Wireless in the Home &
Answers to common Wi-Fi Questions
Expectations, Recommendations, & Best Practices
What is Wi-Fi

- Wi-Fi is a local area wireless computer networking technology that allows devices to connect to a network.

- Wireless Technology is an alternative to wired technology that uses radio waves to provide the network connectivity.
How do you link all of your wireless devices to the internet?

• A wireless Router!
  
  If you have internet in your home, and you connect wirelessly to the internet, then you already have a Wi-Fi router installed.

• You can look at a router as being an internet splitter box. Typically the internet comes into your house over a single line, then goes to your router. Your router then splits, or “routes” your main feed internet to all of your hard wired, and wirelessly connected devices.
Advantages of Wi-Fi

- No Wires
- Convenient
- Increased mobility
- Increased productivity
- Ease of installation
- Fast deployment
- Cost effective
Disadvantages of Wi-Fi

- Limited range
  (This varies from devices)
- Higher data security risks
  (An intruder does not need a physical connection)
- Speed
  (Data transfer speeds are usually slower than a wired connection)
- Stability
  (Interference from other devices can decrease signal strength, cause intermittent, and slower connections)
Expectations

• Typically, slower throughput speeds over a wireless connection than you would get with a hard wired connection
• About 50% or less throughput than that of actual wireless rating
• The closer you are to your router the better your connection speed will be
• Speeds will fluctuate due to interference
• Building materials factor into your Wi-Fi connection speeds and the distance you can travel away from your wireless router without losing connection
• Inter-operability issues between brands of adapters and devices can cause limited connection or lower output speeds
• Limiting the number of devices you add to your Wireless Router may improve speeds for each device connected
Common Wi-Fi Questions:

Q: What is a wireless Repeater, or Expander?
A: A device you can plug into an outlet to rebroadcast your Wi-Fi in an area where you may not have good coverage.

Q: What Wi-Fi encryption should I use
A: Currently WPA2-AES is the best option if your router supports it. If you do not have this option in your router, you should consider upgrading your router.

Q: What is an SSID?
A: The name given to a wireless network. A name is given to distinguish it from other networks near by. This allows you to know what wireless network you want to connect to.

Q: Why do I see multiple SSID's when I search for my own, or other wireless networks?
A: You may see multiple SSID's from the same router if you or other Wi-Fi networks around you have a dual band router with guest mode turned on.

Q: Should I use 2.4 GHz or a 5 GHz band.
A: This depends... 2.4 GHz is compatible with more devices, and has a longer range than 5 GHz. The 5 GHz band is slightly faster, but the range isn’t quite as good. You can only connect to these bands if your device supports it.
Common Wi-Fi Questions:

Q: What is Wireless 802.11 B, G, N, & AC?
A: These are all wireless Wi-Fi standards, and are listed above from oldest to newest. Basically, your connection speeds could be faster with the newer standard. Your devices must be capable of connecting to a specific Wi-Fi standard in order to utilize its speeds.

Q: What speeds can I expect from the various Wireless Standards?
A: Wi-Fi standards listed by “Rated at” speeds vs “Real World” speeds for comparison:

- 802.11b – 11 Mbps (2.4GHz) 2-6 Mbps
- 802.11g – 54 Mbps (2.4GHz) 20 Mbps
- 802.11n – 150 up to 600 Mbps (2.4GHz and 5 GHz) 40-200+ Mbps
- 802.11ac - 1300+Mbps (5 GHz) 70-300+ Mbps

Q: What Wireless channel should I use?
A: Make sure both the 2.4 GHz, and 5 GHz channels are set for “Auto” channel selection

Q: What can I do to get a better Wi-Fi connection, and faster speeds?
A: Glad you asked! We’ll talk about Best Practices & Recommendations
Best Practices & Recommendations

- Router location
- Change Channel selection
- Update Router Firmware
- Update wireless adapter drivers
- Upgrade to a newer high quality Router
- Upgrade to a newer wireless adapter
- Add a Wi-Fi Range Extender/Repeater
- Enable Wi-Fi encryption on your Router
- Avoid placing devices close to things like: microwave ovens, wireless headsets, and cordless telephones
NineStar Nerds can help you with your Wi-Fi!

- Troubleshoot Wi-Fi problems
- Assess current Wi-Fi
- Make recommendations
- Install, and setup your Wi-Fi system