

## NGX Storage AFA Series



### KEY FEATURES

#### Absolute Performance and Enhanced Data Protection

- NGX Storage scale-up and scale-out all flash array is the key enabler to build next generation IT infrastructures.
- NGX-AFA prevents against data loss and corruption with its native triple-parity and dual-parity raid architecture, self healing and predictive error correction technologies to provide highly available and secure solutions.

#### Blazing Fast Performance

- Up to 10M IOPS with consistent sub-ms response time. Scale big without disruption, NGX-AFA will handle mixed workloads both in SAN and NAS environments.

#### Petabyte-Scale Flash

- Designed with no single point of failure and non-disruptive upgrade architecture. You can grow easily both in performance and capacity.

#### Unified Architecture

- NGX-AFA is a true unified storage system that supports Fibre Channel, iSCSI, NFS, SMB and S3 protocols natively. Leverage the SAN, NAS and Object technologies in the same system.

#### Do More With Less

- NGX-AFA will reduce datacenter footprint dramatically. Save more space and cut energy consumption while gaining extreme performance.

#### Data Compression

- NGX Storage transparent inline data compression technology can reduce the physical capacity requirements. It has a new and very fast algorithm that increase compress / decompress performance up to %80 compared to the competitors.

When we look at the most valuable companies in the world, they all leveraged the data to disrupt and change traditional ways. Furthermore, artificial intelligence and machine learning technologies will enable companies and brands to better synthesize and incorporate mounds of data to create more personalized consumer experiences in the modern era of connected devices. From this perspective, the ability to make sense of the digital transformation will be what distinguishes the winners from the losers. Definitely every company knows that quickly adopting new technologies is the fundamental advantage to be competitive in the market, and this shift brings growth and success.

At this point, a unified all-flash storage which works with your existing applications and supports new technologies help companies meet data growth challenges and stay competitive in the business.

### Next Generation All-Flash Data Centers with NGX Storage

#### Architecture

The NGX Storage All-Flash designed and developed in terms of always in-line storage efficiency with compression, deduplication and thin provisioning while providing extreme performance, reliability, scalability and manageability. Our seamless innovative RAID like schema delivers triple-parity robust data and metadata protection which solves performance and rebuild time challenges at petabyte scale capacities. Furthermore, NGX Storage provides over 1M IOPS, 34PB efficient capacity, 99.9999% reliability, up to 840Gb connectivity, instant snapshots, instant clones, data replication, non-disruptive upgrades and share nothing HA architecture within unified storage principles. NGX Storage delivers these capabilities without any compromise on enterprise resiliency.

#### Performance

NGX Storage can easily fulfill any modern data center workloads with consistent performance within sub-millisecond latencies. Thanks to our innovative and intelligent cache algorithms, NGX Storage serves nearly 95% percent of random I/O requests directly from its ultra fast DRAM cache layer which can capable to store up to 8TB of data. Supports variable block sizes from 512B to 1MB to optimize transactional and sequential workloads simultaneously in a single array. Furthermore, intelligent data aware in-line deduplication algorithms protects storage resources and increase performance automatically.

#### Availability and Reliability

NGX Storage is designed to prevent any downtime with it's high availability architecture and complete data protection schemes. It provides non-disruptive software upgrades and capacity expansions while keeping the business online. The system can handle multiple disk failures, repair itself with its unique self-healing algorithms and provides consistent performance at petabyte scale capacities under heavy production workloads. All components in the NGX Storage systems are tested in our QA/Perf labs before delivering to the customers to achieve highest production quality and reliability. NGX Storage is using both asynchronous differential delta copy remote replication and synchronous replication to achieve lowest recovery point and recovery time objectives in the industry. All of our products can communicate natively with each other for data replication. Furthermore, NGX Storage has cloud ready design that capable to work with Amazon S3, Microsoft Azure and Google Cloud.

Table 1) NGX ALL-FLASH GEN2 Series Technical Specifications

	<b>AFA1400</b>	<b>AFA1440</b>	<b>AFA1600</b>	<b>AFA1640</b>
Maximum raw capacity	1.4PB	1.4PB	5.6PB	6.4PB
Maximum drives	384	384	576	640
Max DRAM Cache	256GB	512GB	2048GB	3072GB
Controller form factor	2U	2U	2U	2U
Supported drive types	SAS SSD, NVMe, SCM	SAS SSD, NVMe, SCM	SAS SSD, NVMe, SCM	SAS SSD, NVMe, SCM
Fibre Channel	16/32/64Gb/s	16/32/64Gb/s	16/32/64Gb/s	16/32/64Gb/s
Ethernet <sup>1</sup>	1/10/25/40/100Gb	1/10/25/40/100Gb	1/10/25/40/100Gb	1/10/25/40/100Gb
SAS Backend	SAS 3.0 / 4.0	SAS 3.0 / 4.0	SAS 3.0 / 4.0	SAS 3.0 / 4.0
NVMe-oF	100Gb	100Gb	100Gb	100Gb
Supported RAID Levels	0, 1, 10, 5, 6, 50, 60, RAID-TP, TP-Mirror, 4way Mirror	0, 1, 10, 5, 6, 50, 60, RAID-TP, TP-Mirror, 4way Mirror	0, 1, 10, 5, 6, 50, 60, RAID-TP, TP-Mirror, 4way Mirror	0, 1, 10, 5, 6, 50, 60, RAID-TP, TP-Mirror, 4way Mirror
Max Hosts	8192	8192	8192	8192
Max number of LUNs	65536	65536	65536	65536
Max number of Share	65536	65536	65536	65536
Max LUN size	1024TB	1024TB	2048TB	2048TB
Max Share size	Unlimited	Unlimited	Unlimited	Unlimited
Max Snapshots	Unlimited	Unlimited	Unlimited	Unlimited
Max Clone	Unlimited	Unlimited	Unlimited	Unlimited
Max Replica Profile	Unlimited	Unlimited	Unlimited	Unlimited

1. 10/25/40/100G adapters have TCP Offload Engine.

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Table 1) NGX ALL-FLASH GEN2 Series Technical Specifications

	AFA2600	AFA2800	AFA2840
Maximum raw capacity	8.6PB	31PB	34PB
Maximum drives	1152	2048	2048
Max DRAM Cache	4096GB	8192GB	8192GB
Controller form factor	4U	4U	4U
Supported drive types	SAS SSD, NVMe, SCM	SAS SSD, NVMe, SCM	SAS SSD, NVMe, SCM
Fibre Channel	16/32/64Gb/s	16/32/64Gb/s	16/32/64Gb/s
Ethernet <sup>1</sup>	1/10/25/40/100Gb	1/10/25/40/100Gb	1/10/25/40/100Gb
SAS Backend	SAS 3.0 / 4.0	SAS 3.0 / 4.0	SAS 3.0 / 4.0
NVMe-oF	100Gb	100Gb	100Gb
Supported RAID Levels	0, 1, 10, 5, 6, 50, 60, RAID-TP, TP-Mirror, 4way Mirror	0, 1, 10, 5, 6, 50, 60, RAID-TP, TP-Mirror, 4way Mirror	0, 1, 10, 5, 6, 50, 60, RAID-TP, TP-Mirror, 4way Mirror
Max Hosts	8192	Unlimited	Unlimited
Max number of LUNs	65536	Unlimited	Unlimited
Max number of Share	65536	Unlimited	Unlimited
Max LUN size	8192TB	Unlimited	Unlimited
Max Share size	Unlimited	Unlimited	Unlimited
Max Snapshots	Unlimited	Unlimited	Unlimited
Max Clone	Unlimited	Unlimited	Unlimited
Max Replica Profile	Unlimited	Unlimited	Unlimited

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Table 3) NGX ALL-FLASH GEN2 Series Software Specifications

High Availability Features	<ul style="list-style-type: none"> <li>• Active-Active Dual Controller</li> <li>• Redundant hot swap disk drives, power supplies and fans</li> <li>• Self-Healing array, Intelligent and Auto Data Rebuild Technology</li> <li>• Non-disruptive software and firmware upgrades</li> <li>• Non-disruptive Disk Pool Expansion</li> <li>• Non-disruptive Volume and Share Expansion</li> <li>• Multipath technology</li> <li>• Power loss protection for cache</li> </ul>
Supported Operating Systems and Hypervisors	Windows Server 2016, Windows Server 2019, Windows Server 2022, Linux® (Pardus, RedHat, SuSE, Centos, Debian, Ubuntu, Oracle), UNIX, KVM, Oracle® Solaris, AIX, HP-UX, Mac® OS, FreeBSD, NetBSD, VMware®, Hyper-V, Citrix XEN
Virtualization API Integration	<ul style="list-style-type: none"> <li>• VMware VAAI</li> <li>• Microsoft ODX</li> <li>• OpenStack Cinder and Manila</li> <li>• Kubernetes CSI</li> <li>• OpenShift</li> </ul>
Storage Protocols	Fibre Channel, iSCSI, NFSv3, NFSv4, SMB3/CIFS, Object S3
Storage Efficiency	<ul style="list-style-type: none"> <li>• Inline Compression, Deduplication, Zero Detection, UNAMP/TRIM, Copy Reduction</li> <li>• Thin Provisioning, Thin Snapshot, Thin Clone</li> <li>• Quality of Service and Application Priority</li> <li>• Quota and Space Reservation</li> </ul>
Data Protection	<ul style="list-style-type: none"> <li>• Instant Snapshots, Scheduled Snapshots, Instant Clones</li> <li>• Immutable Snapshot</li> <li>• MetroScale Cluster, business continuity and disaster recovery</li> <li>• Synchronous Remote Replication</li> <li>• Async Remote Replication</li> <li>• Cloud Backup and Cloud Restore (Amazon S3, Google Cloud, OpenStack Swift)</li> </ul>
Data Management	<ul style="list-style-type: none"> <li>• Responsive Web GUI</li> <li>• HTTP(S) RESTful API</li> <li>• Multi-Factor Authentication</li> <li>• SNMPv2/v3</li> <li>• SNMP Trap</li> <li>• E-Mail Alerts</li> <li>• AI and ML driven predictive analytics</li> <li>• Cloud based proactive support and system monitoring</li> </ul>
NAS Features / Plugins	<ul style="list-style-type: none"> <li>• Scale-out-NAS, up to 70PB single namespace</li> <li>• Cluster Aggregated Pool</li> <li>• Active Directory and LDAP Integration</li> <li>• CIFS/SMB File Version Control</li> <li>• WORM</li> <li>• Veritas DataInsight Plugin</li> <li>• Object access over NAS</li> </ul>
Security and compliance	<ul style="list-style-type: none"> <li>• Software encrypted data pools</li> <li>• Self Encrypted Drives</li> <li>• EN 60950-1, CISPR 22/CISPR 24 and EN 55022/55024</li> </ul>

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