toast

Toast Network Requirements

Toast provides all necessary network infrastructure during a standard deployment to operate with minimal configuration or manipulation on the customer's behalf. However, there are instances where customers choose to have a “Self Managed Network ” (“SMN”) or have a “Third Party Service Provider” (“TPSP”) manage the network for them. In such cases, Toast recommends that the network and implementation still be deployed using the specifications that Toast installs with, as this will help Toast Support in the event that you need to call in for assistance. Below is the list of requirements/preferences for deploying Toast in order to ease troubleshooting if situations should arise.

IP Schema and Range Reservations:

- Toast operates on the **192.168.192.0/24** network with a gateway of **192.168.192.1.**
- Our printers come shipped by default to use DHCP.
- If you choose to run a different scheme, you will need to program the printer by following the instructions here: Changing Your Printer's IP Settings.

Firewalls, Allowlisting, and Configuration:

- For Toast to operate successfully, the URL destinations and ports in the Toast Firewall Allowlist must be configured for outbound traffic.
- If you make any modifications to this allowlist, you will need to consult your TPSP to troubleshoot before contacting Toast.
- ICMP echo replies should not be restricted.

Wired Network Infrastructure:

- All wiring should be **Cat5e or higher** cabling and properly terminated in the EIA/TIA568B wiring standard. Any installation services provided by Toast do not include any cabling requests longer than 10’, through walls, or in crawl spaces/open-air areas due to the varying codes in relation to how and what wiring is to be used for networking installations.

- The router/firewall should have Quality of Service (QoS) setup to ensure sufficient bandwidth is dedicated for Toast. Toast recommends the following minimum speeds based off of hardware installation scenarios:

Devices operating Toast	Download Speed (Mbps)	Upload Speed (Mbps)
~ 2 Tablets, 1 KDS, ~250 orders/day	3 Mbps	1 Mbps
~ 10 Tablets, 2 KDS, ~1,000 orders/day	7 Mbps	1 Mbps
~ 30 Tablets, 4 KDS, ~2,000 orders/day	15 Mbps	5 Mbps

- The minimum speeds above should be dedicated strictly for Toast. If these speeds cannot be dedicated for Toast alone, please consult your ISP to increase speeds, or reach out to your Toast Onboarding Consultant to discuss solutions.

Physical Network Segregation & VLANs:

- Toast recommends that the network be **physically** segmented from other outside traffic/network communications. This means that all Toast-specific networking components, including Terminals, Printers, Access Points, KDS, peripherals, etc.
- Non-Toast network devices, such as network components, computers, routers, tablets, cell phones, and repeaters should not be connected to the same network as Toast.
- In the event that you cannot **physically** segment the network, a **logical** segmentation, or **VLAN** can be utilized. In order to do this, the following configuration will need to be performed:
  - A **VLAN** should be set up for the Toast POS network, separate from all other traffic
  - This **VLAN** should have the IP scheme of 192.168.192.0/24.
  - At least 1 physical ethernet port mapped to this VLAN should be available for each IP device.
  - The ports should be clearly labeled "**FOR TOAST USE ONLY**".
  - Non-Toast devices should **NOT be connected to this VLAN**.

Wireless Network Infrastructure:

- All wireless communications should be set to operate 5Ghz band, and should be set on the “least utilized channel”. Toast does not use the 2.4Ghz channels for Implementation as there are many of devices, appliances, and technologies that communicate near this band that can cause interference and connectivity issues with handhelds and your Toast network. Failure to do so can cause issues with order sending, order timing, and overall performance of the tablets, handhelds, and Toast network services.
- Access points are to be installed in centrally located positions in the restaurant, away from Electromagnetic Interference (“EMI”) sources (such as Microwaves, speakers, motors, refrigerators, etc.) to prevent signal interference and connectivity issues with handhelds and your Toast network.
- Access to the network should never drop below -65dBm in service areas where handhelds will be accessing the Toast network. Failure to do so can cause issues with order sending, order timing, and overall performance of the tablets, handhelds, and Toast network services.
- If using wireless, the SSID for Toast use **should belong to the same Virtual Local Area Network (“VLAN”)** that was set up for Toast POS network. If the Toast SSID is not set up for the same VLAN print routing will be negatively affected.
- The SSID should be broadcasted using WPA2/AES Personal encryption. The key should be provided to Toast in the event that support needs to be contacted, they’re prepared and have the credentials to provide proper troubleshooting.