

Views on the News:

Alcatel-Lucent Scales The Edge and Looks To Address The Core With 100GbE

What Alcatel-Lucent announced:

Alcatel-Lucent has announced 100 GbE line cards which will be based on a new 100 Gbps version of the homegrown FP2 silicon chipset it rolled out initially at 50 Gbps to gain competitive advantages in density more than a year ago. The FP2 silicon will be used for commercial release mid next year following IEEE standardization of 100 GbE, and will support new 1x100 GbE and 10 x 10 GbE line cards for the 7750 Service Router and 7450 Ethernet Service Switch. Based on a MIM-D architecture with 112 processors, the new chipset will run at a native rate of 100 Gbps rather than combining lower speed chipsets. Currently in Alcatel-Lucent's labs, the 100 GbE line card will be available for customer demonstration by Q4 2009. Commercial availability is to follow as IEEE standardization for 100 GbE is completed (planned for June 2010).

What it means:

This is not the first 100 GbE line card on the market (Juniper has one for the T1600), but it is the first one announced for an edge router, and the first one available for a switching and routing portfolio spanning the metro, edge, and core. Being based on 100G homegrown silicon offers Alcatel-Lucent strong advantages in terms of footprint and power consumption, and also the very real strategic advantage of decoupling its time to market and development capability for higher performance, new features and differentiation from the availability of commercial silicon. It also resulted in Alcatel-Lucent being able to develop cards that utilize just over 4 Watts per Gbps, which gives it a lead on OpEx reduction for power consumption and a check mark for being a "green" solution.

The kind of processing power the FP2 silicon provides is significant. Alcatel-Lucent indicated that a service router running the new FP2 could support 160,000 subscriber sessions running at 6.25 Mbps of sustained traffic per user with 8 queues on a single width card. That will give Alcatel-Lucent considerable services scalability and performance in a small 1/3rd rack footprint. In addition, Alcatel-Lucent's solution will offer this kind of processing power across its Ethernet Services Switch and Service Router portfolio to span the access, metro and core.

That will help Alcatel-Lucent address the requirements of service providers that are wrestling with the considerable challenge of scaling to meet the increasing demand for more bandwidth, an increasing component of which is being driven by traffic with differentiated performance requirements thanks to the impact of increasing HD video, multimedia traffic, and VPN adoption. The new 100G FP2 is also an important technical complement to Alcatel-Lucent's **"High Leverage Networks"** and **"Applications Enablement"** concepts. Alcatel-Lucent's High Leverage Network is the term it is using for building networks that provide differentiated per service network performance that, combined with subscriber information, can be made available to applications developers.

By so doing, IT applications can be written that can control QoS per service across the network, and which can support service personalization based on subscriber information. This Applications Enablement is an area of huge interest to carriers, but is becoming an even bigger challenge in terms of the associated processing power, footprint and power consumption requirements needed to support it as they continue to scale their networks to 40G and 100G in the metro and to 100G in the core, and as they have to support a growing mix of video, multimedia, and VPN traffic.

That said, Alcatel-Lucent's 100G card is not available yet. Standardization of 100 GbE is slated for June 2010, and Alcatel-Lucent will likely not be able to release this in general availability until sometime shortly after that date. They have their own silicon, but will need some supporting 100G capable components. Nonetheless, we expect the card to be widely available in 2010.

In terms of core routers, as it stands today, the known competitor for 100GE is Juniper, which supports 8 100GE on the T1600. Cisco has yet to announce a 100GE card for the CRS-1. Cisco and Juniper core routers support 32 and 64 10GE interfaces respectively with the CRS-1 and Juniper T1600, both of which occupy half a rack. When Alcatel-Lucent has its new 100G FP2 silicon-based line cards available, it will support 10 100GE or 100 10GE interfaces on the 7750 SR. If Alcatel-Lucent has as much of a development lead as it believes, this 4 could give it competitive advantages in terms of scalability and density which, combined with performance, could contribute to making it an increasing threat in the core router market.

In terms of service / edge routers as it stand today, Alcatel-Lucent is first to announce a 100 GE card. Cisco's ASR 9010 supports 32 10GE interfaces in half a rack, whereas Juniper supports 48 10GE interfaces

in the same footprint. Alcatel-Lucent's announcement will put them at 100 10 GE interfaces or 10 100 GE interfaces in 1/3rd of a rack with the 7750 SR. Of course, Alcatel-Lucent has announced the 100GE card a bit more than a year prior to general availability, and although we have no public knowledge of competing announcements and Alcatel-Lucent believes it has a significant lead time in development, the competitive landscape at and within a year following general availability cannot be predicted with certainty.

Nonetheless, this is the second shot that Alcatel-Lucent has fired across the bow of its competitors with the FP2 silicon, and if Alcatel-Lucent brings it to market commercially as planned and has the lead to market it thinks it will at that time, this announcement could potentially give it a means to gain greater inroads into the fairly exclusive club dominating the core router market. But with the growth pressures being exerted on edge and aggregation networks as more content is cached closer to the subscriber, this announcement will definitely hone Alcatel-Lucent's currently sharp competitive edge at the service edge - protecting and potentially giving it the means to expand its strong market share there in 2010 and beyond.

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