

10 Gigabit Ethernet: 2H12 Results and 2013 Outlook



By Seamus Crehan, President,
Crehan Research Inc.



2H12 results

2012 turned out to be another very strong growth year for 10 Gigabit Ethernet (10GbE), with the data center switch market and the server-class adapter and LAN-on-Motherboard (LOM) market both growing more than 50%. Broad long-term trends such as virtualization, convergence, data center network traffic growth, cloud deployments, and price declines were helped further by more specific demand drivers, many of which materialized in the latter half of 2012. These included the adoption of Romley servers, expanded 10GBASE-T product offerings for both switches and servers, 10GbE LOM solutions for volume rack servers (which drive the majority of server shipments), and the public cloud's migration to 10GbE for mainstream server networking access. (The SNIA Ethernet Storage Forum wrote about many of these in its July 2012 whitepaper titled 10GbE Comes of Age).

However, despite another stellar growth year, 10GbE still remained a minority of the overall data center and server shipment mix (figure 1). Furthermore, its adoption hit some turbulence in the latter half of 2012, mostly related to the initial high prices and the learning curve associated with the new Modular LOM form-factor, resulting in some inventory issues. Another drag on 2H12 10GbE growth was the lack of comprehensive 10GBASE-T offerings from many market participants. Although we saw a very significant step up in 10GBASE-T shipments in 2012, limited product offerings throughout much of 2012 capped its adoption at under less than 10% of total 10GbE shipments.

But these 2H12 issues were more than offset by 10GbE entering its next major stage of volume server adoption during this time period. Crehan Research reported a near-50% increase in 2H12 10GbE results as many public cloud, Web 2.0, and massively scalable data center companies deployed 10GbE servers and server-access data center switches. We believe this is the second of three major stages of mainstream 10GbE server adoption, the first of which was driven by blade servers. The third will be driven by the upgrade of the traditional enterprise segment's large installed base of 1GbE rack and tower server ports to 10GbE.

2013 expectations

As we move through 2013, Crehan Research expects the following factors to have positive impacts on the 10GbE market, driving it closer to becoming the majority data center networking interconnect:

- Better pricing and understanding of Modular LOMs. Initial pricing on 10GbE Modular LOMs has been relatively high, contributing to slower adoption and inventory issues. In the past, end customers

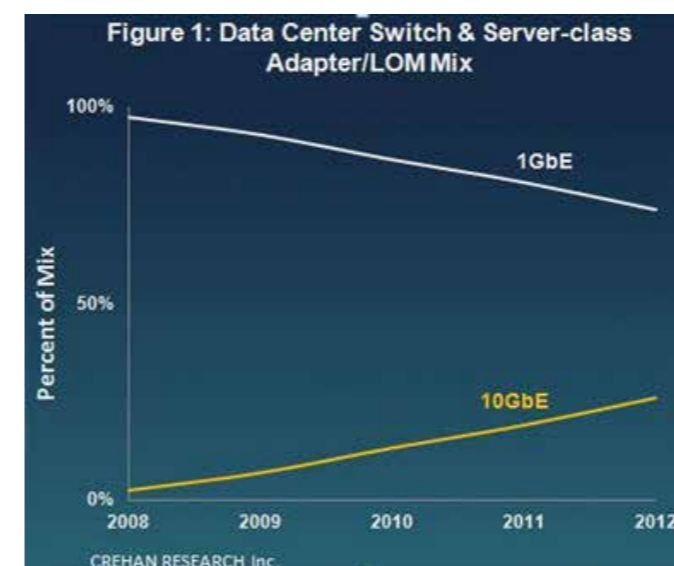


Figure 2: Fibre Channel Switch and HBA Shipments



were given the higher-speed LOM for free – for example, during the 1GbE and blade-server 10GbE transitions. The Modular LOM is a new product form-factor, and it takes time for buyers and sellers to get comfortable with and fully understand it. During 2013, we should see lower pricing for this class of product, driving a higher server attach rate.

- Comprehensive 10GBASE-T product offerings. 2013 should finally bring complete 10GBASE-T product offerings from the major server and switch OEMs, helping drive stronger 10GBASE-T adoption and growth. More specifically, we should see more 10GBASE-T LOMs in addition to top-of-rack and end-of-row data center switches. Furthermore, we expect many of these products to be attractively priced, in order to entice the large installed base of 1GBASE-T customers to upgrade to 10GbE.

- Higher-speed uplink, aggregation, and core data center switches. Servers and server-access switches likely won't see volume deployments to 10GbE without robust and cost-effective higher-speed uplink, aggregation, and core networking options. These have now begun to arrive with 40GbE, and we are starting to see a strong ramp for this technology. Crehan Research expects 2013 to bring the advent of many 40GbE data center switches, and foresees all of the major switch vendors rolling out offerings in 2013. In contrast with the early days of 10GbE, 40GbE prices are already close to parity on a bandwidth basis with 10GbE and have settled on a single interface form factor (QSFP), which should propel 40GbE data center switches to a much stronger start than that seen by 10GbE data center switches.

- Continued traction of 10GbE for storage applications. We expect that 2013 will see a continuation of the broader adoption of 10GbE as a storage protocol, in both the public cloud and traditional enterprise segments. Although Fibre Channel remains a very important data center storage networking technology, Fibre Channel switch and Host Bus Adapter (HBA) shipments each declined slightly in 2012 and have seen flat compound annual growth rates over the past four years (see Figure 2). We expect this gradual Fibre Channel decline to continue in 2013 as more customers run Ethernet-based protocols such as NAS, iSCSI and FCoE, especially over 10GbE, for their storage needs and deployments.