



## NEC Storage Software

# Manual Guide



IS901-42E

© NEC Corporation 2003-2017

No part of the contents of this book may be reproduced or transmitted in any form without permission of NEC Corporation.

The contents of this book may be modified without notice in the future.

# Preface

---

This manual explains the overview of products related to NEC Storage Manager and introduces the related manuals. NEC Storage Manager is software that centrally operates/manages NEC Storage series disk array subsystems. To do so, NEC Storage Manager manages the configurations and state of the NEC Storage series disk array subsystems and sends alert notifications according to performance information or fault information.

NEC Storage Manager consists of the server section that controls storage and the client section that monitors/operates it, and can manage remote storage.

For details about the NEC Storage disk array units, refer to the user's guide or user's manual provided with the disk array unit.

Remarks 1. The NEC Storage Manager is referred to as iSM or Storage Manager in this manual unless clearly specified.

Also, the following terms refer to the corresponding NEC Storage software products.

Term	NEC Storage Software Product
AccessControl	NEC Storage AccessControl
BaseProduct	NEC Storage BaseProduct
CachePartitioning	NEC Storage CachePartitioning
ControlCommand	NEC Storage ControlCommand (Note)
DataMigration	NEC Storage DataMigration
DynamicDataReplication	NEC Storage DynamicDataReplication
DynamicDataReplication Lite	NEC Storage DynamicDataReplication Lite
DynamicDataReplication Express	NEC Storage DynamicDataReplication Express
DynamicSnapVolume	NEC Storage DynamicSnapVolume
IO Load Manager	NEC Storage IO Load Manager
PerformanceMonitor	NEC Storage PerformanceMonitor
PerformanceNavigator	NEC Storage PerformanceNavigator
PerformanceOptimizer	NEC Storage PerformanceOptimizer
PerforCache	NEC Storage PerforCache
PerforOptimizer	NEC Storage PerforOptimizer
Protection Manager	NEC Storage Protection Manager
ReallocationControl	NEC Storage ReallocationControl
RemoteDataReplication	NEC Storage RemoteDataReplication
RemoteDataReplication Asynchronous	NEC Storage RemoteDataReplication Asynchronous
RemoteDataReplication/DisasterRecovery	NEC Storage RemoteDataReplication/DisasterRecovery
ReplicationControl FileSystem Option	NEC Storage ReplicationControl FileSystem Option
ReplicationControl SQL Option	NEC Storage ReplicationControl SQL Option

Term	NEC Storage Software Product
SecureEraser	NEC Storage SecureEraser
StoragePowerConserver	NEC Storage StoragePowerConserver
ThinProvisioning	NEC Storage ThinProvisioning
Analyzer for VMware vRealize Operations	NEC Storage Analyzer for VMware vRealize Operations
Virtual Volume	NEC Storage Virtual Volume
VirtualCachePartitioning	NEC Storage VirtualCachePartitioning
VirtualStoragePartitioning	NEC Storage VirtualStoragePartitioning
VolumeProtect	NEC Storage VolumeProtect
VSS Provider	NEC Storage VSS Provider

Note: NEC Storage ControlCommand is a program product that has integrated the following five functions.

- ReplicationControl
- SnapControl
- ReplicationControl/DisasterRecovery
- ProtectControl
- PowerControl

2. The NEC Storage series disk array subsystem is referred to as a disk array in this manual unless clearly specified. Also, the following terms refer to the corresponding NEC Storage hardware products.

Term	NEC Storage Hardware Product
M series	NEC Storage M series
M100	NEC Storage M100
M300	NEC Storage M300
M500	NEC Storage M500
M700	NEC Storage M700
M5000	NEC Storage M5000
M110	NEC Storage M110
M310	NEC Storage M310 and NEC Storage M310F (Note)
M310F	NEC Storage M310F
M510	NEC Storage M510
M710	NEC Storage M710 and NEC Storage M710F (Note)
M710F	NEC Storage M710F
All flash storage	NEC Storage M310F and M710F
D series	NEC Storage D series
D1-10	NEC Storage D1-10
D1-30	NEC Storage D1-30
D1-30i	NEC Storage D1-30i
D3-10	NEC Storage D3-10
D3-10i	NEC Storage D3-10i
D4-30	NEC Storage D4-30
D4-30i	NEC Storage D4-30i
D8-10	NEC Storage D8-10
D8-20	NEC Storage D8-20
D8-30	NEC Storage D8-30

Term	NEC Storage Hardware Product
E series	NEC Storage E series
A series	NEC Storage A series
A2400	NEC Storage A2400
A2600	NEC Storage A2600
A2700	NEC Storage A2700
A4900	NEC Storage A4900
A3000	NEC Storage A3000
A5000	NEC Storage A5000

Note: NEC Storage M310 and NEC Storage M310F are referred to as M310, and NEC Storage M710 and NEC Storage M710F are referred to as M710 in this manual unless clearly specified.

3. Trademarks and registered trademarks

- Microsoft, Windows, Windows Server, Windows Vista, and Hyper-V are trademarks or registered trademarks of Microsoft Corporation in the United States and other countries.
- HP-UX is a registered trademark of Hewlett-Packard Co. in the United States.
- UNIX is a registered trademark of The Open Group in the United States and other countries.
- Linux is a trademark or registered trademark of Mr. Linus Torvalds in the United States and other countries.
- SUSE is a trademark or registered trademark of Novell, Inc. in the United States and other countries.


Other product names and company names, etc. are trademarks or registered trademarks of the associated companies.

4. In this document, the capacity is calculated based on units of 1024 (for example 1 KB = 1024 bytes) unless otherwise specified.

5. In this document, matters to which careful attention needs to be paid will be described as follows:

Be sure to observe the instructions.

If the indications are ignored and the system is improperly operated, settings which have already been made might be affected.

Type of Indication	
Type	Description
	Describes contents which require users to pay special attention for operation.





# Contents

---

Chapter 1	Manual List.....	1
Chapter 2	Functional Enhancement Overview.....	11
Chapter 3	Provided Manuals.....	12
3.1	Manuals Describing the Storage Manager Basic Functions.....	12
3.1.1	Manuals for the M Series.....	12
3.1.2	Manuals for the D Series.....	12
3.1.3	Manuals for the A Series.....	12
3.2	Manuals Describing the Storage Manager Optional Functions.....	13
3.2.1	Manuals for the M Series.....	13
3.2.2	Manuals for the D Series.....	17
3.2.3	Manuals for the A Series.....	20

# Chapter 1 Manual List

Refer to the following manuals (PDF files) as needed:

 <p>Included in the iSM installation medium</p>	 <p>Included in the medium ISTOREGEXP that comes with iSM Express</p>	 <p>Included in the ControlCommand installation medium</p>
 <p>Included in the corresponding product (software) installation medium</p>		



- **“Manual Guide” IS901**

This “Manual Guide” explains the overview of the system and functions of iSM.



- **“NEC Storage Manager User’s Manual” IS050**

This manual explains the basic functions for using iSM.

For details about how to install the iSM server and the iSM client, refer to the installation guide.



Refer to the manuals when:

- Using the following basic iSM functions:
  - Configuration display, state monitoring, nickname setting (disk array name, logical disk name, and port name), error monitoring, log output, event link, ESMPRO link (only for Linux and Windows).
- Starting/stopping the iSM server and the iSM client.
- A software error occurred on the iSM server or iSM client while iSM was running.



- **“Configuration Setting Tool User’s Manual (GUI)” IS007**

This manual explains how to refer to the configuration setting and configuration information of the disk array through GUI (Graphical User Interface).

\* This manual is based on the D series disk arrays.

When using the M series disk arrays, refer to the “Configuration Setting Tool User’s Manual (GUI) for the M Series” (IS051).

Refer to the manuals when:

- Understanding the disk array configurations.
- Binding/unbinding logical disks. (Batch setting also permitted.)
- Setting nicknames (disk array name, logical disk name, and port name). (Batch setting also permitted.)
- Batch changing replication settings.
- Setting the platforms of ports.
- Making the following settings for disk arrays:
  - Cross Call mode, auto assignment mode, auto repair mode, formatting time, Expand LUN, disk array time, acquisition of disk array internal logs
- Specifying the start of repairing disks.
- Specifying the Access Control settings. \* Function of AccessControl
- Getting configuration information (output).



- **“Configuration Setting Tool User’s Manual (GUI) for M Series” IS051**

This manual explains how to refer to the configuration setting and configuration information of the M series disk array through GUI (Graphical User Interface).

\* This manual is based on the M series disk arrays.

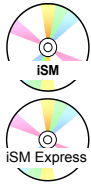
When using the D series disk arrays, refer to the “Configuration Setting Tool User’s Manual (GUI)” (IS007).

\* When performing operations on the M series disk arrays through CLI, refer to the “NEC Storage Manager Command Reference” (IS052).

Refer to the manuals when:

- Specifying the initial disk array settings.
- Binding/unbinding pools.
- Binding/unbinding hot spares.
- Binding/unbinding logical disks.
- Allocating logical disks to a host.
- Applying the software license to disk arrays.
- Changing the disk array settings (network, host connection port, time, power saving).
- Changing the settings for Storage Manager Express.
- Acquiring (outputting) the disk array configuration information.
- Performing Configuration Copy.





- **“NEC Storage Manager Command Reference” IS052**

This manual explains how to refer to the configuration setting and configuration information of the disk array through CLI.

Refer to the manuals when:

- Specifying the initial disk array settings.
- Binding/unbinding pools.
- Binding/unbinding hot spares.
- Binding/unbinding logical disks.
- Allocating logical disks to a host.
- Applying the software license to disk arrays.
- Changing the disk array settings (network, host connection port, time).
- Changing the settings for Storage Manager Express.
- Acquiring (outputting) the disk array configuration information.
- Specifying the disk array configuration settings by using a script.
- Performing Configuration Copy.
- Performing secure erase.
- Using an L2 Cache.
- Using the I/O control function.



- **“NEC Storage Manager Express User’s Guide” IS053**

This manual is intended for users who use NEC Storage Manager Express on the M100 and M110 disk arrays, and explains the installation method and daily operations.

This manual provides the overview of Storage Manager Express; therefore, refer to the following manuals for details.

- NEC Storage Manager User’s Manual (IS050)
- Configuration Setting Tool User’s Manual (GUI) for the M Series” (IS051)
- NEC Storage Manager Command Reference (IS052)



- **“LD Administrator User’s Manual” IS037**

This manual explains the functions and operation methods when the LD Administrator function, ReallocationControl, has been installed.

\* This manual is based on the D series disk arrays.

When using the M series disk arrays, refer to the “Configuration Setting Tool User’s Manual (GUI) for the M Series” (IS051).

Refer to the manual when:

- Maintaining and managing logical disks (for example, assigning/releasing pooled spare disks to/from an application server).
- Using the configuration setting operation guard function.



- **“Cache Partitioning User’s Manual” IS038**

This manual explains the functions and operation methods when the cache partitioning function, CachePartitioning, has been installed.

\* This manual is based on the A series disk arrays (except for A5000).

Refer to the manual when:

- Defining/deleting/changing a cache segment.
- Assigning/freeing a logical disk to/from a cache segment.
- Referring to the status of cache segment partitions.



- **“Performance Monitoring User's Manual” IS025**

This manual explains the functions and operation methods when the performance monitoring function, PerformanceMonitor, has been installed.

Refer to the manual when:

- Displaying the load state in real time.
- Setting a threshold for monitoring an overload.
- Collecting the statistical information of performance.



- **“Performance Optimization User’s Manual” IS026**

This manual explains the functions and operation methods when the performance optimization function, PerformanceOptimizer, has been installed.

Refer to the manual when:

- Detecting bottlenecks (displaying the busy ratio).
- Replacing logical disks (performance tuning).



- **“Performance Analysis User’s Manual” IS029**

This manual explains the functions and operation methods when the performance analysis function, PerformanceNavigator, has been installed.



Refer to the manual when:

- Analyzing performance off-line.
- Planning performance.
- Early detecting and solving performance problem.



- **“Partitioning User’s Manual” IS043**

This manual explains the functions and operation methods when the partitioning function, VirtualStoragePartitioning, has been installed.

\* This manual is based on the D series disk arrays.

Refer to the manual when:

- Understanding the partitioning function.
- Setting the users of partitions.
- Creating/deleting/changing partitions.
- Defining/deleting/changing cache segments to be allocated to the partition.



- **“Thin Provisioning User’s Manual” IS044**

This manual explains the functions and operation methods when the thin provisioning function, ThinProvisioning, has been installed.

Refer to the manual when:

- Understanding the thin provisioning function.
- Effectively using volume free space.
- Expanding a volume without interrupting an operation.
- Setting a virtual capacity pool and virtual capacity logical disk.



- **“Data Migration User’s Manual” IS060**

This manual explains the functions and operation methods when the data migration function, DataMigration, has been installed.

\* This manual provides information only for the cases using the M series disk arrays as the destination.

Refer to the manual when:

- Understanding the data migration function.
- Move data from an existing disk array to a new disk array.



- **“Data Allocation Optimization User’s Manual” IS061**

This manual explains the functions and operation methods when the data allocation optimization function, PerforOptimizer, has been installed.

\* This manual is based on the M series disk arrays.

Refer to the manual when:

- Understanding the data allocation optimization function.



- **“L2 Cache User’s Manual” IS062**

This manual explains the functions and operation methods when the L2 cache function, PerforCache, has been installed.

\* This manual is based on the M series disk arrays.

Refer to the manual when:

- Understanding the L2 cache function.



- **“Cache Partitioning User’s Manual for M Series” IS064**

This manual explains the functions and operation methods when the data cache partitioning function, VirtualCachePartitioning has been installed on the M series disk arrays, or CachePartitioning has been installed on the A5000 disk arrays.

\* This manual is based on the M series and A5000 disk arrays.

Refer to the manual when:

- Defining/deleting/changing a cache segment.
- Assigning/freeing a logical disk to/from a cache segment.
- Referring to the status of cache segment partitions.



- **“I/O Control User’s Manual” IS067**

This manual explains the functions and operation methods when the I/O control function, IO Load Manager has been installed.

\* This manual is based on the M series disk arrays.

Refer to the manual when:

- Understanding the I/O control function.



- **“Messages Handbook” IS010**

This manual explains the messages (error, warning, notice, and information) displayed by iSM and the appropriate action to take. The messages are listed in ID order.



- **“Data Replication User’s Manual (Function Guide)” IS015**

This manual explains the operation methods common to the operating systems supported by iSM to perform the data replication functions provided by DynamicDataReplication, DynamicDataReplication Lite, RemoteDataReplication, RemoteDataReplication Asynchronous, and ControlCommand.

Refer to the manual when:

- Understanding the data replication function.
- Pairing volumes.
- Creating/separating the replication volume of a master volume.
- Restoring replication volumes.
- Creating volume lists.
- Performing volume operations, such as the mounting/unmounting of the file system on Windows.

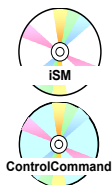


- **“Data Replication User’s Manual (Installation and Operation Guide for Windows)” IS016**
- **“Data Replication User’s Manual (Installation and Operation Guide for Linux)” IS020**

These manuals explain the operation methods depending on the operating system in use to perform the data replication functions provided by DynamicDataReplication, DynamicDataReplication Lite, RemoteDataReplication, RemoteDataReplication Asynchronous, and ControlCommand. Read either of the manuals in accordance with your operating system in use.

Refer to the manual when:

- Understanding the system design or operation examples of data replication.
- A data replication error occurred.



- **“Snapshot User’s Manual (Function Guide)” IS030**

This manual explains the operation methods common to the operating systems supported by iSM, which are used to perform the snapshot functions provided by DynamicSnapVolume and ControlCommand.

Refer to the manual when:

- Understanding the snapshot function.
- Constructing the snapshot environment.
- Creating a snapshot of a business volume.
- Restoring from a snapshot.
- Creating volume lists.
- Performing volume operations, such as the mounting/unmounting of the file system on Windows.

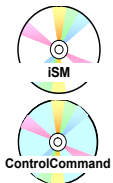


- **“Snapshot User’s Manual (Installation and Operation Guide for Windows)” IS031**
- **“Snapshot User’s Manual (Installation and Operation Guide for Linux)” IS035**

These manuals explain the operation methods depending on the operating system in use to perform the snapshot functions provided by DynamicSnapVolume and ControlCommand. Read either of the manuals in accordance with your operating system in use.

Refer to the manual when:

- Understanding the system design or operation examples of snapshot.
- A snapshot error occurred.



- **“Data Retention User’s Manual” IS040**

This manual explains the functions and operation methods of the data retention function, VolumeProtect.

Refer to the manual when:

- Understanding operations of the data retention function.
- Understanding operation examples using data retention function.



- **“ControlCommand Command Reference” IS041**

This manual explains commands and operation settings related to data replication, snapshot, disaster recovery, data retention, and power saving functions.

Refer to the manual when using data replication, snapshot, disaster recovery, data retention, and power saving functions through CLI.

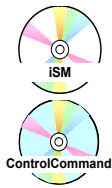


- **“Power Saving User's Manual” IS042**

This manual explains the functions and operation methods of the power saving function, StoragePowerConserver.

Refer to the manual when:

- Understanding operations of the power saving function.
- Understanding operation examples using power saving function.



- **“ReplicationControl SQL Option User’s Manual” IS006**

This manual explains the functions and operation methods of ReplicationControl SQL Option.

Refer to the manual when:

- Creating snapshot backups.
- Restoring snapshots.
- An error occurred while ReplicationControl SQL Option was running.



- **“ReplicationControl FileSystem Option User’s Manual (Linux)” IS028**

This manual explains the functions and operation methods of ReplicationControl FileSystem Option.

Refer to the manual when:

- Replicating a disk after synchronizing a file system when data backup operation is performed using data replication or snapshot function.
- An error occurred while ReplicationControl FileSystem Option was running.



- **“Data Replication User’s Manual (Disaster Recovery System Installation and Operation Guide)” IS027**

This manual explains the disaster recovery function of RemoteDataReplication/DisasterRecovery and disaster recovery operation using iSM and ControlCommand.

\* This manual is based on the D series and M series disk arrays.

Refer to the manual when:

- Understanding the disaster recovery function.
- Understanding the system design or operation examples with taking account of disaster recovery.
- Understanding the ATgroup.



- **“SMI-S Provider User’s Manual” IS150**

This manual explains the functions and operation methods of SMI-S Provider.

Refer to the manual when monitoring and changing the configuration of disk arrays using a management tool that supports the SMI-S (Storage Management Initiative-Specification) defined by the SNIA (Storage Networking Industry Association).

\* This manual provides the description based on the configuration that SMI-S Provider is installed to the management server.

\* This manual explains NEC Storage SMI-S Provider included in NEC Storage ControlCenter Connector.



- **“SMI-S Provider User’s Manual for the M Series” IS153**

This manual explains the functions and operation methods of SMI-S Provider.

Refer to the manual when monitoring and changing the configuration of disk arrays using a management tool that supports the SMI-S (Storage Management Initiative-Specification) defined by the SNIA (Storage Networking Industry Association).

\* This manual provides the description based on the configuration that SMI-S Provider is installed in the disk array.

\* This manual is based on the following disk arrays: M300, M310, M500, M510, M700, and M710.



- **“NEC Storage Analyzer for VMware vRealize Operations User’s Manual” IS068**

This manual explains the functions and operation methods of Analyzer for VMware vRealize Operations.

Refer to the manual when analyzing the performance of the virtualization environment including the disk arrays by using vRealize Operations Manager.

\* This manual is based on the M series disk arrays.



- **“Virtual Volume User’s Manual” IS069**

This manual explains the functions and operation methods of Virtual Volume.

Refer to the manual when performing the storage management on a per-virtual machine basis with cooperating with vSphere.

\* This manual is based on the following disk arrays: M110, M310, M510, and M710.



## Chapter 2 Functional Enhancement Overview

This chapter explains the new main functions of iSM Ver9.7.

For details on revision history, refer to “README.TXT” on the iSM installation medium.

<Storage Manager >

- M510, M710, and M710F support 32 Gbps fibre channel.

## Chapter 3 Provided Manuals

This chapter describes the manuals that describe the basic and optional functions of Storage Manager.

### 3.1 Manuals Describing the Storage Manager Basic Functions

---

This section describes the manuals that describe the basic functions of Storage Manager. Refer to the manuals supporting the disk arrays that you use.

#### 3.1.1 Manuals for the M Series

---

The following manuals describe the functions of Storage Manager that are supported by the M series.

- NEC Storage Manager User's Manual (IS050)
- NEC Storage Manager Express User's Manual (IS053)
- Configuration Setting Tool User's Manual (GUI) for the M Series (IS051)
- NEC Storage Manager Command Reference (IS052)
- Messages Handbook (IS010)

#### 3.1.2 Manuals for the D Series

---

The following manuals describe the functions of Storage Manager that are supported by the D series.

- NEC Storage Manager User's Manual (IS050)
- Configuration Setting Tool User's Manual (GUI) (IS007)
- NEC Storage Manager Command Reference (IS052)
- Messages Handbook (IS010)

#### 3.1.3 Manuals for the A Series

---

The following manuals describe the functions of Storage Manager that are supported by the A2400, A2600, A2700, and A4900 disk arrays.

- NEC Storage Manager User's Manual (IS050)
- Configuration Setting Tool User's Manual (GUI) (IS007)  
(for the A2300/A2400/A2600/A2700/A4300/A4900 disk arrays)
- Storage Manager Command Reference (IS052)
- Messages Handbook (IS010)

## 3.2 Manuals Describing the Storage Manager Optional Functions

This section describes the manuals that describe the optional functions of Storage Manager. Refer to the manuals supporting the disk arrays that you use.

### 3.2.1 Manuals for the M Series

Table 3-1 shows the optional functions supported by the M series and their manuals. The supported optional functions differ depending on the M series model. For details, refer to Table 3-2.

Table 3-1 Optional Functions Supported by the M Series and Related Manuals

	Optional Function Name	Manual
(1)	Performance monitoring <b>PerformanceMonitor</b>	Performance Monitoring User's Manual (IS025)
(2)	Performance analysis <b>PerformanceNavigator</b>	Performance Analysis User's Manual (IS029)
(3)	Access control function <b>AccessControl</b>	Configuration Setting Tool User's Manual (GUI) for the M Series (IS051)
(4)	I/O control <b>IO Load Manager</b>	I/O Control User's Manual (IS067)
(5)	L2 cache <b>PerforCache</b>	L2 Cache User's Manual (IS062)
(6)	Performance optimization <b>PerformanceOptimizer</b>	Performance Optimization User's Manual (IS026)
(7)	Data allocation optimization <b>PerforOptimizer</b>	Data Allocation Optimization User's Manual (IS061)
(8)	Data retention <b>VolumeProtect</b>	Data Retention User's Manual (IS040) ControlCommand Command Reference (IS041)
(9)	Power saving <b>StoragePowerConserver</b>	Power Saving User's Manual (IS042) ControlCommand Command Reference (IS041)
(10)	Cache partitioning <b>VirtualCachePartitioning</b>	Cache Partitioning User's Manual for M Series (IS064)
(11)	Thin provisioning function <b>ThinProvisioning</b>	Thin Provisioning User's Manual (IS044)
(12)	Data migration function <b>DataMigration</b>	Data Migration User's Manual (IS060) NEC Storage Manager Command Reference (IS052)
(13)	Data secure erase <b>SecureEraser</b>	NEC Storage Manager Command Reference (IS052)
(14)	Local data replication/Snapshot <b>DynamicDataReplication</b>	Data Replication User's Manual (Function Guide) (IS015) Data Replication User's Manual (Installation and Operation Guide for Windows) (IS016)
(15)	Local data replication/Snapshot <b>DynamicDataReplication Express</b>	Data Replication User's Manual (Installation and Operation Guide for Linux) (IS020)
(16)	Remote data replication <b>RemoteDataReplication</b>	ControlCommand Command Reference (IS041) (*) * For DynamicDataReplication Express: NEC Storage Manager
(17)	Remote data replication <b>RemoteDataReplication Asynchronous</b>	Command Reference (IS052)

	Optional Function Name	Manual
(18)	Snapshot <b>DynamicSnapVolume</b>	Snapshot User's Manual (Function Guide) (IS030) Snapshot User's Manual (Installation and Operation Guide for Windows) (IS031) Snapshot User's Manual (Installation and Operation Guide for Linux) (IS035) ControlCommand Command Reference (IS041)
(19)	Disaster recovery <b>RemoteDataReplication/ DisasterRecovery</b>	Data Replication User's Manual (Function Guide) (IS015) Data Replication User's Manual (Installation and Operation Guide for Windows) (IS016) Data Replication User's Manual (Installation and Operation Guide for Linux) (IS020) Data Replication User's Manual (Disaster Recovery System Installation and Operation Guide) (IS027) ControlCommand Command Reference (IS041)
(20)	Operation command set <b>ControlCommand</b>	
	• Replication control <b>ReplicationControl</b>	Data Replication User's Manual (Function Guide) (IS015) Data Replication User's Manual (Installation and Operation Guide for Windows) (IS016) Data Replication User's Manual (Installation and Operation Guide for Linux) (IS020) ControlCommand Command Reference (IS041)
	• Snapshot control <b>SnapControl</b>	Snapshot User's Manual (Function Guide) (IS030) Snapshot User's Manual (Installation and Operation Guide for Windows) (IS031) Snapshot User's Manual (Installation and Operation Guide for Linux) (IS035) ControlCommand Command Reference (IS041)
	• Disaster recovery control <b>ReplicationControl/Disaster Recovery</b>	Data Replication User's Manual (Function Guide) (IS015) Data Replication User's Manual (Installation and Operation Guide for Windows) (IS016) Data Replication User's Manual (Installation and Operation Guide for Linux) (IS020) Data Replication User's Manual (Disaster Recovery System Installation and Operation Guide) (IS027) ControlCommand Command Reference (IS041)
	• Data retention control <b>ProtectControl</b>	Data Retention User's Manual (IS040) ControlCommand Command Reference (IS041)
	• Power saving control <b>PowerControl</b>	Power Saving User's Manual (IS042) ControlCommand Command Reference (IS041)
(21)	Microsoft SQL Server linkage <b>ReplicationControl SQL Option</b>	ReplicationControl SQL Option User's Manual (IS006)
(22)	File system synchronization <b>ReplicationControl FileSystem Option</b>	Data Replication FileSystem Option User's Manual (Linux) (IS028)
(23)	vRealize Operations linkage <b>Analyzer for VMware vRealize Operations</b>	Analyzer for VMware vRealize Operations User's Manual (IS068)
(24)	vSphere linkage <b>Virtual Volume</b>	Virtual Volume User's Manual (IS069)
(25)	SMI-S Provider <b>SMI-S Provider</b>	SMI-S Provider User's Manual for the M Series (IS153)

Table 3-2 Optional Function Supported by the M Series (1/2)

Optional Function Name		Disk Array Type				
		M5000	M110	M310	M510	M710
(1)	PerformanceMonitor	✓	✓	✓	✓	✓
(2)	PerformanceNavigator	✓	✓	✓	✓	✓
(3)	AccessControl	✓*2	✓*1	✓*2	✓*2	✓*2
(4)	IO Load Manager	✓	✓	✓	✓	✓
(5)	PerforCache	-	✓	✓*4	✓	✓*4
(6)	PerformanceOptimizer	✓*3	-	-	-	-
(7)	PerforOptimizer	✓*3	✓	✓*5	✓	✓*5
(8)	VolumeProtect	✓	✓	✓	✓	✓
(9)	StoragePowerConserver	✓*2	✓*1	✓*2*4	✓*2	✓*2*4
(10)	VirtualCachePartitioning	✓	-	✓	✓	✓
(11)	ThinProvisioning	✓*2	✓*1	✓*2	✓*2	✓*2
(12)	DataMigration	-	✓*1	✓*2	✓*2	✓*2
(13)	SecureEraser	-	✓	✓	✓	✓
(14)	DynamicDataReplication	✓	✓	✓	✓	✓
(15)	DynamicDataReplication Express	-	✓*1	-	-	-
(16)	RemoteDataReplication	✓	✓	✓	✓	✓
(17)	RemoteDataReplication Asynchronous	✓	✓	✓	✓	✓
(18)	DynamicSnapVolume	✓	✓	✓	✓	✓
(19)	RemoteDataReplication/DisasterRecovery	✓	-	-	✓	✓
(20)	ControlCommand	✓	✓	✓	✓	✓
	ReplicationControl	✓	✓	✓	✓	✓
	SnapControl	✓	✓	✓	✓	✓
	ReplicationControl/DisasterRecovery	✓	-	-	✓	✓
	ProtectControl	✓	✓	✓	✓	✓
	PowerControl	✓	✓	✓	✓	✓
(21)	ReplicationControl SQL Option	✓	✓	✓	✓	✓
(22)	ReplicationControl FileSystem Option	✓	✓	✓	✓	✓
(23)	Analyzer for VMware vRealize Operations	✓	✓	✓	✓	✓
(24)	Virtual Volume	-	✓	✓	✓	✓
(25)	SMI-S Provider	-	-	✓	✓	✓

(\*1) This function is included in the disk array.

(\*2) This function is included in BaseProduct.

(\*3) Only PerformanceOptimizer or PerforOptimizer can be used in a single disk array system.

(\*4) This function cannot be used on the all flash storage.

(\*5) LD movement can be used on the all flash storage, but data relocation in LD or POOL cannot be used.

Table 3-3 Optional Function Supported by the M Series (2/2)

Optional Function Name		Disk Array Type			
		M100	M300	M500	M700
(1)	PerformanceMonitor	✓	✓	✓	✓
(2)	PerformanceNavigator	✓	✓	✓	✓
(3)	AccessControl	✓*1	✓*2	✓*2	✓*2
(4)	IO Load Manager	-	-	-	-
(5)	PerforCache	✓	✓	✓	✓
(6)	PerformanceOptimizer	-	-	-	-
(7)	PerforOptimizer	✓	✓	✓	✓
(8)	VolumeProtect	✓	✓	✓	✓
(9)	StoragePowerConserver	✓*1	✓*2	✓*2	✓*2
(10)	VirtualCachePartitioning	-	✓	✓	✓
(11)	ThinProvisioning	✓*1	✓*2	✓*2	✓*2
(12)	DataMigration	✓	✓	✓	✓
(13)	SecureEraser	✓	✓	✓	✓
(14)	DynamicDataReplication	✓	✓	✓	✓
(15)	DynamicDataReplication Express	✓*1	-	-	-
(16)	RemoteDataReplication	✓	✓	✓	✓
(17)	RemoteDataReplication Asynchronous	✓	✓	✓	✓
(18)	DynamicSnapVolume	✓	✓	✓	✓
(19)	RemoteDataReplication/DisasterRecovery	-	-	✓	✓
(20)	ControlCommand	✓	✓	✓	✓
	ReplicationControl	✓	✓	✓	✓
	SnapControl	✓	✓	✓	✓
	ReplicationControl/DisasterRecovery	-	-	✓	✓
	ProtectControl	✓	✓	✓	✓
	PowerControl	✓	✓	✓	✓
(21)	ReplicationControl SQL Option	✓	✓	✓	✓
(22)	ReplicationControl FileSystem Option	✓	✓	✓	✓
(23)	Analyzer for VMware vRealize Operations	✓	✓	✓	✓
(24)	Virtual Volume	-	-	-	-
(25)	SMI-S Provider	-	✓	✓	✓

(\*1) This function is included in the disk array.

(\*2) This function is included in BaseProduct.

(\*3) Only PerformanceOptimizer or PerforOptimizer can be used in a single disk array system.

## 3.2.2 Manuals for the D Series

Table 3-4 shows the optional functions supported by the D series and their manuals. The supported optional functions differ depending on the D series model. For details, refer to Table 3-5.

Table 3-4 Optional Functions Supported by the D Series and Related Manuals

	Optional Function Name	Manual
(1)	Performance monitoring <b>PerformanceMonitor</b>	Performance Monitoring User's Manual (IS025)
(2)	Performance analysis <b>PerformanceNavigator</b>	Performance Analysis User's Manual (IS029)
(3)	Access control function <b>AccessControl</b>	Configuration Setting Tool User's Manual (GUI) (IS007)
(4)	Resource optimization <b>ReallocationControl</b>	LD Administrator User's Manual (IS037)
(5)	Performance optimization <b>PerformanceOptimizer</b>	Performance Optimization User's Manual (IS026)
(6)	Data retention <b>VolumeProtect</b>	Data Retention User's Manual (IS040) ControlCommand Command Reference (IS041)
(7)	Power saving <b>StoragePowerConserver</b>	Power Saving User's Manual (IS042) ControlCommand Command Reference (IS041)
(8)	Partitioning function <b>VirtualStoragePartitioning</b>	Partitioning User's Manual (IS043)
(9)	Thin provisioning function <b>ThinProvisioning</b>	Thin Provisioning User's Manual (IS044)
(10)	Local data replication/Snapshot <b>DynamicDataReplication</b>	Data Replication User's Manual (Function Guide) (IS015) Data Replication User's Manual (Installation and Operation Guide for Windows) (IS016)
(11)	Local data replication/Snapshot <b>DynamicDataReplication Express</b>	Data Replication User's Manual (Installation and Operation Guide for Linux) (IS020) ControlCommand Command Reference (IS041)
(12)	Remote data replication <b>RemoteDataReplication</b>	
(13)	Remote data replication <b>RemoteDataReplication Asynchronous</b>	
(14)	Snapshot <b>DynamicSnapVolume</b>	Snapshot User's Manual (Function Guide) (IS030) Snapshot User's Manual (Installation and Operation Guide for Windows) (IS031) Snapshot User's Manual (Installation and Operation Guide for Linux) (IS035) ControlCommand Command Reference (IS041)
(15)	Disaster recovery <b>RemoteDataReplication/ DisasterRecovery</b>	Data Replication User's Manual (Function Guide) (IS015) Data Replication User's Manual (Installation and Operation Guide for Windows) (IS016) Data Replication User's Manual (Installation and Operation Guide for Linux) (IS020) Data Replication User's Manual (Disaster Recovery System Installation and Operation Guide) (IS027) ControlCommand Command Reference (IS041)

	Optional Function Name	Manual
(16)	Operation command set <b>ControlCommand</b>	
	<ul style="list-style-type: none"> <li>Replication control <b>ReplicationControl</b></li> </ul>	Data Replication User's Manual (Function Guide) (IS015) Data Replication User's Manual (Installation and Operation Guide for Windows) (IS016) Data Replication User's Manual (Installation and Operation Guide for Linux) (IS020) ControlCommand Command Reference (IS041)
	<ul style="list-style-type: none"> <li>Snapshot control <b>SnapControl</b></li> </ul>	Snapshot User's Manual (Function Guide) (IS030) Snapshot User's Manual (Installation and Operation Guide for Windows) (IS031) Snapshot User's Manual (Installation and Operation Guide for Linux) (IS035) ControlCommand Command Reference (IS041)
	<ul style="list-style-type: none"> <li>Disaster recovery control <b>ReplicationControl/ DisasterRecovery</b></li> </ul>	Data Replication User's Manual (Function Guide) (IS015) Data Replication User's Manual (Installation and Operation Guide for Windows) (IS016) Data Replication User's Manual (Installation and Operation Guide for Linux) (IS020) Data Replication User's Manual (Disaster Recovery System Installation and Operation Guide) (IS027) ControlCommand Command Reference (IS041)
	<ul style="list-style-type: none"> <li>Data retention control <b>ProtectControl</b></li> </ul>	Data Retention User's Manual (IS040) ControlCommand Command Reference (IS041)
	<ul style="list-style-type: none"> <li>Power saving control <b>PowerControl</b></li> </ul>	Power Saving User's Manual (IS042) ControlCommand Command Reference (IS041)
(17)	Microsoft SQL Server linkage <b>ReplicationControl SQL Option</b>	ReplicationControl SQL Option User's Manual (IS006)
(18)	File system synchronization <b>ReplicationControl FileSystem Option</b>	Data Replication FileSystem Option User's Manual (Linux) (IS028)
(19)	SMI-S Provider <b>SMI-S Provider</b>	SMI-S Provider User's Manual (IS150)



Table 3-5 Optional Functions Supported by the D Series

Optional Function Name		Disk Array Type									
		D1-10	D1-30	D1-30i	D3-10	D3-10i	D4-30	D4-30i	D8-10	D8-20	D8-30
(1)	PerformanceMonitor	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
(2)	PerformanceNavigator	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
(3)	AccessControl	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
(4)	ReallocationControl	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
(5)	PerformanceOptimizer	-	-	-	✓	✓	✓	✓	✓	✓	✓
(6)	VolumeProtect	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
(7)	StoragePowerConserver	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
(8)	VirtualStoragePartitioning	-	-	-	-	-	-	-	✓	✓	✓
(9)	ThinProvisioning	-	-	-	-	-	✓	✓	-	-	✓
(10)	DynamicDataReplication	-	-	-	✓	✓	✓	✓	✓	✓	✓
(11)	DynamicDataReplication Lite	✓	✓	✓	-	-	-	-	-	-	-
(12)	RemoteDataReplication	-	-	-	✓	-	✓	-	✓	✓	✓
(13)	RemoteDataReplication Asynchronous	-	-	-	✓	-	✓	-	-	-	✓
(14)	DynamicSnapVolume	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
(15)	RemoteDataReplication/ DisasterRecovery	-	-	-	-	-	-	-	✓	✓	✓
(16)	ControlCommand	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	ReplicationControl	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	SnapControl	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	ReplicationControl/ DisasterRecovery	-	-	-	-	-	-	-	✓	✓	✓
	ProtectControl	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	PowerControl	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
(17)	ReplicationControl SQL Option	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
(18)	ReplicationControl FileSystem Option	✓	✓	-	✓	-	✓	-	✓	✓	✓
(19)	SMI-S Provider	✓	✓	-	✓	-	✓	-	✓	✓	✓

### 3.2.3 Manuals for the A Series

Table 3-6 shows the optional functions supported by the A series and their manuals. The supported optional functions differ depending on the A series model. For details, refer to Table 3-7.

Table 3-6 Optional Functions Supported by the A Series and Related Manuals

	Optional Function Name	Manual
(1)	Performance monitoring <b>PerformanceMonitor</b>	Performance Monitoring User's Manual (IS025)
(2)	Performance analysis <b>PerformanceNavigator</b>	Performance Analysis User's Manual (IS029)
(3)	Access control function <b>AccessControl</b>	<ul style="list-style-type: none"> <li>For A5000 NEC Storage Manager Command Reference (IS052)</li> <li>For A2400/A2600/A2700/A4900 Configuration Setting Tool User's Manual (GUI) (IS007)</li> </ul>
(4)	Resource optimization <b>ReallocationControl</b>	<ul style="list-style-type: none"> <li>For A2300/A2400/A2600/A2700/A4300/A4900 LD Administrator User's Manual (IS037)</li> </ul>
(5)	Performance optimization <b>PerformanceOptimizer</b>	Performance Optimization User's Manual (IS026)
(6)	Cache partitioning <b>CachePartitioning</b>	<ul style="list-style-type: none"> <li>For A5000 Cache Partitioning User's Manual for M Series (IS064)</li> <li>For A4900 Cache Partitioning User's Manual (IS038)</li> </ul>
(7)	Local data replication/ Snapshot <b>DynamicDataReplication</b>	Data Replication User's Manual (Function Guide) (IS015) Data Replication User's Manual (Installation and Operation Guide for Windows) (IS016)
(8)	Remote data replication <b>RemoteDataReplication</b>	Data Replication User's Manual (Installation and Operation Guide for Linux) (IS020) ControlCommand Command Reference (IS041)
(9)	Snapshot <b>DynamicSnapVolume</b>	Snapshot User's Manual (Function Guide) (IS030) Snapshot User's Manual (Installation and Operation Guide for Windows) (IS031) Snapshot User's Manual (Installation and Operation Guide for Linux) (IS035) ControlCommand Command Reference (IS041)
(10)	Disaster recovery <b>RemoteDataReplication/ DisasterRecovery</b>	Data Replication User's Manual (Function Guide) (IS015) Data Replication User's Manual (Installation and Operation Guide for Windows) (IS016) Data Replication User's Manual (Installation and Operation Guide for Linux) (IS020) Data Replication User's Manual (Disaster Recovery System Installation and Operation Guide) (IS027) ControlCommand Command Reference (IS041)

	Optional Function Name	Manual
(11)	Operation command set <b>ControlCommand</b>	
	• Replication control <b>ReplicationControl</b>	Data Replication User's Manual (Function Guide) (IS015) Data Replication User's Manual (Installation and Operation Guide for Windows) (IS016) Data Replication User's Manual (Installation and Operation Guide for Linux) (IS020) ControlCommand Command Reference (IS041)
	• Snapshot control <b>SnapControl</b>	Snapshot User's Manual (Function Guide) (IS030) Snapshot User's Manual (Installation and Operation Guide for Windows) (IS031) Snapshot User's Manual (Installation and Operation Guide for Linux) (IS035) ControlCommand Command Reference (IS041)
	• Disaster recovery control <b>ReplicationControl/ DisasterRecovery</b>	Data Replication User's Manual (Function Guide) (IS015) Data Replication User's Manual (Installation and Operation Guide for Windows) (IS016) Data Replication User's Manual (Installation and Operation Guide for Linux) (IS020) Data Replication User's Manual (Disaster Recovery System Installation and Operation Guide) (IS027) ControlCommand Command Reference (IS041)

Table 3-7 Optional Function Supported by the A Series

	Optional Function Name	Disk Array Type					
		A2400	A2600	A2700	A4900	A3000	A5000
(1)	PerformanceMonitor	✓	✓	✓	✓	✓	✓
(2)	PerformanceNavigator	✓	✓	✓	✓	✓	✓
(3)	AccessControl	✓	✓	✓	✓	✓	✓
(4)	ReallocationControl	-	✓	✓	✓	_*1	_*1
(5)	PerformanceOptimizer	-	-	-	✓	-	✓
(6)	CachePartitioning	-	-	-	✓	-	✓
(7)	DynamicDataReplication	-	✓	✓	✓	✓	✓
(8)	RemoteDataReplication	-	✓	✓	✓	✓	✓
(9)	DynamicSnapVolume	✓	✓	✓	✓	✓	✓
(10)	RemoteDataReplication/DisasterRecovery	-	-	-	✓	-	✓
(11)	ControlCommand	✓	✓	✓	✓	✓	✓
	• ReplicationControl	-	✓	✓	✓	✓	✓
	• SnapControl	✓	✓	✓	✓	✓	✓
	• ReplicationControl/DisasterRecovery	-	-	-	✓	-	✓

(\*1) This function is included in BaseProduct.