

Fujitsu Road Tests the Datacenter Highway with No Speed Limits

News facts:

- Technology demonstration showcases light speed datacenter of the future
- Photonics removes server and storage performance bottlenecks, allows fastest-ever data processing
- Next generation system design enables business-centric datacenter

Munich, November 13, 2013 – At last week's Fujitsu Forum, Fujitsu demonstrated technology that is destined to significantly reshape the datacenter of the future both in functionality and design. By removing current speed limits to deliver data at the speed of light, performance bottlenecks are eliminated, enabling full speed ahead for real-time business.

Fujitsu has teamed up with Intel to develop high-speed Silicon Photonics Technology, which is shown at Fujitsu Forum in Munich (November 6 and 7, 2013) for the first time outside the labs, as a working proof of concept.

With datacenter traffic expected to quadruple in the next three years, current networking technology is starting to create limitations and bottlenecks in high-speed data transfer between the three principal datacenter computing components: server, storage and network.

A new approach from Fujitsu and Intel uses data transfer at light-speed to remove the speed limits on the data highway and provide a glimpse into the future of the datacenter. The throughput performance increase from adopting silicon photonics allows data transfers at ultra-high speeds. Fiber-optic cables carrying eight strands can transfer data at of up to 1.6 Tbps (Terabits per second, and enough to fill an entire 1TB hard drive in just five seconds). Data can also be transferred over much greater longer distances (up to 300 meters) than possible with copper-based Ethernet cable interconnects. In turn, this allows application-optimized server design and a paves the way for a new datacenter design thanks to the decoupling of computing and storage resources.

The opportunity to abstract server and storage provides opportunities for cost savings on ICT facilities as heat-generating components like server processors, which require expensive climate control, need no longer be in the same room as passive storage arrays. Transferring data via fiber optic cables as photons instead of electrical pulses also reduces power consumption, and means a drastic reduction in the amount of rack cabling required – since multiple discreet Ethernet connections for every server node are no longer

necessary.

By removing the speed limits caused by network performance limitations, silicon photonics paves the way for application-optimized server design. It represents the true disaggregation of compute, network and storage resources. In future it will be easier to upgrade individual components when required, instead of having to replace everything to accommodate a processor or networking refresh.

In the datacenter of the future, Fujitsu's vision is that new systems can be more easily added without having to rearrange and re-cable entire structures. In addition, organizations can expect to reduce capital expenditure and do more with less, since removing performance limitations means that expensive components such as server processors can be better utilized.