ETERNUS SF

FUJITSU

ETERNUS SF Express V15.2

Quick Reference

Windows/Linux

Preface

Purpose

This manual describes the pre-installation requirements, installation procedure, configuration procedure, as well as the first use of ETERNUS SF Express. ETERNUS SF Express is part of the Storage Management Software ETERNUS SF products (hereafter referred to as "ETERNUS SF series"):

- ETERNUS SF Express (hereafter referred to as "Express")

- ETERNUS SF Storage Cruiser (hereafter referred to as "Storage Cruiser")

- ETERNUS SF AdvancedCopy Manager (hereafter referred to as "AdvancedCopy Manager")

Intended readers

This manual is intended for people planning Express installation or installing Express for the first time. A basic knowledge of server virtualization is advised to fully understand this manual.

In the case of upgrade from a previous version to the latest version, refer to the *ETERNUS SF Migration Guide*.

Organization

This manual is composed as follows:

Chapter 1 Overview of Express

This chapter is an overview of Express.

Chapter 2 System Design before Installation

This chapter explains the installation requirements for Express.

Chapter 3 Installation and Setup

This chapter explains how to install and setup Express.

Chapter 4 Configuration of Operating Environment

This chapter explains how to configure the Express operating environment.

Chapter 5 Start using Express

This chapter explains how to start using Express.

Notation

The names, abbreviations, and symbols shown below are used in this manual.

Operating systems

Formal name	Abbreviation	
Microsoft(R) Windows Server(R) 2003, Standard Edition Microsoft(R) Windows Server(R) 2003, Standard x64 Edition Microsoft(R) Windows Server(R) 2003, Enterprise Edition Microsoft(R) Windows Server(R) 2003, Enterprise x64 Edition Microsoft(R) Windows Server(R) 2003 R2, Standard Edition Microsoft(R) Windows Server(R) 2003 R2, Standard x64 Edition Microsoft(R) Windows Server(R) 2003 R2, Enterprise Edition Microsoft(R) Windows Server(R) 2003 R2, Enterprise x64 Edition	Windows Server 2003	Windows
Microsoft(R) Windows Server(R) 2008 Standard (32-bit)(64-bit) Microsoft(R) Windows Server(R) 2008 Standard without Hyper-V(TM) (32-bit)(64-bit)	Windows Server 2008	

Formal name	Abbreviation	
Microsoft(R) Windows Server(R) 2008 Enterprise (32-bit)(64-bit) Microsoft(R) Windows Server(R) 2008 Enterprise without Hyper-V(TM) (32-bit)(64-bit) Microsoft(R) Windows Server(R) 2008 Datacenter (32-bit)(64-bit) Microsoft(R) Windows Server(R) 2008 Datacenter without Hyper-V(TM) (32-bit)(64-bit)		
Microsoft(R) Windows Server(R) 2008 R2 Foundation Microsoft(R) Windows Server(R) 2008 R2 Standard Microsoft(R) Windows Server(R) 2008 R2 Enterprise Microsoft(R) Windows Server(R) 2008 R2 Datacenter	Windows Server 2008 R2	
Microsoft(R) Windows Server(R) 2012 Standard Microsoft(R) Windows Server(R) 2012 Datacenter	Windows Server 2012	
Microsoft(R) Windows(R) XP Professional Edition Microsoft(R) Windows(R) XP Home Edition	Windows XP	
Windows Vista(R) Home Basic Windows Vista(R) Home Premium Windows Vista(R) Business Windows Vista(R) Enterprise Windows Vista(R) Ultimate	Windows Vista	
Windows(R) 7 Home Basic Windows(R) 7 Home Premium Windows(R) 7 Professional Windows(R) 7 Enterprise Windows(R) 7 Ultimate	Windows 7	
Windows(R) 8 Windows(R) 8 Pro	Windows 8	
Solaris(TM) 9 Operating System	Solaris 9	Solaris or Solaris OS
Oracle Solaris 10	Solaris 10	
Oracle Solaris 11	Solaris 11	
Red Hat(R) Enterprise Linux(R) AS (v.4 for x86) Red Hat(R) Enterprise Linux(R) AS (v.4 for EM64T)	RHEL-AS4	Linux
Red Hat(R) Enterprise Linux(R) ES (v.4 for x86) Red Hat(R) Enterprise Linux(R) ES (v.4 for EM64T)	RHEL-ES4	
Red Hat(R) Enterprise Linux(R) 5 (for x86) Red Hat(R) Enterprise Linux(R) 5 (for Intel64)	RHEL5	
Red Hat(R) Enterprise Linux(R) 6 (for x86) Red Hat(R) Enterprise Linux(R) 6 (for Intel64)	RHEL6	
SUSE(R) Linux Enterprise Server 11 for x86 SUSE(R) Linux Enterprise Server 11 for EM64T	SUSE Linux Enterprise Server 11	
HP-UX 11.0 HP-UX 11i HP-UX 11i v2 HP-UX 11i v3	HP-UX	
AIX 5L(TM) V5.1 AIX 5L(TM) V5.2 AIX 5L(TM) V5.3 AIX(R) V6.1 AIX(R) V7.1	AIX	

Formal name	Abbreviation	
VMware(R) Infrastructure 3 Foundation VMware(R) Infrastructure 3 Standard VMware(R) Infrastructure 3 Enterprise	VMware Infrastructure 3	VMware
VMware vSphere(R) 4 Essentials Kit VMware vSphere(R) 4 Essentials Plus Kit VMware vSphere(R) 4 Standard Edition(TM) VMware vSphere(R) 4 Standard Plus Data Recovery VMware vSphere(R) 4 Advanced Edition(TM) VMware vSphere(R) 4 Enterprise Edition(TM) VMware vSphere(R) 4 Enterprise Plus Edition(TM)	VMware vSphere 4	
VMware vSphere(R) 5 Essentials Kit VMware vSphere(R) 5 Essentials Plus Kit VMware vSphere(R) 5 Standard Edition(TM) VMware vSphere(R) 5 Standard Plus Data Recovery VMware vSphere(R) 5 Enterprise Edition(TM) VMware vSphere(R) 5 Enterprise Plus Edition(TM)	VMware vSphere 4	

Oracle Solaris might be described as Solaris, Solaris Operating System, or Solaris OS.

Related products of Fujitsu Storage Systems ETERNUS and Storage Management Software ETERNUS SF

Proper name	Abbreviation
ETERNUS DX60/DX60 S2 ETERNUS DX80/DX80 S2 ETERNUS DX90/DX90 S2	ETERNUS Disk storage system
Web GUI of ETERNUS DX series	ETERNUS Web GUI

Software products

Proper name	Abbreviation
Microsoft(R) Internet Explorer(R)	Internet Explorer
Mozilla(R) Firefox(R)	Firefox

Manuals

Proper name	Abbreviation
ETERNUS SF Express / ETERNUS SF Storage Cruiser / ETERNUS SF AdvancedCopy Manager Installation and Setup Guide	ETERNUS SF Installation and Setup Guide
ETERNUS SF Express / ETERNUS SF Storage Cruiser / ETERNUS SF AdvancedCopy Manager Migration Guide	ETERNUS SF Migration Guide
ETERNUS SF Express / ETERNUS SF Storage Cruiser / ETERNUS SF AdvancedCopy Manager Web Console Guide	ETERNUS SF Web Console Guide
ETERNUS SF Express / ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module	ETERNUS SF Operation Guide for Copy Control Module
ETERNUS SF Storage Cruiser / ETERNUS SF AdvancedCopy Manager Cluster Environment Setup Guide	ETERNUS SF Cluster Environment Setup Guide
ETERNUS SF Express / ETERNUS SF Storage Cruiser / ETERNUS SF AdvancedCopy Manager Messages	ETERNUS SF Messages
ETERNUS SF Express / ETERNUS SF Storage Cruiser Event Guide	ETERNUS SF Event Guide
ETERNUS SF Express / ETERNUS SF Storage Cruiser / ETERNUS SF AdvancedCopy Manager Glossary	ETERNUS SF Glossary

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Notes

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Update history

Content of update	Updated section	Revision
Added Oracle Solaris 11, AIX V6.1 and AIX V7.1 in the operating systems.	Notation in Preface	3
Added Windows Server 2012 and Windows 8 in the operating systems.	Notation in Preface	4

Manual organization and reading suggestions

Manual organization

The following table describes the Manual organization of Express, Storage Cruiser and AdvancedCopy Manager.

When to read	Related manuals (abbreviated)	Related products (**NOTE**)			Explanation
		EXP	SC	ACM	
Before installation	Quick Reference	Yes	Yes	Yes	This manual is unique for each product. The following manuals are available: - Express Quick Reference - Storage Cruiser Quick Reference - AdvancedCopy Manager Quick Reference
	Overview	No	No	Yes	This manual is unique for each product.
During installation	Installation and Setup Guide	Yes			This manual is common for all products.
	Cluster Environment Setup Guide	No	Yes		This manual is common for Storage Cruiser and AdvancedCopy Manager.
	Migration Guide	Yes			This manual is common for all products.
During operation	Operation Guide	Yes	Yes	Yes	This manual is unique for each product. The following manuals are available: - Express Operation Guide - Storage Cruiser Operation Guide - Storage Cruiser Operation Guide for Optimization Option - AdvancedCopy Manager Operation Guide (for Windows) - AdvancedCopy Manager Operation Guide (for Solaris) - AdvancedCopy Manager Operation Guide (for Linux) - AdvancedCopy Manager Operation Guide (for HP-UX) - AdvancedCopy Manager Operation Guide (for AIX)
	Operation Guide for Copy Control Module	Yes	No	Yes	This manual is common for Express and AdvancedCopy Manager.
	Web Console Guide	Yes			This manual is common for all products.
Anytime	Event Guide	Yes		No	This manual is common for Express and Storage Cruiser.
	Messages	Yes			This manual is common for all products.
	Glossary	Yes			This manual is common for all products.

NOTE: "EXP" indicates Express, "SC" indicates Storage Cruiser and "ACM" indicates AdvancedCopy Manager.

How to read manuals

Please use the following table to find the most useful information in the Express, Storage Cruiser and AdvancedCopy Manager manuals to answer your inquiry.

Purpose	Related products (**NOTE**)	Manual	Main contents	How to read
Acquiring a product overview and basic operation knowledge	EXP	- Express Quick Reference	- Product overview - Installation decision - Overview of the necessary tasks from installation to first use	Please read if you want to acquire a fundamental knowledge of the product and its operation in order to decide to install it or not.
	SC	- Storage Cruiser Quick Reference		
	ACM	- AdvancedCopy Manager Quick Reference		
		- AdvancedCopy Manager Overview	- Main functions - Linkable applications - Procedure overview for Advanced Copy of ETERNUS Disk storage system	
Deciding if a version upgrade is required	common	- ETERNUS SF Migration Guide	- Incompatibilities with previous version - Notes and cautions about version upgrade - Version upgrade procedure	Please read if you want to upgrade from a previous version.
Installing and correctly operating the product Setting up operating environment depending on purpose	common	- ETERNUS SF Installation and Setup Guide	- Operating environment - Installation procedure - Setup procedure - Uninstallation procedure	Please read if you want to install and setup the product.
	SC, ACM	- ETERNUS SF Cluster Environment Setup Guide	- Supported cluster software - Installation procedure for a clustered system - Setup procedure for a clustered system - Uninstallation procedure for a clustered system	Please read if you want to install and setup the product on a clustered system.
Administration and operation of the installed system	EXP	- Express Operation Guide	- Starting and stopping the software - Device monitoring - Data copy inside the storage system - Necessary tasks after an architectural modification of the system as well as product maintenance	Please read if you want to start or shutdown the system, monitor the operation status, do backup/restore operations, etc.
	SC	- Storage Cruiser Operation Guide	- Starting and stopping the software - Device monitoring	

Purpose	Related products (**NOTE**)	Manual	Main contents	How to read
			- Necessary tasks after an architectural modification of the system as well as product maintenance - Command reference	
		- Storage Cruiser Operation Guide for Optimization Option	- Operating environment construction - Operating status monitoring - Necessary tasks after an architectural modification of the system as well as product maintenance - Command reference	
	EXP, ACM	- ETERNUS SF Operation Guide for Copy Control Module	- Starting and stopping the software	
	ACM	- AdvancedCopy Manager Operation Guide (for Windows) - AdvancedCopy Manager Operation Guide (for Solaris) - AdvancedCopy Manager Operation Guide (for Linux) - AdvancedCopy Manager Operation Guide (for HP-UX) - AdvancedCopy Manager Operation Guide (for AIX)	- Data backup/restore inside the storage system - Necessary tasks after an architectural modification of the system as well as product maintenance - Command reference	
	common	- ETERNUS SF Web Console Guide	- Operating environment - Screen layout description	Please read if you want to understand the ETERNUS SF Web Console.
Dealing with messages issued by the software	common	- ETERNUS SF Messages	- Messages and their explanations - Parameter (variable information) description - System action - Countermeasures	Please read if you want a practical way of investigating and dealing with messages issued by the software.
Dealing with events issued by the software	EXP, SC	- ETERNUS SF Event Guide	- Phenomenon of event - Countermeasures	Please read if you need to find a practical way of investigating and dealing with events.
Researching the meaning of specific terms related to the products and	common	- ETERNUS SF Glossary	- Product specific terminology explanation - Explanation of important terminology appearing in the manual	Please read if you want to learn the meaning of important terms, product specific terms or

Purpose	Related products (**NOTE**)	Manual	Main contents	How to read
other important terms			- Synonyms and related terms - Proper form of abbreviated terms	abbreviations used in the manuals.

NOTE: "EXP" indicates Express, "SC" indicates Storage Cruiser and "ACM" indicates AdvancedCopy Manager.

Contents

Chapter 1 Overview of Express

This chapter is an overview of Express.

1.1 Function overview

Express makes storage management less difficult thanks to the following functions:

- Easy configuration and expansion

  ETERNUS Disk storage system can be easily configured with the configuration wizard.
  Even without prior experience of ETERNUS Disk storage system configuration and setup, volume creation in ETERNUS Disk storage system can be done with a wizard. ETERNUS Disk storage system and volumes can also be added later with only a few clicks in the wizard.

- Easy operation

  What to do, how to do it: operation target and method can be selected directly on the screen in ETERNUS SF Web Console. Therefore, operation procedures are no longer difficult to understand.

  ETERNUS SF Web Console allows Express operation directly from a Web browser.
  In this manual, ETERNUS SF Web Console will be referred hereafter as "Web Console".

- Easy troubleshooting

  When a problem occurs, the user can determine the cause and scope of the problem before calling to report it. Easy to understand messages makes it possible to understand the cause of a problem without prior expert storage knowledge. Advice on how to handle the problem can be displayed by clicking on the message.

Furthermore, Express provides access to the Advanced Copy function of ETERNUS Disk storage system. The Advanced Copy function allows high speed copy of a business volume at anytime.

See
....
For details of the functions provided by Express, refer to "Overview" in the *ETERNUS SF Express Operation Guide*.
....

1.2 Product structure

Express is made of the following program.

Table 1.1 Express software components and supported OS

No.	Program name	Function overview	Supported operating systems (A=Available, N/A=Not Available)				
			Windows	Solaris	Linux	HP-UX	AIX
1	ETERNUS SF Manager	Manages the storage system	A	N/A	A	N/A	N/A

Point
....
After installation of ETERNUS SF Manager, if ETERNUS SF Manager is set up as the Express's manager, it is possible to use Express. For details about the version level of the supported operating systems, refer to "Operating environment of ETERNUS SF Manager" in the *ETERNUS SF Installation and Setup Guide*.
....

In this manual, the server where ETERNUS SF Manager is installed is referred as the "Management Server", and a server managed by the Management Server is referred as "Managed Server".

1.3 Supported hardware

The following hardware can be managed with Express:

Table 1.2 Supported hardware

Type	Device name
Storage device	ETERNUS DX60/DX60 S2 ETERNUS DX80/DX80 S2 ETERNUS DX90/DX90 S2

1.4 Operating environment models

Express can manage one or more storage devices

Express can operate in various system configurations such as the ones described in this section.

Basic system configuration

In this configuration, Express Manager and Web Console are operated on the same server.

Figure 1.1 Example of basic system configuration
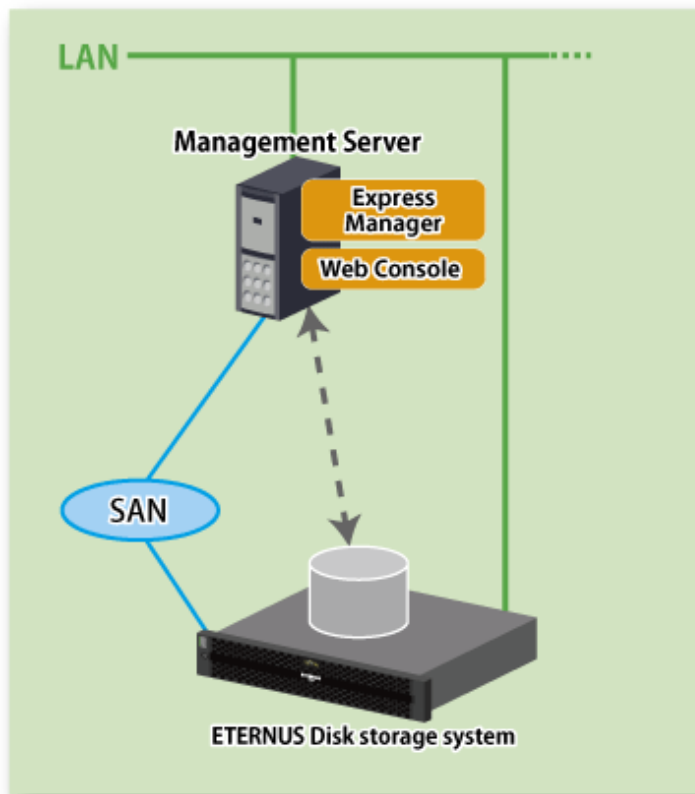
Express Manager and Web Console can be operated on different servers. In this environment, Web Console accesses Express Manager over the network (HTTPS connection).

System configuration using the Advanced Copy function

In Express, the Management Server sends a command to ETERNUS Disk storage system to perform an Advanced Copy function. There are two available methods for sending the copy command:

- Sending a command to ETERNUS Disk storage system to perform an Advanced Copy function from the server over the SAN (hereafter referred to as "Copy command via SAN")

- Sending a command to ETERNUS Disk storage system to perform an Advanced Copy function from the server over the LAN (hereafter referred to as "Copy command via LAN")

The following table describes the requirements for the two copy methods, via SAN or via LAN, for each type of system:

Device name	Copy command via SAN		Copy command via LAN	
	Operation	Firmware version	Operation	Firmware version
ETERNUS DX60/DX60 S2/DX80/DX90	A	All versions	N/A	-
ETERNUS DX80 S2/DX90 S2	A	All versions	A	All versions

(A=Available, N/A=Not Available)

When using the Copy command via SAN method, a logical volume that can be accessed from the Management Server is needed in ETERNUS Disk storage system. In this manual, this logical volume is called "access volume". One logical volume of ETERNUS Disk storage system must be assigned to Management Server as the access volume.

Figure 1.2 Example of system configuration using Copy command via SAN
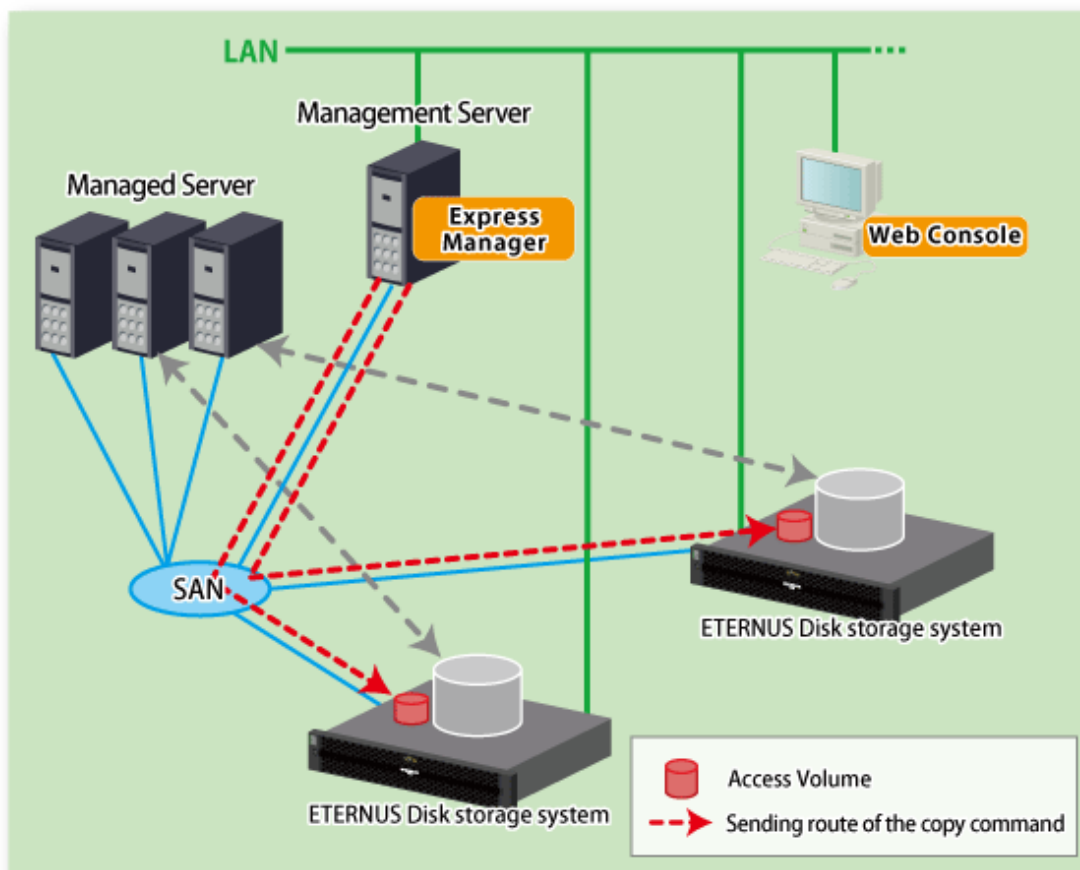
When using the Copy command via LAN method, no access volume is needed.

Figure 1.3 Example of system configuration using Copy command via LAN
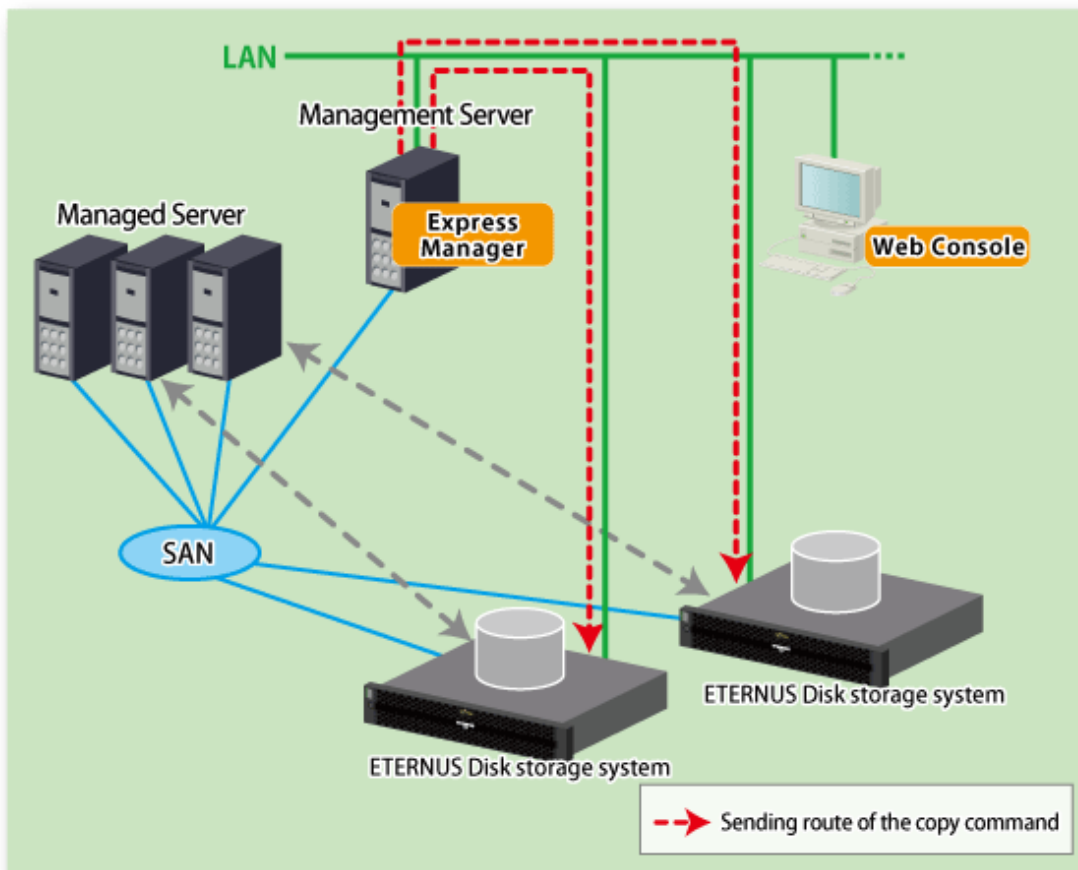
- For details about a high availability configuration, refer to "Executing remote copy (HA configuration)" in the *ETERNUS SF Express Operation Guide*.

- For details about a disaster recovery configuration, refer to "Executing remote copy (DR configuration)" in the *ETERNUS SF Express Operation Guide*.

Chapter 2 System Design before Installation

This chapter explains the system design required before the Express installation.

Before reading this chapter, check the cautions and limitations mentioned in the software guide.

2.1 Choosing Management Server

Express's manager has to process requests from the Web Console as well as various events and data acquisition coming from the managed hardware. To avoid interferences from other software or insufficient physical resources and ensure smooth operations, it is recommended to install Express on its own dedicated server.

If a dedicated server cannot be secured, the Management Server should be chosen according to the following requirements:

Impact on business applications

On a server running business applications (hereafter described as "business server"), Express's manager operations will likely have an impact on other applications performance. If the candidate server is a mission critical server running financial, distribution or public utilities applications, the decision to install Express's manager must be evaluated with extra caution.

Impact on other guest OS (in case of a virtual server environment)

In a virtual server environment, the physical server resources (CPU, memory, and network) are shared by multiple guest OS. Therefore, the operations of a guest OS have an impact on the other guest OS performance. Before installing Express's manager on a guest OS, usage of physical resources and role of other guest OS must be evaluated carefully.

Incompatible software

Express's manager cannot run on the same server concurrently to certain other software (hereafter described as "incompatible software"). A server with no incompatible software must be selected.

📑 See
....
For details of the incompatible software, refer to "Operating environment of ETERNUS SF Manager" in the *ETERNUS SF Installation and Setup Guide*.
....

2.2 Collecting information required for installation

When Express is installed, the following information items are required:

Items	Required information
License	- Software license to use Express
Server	- Server name - Server IP address - Type of connection between the server and the storage systems - HBA host ID
Storage device	- IP address of storage device - User name and password for storage device - SNMP community name
Volume	- Volume name - Volume capacity

Items	Required information
	- Volume type - Number of volumes to create
RAID Group	- RAID Group name - RAID Level - CM number - Number of disks in the RAID Group
Advanced Copy function	- Advanced Copy license If the storage device is ETERNUS DX60 S2/DX80 S2/DX90 S2, this license is included in the software license. - Copy table size - Proportion
E-mail	- Destination E-mail addresses - Source E-mail address - IP address and port number of the SMTP server
Host interface	- Host interface type - iSCSI name and IP address of the corresponding port - Use of Host affinity or not

 See
・・
For details on the license, refer to "License Management" in the *ETERNUS SF Installation and Setup Guide*.
・・

Chapter 3 Installation and Setup

This chapter explains the installation and setup procedures of Express.

In case of update from a previous version to the latest version, refer to the *ETERNUS SF Migration Guide*.

3.1 Overview of installation procedure

The ETERNUS SF Manager must be installed to use Express.
The overview of the installation procedure of ETERNUS SF Manager is shown below.

1. Check if the target server satisfies the hardware and software requirements for the ETERNUS SF Manager installation.

   ### See
   ....
   For details of each condition, refer to "Operating environment of ETERNUS SF Manager" in the *ETERNUS SF Installation and Setup Guide*.
   ....

2. Install the ETERNUS SF Manager.

   ### See
   ....
   For details of installation procedure, refer to "Installation of ETERNUS SF Manager" in the *ETERNUS SF Installation and Setup Guide*.
   ....

3.2 Setup overview

The overview of the procedure for setting up the ETERNUS SF Manager as the Express Manager is shown below.
For details on the setup procedure, refer to "Setup of ETERNUS SF Manager" in the *ETERNUS SF Installation and Setup Guide*.

1. Create and register a user account that will be using Express.

   The possible operations by the user are dependent on the level of permissions the user account is given. The following table describes the differences:

ESF Admin Role	OS administrator privilege	
	Yes	No
Yes	Operations are possible from the Web. Console and the command line.	Operations are possible only from the Web Console.
No	Operations are possible only from the command line.	Operations are neither possible from the Web Console nor from the command line.

   ### Point
   ....
   - On systems using Single Sign-on, a created user account should be registered in the corresponding account authentication system so that the user can login to the Management Server.
     For example, on the Windows environment, if the Management Server belongs to an Active Directory domain, the user must be added to the Active Directory domain.

   - Commands can be executed only by users with OS administrator privileges or users belonging to the OS administrators group.
   ....

2. Set up the firewall.

   The firewall must be set up so that the remote PC where the Web Console will be used can connect to the Management Server.

3. Launch the Web Console, and then check that the user registered by step 1 can login to the Management Server from the Web Console.

   See

   . . . .

   For the version level of the supported web browsers, refer to "Supported web browsers" in the *ETERNUS SF Web Console Guide*.

   . . . .

   Point

   . . . .

   From the "Chapter 4 Configuration of Operating Environment" chapter on, the described tasks are supposed to be performed from the Web Console. Before proceeding, it is therefore important to check that Express can actually be operated from the Web Console.

   . . . .

Chapter 4 Configuration of Operating Environment

This chapter explains how to configure the Express operating environment.

4.1 Configuring the network environment

If a firewall is installed between the Management Server and the Managed Server, or between the Management Server and the Managed device, the network environment must be setup so that the SNMP Traps emitted by the Managed device or the Managed Server can be sent to the Management Server.

 See
. . . .
For details about the procedures, refer to the following section in the *ETERNUS SF Installation and Setup Guide*.
"Setup of ETERNUS SF Manager" -> "Setup of Express's manager" -> "Configuring the network environment"
. . . .

4.2 Setting the storage system

The following procedure is required to set up the storage devices managed with Express:

1. Set the following properties for the storage devices to manage and then register them in Express.

    -   IP address of the Management Server

    -   Enable the SNMP function of MNT port

    -   Created SSH server key (for ETERNUS DX80 S2/DX90 S2 only)

    -   Created Software Role Account (for ETERNUS DX80 S2/DX90 S2 only)

    -   SNMP community name (for ETERNUS DX80 S2/DX90 S2 only)

     See
    . . . .
    For details about the procedure, refer to "Registering disk storage systems" in the *ETERNUS SF Express Operation Guide*.
    . . . .

2. Register the Managed Servers used for ETERNUS Disk storage system in Express.

     See
    . . . .
    For details about the procedure, refer to "Registering servers" in the *ETERNUS SF Express Operation Guide*.
    . . . .

3. Create RAID groups in ETERNUS Disk storage system managed by Express.

     See
    . . . .
    For details about the procedure, refer to "Creating RAID groups" in the *ETERNUS SF Web Console Guide*.
    . . . .

4. Create volumes in ETERNUS Disk storage system.

     See
    . . . .
    For details about the procedure, refer to "Creating volumes" in the *ETERNUS SF Web Console Guide*.
    . . . .

5. Assign volumes in ETERNUS Disk storage system to Managed Servers.

📑 See
....
For details about the procedure, refer to "Volume allocation wizard" of "Environment configuration using wizard" in the *ETERNUS SF Express Operation Guide*.
....

📖 Information
....
Steps from 2 to 5 of the above procedure are supported by a wizard in Express to make them easier. For details on the wizard, refer to "Storage configuration wizard" of "Environment configuration using wizard" in the *ETERNUS SF Express Operation Guide*.
....

4.3 Checking the SNMP Trap reception

The purpose of the SNMP Trap test is to check that events generated by the storage devices are properly displayed in Express's manager.

📑 See
....
For details about the procedure, refer to "Event notification test" in the *ETERNUS SF Express Operation Guide*.
....

🅿 Point
....
If the system is operated in a state where events cannot be displayed, problems will not be detected or detected too late and create a possibility that the system will not work properly. It is therefore important to check that the events generated by the storage devices are properly displayed.
....

4.4 Configuring the Advanced Copy

If you use the Advanced Copy function of ETERNUS Disk storage system, the environment has to be configured accordingly.

🅿 Point
....
Register the Advanced Copy license before using the Advanced Copy function of ETERNUS Disk storage system.
For details of license and registering procedure, refer to "License Management" in the *ETERNUS SF Installation and Setup Guide*.
....

For ETERNUS Disk storage system using the Copy command via SAN

1. Access volume settings

2. Connection method settings

3. Advanced Copy settings

For ETERNUS Disk storage system using the Copy command via LAN

1. Connection method settings

2. Advanced Copy settings

P Point

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For ETERNUS Disk storage system using the Copy command via LAN, access volume settings are not needed.

....

When using the Copy command via SAN method for the ETERNUS Disk storage system, an access volume setting is needed. However, when using the Copy command via LAN method, an access volume setting is not needed.

See

....

- For details about access volume settings, refer to "Access volume settings" in the *ETERNUS SF Express Operation Guide*.

- For details about connection method settings, refer to "Connection type settings" in the *ETERNUS SF Express Operation Guide*.

- For details about Advanced Copy settings, refer to the following sections in the *ETERNUS SF Express Operation Guide*.

    - "Copy table size settings"

    - "Remote Advanced Copy settings" (Only when using REC)

....

4.5 Backing up the setup information

The Express's manager setting information should be backed up to prevent its loss in case of a failure of the Management Server.

See

....

For details about the procedure, refer to the following sections in the *ETERNUS SF Express Operation Guide*.

- For Windows environment

    "Backing up Express's manager environment (Windows)"

- For Linux environment

    "Backing up Express's manager environment (Linux)"

....

Chapter 5 Start using Express

This chapter explains how to start using Express.

5.1 Monitoring and managing storage systems

This explains how to verify the operation and load status for storage systems.

5.1.1 Performance monitoring

Performance monitoring of ETERNUS Disk storage system is possible with Express.

Performance monitoring can be performed by selecting a storage device previously registered in "4.2 Setting the storage system" in the Web Console.

> ### See
> ....
> For details about the procedures, refer to "Performance management" in the *ETERNUS SF Express Operation Guide*.
> ....

5.1.2 Storage capacity virtualization operation by using Thin Provisioning

For ETERNUS DX80 S2 or ETERNUS DX90 S2, storage capacity virtualization operation can be done by using the Thin Provisioning function.

There are two methods to start the Thin Provisioning operation for ETERNUS Disk storage system:

- By registering ETERNUS Disk storage systems where Thin Provisioning is enabled

- By updating the system information on the Web Console after the Thin Provisioning is enabled on an already registered ETERNUS Disk storage system

> ### See
> ....
> For details about the procedures, refer to "Thin Provisioning management" in the *ETERNUS SF Express Operation Guide*.
> ....

5.2 Backing up the data of business volumes

This explains how to backup the data of business volumes using the Advanced Copy function of ETERNUS Disk storage systems.

5.2.1 Executing the Advanced Copy

The data of business volumes on the ETERNUS Disk storage systems can be backed up with the Advanced Copy function.

> ### See
> ....
> For details about the procedures, refer to "Executing Advanced Copy" in the *ETERNUS SF Express Operation Guide*.
> ....

5.2.2 Checking the copy status and cancelling the operation

When Advanced Copy is running, it is possible to check the copy progress status or cancel the copy operation from the Web Console or via a command.

 See
....
For details about the procedures, refer to "Executing Advanced Copy" in the *ETERNUS SF Express Operation Guide*.
....