WNHD3004 User Manual

NETGEAR, Inc.
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Product Registration, Support, and Documentation

Register your product at *http://www.netgear.com/register*. Registration is required before you can use our telephone support service. Product updates and Web support are always available at *http://www.netgear.com/support*.
Setup documentation is available on the support website, and on the documentation website. When the wireless bridge is connected to the Internet, click the Knowledge Base or the Documentation link under Web Support on the main menu to view support information.

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Marking by the above symbol indicates compliance with the Essential Requirements of the R&TTE Directive of the European Union (1999/5/EC). This equipment meets the following conformance standards:
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FCC Requirements for Operation in the United States

FCC Information to User

This product does not contain any user serviceable components and is to be used with approved antennas only. Any product changes or modifications will invalidate all applicable regulatory certifications and approvals.

FCC Guidelines for Human Exposure

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body.

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

FCC Declaration Of Conformity

We NETGEAR, Inc., 4500 Great America Parkway, Santa Clara, CA 95054, declare under our sole responsibility that the model WNHDE111 5 GHz Wireless-N HD Access Point/Bridge WNHDE111 complies with Part 15 of FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

FCC Radio Frequency Interference Warnings & Instructions

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

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

Modifications made to the product, unless expressly approved by NETGEAR, Inc., could void the user's right to operate the equipment.

Caution to Canada users

High power radars are allocated as primary users (meaning they have priority) of 5250-5350 MHz and 5650-5850 MHz and these radars could cause interference and/or damage to LELAN devices.

Operation is subject to the following two conditions:

1) This device may not cause interference and

2) This device must accept any interference, including interference that may cause undesired operation of the device.

IMPORTANT NOTE:

IC Radiation Exposure Statement:

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

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

Maximum Wireless Signal Rate Derived from IEEE Standard 802.11 Specifications

Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate.

TABLE OF CONTENTS

Operation Overview

The AP/Bridge by default runs “Auto” mode, in this mode, it will detect if it’s wired connected to a router (with DHCP server), if so, it will automatically set itself to “Access Point” (the GUI will show AP banner), this will take about 30~60 seconds. If no DHCP is detected through wired connection, it will set itself to “Bridge” (Station) mode (the GUI will show Bridge banner), this takes about 60~90 seconds.

In Auto mode, if no DHCP server is detected, it runs in Bridge mode, but if DHCP server is later detected, and this bridge is not connected to any Access Point, it will automatically switch to Access Point mode.

By default, the units run in DHCP client mode, that means AP and Bridge (if connected to the AP) will both get DHCP IPs from the router.

The device has a built-in web server, accessible through PC browsers.

If the PC is directly connected to the device, the PC can access http://www.mywifiext.net to access the device GUI.

If the PC is directly connected to the router, then the user needs to log in the router’s configuration GUI, finds out what DHCP IPs the devices (both AP and STA) get, then connect to their GUIs by browsing to their IP addresses.

LED Definition

There are 3 LEDs on the front of the unit, from top to bottom:

Power LED

Wireless Speed LED

WPS LED

Their behaviors are:

Power LED:

- flashing green(quick, 0.2 sec) > unit booting with normal firmware
- flashing green(slow, 0.8 sec) > unit ready, but no STA associated for AP, or STA not associated with AP
- Solid green: AP and STA associated.

Wireless Speed LED:

AP:

- Solid green: At least 1 client is associated with the AP
- OFF if AP has no STA associated with it.

STA:

- solid red when strength is very weak
- solid orange when speed is less than 50Mbps
- solid green when speed is more than 50Mbps
- OFF if STA is not associated with any AP

WPS LED:

Blinking: WPS in progress

3-way Switch on the back panel

Auto/Access Point/Station

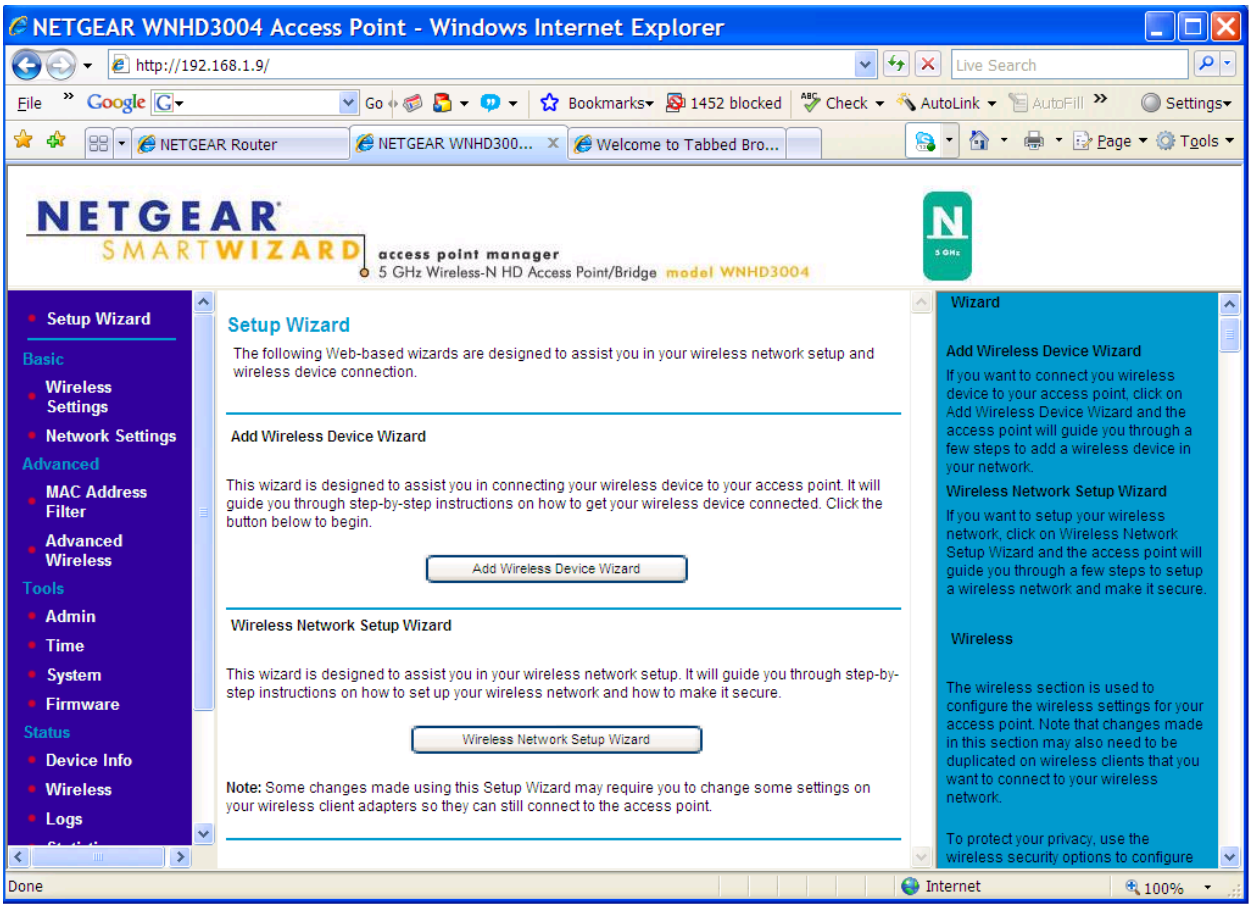
In Auto mode, it will set itself dynamically to AP or Station mode, depending on if it's wired to a DHCP server/Router.

If set to "Access Point" or "Station", the unit will only run always as AP or STA mode then.

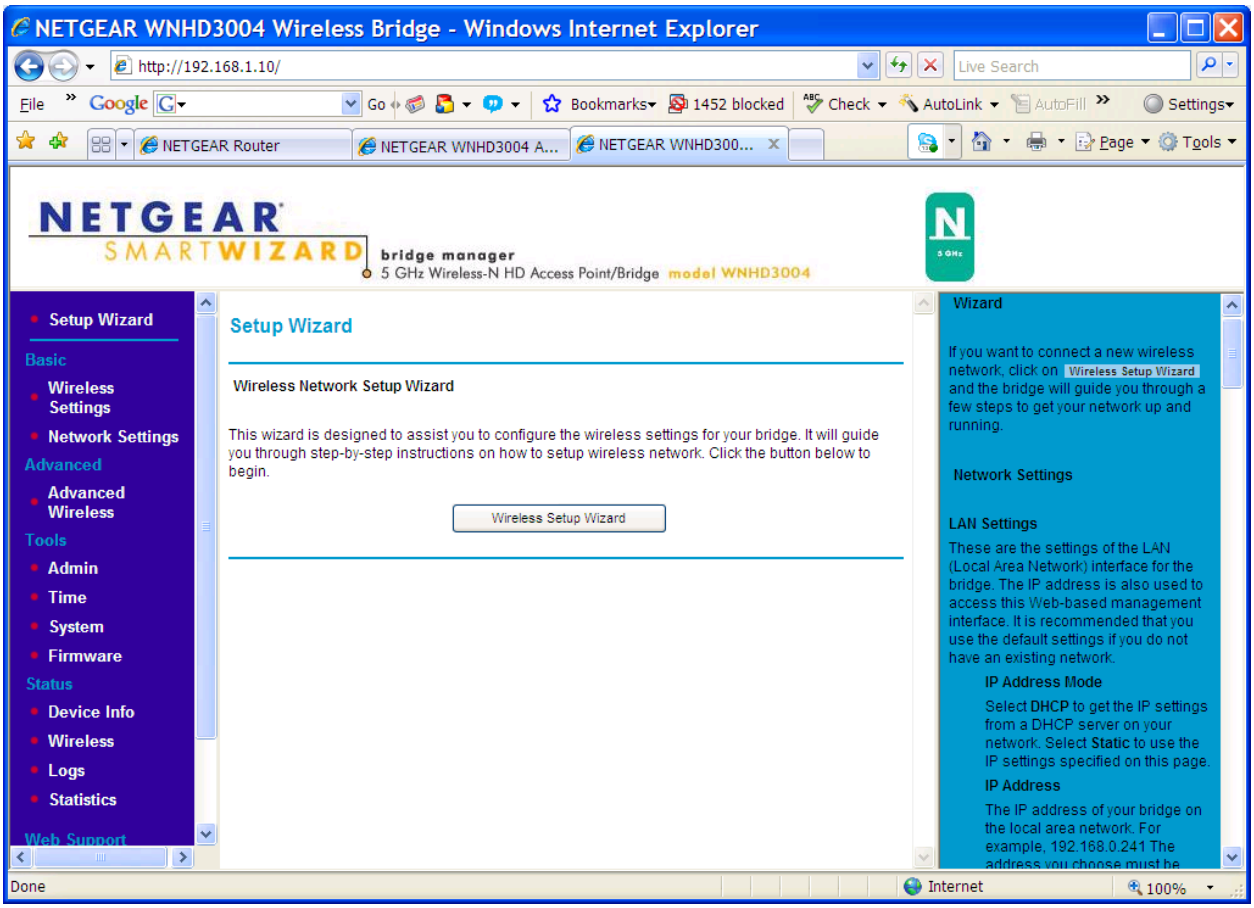
GUI Functions

"Setup Wizard"

On AP side, it includes two functions: Method to add a new wireless client (either WPS, or manually), and method to set AP's wireless settings.



"Setup Wizard" for STA/Bridge only has one function, to setup its wireless settings to match it on AP side, either through WPS, or through manual settings.



Basic Wireless Settings

This page allows the user to set the following parameters:

SSID: By default, it's "WNHD3004"

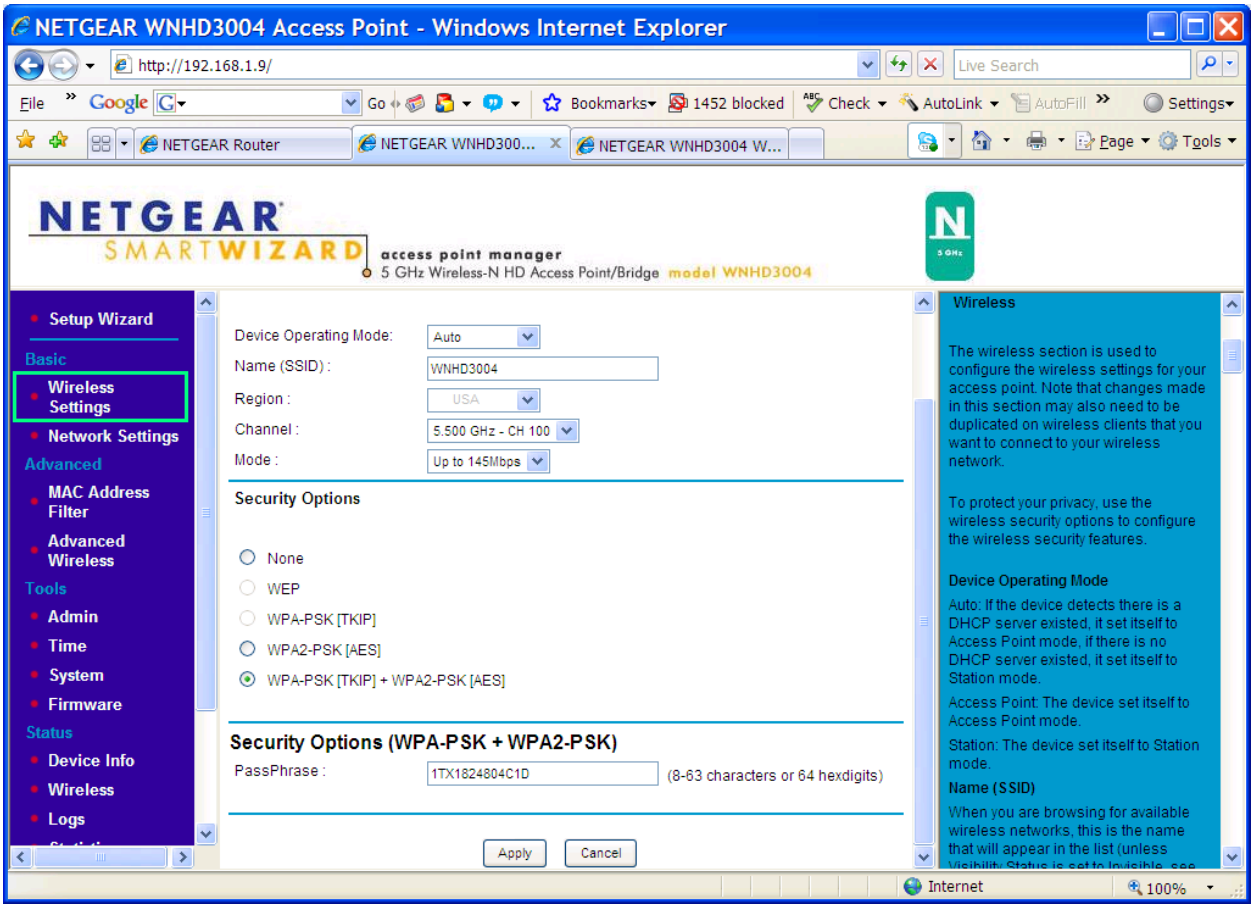
Region: USA is the region selected, user can't change it.

Channel: By default, it's "100".

Mode: By default, it's "Up to 145Mbps" (20MHz channel is required by WiFi alliance by default), the other modes are "Up to 54Mbps" (11a), and "Up to 300Mbps"(40MHz channel)

Security: By default, WPA/WPA2-PSK mixed mode is enabled.

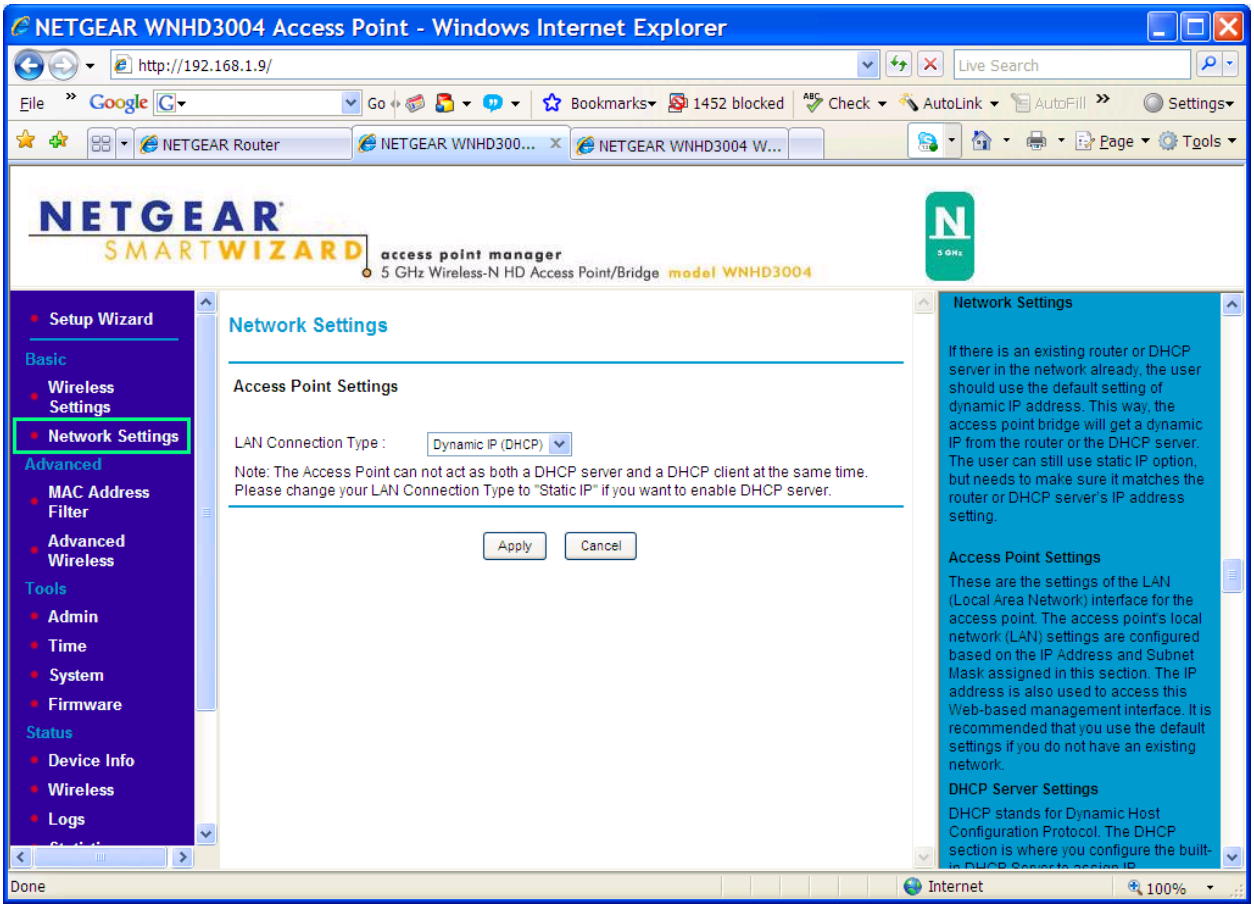
Default passphrase is a device Serial Number.



On the Bridge/STA side, the GUI looks very similar, except there is no channel selection but only “Auto”, it will scan all channels and associate with AP on the channel the AP is running.

Network Settings

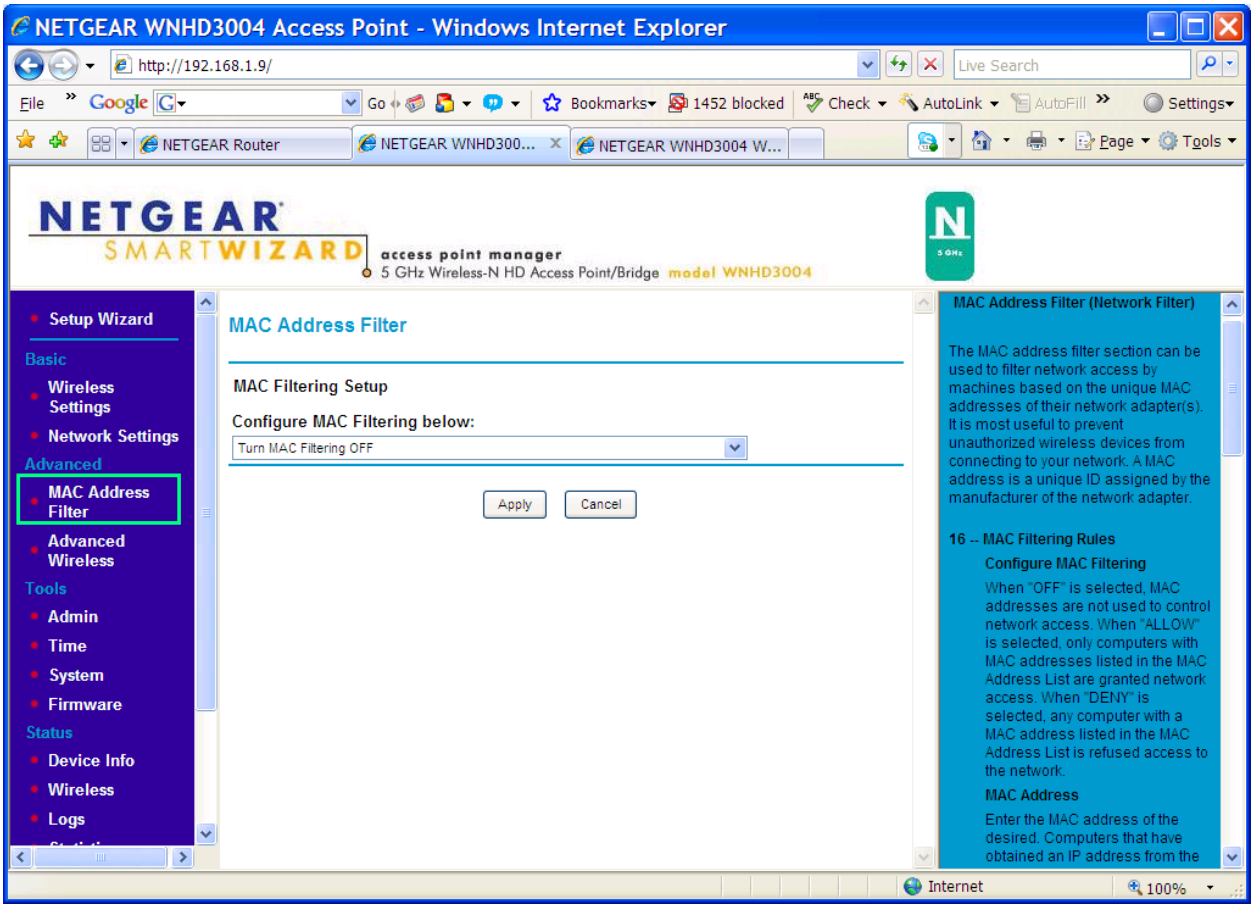
By default, the devices will run in “DHCP” mode, which means they will get DHCP IPs from the router.



You can change the default type to “Static” IP, by default, AP has default IP 192.168.1.240, and Bridge/STA has default IP 192.168.1.241, you can change the default IPs through this page (a factory default reset will reset them back to .240 and .241).

MAC Address Filtering

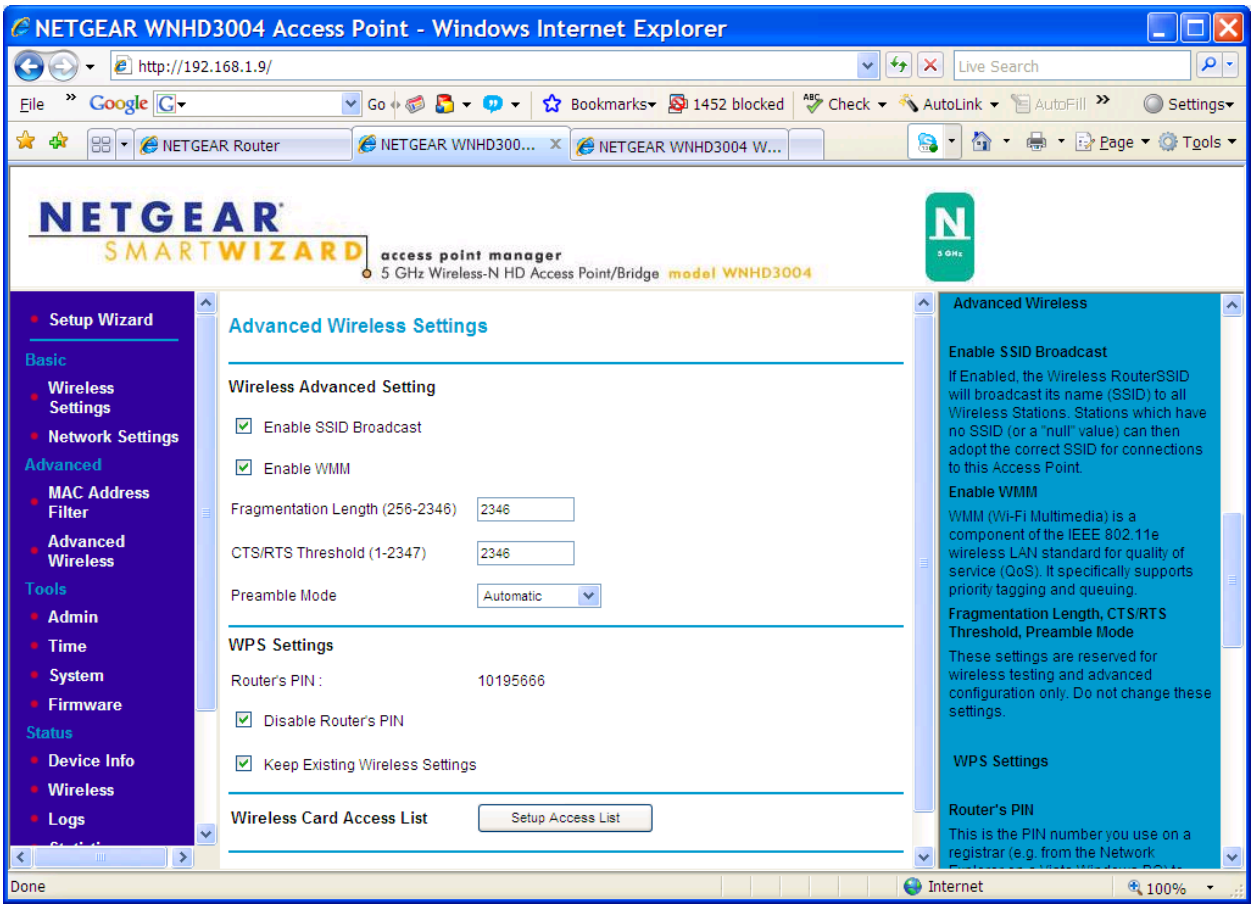
This function is only available on Access Point side, by default, it’s disabled. If enabled, it allows to filter out wireless clients if not on the allowed MAC list, for tightened security.



Advanced Wireless Settings

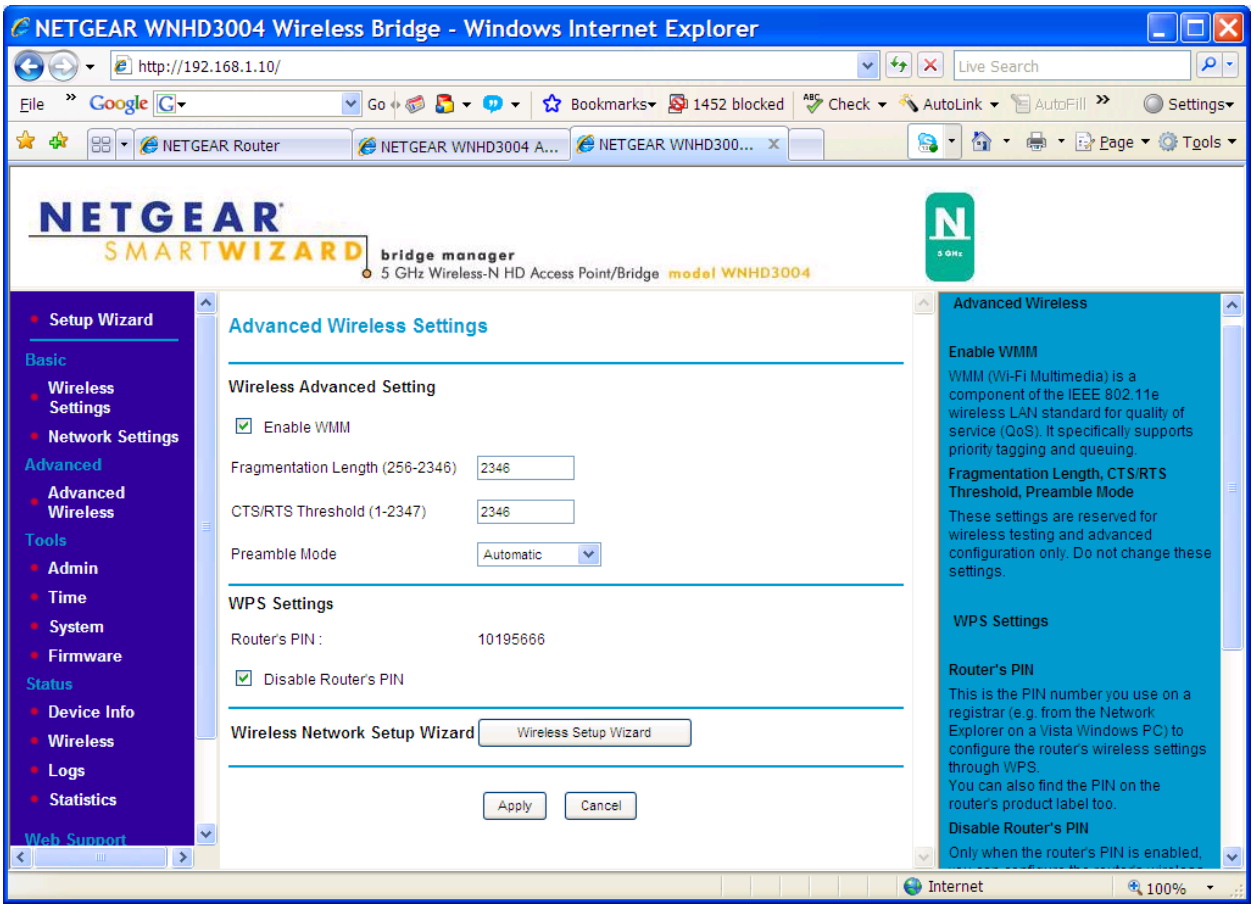
This page has the following options

- Enable SSID Broadcast
- Enable WMM
- WPS PIN: AP or STA's WPS PIN, that can be used by other wireless client or AP that support WPS PIN.
- "Keep Existing Wireless Settings": By default, this is enabled, that means the AP when running WPS, will simply use existing SSID and WPA/WPA2 Passphrase, without generating random SSID and Passphrase. If this is unchecked, AP will generate random SSID and 64-hex-digit Passphrase.
- "Wireless Access List" links to "MAC Address Filtering" page.



Bridge/STA side also has Advanced Wireless Settings page, it just does not have the 3 functions relevant to AP:

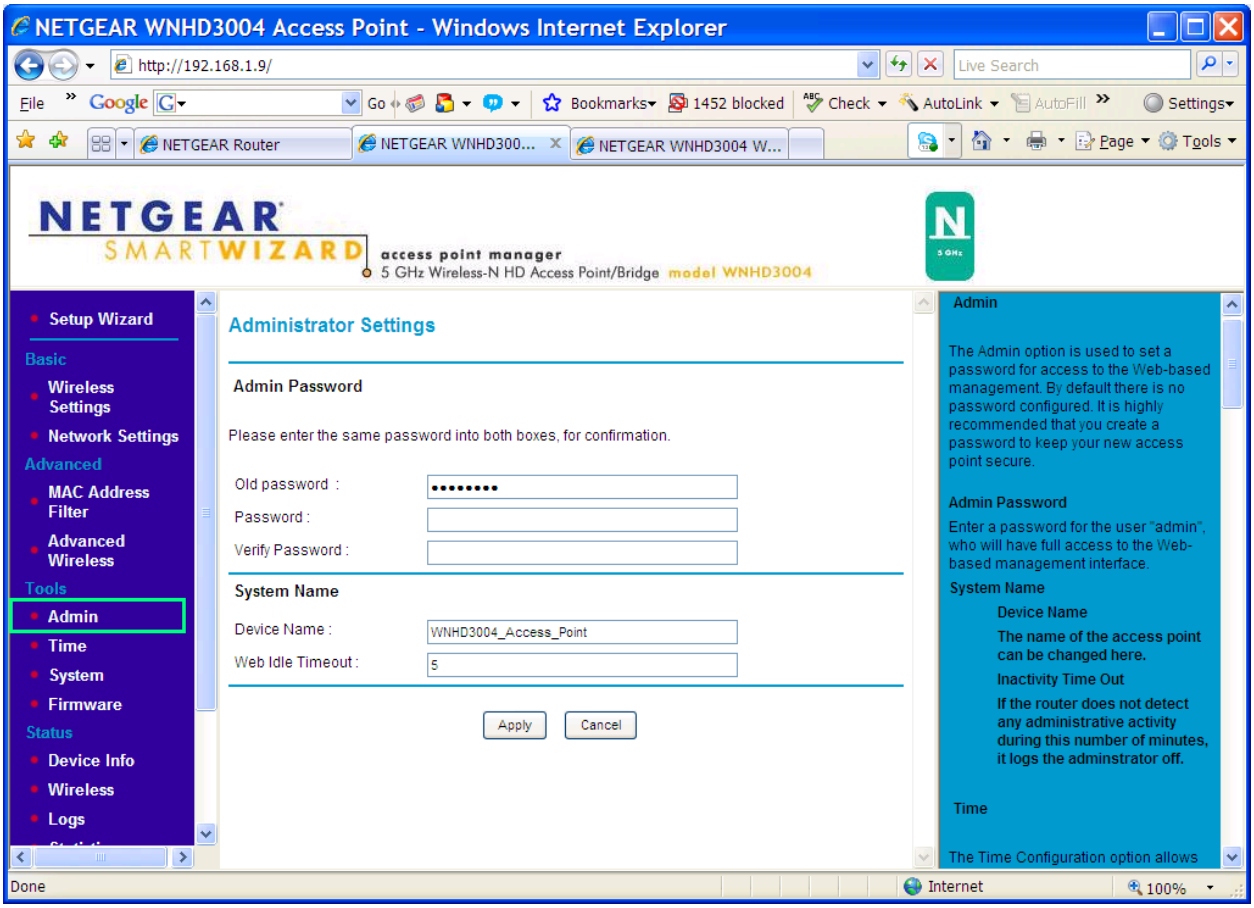
- No “SSID Broadcast” option
- No “Keep existing settings” option
- No “Wireless Access List”, instead, it adds a link to “Setup Wireless Wizard”



“Admin” page

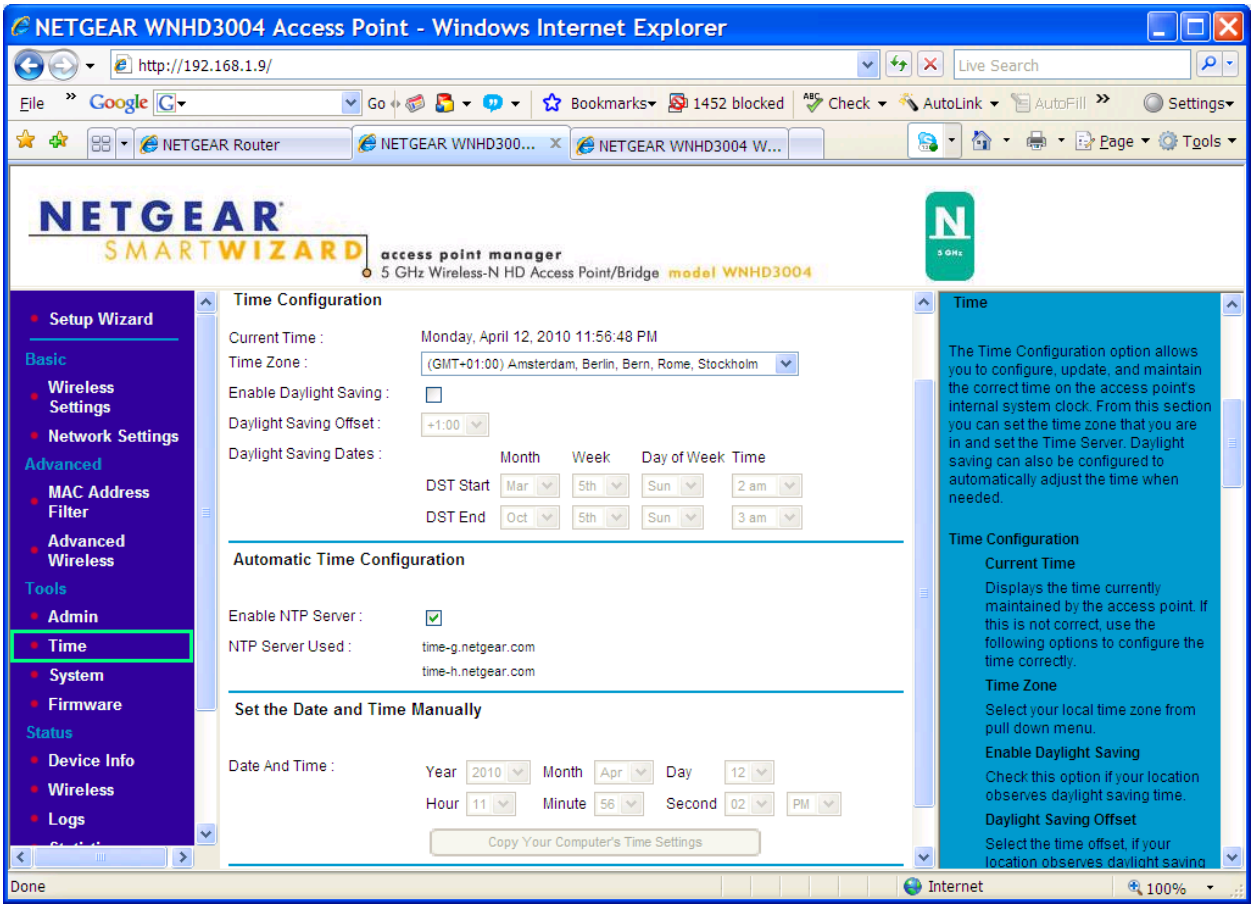
User can change web GUI login password (username “admin” is not changeable), and the login session time-out value (By default, it’s 5 minutes, meaning the GUI will auto log out the session if idle for 5 minutes)

The device name is used to show up in Vista/Win7 network map.



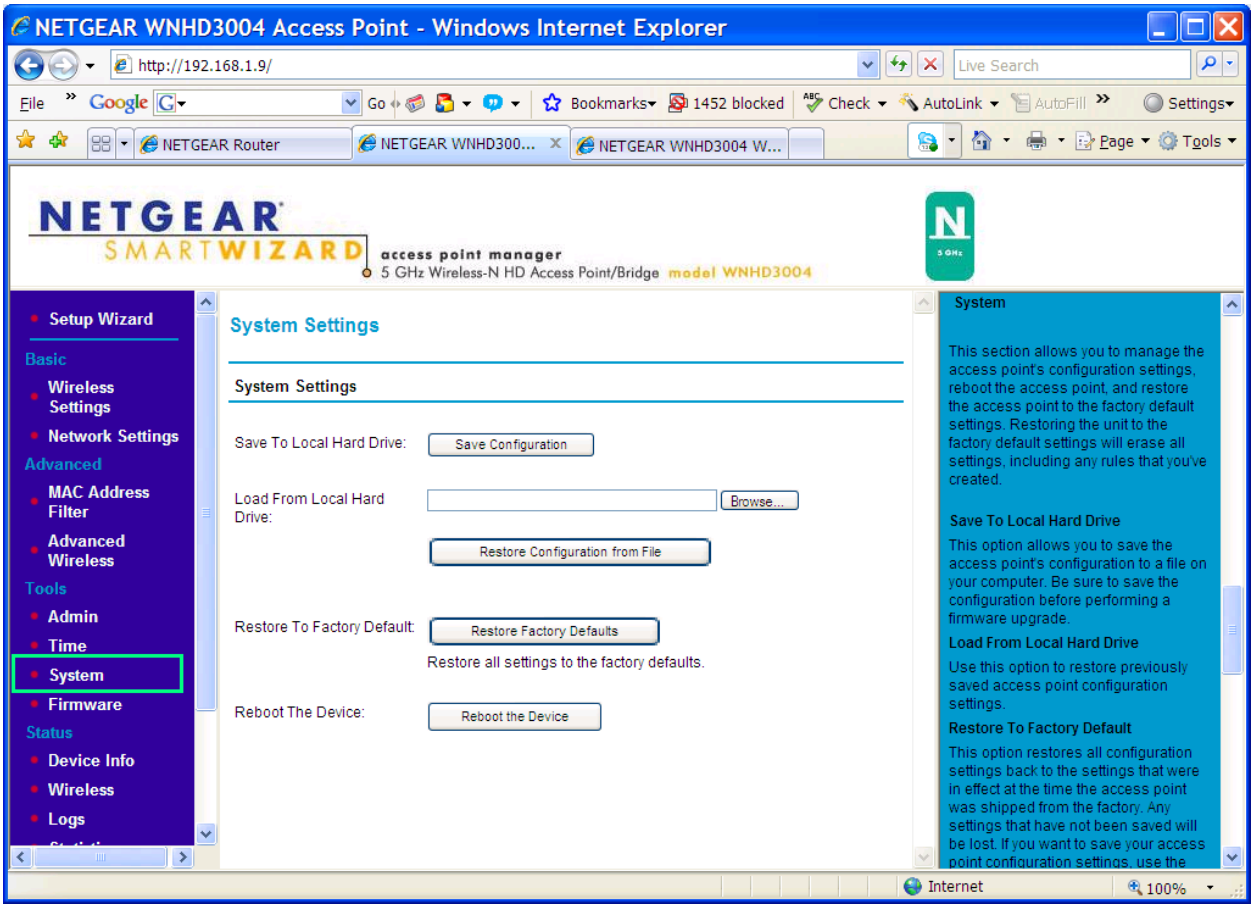
“Time” page

By default, the time zone is set to GMT+1, and uses NTP servers (NETGEAR servers)



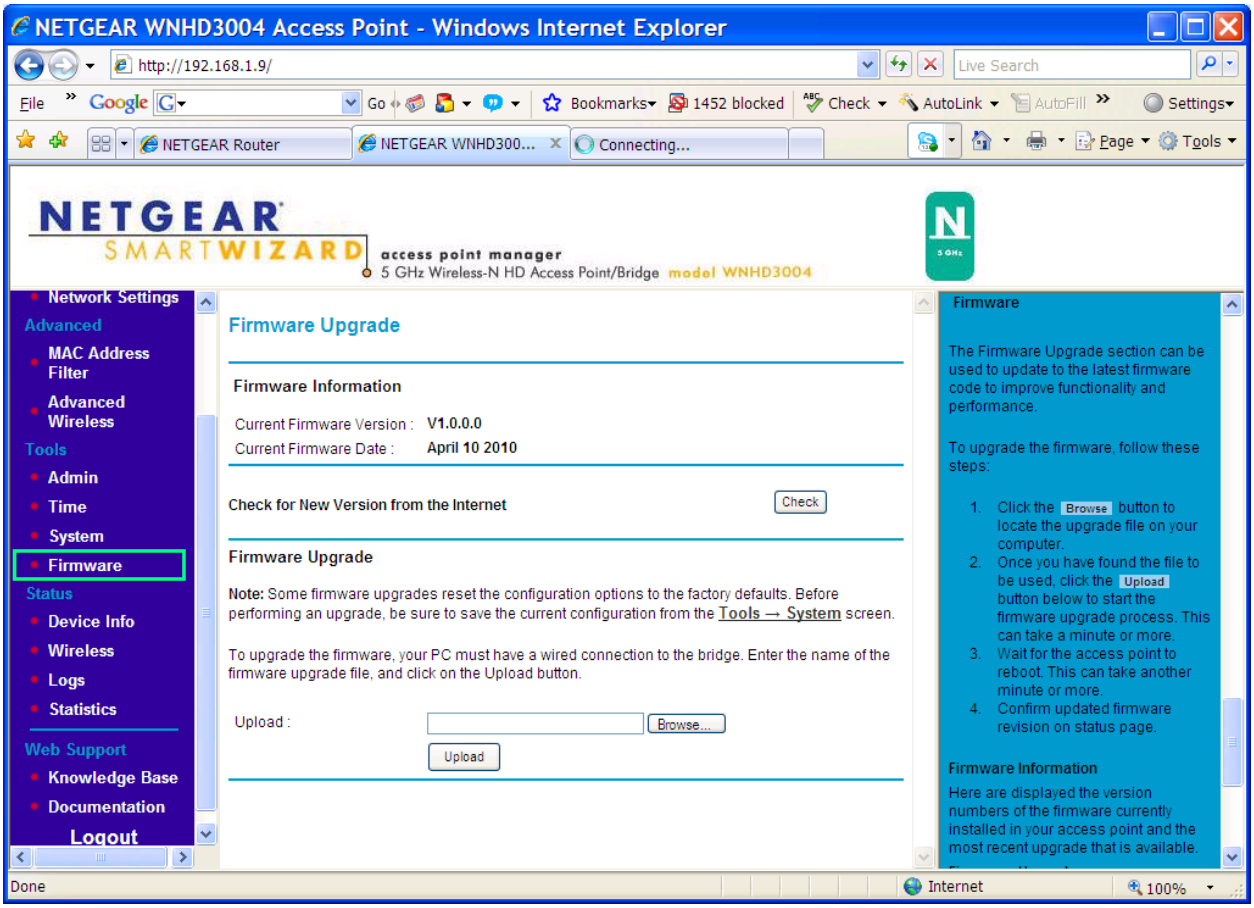
“System” page

In this page, user can save the configuration of the device, restore the configuration from a previously-saved file, reset device to factory default (Default to “Auto” mode, default to DHCP mode, default to default IPs, etc), or reboot the device.



“Firmware” page

In this page, user can find out the firmware version, released date, and can manually upload a downloaded firmware, or to auto-check if there is any newer firmware available. When click “Check”, the device connects to NETGEAR server to see if there is a newer firmware.



“Device Info” page

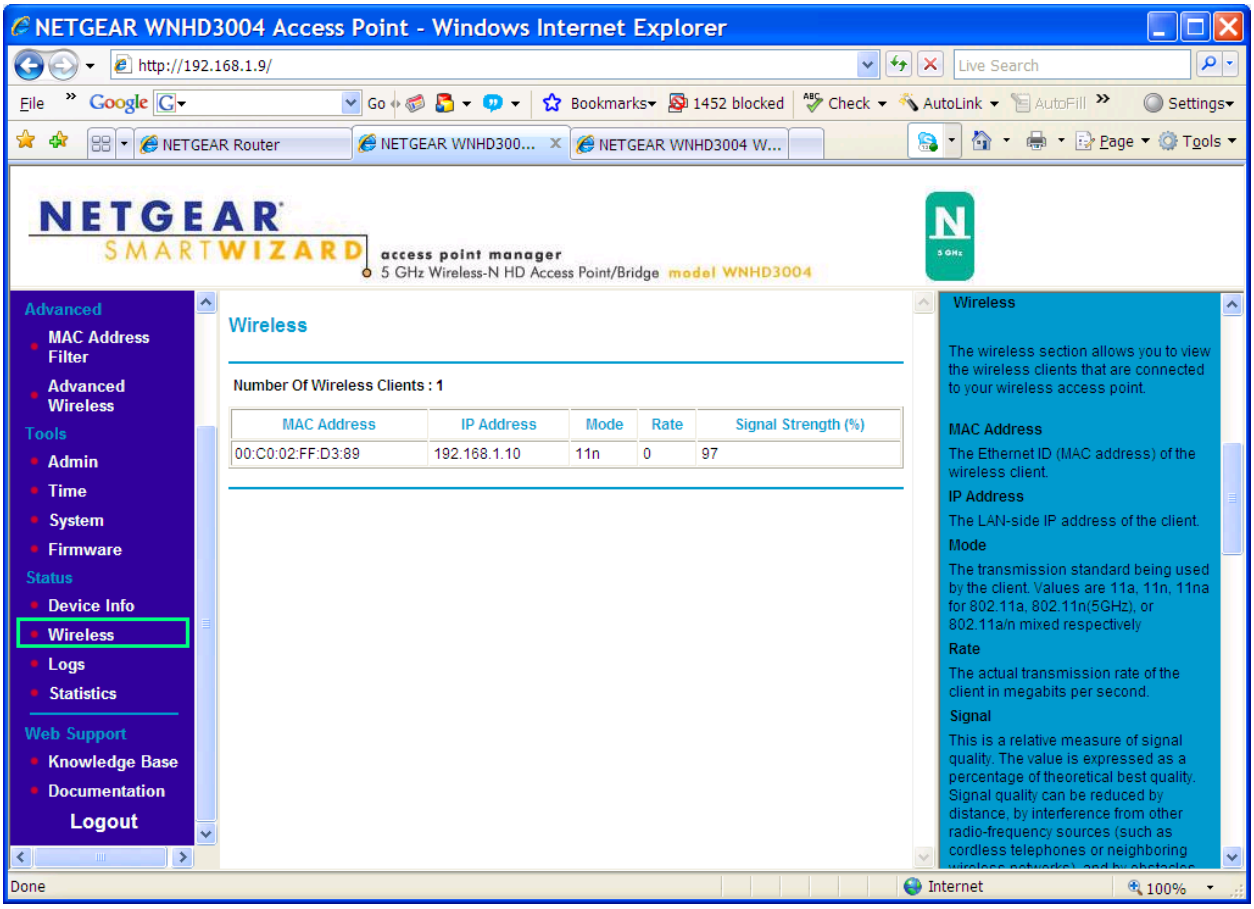
This page lists the following information:

- System Up time
- Firmware information
- IP information: Default IP, or the DHCP IP got from router
- Wireless LAN: On AP side, it lists the wireless settings the AP is running. On STA side, it will list whether it’s associated with any AP, if so, which AP, which channel, which mode.

“Wireless” page in Status category

On the AP side, this page lists the information of each client associated with this AP.

On the Bridge/Station side, this page lists the Access Points the Bridge/Station can see/scan.



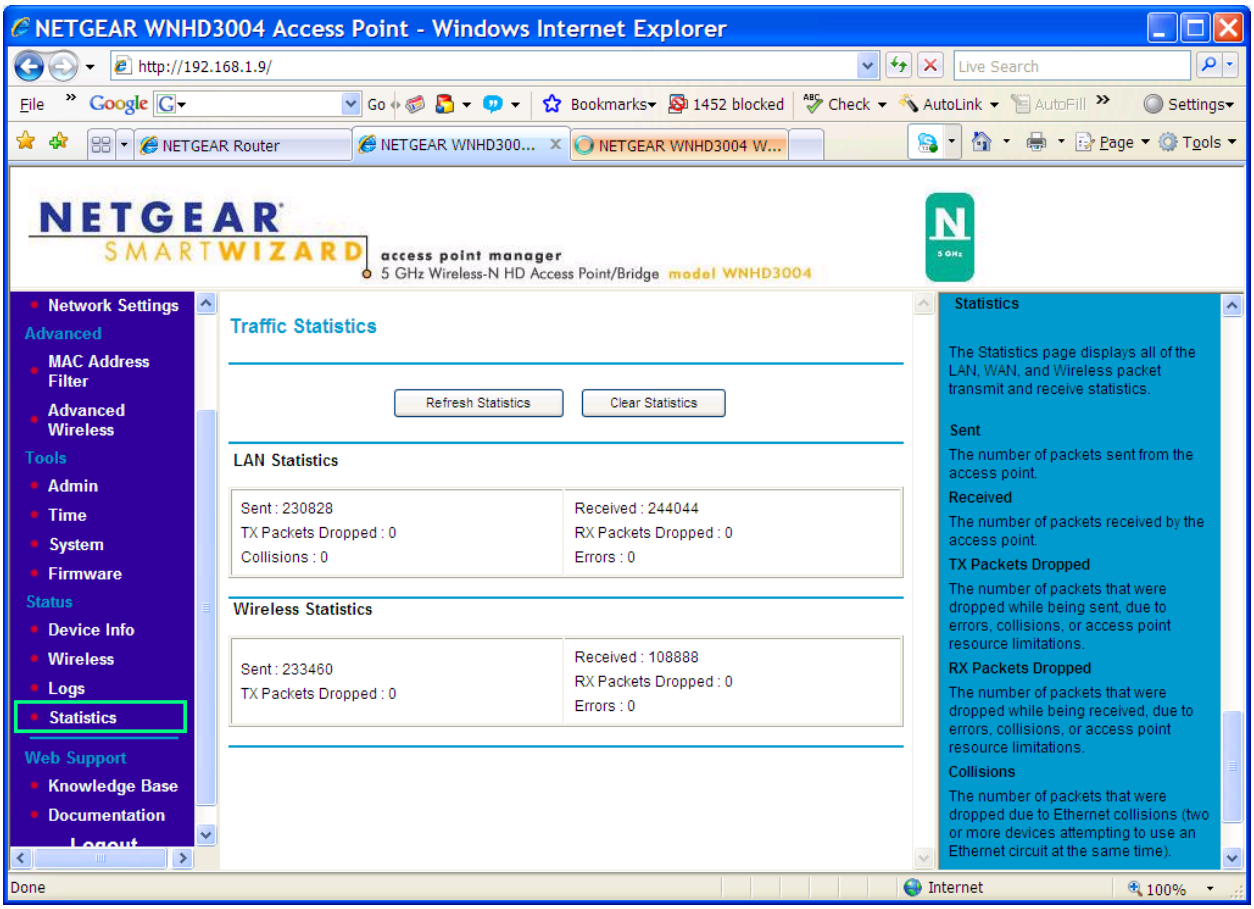
“Logs” page

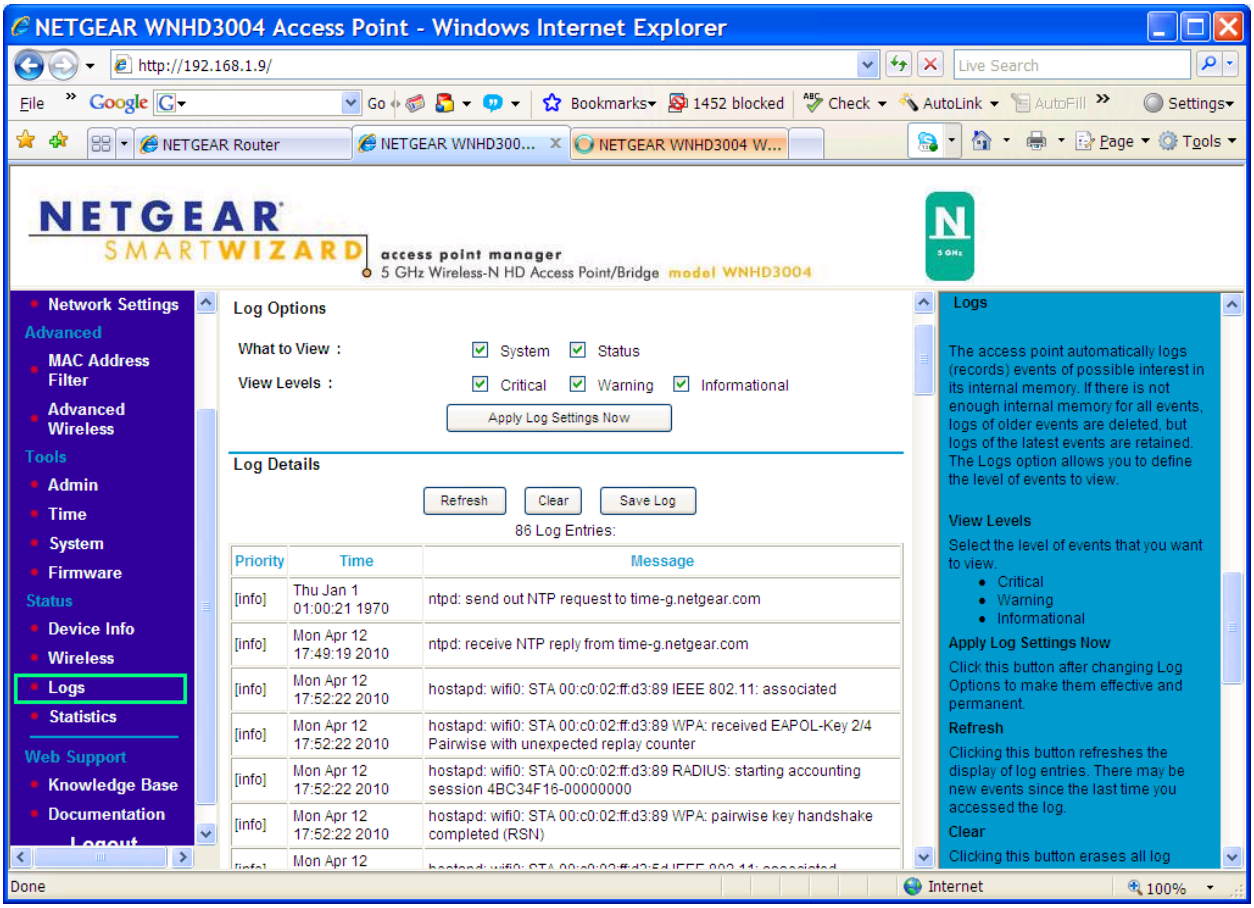
In the “Logs” page, user can find entries for events like NTP server contact, wireless client association/dissociation, etc.

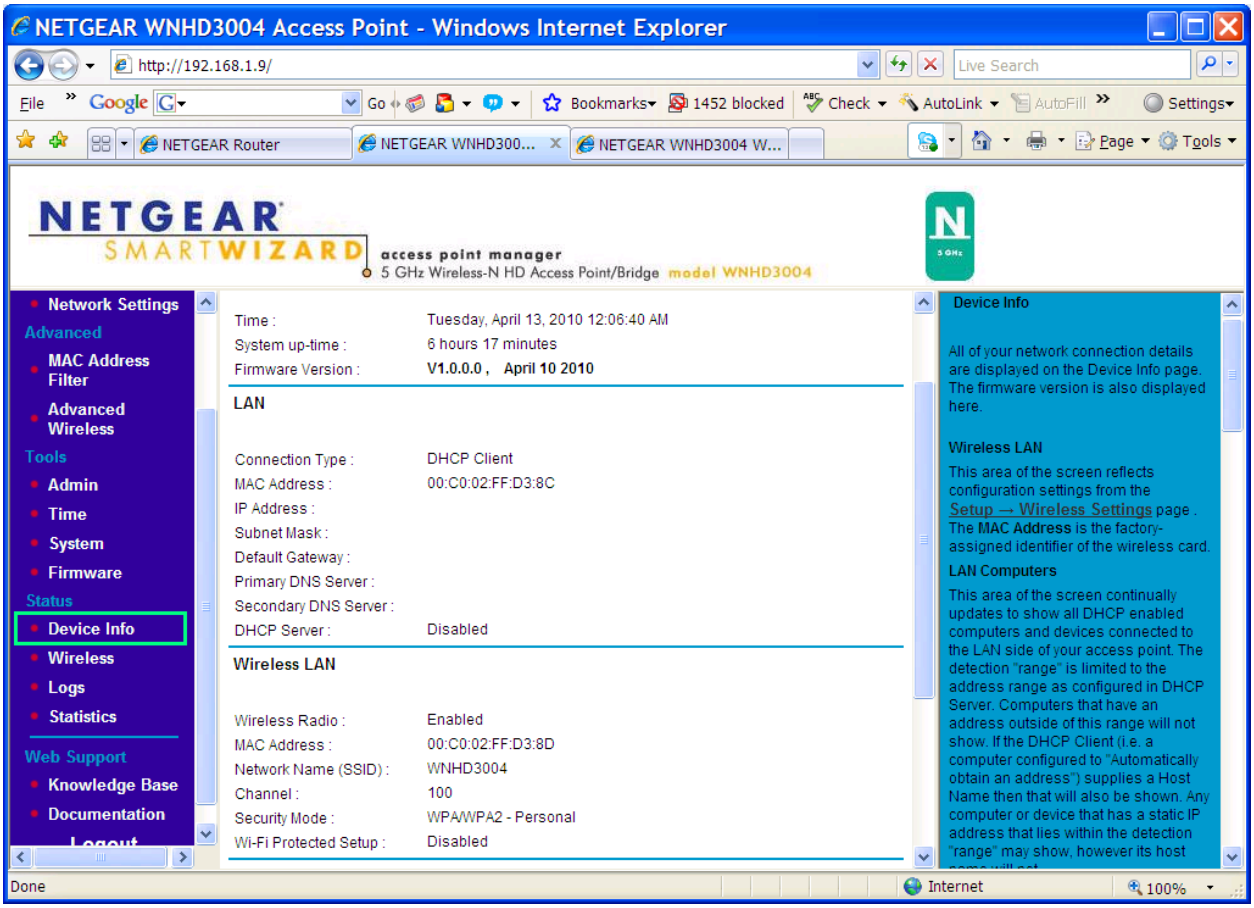
“Statistics” page

User can check the amount of packets sent by the device’s Ethernet interface or wireless interface. The “Errors”, “Dropped”, “Conflicts” number will be hintful if seeing connection issues.

“Knowledge Base” and **“Documentation”** are two links, the first one links to NETGEAR support web site, the 2nd one links to the online Reference Manual of the product (it will be published before the product hits the market.).







Troubleshooting Tips

Q: STAs get the default IP 192.168.1.241. What in case of more than 1 STA?
A: In case of more than 1 STA, all STAs will have default 192.168.1.241. If the AP is connected to a router, all STAs will get DHCP IPs from the router therefore there will be no IP conflict. The IP conflict only affects your access to the STA GUI, it does not impact traffic from devices behind the STAs, as they are just bridges.

Q: How does the access to the UI work in case that the devices are not connected to a DHCP server?
A: Through default IP. So in case you have two STAs or more, you need to manually change STAs to use different IPs. This is the same for Quantenna reference firmware you previously tested.

Appendix A Technical Specifications

This appendix provides factory default settings and technical specifications for the 5 GHz High-Performance Wireless-N HD Home Theater Adapter WNHD3004.

Table A-1. Wireless-N AccessPoint/Bridge Default Configuration Settings
Feature Default Setting

Features		Default Setting
Login		
	Login URL	http://www.mywifiext.net or http://www.mywifiext.com
	Login Name	admin
	Login Password	password
Local Network		
	Default LAN IP Address	AP mode: 192.168.1.240 Bridge mode: 192.168.1.241
	Subnet	255.255.255.0
	DHCP Server	disabled
	Time-zone	GMT-8 Pacific Time
	Time Zone Enabled for Daylight Saving Time	Enabled
Wireless		
	SSID	WNHD3004
	Security	WPA/WPA2-PSK
	Broadcast SSID	Enabled
	Transmission Speed	Auto
	Country/Region	United States in the U.S., otherwise varies by region
	RF Channel	Auto
	Operating Mode	802.11 n/a mixed mode
	Data Rate	Best
	Output Power	Full
Physical Specifications		
	Dimensions	175 x 130 x 35 mm(6.9 x 5.1 x 1.4 in)
	Weight	0.35 kg
Environmental Specifications		
	Operating temperature	0° to 40° C (32º to 104º F)
	Operating humidity	90% maximum relative humidity, non-condensing

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