DATASHEET

**PrimaryIO APA 2.0 for
VMware vSphere ESXi 6.x**

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Storage-IO Bottlenecks are the #1 Problem Faced by Virtual Datacenters

Virtualization has revolutionized datacenters with consolidated compute resources and shared storage arrays. However, virtualized applications often suffer delays due to performance issues, with most datacenters reporting IO as their biggest performance bottleneck. A few datacenters have adopted a brute force approach that consists of replacing existing storage arrays with high-speed AFA (All-Flash Arrays) to overcome IO performance issues. Such an approach is expensive and not warranted in most cases. Moreover, since datacenters have a diverse set of workloads, they need an intelligent, data driven approach that analyzes their IO usage in real time and resolves storage performance health issues at the level of individual virtual machines.

Solution: PrimaryIO APA 2.0

PrimaryIO APA 2.0 for VMware provides an integrated IO Analyzer along with a server-side SSD Caching solution to address storage performance problems in VMware powered data centers. Both the components work in tandem to deliver higher VM density and enhanced performance.

IO Analyzer

The IO Analyzer works in a non-intrusive way to continuously monitor all IO traffic across multiple vCenter environments. It collects data to provide a high-level view of the datacenter's storage utilization and IO health. The collected data is analyzed to identify SSD resources required to address IO health issues by adding server-side cache.
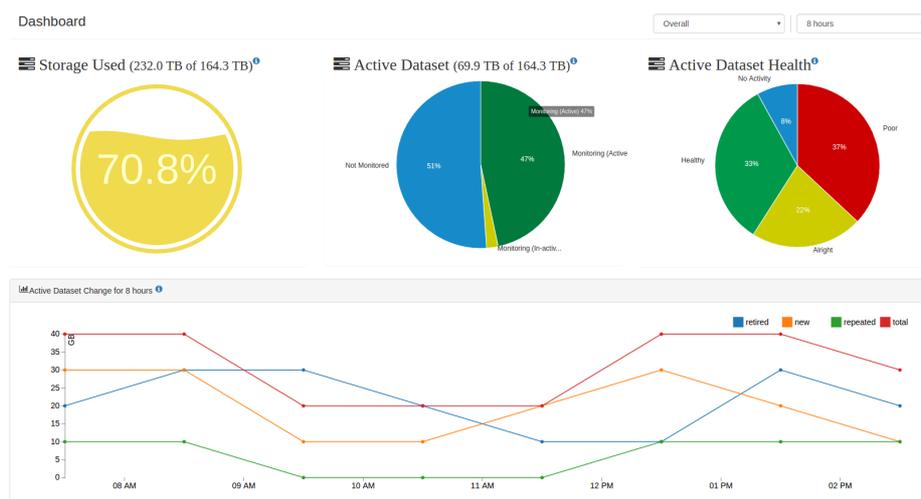

Figure 1: IO Analyzer Dashboard

KEY BENEFITS

✔ Monitors real-time IO traffic to continuously analyse datacenter storage health.

✔ Provides real-time recommendations for server-side SSD caching (with optimum cache sizes) to resolve storage health issues.

SSD Caching

The SSD Caching component transparently moves frequently accessed application data to an SSD cache to achieve up to 10x performance acceleration.

It supports read as well as write-back caching. In write-back caching mode data is first written to SSDs and subsequently copied to disk drives in the background, allowing the system to handle bursts of write requests at SSD speeds instead of disk speeds.

PrimaryIO APA is a fail-safe caching solution which provides high-availability by maintaining redundant caches in the cluster. It can also work with remote caches, freeing datacenters from the need of placing an SSD device on every ESX host in a cluster.
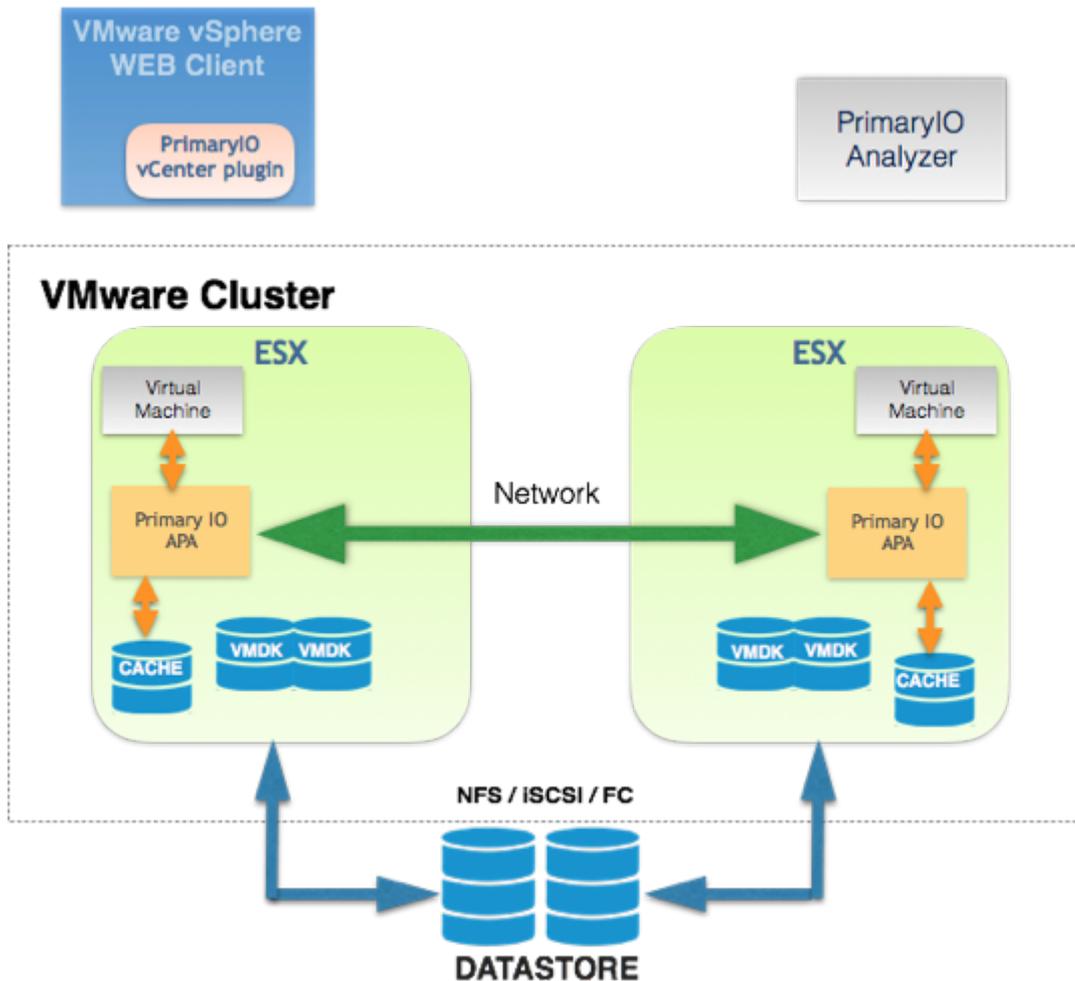

Figure 2: PrimaryIO APA – High-Level Architecture

KEY BENEFITS

- ✔ Data driven, configurable, application-level IO acceleration.

- ✔ Fully integrated with vCenter using VAIO APIs.

- ✔ Non-intrusive installation that can be performed without placing ESXi hosts in maintenance mode.

- ✔ Capable of utilizing non-local SSDs in the cluster for caching.

- ✔ Zero downtime to enable caching.

- ✔ Supports all VMware certified hardware and SSDs.

Minimum System Requirements

Item	Requirement
ESXi version	ESXi 6.0, update 2
RAM	4 GB or more
Network	10 Gbps or higher
SSD	Any SSD supported by VMware
vCenter Web Client	Version 6.0u2
PIO Appliance	VMware 6.0u2
Supported Browsers	Chrome v50 or higher, Firefox v40 or higher

System Requirements and Supported Platforms

Server Platforms	Cisco UCS Series Dell PowerEdge Series IBM xSeries platforms HP DL380 xxx All other server platforms supported by VMware
Flash Devices	Fusion-io ioDrive and ioDrive2 Intel DC S3700 Series SSD Any other Flash device supported by VMware
Storage Systems	All storage systems supported by VMware (iSCSI, FC &FCoE)
vCenter Versions	ESXi 6.0u2 and ESXi 6.0u2a
Hypervisor Versions	ESXi 6.0u2
VMFS Versions	VMFS 5
Guest Operating Systems	All guest operating systems compatible with ESXi 6.0u2
Management Server Database	Microsoft SQL Server 2012, 2008 Microsoft SQL Server 2008 Express Microsoft SQL Server 2012 Express
PrimaryIO APA Licensing	Per ESX host licensing for the entire product. The IO Analyzer component comes bundled with PrimaryIO APA without any extra charges.

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