

# IBM FlashSystem V9000

## IBM FlashSystem V9000 at a glance

<b>Models</b>	<ul style="list-style-type: none"> <li>• 9846/9848 AC3 controllers</li> <li>• 9846/9848 AE3 flash enclosure drawers</li> </ul>
<b>System size</b>	<ul style="list-style-type: none"> <li>• Minimum: (1 x AE3 and 2 x AC3)</li> <li>• Maximum scaled-out system: (8 x AE3 and 8 x AC3)</li> </ul>
<b>Flash type</b>	IBM-enhanced 3D TLC
<b>Flash module configuration</b>	<p>For each AE3:</p> <ul style="list-style-type: none"> <li>• 6, 8, 10 or 12 3.6 TB modules;</li> <li>• or 8, 10 or 12 8.5 TB modules;</li> <li>• or 8, 10 or 12 18 TB modules</li> </ul> <p>Up to 8 AE3 expansions; Up to 4 AC3 pairs</p>
<b>Maximum internal flash capacity</b>	<p>43 TB to 219 TB (effective, assuming 2.5:1 or better hardware compression)</p> <ul style="list-style-type: none"> <li>• 900 TB (effective, assuming 5:1 data reduction)</li> </ul> <p>Up to 1.7 PB (effective, assuming 2.5:1 or better hardware compression)</p> <ul style="list-style-type: none"> <li>• 6.7 PB (effective, assuming 5:1 data reduction)</li> </ul>
<b>Maximum external storage capacity</b>	External virtualization: Up to 32 PB usable capacity
<b>Maximum performance (100% read, cache miss)</b>	<p>Minimum latency (4K)</p> <ul style="list-style-type: none"> <li>• 180 µs</li> <li>• 180 µs</li> </ul> <p>IOPS (4K) with h/w compression</p> <ul style="list-style-type: none"> <li>• 1,300,000</li> <li>• 5,200,000</li> </ul> <p>Bandwidth (256K)</p> <ul style="list-style-type: none"> <li>• 10 GB/s</li> <li>• 80 GB/s</li> </ul>
<b>RAS features</b>	<p>Two-dimensional flash RAID</p> <ul style="list-style-type: none"> <li>• Module-level Variable Stripe RAID</li> <li>• System-level RAID 5 across modules</li> <li>• Hot-swappable flash modules</li> <li>• Tool-less module installation/replacement</li> <li>• Concurrent code load</li> <li>• Redundant and hot-swappable components</li> </ul>
<b>Encryption</b>	Data-at-rest AES-XTS 256
<b>Host connectivity options per building block</b>	<p>16 x 16/8/4 Gb Fibre Channel with NVMe-oF support</p> <ul style="list-style-type: none"> <li>• 8 x 10 Gb Fibre Channel over Ethernet (FCoE)</li> <li>• 8 x 10 Gb iSCSI</li> </ul> <p>64 x 16/8/4 Gb Fibre Channel with NVMe-oF support</p> <ul style="list-style-type: none"> <li>• 32 x 10 Gb Fibre Channel over Ethernet (FCoE)</li> <li>• 32 x 10 Gb iSCSI</li> </ul>
<b>Virtualization software model</b>	5639-RB8
<b>Tiered solution models</b>	9846/9848 12F, 24F and 92F SAS expansion drawers, with each drawer adding up to a further 1.3 PB of storage

<b>Controller CPU</b>	<ul style="list-style-type: none"><li>• Four Intel Xeon E5 v4 Series 8-core 3.2 GHz processors</li><li>• 16 Intel Xeon E5 v4 Series 8-core 3.2 GHz processors</li></ul>
<b>Controller memory</b>	<ul style="list-style-type: none"><li>• 128 GB standard, up to 512 GB</li><li>• 512 GB standard, up to 2,048 GB</li></ul>
<b>Dimensions (height x width x depth)</b>	<p>6U in a standard 19 in. rack</p> <ul style="list-style-type: none"><li>• 288 mm x 445 mm x 801 mm</li></ul> <p>4 x 6U blocks in a standard 19 in. rack</p> <ul style="list-style-type: none"><li>• 1,066 mm x 445 mm x 801 mm</li><li>•</li></ul> <p>Additional AE2 units add 2U or 44.5 mm in height</p> <p>Weight</p> <ul style="list-style-type: none"><li>• 82 kg (181 lb) fully loaded</li><li>• Up to 736 kg (1623 lb) fully loaded</li></ul>

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