Main Software for NEC Storage M Series

<table>
<thead>
<tr>
<th>Category</th>
<th>Software/Product Name</th>
<th>M100</th>
<th>M300</th>
<th>M500</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage management</td>
<td>NEC Storage Manager</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>Basic functions to enable integrated storage operations management</td>
</tr>
<tr>
<td></td>
<td>NEC Storage Manager Integration Base</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>Basic functions to enable integrated storage operations management</td>
</tr>
<tr>
<td></td>
<td>NEC Storage Performance Monitor</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>Functions to streamline the analysis of storage performance data</td>
</tr>
<tr>
<td></td>
<td>NEC Storage Performance Navigator</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>Functions to streamline the analysis of storage performance data</td>
</tr>
<tr>
<td></td>
<td>NEC Storage Performance Monitor Suite</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>Package product including both NEC Storage Performance Monitor and NEC Storage Performance Navigator</td>
</tr>
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</tr>
<tr>
<td></td>
<td>NEC Storage DynamicDataReplication</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>CLI functions to perform operations such as replication and data protection on an application server</td>
</tr>
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<td>NEC Storage DynamicDataReplication Express</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
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</tr>
<tr>
<td></td>
<td>NEC Storage DynamicSnapVolume</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>Functions to create a differential replicated volume</td>
</tr>
<tr>
<td></td>
<td>NEC Storage ReplicationNavigator</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
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<td></td>
<td>NEC Storage BaseProduct</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>Basic functions to control storage</td>
</tr>
<tr>
<td></td>
<td>NEC Storage Manager Express</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>Basic functions to enable storage operations management</td>
</tr>
<tr>
<td></td>
<td>NEC Storage ControlCommand</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>Basic functions to enable storage operations management</td>
</tr>
<tr>
<td></td>
<td>NEC Storage RemoteDataReplication</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>Functions to create a fully replicated volume in the same storage unit</td>
</tr>
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<td>NEC Storage RemoteDataReplication Asynchronous</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>Functions to asynchronously create a fully replicated volume in a remote store unit by using a low-speed line</td>
</tr>
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</tr>
<tr>
<td>Resource control</td>
<td>NEC Storage DataMigration</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>Functions to migrate data from an existing storage unit to a new one</td>
</tr>
<tr>
<td></td>
<td>NEC Storage VolumeProtect</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>Functions to protect data from tampering and guarantee data integrity for each volume</td>
</tr>
<tr>
<td>High availability</td>
<td>NEC Storage PathManager</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>Functions to automatically switch paths and distribute the I/O loads.</td>
</tr>
</tbody>
</table>

Environmental compliance

- **Eco Symbol Star**
  - The Eco Symbol Star is a label placed on innovative, environment-friendly products that satisfy the qualification standards as a leading product within NEC and the industry.
  - M100: ☑
  - M300: ☑
  - M500: ☑

- **Eco Symbol**
  - The Eco Symbol is a label placed on products that meet NEC prescribed environmental soundness standards. Eco Symbol products must be environmentally superior and assure transparency.
  - M100: ☑
  - M300: ☑
  - M500: ☑

- **RoHS Compliance**
  - This product complies with the European Union directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS).
  - M100: ☑
  - M300: ☑
  - M500: ☑

Safety notice

Before you use this product, please read carefully and comply with the cautions and warnings in manuals such as User’s Guide and Installation Guide. Incorrect use may cause a fire, electrical shock or injury.

For further information, please contact:

http://www.necstorage.com
NEC Storage M Series, the new SAN storage infrastructure. Awakening the true potential of storage units in IT environments of the future.

Demands on Storage Units
- Reduce the workload required for storage management by using virtualization technology
- Efficiently manage data according to its usage frequency
- Dramatically reduce the power consumption of storage units for environmental conservation and power saving
- Ensure the continuous operations in the face of unforeseen failures

M Series Disk Array

Responding to ballooning data, preparing for virtualization and cloud environments, and responding to environmental and power-saving needs, The drastically changing environment of IT infrastructure requires a storage unit that meets these needs. M Series has been developed to satisfy these needs by bringing together the high reliability technology and innovative ability that NEC has acquired during the development of the NEC Storage products. The new SAN storage infrastructure leads the ever-evolving virtualization and cloud computing age.

M Series has superior characteristics for next-generation SAN storage units. These features address the need for high performance and high availability to support business continuity, advanced eco-friendly performance, easy installation and operations that reduce the management workload, and economic efficiency that reduces the TCO to store and archive data.

M Series offers a diverse product lineup consisting of entry model M100 Disk Array, basic model M300 Disk Array, and high performance model M500 Disk Array that achieves a large-scale storage integration by utilizing advanced virtualization technologies such as data allocation optimization with a high-speed solid state drive (SSD) and thin provisioning, all developed to respond to the needs of the next generation.

**High Performance & High Availability**
M Series ensures the protection of data at businesses and provides high performance and high availability to support high-speed access.
- High-speed components and interfaces such as SSD are supported.
- Data can automatically be allocated to a suitable device according to its access frequency.
- Main components are made redundant and protected.
- Original high availability technologies such as Super Phoenix technology are adopted.
- Superior security functions such as self-encrypting drives are supported.

**Easy Installation & Operation**
M Series reduces the workload of managing storage by offering autonomous operations utilizing virtualization technologies and easy-to-use GUI.
- The advanced dynamic pool enables the expansion of capacity and performance without stopping operations.
- Thin provisioning optimally allocates storage capacity in a virtual environment.
- A backup site can be easily and economically constructed by using an iSCSI interface.
- Data can be migrated and moved between storage units without using an FC switch.
- The user-friendly GUI makes storage management and operation easy.

**Advanced Eco-friendly Function**
M Series promotes environmental conservation by actively adopting eco-friendly components that save power.
- The eco-friendly design employs the 80PLUS® PLATINUM (for M500) or 80PLUS® GOLD (for M100 and M300) certified high-efficiency power supplies as well as low-power processors.
- M Series can be used even in 40°C(104°F) environments, contributing to a reduced electricity cost.
- Power consumption is reduced by providing a visualization of the power consumption and implementing the autonomous MAID function.

**IT Cost Optimization**
M Series contributes to the reduction of TCO by optimizing the investment cost and making daily operations highly efficient.
- Devices (SAS, nearline SAS, and SSD) and interfaces (FC, iSCSI, and SAS) can be selected according to your purpose, optimizing the investment cost.
- The management software is bundled with M100.
- The management workload can be reduced with virtualized system operations.
Innovate virtualization with NEC Storage M Series

Automatically allocating data to a suitable device according to access frequency

M Series enables the creation of layers of different types of devices such as SSD that allows high-speed data access, high-performance SAS HDD, and high-capacity and low bit-cost nearline SAS HDD. The stored data is automatically re-allocated in suitable storage layers by routine monitoring so that frequently accessed data is moved to a SSD pool and infrequently accessed data is moved to a nearline SAS pool. This maximizes storage performance and optimizes the investment cost of the storage units.

SSD L2 cache & persistent write, ensuring stable, high-speed performance

M Series was developed to achieve higher levels of performance through utilization of SSD. The throughput of frequently accessed data was improved to remove hot spots by using SSD, which has a readout performance of superior speed, as an L2 cache. In addition, a persistent write cache can continue FastWrite operations by storing redundant data in SSD when an error occurs in one controller.

Advanced dynamic pool, expanding the capacity and performance simply by adding HDD

The flexibility to respond to a sudden increase in data is vital in this age of constant change. NEC Storage M Series offers an advanced dynamic pool that NEC recently developed by elevating the level of existing virtual pools. The advanced dynamic pool enables the automatic increase in pool capacity during capacity shortages simply by adding HDD, and improved performance of the entire pool by automatically optimizing data allocation to distribute data.

Thin provisioning, optimally allocating storage capacity in a virtualized environment

The thin provisioning feature virtually allocates the capacity of a physical volume to a logical volume and adds HDD when the capacity of physical volume is insufficient. The storage usage is maximized because you can minimize the difference between the used space and the physical volume capacity. The initial investment cost and power consumption can also be reduced. In addition, it is not necessary to stop operations or adjust a schedule to change the capacity because HDD can be added without stopping jobs.

Improving the operating efficiency of a server virtualization environment by integrating with a VMware environment

M Series supports VMware vSphere APIs for Array Integration (VAAI), a storage API provided by VMware, Inc. By incorporating this API, operations that were processed on a server in the past can be processed on the M Series product itself. These operations include the replication and migration of virtual machines, initialization of new virtual machines, and exclusive control of storage areas. Performing these operations without a server reduces server loads, enhances the operational efficiency of the entire virtualization environment, and increases overall performance.

Innovate business continuity with NEC Storage M Series

Enables the migration of data between storage units

The data migration function responds to requests to move data from an existing storage unit to the M Series unit. Even when models do not support RDR, data can be moved economically without using an FC switch or other hardware.

RAID protects against double failures, handling increasing data capacities

The HDD capacity is becoming larger as business information rapidly increases. There is also a risk of data loss because the second HDD can fail while recovering a damaged HDD. M Series supports the NEC original RAID triple mirror feature that achieves the high-speed performance of RAID-1 and the reliability of RAID-6 in addition to the double parity configuration of RAID-6, responding to demands for both large capacities and high reliability. M Series can maintain its performance during failures with its design that duplicates main components, establishing a level of reliability equivalent to high-end models of storage units.

Innovate interoperability with NEC Storage M Series

Intuitive GUI allows even first-time users to easily manage the storage unit

The GUI was developed to provide a user-friendly and easy-to-understand environment that allows anyone to manage the storage unit. Its intuitive design facilitates the operation of first-time users. The GUI manages all operations from a visual web browser window, implementing the concepts of intuitive, easy-to-understand, and visible operation.

iSCSI RDR economically counters disaster through remote replication

Constructing a backup site to protect valuable data against disasters such as earthquakes and fires can cost a great deal of money and resources. With M Series, an IP line is used with iSCSI RDR, making an FC-IP converter unnecessary and enabling the development of cost-efficient disaster prevention and response measures. In addition, low-cost operation is possible due to a reduction of line cost.
Entry model | Basic model | High performance model
---|---|---
M300 Disk Array | M300 Disk Array | M300 Disk Array

### Green innovation with NEC Storage M Series

#### Reducing power consumption with advanced power saving technology

To offer top-class eco-friendly storage units, NEC has developed M Series by applying advanced energy saving technology so that its power consumption is significantly less than previous models. It promotes power saving of the entire storage unit by incorporating a low-power processor as its CPU and enabling autonomous control. For the power supply, M Series employs the 80PLUS PLATINUM (for M500) or 80PLUS GOLD (for M100 and M300) certified high-efficiency power supplies. In addition, M Series incorporates as many power saving components as possible, and achieves a significant reduction in the total number of components. M Series can be used in 40°C (104°F) environments, reducing the power consumed by air conditioning.

#### Realizing low-power operations by visualization of power consumption and autonomous device control

The power consumption of all M Series units in the same infrastructure environment can be managed with real-time visualizations. In addition, components such as CPU, fan and HDD can autonomously control power consumption based on storage unit usage. Energy efficient operations are promoted by reducing unnecessary power consumption as much as possible when the storage unit is idle.

#### Saving power resources with the autonomous MAID function

The larger the system is, the more power is consumed and the more the running cost is increased. M Series adopts MAID (Massive Array of Inactive Disks) technology to promote energy efficiency. For example, by managing a job schedule in pool units with dedicated software, the motor of a backup disk drive that is not being used is turned off to save power. M Series can now use up to 30% less power than previous NEC Storage models.

#### Innovate security with NEC Storage M Series

#### Advanced security functions such as data encryption and personal information leakage prevention

The security of storage units that store confidential business data is always threatened. M Series uses a Self-encrypting drive (SED) to encrypt data in the HDD. This function prevents data leakage when the HDD is inappropriately removed, lost, stolen, or damaged. Furthermore, M Series features a variety of security functions, including restrictions on access to logical disks, audit of logs and other records, and prevention of erroneous operations.