

Fabric Computing Poised as a Preferred Infrastructure for Virtualization and Cloud Computing

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Fabric computing is a fixture on the radar screen of many IT groups, driven by the increased penetration of virtualization and prospects for cloud computing.

As virtualization penetration increases, IT organizations will deploy virtual machine (VM) mobility, which will demand more attention to a fabric-based infrastructure that better integrates server, storage and networking for greater agility and faster time to deploy.

Key Findings

- Fabric computing is nearing a stage of adolescence — maturing quickly, but with much room for growth and maturation.
- Enterprises with serious initiatives in virtualization and cloud computing need to begin designing a fabric-based infrastructure, and the organizational structure to properly support it, as the underlying foundation for these initiatives.
- Based on polling results and many interactions with clients, we believe that Cisco has been the most influential marketing force in expanding the IT vocabulary and recognition for fabric computing, which is currently dominated by two vendors (Cisco and HP), with Dell, IBM and others making moves. Most users are still determining the use cases of fabric-based computing, and, as yet, are unwilling to be sold prepackaged modules of complete solutions by a single vendor.

Recommendations

- Put fabric computing on the priority list of data center architecture planning, if your virtualization plans call for a heavily dynamic infrastructure.
- Do not overhaul or plan on rip-and-replace fabric development, but impose on vendors' design guidelines that harmonize their solutions with your other data center infrastructure.
- Keep three vendors on the playlist of considerations; no single vendor is likely to have all the pieces at any time, so a comparison of options is advisable.
- Organizational role alignment and administrative responsibilities, while not high on the factors of importance poll, should be an integral part of the planning process, paralleling the efforts around infrastructure virtualization and fabric design.

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WHAT YOU NEED TO KNOW

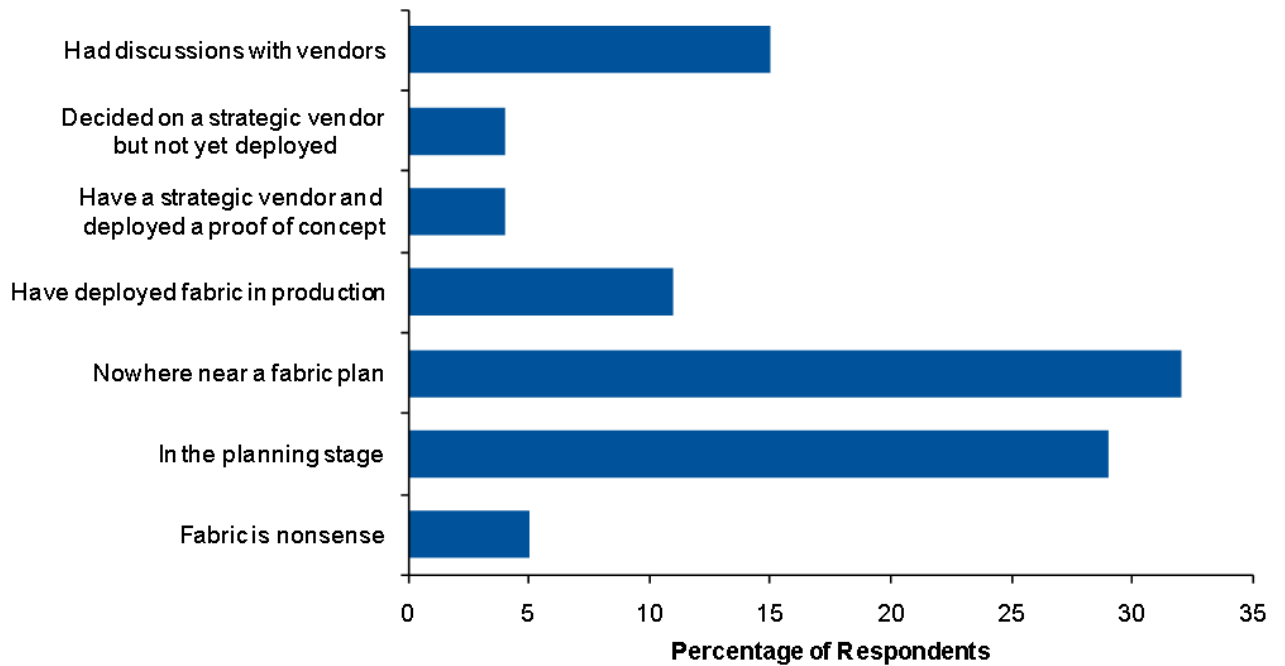
Fabric can offer a number of advantages, such as improved time to deployment, and greater efficiencies and resource utilization in the data center. Nevertheless, the adoption rate will be relatively low through 2011, because of ROI benefits that are still relatively unproven across a wide field of use cases. Vendors are initially positioning their fabric computing offerings as data center solutions — presenting a high overall entry cost due to new blade systems, software for fabric resource management, and integration services to bind servers, networks and storage — potentially into new silos. Combined with the slow economic recovery, Gartner believes that the market share of servers associated with fabric architectures will be relatively slow to ramp up (with a modest 4.4% of total server shipments by 2015), but will continue throughout the decade. As a model, this penetration mirrors the experience of blade servers throughout its decade-long climb to prominence.

ANALYSIS

One of the major factors driving fabric computing will be the level of infrastructure virtualization and the dynamic nature of these infrastructures. The more that virtualization is implemented with the dynamic mobility of VMs, the greater the likelihood that these dynamic environments will need improved management of the resources to gain greater utilization efficiencies. As an indicator, one poll conducted at the 2010 Gartner Data Center Conference (held in December 2010) asked respondents to characterize their IT infrastructure. Only 17% responded that they were either not virtualized or that the VMs they deployed were fixed to a physical server. The other 83% of respondents were using mobility to reassign new locations or shift workloads, or were using policy-based software rules for optimization.

Our planning assumption links the dynamic infrastructure to increased fabric computing. The polling data in Figure 1 suggests that a large proportion of IT organizations are preparing to engage with vendors — some already in production and others deploying proofs of concept. Overall, 63% are in the active phase, as opposed to the rest, which lack interest or seriousness. The poll results do not constitute a scientific sample, and, therefore, are of value only as potential indicators of the perceptions of half the attendees at this presentation. The results, as with all Gartner conference polling, should not be used to extrapolate vendor market share or to predict definitive future outcomes (see Note 1).

Figure 1. What fabric infrastructure deployment stage are you in?

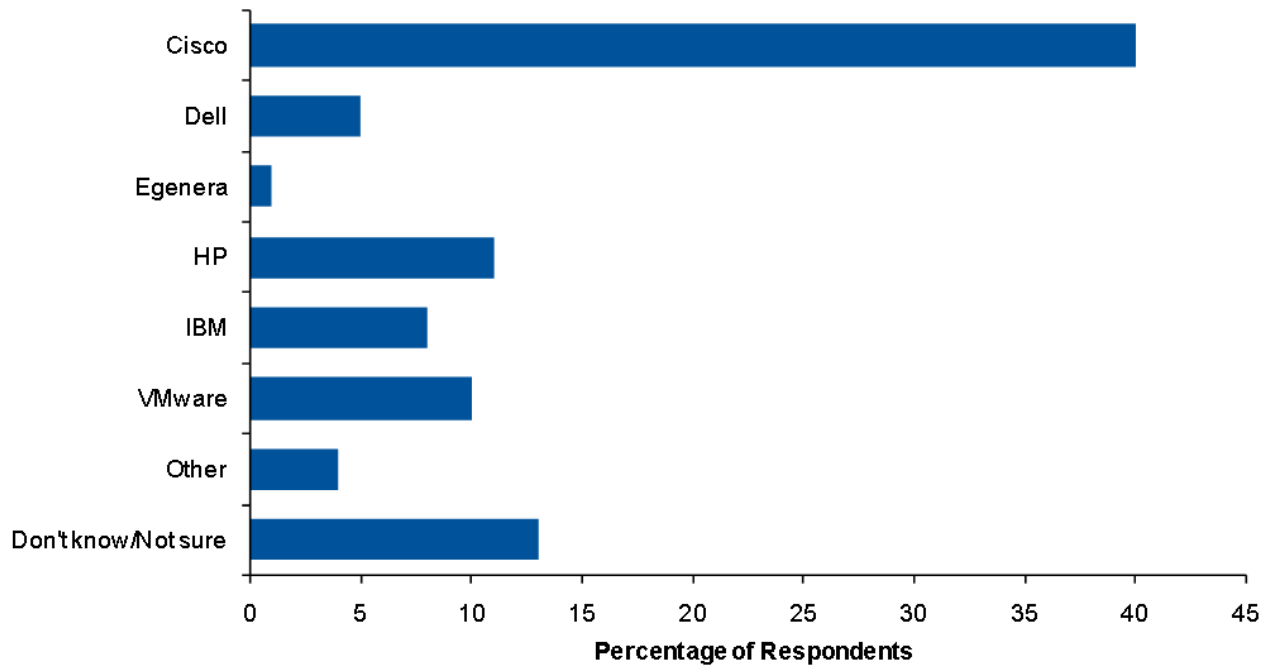


n=90

Source: Gartner (February 2011)

Because this market is being driven in part by active vendor marketing, we sought to differentiate how influential the vendors were in promoting their own concepts, including Cisco's Unified Computing System, HP's Converged Infrastructure, Dell's Virtual Integrated System, IBM's Dynamic Infrastructure, etc. However, vendor sales pressure turned out to receive the lowest response rate, and virtualization expansion received the highest sales pressure (by 3.5 times). If we add in cloud computing as an additional motivating factor, the driving force rises to 6.3 times sales. Yet, vendors will be instrumental in proving (or disproving) the ROI benefits of fabric computing. Gartner believes that one vendor, Cisco, seems to have been particularly adept at missionary selling and persuasion, most likely due to its strong networking base in many large enterprises. Figure 2 shows that respondents identified Cisco as the most credible contender, with HP a distant second, then IBM, Dell and others.

Figure 2. Which vendor would you perceive to be the most competent to deliver on a fabric-based strategy in your enterprise?



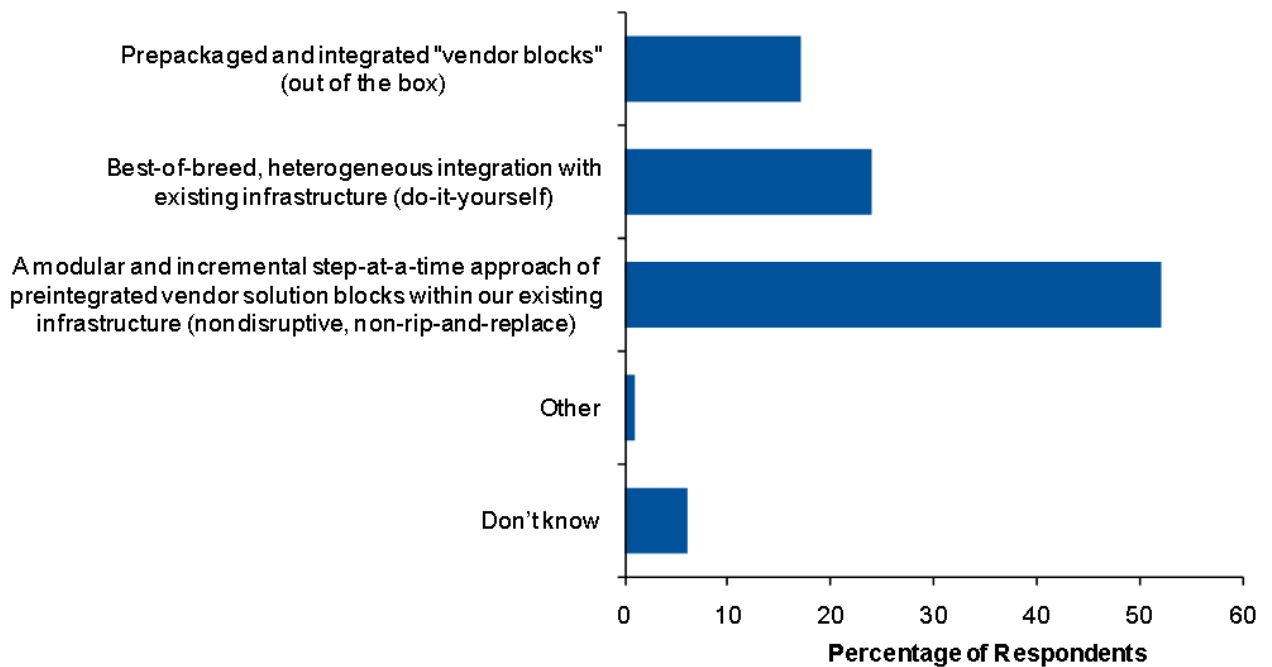
n= 92

Source: Gartner (February 2011)

The question addressed in Figure 2 was also asked in a separate presentation in which users had multiple-choice options. Out of 101 responses, Cisco captured 47, HP got 26 and IBM got 24.

Finally, equally important was how respondents felt about the way solutions should be packaged and delivered. Figure 3 raises the issue of whether users can be easily sold on prepackaged "vendor blocks," as opposed to having the flexibility to configure solutions from existing infrastructure (e.g., VMware and blades in place) integrated with vendor deliverables, or having the flexibility of building out data center convergence and consolidation incrementally and modularly. The underlying risk might already be evident to data center managers: the fear of vendors usurping their independence and forcing disruptive rip-and-replace decisions on them. This will become even more apparent as solutions such as Oracle's Exadata and the recently announced HP-Microsoft Converged Application Appliances combine to leverage fabric-based platforms.

Figure 3. Which packaging and procurement strategy will represent your most likely approach in rolling out a comprehensive fabric strategy in your data centers?



n=89

Source: Gartner (February 2011)

RECOMMENDED READING

"Emerging Technology Analysis: Fabric-Based Computing, Server Technologies, 2010"

"Clearing the Confusion About Fabric-Based Infrastructure: A Taxonomy"

Note 1

Polling Demographics

The poll results were collected at the presentation entitled "Fabric Computing in the Next-Generation Data Center: What, How and When." The presentation was part of a track called "Servers and Operating Systems: Tectonic Shifts Under Way." There were approximately 2,000 attendees at the conference; among them, 182 came to the presentation. The overall conference attendee breakout of users versus vendors was 68% and 32%, respectively.

Approximately 300 polling questions were asked during the four-day event. The polls were conducted with handheld devices in the conference rooms. Although Gartner requested that the polling questions be answered exclusively by end users, there was no control over who used the devices.

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