

Gateway & Edge Device Network Functionality

Devices Affected: QD2040x, QWLx.x

Data Collection Network

Media Type: RS-485 serial

Protocol: TCSBus

Topology: The collection of data from controllers is done through the segmented serial networks that terminate at the Gateway.

Data Flow: The data is evaluated by the supervisory control module, where overrides can be performed, then the data is aggregated and packaged in messages to be transmitted to the Cloud Service.

Data Transmission Network

Media Type: Ethernet

Protocol: TCP, HTTPS (Port 443)

Topology: Ethernet with access to the Cloud Service domain.

Data Flow: The messages are transmitted via HTTPS POST to the Cloud Service; the response to the POST contains all the messages that the Cloud Service has queued.

Device Setup/Troubleshooting

Device setup occurs early in the commissioning process, in order for it to establish communication with the Cloud Service. After the link has been robustly established, other configuration options become available in the Cloud Service:

Via Network Web Interface:

Media Type: Ethernet

Protocol: TCP, HTTPS (Port 443)

Topology: A local workstation that has access to the device's IP/subnet on Port 443.

Data Flow: The user logs into the setup interface, and submits the changes via HTTPS POST to the local device. The device processes the new messages, applies changes, and restarts the application.

Via Secure Shell:

Media Type: Ethernet

Protocol: SSH (Port 22)

Topology: A local workstation that has access to the device's IP/subnet on Port 22.

Data Flow: The user logs into the console via SSH, runs "setup" command, follows the menu prompts, and saves. The configuration will be updated and the application will restart.

Via Local Access (Monitor and Keyboard):

Media Type: VGA, USB Keyboard

Protocol: NA

Topology: Local Access ("Crash Cart")

Data Flow: The user logs into the console, runs "setup" command, follows the menu prompts, and saves. The configuration will be updated and the application will restart.

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Network Port List

Inbound Ports

Number	Purpose	Minimum Requirement
22	Setup/Troubleshoot	No
80	Redirects to 443	No
443	Setup/Troubleshoot	No

Outbound Ports

Number	Purpose	Access to Cloud Service	Minimum Requirement
80	OS to update fallback	No	No
443	Secure – Message Transport for HVAC Operation	Yes	Yes
8443	Management Port	Yes	Yes

Configuration Management

A Secure Mode option is available. When this option is enabled, it disables all inbound ports except Port 22, which would be accessible only from the customer's local network. This will disable the device's web server and web interface.

Cloud Service Destination Addresses

US: 51.81.3.224/29

CAN: 192.99.228.152/29

FQDN: *.ubiquitysystems.net

(Supporting and related sites and services would precede the domain name as in this example: *support.ubiquitysystems.net*)