

2026 Industrial Router Selection Checklist

Stop guessing. Use this 5-point checklist before specifying hardware for your next mission-critical OT network to ensure 100% uptime and avoid costly truck rolls.

1. Environmental & Physical

Don't put consumer plastic in a 60°C control panel.

- ☐ **Operating Temperature:** Does it support true industrial extremes (-40°C to 85°C) without processor throttling?
- ☐ **Enclosure Material:** Is it housed in an IP30/IP40 rugged metal casing for natural heat dissipation and EMI shielding?
- ☐ **Mounting:** Does it feature a native, secure 35mm DIN-rail clip (not a flimsy plastic add-on) to withstand machine vibration?

2. Power Supply

Avoid deploying additional consumer power adapters inside industrial panels.

- ☐ **Voltage Range:** Can it run directly off the control panel's existing power (e.g., standard 9-24V DC or 12-48V DC)?
- ☐ **Terminal Block:** Does it utilize a secure industrial terminal block rather than a consumer DC barrel jack that easily vibrates loose?
- ☐ **Protection:** Does it feature built-in reverse polarity and electrical surge protection?

3. Connectivity & Interfaces

Match the router directly to your field devices to minimize external failure points.

- ☐ **LAN Ports:** Does it have enough Ethernet ports (e.g., 4x LAN) to connect multiple PLCs/HMIs without a separate switch?
- ☐ **Legacy Serial:** If connecting older PLCs or utility meters, does it have physical RS232/RS485 serial ports?
- ☐ **Protocol Conversion:** Does it natively translate protocols, such as Modbus RTU to Modbus TCP or MQTT?

4. Redundancy & Failover

Plan for inevitable ISP outages.

- ☐ **Dual SIM:** Does it feature dual SIM slots for automatic carrier failover if the primary cellular network drops?
- ☐ **WAN-to-Cellular:** Can it use wired WAN as the primary connection and instantly switch to 4G/LTE as a backup?

- ☐ **Antenna Connectors:** Does it use standard SMA connectors, allowing for external high-gain antennas?

5. Security & Management

Protect your internal OT network from public internet threats.

- ☐ **VPN Support:** Does it support industry-standard VPN tunnels (OpenVPN, IPsec, WireGuard) to encrypt SCADA data?
- ☐ **Firewall:** Does it have an SPI Firewall with strict MAC/IP filtering capabilities?
- ☐ **Remote Management:** Can your engineering team securely reboot, ping, or reconfigure the device remotely?

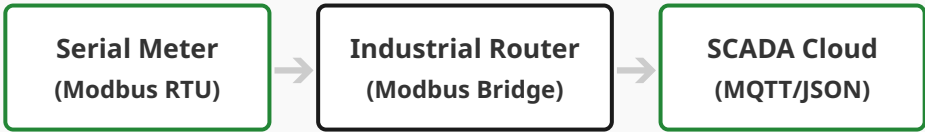
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3 Common OT Network Topology Blueprints

Reference these standard architectures when integrating legacy equipment or scaling remote site connectivity.

TOPOLOGY 1

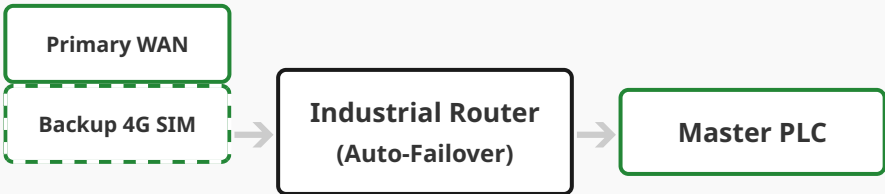
Legacy Serial to Cloud (Protocol Translation)



Challenge: Older equipment speaks Modbus RTU, which cannot travel over standard IP networks.
Solution: Deploy a router with RS485 ports and RTU-to-MQTT conversion for cloud integration.

TOPOLOGY 2

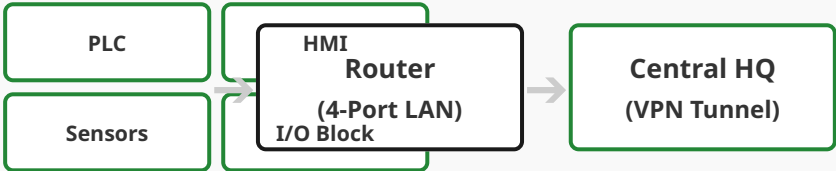
High-Availability SCADA (Cellular Failover)



Challenge: Relying on a single ISP leaves the site vulnerable to cable cuts or maintenance.
Solution: Use WAN+Cellular failover architecture to ensure zero downtime.

TOPOLOGY 3

Isolated Remote I/O Network (Cost-Optimized)



Challenge: Cabinet space is limited; adding external switches increases cost and failure points.

Solution: Use a router with integrated 4-port LAN to create an isolated control cell.

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