MetaMux

Packet aggregation in 39 nanoseconds

MetaMux is a network application designed for Arista’s FPGA-enabled switches performing multiplexing/aggregation of incoming streams in an average of 39 ns*.

The MetaMux application provides a configurable number of multiplexer (mux) options all the way from 48:1 down to multiple 4:1 mux instances. To allow for the situation where multiple packets arrive at the multiplexer at the same time, MetaMux will queue packets in its input buffers to ensure contending packets can be sent on the link. Buffer utilisation and statistics are available from the device.

MetaMux performs packet multiplexing with significantly lower latency than the best conventional switches, making it extremely useful for connecting trading machines directly to exchanges, for example. Its latency is significantly lower whilst offering the same level of industry standard monitoring and management as traditional switches.

It is optimised for the Arista 7130L Series at an average of 39 ns, but also available on the 7130E Series and K Series devices with slightly higher latency profiles*.

<table>
<thead>
<tr>
<th>FEATURES</th>
<th>BENEFITS</th>
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<tbody>
<tr>
<td>Ultra-fast multiplexing in 39 ns</td>
<td>Aggregate streams from multiple sources into a single stream for hand-off to exchanges, microwave links, or WAN links. Configurable as many N:1 multiplexers</td>
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<td>Deterministic</td>
<td>Know and rely upon your system’s latency for fairness, or to get the best execution environment for all your orders. Without contention MetaMux aggregation latency varies by +/- 7 ns.</td>
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<td>Complete packet statistics</td>
<td>Receive per port counters from the MetaMux application and the Layer 1 switch; useful for accounting, statistics, diagnosis and troubleshooting for both ingress and egress</td>
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<td>Support for BGP and PIM</td>
<td>Exchanges may require a Layer 3 network device supporting BGP and PIM</td>
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<td>Easy to monitor and manage</td>
<td>Arista provides a complete range of additional features including:</td>
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<td>• A comprehensive set of Ethernet counters on each port</td>
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<td>• An integrated Linux management processor</td>
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<td></td>
<td>• Streaming telemetry via a local InfluxDB tick database</td>
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<td></td>
<td>• Web-based Graphical User Interface (GUI)</td>
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<td>• Command-line interface (CLI) via secure shell (SSH), Telnet, serial connection</td>
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<td>• Local and remote logging via Syslog</td>
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<td>• JSON-RPC API</td>
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<td>• Simple network management protocol (SNMP) v1, v2, v3</td>
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<td>• Support for NETCONF</td>
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Optimized for

- Arista 7130L Series with embedded Xilinx Ultrascale+ FPGA.

Compatible with

- Arista 7130K Series with embedded Xilinx Virtex 7 FPGA
- Arista 7130E Series with embedded Xilinx Ultrascale or Ultrascale+ FPGA.

*See product documentation for full latency profiles.

Use it for low-latency exchange connectivity for trading

Layer 1+ Switch

Layer 2 Switch

Trading Servers

MetaMux

39 ns Order entry

5 ns Market data fan-out

Exchange

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