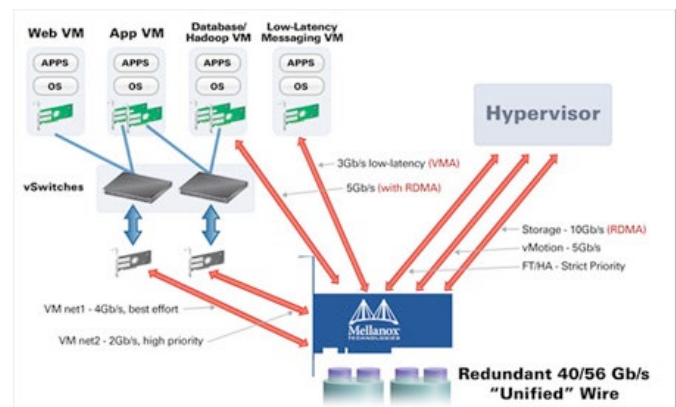




DATACENTRE ETHERNET NETWORKING

What is Datacentre Ethernet Networking?

Ethernet is a broad and widely-adopted set of networking standards that encompass LANs, WANs and even carrier infrastructure – as well as private and hybrid cloud datacentres. As bandwidth demands upon these environments have increased, new Ethernet standards have evolved to keep pace, giving rise to Gigabit speeds. Hardware built to these standards now transport huge quantities of data across the datacentre network, with many high-performance environments migrating to 100GbE or even faster



The Ethernet Performance Challenge

As organisations create more data, embrace more cloud services and develop digitally-defined business processes, the enterprise datacentre needs to provide ever-increasing performance. Standard 1 or 10 Gigabit Ethernet datacentre speeds – once considered plenty of bandwidth for any application – are fast running out of time before they too become a bottleneck to business objectives.

Enterprises intending to transform their private and hybrid cloud datacentres to hyperconverged infrastructure (HCI), SDN and other next-generation technologies especially need to plan for the future in order to maximise their strategic investments. These webscale models are predicated on the delivery of reliable, multi-Gigabit datacentre performance.

Moving to a 25GbE or 40GbE architecture is an inevitable step in maintaining competitive advantage and ensuring a productive user experience for customers and staff. This is the pathway of future scalability to higher Ethernet performance standards (25/40/50/100/400GbE) that allow enterprises to be as agile as possible; embracing new technologies, automating processes and creating new applications. The only question is how.

What approach should IT departments take to implement the highest performing, most cost-efficient Ethernet enhancement?

Datacentre Ethernet – what a solution needs to look like

The demand for more processing power, efficiency and scalability is constantly accelerating in datacentres where high-performance computing, cloud, machine learning, data analytics, and storage are key applications. To address these demands in a comprehensive rather than piecemeal fashion, enterprises are increasingly turning to complete end-to-end solutions (silicon, adapter cards, switch systems, cables and software) that support their choice of InfiniBand and Ethernet networking technologies.

The traditional core attributes of switching architecture – performance, power and cost - are paramount in today's modern datacentre environments. Other key considerations are:

- open network standards; avoiding proprietary vendor lock-in by taking advantage of networking interoperability
- low latency; ensuring minimal packet-loss and response times
- maximum density; to conserve physical space and power.

Mellanox

Mellanox is a leading supplier of end-to-end Ethernet and InfiniBand intelligent interconnect solutions and services for servers, storage and hyper-converged infrastructure. Mellanox intelligent adapters, switches and cables increase datacentre efficiency by providing the highest throughput and lowest latency, delivering data faster to applications and unlocking system performance.

Mellanox solutions also offer:

- **Zero Packet Loss** – for full rate line speed and the highest buffering on the market
- **Predictable Performance** – ensuring fair bandwidth allocation among streams
- **Choice of Network OS** – to negate lock-in and promote open network principles

