



## HPC User Site Census: All Networks

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### EXECUTIVE SUMMARY

This report, part of the Intersect360 Research Site Census series, provides an examination of the server interconnects and network characteristics found at a sample of HPC user sites. Intersect360 Research surveyed a broad range of users about their current computer system installations, storage systems, networks, middleware, and software supporting these computer installations.

The goal in this analysis of networks is to examine the installations by network type and by supplier across the three locales (system, storage, and LAN) within the HPC user communities.

Key findings of the survey include the following:

- Ethernet and InfiniBand are the two primary network protocols that compete across all three locales: system interconnects, storage networks, and LANs. Ethernet is the most prevalent for all three locales when data rates are disregarded. For the higher performance interconnects, InfiniBand (40G in particular) continues to be used in the greatest number of systems reported in our study.
- About two-thirds of the surveyed sites reported both Ethernet and InfiniBand installed at their site.
- 10 Gigabit Ethernet has the most representation for storage networks, capturing the upgrade business from Gigabit Ethernet, and surpassing InfiniBand installations.
- Mellanox is the supplier used most often for system interconnects, with 42% of mentions, and also for storage networks, with 35% of mentions. Cisco continues to be the leading supplier for the LAN market, with 46% of the mentions.
- Mellanox gained share in every locale. Mellanox accounted for 42% share of system interconnects reported in 2016 versus 40% last year, 35% share of storage networks in 2016 versus 28% in 2015, and 13% LANs versus 11% in 2015.
- Ethernet, as expected, accounts for the majority of LAN network implementations reported at these sites, with both 10 Gigabit Ethernet and Gigabit Ethernet each accounting for 35% of the mentions. In this report, 10 Gigabit Ethernet nudge slightly ahead two more LANs reported than Gigabit Ethernet. We expect Gigabit Ethernet will slowly decline in share over the coming years.

## COMPANIES MENTIONED IN THIS REPORT

- Ace Computers
- Amazon Web Services
- Arista
- Aspen
- Asus
- AT&T
- Atipa
- Avaya - Nortel
- BNC
- Broadcom
- Brocade
- Cisco Systems
- CITRIX
- Cray
- DataDirect Networks
- Dell EMC
- Digisol
- D-Link
- Edgecore
- Emulex
- Eurotech
- Extreme Networks
- Flextronics
- Fujitsu
- H3C
- Hewlett Packard Enterprise
- Huawei
- IBM
- Intel
- Juniper Networks
- Lenovo
- Linksys
- Linktel
- Mellanox
- Micro Focus
- Microway
- Mikrotik
- Myricom
- NetAPP
- NetGear
- Oracle
- Penguin Computing
- Qlogic
- Qualcomm
- Quanta
- SGI
- SMC Networks
- SolarFlare
- Supermicro
- Tikona
- Trendnet
- TrueScale

## TECHNOLOGIES COVERED IN THIS REPORT

- HPC system elements
  - Systems, clusters
- Storage elements
  - Storage systems
- Interconnect elements
  - System interconnects
  - Storage interconnects
  - LAN interconnects
  - Interconnect standards
    - Ethernet
    - InfiniBand
    - Fibre Channel
    - Other interconnect standards

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