



# The Home Network

## Our Neglected Workhorse

An IDC InfoBrief, sponsored by Linksys | May 2015



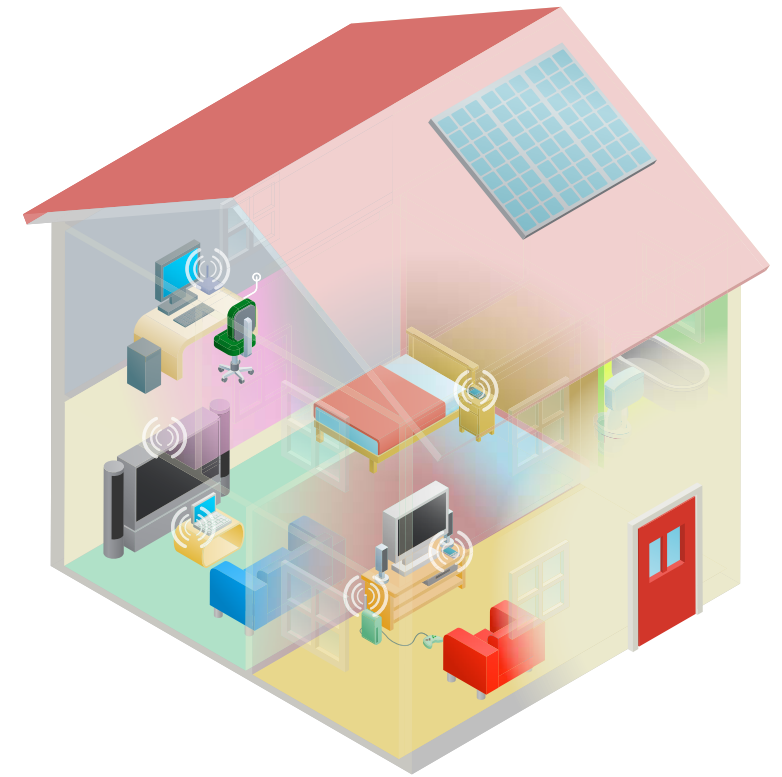
## The Home Network

First, it was just our PCs connecting to the Internet, our desktops and laptops. Then video game consoles. Then smartphones, tablets, televisions, Blu-ray players, media streamers and home automation devices.

The average home has more than 8 devices connecting to the Internet, and they're not used for just sending emails and tweets. We're streaming movies and TV shows in high definition, we're video chatting with our friends and family, and we're playing video games against competitors around the globe, all on different devices and often at the same time.

All of it relies on that connection to the Internet, and at the heart of it all sits the humble home network router. Over the years, routers have boosted their speed and range tremendously, from the lowly 11 megabits per second of 802.11b at the beginning of the century to the 1.3 gigabits found in some 802.11ac routers today.

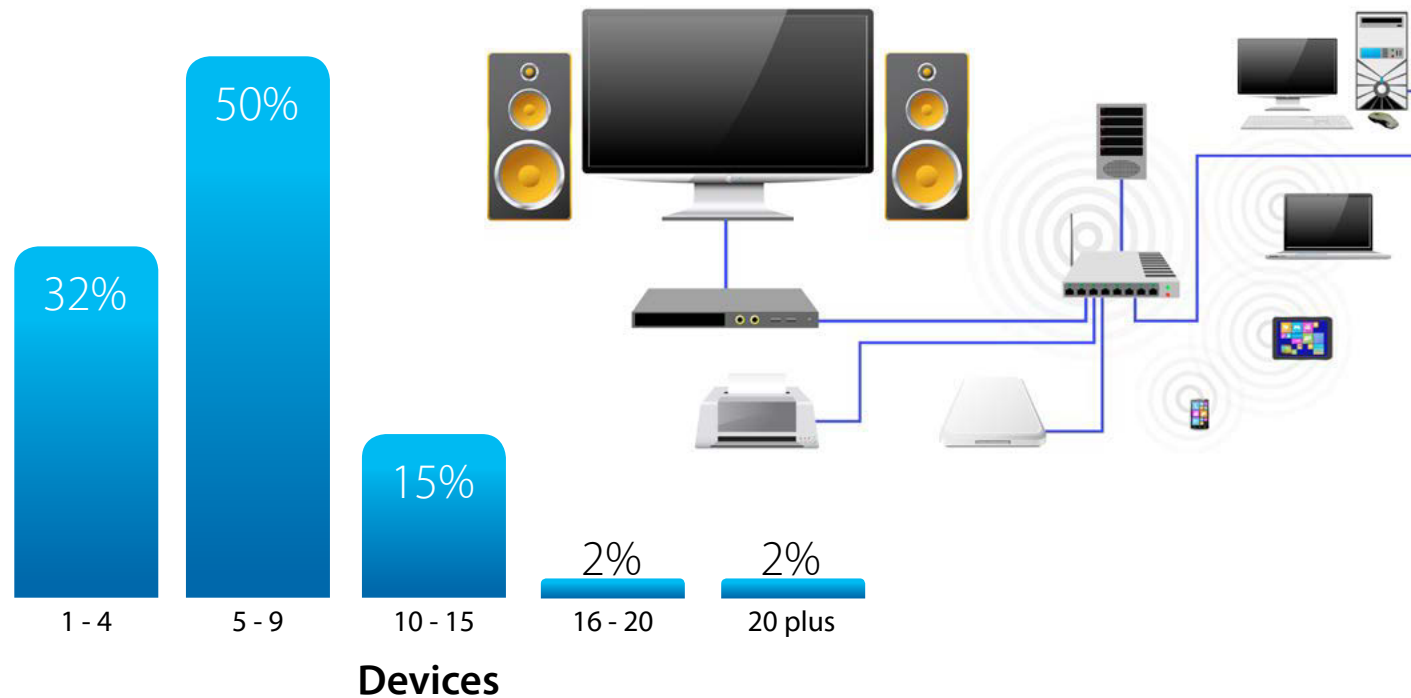
But a lot of that capacity goes to waste, causing traffic jams in our homes that lead to jittery video chats and interrupted video streams. The latest Wi-Fi technology, MU-MIMO, hopes to change all that — not with more power, but more efficient use of the throughput already available.



The average home has more than **8 devices** connecting to the Internet, and they're not used for just sending emails and tweets.

# The Network in the Home is Crowded

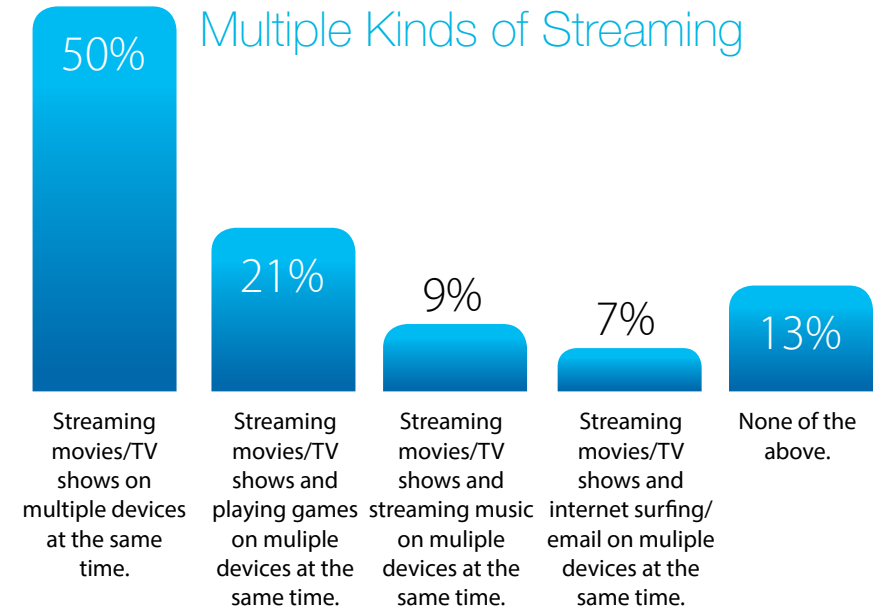
## Multiple Connected Devices



Two-thirds of households with three or more persons have at least 5 devices simultaneously connecting to the Internet.

*Q. How many devices are connected to the internet at the same time in your home?*

## Multiple Kinds of Streaming



### Activities

And they're not just sending email. Streaming movies and TV shows, playing online games, and streaming music from the Internet to multiple devices simultaneously has the home network on overload.

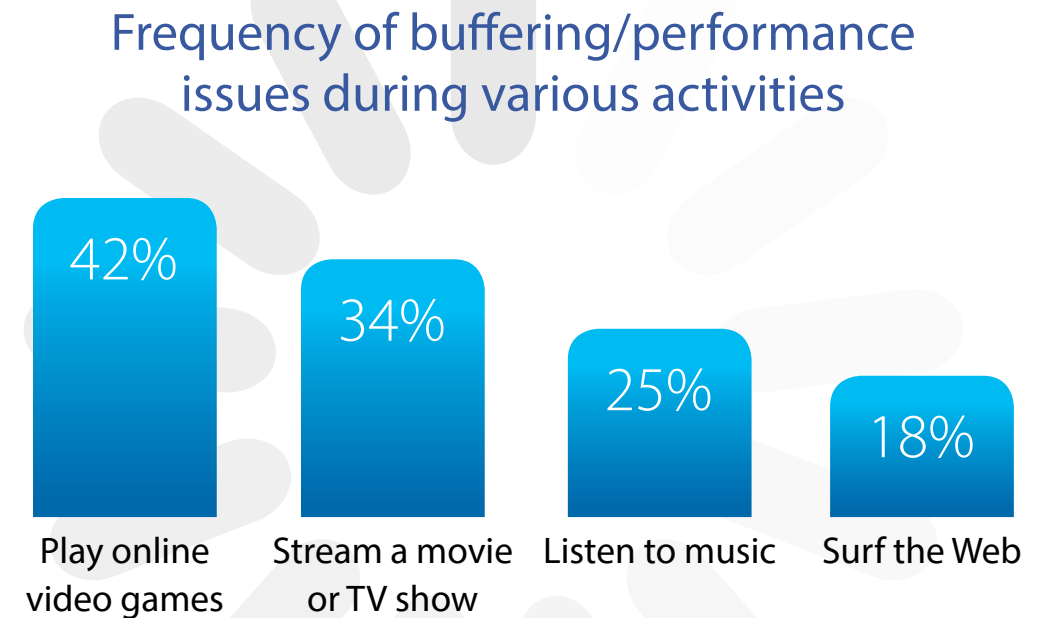
*Q. What activities are the occupants in your household doing most often?*

## At Rush Hour, the Network is Clogged

With the number of connected devices and their uses growing, we're demanding more from our routers. Seven years ago, streaming video from the Internet to the television barely existed. Now, more than 100 million households worldwide do it, and that will only increase.

Modern home routers are designed to prioritize certain traffic, but problems still plague the home network. Our routers have gotten stronger and improved their range, but the bandwidth is used inefficiently, so that a weak client pulling down one video can hurt the experience of everyone on the network.

**More than half** of survey respondents said they frequently or always experience buffering, interruptions or other performance issues on their home network.

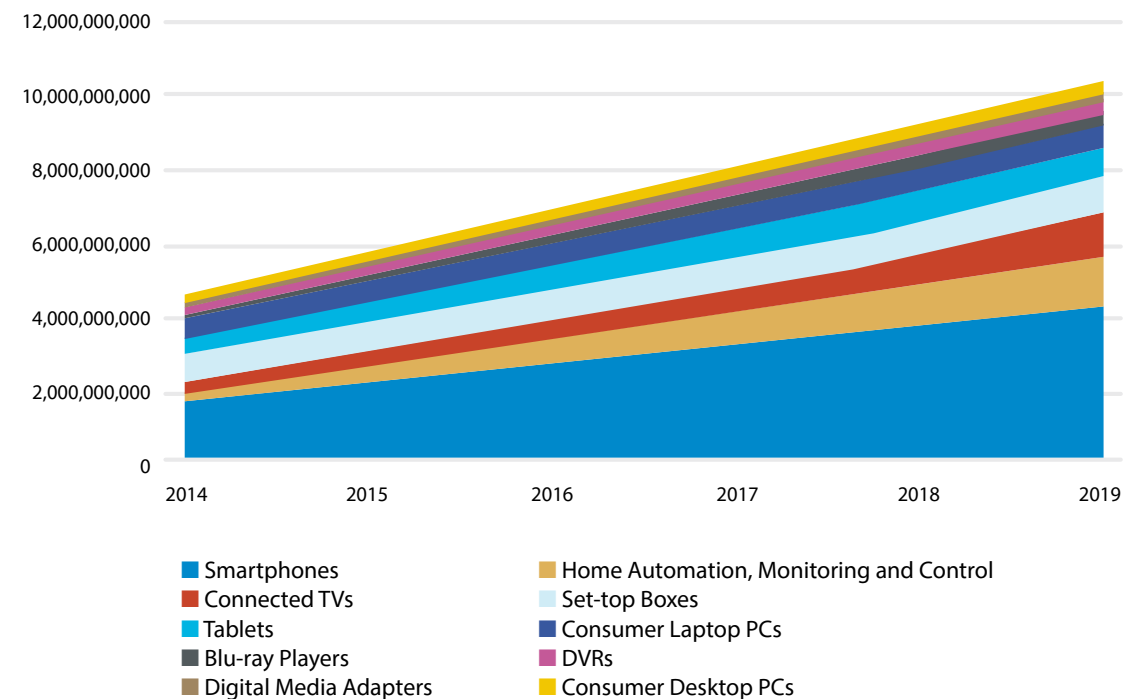


Q. When you do the following activities, how frequently, if ever, do you experience Wi-Fi-related performance issues such as buffering, slow load times, lag or interruptions?

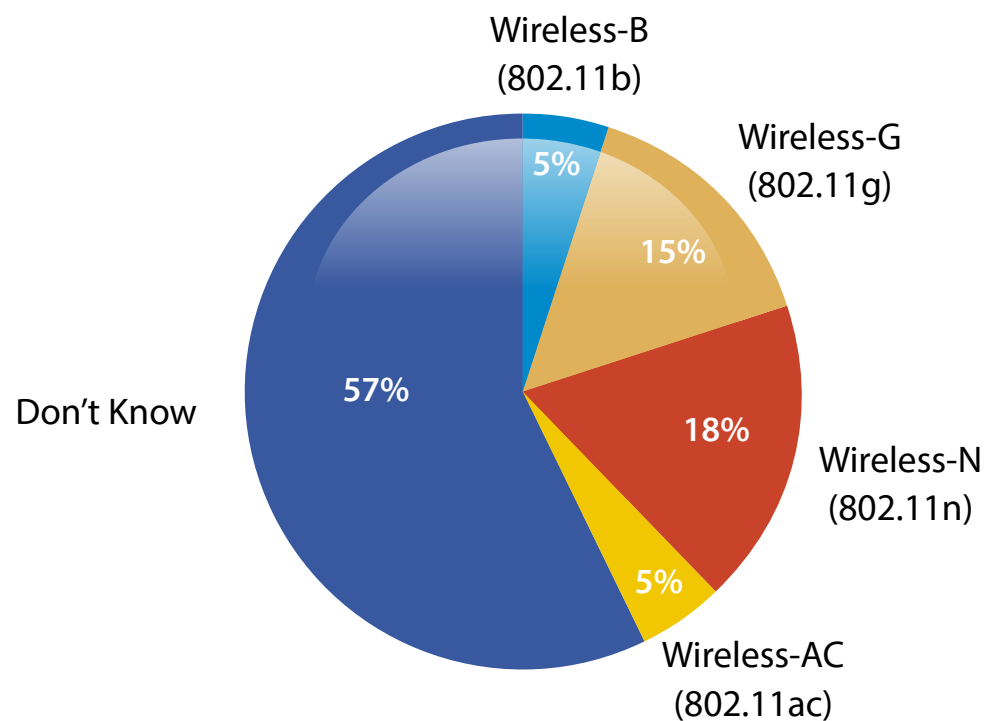
## And It's Going to Get More Crowded

The cost of connectivity will continue to fall while the value of connecting things will rise. From video cameras that monitor the home to garage doors that alert you when they've been left open to bathroom scales that track the fluctuations in your body, intelligence and connectivity will migrate to more and more parts of our homes. An expanding array of mobile devices, from smartphones to tablets to wearable computing devices, is also placing greater demands on home networks. Also on the horizon is the next generation of HD video, known as ultra-high-definition, which has between four and 16 times the number of pixels of 1080p Full HD. The need for mobile accessibility is also in demand with the growing number of devices like home automation.

By the end of 2019, households worldwide will have more than **10 billion devices** capable of connecting to their home network router.



## Part of the Problem: A Lot of Old Routers



Q. What wireless technology does your household's router currently use?



Of respondents who could identify their wireless router technology, **only one in 8** use the latest version of Wi-Fi (Wireless-AC)

**More than half** of respondents did not know what flavor of Wi-Fi their router uses

**Nearly half of the respondents** who could identify their router's wireless technology said it ran a version of Wi-Fi that was first ratified a dozen years ago or older.

## Technology is Evolving – But has Your Router?

An average of 8 devices connect to the network in homes today and 84% of users stream video or music or play games simultaneously. Combine that with a majority of homes running older routers, it makes sense that 54% of users surveyed experience frequent or persistent performance issues on their network.

**95%**

of those surveyed said they had routers that were Wireless-B, Wireless-G, or Wireless-N, or they did not know what wireless protocol their router used.

Consumers spend hundreds on connected devices every year, including HDTVs, smartphones, tablets and home automation devices — all of which are held back by old router technology that is degrading their performance.

Survey respondents say they would spend an average of

**\$84 MORE**

for their routers to never have to worry about performance issues.



### Wireless Technology Evolution

**1999**

802.11b is released, allowing consumers to surf the Web wirelessly at 11Mbps ... assuming they are within a room or two of the router.

**2003**

802.11g lets consumers reliably stream online music wirelessly at 54Mbps.

**2009**

802.11n boosts both range and throughput, letting consumers stream online video in most parts of the home.

**2013**

802.11ac breaks the gigabit per second barrier

**2015**

MU-MIMO introduced

## Help is on the Way: MU-MIMO, the Latest Innovation in Wi-Fi

MU-MIMO helps provides up to 3X faster performance for all the devices on the network because each device is prioritized to connect to the best Wi-Fi connection. MU-MIMO is like having an individual wireless router dedicated to each device on the network so that multiple users can connect at the same time without slowing down the network.

Routers today send one wireless transmission to one device at a time, MU-MIMO allows for multiple simultaneous transmissions to multiple devices. The movie streamed from the Internet to your TV and the video chat with your friend across the country can each get their own Wi-Fi connection. MU-MIMO enables the whole household to play video games, listen to music, and stream movies at the same time, without lag or buffering.

### Why is MU-MIMO Better?

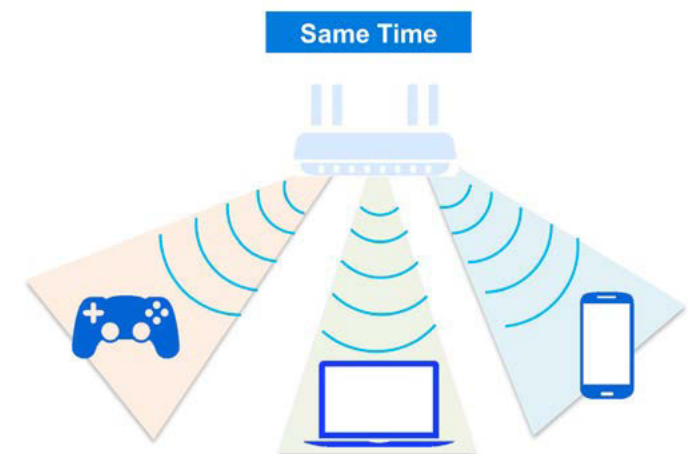
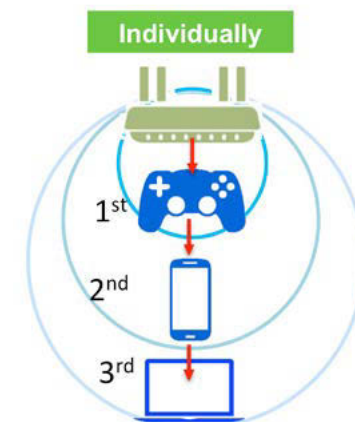
3x faster Wi-Fi for everyone and everything on your busy network.

#### WITH OTHER ROUTERS

These routers send Wi-Fi to one device at a time, essentially making your Smart TVs, smartphones, tablets, game consoles, and PCs wait in single-file line to receive data.

#### LINKSYS MAX-STREAM ROUTERS

MU-MIMO sends Wi-Fi to all devices at the same time. Your Smart TVs, smartphones, tablets, consoles, and PCs can now stand at the front of the line together so they can each experience 3x faster speeds.



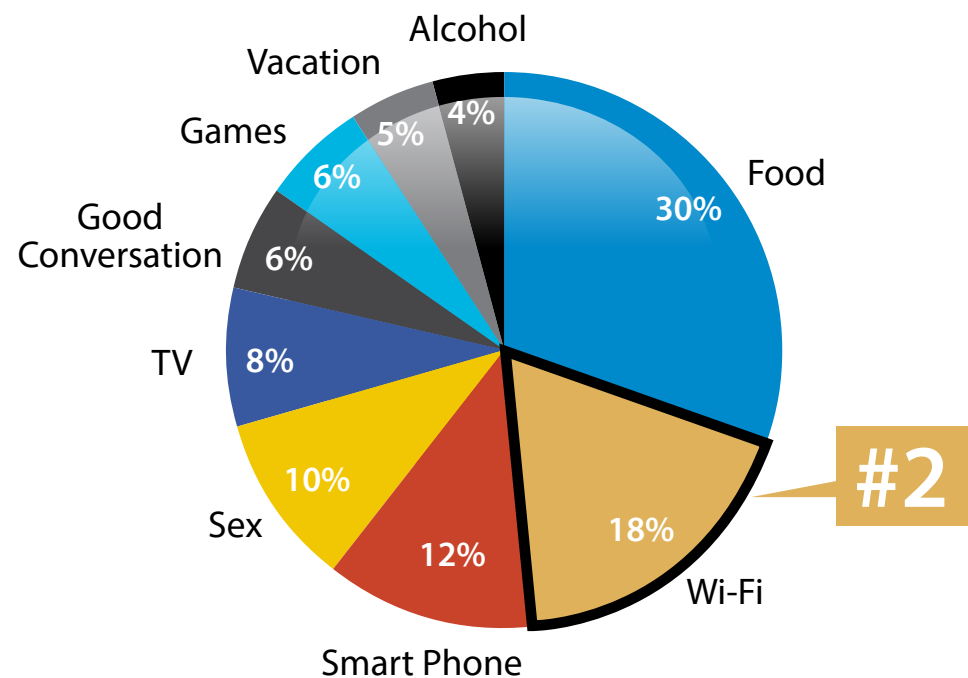


## At the End of the Day, We Want Our Wi-Fi

Wi-Fi Ranked #2 item we do not want to live without

When it comes to buying a Wi-Fi router, 84% of survey respondents cite performance as one of the most important attributes, far out-distancing range, security and even price.

MU-MIMO increases overall throughput and maximizes efficiency of home networks to achieve the best experience available for multiple-device households.



More important than sex or TV, we want our Wi-Fi.



## Methodology

For this report, IDC conducted a survey in March 2015 of 1,002 adults in the U.S. who live in households of three or more people. This study was designed to determine how adults use their Internet-connected devices at home and what pain points they might have when it comes to streaming video, audio or online games.