

Clover Local-Connect Network Set-Up Guide

Connecting Clover POS and KDS devices



Contents

Clover Local-Connect Network Overview.....	3
Network Configuration Recommendations.....	3
Connecting Your Network.....	4
Important Information.....	5
Addendum—Clover Local Network Technical Reference	6
Router Configuration	6

Clover Local-Connect Network Overview

Clover Local Connect provides improved operation when a good connection to the Internet is temporarily unavailable. Orders created at front of house devices such as the Clover Mini or Station Duo will be fired to the Clover Kitchen Display System immediately even when the Internet connection is down. For Clover Local Connect to operate, the local network must be configured so the Clover Devices can communicate directly with each other.

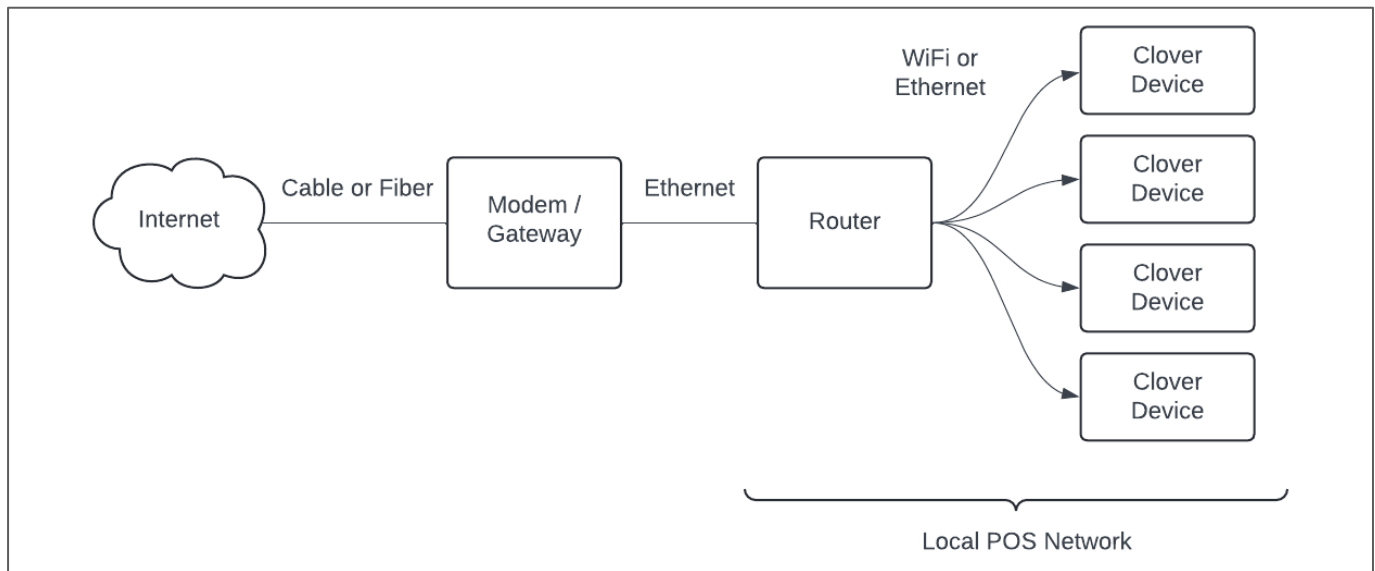


Diagram: Typical network configuration

The **Modem or Gateway** is normally provided by your Internet Service Provider. It handles the physical connection between the service provider's cable or fiber options and the local network.

The **Router** creates the local network. It directs the messages between the Clover devices and the internet. Routers can either use Wi-Fi or direct cable connections to connect to the Clover devices. Most routers available today provide both Wi-Fi and wired connections. Wired connections are generally more stable and secure than Wi-Fi, so use them if you can.

Network Configuration Recommendations

These recommendations will help you get the best performance from your Clover devices and from Clover's Local Sharing feature:

1. Use a dedicated router for your local POS network.
2. Connect the router directly to the internet modem or gateway.
3. Whenever possible, wired Ethernet connections should be used rather than Wi-Fi.
4. If using Wi-Fi, a router supporting the **Wi-Fi 6** standard is recommended.
5. If more wired connections are required than are available on the router, an unmanaged Ethernet switch may be added.

6. Do not connect non-Clover devices or devices not specifically recommended by Clover to the router used for the Clover network. These devices can create traffic on the local network which can interfere with the proper operation.
7. Do not use any Wi-Fi connected to the POS network for public or guest access. This can create both excessive traffic and security risks.
8. When using Wi-Fi to connect to your Clover devices, ensure that the Wi-Fi router or access point is as close to your devices as possible. Wi-Fi signals will be weakened when passing through walls or other obstructions.
9. If you need to cover separate areas, such as a patio or separate dining area, a Wi-Fi access point can be installed in the remote area and connected by Ethernet cable to the router. Do not use a second router as an access point.

Connecting Your Network

The following diagram shows the physical connections of a typical Clover POS local network.

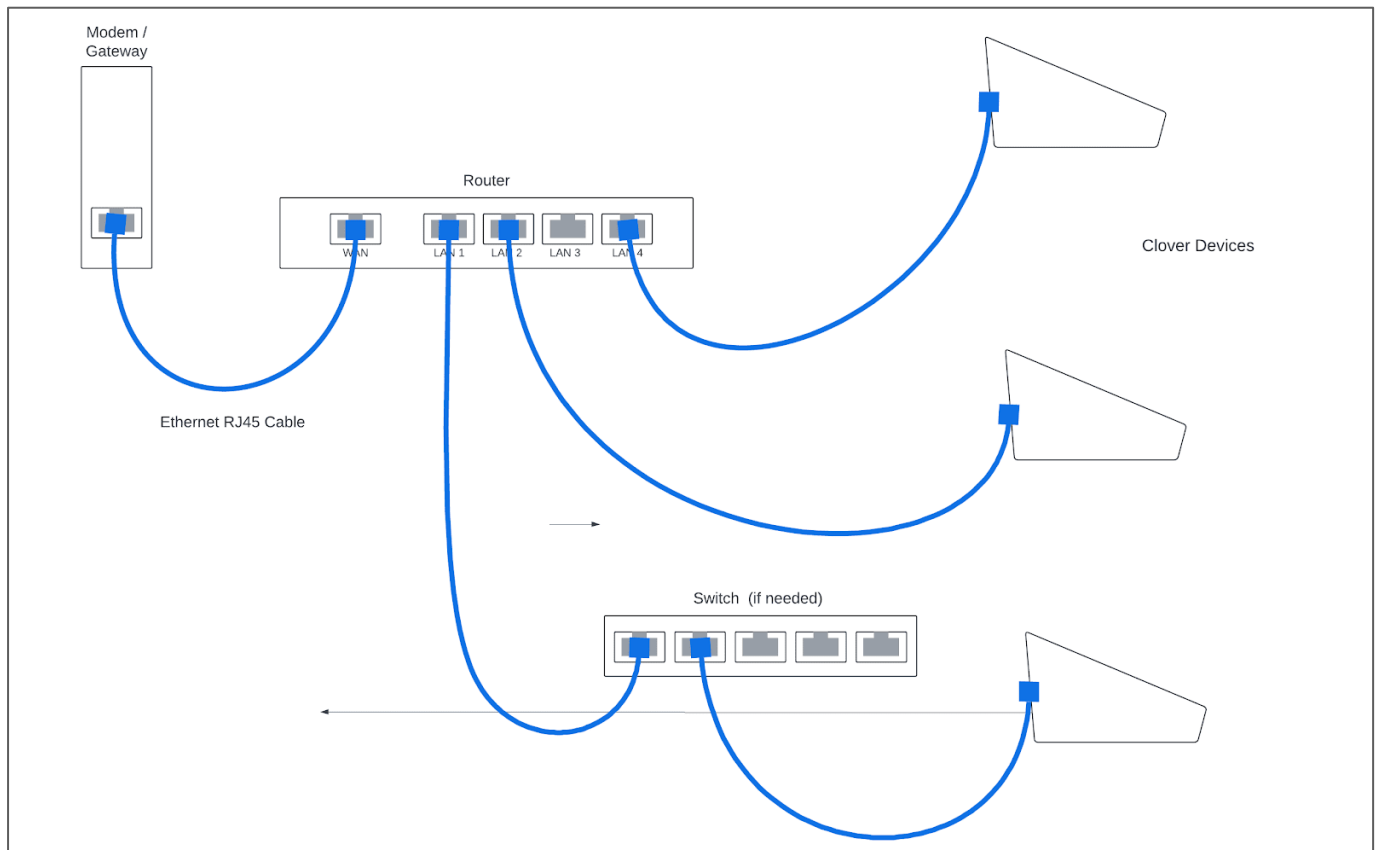


Diagram: Physical connection of a typical Clover POS local network

The cables used to connect the components are Ethernet cables, which should be at least “Cat-5” or higher. Commercially available premanufactured cables should be used. If it is necessary to create custom length cables, such as when running through walls, a trained technician should assemble the cables and verify their performance with a network tester. Cables should be no longer than necessary, never exceeding 100 meters (328 feet).



The router will have one jack typically labeled “WAN” or “Internet”. This jack should be connected to the modem. The internet provider’s device may have multiple Ethernet jacks on the back, generally the router may be connected to any one of these jacks.

The router will have several jacks typically labeled “LAN” or “Ethernet”. The Clover devices should be connected to these jacks.

If there are more Clover devices than there are jacks on the router, one or more “unmanaged” Ethernet switches may be added. A cable should be run from any of the LAN jacks on the router to any of the jacks on the back of the switch. (Some switches have a specified input or “uplink” jack. If so, connect the cable from the router there.) Cables can then be run from the switch to the Clover devices.

Important Information

Provide the enclosed addendum, *Clover Local Network Technical Reference*, to your network provider.

Addendum—Clover Local Network Technical Reference

Clover Local Connect is designed to operate over a standard Local Area Network, either as Wi-Fi or hard wired. Most retail or small business grade routers should be fine when setup in their default configuration. The Clover devices should all be connected to the same, single router. It should be configured as a single subnet with a minimum 24-bit subnet mask (255.255.255.0). The Clover devices must be able to communicate directly with each other, so features such as “Client Isolation” must be disabled.

Router Configuration

Routers frequently have a daunting number of configuration options. Fortunately, the factory default configuration is usually correct. Because the various manufacturers provide different options often using different terminology, it is unfortunately impossible to provide specific instructions. The following can provide some guidance to you or your local technical support:

1. **Perform a factory reset** of the router to place it in the default configuration. See the manufacturer’s documentation. This often involves finding a hidden reset switch.
2. **Connect the laptop to the router** via wired ethernet. Follow the manufacturer’s instructions to connect to the admin utility and set a router password. This may be easier to do if the laptop’s Wi-Fi is disabled.
3. **Connect the router to the WAN.** Set the WAN or Internet connection type to that specified by the network provider, generally “Dynamic IP”.
 - a. If the router has multiple WAN ports, ensure that only one is enabled.
 - b. Verify that the router’s firmware is current (generally on a “System Management” page). Some manufacturers provide a mechanism to download firmware in the admin utility, others require that the firmware be downloaded from a support site.
4. **Configure the *base LAN address*** (generally of the form 192.168.xxx.1) so that it does not conflict with any higher network in the route to the internet. The “xxx” should not be duplicated. Running ‘traceroute’ to a public DNS (such as, 8.8.8.8) is a good check. Many routers have a “tools” page that includes traceroute.
 - a. The router should be configured with a 24 bit or larger local subnet mask (255.255.255.0). Clover Local Connect will not operate with smaller subnet masks, such as 255.255.0.0.
 - b. The LAN DHCP server should be enabled. The DHCP lease time should be 120 minutes or greater.
 - c. **IMPORTANT:** The router must be configured so that the LAN (peer) devices can communicate directly with each other. Isolation features should be disabled. These can include:
 - AP Isolation
 - Client Isolation
 - VLANs
5. **Make the LAN gateway visible to all devices.**
 - a. Clover Local Connect requires that the LAN gateway be visible to all devices.
 - b. The LAN gateway uses the ***base LAN address*** defined earlier.
6. **Enable/Disable the gateway settings** as follows:
 - a. **Enable “respond to pings from LAN.”**
 - b. If Wi-Fi is used to connect to the Clover Devices, **enable WPA2 security** and a password set.

- c. **Disable MAC filtering** or MAC reservation features. The WPA2 security will protect against unintended connections.
- d. **Enable NAT** (Network Address Translation). Few routers allow this to be disabled, but it is best to verify that it is enabled.
- e. **Disable Port forwarding** or DMZ features.
- f. **Disable these additional features:**
 - i. Parental controls
 - ii. Time of day restrictions
 - iii. Guest and IoT networks
 - iv. UPnP, sometime known as NAT forwarding
 - v. QoS or other bandwidth restrictions