

Wired vs. Wireless in Your Library



Wired vs. Wireless (WiFi) in Your Library

SCKLS strongly recommends that all library staff and patron devices utilize wired network connections. We believe that the benefits of wired internet far outweigh any potential drawbacks. Although wireless access plays an important role in connecting patron devices, mobile staff devices, and certain Internet of Things (IoT) devices, we support the widely held view that wired networks offer enhanced speed, reliability, and security compared to wireless networks.

Wired Network

SCKLS recommends the use of Cat6 or Cat6a Plenum pure copper wiring. It is important to adhere to local fire codes, which may dictate the use of Plenum in lieu of non-Plenum wiring based on the installation location. Plenum cable is required in any air handling spaces and is designed to produce low smoke and flame in the event of a fire. While Plenum cable tends to be more expensive, it is essential in many situations. **Cat 7 and Cat 8 cabling are available, but we do not recommend either at this time.*

Wired network drops should be installed to accommodate every device, including IP based phones, along with additional drops whenever feasible. If you are setting up a network for the first time, we strongly recommend installing network drops not only in locations where you currently intend to place your devices but also in areas where there is potential for future device additions. Additionally, incorporate adequate drops in ceiling spaces to support the installation of WiFi Access Points.

Network drops should be terminated with Cat 6 jacks and Cat 6 patch. All drops should be tested and labeled by the installer. The patch panel should be installed in the vicinity where your Internet Service Provider (ISP) terminates their connection and installs their modem. It is essential to ensure that adequate electrical service is available for the network equipment and ISP modem.

WiFi Network

We recommend utilizing WiFi networks as an enhanced service for both staff and patrons. Utilizing multiple SSIDs (Service Set Identifiers) for staff, patrons, and IoT (Internet of Things) devices, can achieve improved flexibility, security, and management advantages. The use of separate encrypted WiFi SSIDs, provide optimized availability, and effective frequency management, among other benefits.

Access Points (APs) should be strategically installed throughout the library to ensure optimal coverage. While some libraries can effectively operate with a single AP, others may require multiple access points. Factors, such as building size, construction type, window placement, shelving arrangements, number of floors, user volume, and other elements may affect WiFi signal quality.

Electrical Wiring

In addition to installing network drops, ensure that sufficient electrical outlets are included near these network drops. It is critical that all electrical work is carried out by a licensed electrician.

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Disclaimer

SCKLS does not provide installation services for data (network), phone, or electrical wiring. We recommend contacting a local licensed provider for assistance with these services. SCKLS is available to support the library and its chosen provider in assessing requirements and identifying optimal locations for drops and receptacles.

This document serves as an introductory overview of the comparison between Wired and Wireless options in libraries. It does not comprehensively cover every aspect, as the needs and requirements may vary for each library. Therefore, we strongly encourage any library seeking further clarification to arrange a site visit with SCKLS. This will help address your questions and offer guidance on making decisions that best serve the unique needs of your library.

Glossary

Access Point (AP)

A stand-alone device providing wireless devices (laptop, phone, etc.) a connection to a wired network.

CAT 6 / 6a (*CAT 5e wiring is typically what is installed in your library, as it was the standard at that time)

Network cabling used to provide network/internet connectivity to devices on a local network.

ISP

Internet Service Provider, a company providing internet access to their customers.

Network drops

A connection point with an ethernet jack that a computer or other network device can connect to for local network and/or internet access.

Network Room

A dedicated space housing network devices such as routers, switches, firewalls, modems, etc.

PoE

Power over Ethernet. Power is distributed over the network drop vs. an electrical outlet.

SSID

Service Set Identifier, aka, a WiFi network's name

VLAN

Virtual Local Area Network (used to divide groups of devices into separate LAN's)