BENCHMARK

ATTO

ATTO Celerity™ 32Gb Performance in VMware® Environments

Overview

Organizations are taking advantage of virtualized servers and storage to run a myriad of back office applications such as e-mail, customer databases, manufacturing system and other highly I/O driven data transfers. In fact, three out of four businesses depend on virtualization technology, with the vast majority of these (more than 70%) using VMware ESXi™ as their primary hypervisor. The success of these businesses rest on the reliability, performance and manageability of their VMware® software and hardware ecosystem. As a VMware Technology Alliance Partner (TAP), ATTO has a long-standing commitment to work with VMware to provide rigorously-tested storage connectivity solutions to VMware's global customer base of almost 500,000 companies.
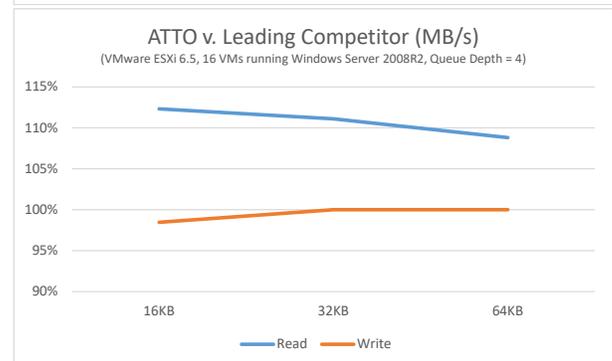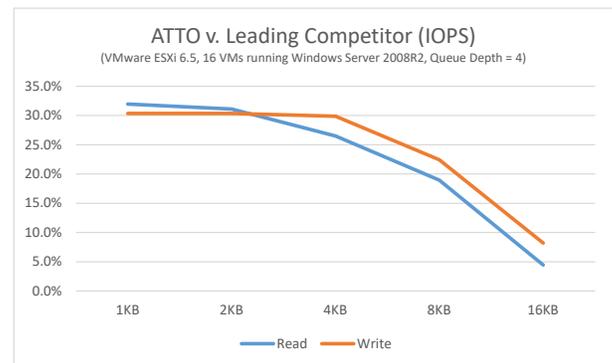
Fibre Channel continues to be a key part of the storage infrastructure supporting virtualization in the data center and for SMEs because of its security and dedicated bandwidth for mission critical operations. The latest versions of VMware vSphere ESXi (v6.5), combined with next generation 32Gb Fibre Channel technology provide a compelling story for users who demand the highest performance even as they put more demands on their ever-growing storage infrastructure.

The ATTO Advantage

With over 30 years of experience providing connectivity solutions that solve our customer's most challenging storage issues, ATTO Celerity™ 32Gb/s Fibre Channel host bus adapters (HBAs) help you get the most out of your virtualized environment. Unlike competitive HBA products,

which are designed for "general purpose" computing applications, ATTO Advanced Data Streaming (ADS™) Technology manages latency and provides controlled acceleration for smooth data streaming, giving our products outstanding performance in the most-demanding VMware configurations.

In testing, we demonstrated that ATTO Fibre Channel adapters are able to support over 30% more IOPS than competitive products running the same I/O workload. In the real world, this equates to >150,000 more IOPS when using ATTO adapters.

ATTO v. Leading Competitor (IOPS)
(VMware ESXi 6.5, 16 VMs running Windows Server 2008R2, Queue Depth = 4)

ATTO v. Leading Competitor (MB/s)
(VMware ESXi 6.5, 16 VMs running Windows Server 2008R2, Queue Depth = 4)

About ATTO

For over 30 years, ATTO Technology, has been a global leader across the IT and media & entertainment markets, specializing in network and storage connectivity and infrastructure solutions for the most data-intensive computing environments. ATTO works with partners to deliver end-to-end solutions to better store, manage and deliver data.

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The Power Behind the Storage

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Celerity 32Gb/s HBAs are the perfect solution to accelerate database performance, whether analytical databases or applications having a similar I/O profile such as web servers and e-mail servers. Most competitive Fibre Channel adapters tune performance to favor data reads, which is useful for certain types of database environments. However, only ATTO is able to provide superior performance for your complete database needs where both reads and writes are accelerated for peak performance all the time.

In some instances, applications running on virtualized servers depend on being able to move larger blocks of data while simultaneously supporting work flows that traditionally require high throughput such as video-on-demand and rich media file delivery. Only ATTO achieves top performance in all of these diverse environments. In our head-to-head testing, we moved more than twice the data as the nearest competitor, pushing over 6,200 MB/s of data to and from the storage. We maximize the bandwidth available for video migration and file archiving, allowing backups to complete faster and clearing large copy operations so that mission critical operations aren't adversely impacted.

Summary and Conclusions

Only ATTO has the experience needed to develop VMware® drivers that support a diverse business workflow. With 30% better small-block I/O and over double the performance in large-block transfers, Celerity 32Gb/s Gen 6 Fibre Channel adapters are unmatched. Even better, ATTO supports the latest VMware architecture to ensure that all of the latest business tools are available to our customer, improving ROI and moving business forward.

Configuration

- Dell PowerEdge R430 server
- VMware vSphere ESXi 6.5 running (16) Microsoft Windows Server 2008R2virtual machines
- ATTO Gen 6 Celerity™ FC-322E 32Gb/s Fibre Channel HBAs
- Competitive 32Gb/s Fibre Channel HBAs

ATTO Celerity™ Host Bus Adapters

Product Features	324E	322E	321E
Part Number	CTFC-324E-000	CTFC-322E-000	CTFC-321E-000
Fibre Channel Ports	4	2	1
Max. Data Rate	32Gb/s	32Gb/s	32Gb/s
Max. Transfer Rate	9600MB/s	6400MB/s	3200MB/s
Bus Type	PCIe 3.0 x16	PCIe 3.0 x8	PCIe 3.0 x8
Auto Negotiation	32Gb, 16Gb, 8Gb	32Gb, 16Gb, 8Gb	32Gb, 16Gb, 8Gb
Connector Type	Optical SFP+ LC	Optical SFP+ LC	Optical SFP+ LC
Max. Cable Length (OM3)	100m - 16Gb 50m - 32Gb	100m - 16Gb 50m - 32Gb	100m - 16Gb 50m - 32Gb
Low-Profile Form Factor	No	Yes	Yes
Developer's Kit[1] (Target Mode API)	Yes	Yes	Yes
Warranty	3 year	3 year	3 year

Celerity 321E

Celerity 322E

Celerity 324E