

EVENT FLASH

Juniper Expands Carrier Ethernet Portfolio with the MX480 and MX240

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IN THIS EVENT FLASH

This IDC Flash discusses Juniper Networks' announcement to expand its Carrier Ethernet portfolio with two new MX products: the MX480 and MX240. These new products extend the MX960 platform to two uniquely smaller boxes with high density and small form factors to enable Ethernet services and connectivity to move closer to the provider edge.

SITUATION OVERVIEW

Carriers are trying to migrate legacy service offerings and traditional networks to provide lower-cost Ethernet services that run over a Carrier Ethernet Layer 2/3 transport architecture. Carrier customers are indeed finding that Ethernet services offer higher bandwidth as well as lower cost, but carriers to date have been hard pressed to find their own savings while this migration is taking place. Whether the decision is Layer 2 or Layer 3 services is inconsequential as both should be offered, but providers must now install Carrier Ethernet products at the edge, where space, power, and cooling are exceedingly difficult to come by. Juniper, by extending the MX product line, has offered high-performance routing and switching for the Carrier Ethernet edge in very small form factors, thus keeping the operational costs down.

A major challenge facing providers delivering Carrier Ethernet services is the three-dimensional trade-off between density, bandwidth, and quality of service. Stringent latency and jitter requirements coming from these three forces affect the scalability of the network and are very much dependent on the platform on which they are delivered. In addition, the scalability of metro Ethernet networks has been questioned due to the requirement to support thousands of MAC addresses. Probably what is most remarkable about this announcement is the ability of all of the Juniper MX products to support up to 1 million MAC addresses. This extends the scalability of the MX960 to the edge and, since every network element requires a MAC address, virtually eliminates scalability issues.

Additional hardware enhancements include Layer 2 switching added to the Layer 3 routing cards (DPC-R) as well as high-density Layer 2 switching cards (DPC-X) for aggregation. New queuing cards (DPC-EQ) support 64K queues and granular queuing. Commendable is the extension of these new cards to the M series, increasing performance and density for that platform as well. And, the switch fabric is 100G ready when the standards are settled and line cards become available.

The MX480 and MX240 run on the JUNOS operating system, which allows for immediate deployments of this newly extended MX line without extensive testing since the MX960 has already been tested and deployed in tier 1 provider networks. Juniper is also delivering LDP VPLS in addition to the BGP VPLS, which has always been supported. While Juniper has not advocated the LDP approach in the past, LDP is being used in Layer 2 networks today; therefore, support for these networks is critical. In addition, the awaited Ethernet features have already been added to the JUNOS software that is shipping today. The scalability in the MX platform also addresses current limitations seen in many multicast deployments. Multicast traffic continues to tax networks supporting video transmission. Whether it is best effort or switched digital video or HDTV, support for multiple multicast protocols and applications is necessary to deliver these various forms of media.

Juniper is also offering new software features to simplify the complexity of these networks. The MPLS plug-and-play features help automate operations by reducing errors and simplifying configuration for network operators by automating responses to unusual changes or conditions. This proactive approach to mitigating issues is extremely helpful. So is JUNOScript, which creates common configuration scripts to prevent errors. The reader should note that configuration errors are *the* most common problem in deploying routed and switched networks! These same scripts can be used for troubleshooting and creating custom diagnostics to not only simplify the configuration process but sustain it. The fact is, core MPLS networks are growing and migrating to the edge, and while MPLS has been criticized for being overly complex, it has 10 years of deployment, so any tools that simplify expansion and increasing configuration complexity will help providers deliver services faster in a much-needed stable environment.

FUTURE OUTLOOK

The Carrier Ethernet switching and routing (CESR) market continues to be one of the fastest-growing segments of the telecommunications equipment market. The CESR market hit almost \$3 billion in 2006 and is on a trajectory for 18% growth year over year for 2007. The 2011 CESR forecast is \$6.7 billion, which equates to a 21% CAGR. The Carrier Ethernet market is applicable to residential services and business services and as a vehicle for the wireless backhaul market. Growth is also coming from the over-the-top (OTT) large

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datacenter customers whose growth for switching applications for server farms has been tremendous. Large enterprise accounts are also demanding very high performance on more reliable platforms, shifting some demand for carrier product into the enterprise as well. So the combination of telecom, cable, datacenter, and large enterprise accounts is driving this market, which requires Layer 2 switching and Layer 3 routing on high-availability platforms with stable software that can be simplified for ease of deployment. Juniper continues to deliver in all these key areas with a full MX product line. The only thing missing is even smaller MX products, which IDC anticipates Juniper customers have already requested and most likely will be announced in the next 12 months. The key here is that MX960, MX480, and MX240 will address and meet the bulk of the CESR market for a long time. Look for Juniper to continue to gain market share in this fast-growing space!