

A Router security risk and how to fix it

**Hint: Change your Router Admin Web
page default password now!**

A Learn in 30 presentation

By John Krout

For PATACS+OPCUG

September 16, 2023

Agenda

- What is a router Admin Web page?
- Understanding the security risk
- Can your router's Admin Web page be accessed from outside your LAN?
- What you can do to prevent access to your Router's Admin Web page by mischievous outsiders
- *** This presentation assumes you bought, own, and set up your router. If your child or grandchild set it up, then consult them. If you rent a router from your Internet Service Provider (ISP), then call ISP Customer Service. ***

**What is a router's
Admin Web page?**

The router Admin Web pages

Every router has a built-in Web server capability, to enable customizing your router. The Web pages are useful in many ways:

- Change the WiFi password and WiFi SSID (network name) for WiFi communication
- Add Network Attached Storage (NAS) to the router, and assign an ID and password for the NAS
- Change the LAN IP address of your router
- Change the Admin Web Page password for your router

The router Admin Web home page

- The web page address (URL) of the Admin Web home page is typically **192.168.1.1**, the default **LAN IP address** of the router.
- The **home page** requires you to enter a password for access to the Admin Web pages.
- The router's default Admin Web password might be printed on a label applied to the router.
- For the vast majority of the routers sold in the US, that default password is **admin**.

Example: Linksys MR8300 Router



192.168.1.1/ui/1.0.99.210186/dynamic/velop/blocking.html#m

Keep your Wi-Fi handy

The Linksys app puts the ability to manage your Wi-Fi at your fingertips at all times. You'll need it if you decide to add nodes to improve coverage and reliability.

Download on the App Store

GET IT ON Google Play



[Continue to Linksys Smart Wi-Fi](#)

Example: Linksys MR8300 Router

192.168.1.1/ui/1.0.99.210186/dynamic/login.html

Linksys Smart Wi-Fi Help

Sign In

Log in with your router password.

Access Router

[Show hint](#)

[Sign In](#) [Reset password](#)

English (United States) ▾

To login with your Linksys Smart Wi-Fi account, [click here](#).

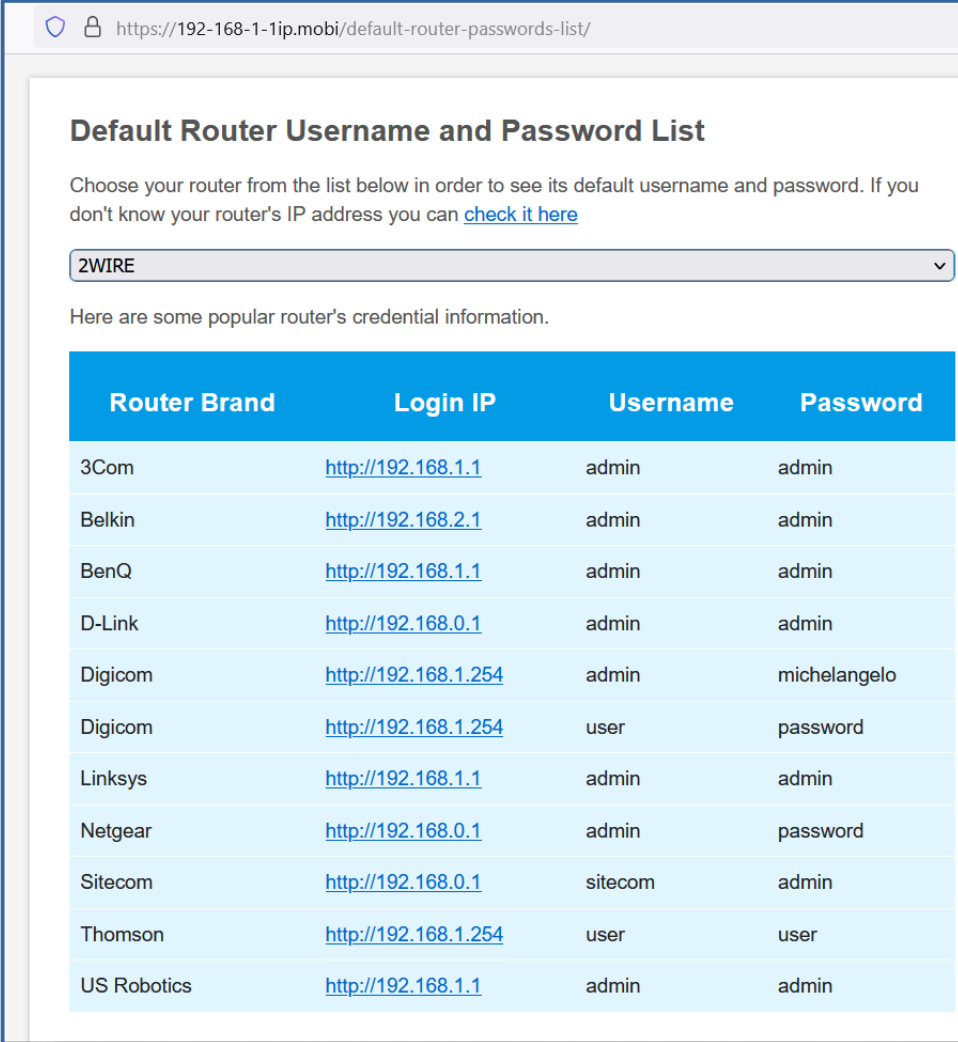
We recommend using the Linksys app

Put the power to view and manage your Wi-Fi in your pocket. Control on the go from anywhere, anytime.

Understanding the Security Risk

Router admin page default access credentials

- Defaults for each router brand are posted on the Web for all to see
- For almost all routers sold in the US, the default ID+ PW are **admin** and **admin**
- See for instance **192-1681-1-ip.mobi**



https://192-168-1-1ip.mobi/default-router-passwords-list/

Default Router Username and Password List

Choose your router from the list below in order to see its default username and password. If you don't know your router's IP address you can [check it here](#)

2WIRE

Here are some popular router's credential information.

Router Brand	Login IP	Username	Password
3Com	http://192.168.1.1	admin	admin
Belkin	http://192.168.2.1	admin	admin
BenQ	http://192.168.1.1	admin	admin
D-Link	http://192.168.0.1	admin	admin
Digicom	http://192.168.1.254	admin	micelangelo
Digicom	http://192.168.1.254	user	password
Linksys	http://192.168.1.1	admin	admin
Netgear	http://192.168.0.1	admin	password
Sitecom	http://192.168.0.1	sitecom	admin
Thomson	http://192.168.1.254	user	user
US Robotics	http://192.168.1.1	admin	admin

Every router has TWO IP addresses

- Your computer, phone and other devices use the router's LAN IP address to communicate with each other and, through your router, the outside world of Web pages and other Internet services
- Your router has a second IP address, called an **Internet IP address**, assigned by your **Internet Service Provider (ISP)**.
- Your router tells the outside world to send responses to that Internet IP address.
- Every response from the outside world includes your router's internet IP address as the response destination.

Your router's Internet IP address

- It is easy to find out the Internet IP address of your router
- The Admin Web Page itself may make that address visible.
- The phrases return address and Internet IP address are used as synonyms in this presentation.
- Every use of an app or application to request access to info from the outside world includes your router's Internet IP address, so that the server on the outside can send its response to you via your router.

Find your router's Internet IP address

- Many web pages will echo that return address back to your browser,
- You can read it and use it.
- Later in this presentation, I will suggest a valuable use of that IP address.

An example:

whatismyipaddress.com

The screenshot shows the homepage of whatismyipaddress.com. The browser address bar displays the URL https://whatismyipaddress.com. The website header includes the logo, a search bar with the placeholder text "Enter Keywords or IP Address...", and navigation links for ABOUT, PRESS, BLOG, and SUPPORT. Below the header is a menu with options: MY IP, IP LOOKUP, HIDE MY IP, VPNS, TOOLS, and LEARN.

The main content area displays the following information:

- My IP Address is:
- IPv6: [2600:4040:264a:9800:3486:fd4c:f958:8e7a](#)
- IPv4: [96.255.234.188](#) (circled in red)

Below the IP addresses, there is a section for "My IP Information:" with the following details:

- ISP: Verizon Business
- City: Ashburn
- Region: Virginia

A red button labeled "HIDE MY IP ADDRESS NOW" is positioned to the right of the IP information. A warning message states: "Your location may be exposed!".

On the right side, a map shows the location of the IP address. A tooltip over the map reads: "Click for more details about 2600:4040:264a:9800:3486:fd4c:f958:8e7a". The map shows the location is in the Washington D.C. area, near the border of Pennsylvania, Delaware, and Virginia. At the bottom right of the map area, it says "Location not accurate?".

A Fortunate Accident

- I accidentally used my router's Internet IP address in my browser as a Web page address.
- The router's Admin Web home page appeared, asking for my Admin web page password!
- I learned that my router allows me to access the router Admin web page from anywhere outside my home.

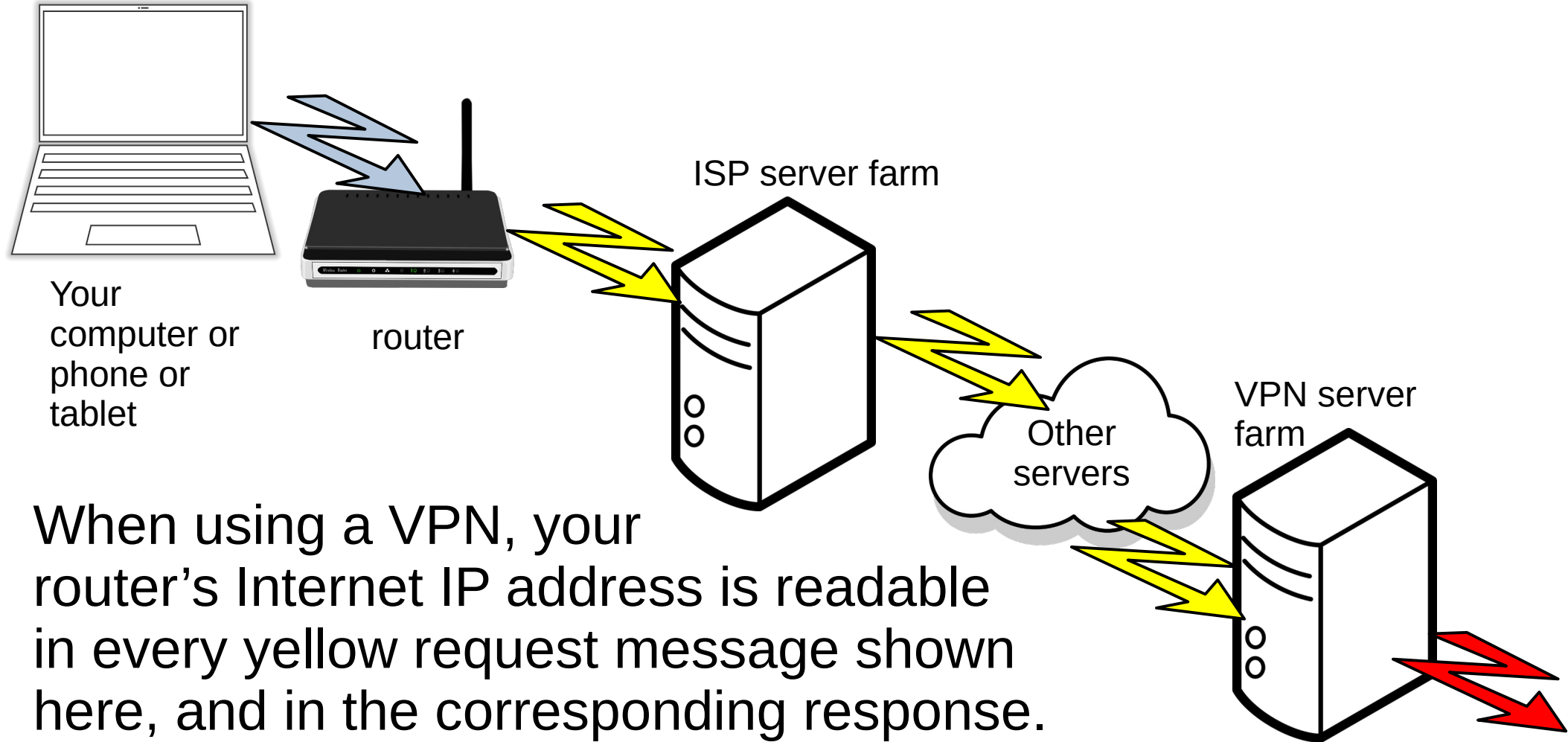
Can others discover your router's Internet IP address?

- YES!
- Your ISP assigns your return address and keeps track of it.
- Also, requests typically flow through many servers on the way to the Web server, email server, weather server, and so forth. Same is typical for the responses.
- Any bored, underpaid server administrator can install a logging application to capture return addresses.

Does a Virtual Private Network (VPN) prevent Internet IP address capture?

- NOT COMPLETELY!
- VPN servers typically have all logging turned off, so that the return address does not show up in any system logs.
- **The return address of *the VPN server*** appears in every request through that server to a Web server or other Internet service on your behalf.
- In the communications path between your device and the VPN server, **the return address is not encrypted**. That path includes, at a minimum, your ISP.

Internet path to VPN server farm



Risk in a Nutshell

- It is possible for outsiders to discover your router's Internet IP address
- Outsiders can find your router's Admin Web page default password.
- If your router, like my Linksys router, allows admin from outside, and **if you still use the default admin web page password**, then an outsider could log into that Admin Web page and change your router settings

Risk in a Nutshell

Using your router's Admin Web page, what could an outside bad apple change to cause mischief?

- Change the WiFi password and WiFi SSID (network name) for WiFi communication
- Change an ID and password for router-connected NAS
- Change the LAN IP address of your router
- Change the Admin Web Page login credentials for your router, so you cannot change anything.

Can YOUR router's Admin Web page be accessed from outside your LAN?

Learn your router's Internet IP address

- Your Router's Admin Web page may show that IP address to you.
- Many web pages exist solely to echo your router's return address back to you, so you can see it.
- Try [whatismyipaddress.com](https://www.whatismyipaddress.com)

Use that IP address as a URL in your browser

- If your router's Admin Web page appears in your browser, then you definitely have access to it from outside your LAN.
- So does any outsider who learns your Internet IP address.
- They need the router admin web page login credentials.
- As we saw earlier, the ***default credentials*** are easily found on the Web

**What you can do to PREVENT
access to your Router's Admin
Web page by mischievous
outsiders**

Change your router's Admin Web home page password

- Use the Admin Web page to change to a **unique password**.
- If you find it necessary to use that Admin web page while not connected to your LAN, you can do that using the Internet IP address of your router.
- If your router Admin Web pages gives you the option, turn off access to the Admin Web page from outside your LAN.
- My Linksys router does not provide that option.

Two different lists of the ten most commonly used passwords

Top 10 most common passwords

- Password.
- 123456.
- 123456789.
- 12345678.
- 1234567.
- Password1.
- 12345.
- 1234567890.

[More items...](#) • Sep 1, 2022



Dashlane

<https://www.dashlane.com> › blog › ten-most-common...

Worldwide, the most common passwords are:

- 123456.
- password.
- 123456789.
- 12345.
- 12345678.
- qwerty.
- 1234567.
- 111111.

[More items...](#) • Jun 14, 2023



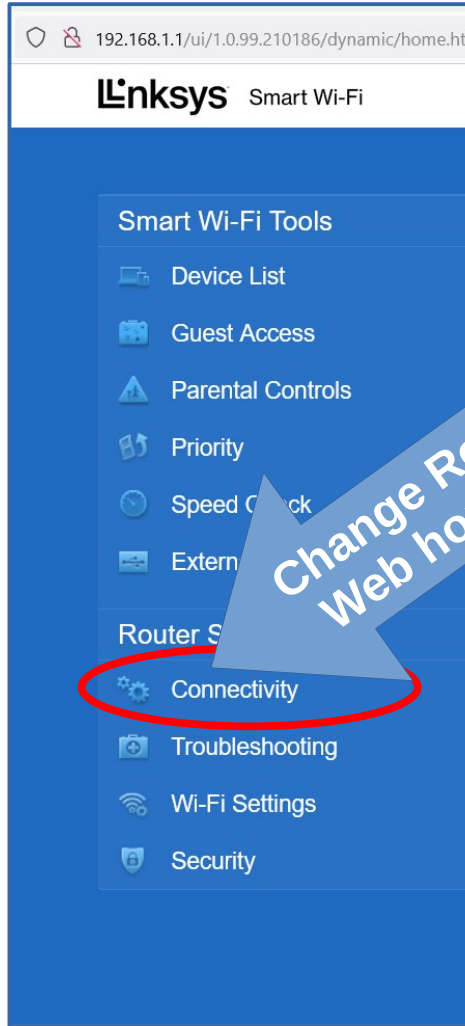
Becker's Hospital Review

<https://www.beckershospitalreview.com> › cybersecurity ⋮

How to change the Admin Web page PW in a recent Linksys router

- I do not own every router ever sold.
- For that reason, I cannot show you how to do so for every router ever sold.
- I can show you how for my Linksys MR8300 router.
- Most other recent Linksys routers use a similar Graphical User Interface (GUI)

Example: Linksys MR8300 Router



192.168.1.1/ui/1.0.99.210186/dynamic/home.ht

Linksys Smart Wi-Fi

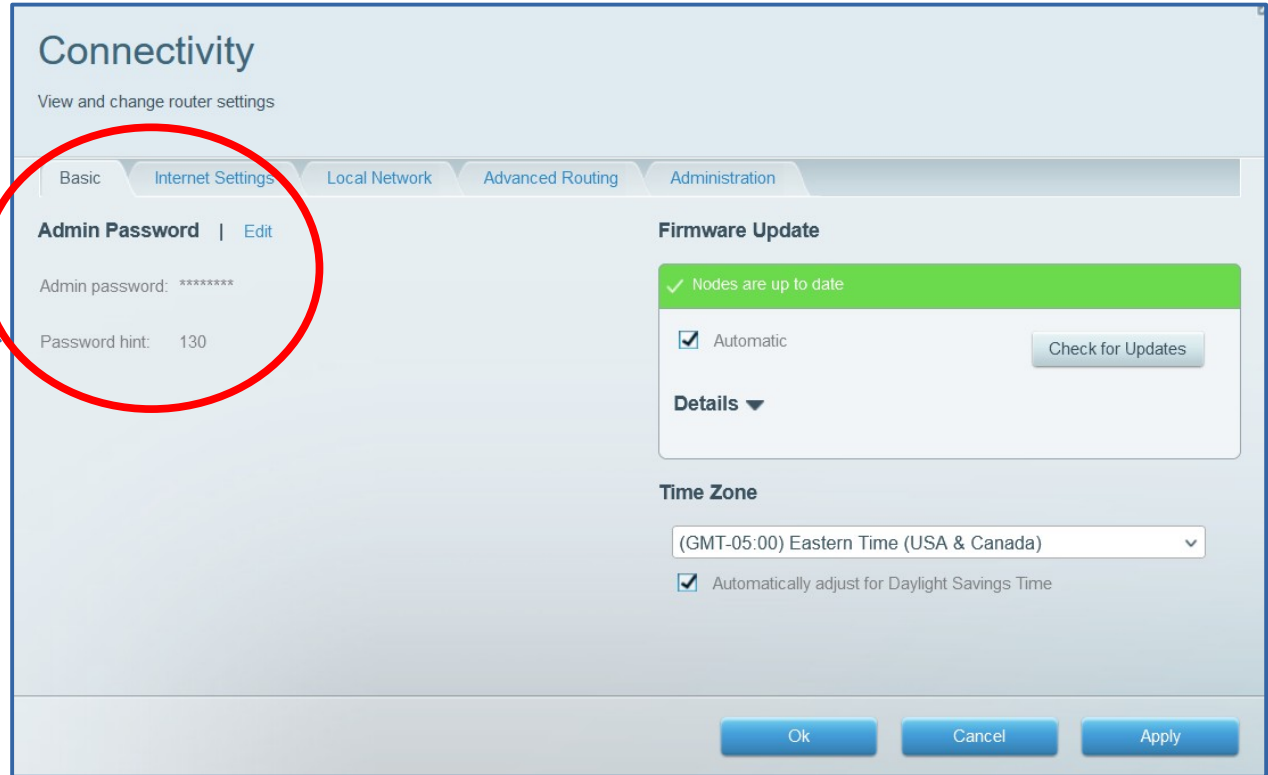
Smart Wi-Fi Tools

- Device List
- Guest Access
- Parental Controls
- Priority
- Speed Check
- External

Router Settings

- Connectivity**
- Troubleshooting
- Wi-Fi Settings
- Security

Change Router Admin
Web home page PW



Connectivity

View and change router settings

Basic | **Internet Settings** | Local Network | Advanced Routing | Administration

Admin Password | Edit

Admin password: *****

Password hint: 130

Firmware Update

✓ Nodes are up to date

Automatic Check for Updates

Details ▾

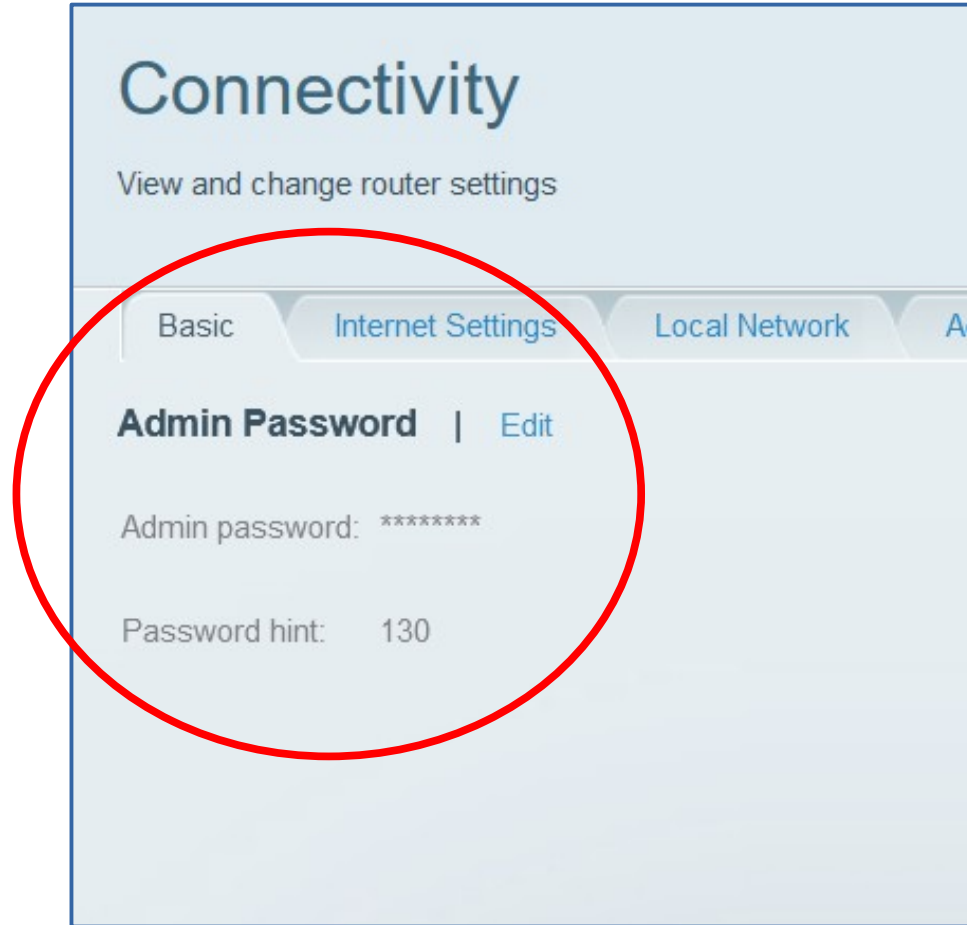
Time Zone

(GMT-05:00) Eastern Time (USA & Canada) ▾

Automatically adjust for Daylight Savings Time

Ok Cancel Apply

Example: Linksys MR8300 Router



THE END