the role of networking in connected environments

The connected technologies in a home or business are powerless without an ultra-fast network. In residential environments, connectivity issues can hurt video streaming quality, as well as the performance and responsiveness of smart-home devices, such as lighting, shading, and A/V integrations. In workspaces, network issues can impact conferencing equipment, Internet access, and office automation, thus hurting productivity and collaboration.

In both environments, connected technologies are only as good as the network they reside on, underscoring the importance of having a dependable networking backbone that is properly designed and configured from the start.

what is a network?

A network allows devices to communicate with each other and, when applicable, with the Internet and other external networks.

In a connected environment, networking gear can consist of several components. The core equipment usually includes

- Routers
- Switches
- Wireless access points
- Ethernet cabling

Depending on the scale and use of the network, additional components can include independent firewalls, network area storage (NAS) devices, and other equipment.

In a home or business, the network plays the crucial role of providing Internet access and the ability to transmit data and connect with other technologies throughout the environment, either wired or wirelessly.

what causes network problems?

When connected devices don't respond properly or function the way they're supposed to, the culprit may be the network. That's particularly true in wireless area networks (WAN), which rely on Wi-Fi to transmit data back and forth.

Usually, these type of network issues are due to one or more of the following

- Not enough wireless access points (WAPs)
- Poor location of wireless access points
- Overall lack of network bandwidth

how can the problems be fixed?

It's important to note that Wi-Fi issues due to poorly placed access points cannot be easily remedied by adding more equipment. While it's true that expanding Wi-Fi coverage to other areas will help fill gaps, it's not as simple as adding an access point to each floor of a building. A variety of factors will influence the strength of the Wi-Fi signal, including the building materials in various spaces. Additionally, access points that are placed too closely together can actually hurt the signal.

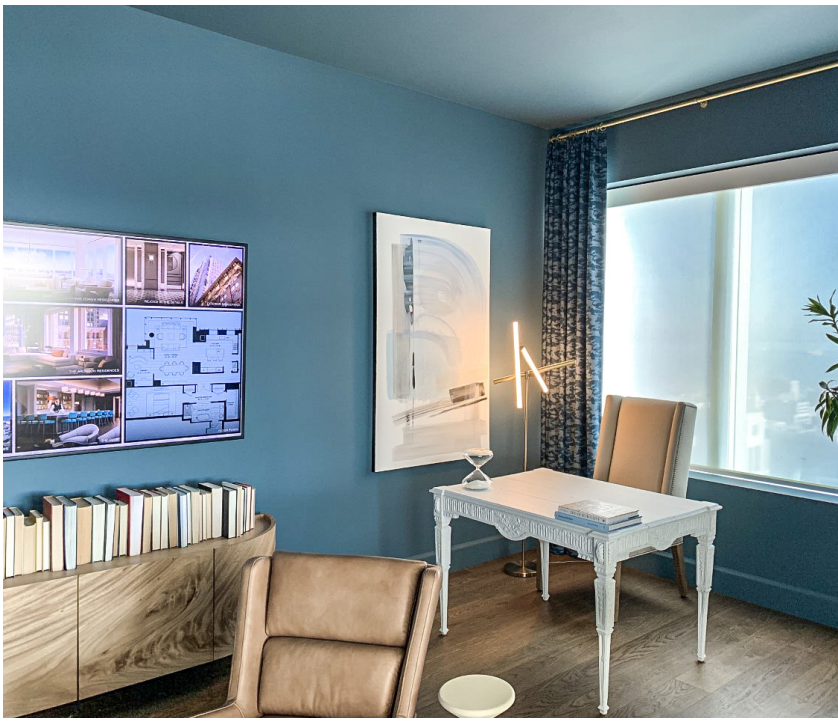
This is why it is strongly recommended to use experienced network technicians to custom-design your network to your needs and space, ideally from the beginning. Technicians can perform a thorough network audit to identify the source of connectivity issues, and implement the proper solutions for increasing signal coverage or resolving bad WAP locations.

what's the best network gear available?

This depends on several factors that are unique to your space, including the size of your network and how it's used. For example, a smart home with 10-12 connected devices will naturally have a much different network than that of a multistory commercial building with a massive IT infrastructure.

As a general rule of thumb, AVDG recommends the following brands for networking equipment:

- Ruckus (access points)
- Meraki (access points)
- D-Link (switches)
- Cisco (switches)



what is wi-fi 6?

Wi-Fi 6 (or Wi-Fi 6E) is the biggest Wi-Fi upgrade in 20 years, delivering faster speeds and better connectivity, especially for environments with numerous wireless devices. Wi-Fi 6 enables speeds up to three times faster than the previous generation, in addition to allowing more wireless devices to send data simultaneously. It also self-optimizes the connection for the best performance and reliability possible (no need to manual switch between frequency bands).

Wi-Fi 6 devices started coming out in 2020, so if you haven't changed your Wi-Fi hardware in a few years (routers, access points, or wireless devices) then your network is probably using Wi-Fi 5 or an even older generation.

learn more

AVDG is a national leader in audiovisual and smart-system integrations. We provide robust networking solutions to power your connected devices with the fastest and most dependable technology on the market. We are experts in both AV and IT solutions, which ensures that all your connected technologies are seamlessly unified for maximum performance and reliability. Plus, we offer 24/7 remote monitoring of your network performance, so that our technicians can address any issues at the first sign of a problem.

Contact us today to learn how AVDG's networking solutions can power your AV and smart-system integrations.