Wireless vs. Wired

**Installation** If networking your computers requires you to replace existing wiring with Ethernet (Cat 5) wire, you might want to consider a wireless alternative. Replacing existing wiring can be difficult and/or expensive depending on your environment.

**Reliability** Wireless networks suffer a few more reliability issues than wired networks. Wireless signals are subject to interference from other electronic devices including, but not limited to microwave ovens, cordless telephones, and garage door openers. Interference can be minimized with proper installation.

**Performance** Network performance is another consideration when deciding between wired and wireless connections. Wireless connections are distance sensitive, meaning that maximum performance will degrade on computers farther away from the wireless router. As more wireless devices communicate wirelessly at the same time, performance degrades even further.

**Mobility** The greater mobility of wireless networks helps offset the performance disadvantage. Mobile computers do not need to be tied to an Ethernet wire and can roam freely within the wireless network range.

Security You should consider security when deciding between wireless and wired connections. In theory, wireless networks are less secure than wired networks, because wireless communication signals travel through the air and can easily be intercepted. The weaknesses of wireless security are more theoretical than practical. Wireless networks protect their data through the Wired Equivalent Privacy (WEP) encryption standard which is enabled by default on your Wireless Broadband Router. WEP makes wireless communications reasonably as safe as wired ones. No computer network is completely secure and network owners should research this topic to ensure they are aware of and comfortable with the risks.

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<th>Wired</th>
<th>Wireless</th>
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<tbody>
<tr>
<td>Installation</td>
<td>moderate difficulty</td>
<td>easier, but beware interference</td>
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<tr>
<td>Cost</td>
<td>less</td>
<td>more</td>
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<tr>
<td>Reliability</td>
<td>high</td>
<td>reasonably high</td>
</tr>
<tr>
<td>Performance</td>
<td>very good</td>
<td>good</td>
</tr>
<tr>
<td>Security</td>
<td>reasonably good</td>
<td>reasonably good</td>
</tr>
<tr>
<td>Mobility</td>
<td>limited</td>
<td>outstanding</td>
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Before installing your wireless network, please note the following:

- You should consider using the same operating system on all the computers connected to your network.
- You should consider using the latest operating system including all fixes and patches associated with the operating system. The most current operating systems tend to have the most robust features for wireless connectivity.
- You should consider placing your wireless router at least 10 feet from certain cordless phones, microwaves, or other electronic devices to avoid potential interference.
- Your wireless router operates at the 2.4 GHz frequency. If you experience interference when using a 2.4 GHz cordless phone, and you are unable to relocate your cordless phone, consider upgrading your phone to 5.8GHz or 900 Mhz.

Note: Cordless phones using 5.8GHz and 900MHz are generally not known to cause wireless network interference. If you are unsure which frequency your cordless phone operates on, please check your phone or reference your phone’s user manual and/or manufacturer’s website.
What factors should I consider when planning my wireless network?

The decision to go with a wired vs. wireless network depends on several factors including ease of installation, reliability, security, mobility, and performance. Your Wireless Broadband Router has both wireless and wired ports for maximum flexibility. You should carefully consider the advantages and disadvantages of wireless vs. wired for each device on your network.

• The wireless router is generally able to go through one or two walls before it loses connectivity. Keep the number of walls and ceilings between your router and the other devices on your network to a minimum.

• Position the devices connected to your network so the signals will go straight through a wall rather than at an angle. The wall, at an angle, will have a greater effect on signal strength.

You should consider placing the wireless router in an open area where the wireless range will not be directly affected by surroundings. Wireless signal strength will be much stronger in an open area as opposed to an area with lots of obstructions.

The wireless signal degrades with distance and obstructions, including ceilings, walls, furniture, etc. You should consider the layout of your home or business when deciding where to place your wireless router.

In a single story building you may want to place the router as high and as close to each wireless computer as possible. Consider where you will use your wireless devices when placing your router. Avoid putting the router behind large objects or other obstructions to avoid interference.

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