## TrueNAS® Expansion Shelves

### SCALE STORAGE EFFORTLESSLY

To meet the demands of today’s applications, businesses need to keep pace with massive data growth. The modern business has to support a full range of storage protocols for Windows, Apple, Unix, and mobile devices. Thousands of terabytes of data need to be retained for analysis by Big Data applications.

To support these and other business requirements, and to reduce storage sprawl, the TrueNAS “pay as you grow” pricing model offers storage, power, and space efficiency with the ability to expand capacity on an as-needed basis.

Three expansion shelf options make TrueNAS capacity expansion effortless for businesses that never sleep. Every TrueNAS model has enclosure management, supports storage controller redundancy and global hot spares, zero-downtime firmware updates, upgrades, and offers around the clock support. Without disruption, you can add expansion shelves and drives to TrueNAS to keep pace with growing storage needs.

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### AVAILABLE EXPANSION SHELVES

**TrueNAS ES12**
- 2U: 12x 3.5” hard drive bays (front-loading, hot swap)
- Redundant, hot-swap SAS3 (12 Gb/s) controllers
- 3x Mini-SAS HD Host Connections per Controller (SFF-8644)
- Physical Dimensions (length x width x height): 21 x 19 x 3.5” | 531 x 447 x 89 mm
- Rackmount Rail Depth: 23.5” to 29.5” standard
- Up to 36” with extenders (included)
- Empty weight: 26 lbs | 12 kg
- Fully-loaded weight: 44 lbs | 20 kg
- Power Draw: 112 W (idle); 180 W (max)

**TrueNAS ES24**
- 4U: 24x 3.5” hard drive bays (front-loading, hot swap)
- Redundant, hot-swap SAS3 (12 Gb/s) controllers
- 3x Mini-SAS HD Host Connections per Controller (SFF-8644)
- Physical Dimensions (length x width x height): 20.5 x 19 x 7” | 521 x 483 x 178 mm
- Rackmount Rail Depth: 26.5” to 36.5”
- Empty weight: 40 lbs | 18 kg
- Fully-loaded weight: 76 lbs | 34.5 kg
- Power Draw: 231 W (idle); 288 W (max)

**TrueNAS ES60**
- 4U: 60x 3.5” hard drive bays (top-loading, hot swap)
- Redundant, hot-swap SAS3 (12 Gb/s) controllers
- 2x Mini-SAS HD Host Connections per Controller (SFF-8644)
- Physical Dimensions of Shelf (L x W x H): 33.38 x 19 x 6.9” | 848 x 483 x 176 mm
- Physical Dimensions of Shelf with Cable Management Arm (L x W x H): 39.50 x 19 x 6.9” | 1000 x 483 x 176 mm
- Designed to fit in a standard 19” wide, 1000 mm depth cabinet
- Rackmount Rail Depth: 27.5” to 31” (699 to 788 mm) with Cable Management
- Up to 38.5” (978 mm) w/o Cable Management
- Empty weight: 85 lbs | 38.5 kg
- Fully-loaded weight: 175 lbs | 80 kg
- Power Draw w/ 60 HDDs: 479 W (idle); 821 W (max)

### AVAILABLE STORAGE MEDIA

- **Enterprise Nearline Hard Drives** (7200 RPM SAS3 - 12 Gb/s)
- Capacities available from 2 TB to 14 TB
- Self-Encrypting Drives (SED) Available
- **Enterprise Solid State Drives** (SAS3 - 12 Gb/s)
- Capacities available from 250 GB to 7.68 TB
- Self-Encrypting Drives (SED) Available

### POWER MANAGEMENT

- Redundant, hot-swappable, high-efficiency (90%+) power supplies
- 100-240 Volt input power supported (auto-switching)
- UPS signal response and alerts
- Redundant cooling
- All expansion shelves are RoHS 6/6 compliant

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### Max Capacity

<table>
<thead>
<tr>
<th></th>
<th>Base Unit</th>
<th>ES12</th>
<th>ES24</th>
<th>ES60</th>
</tr>
</thead>
<tbody>
<tr>
<td>TrueNAS X10</td>
<td>168 TB</td>
<td>504 TB (two shelves)</td>
<td>Not supported</td>
<td>Not supported</td>
</tr>
<tr>
<td>TrueNAS X20</td>
<td>168 TB</td>
<td>504 TB (two shelves)</td>
<td>Not supported</td>
<td>720 TB (one shelf)</td>
</tr>
<tr>
<td>TrueNAS M40</td>
<td>336 TB</td>
<td>672 TB (two shelves)</td>
<td>1 PB (two shelves)</td>
<td>2 PB (two shelves)</td>
</tr>
<tr>
<td>TrueNAS M50</td>
<td>336 TB</td>
<td>2.35 PB (twelve shelves)</td>
<td>4.37 PB (twelve shelves)</td>
<td>10.4 PB (twelve shelves)</td>
</tr>
</tbody>
</table>

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