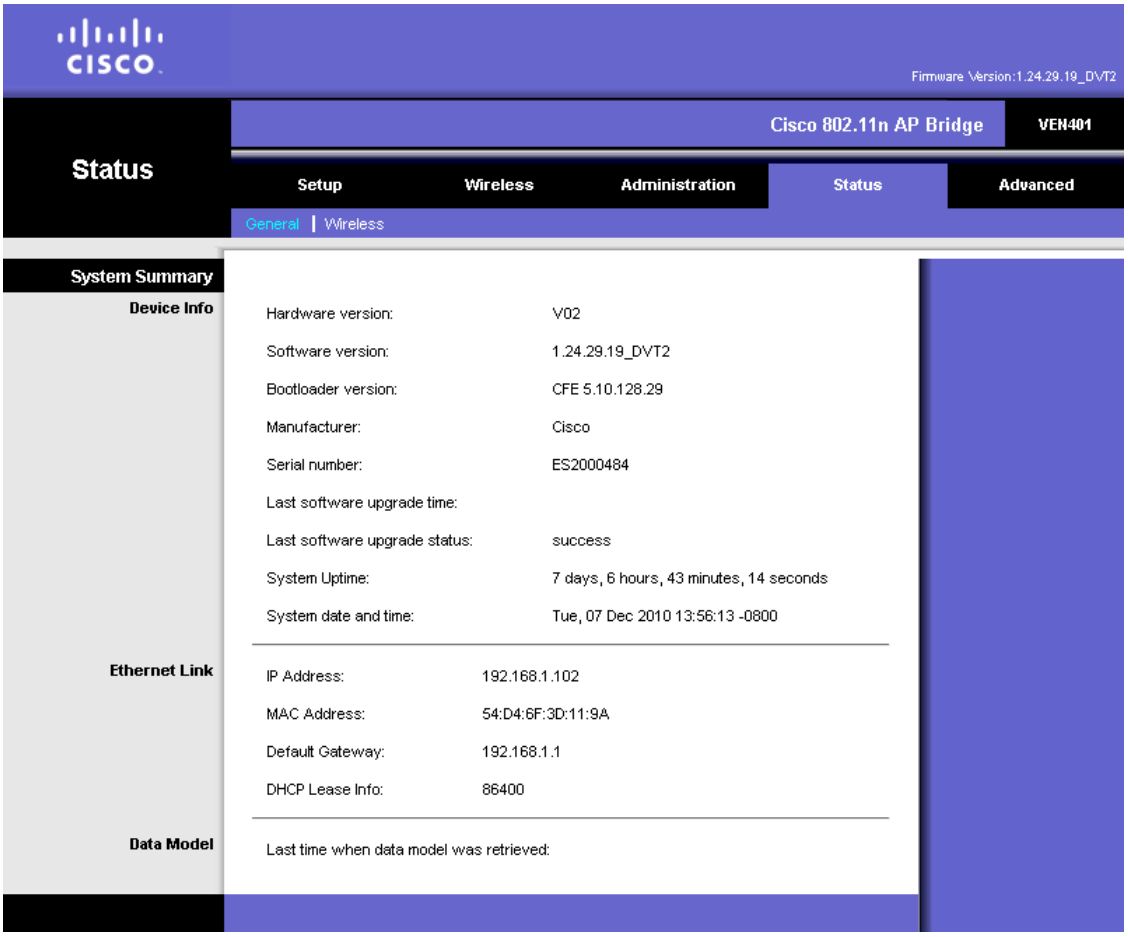
Path: Administration > Reboot

Click **Save/Reboot** to reboot the device. The restart will terminate the Internet connection.

Status Information

General System Status Information

Use this screen to view general information for your device.



Device Information

Hardware Version—Provides the version number of the device's hardware.

Software Version—Provides the version number of the device's software.

Bootloader version—Provides the version number of the bootloader.

Manufacturer—Provides the manufacturer name.

Serial Number—Provides the serial number of the device.

Last software upgrade time—Indicates most recent upgrade attempt.

Last software upgrade status—Indicates if upgrade attempt succeeded or failed.

Status Information

System Uptime—Provides the length of time the device has been active.

System date and time—Provides the current date and time of the device.

Ethernet Link

IP Address—Provides the device's IP address, as it appears on your local network.

MAC Address—Provides the device's MAC address.

Default Gateway—Provides the default gateway IP address.

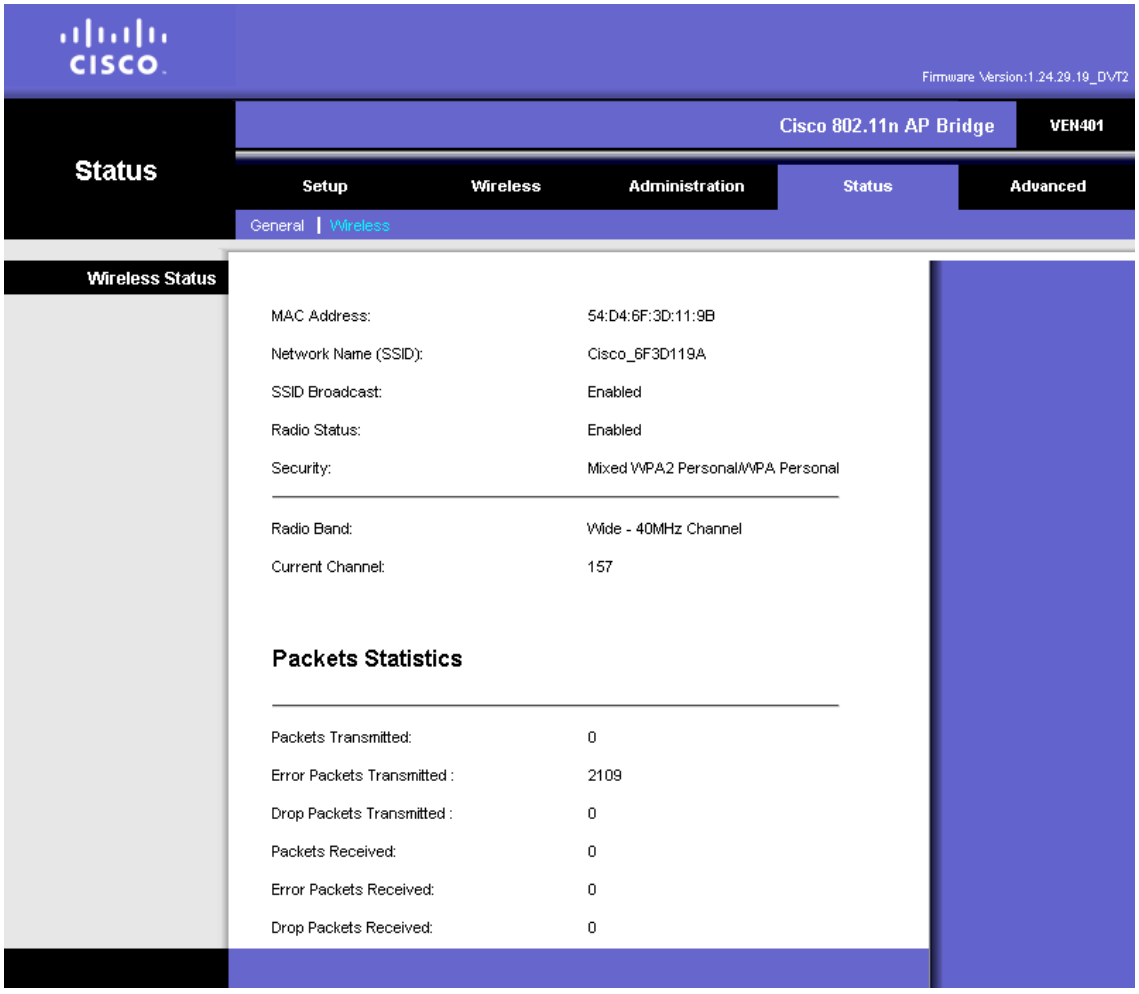
DHCP Lease Time—Provides the length of time for the DHCP lease setting.

Data Model

Provides date and time of the most current update to the data model.

Wireless Status Information

Use this screen to view the status of your wireless connection.



MAC Address—Provides the MAC address of the device's local, wireless interface.

Network Name (SSID)—Provides the name of the wireless network.

SSID Broadcast—Indicates if the SSID broadcast setting is enabled or disabled.

Radio Status—Indicates if the radio is enable or disabled.

Security—Provides the wireless security method.

Radio Band—Provides the radio band setting.

Current Channel-Provides the channel associated with the frequency that the radio band uses.

Packet Statistics

This section lists the number of packets transmitted and received, including attempts that encounter an error condition or are dropped.

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