

## EVENT FLASH

### Juniper Announces the MX960: The Ethernet Router the Carriers Have Been Waiting For!

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#### IN THIS EVENT FLASH

This IDC Flash discusses Juniper Networks' announcement of the MX960, a built-for-purpose Carrier Ethernet Services Router. The platform delivers the industry's largest Ethernet Router ever to exist, at a honking 960Gbps. Based on the JUNOS platform, the product incorporates some key hardware elements that deliver scalability unprecedented in the industry.

#### SITUATION OVERVIEW

- ☒ A major challenge facing providers delivering IPTV and Carrier Ethernet services is the three-dimensional trade-off between density, bandwidth, and quality of service. There will be a serious effect on network congestion as well as stringent latency requirements coming from these three forces on all equipment deployed in this market. Inherently, network scalability to meet these requirements is dependent on the number of IP flows that can be supported. Vendors that have delivered and continue to deliver technically advanced product will have an edge. Juniper clearly is bringing to market yet another product whose scalability and performance are confirmed by their increasing customer demand and commitment.
- ☒ One of the key features Juniper brings to the MX960 is the ability to do complete bridging and routing simultaneously on all ports. With the JUNOS software as the base operation system, all previous routing features, as well as Layer 2 switching on all ports, are inherent. What makes this feature so important is that for any provider offering Carrier Ethernet services or IPTV, this switch router can be deployed and fully utilized today in both modes before services really start to scale and thousands of subscribers come aboard, saving the cost of deploying additional access equipment until needed. It also enables video servers located on separate router subnets to be locally switched while the rest of the traffic can be routed. A secure network is thus established, preventing stolen or unauthorized video as well as any major denial of service attack.
- ☒ The core architecture of the MX960 is I-chip ASIC, which scales the Ethernet density up to 480 GbE ports or 48 10G Ethernet ports or some combination thereof. The I-chip is key to the L2 and L3 classification mix on any port as well as advanced QoS capabilities such as hierarchical shaping and queuing. Additional on-chip and off-chip memory provides the headroom to scale for new applications, features, and subscribers, especially with the 40Gbps-per-slot capacity. The new switch fabric (960Gbps) also supports high-performance multicast, which will be significantly stressed and is absolutely required for broadcast IPTV services. It is clear that multicast performance will make or break some router vendors in this emerging IPTV market.
- ☒ High availability (HA) features have increased in importance as aggregation requirements have grown. Typically, router vendors develop HA features over time, and while features don't represent any revenue potential, they certainly can *limit* revenue potential if the service router is not reliable. Not only is carrier class reliability required by service providers, but some Ethernet services routers are being sold into Enterprise accounts mainly because of their solid redundancy features.
- ☒ IDC has forecast the U.S. market for Ethernet services will grow to \$2.7 billion in 2010, a compound annual growth rate (CAGR) of 33.8%, while growth in EMEA is expected to be even higher. An Ethernet connection is much more cost effective than a traditional leased T1/3 line, and the MX960 can provide Ethernet business services via Layer 3, VPLS, or VPWS.
- ☒ So where does this Ethernet services router fit? It fits a wide number of applications, but keep in mind this is not a box for smaller networks: This is targeted at tier 1 and tier 2 providers that have large networks and deliver Ethernet services today and that also plan to deliver IPTV to millions of subscribers. Is this the edge aggregation switch some expected? Yes and no; it's a large version of a Layer 3 router and Layer 2 switch meant for metro core aggregation. As more Ethernet services are sold, and IPTV subscribers come onboard, edge aggregation switches will need to be deployed. Right now, the Layer 2 switch market is growing slowly, but for a stable network of the future, the core aggregation infrastructure products must be deployed today. Juniper has delivered an Ethernet services router that has a mature modular operating system, Ethernet density, and the ability to do bridging and switching on any port. For network stability, density, growth, and scalability, this is another terrific product introduction for Juniper Networks.

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## FUTURE OUTLOOK

- ☒ The Carrier Ethernet market continues to be a fast-growing segment of the service provider router market. IDC has estimated that it will grow to 32% of that market in 2006 and exceed 40% by 2010. IDC believes Juniper has surpassed many of today's Carrier Ethernet requirements to deliver a new platform on which service providers can build their triple-play networks as well as converge their older connection-oriented networks over time.