DIS HUB PREREQUISITES

Facility Requirement	Facility Preparations	Notes
Power	- Standard 110V power outlet within 4 feet of DIS Hub location (not including printer power setup)	All DIS Hubs will come with a standard USA style power plug and cable.
Network	- One whitelisted ethernet port per DIS Hub (not including one whitelisted ethernet port per printer) allowing outbound communication to DNS port 53, HTTPS port 443, and NTP port 123 UDP.	Ports must have a clear network allowing outbound communication to the DIS Hub. See appendix A for more information.
Connections	- At least two ethernet cables per DIS Hub (not including printers direct connection to network)	These will be for connecting DIS Hub to network and connecting DIS Hub to printer.

** These items should be prepared by the DIS Hub user[s] prior to full installation by the Wurth Additive Group. Please reach out to your local Wurth Additive Group representative with any questions.

WHAT'S IN THE BOX

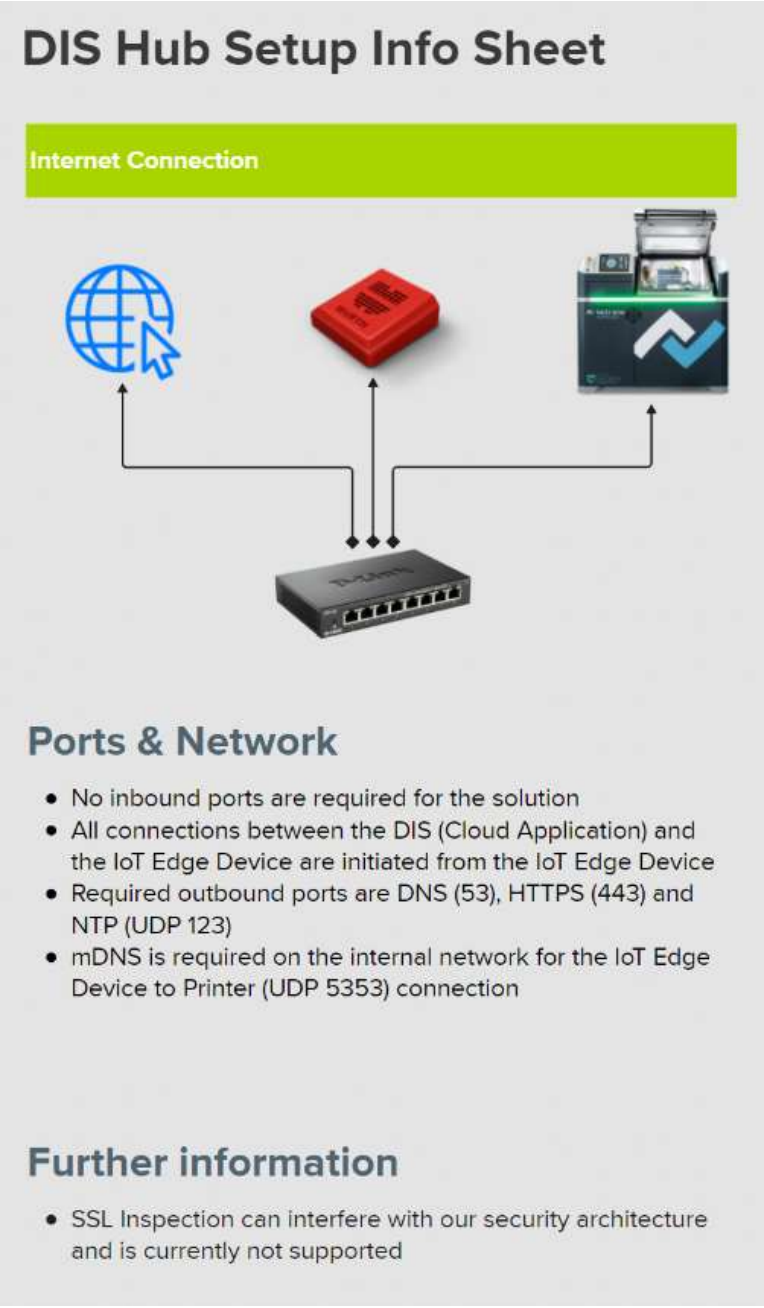
Item	Notes
DIS Hub	Please note the Hub ID and MAC address listed on the outside of the box as well as on the bottom of the DIS Hub.
Power Cable	5ft USB-C cable with USA style plug and on/off switch.

DIS HUB CARE INFORMATION

Facility Requirement	Value Range	Notes
Storage Temperature Range	-20°C to 60°C (-4°F to 140°F)	
Operating Temperature Range	0°C to 50°C (32°F to 122°F)	
Humidity Range	10% to 80% RH	
Ventilation and Air Flow	15cm (6in) minimum open space in rear	- Do not cover device while operating
Electrical Connection	100-240V AC, 50-60Hz, 0.8A	- Requirements for provided power cable
Network Conditions	Ethernet cable and whitelisted port	- MAC addresses for each device are provided on device label if individualized permissions are needed
Cleanliness and Safety		- Keep device away from any fluids - Keep operating area free of dust - Avoid placing device next to strong electromagnetic fields - Do not disassemble the device

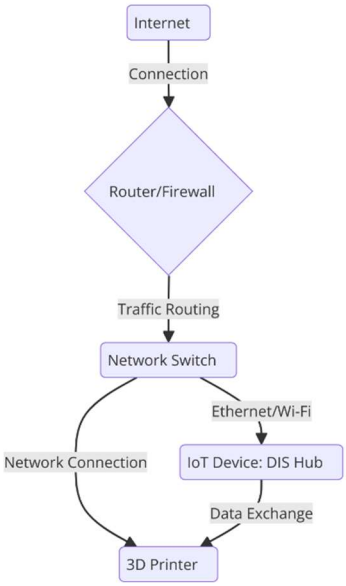
Appendix A - GUIDE TO SET UP LOCAL NETWORK FOR DIS

Before DIS can be used, the system and the service need to be set up with a local network. The diagram below shows the way the system needs to be connected and configured using local Ethernet and a Switch (the device in the middle), to which both DIS Hub (red box) and the printer to the right are connected. **The switch, DIS Hub, and the printer must be on the same network.** The diagram below also lists what ports needs to be open on a local network in order for DIS to work correctly. It might require the help of the local IT Administrator, or a Deco unit that will run a dedicated DIS network.



After the devices are connected to the local network as shown above, the Printer needs to Bind to the DIS Hub. This is done via the Printer panel menu, navigating to the right configuration option and selecting the proper name of the DIS Hub. The name of the DIS Hub is written on the label attached to the bottom of the Hub.

For the reference, the diagram below shows the network configuration from the data routing perspective. Please note that DIS Hub (IoT Edge Device) **is not connected to the printer directly,** but rather through the network, since they are both connected to the same switch and are on the same network.



More on the DIS Networking Requirements and ports:

When connecting the DIS Hub to your network, it's important to ensure that certain internet communication channels are allowed. This involves configuring your network settings to "whitelist" or permit traffic specifically to and from the DIS Hub. The whitelist essentially tells your firewall or network security tools to allow certain types of outbound traffic without blocking it.

The DIS Hub relies on three primary outbound connections:

1. **DNS (Port 53):**

The hub needs to communicate with Domain Name System (DNS) servers to resolve domain names into IP addresses. This process is essential for the hub to identify and reach external services on the internet. Port 53 is typically used for DNS queries, and opening this port ensures the hub can resolve the correct destinations for its operations.

2. **HTTPS (Port 443):**

Secure web traffic runs over port 443 using the HTTPS protocol. The DIS Hub uses HTTPS to securely exchange data with cloud services, download updates, or access remote resources. Allowing outbound traffic on port 443 ensures that all secure communications between the hub and external servers can proceed without interruption.

3. **NTP (Port 123, UDP):**

The Network Time Protocol (NTP) allows the hub to synchronize its internal clock with an accurate time source. This is often a critical step for maintaining consistent logs, ensuring proper encryption handshakes, and meeting compliance standards. Opening UDP port 123 lets the hub keep its system time correct and aligned with external time servers.

By ensuring these ports are open for outbound communication, the DIS Hub can function effectively, maintain secure connections, and operate reliably.