

- Determine what subnet your Maryville VM is on.
255.255.224.0
- How many hosts (IP addresses) are potentially on this same subnet?
8
- Do you think this subnet is well designed? Would you make it larger or smaller? Explain your rationale.
I think the subnet is well designed. If I had to make any changes, I would make it smaller. I would divide the subnet into two subnets. Each subnet would manage 4 hosts. I believe smaller subnets are easier to manage and troubleshoot. I also think that smaller the subnet the better the network performs.
- Is there a way for you to determine if you are on a VLAN from your VM? Please explain.
I think you have to be logged into the VM administrator console to determine if you are on a VLAN.
- Is IPv6 enabled on the VM? If so, do you think it should be removed?
IPv6 is enabled by default.
- Does it serve a purpose in this environment? Does it introduce any vulnerabilities?
I think it should be removed because it compromises privacy by sending MAC addresses to websites users visit.

Chose E8400, then Version: 1.0.00. Log on with username: admin and password admin.
Under Wireless / Wireless Security, select WPA2 Enterprise.
What do you also need to be configured for WPA2 Enterprise to work?

A Radius server connection needs to be established in order for the WPA2 Enterprise to work. I would also need an encryption key.

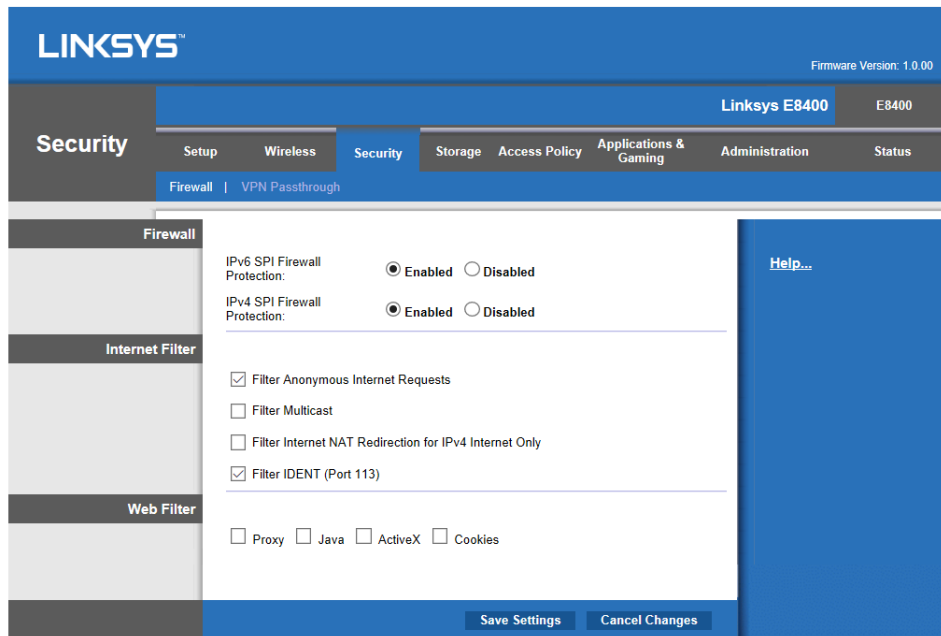
The screenshot shows the Linksys E8400 web interface. The top navigation bar includes 'Setup', 'Wireless', 'Security', 'Storage', 'Access Policy', 'Applications & Gaming', 'Administration', and 'Status'. The 'Wireless' tab is selected, and the 'Wireless Security' sub-tab is active. The page is titled '6 GHz Wireless Security' and '2.4 GHz Wireless Security'. Both sections show 'Security Mode' set to 'WPA2 Enterprise'. The 'RADIUS Server' field is empty, and the 'RADIUS Port' is set to '1812'. The 'Shared Key' field is empty. At the bottom, there are 'Save Settings' and 'Cancel Changes' buttons.

The screenshot shows the Linksys E8400 web interface. The top navigation bar includes 'Setup', 'Wireless', 'Security', 'Storage', 'Access Policy', 'Applications & Gaming', 'Administration', and 'Status'. The 'Wireless' tab is selected, and the 'Wi-Fi Protected Setup' sub-tab is active. The page is titled 'Wi-Fi Protected Setup™'. It shows 'WPS: Enabled' and 'Wi-Fi Protected Setup™' selected. Below this, it says 'Use one of following for each Wi-Fi Protected Setup™ supported device:'. There are three options: 1. If your client device has a Wi-Fi Protected Setup™ button, click or press that button and then click the button on the right. 2. If your client device has a Wi-Fi Protected Setup™ PIN number, enter that number here and then click 'Register'. 3. If your client asks for the Router's PIN number, enter this number 64483955 in your client device. Below these options, there are two sections: '5 GHz Wireless Settings' and '2.4 GHz Wireless Settings'. Both sections show 'Network Name (SSID): Linksys0011' and 'Security: Disabled'. At the bottom, there are 'Save Settings' and 'Cancel Changes' buttons.

Note: To be clear, WPS is the vulnerable system in this case, not WPA. If a network has WPS disabled (which they should, given the existence of tools such as this), it will be immune to the following attack.

Under Wireless / Basic Wireless Settings, if you want to maximize security would you enable or disable WPS? (Hint: read this article: <https://www.pwnieexpress.com/blog/wps-cracking-with-reaver>)

I would disable WPS because, "if a network has WPS disabled, it will be immune to attacks."



Under Security / Firewall:

What does the IPv4 SPI Firewall Protection do?

It keeps track of the state of network connections traveling across it. The firewall also provides protection against connection threats and Denial of Service threats.

Source: <https://www.linksys.com/us/support-article?articleNum=140652>

What does Filter IDENT (Port 113) do? Should you leave this enabled?

Its an Internet filter that keeps port 113 from being attacked by outside intruders. It should be enabled to prevent attacks.

Source: <https://www.linksys.com/in/support-article?articleNum=139913>

LINKSYS™

Firmware Version: 1.0.00

Administration

Linksys E8400

E8400

Setup

Wireless

Security

Storage

Access Policy

Applications & Gaming

Administration

Status

Management

Log

Diagnostics

Factory Defaults

Firmware Upgrade

Management

Router Access

Local Management Access

Remote Management Access

Advanced features

UPnP

Back Up and Restore

Router Password:

Re-Enter to Confirm:

Access via:

Access via Wireless:

Remote Management:

Access via:

Remote Upgrade:

Allowed Remote IP Address:

Remote Management Port:

SIP ALG:

UPnP:

Allow Users to Configure:

Allow Users to Disable Internet Access:

Back Up Configuration

Restore Configuration

Help...

Save Settings

Cancel Changes

Should UPnP be enabled or disabled for maximum security?

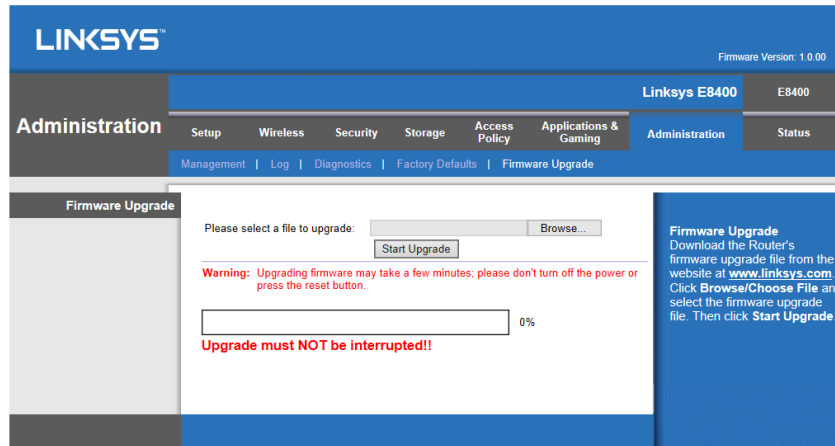
Universal Plug N Play was created to open ports for devices that connect to the network and need access to ports. This should be disabled because it gives hackers easy access to open ports.

Where do you configure this?

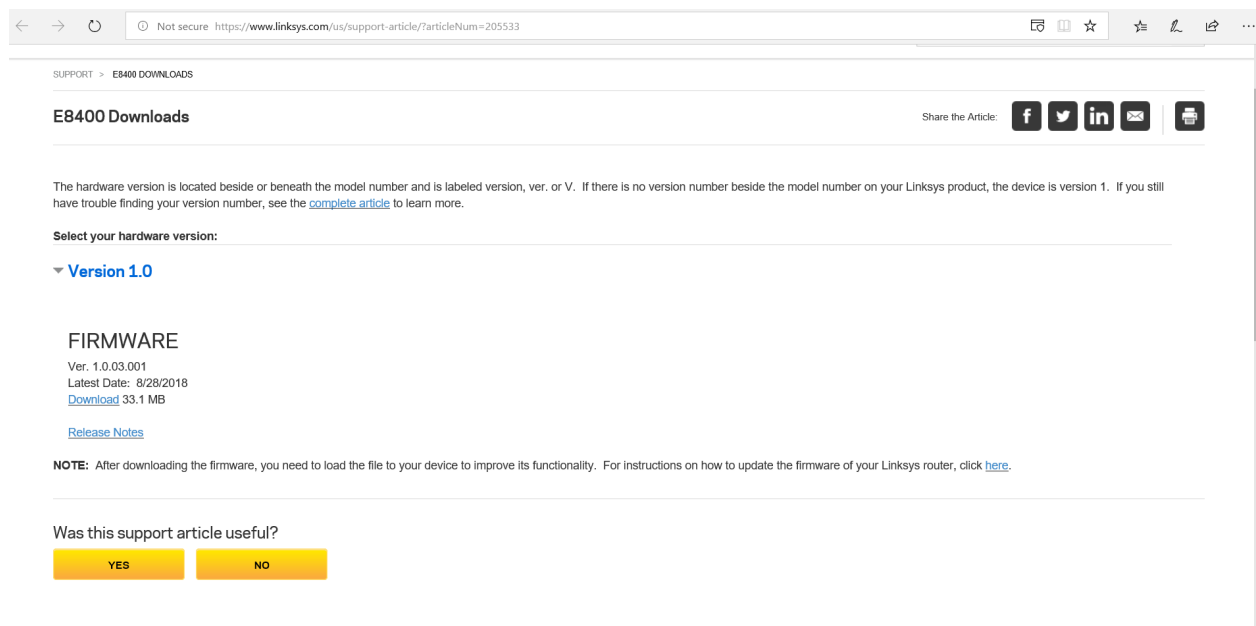
Go to Administration and it's located under the management tab.

If the firmware is outdated for the router and needs updating, where would you do this?

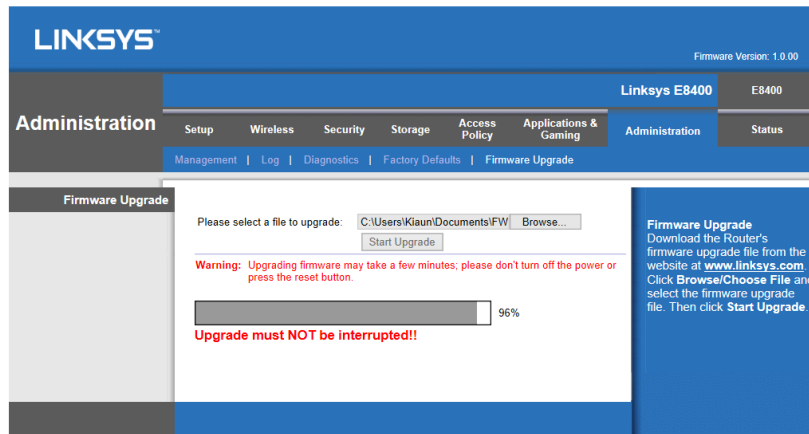
Administration > Firmware Upgrade



Find the latest firmware version for the E8400 model - what is the latest version?



Update the router



Upgrade is successful.

Continue



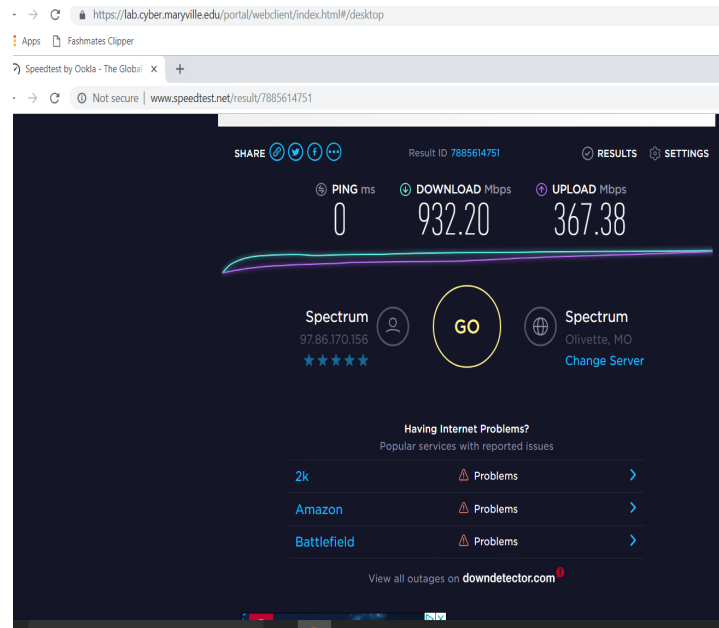
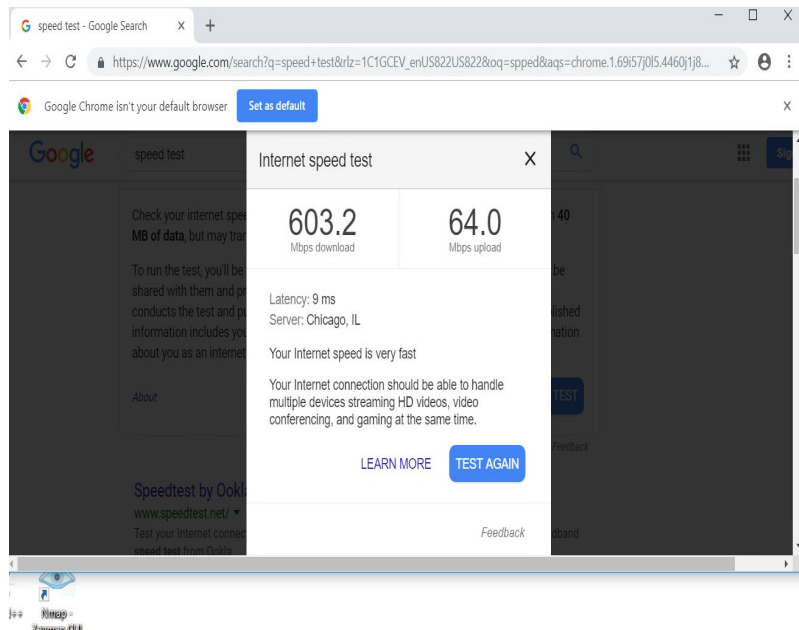
See if the version number changes in the upper right. Does it?

No it doesn't change.

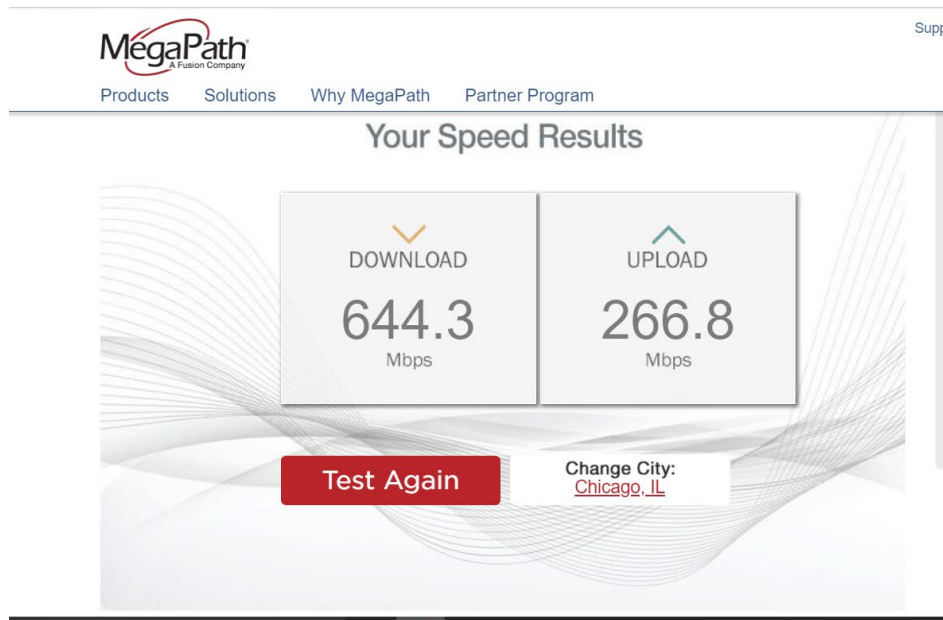
Google - just type "speed test" and click the "Run Speed Test" button.

What speeds download and upload does Google show?
603.2 Mbps download and 64.0 Mbps upload.

speedtest.net. What speeds download and upload does Speedtest show?
932.20 Mbps download and 367.38 Mbps Upload



speakeasy.net/speedtest What speeds download and upload does Speakeasy show?
644.3 Mbps Download and 266.8 Mbps Upload.



Why does each of these sites show different results? Or, do you think they are close enough to be considered the same? Explain.

I think the results are different because each site uses a different method of testing.

Internet Health Test

74%
85.53 MBPS

Location: St Louis, MO

Speed

Steps	Speed
Step 1	
Step 2	
Step 3	
Step 4	
Step 5	

Start Test

Internet Health Test

Finishing the test! Now take more action:

Internet Service Providers like Comcast, Verizon, and AT&T not throttle the Internet:

TAKE ACTION

Spread the word about the Internet Health test with your friends:

SHARE ON FACEBOOK SHARE ON TWITTER

Internet Health Test

40%
178.78 MBPS

Location: St Louis, MO

Speed

Steps	Speed
Step 1	254.69 Mbps
Step 2	728.97 Mbps
Step 3	
Step 4	
Step 5	

Test Again

Internet Health Test

Finishing the test

Internet Service Providers like Comcast, Verizon, and AT&T not throttle the Internet:

Spread the word about the Internet Health test with your friends:

The image displays two screenshots of the Internet Health Test website, showing the progress of a speed test.

Top Screenshot (11% Complete):

- Location:** St Louis. MO
- Speed Test Results:**
 - Step 1: 254.69 Mbps
 - Step 2: 728.97 Mbps
 - Step 3: 659.76 Mbps
 - Step 4: (Yellow bar, download icon)
 - Step 5: (Grey bar, refresh icon)
- Test Again** button.
- Questions or Concerns:** help@internethealthtest.org

Bottom Screenshot (100% Complete):

- Location:** St Louis. MO
- Test Again** button.
- Your Results:**
 - Average Speed:** 528.98 Mbps
- Share** section with links for Tweet, Share, Mail, and a Link field.
- Questions or Concerns:** help@internethealthtest.org

Both screenshots include a footer with the text: "Fight for the Future, Demand Progress, or Free Press will email you with campaign updates. [Privacy Policy](#)" and "Spread the word about the Internet Health test with your friends:".

Based on the results, does it appear you are being throttled? (Hint: you need to read "About the Test" to answer)

No, I don't think I'm being throttled because it says average speed. I would have concerns if the results came back as low or below average.

Do you think this will change in the future with the removal of net neutrality?

Yes, I think it will change because I believe telecommunications companies are going to utilize their control over what we view on the Internet.