

"10 Gigabit Ethernet: An End-User Perspective"

"10 Gigabit Ethernet: An End-User Perspective" is an installment of the LAN Research Panel and provides primary, end-user data on Gigabit Ethernet and 10 Gigabit Ethernet Adoption trends. Panel members represent organizations of all sizes and a range of industry verticals. Data for this report was collected in May 2003, and includes information on: current GE and 10GE deployments, future 10GE deployment plans, types of cabling currently used in corporate data centers, types of cabling planned for use in future 10GE deployments, price points panelists would be willing to meet for 10GE server adapter cards and 10GE switch line cards, attitudes toward deploying multiple aggregated GE links as opposed to a single 10GE link, and panelist viewpoints on the types of applications requiring the use of 10GE connections. The data and analysis contained in the report will be useful to server and switch vendors in gauging end-user attitudes toward 10GE.

- Although the type of server software an organization runs over its network does not directly influence whether or not that organization deploys 10GE, it is useful to many vendors to know how server software is correlated with attitudes toward 10GE. To that end, we found that the largest majority of panelists have Windows server software deployed somewhere in their network. Linux is the second most deployed server software, with Sun Solaris and HP-UX coming in third and fourth, respectively. Segmenting by size of business, larger organizations are much more likely to have deployed "heavy duty" server software, such as Sun or HP, as their computing needs are typically more intensive than those of smaller firms.

- Gigabit Ethernet (GE) has made significant inroads, already, into the networks of our panel organizations. About 43% of the panelists have deployed GE server adapter cards, and 24% have deployed GE switch line cards. Predictably, larger organizations in the panel, with greater bandwidth requirements for their networks, are more likely to have deployed GE. A much smaller percentage of the panelists have deployed 10 Gigabit Ethernet (10GE).

- Only a small majority of the panelists have no plans to eventually deploy 10GE somewhere in their networks: Roughly 56% have no plans to deploy 10GE server adapter cards, and 62% have no plans to deploy switch line cards. Given the current expense and relative newness of 10GE, In-Stat/MDR believes these results bode well for the eventual market acceptance of 10GE.

- CAT5 cabling is still the predominate type of cable used in the corporate data centers of the panel, though among larger organizations, multi-mode and single-mode fiber are also extensively used, primarily due to the need to network longer distances. CAT6 was the least widely deployed type of

cable among the organizations represented in the panel, which casts some doubt on the efficacy of using CAT6 as the cabling type for the developing 10Gbase-T standard.

- For those panel organizations planning to deploy 10GE into their organizations, multi-mode fiber was the top choice, followed by CAT5, 5e or 6, and then single-mode fiber and, finally, copper 10GBase-CX4. These results are surprising, since 10GBase-CX4 is expected to be standardized by 4Q03, while it will most likely be 2005 before a 10GE CAT5, 5e or 6 standard is finalized, and points out the importance of copper 10GE standards making use of the installed base of copper wiring.

- Many of the panelists are unsure about what is "reasonable" pricing for a 10GE server adapter card or 10GE switch line card. This is especially true for smaller companies, who have relatively less need for a full 10 Gigabits of bandwidth, and subsequently have most likely spent less time investigating 10GE prices or seriously considering what they would be willing to pay for 10GE connections. Consequently, the majority of panelists selected "Less than \$4,000" as the price they were willing to pay - the lowest amount among the survey responses allowed. Larger companies in the panel, with, presumably, more experience with 10GE, were willing to pay somewhat more for 10GE connections.

- Currently, a slight majority of panelists find aggregating multiple GE links together for higher bandwidth more practical than deploying one 10GE link, though a very large percentage - 27% - do not know what they would find more practical. This large "Don't know" percentage is indicative of the "newness" of 10GE in the market place. Although roughly equal percentages of panelists from all sizes of organizations find aggregating multiple GE links more practical, panelists from larger organization are much more likely than panelists from smaller organizations to find deploying a 10GE connection practical and, conversely, less likely to not know what they would find more practical. In-Stat/MDR expects that, even as those smaller firms who currently don't know what they would find more practical become more familiar with 10GE, they will tend to choose aggregating multiple GE links. Aggregating multiple GE links should give them more granularity of bandwidth in relation to costs, which should be a better fit for firms with relatively less need for bandwidth.

- On a related note, larger firms are more likely than smaller firms in the panel to see 10GE as being necessary for a variety of applications, such as SAN, NAS and high performance computing. This is likely due to larger firms being more familiar with these applications and the benefits that 10GE can bring to them.

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