Isilon Archive Scale-Out NAS

For most businesses today, data storage requirements are continuing to grow rapidly – nearly doubling every 2 to 3 years. 80% of this new data is file-based, unstructured data. This rapid data growth is straining often limited IT resources and increasing management complexity. Increasingly stringent compliance requirements is another factor driving the need for efficient data archiving solutions that can store and protect data for long-term retention. Organizations must also weigh the cost of storing archive data against the need for quick access.

To address these challenges, Dell EMC Isilon offers two highly efficient and massively scalable archive storage solutions – the A200 is an ideal active archive storage solution that combines near-primary accessibility, value and ease of use – while the A2000 is an ideal solution for high density, deep archive storage that safeguards data efficiently for long-term retention.

The A200 and the A2000 are both powered by the OneFS operating system and use an innovative modular architecture to provide an efficient, yet simple scale-out storage platform to store, manage and protect massive amounts of unstructured data, while dramatically reducing cost and complexity. Both platforms utilize a dense hardware design that provides 4 nodes within a single 4U chassis.

The archive platforms can be combined with new or existing all-flash and hybrid storage systems into a single cluster that provides an efficient tiered storage solution.

**Capacity**1,2: The A200 provides between 120 TB to 720 TB per chassis and scales to 45 PB in a single cluster. The A2000 stores up to 960 TB per chassis and scales to over 60 PB in a single cluster.

**Efficiency:** OneFS powered storage delivers up to 80 percent storage utilization versus about 50 percent for traditional platforms. SmartDedupe data deduplication software enhances storage efficiency to further reduce your physical storage requirements.

**Simplicity:** You can install, configure, and have a solution online in less than 10 minutes. It's also simple to add an A200 or A2000 to an existing cluster. When needed, you can add an additional A200 or A2000 to the cluster to scale capacity in a matter of minutes. And, your solution remains simple to manage no matter how large your data environment becomes.

**Data protection:** OneFS powered solutions are highly resilient and offers N+1 through N+4 redundancy. You may also choose from a variety of efficient and proven enterprise data backup and disaster recovery options.

**Security:** OneFS powered solutions offer a broad range of robust security options including FIPS 140-2 level 2 self-encrypting drives, role-based access control (RBAC), secure access zones, SEC 17a-4 compliant WORM data immutability, SMB3 encryption, HDFS Transparent Data Encryption (TDE) and integrated file system auditing support.

1 Usable capacity will be lower than the raw capacity reflected in this specification sheet.

2 Maximum cluster sizes for A200 and A2000 is 252 nodes or 63 fully populated chassis.
## A200 Specifications

<table>
<thead>
<tr>
<th>A200 ATTRIBUTES &amp; OPTIONS</th>
<th>2 TB HDD</th>
<th>4 TB HDD</th>
<th>8 TB HDD</th>
<th>12 TB HDD</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHASSIS CAPACITY¹</td>
<td>120 TB</td>
<td>240 TB</td>
<td>480 TB</td>
<td>720 TB</td>
</tr>
<tr>
<td>HDD DRIVES (3.5&quot; SATA) PER CHASSIS</td>
<td></td>
<td>60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SELF-ENCRYPTING DRIVE (SED HDD) OPTION</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>OPERATING SYSTEM</td>
<td>OneFS 8.1 or later except for self-encrypting drive options which require OneFS 8.1.0.1 or later.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NUMBER OF NODES PER CHASSIS</td>
<td></td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>CPU TYPE (PER NODE)</td>
<td></td>
<td>Intel® Pentium® Processor D1508</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECC MEMORY (PER NODE)</td>
<td></td>
<td>16 GB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CACHE (PER NODE) SOLID STATE DRIVES (400 GB SSD FOR 2, 4 AND 8 TB HDD AND 800 GB SSD FOR 12 TB HDD)</td>
<td>1 or 2</td>
<td>1 or 2</td>
<td>1 or 2</td>
<td>1 or 2</td>
</tr>
<tr>
<td>SELF-ENCRYPTING DRIVE (SED SDD) OPTION</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>FRONT-END NETWORKING (PER NODE)</td>
<td></td>
<td>2 x 10GbE (SFP)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>INFRASTRUCTURE NETWORKING (PER NODE)</td>
<td></td>
<td>2 InfiniBand connections supporting QDR links or 2 X 10 GbE (SFP)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TYPICAL POWER CONSUMPTION @ 240V (PER CHASSIS)</td>
<td></td>
<td>1060 Watts (@25°C)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAXIMUM POWER CONSUMPTION @ 240V (PER CHASSIS)</td>
<td></td>
<td>1460 Watts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TYPICAL THERMAL RATING</td>
<td></td>
<td>3600 BTU/hr</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

¹ Usable capacity will be lower than the raw capacity reflected in this specification sheet.
## A2000 Specifications

### A2000 ATTRIBUTES & OPTIONS

<table>
<thead>
<tr>
<th></th>
<th>10 TB HDD</th>
<th>12 TB HDD</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHASSIS CAPACITY¹</td>
<td>800 TB</td>
<td>960 TB</td>
</tr>
<tr>
<td>HDD DRIVES (3.5&quot; SATA) PER CHASSIS</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>SELF-ENCRYPTING DRIVE (SED HDD) OPTION</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>OPERATING SYSTEM</td>
<td>OneFS 8.1 or later except for self-encrypting drive options which require OneFS 8.1.0.1 or later.</td>
<td></td>
</tr>
<tr>
<td>NUMBER OF NODES PER CHASSIS</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>CPU TYPE (PER NODE)</td>
<td>Intel® Pentium® Processor D1508</td>
<td></td>
</tr>
<tr>
<td>ECC MEMORY (PER NODE)</td>
<td>16 GB</td>
<td></td>
</tr>
<tr>
<td>CACHE (PER NODE) SOLID STATE DRIVES (400 GB SSD FOR 2, 4 AND 8 TB HDD AND 800 GB SSD FOR 12 TB HDD)</td>
<td>1 or 2</td>
<td>1 or 2</td>
</tr>
<tr>
<td>SELF-ENCRYPTING DRIVE (SED SDD) OPTION</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>FRONT-END NETWORKING (PER NODE)</td>
<td>2 x 10GbE (SFP+)</td>
<td></td>
</tr>
<tr>
<td>INFRASTRUCTURE NETWORKING (PER NODE)</td>
<td>2 InfiniBand connections supporting QDR links or 2 x 10GbE (SFP+)</td>
<td></td>
</tr>
<tr>
<td>TYPICAL POWER CONSUMPTION @ 240V (PER CHASSIS)</td>
<td>1120 Watts (@25°C)</td>
<td>1520 Watts</td>
</tr>
<tr>
<td>TYPICAL THERMAL RATING</td>
<td>3800 BTU/hr</td>
<td></td>
</tr>
</tbody>
</table>

### CLUSTER ATTRIBUTES

<table>
<thead>
<tr>
<th></th>
<th>A200</th>
<th>A2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUMBER OF CHASSIS²</td>
<td>1 to 63</td>
<td>1 to 63</td>
</tr>
<tr>
<td>NUMBER OF NODES²</td>
<td>4 to 252</td>
<td>4 to 252</td>
</tr>
<tr>
<td>CLUSTER CAPACITY ¹,²</td>
<td>120 TB to 45.3 PB</td>
<td>800 TB to 60.4 PB</td>
</tr>
<tr>
<td>RACK UNITS²</td>
<td>4 to 252</td>
<td>4 to 252</td>
</tr>
</tbody>
</table>

¹ Usable capacity will be lower than the raw capacity reflected in this specification sheet.

² Maximum cluster sizes for A200 and A2000 running OneFS 8.2 or later is 252 nodes or 63 fully populated chassis.
### PRODUCT ATTRIBUTES

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SCALE-OUT ARCHITECTURE</strong></td>
<td>Distributed, fully symmetric clustered architecture that combines modular storage with OneFS powered operating system</td>
</tr>
<tr>
<td><strong>MODULAR DESIGN</strong></td>
<td>4 self-contained nodes include compute assembly and HDDs in a 4U rack-mountable chassis. Integrates easily into existing clusters</td>
</tr>
<tr>
<td><strong>OPERATING SYSTEM</strong></td>
<td>OneFS operating system creates a cluster with a single file system and single global namespace; fully journaled, fully distributed, globally coherent write/read cache</td>
</tr>
<tr>
<td><strong>HIGH AVAILABILITY</strong></td>
<td>No single point of failure; self-healing design protects against disk or node failure; includes back-end intra-cluster failover</td>
</tr>
<tr>
<td><strong>SCALABILITY</strong></td>
<td>With OneFS 8.2 or later, scales from 4 to 252 nodes in a single cluster with up to 30 PB capacity (raw) for the A200 and up to 50 PB capacity (raw) for the A2000.</td>
</tr>
<tr>
<td><strong>DATA PROTECTION</strong></td>
<td>FlexProtect™ file-level striping with support for N+1 through N+4 and mirroring data protection schemes</td>
</tr>
<tr>
<td><strong>DATA REPLICAION</strong></td>
<td>SyncIQ® fast and flexible file-based asynchronous replication</td>
</tr>
<tr>
<td><strong>2-WAY NDMP</strong></td>
<td>Supports two ports of Fibre Channel (8G) that allows for 2-way NDMP connections, and two ports of standard 10GbE connectivity</td>
</tr>
<tr>
<td><strong>DATA RETENTION</strong></td>
<td>SmartLock® policy-based retention and protection against accidental deletion</td>
</tr>
<tr>
<td><strong>SECURITY</strong></td>
<td>File system audit capability to improve security and control of your storage infrastructure and address regulatory compliance requirements</td>
</tr>
<tr>
<td><strong>EFFICIENCY</strong></td>
<td>SmartDedupe data deduplication option, which can reduce storage requirements by up to 35 percent</td>
</tr>
<tr>
<td><strong>AUTOMATED STORAGE TIERING</strong></td>
<td>Policy-based automated tiering options, including SmartPools and CloudPools software, to optimize storage resources and lower costs</td>
</tr>
<tr>
<td><strong>NETWORK PROTOCOL SUPPORT</strong></td>
<td>NFSv3, NFSv4, NFS Kerberized sessions (UDP or TCP), SMB1 (CIFS), SMB2, SMB3, SMB3-CA, Multichannel, HTTP, FTP, NDMP, SNMP, LDAP, HDFS, ADS, NIS reads/writes</td>
</tr>
</tbody>
</table>

### ENVIRONMENTAL SPECIFICATIONS

#### POWER SUPPLY

A200 and A2000: Dual-redundant, hot-swappable 1050W (low line) 1100W (high line) power supplies with power factor correction (PFC); rated for input voltages 90 - 130 VAC (low line) and 180-264 VAC (high line)

Power factor is a measure of how effectively you are using electricity. The power factor of an AC electrical power system is defined as the ratio of the real power absorbed by the load to the apparent power flowing in the circuit, and is a dimensionless number in the closed interval of −1 to 1. A power factor of less than one indicates the voltage and current are not in phase, reducing the instantaneous product of the two.

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### Power factor and efficiency rate for A200 and A2000

<table>
<thead>
<tr>
<th>System Load</th>
<th>Efficiency</th>
<th>PF</th>
</tr>
</thead>
<tbody>
<tr>
<td>10%</td>
<td>86.00%</td>
<td>0.918</td>
</tr>
<tr>
<td>20%</td>
<td>92.95%</td>
<td>0.967</td>
</tr>
<tr>
<td>30%</td>
<td>93.93%</td>
<td>0.970</td>
</tr>
<tr>
<td>40%</td>
<td>94.41%</td>
<td>0.972</td>
</tr>
<tr>
<td>50%</td>
<td>94.49%</td>
<td>0.981</td>
</tr>
<tr>
<td>60%</td>
<td>94.11%</td>
<td>0.986</td>
</tr>
<tr>
<td>70%</td>
<td>94.04%</td>
<td>0.990</td>
</tr>
<tr>
<td>80%</td>
<td>93.86%</td>
<td>0.992</td>
</tr>
<tr>
<td>90%</td>
<td>93.63%</td>
<td>0.995</td>
</tr>
<tr>
<td>100%</td>
<td>93.25%</td>
<td>0.996</td>
</tr>
</tbody>
</table>

### OPERATING ENVIRONMENT
Compliant with ASHRAE A3 data center environment guidelines

### DIMENSIONS/WEIGHT
- **A200:**
  - Height: 7” (17.8 cm)
  - Width: 17.6” (44.8 cm)
  - Depth (front NEMA rail to rear 2.5” SSD cover ejector): 35.8” (91.0 cm)
  - Depth (front of bezel to rear 2.5” SSD cover ejector): 37.6” (95.5 cm)
  - Weight: 240 lbs. (108.9 kg)
- **A2000:**
  - Height: 7” (17.8 cm)
  - Width: 17.6” (44.8 cm)
  - Depth (front NEMA rail to rear 2.5” SSD cover ejector): 40.4” (102.6 cm)
  - Depth (front of bezel to rear 2.5” SSD cover ejector): 42.2” (107.1 cm)
  - Weight: 285 lbs. (129.3 kg)

### MINIMUM SERVICE CLEARANCES
Front: 40” (88.9 cm), rear: 42” (106.7 cm)

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**Safety and EMI Compliance**

**Statement of Compliance**

This Information Technology Equipment is compliant with the electromagnetic compatibility (EMC) and product safety regulations/standards required by the countries in which the product is sold. EMC compliance is based on FCC part 15, CISPR22/CISPR24 and EN55022/EN55024 standards, including applicable international variations. EMC compliant Class A products are marketed for use in business, industrial, and commercial environments. Product Safety compliance is based on IEC 60950-1 and EN 60951-1 standards, including applicable national deviations.

This Information Technology Equipment is in compliance with EU RoHS Directive 2011/65/EU.

The individual devices used in this product are approved under a unique regulatory model identifier that is affixed to each individual device rating label, which may differ from any marketing or product family name in this datasheet.

For additional information see [https://support.emc.com](https://support.emc.com) under the Safety & EMI Compliance Information tab.
Take the next step

Contact your Dell EMC sales representative or authorized reseller to learn more about how OneFS powered archive scale-out NAS storage solutions can benefit your organization.

Shop Dell EMC Isilon to compare features and get more information.