

Emulex OneCommand Vision

Making sense of the I/O blender

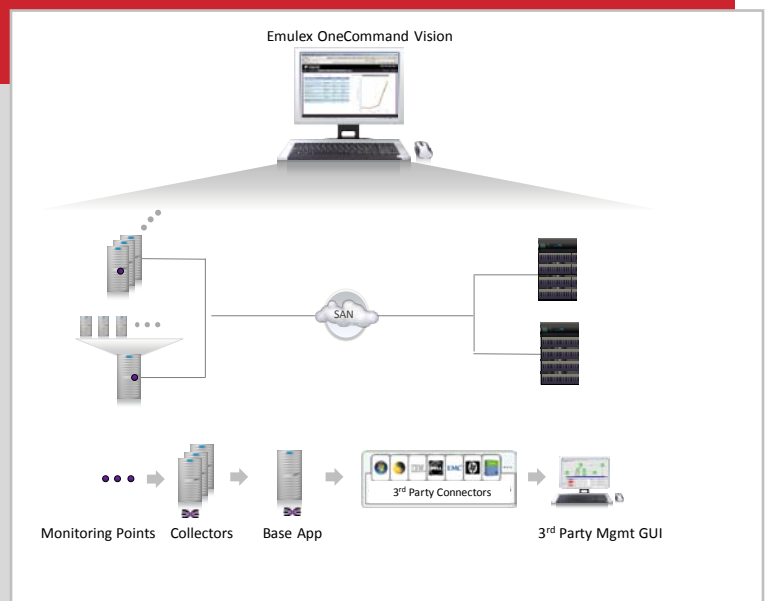
To maximize resource utilization, many IT organizations have turned to consolidation strategies such as server virtualization and SANs. Unfortunately these strategies have also created potential I/O oversubscription points throughout the data path—from the hypervisor to the disk drive spindle. This report documents the results of ESG Lab hands-on testing of the Emulex OneCommand Vision software, which enables IT organizations to intelligently and proactively monitor overall I/O health in a heterogeneous data center environment. ESG evaluated OneCommand Vision's ability to deliver end-to-end I/O management insight in a test bed comprised of virtual and physical servers attached to a heterogeneous mix of Storage Area Network (SAN)-attached disk arrays via a variety of host adapters and storage networking protocols.

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The Product

The Emulex OneCommand Vision I/O management software solution provides an end-to-end view of the storage infrastructure that optimizes the efficiency, performance, and availability of applications and services that rely on SAN-attached storage. As shown, OneCommand Vision provides I/O management using a variety of Emulex software components: Collectors that gather data from production servers (a.k.a., monitoring points), a data store that retains configuration and monitoring data, and a base application that provides a single pane of glass for end-to-end I/O management. Third-party connectors are provided for integration with popular infrastructure management applications (e.g., HP OpenView).

Emulex OneCommand Vision provides insight into overall I/O performance health across the data center environment so IT can proactively address I/O oversubscription, ensure that service level agreements are met, quickly resolve complex application availability problems, and intelligently size infrastructure in terms of I/O to facilitate consolidation and physical-to-virtual efforts.



Why This Matters

Virtualization and consolidation efforts show no signs of slowing as organizations struggle to keep up with never-ending data growth. These strategies more efficiently utilize resources, which can help organizations gain maximum return on investment, streamline management efforts, and enhance business processes. However, virtualization and consolidation strategies can increase the risk of application performance problems due to hidden I/O contention. The ability to view I/O across the infrastructure eliminates blind spots and enables administrators to improve application availability and business productivity and meet service-level objectives.

ESG Lab has confirmed that Emulex OneCommand Vision I/O profiles provide insight into application-level performance and workloads that illuminates the storage data path in heterogeneous SAN-attached environments.

ESG Lab Validation Highlights

ESG Lab performed hands-on evaluation and testing of the Emulex OneCommand Vision at Emulex’s Bolton, MA facilities. The following is a summary of the results:

- Installing and configuring Emulex OneCommand Vision on a pre-wired test bed was straightforward and intuitive.
- ESG Lab confirmed that OneCommand Vision data collection is lightweight and efficient. Virtual servers collect information without having to install software on the server being monitored. Emulex sensor software installed on physical Windows and Linux servers consumed very little resources (less than 3% CPU and 11 MB of RAM—Emulex has since demonstrated that its shipping version has reduced CPU to less than 1.5% on average).
- OneCommand Vision was used to get a visual of the I/O blender in a consolidated, multi-tenant IT infrastructure. A mix of physical and virtual servers accessing a mix of SAN-attached disk arrays from multiple vendors through the Fibre Channel and FCoE protocols was monitored.
- The “Top Talkers” view provided an easy-to-read view of the I/O traffic on a storage port being shared by multiple applications.
- The I/O Latency views provided a clear view of I/O performance over time.



- The I/O Analyzer views were used to monitor I/O health from a centralized single pane of glass.
- Intelligent Alerting was used to create threshold-based notification rooted in historical performance and events.
- Monitoring an FCoE connection provided by an Emulex CNA was straightforward and intuitive. The FCoE infrastructure looks and feels exactly the same as traditional Fibre Channel within the Emulex OneCommand Vision GUI.

Issues to Consider

While the “Top Talker” performance graph can be used to assess the performance of a mix of applications sharing a single target port on a disk controller, a similar view that shows top talkers at a higher level across all disk arrays and target ports would be helpful as well.

As more and more customers get familiar with the capabilities of Intelligent Alerts, ESG Lab expects that Emulex customer feedback will be used to expand the breadth and value of supported alerts. Intelligent alerting at a higher level based on application-level best practices would be especially powerful (for example, a Microsoft Exchange alert when database response times exceed Microsoft’s recommended value of 20 milliseconds for database reads).

The Bigger Truth

IT organizations already know that managing I/O across the data center environment could be extremely beneficial—there just hasn’t been a method simple enough to be usable. For IT to try to ascertain I/O status by manually combining data from host-based agents, switches and disk arrays might be technically feasible, but the time and effort required make it impractical in practice. So what makes Emulex OneCommand Vision different? It is a lightweight, software-only, single solution that covers heterogeneous components across the data center.

In ESG’s opinion, Emulex OneCommand Vision delivers a user-friendly, application-level viewpoint of I/O health and status. Because OneCommand Vision provides valuable information risk-free, any IT organization interested would be well served to try the 30-day free trial offered by Emulex. There is no upfront investment, as it needs no specialized hardware and most organizations have long trusted Emulex for HBA management and software—so why not try it out?

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