

Overview

The xPort family of Layer 1 switches comprises two models: the XPM variable mesh switch, and the XPM3, which adds an FPGA to support multiplexing back to the exchange and data capture with a highly accurate timestamp. Both switches support on-the-fly reconfiguration. This feature allows you to enable or disable ports, and remap network topologies. The XPM3 sends messages back to the exchange in only 80ns. The XPM has 48 ports: 32 SFP/SFP+ ports, and 4 x QSFP+ ports. The XPM3 has 32 SFP/SFP+ ports. Both switches support custom mesh topologies for virtually any server configuration.

Product Features	XPM	XPM3
Number of Ports	48	32
Full Mesh	Y	Y
10MB, 100MB, 1GB, 10GB Support	Y	Y
Media Agnostic	Y	Y
Industry Standard CLI	Y	Y
Port Isolation	Y	Y
Port Diagnostics	Y	Y
FPGA		Y
Send Orders Back to Exchange		Y
Rebroadcast Data with Timestamp		Y
Capture Data with Timestamp		Y

INDUSTRY STANDARD COMMAND-LINE INTERFACE (CLI)

Among other functions, the command-line interface permits:

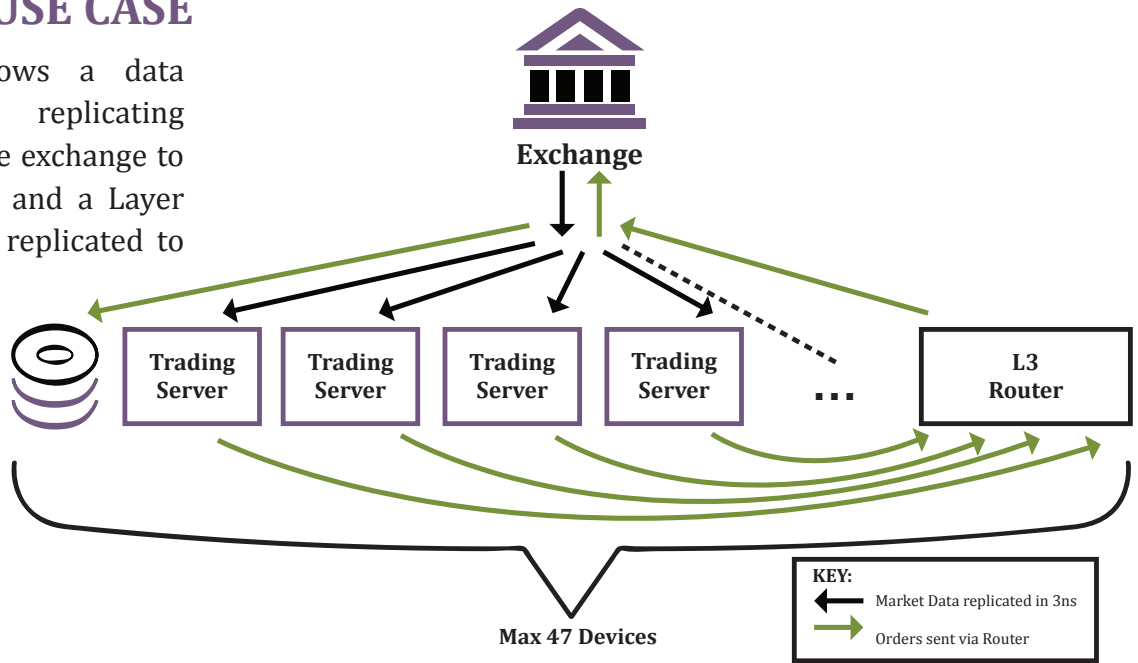
- Isolation of ports
- Configuration of port speed (auto-negotiation/force)
- Diagnosis of port connectivity issues, to measure light levels, etc.
- Access to device health monitoring, such as ambient temperature, power draw, etc.
- Dynamic configuration and reconfiguration of mesh networks

LATENCY DATA

Connection	Port-to-Port Latency
32 SFP/SFP+ ports	2ns minimum
4 QSFP+ ports (XPM only)	2.5ns typical
10M/100M/1G/10G Ethernet	4ns maximum

XPM EXAMPLE USE CASE

The first diagram shows a data replication use case, replicating market data from a single exchange to multiple trading servers and a Layer 3 router. Market data is replicated to these devices in around 3ns. These devices can send orders back to the exchange via the router. In this example, this exchange-bound traffic is also replicated out of a spare port for capture.



XPM3 EXAMPLE USE CASE

To avoid outbound orders needing to traverse the router, we can use an XPM3. The second diagram shows an XPM3 in a combined multiplexing, data replication, capture and rebroadcast use case. The XPM3 can be configured to have up to 31 multiplex ports. These ports pass orders to the exchange in 80ns via the on-board FPGA, while they maintain 2-4ns latency to replicate incoming data. The diagram shows market data being replicated to multiple trading servers and a Layer 3 switch; the same market data is captured and also rebroadcast with high resolution timestamps. We can also see orders being sent directly to the exchange; the exchange-bound traffic is also captured and rebroadcast.

