HIKVISION

Wireless Bridge DS-3WF0AC-2NT

User Guide

User Guide

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About this Manual

The Guide includes instructions for using and managing the product. Pictures, charts, images and all other information hereinafter are for description and explanation only. The information contained in the Guide is subject to change, without notice, due to firmware updates or other reasons. Please find the latest version in the company website (http://overseas.hikvision.com/en/).

Please use this user guide under the guidance of professionals.

Trademarks Acknowledgement

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Legal Disclaimer

Regulatory Information

FCC Information

Please take attention that changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC compliance: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC Conditions

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.

2. This device must accept any interference received, including interference that may cause undesired operation.

EU Conformity Statement

This product and - if applicable - the supplied accessories too are marked with "CE" and comply therefore with the applicable harmonized European standards listed under the EMC Directive 2014/30/EU, the LVD Directive 2014/35/EU, the RoHS Directive 2011/65/EU.

2012/19/EU (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see: www.recyclethis.info

2006/66/EC (battery directive): This product contains a battery that cannot be disposed of as unsorted municipal waste in the European Union. See the product documentation for specific battery information. The battery is marked with this symbol, which may include lettering to indicate cadmium (Cd), lead (Pb), or mercury (Hg). For proper recycling, return the battery to your supplier or to a designated collection point. For more information see: www.recyclethis.info

Industry Canada ICES-003 Compliance

This device meets the CAN ICES-3 (A)/NMB-3(A) standards requirements.

Applicable Models

This guide is applicable to DS-3WF0AC-2NT.

Symbol Conventions

The symbols that may be found in this document are defined as follows.

Symbol	Description
![NOTE]	Provides additional information to emphasize or supplement important points of the main text.
![WARNING]	Indicates a potentially hazardous situation, which if not avoided, could result in equipment damage, data loss, performance degradation, or unexpected results.
![DANGER]	Indicates a hazard with a high level of risk, which if not avoided, will result in death or serious injury.

![WARNING]

● During the installation and utilization of the device, please strictly conform to electrical safety rules in different nations and regions.

● You shall acknowledge that the use of the device with Internet access might be under network security risks, please strengthen protection for your personal information and data security. If you find the device might be under network security risks, please contact with us.

Contents

Chapter 1　Application Scenario

1.1　Networking requirement

To ensure the safety of employees and property, a video surveillance system needs to be installed in a building site.

1.2　Solution

The wireless bridges are used to address this requirement.

1.3　Connecting the wireless bridges

1.3.1　Hardware connection of AP device

Connect the AP device to a switch in monitor center. See the following figure:
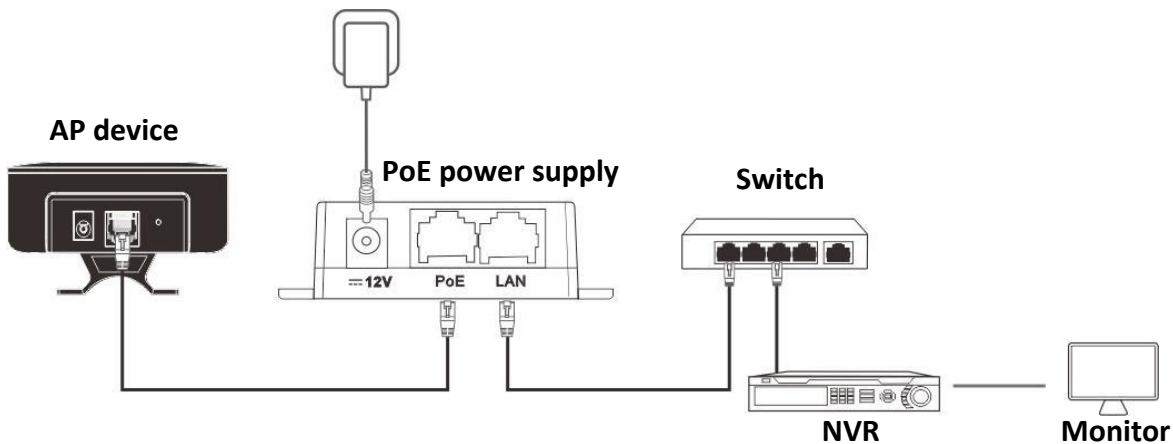
1.3.2 Hardware connection of CPE device

Connect the CPE device to an IP camera in the monitoring site.
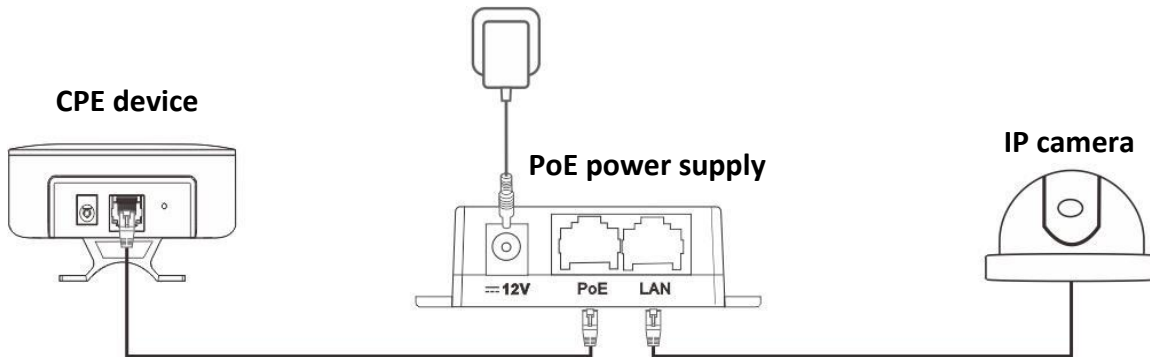
1.4 Networking topology

Select one scenario to install the wireless bridge to the corresponding site.
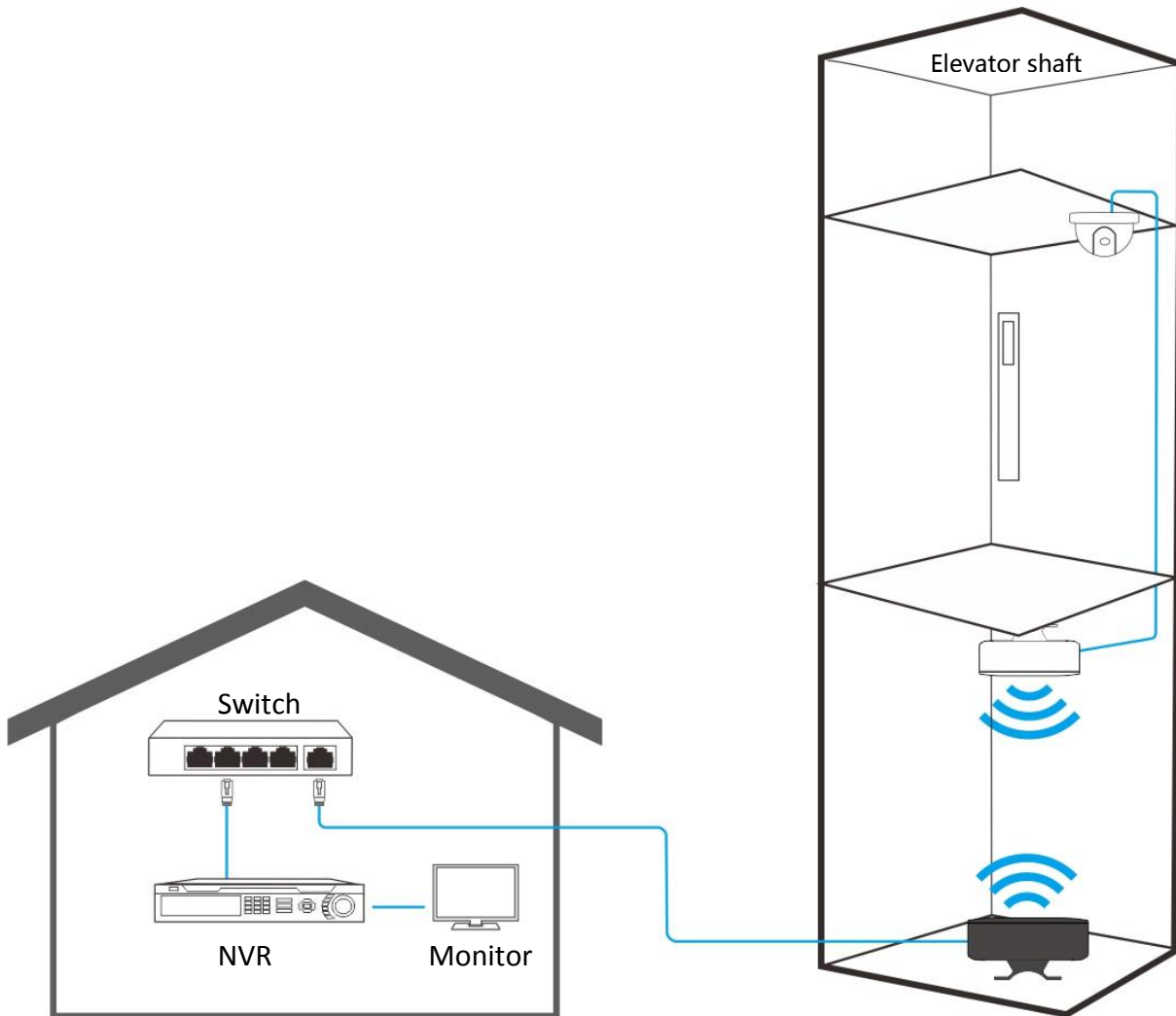
Scenario 1
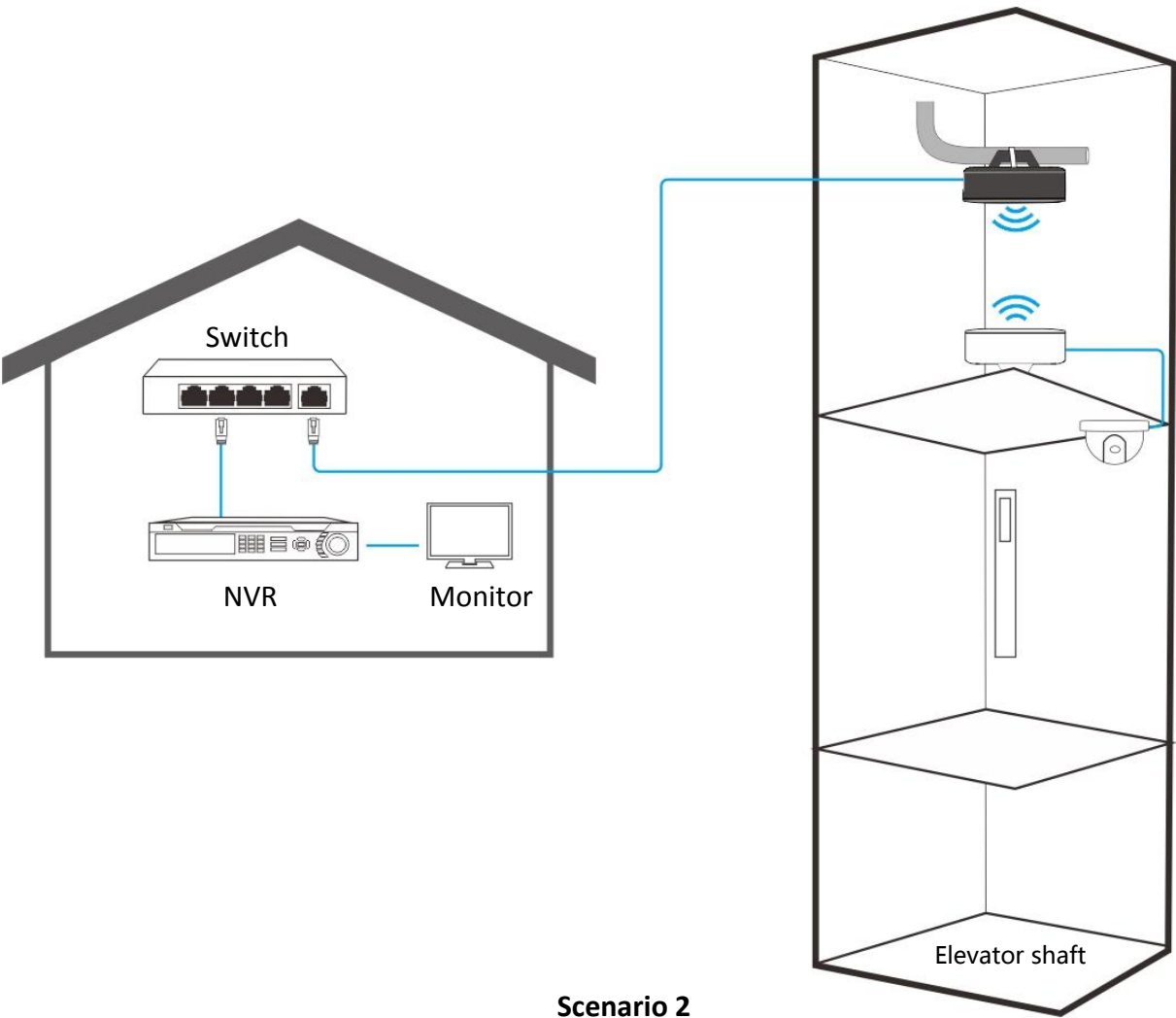
Scenario 2

Chapter 2   Login

2.1   Logging in to the web UI of the wireless bridge

For initial use of the router, refer to the quick start guide of the wireless bridge. After activating the wireless bridge, you can refer to the following procedure for login.

Step 1 Connect a computer to the wireless bridge, or the switch connected to the wireless bridge.

Step 2 Configure the IP address of the computer used to configure the wireless bridge. OS example: Windows 7

1) Right-click the ![icon] icon on the lower right corner of the desktop.
2) Click **Open Network and Sharing Center**.
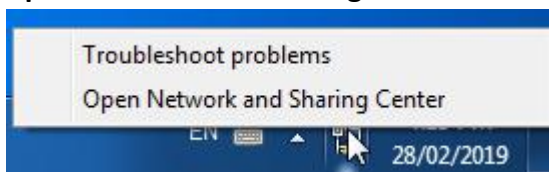
3) Click **Local Area Connection**, then click **Properties**.
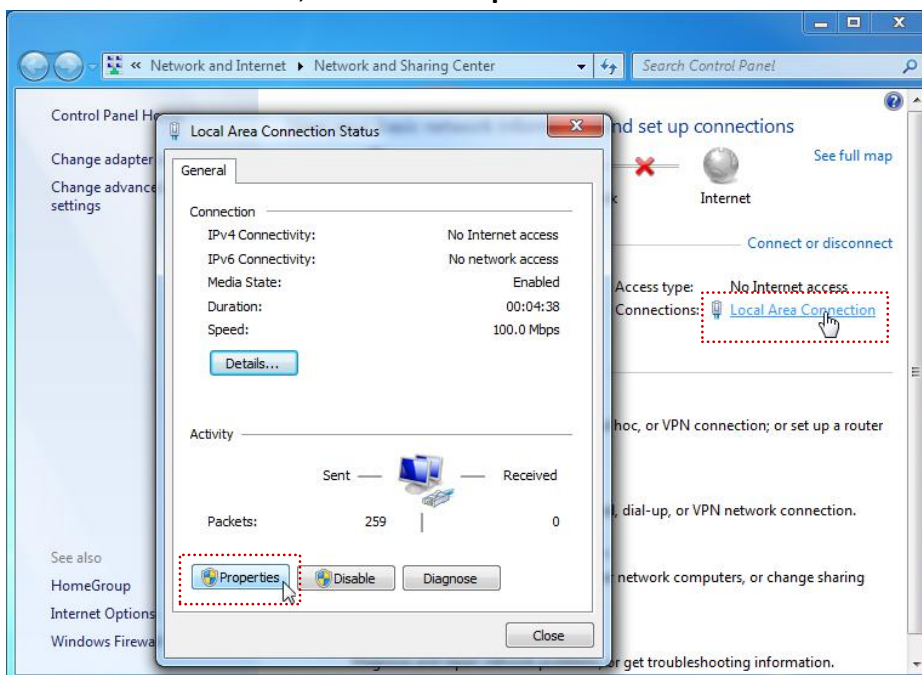
4) Double-click **Internet Protocol Version 4 (TCP/IPv4)**.
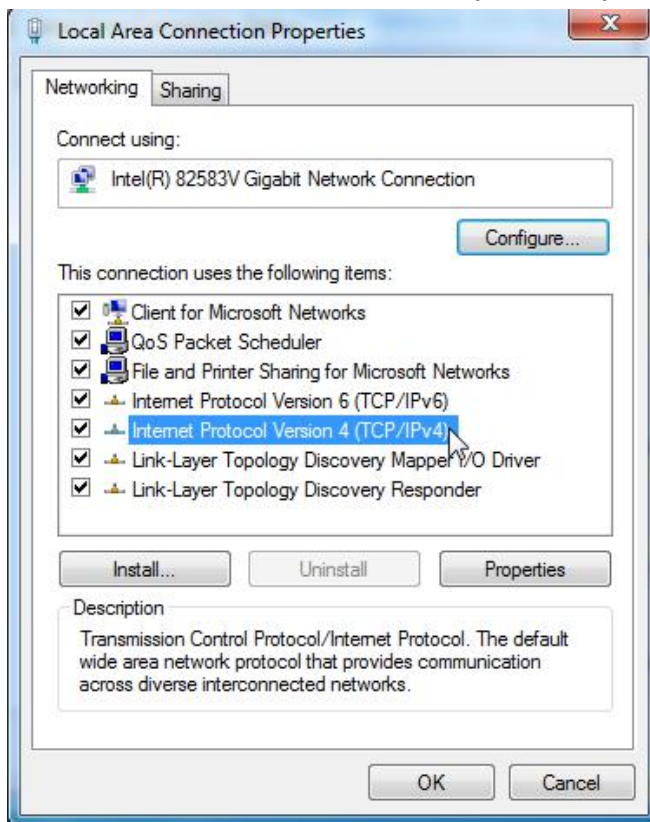
5) Select **Use the following IP address**, set the **IP address** to **192.168.1.*X*** (*X* ranges from 2 to 253, excluding 35 and 36), the **Subnet mask** to **255.255.255.0**, and click **OK**.
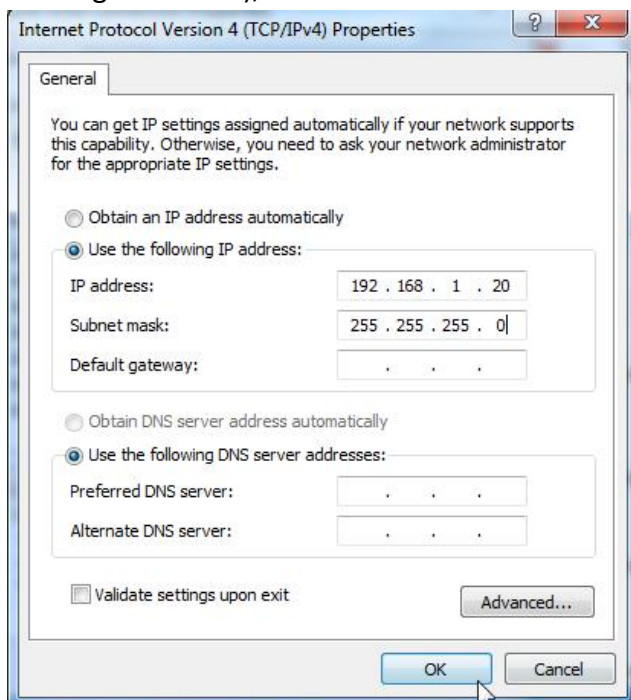
6) Click **OK** on the **Local Area Connection Properties** window, and close the other windows.

Step 3 Log in to the web UI of the wireless bridge.

1) Start a web browser, and visit **192.168.1.35** for AP device (**192.168.1.36** for the CPE device).
2) Enter the login password you set before, and click **Login**.

----End

Log in to the web UI successfully. Now you can configure the wireless bridge.
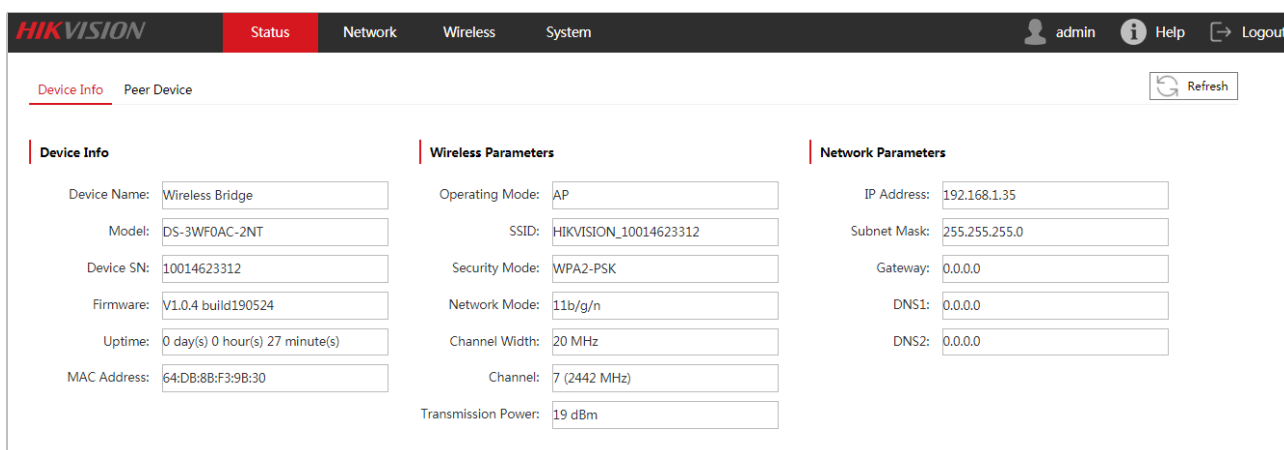
2.2 Logging out of the web UI of the wireless bridge

Click the **Logout** on the upper-right corner of the web UI to logout. When you close the web browser, the system logs you out as well.

Chapter 3　System Status

This module allows you to view the information of this wireless bridge and peer.

3.1　Device info

Log in to the web UI, and choose **Status**.

You can view the device info, wireless parameters and network parameters here.

Parameters Description

Items		Description
Device Info	Device Name	It specifies the name of this device. If this device is not the only one of its kind in the network, this name helps you identify the device. You can change the name of this device on the **System** > **Maintenance** page.
	Model	It specifies the model number of this device.
	Device SN	It specifies the serial number of this device. The devices in the same package have the same serial number.
	Firmware	It specifies the system software version number of this device.
	Uptime	It specifies time during which this device is operating.
	MAC Address	It specifies the MAC address of LAN port of this device. When connecting to another device using an Ethernet cable, the wireless bridge uses this MAC address to communicate with the device.

Items		Description
Wireless Parameters	Operating Mode	It specifies the working mode the device operates. The wireless bridge works in AP mode or CPE mode, and cannot be changed.
	SSID	It specifies the wireless network name of this device.
	Security Mode	It specifies the security mode of the wireless network of this device.
	Network Mode	It specifies the network mode of this device.
	Channel Width	It specifies the bandwidth of the operating channel of a wireless network.
	Channel	It specifies channel in which this device operates, and its center frequency.
	Transmission Power	It specifies the transmit power of this device. Higher number indicates wider WiFi coverage. Setting a proper transmit power helps improve the performance and security of the wireless network.
Network Parameters	IP Address	It specifies the IP address (also named management IP address) of this device. You can change this IP address on the **Network** page.
	Subnet Mask	It specifies the subnet mask of the wireless bridge.
	Gateway	It specifies the default gateway of the wireless bridge. When the device accessing the internet, packets should be forwarded through the gateway.
	DNS1	It specifies the primary DNS server IP address of the wireless bridge.
	DNS2	It specifies the secondary DNS server IP address of the wireless bridge.

3.2 Information of peer device

Log in to the web UI, and choose **Status** > **Peer Device**.

You can view the transmitted and received rate of this wireless bridge, and view the related information of peer device, such as signal strength, noise, IP address and MAC address.

Parameters Description

Items	Description
Signal Strength (dBm)	It specifies the signal strength of peer wireless bridge.
Received Rate (Mbps)	It specifies the receiving rate of this wireless bridge.
Transmitted Rate (Mbps)	It specifies the transmitting rate of this wireless bridge.
Noise (dBm)	It specifies the interference signal and electromagnet noise strength of peer wireless device in the current environment. Larger absolute value indicates less interference.
IP Address	It specifies the IP address of peer wireless bridge.
MAC Address	It specifies the MAC address of peer wireless bridge.

Chapter 4　Network

4.1　Overview

Log in to the web UI, and choose **Network**.

You can change the network parameters of this wireless bridge here, including IP address, subnet mask, gateway and DNS server addresses here.

IP Address:	192.168.1.35
Subnet Mask:	255.255.255.0
Gateway:	0.0.0.0
DNS1:	0.0.0.0
DNS2:	0.0.0.0
	💾 Save

Parameters Description

Items	Description
IP Address	It specifies the IP address (also named management IP address) of this device. Devices in LAN can use it to log in to the web UI of this wireless bridge. If you want to enable this wireless bridge to access the internet, this IP address should be set to an unused IP address which is in the same segment as that of the egress router.
Subnet Mask	It specifies the subnet mask of the wireless bridge. The default is 255.255.255.0.
Gateway	It specifies the default gateway of this wireless bridge. It is optional. If you want to enable this wireless bridge to access the internet, the gateway should be set to the LAN IP address of the egress router.

Items	Description
DNS1	It specifies the primary DNS server IP address of this wireless bridge. It is optional. If you want to enable this wireless bridge to access the internet, and the egress router supports DNS agent, you can enter the LAN IP address of the router here. If the router does not support DNS agent, you need to enter a correct DNS IP address here.
DNS2	It specifies the secondary DNS server IP address of this wireless bridge. It is optional. If you have two DNS server IP addresses, you can enter the other one here.

4.2 Changing the IP address

Assume that you need to change the IP address to 192.168.1.25.

Configuration procedure

Step 1 Choose **Network**.

Step 2 Change the **IP Address** to **192.168.1.25**.

Step 3 Click **Save**.

----End

If you still want to configure the wireless bridge after changing the IP address, refer to the following procedure:

- If the new IP address is in the same network segment as that of the old one, refresh the page and use the new IP address to log in to the web UI for configuration.
- If the new IP address is in different network segment from that of the old one, set the IP address of your management computer to an unused one which should be in the same network segment as that of the new IP address of the wireless bridge. Then use the new IP address of the wireless bridge to log in to the web UI for configuration.

Chapter 5   Wireless

5.1   Overview

Log in to the web UI, and choose **Wireless**.

You can change the wireless parameters of this wireless bridge here, including SSID, channel, transmission power, and so on.

Parameters description

Items	Description
Operating Mode	It specifies the working mode the device operates. The wireless bridge works in AP mode or CPE mode, and cannot be changed.
SSID	It specifies the wireless network name of this device. You can change it here. ![NOTE] **NOTE** After changing the SSID of this wireless bridge, you need to change the SSID of peer wireless bridge as well. Otherwise, the wireless bridge fails to connect to peer one.

Items	Description
Hide	It specifies whether to hide the SSID. ● Check the **Hide** box: The wireless bridge does not broadcast this SSID. When connecting to the wireless network, you need to enter the SSID manually. ● Uncheck the **Hide** box: The wireless bridge broadcasts this SSID. Wireless devices nearby can scan find the SSID.
Country Code	It specifies the country/region this wireless bridge locates. When you configure the device for the first time, you need to select your country/region to activate the device. It cannot be changed here.
Network Mode	It specifies the network mode of this device. Currently, it supports 11b/g/n, which allows wireless devices supporting 802.11b, 802.11g, and 802.11n at 2.4 GHz band to access the wireless network.
Channel Width	It specifies the bandwidth of the operating channel of a wireless network. ● **20MHz**: The wireless bridge can only use 20 MHz channel bandwidth. ● **40MHz**: The wireless bridge can only use 40 MHz channel bandwidth.
Channel	It specifies channel in which this device operates, and its center frequency. Auto indicates the wireless bridge select the channel automatically according to the current environment.
Antenna Gain	It specifies the built-in antenna gain value. It cannot be changed.
Transmission Power	It specifies the transmit power of this device. Larger transmission power indicates wider WiFi coverage. Set a proper transmission power can improve the security and performance of the wireless bridge.
Allowing adjusting transmission power	If you want to change the transmission power of the wireless bridge, check this option, and enter a value in the Transmission power input box.
Security Mode	It specifies the security mode of the wireless network of this device. ● **None**: It indicates that any device can connect to the wireless network of the device. For security, this option is not recommended. ● **WPA-PSK**: It indicates that the wireless network uses WPA-PSK security mode. ● **WPA2-PSK**: It indicates that the wireless network uses WPA2-PSK security mode.
Security Key	It specifies the WPA pre-shared key.
Scan	It used to scan the wireless networks nearby, and displays their SSID, MAC address, channel, signal strength, and so on for analysis.

5.2 Changing wireless parameters

Step 1 Choose **Wireless**.

Step 2 Change the parameters as required.
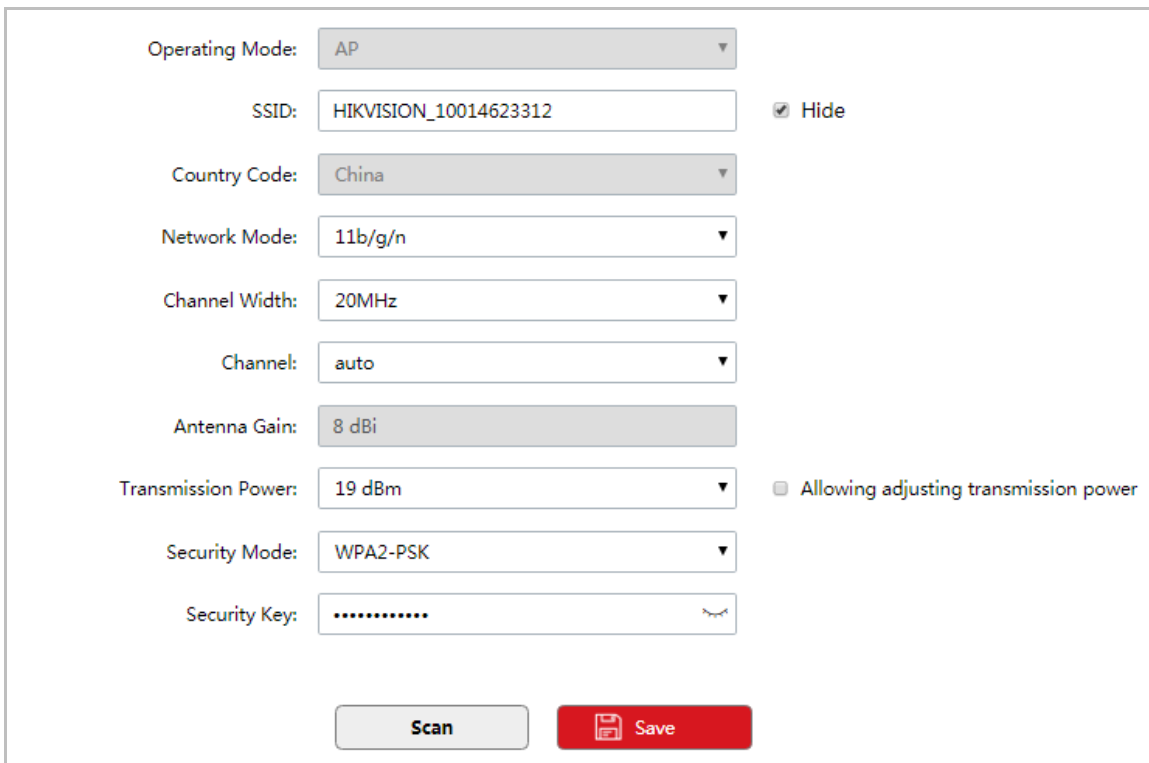
Step 3 Click **Save**.

----**End**

5.3   Scanning SSID nearby

Assume that you need to detect the wireless networks nearby.

Step 1 Choose **Wireless**.

Step 2 Click **Scan**.

----End

Wait until the scanning completes. You can set a channel with less interference which is less used by the devices nearby to improve the wireless transmission performance.

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Scan   ×

SN	SSID	MAC Address	Channel	Security Mode	Signal Strength
1	7EF0	D8:32:14:67:7E:F1	6	Mixed WPA/WPA2-PSK...	
2	huangj	C8:3A:35:13:05:08	11	Mixed WPA/WPA2-PSK...	
3	7C98	D8:32:14:79:0A:B1	6	Mixed WPA/WPA2-PSK...	
4	06*0nz*	08:40:F3:07:B3:B1	2	WPA2-PSK,AES	
5	ruanjian_hxl...	C8:3A:35:AC:15:E1	1	Mixed WPA/WPA2-PSK...	
6	HENG222	50:2B:73:F0:39:C9	11	WPA2-PSK,AES	
7	0124	50:2B:73:F0:39:CB	11	None	
8	94E8	D8:32:14:79:94:E9	6	Mixed WPA/WPA2-PSK...	
9	M50-RENZ	C8:3A:35:F5:80:32	3	None	
10	hq111_F1D7A0	50:2B:73:F1:D7:A1	2	WPA2-PSK,AES	

10 ▼ items per page 64 items in total   Previous 1 2 3 4 5 6 7 Next

Chapter 6   System
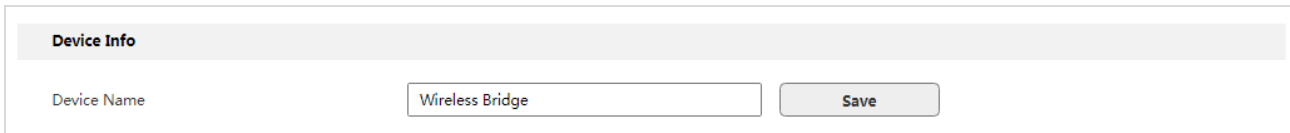
6.1   Maintenance

6.1.1   Device info

Log in to the web UI and choose **System** > **Maintenance**.

In this module, you can change the device name. If this device is not the only one of its kind in the

network, this name helps you identify the device.

Customize a device name in the Device Name input box, and click **Save**.
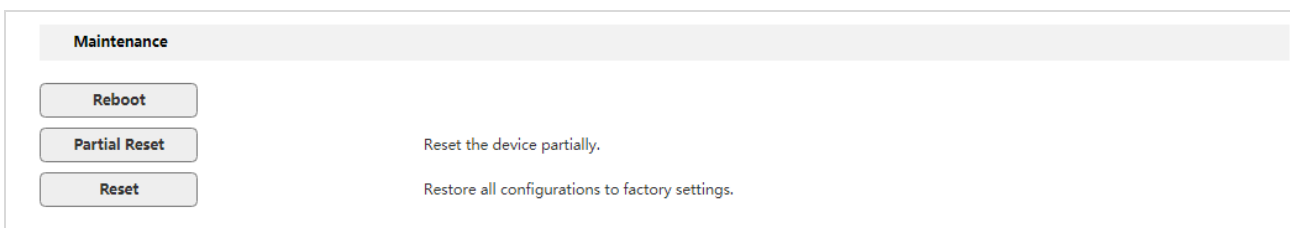
Device Info		
Device Name	Wireless Bridge	Save

6.1.2   Maintenance

Log in to the web UI and choose **System** > **Maintenance**.

In this module, you can reboot, reset or partially reset the wireless bridge.

- **Partial Reset**: After being reset partially, the wireless bridge is restored to the activated status, and only network configurations and the login password are kept unchanged.
- **Reset**: After being reset, the wireless bridge is restored to factory settings, and you need to activate it again before configuration.

Maintenance	
Reboot	
Partial Reset	Reset the device partially.
Reset	Restore all configurations to factory settings.

Reboot

If a setting does not take effect or the wireless bridge works improperly, you can try rebooting it to resolve the problem.

NOTE

Rebooting the device will disconnect all connections. So you'd better reboot it at idle time.

Configuration procedure

Step 1 Choose **System** > **Maintenance**.

Step 2 Click **Reboot**.
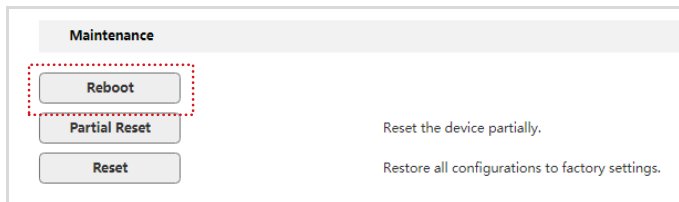
Step 3 Confirm the message on the pop-up window, and click **OK**.

----End

A progress bar is displayed on the page. Wait for it to elapse.

Partial reset

If you want to reset the wireless bridge to activated status, and keep network parameters and login password unchanged, you can partial reset the device.

Configuration procedure

Step 1 Choose **System** > **Maintenance**.

Step 2 Click **Partial Reset**.

Step 3 Confirm the message on the pop-up window, and click **OK**.

----**End**

A progress bar is displayed on the page. Wait for it to elapse.

Reset

If you cannot locate a fault of the wireless bridge or forget the login password, you can restore the wireless bridge to factory settings and then configure it again.

![NOTE]

- When the factory settings are restored, the configuration of the wireless bridge is lost. Therefore, you need to reconfigure it. Restore the factory settings of the wireless bridge only when necessary.
- To prevent damaging the wireless bridge, ensure that the power supply of the wireless bridge is normal during reset.

Configuration procedure

Step 1 Choose **System** > **Maintenance**.

Step 2 Click **Reset**.
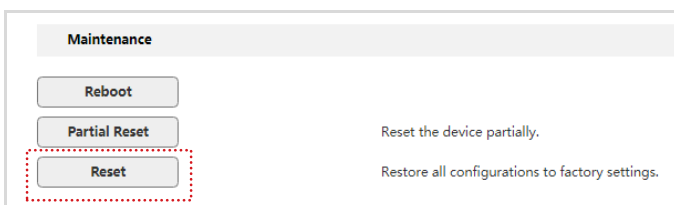
Step 3 Confirm the message on the pop-up window, and click **OK**.

----**End**

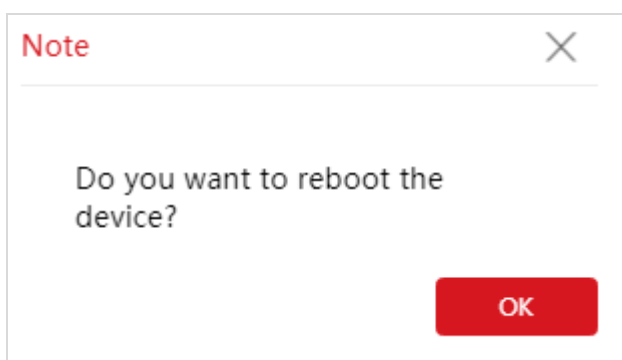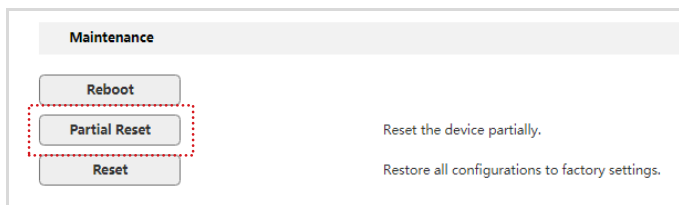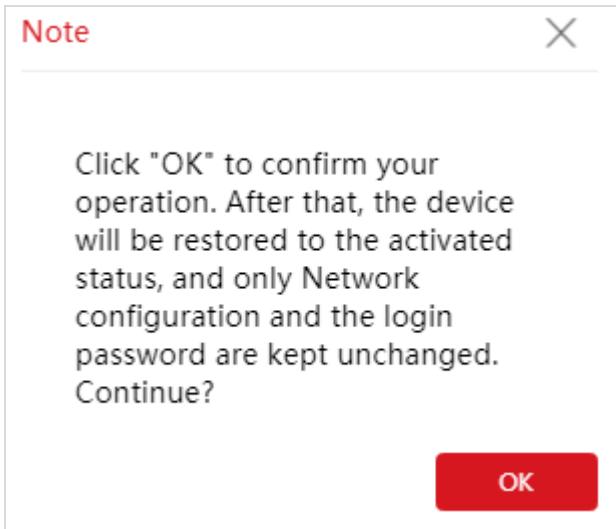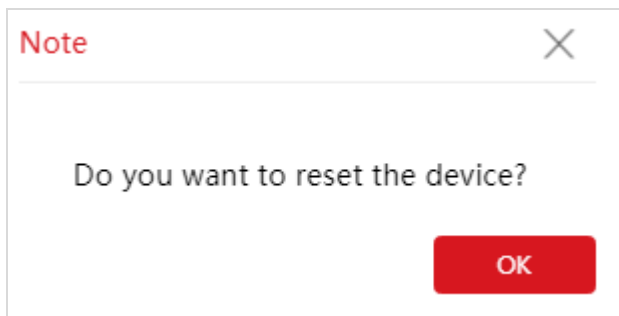A progress bar is displayed on the page. Wait for it to elapse.

6.1.3 **Import/Export**

Log in to the web UI and choose **System** > **Maintenance**.

The Export function enables you to export the current configuration of the wireless bridge to a local computer. The Import function enables you to import the wireless bridge to a previous configuration.
If the wireless bridge enters the optimum condition after you greatly change the configuration of the wireless bridge, you are recommended to export the configuration, so that you can import it after upgrading or resetting the wireless bridge.

 NOTE

If you need to apply same or similar configurations to many wireless bridges, you can configure one of the wireless bridges, export its configuration, and use the Import function to import the configuration on the other wireless bridges. This improves configuration efficiency.

Export

Step 1 Choose **System** > **Maintenance**.

Step 2 Click **Export**.
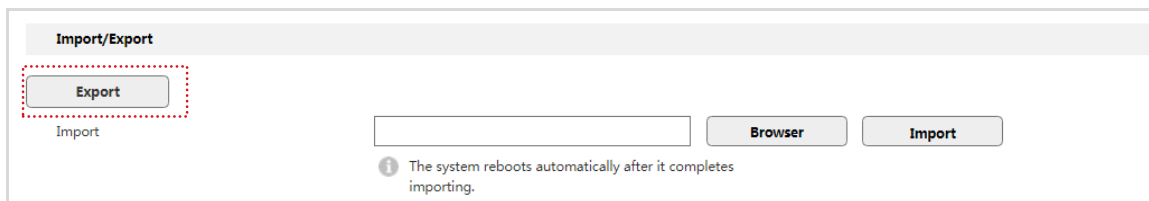
----**End**

A file with a name of "APCfm,cfg" will be saved to your local computer.

If the following warning message appears, click **Keep**.
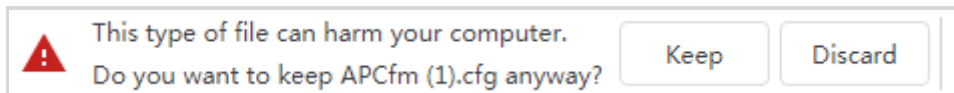
Import

Step 1 Choose **System** > **Maintenance**.

Step 2 Click **Browser**.
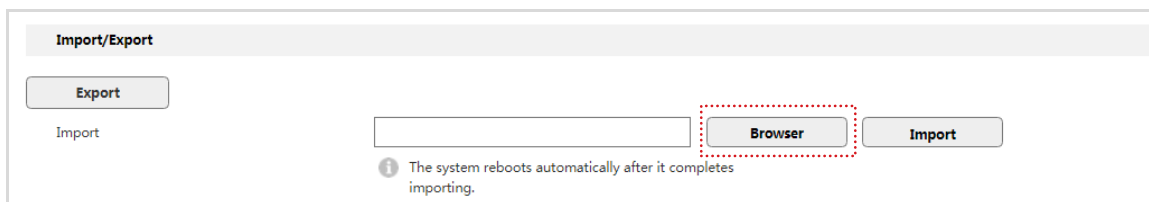
Step 3 Select a configuration file you export before, and click **Import**.

Step 4 Confirm the message on the pop-up window, and click **OK**.

----End
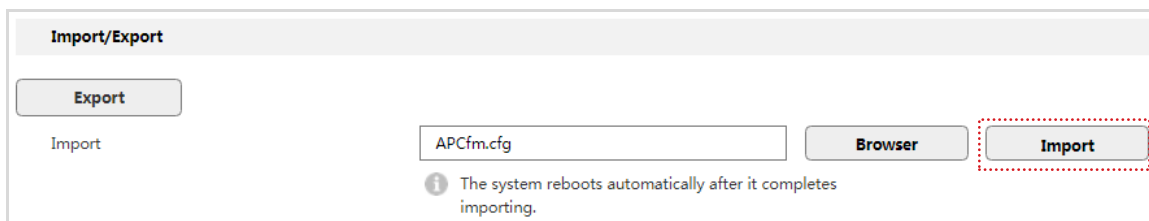
A progress bar is displayed on the page. Wait for it to elapse.

6.1.4 Upgrade

Log in to the web UI and choose **System** > **Maintenance**.

This function upgrades the firmware of the wireless bridge for more functions and higher stability.
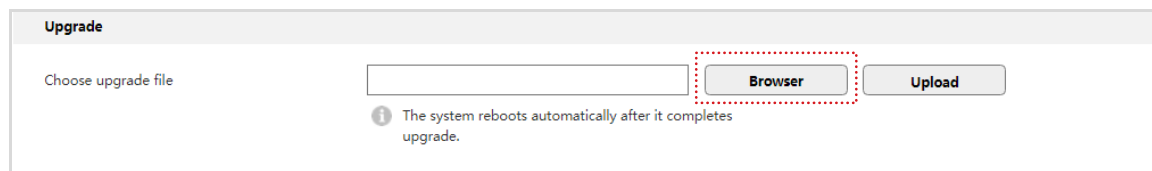
To prevent damaging the wireless bridge, verify that the new firmware version is applicable to the wireless bridge before upgrade and keep the power supply of the wireless bridge connected during an upgrade.

Configuration procedure
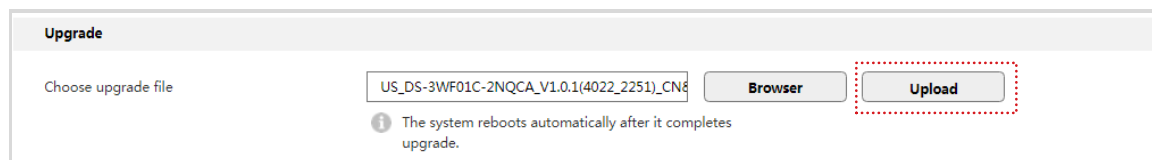
Step 1 Choose **System** > **Maintenance**.

Step 2 Click **Browser**.

Upgrade			
Choose upgrade file	[ ]	Browser	Upload
	ⓘ The system reboots automatically after it completes upgrade.		

Step 3 Select an upgrade file and click **Upload**.

Upgrade			
Choose upgrade file	US_DS-3WF01C-2NQCA_V1.0.1(4022_2251)_CN8	Browser	Upload
	ⓘ The system reboots automatically after it completes upgrade.		

Step 4 Confirm the message on the pop-up window, and click **OK**.

----End

A progress bar is displayed on the page. Wait for it to elapse.

Then Log in to the web UI of the wireless bridge, and check the **Firmware** on the **Status** page, and ensure that the version displayed here is the same as the firmware you upgrade.

🛈 **NOTE**

After the firmware is upgraded, you are recommended to restore the factory settings of the wireless bridge and configure it again, so as to ensure stability of the wireless bridge and proper operation of new functions.

6.2   Time settings

Log in to the web UI and choose **System** > **Time Settings**.

In this module, you can set the system time of the wireless bridge. The wireless bridge supports to manually set up the system time and to let the system time synchronize with the Internet.

6.2.1   Manual

Log in to the web UI and choose **System** > **Time Settings**.

You can manually set the system time of the wireless bridge. If you choose this option, you need to set the system time each time after the wireless bridge reboots.

Configuration procedure

Step 1 Choose **System** > **Time Settings**.

Step 2 Click the **Date & Time** input box.

Step 3 Set the date and time for the wireless bridge, or click **Synchronize with PC Time** button to synchronize the time to that of the management computer.

Step 4 Click **OK**.
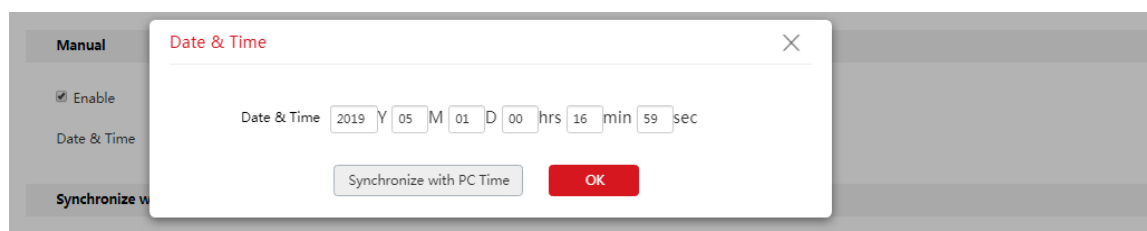
----**End**

6.2.2   Synchronize with the internet

Log in to the web UI and choose **System** > **Time Settings**.

The wireless bridge automatically synchronizes its system time with a time server of the internet. This enables the wireless bridge to automatically correct its system time after being connected to the internet.

For details about how to connect the wireless bridge to the internet, refer to Network.

Configuration procedure

Step 1 Choose **System** > **Time Settings**, and move to the **Synchronize with the Internet** part.

Step 2 Check the **Enable** box.

Step 3 Enter the IP address of the NTP server, which is **185.134.197.4** in this example.

Step 4 Enter the NTP port. The default is 123.

Step 5 Set a synchronization Interval at which the wireless bridge synchronize its time with the internet.

Step 6 Click **Save**.

----End

6.3   Basic Service

Log in to the web UI and choose **System** > **Basic Service**.

In this module, you can set the SSH function, and export system logs.

6.3.1 SSH server

Log in to the web UI, choose **System** > **Basic Service**.

Secure Shell (SSH) uses encryption and authentication mechanisms to achieve remote access and file transmission services.

This wireless bridge supports SSH server, and allows SSH client to connect to it.

SSH server is disabled by default.

Assume that you want to log in to the wireless bridge (192.168.1.35) and configure it form the computer installed with the SSH client software.

Configuration procedure

Step 1 Choose **System** > **Basic Service**, and move to the **SSH Server** part.

Step 2 Check the **Enable** box.
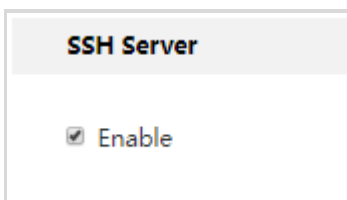
Step 3 Run the SSH client software on the management computer. PuTTY is used for illustration.

1) Run the **Putty**.
2) Set Connection type to SSH.
3) Set **Host Name (or IP address)** to **192.168.1.35**.
4) Click **Open**.
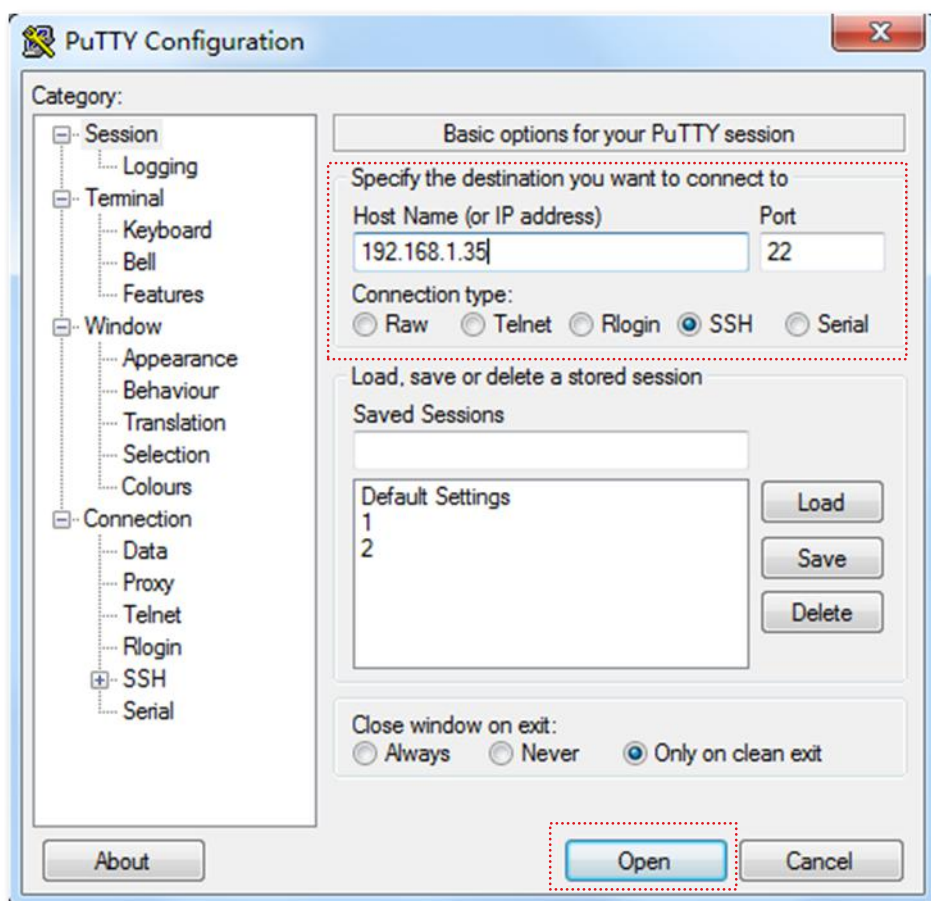
Step 4 Enter the user name (hikvision) and login password of the wireless bridge according to the instructions to log in to the configuration page.

27

----End

6.3.2 Export

Log in to the web UI, choose **System** > **Basic Service**, and move to **Export** part.

The logs of the wireless bridge record various events that occur and the operations that users perform after the wireless bridge starts. In case of a network fault, you can refer to the logs during troubleshooting.
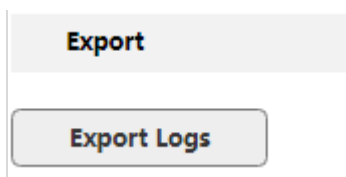
To ensure that the logs are recorded correctly, verify the system time of the wireless bridge. You can correct the system time of the wireless bridge by choosing **System** > **Time Settings**.
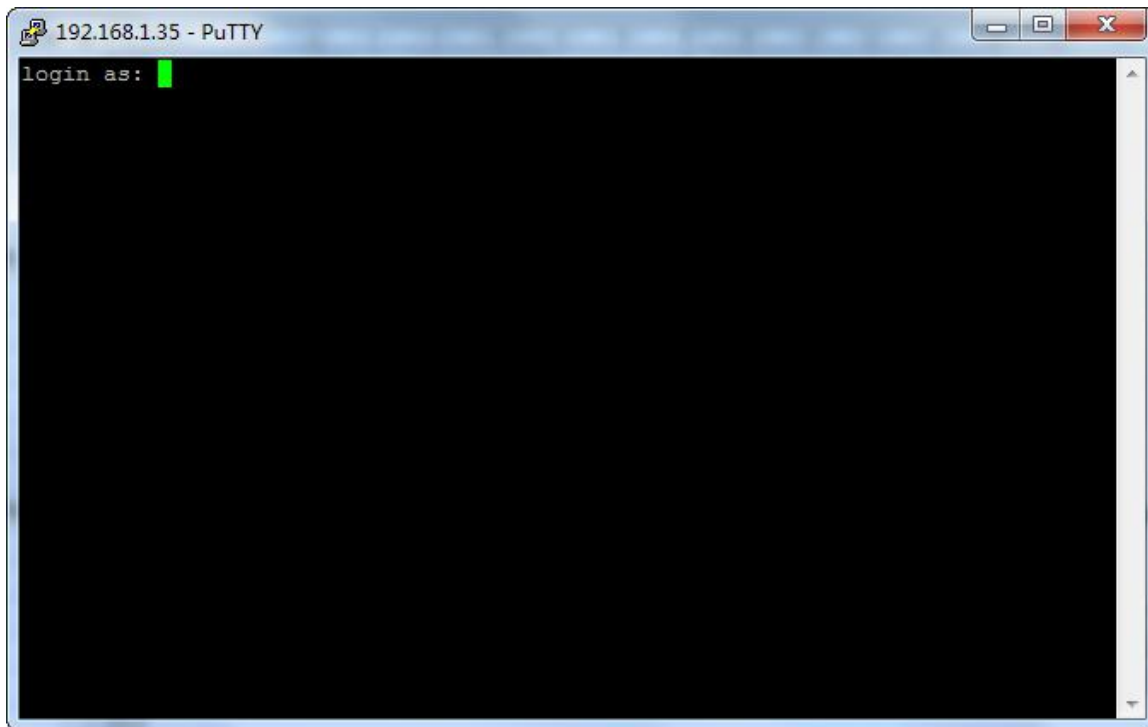
 NOTE

When the wireless bridge reboots, the previous logs are lost.
The wireless bridge reboots when it is powered on again, the firmware is upgraded, a wireless bridge configuration is imported or the partial reset or reset is performed.

6.4 Account

Log in to the web UI and choose **System** > **Account**.

On this module, you can change the login account information of the wireless bridge to prevent unauthorized login.

Changing the login password

Step 1 Choose **System** > **Account**.

Step 2 Click **Change**.

User List	Change
SN	User Name
1	admin

Step 3 Enter the current login password in the **Old Password** input box.

Step 4 Customize a new login password in the **New Password** input box.

Step 5 Enter the new password you set again in the **Confirm New Password** input box.

Step 6 Click **Save**.

Administrator ✕

User Name	admin
Old Password	
New Password	
Confirm New Password	

Save   Cancel

----End

Appendix

A Default parameters

By default, the parameters are shown in the following table:

Parameters		Default
Login	Login IP address	192.168.1.35 or 192.168.1.36
	User name	admin
	Password	/
Network	IP Address	192.168.1.35 or 192.168.1.36
	Subnet Mask	255.255.255.0
	Gateway	0.0.0.0
	DNS1	0.0.0.0
	DNS2	0.0.0.0
Wireless	Operating Mode	AP or CPE
	SSID	HIKVISION_XXXXXXXXXXX, XXXXXXXXXXX is the serial number of the wireless bridge.
	Network Mode	11b/g/n
	Channel Width	20MHz
	Channel	auto
	Transmission Power	20 dBm
	Security Mode	WPA2-PSK
	Security Key	123456789abc
System	Device Name	Wireless Bridge
	Time Settings	Manual
	SSH	Disable

B Acronyms and Abbreviations

Acronym or Abbreviation	Full Spelling
DNS	Domain Name System
IPv4	Internet Protocol version 4
MAC	Media Access Control
NTP	Network Time Protocol
PoE	Power Over Ethernet
PSK	pre-shared key
SSH	Secure Shell
SSID	Service Set Identifier

See Far, Go Further