Open-E Software Solutions with ATTO Technology Hardware Solution

ATTO

For nearly 30 years, ATTO Technology, Inc., has been a global leader across the IT and media and entertainment markets, specializing in storage and network connectivity and infrastructure solutions for the most data-intensive computing environments. ATTO works collaboratively with partners to deliver a wide range of end-to-end, customized solutions to better store, manage and deliver big data. With a focus toward markets that require higher performance and with a dedication to working as an extension of customer's design teams, ATTO manufactures host and RAID adapters, network adapters, storage controllers, Thunderbolt-enabled devices, switches and software. ATTO solutions provide a high level of connectivity to all storage interfaces, including Fibre Channel, SAS, SATA, iSCSI, 40/10GbE and Thunderbolt. Distributing its cutting-edge products worldwide through Original Equipment Manufacturers (OEMs), systems integrators, value added resellers (VARs) and authorized resellers, ATTO is the Power Behind the Storage.

OPEN-E

Open-E Inc. is ATTO's trusted Partner and a well-established developer of IP-based storage management software which offers excellent compatibility with industry standards, and is the easiest to use and manage. The ZFS- and Linux-based Open-E JovianDSS Data Storage Software was designed especially for enterprise-sized Software Defined environments. With its unique features, the product ensures highest data reliability and integrity – for optimal data storage, protection and recovery.

Open-E accounts for over 27,000 installations world-wide and has received numerous industry awards and recognition. Thanks to its reputation, experience and business reliability, Open-E has become the technology partner of choice for industry-leading IT companies.For further information about Open-E, its products and partners, visit **www.open-e.com**
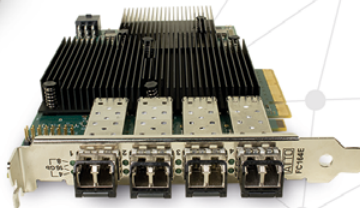
ATTO

With a focus towards markets that require higher performance and with a dedication to working as an extension of customer's design teams, ATTO manufactured products are:

- Ethernet Adapters
- Fibre Channel HBAs
- Fibre Channel Bridges
- SAS/SATA RAID
- SAS/SATA HBAs
- Thunderbolt™ Devices
- XstreamCORE™ SAN Storage Controllers
- Software
- Cables and Accessories

By collaboration with industry leading IT specialists, the company was able to establish a wide range of storage connectivity solutions, such as:

- 4K/8K Video Workflow
- Cloud Storage
- Data Center Virtualization
- Digital Asset Management
- Ethernet Connected Storage
- Fibre Channel Connected Storage
- High Availability Fibre Channel Multipathing Storage
- MS Exchange Server
- SAS/SATA Connected Storage
- SAS/SATA Storage Connectivity
- Server Connectivity
- Software Defined Storage
- Tape Library Storage Connectivity
- Thunderbolt Connectivity
- Workstation / Laptop Connectivity

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ATTO Technology, Inc.

OPEN-E

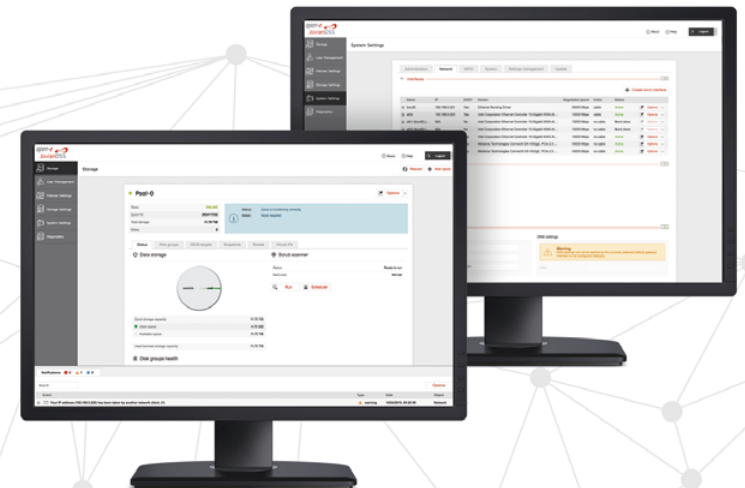**Software features Open-E JovianDSS**

Open-E JovianDSS is a ZFS- and Linux-based data storage software designed especially for enterprise-sized storage environments.
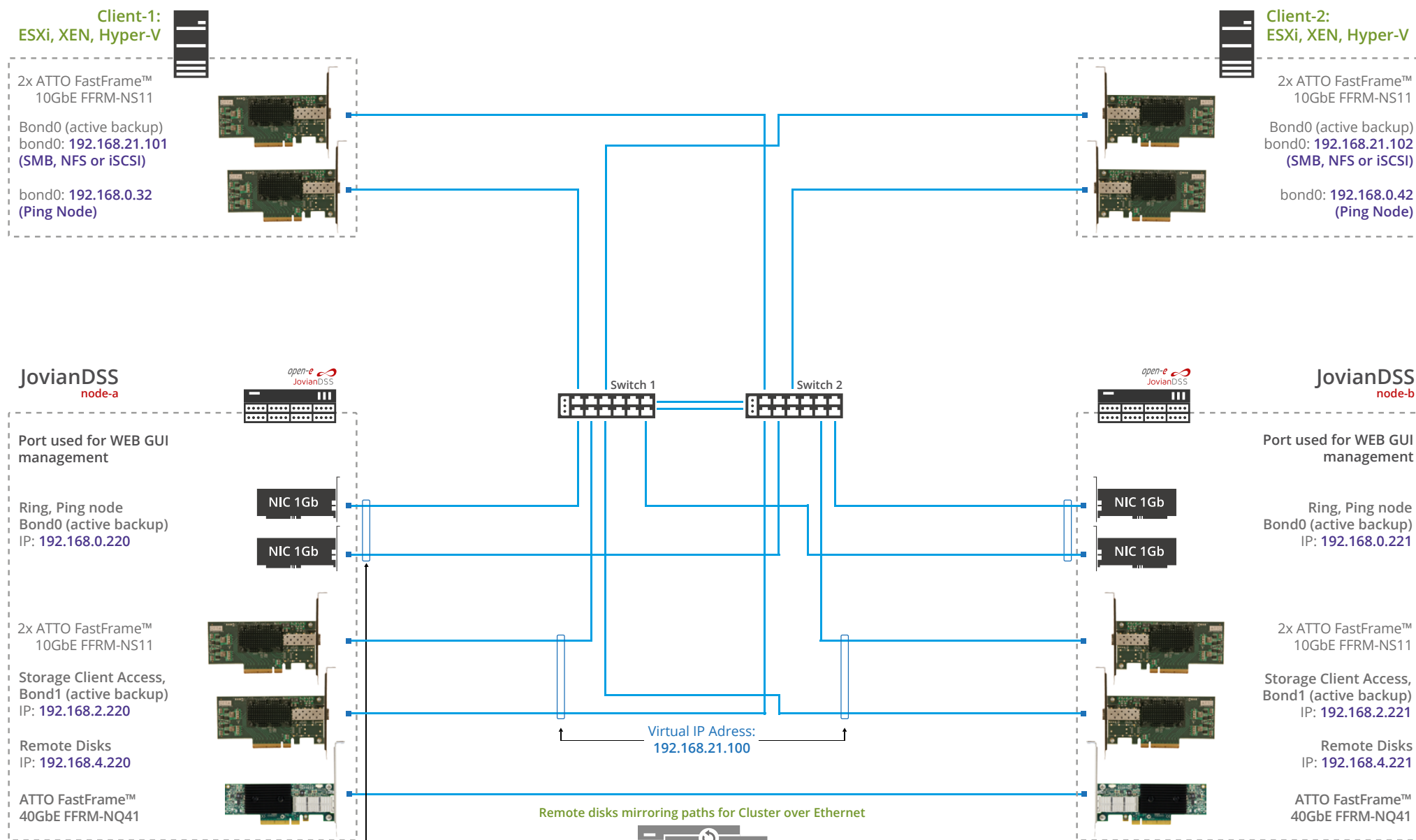
- Optional On- and Off-site Data Protection that enables asynchronous replication to local sites or co-locations with consistent snapshots, secure archiving, encryption and buffering
- Highest quality for mission-critical business needs with ZFS on Linux
- Unlimited scalability and compatibility
- High Availability Load-balanced Cluster for NFS, SMB and iSCSI for highest data security with failover
- Warranted data integrity with self-healing check-sums, atomic writes and transactional copy-on-write I/O operations
- Native compression and data deduplication to reduce physical disk usage
- Tiered RAM and SSD cache for improved performance
- Thin provisioning for easy scalability
- Unlimited snapshots and clones that enable easy cloning, versioning and backup
- Unlimited file size
- Independent VIPs (Virtual IP addresses) feature to avoid downtime during maintenance
- VMware vSphere Storage APIs Array Integration (VAAI) included for data acceleration
- Hybrid storage pools to utilize the I/O performance of SSDs and high capacity of HDDs in a single system
- No backup agents required for Disaster Recovery

As data storage and management is crucial to any company's success, Open-E provides many options regarding storage solutions which enable a seamless development of a secure storage environment and that fit various business requirements, focusing on:

- Backup and Restore
- Business Continuity
- Cloud Storage
- Disaster Recovery
- Storage Centralization
- Storage Virtualization

open-e
JovianDSS

Stretched Metro Cluster over Ethernet

open-e JovianDSS

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Client-1:
ESXi, XEN, Hyper-V

2x ATTO FastFrame™
10GbE FFRM-NS11

Bond0 (active backup)
bond0: **192.168.21.101**
(SMB, NFS or iSCSI)

bond0: **192.168.0.32**
(Ping Node)

Client-2:
ESXi, XEN, Hyper-V

2x ATTO FastFrame™
10GbE FFRM-NS11

Bond0 (active backup)
bond0: **192.168.21.102**
(SMB, NFS or iSCSI)

bond0: **192.168.0.42**
(Ping Node)

JovianDSS
open-e JovianDSS
node-a

Switch 1

Switch 2

open-e JovianDSS
JovianDSS
node-b

Port used for WEB GUI
management

Ring, Ping node
Bond0 (active backup)
IP: **192.168.0.220**

NIC 1Gb

NIC 1Gb

NIC 1Gb

NIC 1Gb

Port used for WEB GUI
management

Ring, Ping node
Bond0 (active backup)
IP: **192.168.0.221**

2x ATTO FastFrame™
10GbE FFRM-NS11

Storage Client Access,
Bond1 (active backup)
IP: **192.168.2.220**

Remote Disks
IP: **192.168.4.220**

ATTO FastFrame™
40GbE FFRM-NQ41

Virtual IP Adress:
192.168.21.100

2x ATTO FastFrame™
10GbE FFRM-NS11

Storage Client Access,
Bond1 (active backup)
IP: **192.168.2.221**

Remote Disks
IP: **192.168.4.221**
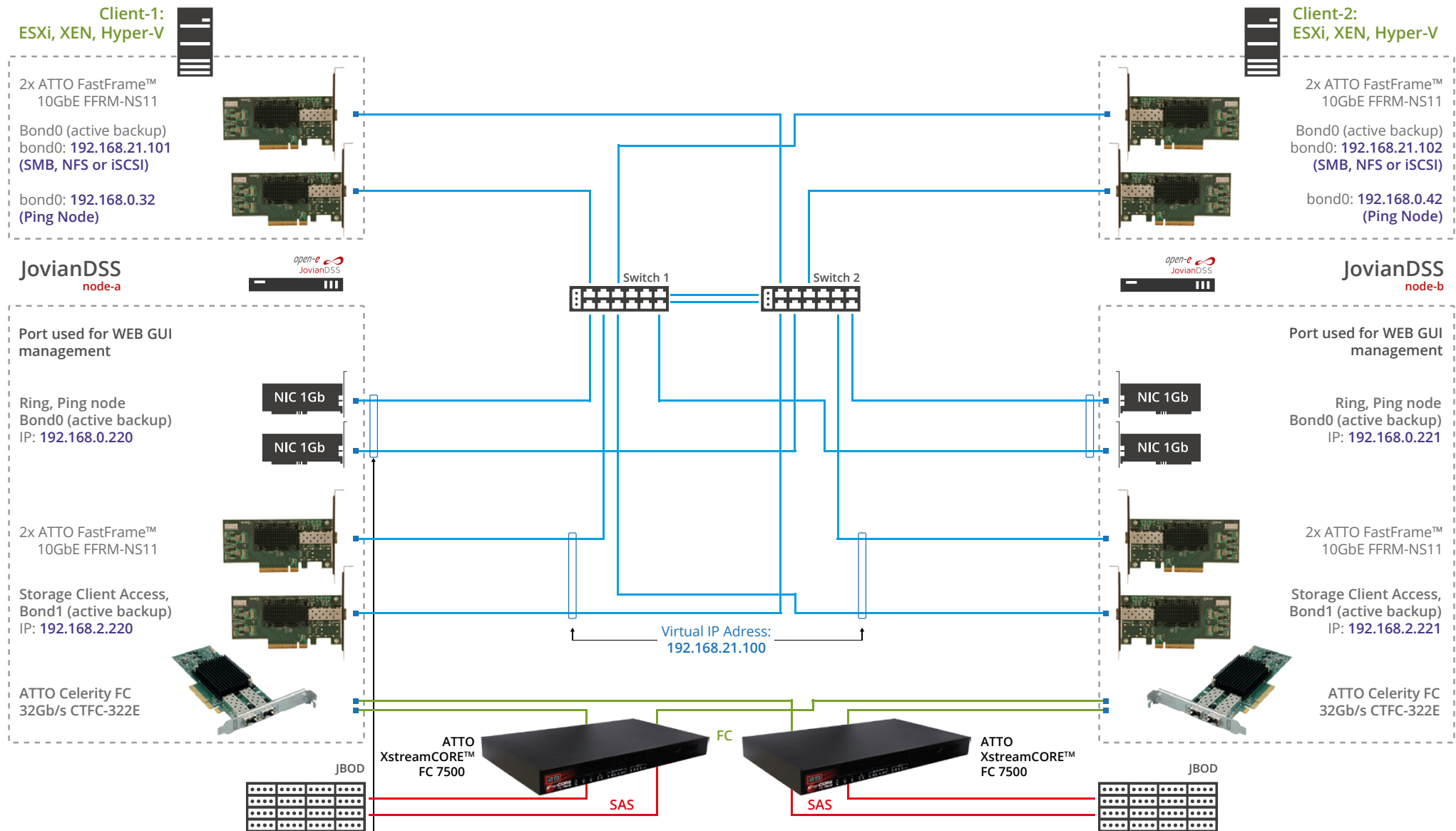
ATTO FastFrame™
40GbE FFRM-NQ41

Remote disks mirroring paths for Cluster over Ethernet

NOTE:
Ring path (heartbeat) and Ping nodes must run on
Active-Backup bonding. Ring and Ping IP must be
configured in the same network subnet.

Stretched Metro Cluster with SAS/FC bridges

open-e JovianDSS

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Client-1:
ESXi, XEN, Hyper-V

2x ATTO FastFrame™
10GbE FFRM-NS11

Bond0 (active backup)
bond0: **192.168.21.101**
(SMB, NFS or iSCSI)

bond0: **192.168.0.32**
(Ping Node)

Client-2:
ESXi, XEN, Hyper-V

2x ATTO FastFrame™
10GbE FFRM-NS11

Bond0 (active backup)
bond0: **192.168.21.102**
(SMB, NFS or iSCSI)

bond0: **192.168.0.42**
(Ping Node)

JovianDSS
node-a

open-e JovianDSS

Switch 1

Switch 2

open-e JovianDSS

JovianDSS
node-b

**Port used for WEB GUI
management**

Ring, Ping node
**Bond0 (active backup)
IP: 192.168.0.220**

NIC 1Gb

NIC 1Gb

NIC 1Gb

NIC 1Gb

**Port used for WEB GUI
management**

Ring, Ping node
**Bond0 (active backup)
IP: 192.168.0.221**

2x ATTO FastFrame™
10GbE FFRM-NS11

**Storage Client Access,
Bond1 (active backup)
IP: 192.168.2.220**

Virtual IP Adress:
192.168.21.100

2x ATTO FastFrame™
10GbE FFRM-NS11

**Storage Client Access,
Bond1 (active backup)
IP: 192.168.2.221**

ATTO Celerity FC
32Gb/s CTFC-322E

FC

ATTO Celerity FC
32Gb/s CTFC-322E

JBOD

ATTO
XstreamCORE™
FC 7500

SAS

ATTO
XstreamCORE™
FC 7500

SAS

JBOD

NOTE:
Ring path (heartbeat) and Ping nodes must run on
Active-Backup bonding. Ring and Ping IP must be
configured in the same network subnet.