

ETERNUS SF

AdvancedCopy Manager SRA

Version 2.4

User's Guide

Windows(64)

B1WS-0994-04ENZ0(05)
September 2020

Preface

Purpose

This manual explains how to install and customize ETERNUS SF AdvancedCopy Manager SRA (hereafter referred to as "AdvancedCopy Manager SRA") to use ETERNUS Disk storage systems from VMware(R) vCenter Site Recovery Manager(TM).

Intended Readers

This manual is intended for system administrators who use ETERNUS Disk storage systems and perform VMware(R) vCenter Site Recovery Manager(TM) operations.

Organization

This manual is composed as follows:

Chapter 1 Overview

Provides an overview of AdvancedCopy Manager SRA.

Chapter 2 Setup

Explains how to install and setup AdvancedCopy Manager SRA.

Chapter 3 Operation

Describes the operation procedures of AdvancedCopy Manager SRA.

Appendix A Command References

Lists and describes the commands of AdvancedCopy Manager SRA.

Appendix B Troubleshooting

Lists and describes the messages that are output during the use of AdvancedCopy Manager SRA and the operations required to fix problems.

Appendix C Version Upgrade Procedure

The upgrade procedure from the previous version of AdvancedCopy Manager SRA is described.

Conventions

- Microsoft(R) Windows Server(R) 2012 Standard and Microsoft(R) Windows Server(R) 2012 Datacenter are abbreviated as "Windows Server 2012".
- Microsoft(R) Windows Server(R) 2012 R2 Standard and Microsoft(R) Windows Server(R) 2012 R2 Datacenter are abbreviated as "Windows Server 2012 R2".
- Microsoft(R) Windows Server(R) 2016 Standard and Microsoft(R) Windows Server(R) 2016 Datacenter are abbreviated as "Windows Server 2016".
- In this manual, each individual model name of ETERNUS Disk storage system is listed with "FUJITSU Storage" omitted from it.
- FUJITSU Storage ETERNUS SF AdvancedCopy Manager is abbreviated as "AdvancedCopy Manager".
- AdvancedCopy Manager Copy Control Module is abbreviated as "Copy Control Module".
- ETERNUS SF AdvancedCopy Manager SRA is abbreviated as "AdvancedCopy Manager SRA".
- VMware(R) vCenter Site Recovery Manager(TM) is abbreviated as "VMware SRM" or "VMware Site Recovery Manager".
- The "protected site" in the "Site Recovery Manager Administration Guide" of VMware SRM is referred to as "Production Site". In addition, the "recovery site" is referred to as "Recovery Site".
- The following manual names are abbreviated as "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".
"ETERNUS SF Express V15.x/AdvancedCopy Manager V15.x Operation Guide for Copy Control Module"
"FUJITSU Storage ETERNUS SF AdvancedCopy Manager V16.x Operation Guide for Copy Control Module"

- The following manual names are abbreviated as "ETERNUS SF AdvancedCopy Manager Installation and Setup Guide".
"ETERNUS SF Express V15.x/Storage Cruiser V15.x/AdvancedCopy Manager V15.x Installation and Setup Guide"
"FUJITSU Storage ETERNUS SF Express V16.x/ETERNUS SF Storage Cruiser V16.x/ETERNUS SF AdvancedCopy Manager V16.x Installation and Setup Guide"
- The following manual name is abbreviated as "ETERNUS SF AdvancedCopy Manager Migration Guide".
"ETERNUS SF Express V15.x/Storage Cruiser V15.x/AdvancedCopy Manager V15.x Migration Guide"
"FUJITSU Storage ETERNUS SF Express V16.x/ETERNUS SF Storage Cruiser V16.x/ETERNUS SF AdvancedCopy Manager V16.x Migration Guide"

Trademarks

Microsoft, Windows, Windows Server, and the names of other Microsoft products are trademarks or registered trademarks of Microsoft Corporation in the United States and other countries.

VMware, the VMware logo, Virtual SMP, and vMotion are trademarks or registered trademarks of VMware, Inc. in the United States and other countries.

All other trademarks and product names are the property of their respective owners.

Contents

Chapter 1 Overview.....	1
1.1 AdvancedCopy Manager SRA.....	1
1.1.1 What is AdvancedCopy Manager?.....	1
1.1.2 What is AdvancedCopy Manager SRA?.....	1
1.2 System Configuration.....	4
1.3 System Requirements.....	6
1.3.1 Hardware.....	6
1.3.2 Software.....	7
Chapter 2 Setup.....	8
2.1 Installation.....	8
2.1.1 Preparation.....	8
2.1.2 Installation Procedure.....	9
2.2 Configuring User Accounts.....	9
2.3 Replication Settings.....	10
2.3.1 Register ETERNUS Disk storage system.....	11
2.3.2 Retrieve ETERNUS Disk storage system information.....	12
2.3.3 Create replication copy groups.....	12
2.3.4 Add replication copy pairs.....	13
2.3.5 Create snapshot copy groups for recovery plan testing.....	14
2.3.6 Add snapshot copy pairs for recovery plan testing.....	15
2.3.7 Registration of replication copy groups into AdvancedCopy Manager SRA.....	15
2.3.8 Register snapshot copy groups for recovery plan testing into AdvancedCopy Manager SRA.....	16
2.3.9 Start replication.....	17
2.3.10 Wait for replication completion.....	17
2.4 Register/Change/Delete ETERNUS Disk storage systems to VMware SRM.....	18
2.4.1 Procedure for vSphere Client.....	18
2.4.2 Procedure for vSphere Web Client.....	20
Chapter 3 Operation.....	24
3.1 Failback Procedure.....	24
3.1.1 How to stop replications.....	24
3.2 Configuration Changes.....	24
3.2.1 Add an ETERNUS Disk storage system, replication copy group/copy pair, and snapshot copy group/copy pair for recovery plan testing.....	25
3.2.2 Delete the registered ETERNUS Disk storage system, replication copy group/copy pair, and snapshot copy group/copy pair for the recovery plan testing.....	26
3.2.2.1 Check snapshot for recovery plan testing.....	27
3.2.2.2 Stop snapshot for recovery plan testing.....	28
3.2.2.3 Delete snapshot copy pairs for recovery plan testing.....	28
3.2.2.4 Delete snapshot copy groups for recovery plan testing.....	28
3.2.2.5 Reflect the updated snapshot copy groups for recovery plan testing to AdvancedCopy Manager SRA or delete its registration.....	29
3.2.2.6 Stop replication.....	29
3.2.2.7 Delete replication copy pairs.....	29
3.2.2.8 Delete replication copy group.....	30
3.2.2.9 Reflect updated replication copy group to AdvancedCopy Manager SRA or delete its registration.....	30
3.2.2.10 Delete registered information for ETERNUS Disk storage system.....	31
3.2.2.11 Update the storage information.....	31
3.2.3 Change the replication attribute.....	31
3.2.4 Change the attribute of snapshot copy group for recovery plan testing.....	31
3.2.5 Change the IP address, ETERNUS name, and Box ID of ETERNUS Disk storage system.....	32
3.2.5.1 Delete registered information for ETERNUS Disk storage system.....	33
3.2.5.2 Re-register ETERNUS Disk storage system.....	34
3.2.5.3 Change the ETERNUS name.....	34
3.2.5.4 Retrieve ETERNUS Disk storage system information.....	35

3.2.5.5 Update copy group information.....	35
3.2.5.6 Update storage information.....	36
3.2.6 Change the host affinity configuration, host definition, port parameter settings and LUN group definition in the ETERNUS Disk storage system connectivity definition.....	36
Appendix A Command References.....	38
A.1 Command Summary.....	38
A.2 ETERNUS Disk storage system information collection/display command.....	38
A.2.1 advgetdevs (Command for collecting and displaying information on ETERNUS Disk storage systems).....	38
A.3 Copy Control Module copy group management commands.....	40
A.3.1 advsetgr query (Copy Control Module copy group display command).....	40
A.3.2 advsetgr add (Copy Control Module copy group registration command).....	43
A.3.3 advsetgr change (Copy Control Module copy group update command).....	44
A.3.4 advsetgr remove (Copy Control Module copy group deletion command).....	45
Appendix B Troubleshooting.....	47
B.1 AdvancedCopy Manager SRA Messages.....	47
B.2 Data Files to Collect.....	56
Appendix C Version Upgrade Procedure.....	57
C.1 Version Upgrade from AdvancedCopy Manager SRA 1.4 or earlier.....	57
C.1.1 Prior confirmation.....	57
C.1.2 Setting up the ETERNUS Disk storage system.....	57
C.1.3 Uninstalling earlier versions of AdvancedCopy Manager SRA.....	57
C.1.4 Upgrading the VMware SRM version.....	57
C.1.5 Installing/upgrading the version of Copy Control Module.....	58
C.1.6 Installing AdvancedCopy Manager SRA 2.4.....	58
C.1.7 Registering the ETERNUS Disk storage system.....	58
C.1.8 Obtaining the ETERNUS Disk storage system information.....	58
C.1.9 Creating a copy group.....	59
C.1.10 Adding a copy pair.....	59
C.1.11 Registering the copy group in AdvancedCopy Manager SRA.....	59
C.1.12 Checking the replication.....	59
C.1.13 Waiting for the replication to complete.....	60
C.2 Version Upgrade from AdvancedCopy Manager SRA 1.5.....	60
C.2.1 Prior confirmation.....	60
C.2.2 Setting up the ETERNUS Disk storage system.....	60
C.2.3 Uninstalling earlier versions of AdvancedCopy Manager SRA.....	61
C.2.4 Upgrading the version of VMware SRM.....	61
C.2.5 Installing AdvancedCopy Manager SRA 2.4.....	61
C.2.6 Obtaining the ETERNUS Disk storage system information.....	61
C.2.7 Creating a copy group for recovery plan testing.....	61
C.2.8 Adding a copy pair for recovery plan testing.....	62
C.2.9 Registering the copy group in AdvancedCopy Manager SRA.....	62
C.2.10 Checking the replication.....	62
C.2.11 Wait for replication completion.....	63
C.3 Version Upgrade from AdvancedCopy Manager SRA 2.0 or later.....	63

Chapter 1 Overview

This chapter provides an overview of AdvancedCopy Manager SRA.

1.1 AdvancedCopy Manager SRA

This section describes AdvancedCopy Manager and AdvancedCopy Manager SRA.

1.1.1 What is AdvancedCopy Manager?

AdvancedCopy Manager, used in conjunction with ETERNUS Disk storage systems, provides advanced copy functions for fast backup, restore, and replication.

1.1.2 What is AdvancedCopy Manager SRA?

AdvancedCopy Manager SRA is an adapter software that allows the use of ETERNUS Disk storage systems from VMware Site Recovery Manager (VMware SRM).

VMware SRM, using AdvancedCopy Manager SRA, can perform replication on a per disk array basis in an ETERNUS Disk storage system. AdvancedCopy Manager SRA provides the following with VMware SRM.

- Testing a recovery plan
- Running a recovery plan
- Reversing the replication after running a recovery plan (ReProtect)

AdvancedCopy Manager SRA creates and uses a temporary snapshot of the copy destination device for recovery plan testing. (Fig. 1.6 *1)
To test a recovery plan, you must set up snapshots for the recovery plan testing in the copy destination site. For details on setting up snapshots for the recovery plan testing, refer to "2.3 Replication Settings".

Figure 1.1 During normal operation

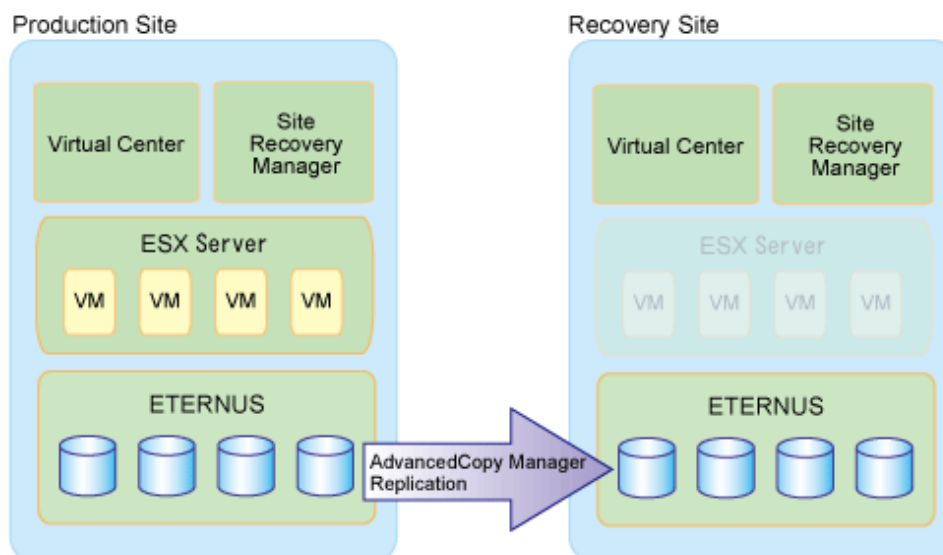


Figure 1.2 Operation during a disaster

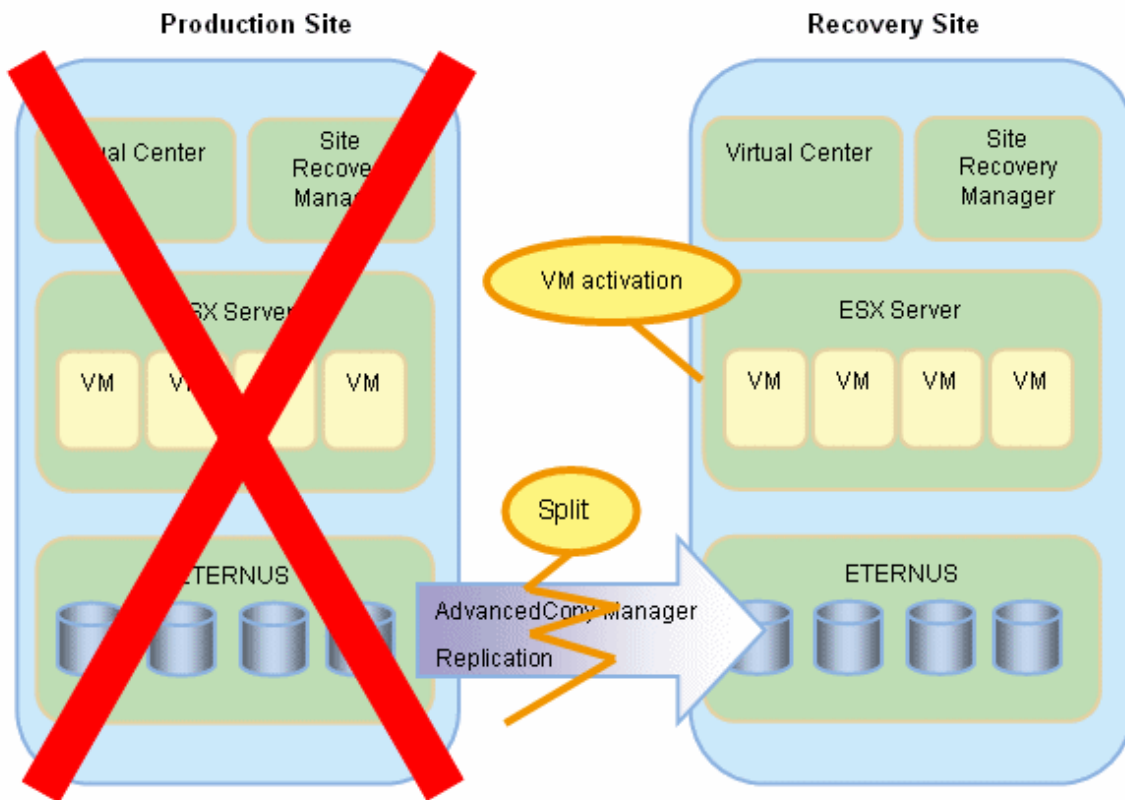
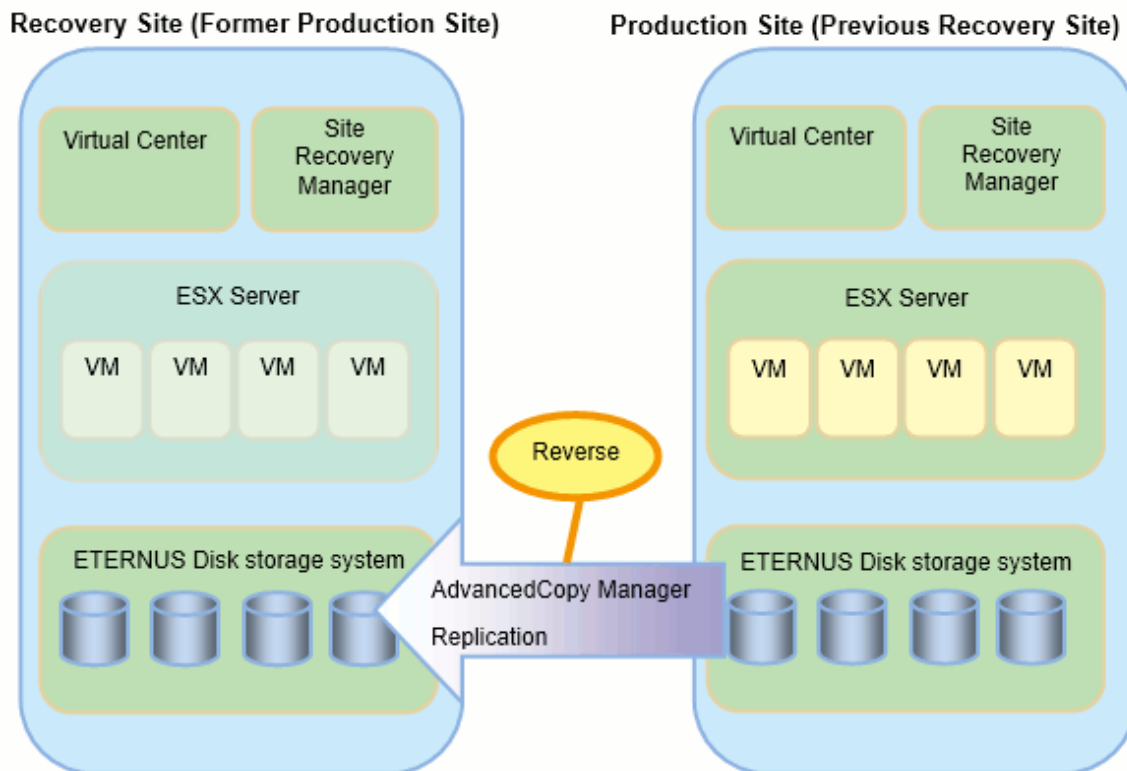


Figure 1.3 Failback operation



AdvancedCopy Manager SRA also allows a workflow to be executed per consistency group made up of multiple devices. Consistent recovery plan testing and recovery plan can be realized across multiple devices by building disaster-countermeasure environments for paired consistency groups between the Production Site and the Recovery Site.

 Note

- Use a consistency group when you want to perform a failover while maintaining consistency of the I/O order among multiple LUNs. For non-consistency groups, the consistency of the I/O order during a failover is limited within the devices.
- Use a consistency group when VM data is allocated to multiple devices. If VM data is exclusive to the devices or the consistency of the inter-device I/O order between the system and the data volume does not need to be maintained, you need not use the consistency group.
- Devices registered to a consistency group can be registered only to the same SRM protection group.

Figure 1.4 Performing the recovery plan for the consistency group

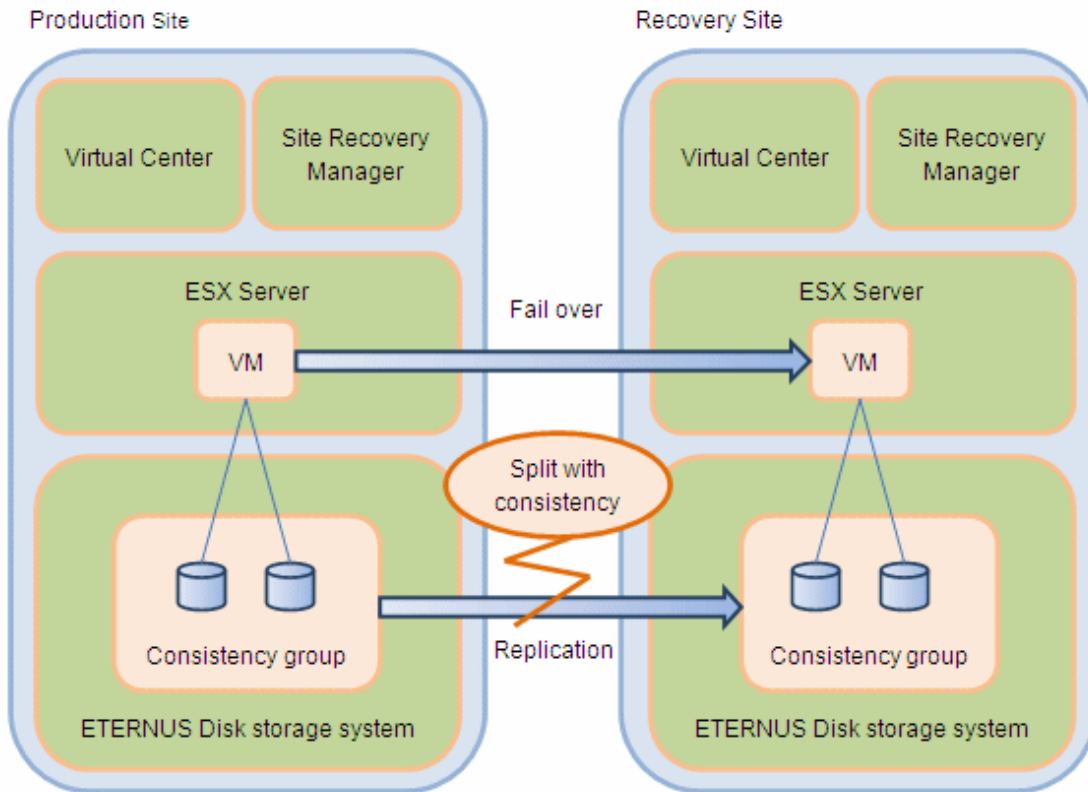
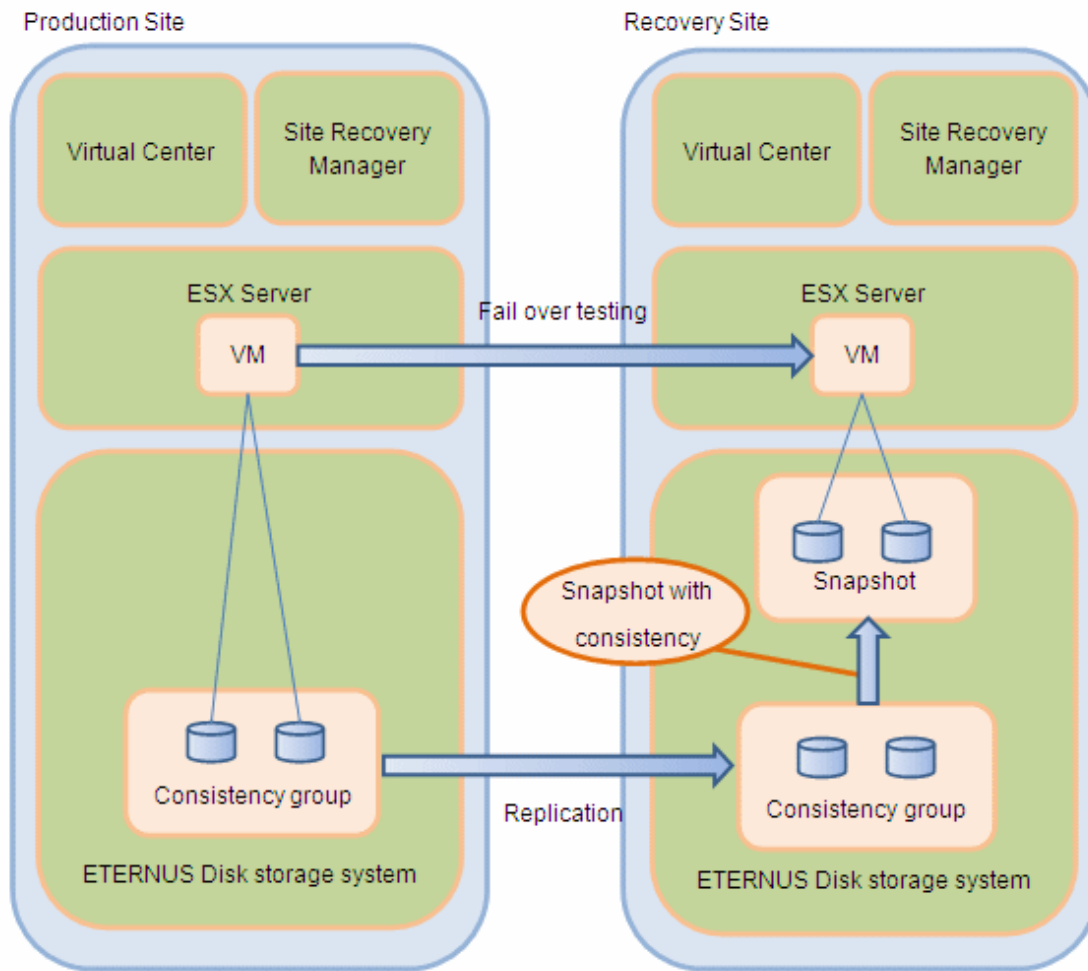


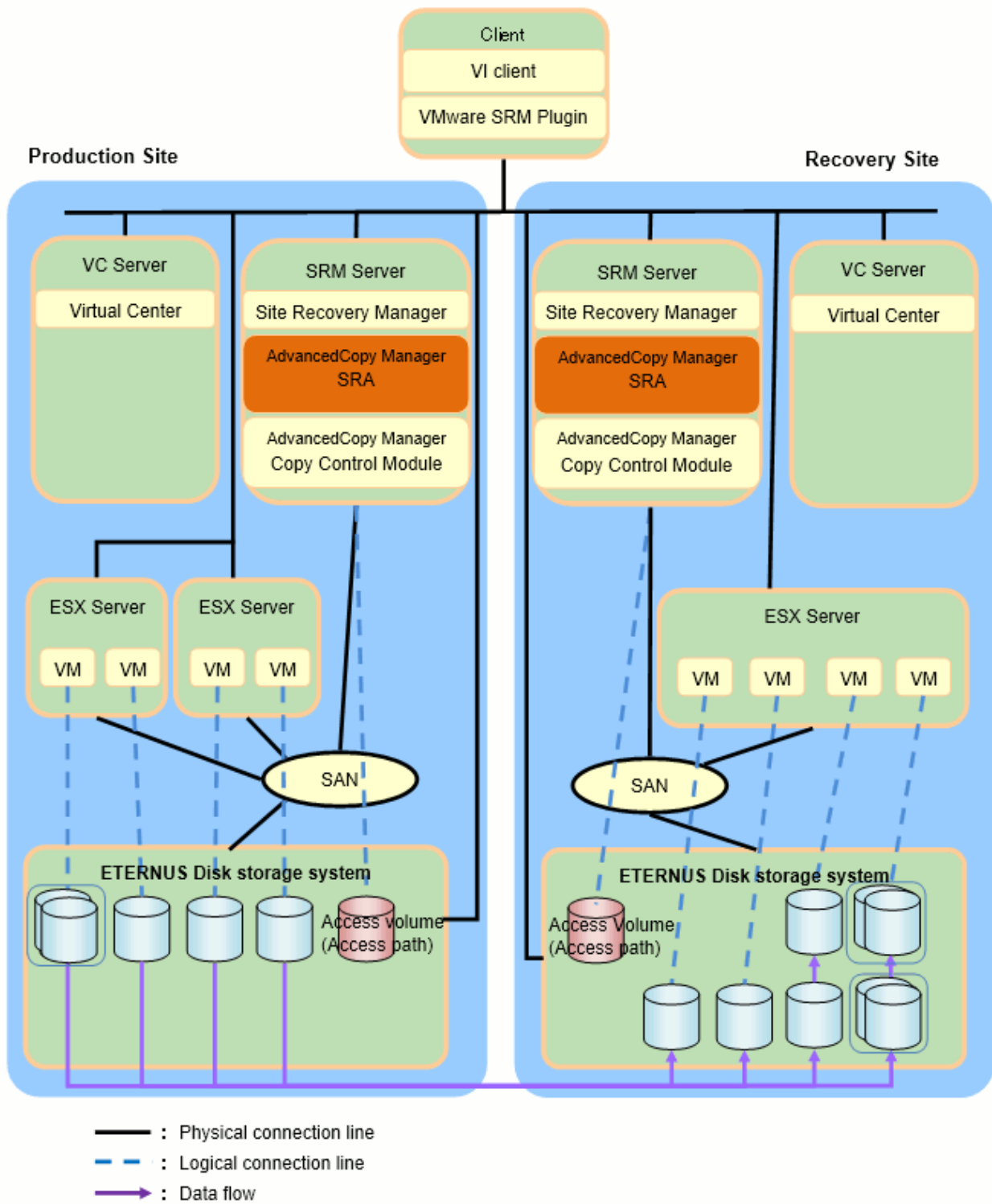
Figure 1.5 Testing the recovery plan for the consistency group



1.2 System Configuration

The figure below provides an example configuration for AdvancedCopy Manager SRA:

Figure 1.6 Example configuration for AdvancedCopy Manager SRA



 Note

- The Copy Control Module can be used to operate the ETERNUS Disk storage system from the SRM server (a server where VMware SRM is installed) with AdvancedCopy Manager SRA. There are 2 copy function types: Copy command via SAN and Copy command via LAN. When you use the Copy command via the SAN, an access volume (access path) must be created in the ETERNUS Disk storage system. For details, refer to the "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".

- If the Copy command via the LAN communicates with the ETERNUS Disk storage system using SSH, the processing time increases in proportion to the number of Advanced Copy functions there are to execute, when compared with the Copy command via the SAN. Moreover, it may take a few minutes to execute the Advanced Copy functions using the Copy command via the LAN depending on the number of copy pairs the Copy Control Module executes at a time.
In a mixed SAN/LAN environment, it is recommended that you use the Copy command via the SAN.
- In a SAN environment, AdvancedCopy Manager SRA supports FC connections and iSCSI connections. FCoE connections are not supported.

1.3 System Requirements

This section provides the system requirements for using AdvancedCopy Manager SRA.

1.3.1 Hardware

One of the following devices is required for AdvancedCopy Manager SRA:

All-Flash Arrays	ETERNUS AF250 S3/S2, AF650 S3/S2 ETERNUS AF250, AF650 ETERNUS DX200F
Hybrid Storage Systems/ Disk Storage systems	ETERNUS DX100 S5/S4/S3 ETERNUS DX200 S5/S4/S3 ETERNUS DX500 S5/S4/S3, DX600 S5/S4/S3 ETERNUS DX900 S5 ETERNUS DX8700 S3, DX8900 S4/S3 ETERNUS DX90 S2/DX90 ETERNUS DX410 S2/DX410, DX440 S2/DX440 ETERNUS DX8100 S2/DX8100, DX8400 ETERNUS DX8700 S2/DX8700 ETERNUS4000 Model 400, 600 ETERNUS8000 Model 800, 1200, 2200

When using a consistency group, one of the following hardware devices is required:

All-Flash Arrays	ETERNUS AF250 S3/S2, AF650 S3/S2 ETERNUS AF250, AF650 ETERNUS DX200F
Hybrid Storage Systems/ Disk Storage systems	ETERNUS DX100 S5/S4/S3 (*1) ETERNUS DX200 S5/S4/S3 ETERNUS DX500 S5/S4/S3, DX600 S5/S4/S3 ETERNUS DX900 S5 ETERNUS DX8700 S3, DX8900 S4/S3 ETERNUS DX90 S2 (*2) ETERNUS DX410 S2 (*2), DX440 S2 (*2) ETERNUS DX8100 S2 (*2) ETERNUS DX8700 S2 (*2)

*1) Firmware version of the ETERNUS DX100 S3: V10L20 or later

*2) Firmware version: V10L30 or later

Information

The above storage devices are referred to as "ETERNUS Disk storage systems" in this manual.

Point

The hardware devices that can be used depend on the installed version of AdvancedCopy Manager. Refer to the "ETERNUS SF AdvancedCopy Manager Installation and Setup Guide" for details.

1.3.2 Software

Operating Systems

AdvancedCopy Manager SRA requires one of the following operating systems:

- Windows Server 2012
- Windows Server 2012 R2
- Windows Server 2016

Point

The operating systems that can be used depend on the installed version level of AdvancedCopy Manager. Refer to the "ETERNUS SF AdvancedCopy Manager Installation and Setup Guide" for details.

Required Applications

The following software must be installed before AdvancedCopy Manager SRA:

- VMware Site Recovery Manager
One of the following software must be installed.
VMware Site Recovery Manager 6.0
VMware Site Recovery Manager 6.1
VMware Site Recovery Manager 6.5
- Java Runtime Environment Version 8 Update 65 or later (32bit version/64bit version)
For AdvancedCopy Manager V16.2 or earlier, the 32bit version is required.
For AdvancedCopy Manager V16.3 or later, the 64bit version is required.
- AdvancedCopy Manager V15.2 or later

The following patches must be applied.

AdvancedCopy Manager version	OS type	Patch ID
Version 15.2	Windows Server 2012	T007793WP-01 or later

Chapter 2 Setup

This chapter describes how to set up a new installation of AdvancedCopy Manager SRA.

When migrating from an environment using AdvancedCopy Manager SRA (former name: ETERNUS SF AdvancedCopy Manager Adapter for VMware SRM) 1.4 or earlier, refer to "[C.1 Version Upgrade from AdvancedCopy Manager SRA 1.4 or earlier](#)".

When migrating from an environment using AdvancedCopy Manager SRA 1.5, refer to "[C.2 Version Upgrade from AdvancedCopy Manager SRA 1.5](#)".

When migrating from an environment using AdvancedCopy Manager SRA 2.0 or later, refer to "[C.3 Version Upgrade from AdvancedCopy Manager SRA 2.0 or later](#)".

1. "2.1 Installation"
 1. "2.1.1 Preparation"
 2. "2.1.2 Installation Procedure"
2. "2.2 Configuring User Accounts"
3. "2.3 Replication Settings"
4. "2.4 Register/Change/Delete ETERNUS Disk storage systems to VMware SRM"



Point

The replication unit for this function is Logical Units (disk).
A Logical Unit is referred to as "LU" or "volume" in this manual.

2.1 Installation

To install AdvancedCopy Manager SRA, follow the procedures described in the sections below.

2.1.1 Preparation

This section explains the procedure to perform before installing AdvancedCopy Manager SRA in the SRM server.

1. Copy Control Module confirmation.

Check that Copy Control Module is installed in the SRM server. For details on how to install Copy Control Module, refer to the "ETERNUS SF AdvancedCopy Manager Installation and Setup Guide".

2. ETERNUS Disk storage system connection.

To operate the ETERNUS Disk storage system from Copy Control Module, connect the SRM server with ETERNUS Disk storage system at both the Production Site and the Recovery Site.

Set up the network environment in Copy Control Module settings. In addition, when you use the Copy command via the SAN, configure an access volume (access path). For details, refer to the "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".

Note

- If you are required to set a firewall between the SRM server and the ETERNUS Disk storage system, the firewall must be set up from the network settings of ETERNUS Web GUI. For details, refer to the "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".
- Do not connect the SRM server to the disk in which the replication of VMware SRM performed.

3. LU allocation

Allocate the required LU. For one datastore LU, the required LU for AdvancedCopy Manager SRA is as follows:

Required LU	Production Site		Recovery Site	
	Number	Size	Number	Size
Datastore LU	-	-	1	Same as copy source LU
Snapshot LU for recovery plan testing	1 (*1)	Same as datastore LU	1	Same as datastore LU

*1: Required when performing recovery plan testing from the previous Recovery Site to the previous Production Site for a failback operation.

Connect the allocated LU so that it can be accessed from the ESX server at each site.

In addition, when using Copy Control Module with the Copy command via the SAN, the SRM server must have one access volume (access path) LU in the ETERNUS Disk storage system.



Note

- Only mapping with Host Affinity is supported. LUN mapping is not supported.
- The LU belonging to the Affinity/LUN Group that meets the condition below is not available for AdvancedCopy Manager SRA:
 - The same logical volume number is allocated to multiple different Affinity/LUN Groups.

2.1.2 Installation Procedure

This section describes the procedures for installing AdvancedCopy Manager SRA in the SRM server.

1. Run the AdvancedCopy Manager SRA installer "FUJITSU_ETERNUS_SF_AdvancedCopy_Manager_SRA2.4.exe" and follow the instructions.
2. Restart the VMware SRM service (VMware Site Recovery Manager Service).

2.2 Configuring User Accounts

This section explains the user accounts that are required when using AdvancedCopy Manager SRA.

In Windows Server, the User Account Control function (hereafter called "UAC") has been added to enhance security.

Cases when UAC is enabled or disabled are explained below.

- When UAC is enabled

When any user other than the built-in Administrator account (including accounts in the Administrator group) executes a process or program that requires administrator permissions, the "Permissions granted/authorized dialog" is displayed. Permissions granted or authorized must be confirmed.

- When UAC is disabled

Processes or programs that require administrator permissions must be executed by either the built-in Administrator account or a user account in the Administrators group.

The operating conditions are shown below.

Table 2.1 Relationship between account and UAC

Account type	UAC: Enabled	UAC: Disabled
Built-in Administrator account	A	A
User account in the Administrators group	B	A
Standard user account	B	C

- A: Runs without displaying the permissions granted dialog.
- B: Displays the permissions granted dialog, and runs if permissions are approved.
- C: Does not run, because Administrator permissions cannot be obtained.

If you do not wish to perform the dialog process using the administrator permissions dialog, and the conditions marked as "B" in the table above apply (such as for batch processing), programs must be executed with administrator permissions using one of the following methods:

- In the Command Prompt, use the runas command to execute programs as a user with administrator permissions or the permissions required to operate AdvancedCopy Manager. A password must be entered after this.

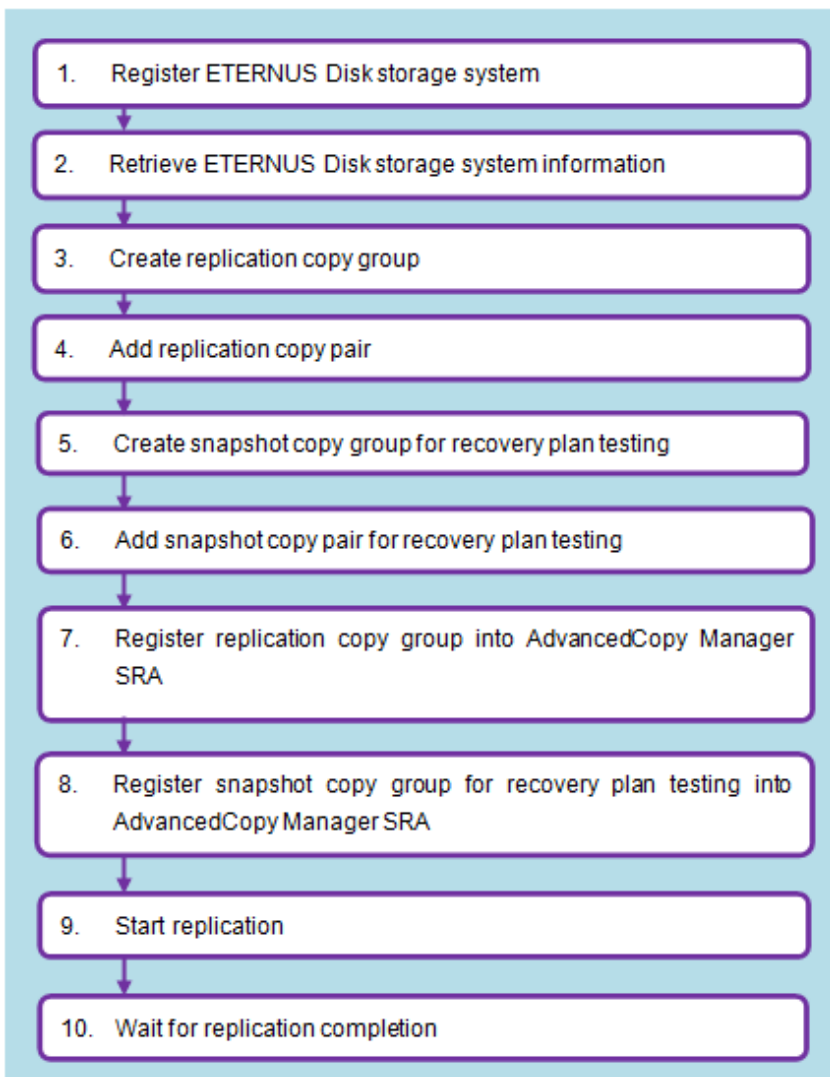
[Batch file (test.bat) execution example]

```
runas /noprofile /user:mymachine\acmuser "cmd.exe /k test.bat"
```

- In the Task Scheduler, specify "Execute with top level privileges" to operate the program.
- Select "Command Prompt (Admin)" to start the Command Prompt. Execute the program from the Command Prompt.

2.3 Replication Settings

To set up replication, perform the following steps:



Note

- Before registering a logical volume, the volume information must be obtained with the `advgetdevs` command. AdvancedCopy Manager SRA cannot operate logical volumes if its information is not obtained with the `advgetdevs` command.
- Only mapping with Host Affinity is supported. LUN mapping is not supported.
- LUNs that are not registered to Host Affinity cannot obtain information with the `advgetdevs` command.

2.3.1 Register ETERNUS Disk storage system

The ETERNUS Disk storage system used for replication must first be registered to Copy Control Module on the SRM server at both the Production Site and the Recovery Site. If the target ETERNUS Disk storage system is already registered to Copy Control Module, registration is not necessary.

Define the name of the ETERNUS Disk storage system used for replication and execute the following commands on the SRM server at each site. For information on the command, refer to the "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".

Registration of the ETERNUS Disk storage system at the local site:

- [If you use the Copy command via the LAN]

```
acarray add -a ETERNUS_name -ip IP_address -user user_name -password password -lan
```

- [If you use the Copy command via the SAN]

```
acarray add -a ETERNUS_name -ip IP_address -user user_name -password password -path  
access_volume
```

Registration of the ETERNUS Disk storage system at the pair site:

- [If you use the Copy command via the LAN]

```
acarray add -a ETERNUS_name -ip IP_address -user user_name -password password -lan
```

- [If you do not use the Copy command via the LAN or cannot use it]

```
acarray add -a ETERNUS_name -boxid BoxID -remote
```

Point

If the same ETERNUS Disk storage system needs to be registered in the SRM server at each site, register it with the same ETERNUS name.

Example

- Execution example at the Production Site

```
C:\>acarray add -a E8000P -ip 10.124.6.118 -user root -password root -path E:  
Successful completion.  
  
C:\>  
C:\>acarray add -a E8000R -boxid 00ETERNUSDXM##ET44S20A####KK000000010## -remote  
Successful completion.  
  
C:\>
```


2.3.2 Retrieve ETERNUS Disk storage system information

Execute the following command on the SRM server at both the Production Site and the Recovery Site to obtain configuration and logical volume information of the ETERNUS Disk storage system connected to the server. For information on the command, refer to "A.2.1 [advgetdevs \(Command for collecting and displaying information on ETERNUS Disk storage systems\)](#)".

```
advgetdevs ETERNUS_ip_address
```

Point

The amount of time needed for this operation to be completed depends on the configuration of the cabinet for the ETERNUS Disk storage system and the LU configuration such as the number of LUNs, the number of connection ports, and the number of connected hosts. Expect between a few minutes and several tens of minutes under light load conditions.

Example

- Execution example at the Production Site

```
C:\>"C:\Program Files (x86)\VMware\VMware vCenter Site Recovery Manager\storage\sra
\FujitsuAdvancedCopyManager\advgetdevs.exe" 10.124.6.118
Serial No. = 001324
BoxID = 00ETERNUSDXH##ET84S20A####ID001324#####
      (3030455445524E555344584823234554383453323041232323234944303031333234232323232323)

LUNName                LUN                Blocks
-----
0000:6_243             6(0x0006)         65536000(   32000MB)
0001:6_243             18(0x0012)        49152(     24MB)

C:\>
```

- Execution example at the Recovery Site

```
C:\>"C:\Program Files (x86)\VMware\VMware vCenter Site Recovery Manager\storage\sra
\FujitsuAdvancedCopyManager\advgetdevs.exe" 10.124.6.252
Serial No. = 0000000010
BoxID = 00ETERNUSDXM##ET44S20A####KK0000000010##
      (3030455445524E555344584D23234554343453323041232323234B4B3030303030303030303031302323)

LUNName                LUN                Blocks
-----
0002:194_104           0(0x0000)         47448064(   23168MB)
0003:194_104           1(0x0001)         47448064(   23168MB)

C:\>
```

Note

Do not log in to the target ETERNUS Disk storage system from ETERNUS Web GUI while the `advgetdevs` command is running.

2.3.3 Create replication copy groups

Define the replication copy group name and execute the following command to create the copy group on the SRM server at both the Production Site and the Recovery Site.

When using a consistency group, create replication copy groups on a per consistency group basis.

If you are not using a consistency group, create replication copy groups on a per optional group basis. For information on the command, refer to the "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".

```
acgroup create -g copy_group_name -type REC -a ETERNUS_name -remote remote_ETERNUS_name
```

Example

- Execution example at the Production Site

```
C:\>acgroup create -g REPGRP1 -type REC -a E8000P -remote E8000R
Successful completion.

C:\>
```

- Execution example at the Recovery Site

```
C:\>acgroup create -g REPGRP1 -type REC -a E8000R -remote E8000P
Successful completion.

C:\>
```

Note

Specify the ETERNUS Disk storage system connected to the Production Site and the Recovery Site with the -a option and specify the ETERNUS Disk storage system connected to its pair sites with the -remote option. Note that the ETERNUS Disk storage systems specified by -a option and -remote option go across at the Production Site and the Recovery Site.

2.3.4 Add replication copy pairs

Execute the following command on the SRM server at both the Production Site and the Recovery Site to add a logical volume pair to the replication copy group. For information on the command, refer to the "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".

```
acpair add -g copy_group_name -p source_ETERNUS_name/logical_volume_number:destination_ETERNUS_name/logical_volume_number
```

Point

- Before adding a logical volume to the copy pair, the information of its logical volume must be obtained with advgetdevs command.
- Consistency groups are controlled on a per replication copy group basis. Therefore, to use copy groups as a consistency group, define only LU copy pairs that make up the consistency group.

Example

- Execution example at the Production Site

```
C:\>acpair add -g REPGRP1 -p E8000P/0x45:E8000R/0x4F
Successful completion.

C:\>
```

- Execution example at the Recovery Site

```
C:\>acpair add -g REPGRP1 -p E8000P/0x45:E8000R/0x4F
Successful completion.
```

```
C:\>
```

- Execution example for consistency group

```
C:\>acpair add -g CONSISTENCYGRP1 -p E8000P/0x60:E8000R/0x68
Successful completion.

C:\>acpair add -g CONSISTENCYGRP1 -p E8000P/0x61:E8000R/0x69
Successful completion.

C:\>
```

2.3.5 Create snapshot copy groups for recovery plan testing

Define a snapshot copy group name for recovery plan testing. When you use a consistency group, the snapshot copy group name for the recovery plan testing should be a copy group name that has "_snap" added to the replication copy group name. For non-consistency groups, the snapshot copy group name for the recovery plan testing is optional. If you define a copy group name, execute the following command on the SRM server at the Recovery Site to create a snapshot copy group for the recovery plan testing. When performing the recovery plan testing in a failback operation, create a snapshot copy group for the recovery plan testing at the Production Site, as well. For information on the command, refer to the "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".

```
acgroup create -g copy_group_name -type [QuickOPC|SnapOPCP] -a ETERNUS_name
```

Set the copy type for the snapshot to either QuickOPC or SnapOPC+.



Example

Consistency groups:

```
C:\>acgroup create -g CONSISTENCYGRP1_snap -type QuickOPC -a E8000P
Successful completion.

C:\>
```

Groups other than consistency groups:

```
C:\>acgroup create -g SNAPGRP1 -type QuickOPC -a E8000P
Successful completion.

C:\>
```



Note

- When using SnapOPC+, a Snap Data Volume (SDV) is required. In addition, it is recommended that you configure a Snap Data Pool (SDP) in case of an SDV capacity shortage.
- When using SnapOPC+ with any of the following ETERNUS Disk storage systems, caution is required for the ATS locking:
 - ETERNUS DX90 (all firmware versions)
 - ETERNUS DX90 S2 (firmware version V10L30 or earlier)
 - ETERNUS DX410/DX440 (all firmware versions)
 - ETERNUS DX410 S2/DX440 S2 (firmware version V10L30 or earlier)
 - ETERNUS DX8100/DX8400/DX8700 (all firmware versions)
 - ETERNUS DX8100 S2/DX8700 S2 (firmware version V10L30 or earlier)

- ETERNUS4000 models 400 and 600 (all firmware versions)
- ETERNUS8000 models 800, 1200 and 2200 (all firmware versions)

Since the above ETERNUS Disk storage systems do not support ATS locking for Snap Data Volumes (SDV), recovery plan testing may fail. To use SnapOPC+, disable ATS locking on the ESX server at the Recovery Site.

For more information, refer to the following documents:

- "vSphere Storage Guide" (ESXi 5.0, vCenter Server 5.0 or later)
- "Fibre Channel SAN Configuration Guide" (ESX 4.1, ESXi 4.1, vCenter Server 4.1)
- "iSCSI SAN Configuration Guide" (ESX 4.1, ESXi 4.1, vCenter Server 4.1)

2.3.6 Add snapshot copy pairs for recovery plan testing

Execute the following command on the SRM server at the Recovery Site to add a copy pair to the snapshot copy group for recovery plan testing. When performing recovery plan testing for a fallback, add a copy pair to the snapshot copy group for recovery plan testing at the Production Site, as well. For information on the command, refer to the "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".

```
acpair add -g copy_group_name -p source_ETERNUS_name/logical_volume_number:destination_ETERNUS_name/  
logical_volume_number
```

Point

- Before adding a logical volume to the copy pair, the information of its logical volume must be obtained with the advgetdevs command.
- For snapshot copy group for recovery plan testing as a consistency group, define copy pairs corresponding to all the LUs at each site that make up the consistency group. Definitions of copy pairs other than the LUs that make up the consistency group at each site should not exist.

Example

- For consistency groups:

```
C:\>acpair add -g CONSISTENCYGRP1_snap -p E8000R/0x68:E8000R/0x6C  
Successful completion.  
  
C:\>acpair add -g CONSISTENCYGRP1_snap -p E8000R/0x69:E8000P/0x6D  
Successful completion.  
  
C:\>
```

- For groups other than consistency groups:

```
C:\>acpair add -g SNAPGRP1 -p E8000P/0x45:E8000P/0x46  
Successful completion.  
  
C:\>
```

2.3.7 Registration of replication copy groups into AdvancedCopy Manager SRA

To register a replication copy group into AdvancedCopy Manager SRA, execute the following command on the SRM server at both the Production Site and the Recovery Site. For information on the command, refer to "[A.3.2 advsetgr add \(Copy Control Module copy group registration command\)](#)".

- For consistency groups:

```
advsetgr add -cg copy_group_name
```

- For groups other than consistency groups:

```
advsetgr add -g copy_group_name
```

Example

- Execution example at the Production Site

```
C:\>"C:\Program Files (x86)\VMware\VMware vCenter Site Recovery Manager\storage\sra
\FujitsuAdvancedCopyManager\advsetgr.exe" add -g REPGRP1
Successful completion.

C:\>
```

- Execution example at the Recovery Site

```
C:\>"C:\Program Files (x86)\VMware\VMware vCenter Site Recovery Manager\storage\sra
\FujitsuAdvancedCopyManager\advsetgr.exe" add -g REPGRP1
Successful completion.

C:\>
```

If a copy pair has been added to a copy group already registered in AdvancedCopy Manager SRA, execute the following command at the Production Site and the Recovery Site.

- For consistency groups:

```
advsetgr change -cg copy_group_name
```

- For groups other than consistency groups:

```
advsetgr change -g copy_group_name
```

When you register replication copy groups as a consistency group, a copy group with a name that has "_snap" added to the end of the replication copy group name is registered as a snapshot copy group for the recovery plan testing at the same time. If the recovery plan testing is not conducted (snapshot copy group for the recovery plan testing is not needed), specify the -notest option.

2.3.8 Register snapshot copy groups for recovery plan testing into AdvancedCopy Manager SRA

For consistency groups, since snapshot copy groups for testing are registered at the same time as registering replication copy groups, the operation is not needed.

For non-consistency groups, execute the following command in the SRM server at the Recovery Site to register a snapshot copy group for the recovery plan testing into AdvancedCopy Manager SRA. When you perform the recovery plan testing for a failback, register a snapshot copy group for the recovery plan testing at the Production Site, as well. Execute the following command on the SRM server at the Recovery Site. For information on the command, refer to "[A.3.2 advsetgr add \(Copy Control Module copy group registration command\)](#)".

```
advsetgr add -sg copy_group_name
```

Example

```
C:\>"C:/Program Files (x86)/VMware/VMware vCenter Site Recovery Manager/storage/sra/
FujitsuAdvancedCopyManager/advsetgr.exe" add -sg SNAPGRP1
Successful completion.
```

```
C:\>
```

If a copy pair has been added to a copy group already registered in AdvancedCopy Manager SRA, execute the following command at the Recovery Site.

```
advsetgr change -sg copy_group_name
```

2.3.9 Start replication

To start replication, execute the following command in the SRM server at the Production Site. Specify the consistency mode or the synchronous mode for the transfer mode. For information on the command, refer to the "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".

```
acec start -g copy_group_name -transfer {consist | sync}
```

Point

The transfer mode, recovery mode, and split mode for the replication mode can be specified as shown in the table below.

Transfer mode	Recovery mode	Split mode
Consistency mode	Automatic Recovery or Manual Recovery	-
Synchronous mode		Automatic Split

The synchronous mode greatly affects the write I/O performance from the server to the ETERNUS Disk storage system. Therefore, use the synchronous mode in environments where the delay is short. Otherwise, use the consistency mode.

If the Manual Recovery mode is selected, the transfer is not resumed until the Suspend (acec suspend -force) and Resume (acec resume) operations are performed even after the blocked copy route status is resolved.

Example

```
C:\>acec start -g REPGRP1 -p E8000P/0x45:E8000R/0x4F -transfer consist
E8000P/0x45:E8000R/0x4F
# DATE : 2011/08/16 21:55:22 - << EC Started >>
# From:BoxID=3030455445524e555344584823234554383453323041232323234944303031333234232323232323/
Olu=4F/Adr_high=0/Adr_low=0/size_high=0/size_low=0
# To :BoxID=3030455445524e555344584d23234554343453323041232323234b4b3030303030303031302323/Olu=45/
Adr_high=0/Adr_low=0

Succeeded : 1
Failed : 0

C:\>
```

2.3.10 Wait for replication completion

Wait for the completion of the replication processing.

Execute the following command on the SRM server at the Production Site to check the replication status and wait until the replication status changes to "Paired". For information on the command, refer to the "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".

```
acec query -g copy_group_name
```



Example

```
C:\>acec query -g REPGRP1
```

```
Copy Group Name      : REPGRP1
Copy Group Type      : REC
Disk Array Name      : E8000R (00ETERNUSDXM##ET44S20A####KK000000010##)
Remote Disk Array Name : E8000P (00ETERNUSDXH##ET84S20A####ID001324#####)
```

Source	<=>	Target	SID(RSID)	EC Status	Copy Phase	Copied Block	Rcv	Split	Xfer
E8000P/0x45	==>	E8000R/0x4F	0xB4(0xA8)	"EC Executing"	"Paired"	30720000	auto	----	consist

```
C:\>
```

2.4 Register/Change/Delete ETERNUS Disk storage systems to VMware SRM

To register, update, or delete the information for ETERNUS Disk storage systems managed by VMware SRM, refer to the following procedures:

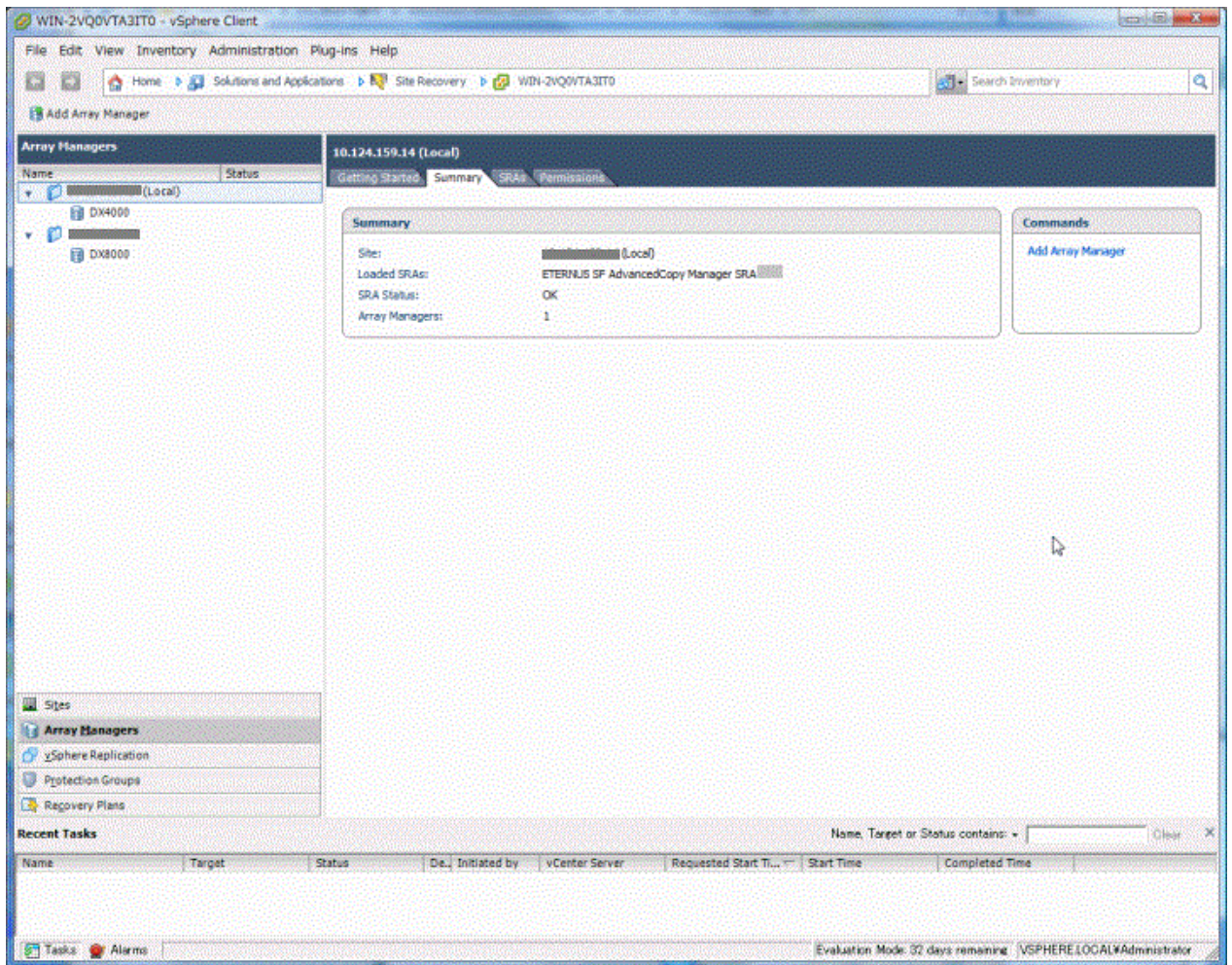
- For the procedure using vSphere Client
Refer to "[2.4.1 Procedure for vSphere Client](#)".
- For the procedure using vSphere Web Client
Refer to "[2.4.2 Procedure for vSphere Web Client](#)".

For vSphere Client and vSphere Web Client, refer to the manuals published by VMware, Inc. for information on the requirements, operation, and detailed settings related to SRM.

2.4.1 Procedure for vSphere Client

1. On the vSphere Client Home page, click the **Site Recovery** icon.

2. Select **Array Managers** on the bottom left of the screen.



- When adding an ETERNUS Disk storage system

Select the site to be added from the top left tree and select **Add Array Manager** from the right-click menu. Specify the following items in the displayed dialog box:

- Displayed name of the ETERNUS Disk storage system
 - Type of SRA (select ETERNUS SF AdvancedCopy Manager SRA)
 - IP address of the ETERNUS Disk storage system
- When changing the displayed name or IP address of an ETERNUS Disk storage system

Select the ETERNUS Disk storage system to change from the top left tree and select **Edit Array Manager** from the right-click menu.

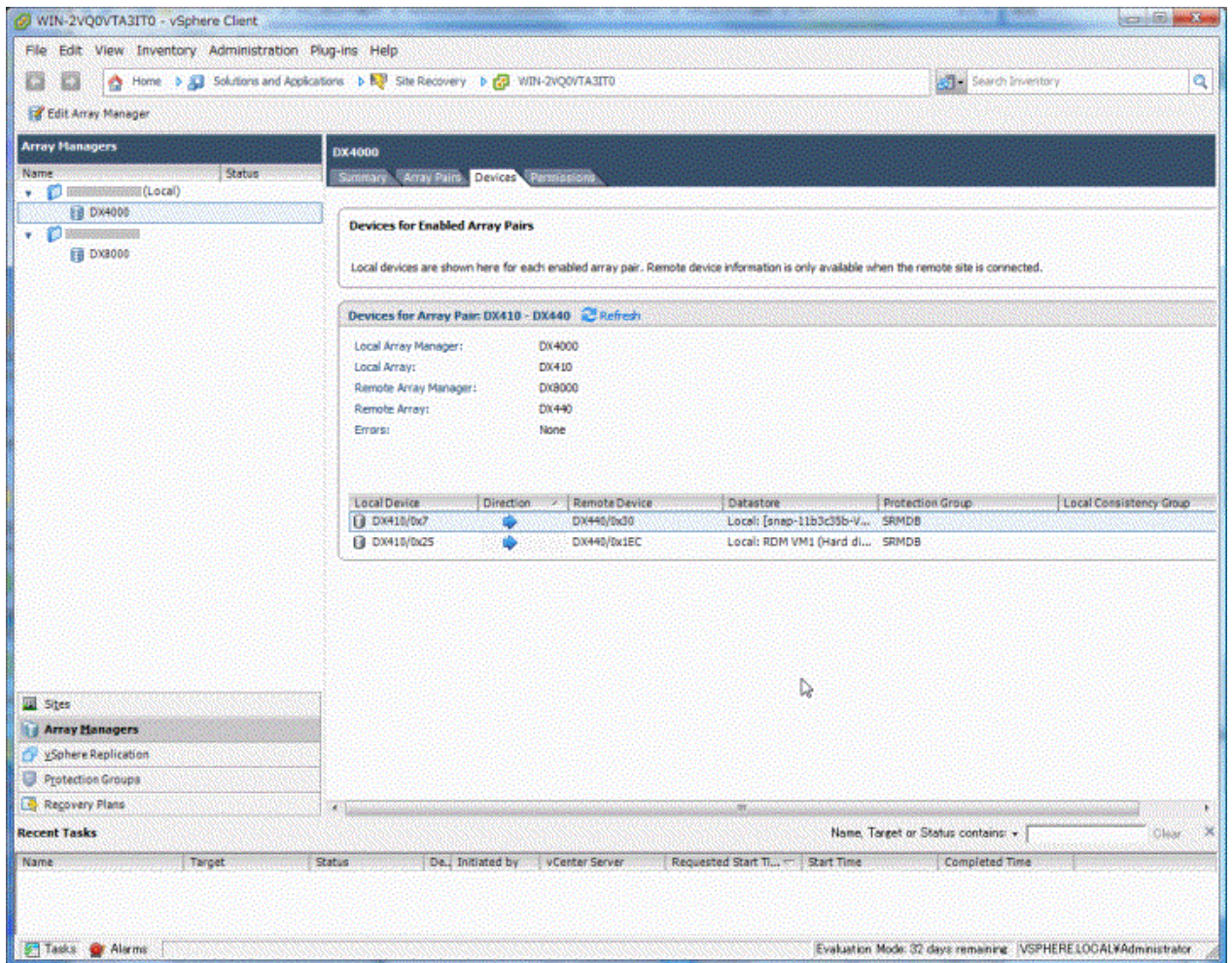
Specify the following items in the displayed dialog box:

- Displayed name of the ETERNUS Disk storage system
 - IP address of the ETERNUS Disk storage system
- When deleting an ETERNUS Disk storage system

Select the ETERNUS Disk storage system to delete from the top left tree and select **Remove Array Manager** from the right-click menu.

- When the replication is added/deleted/changed

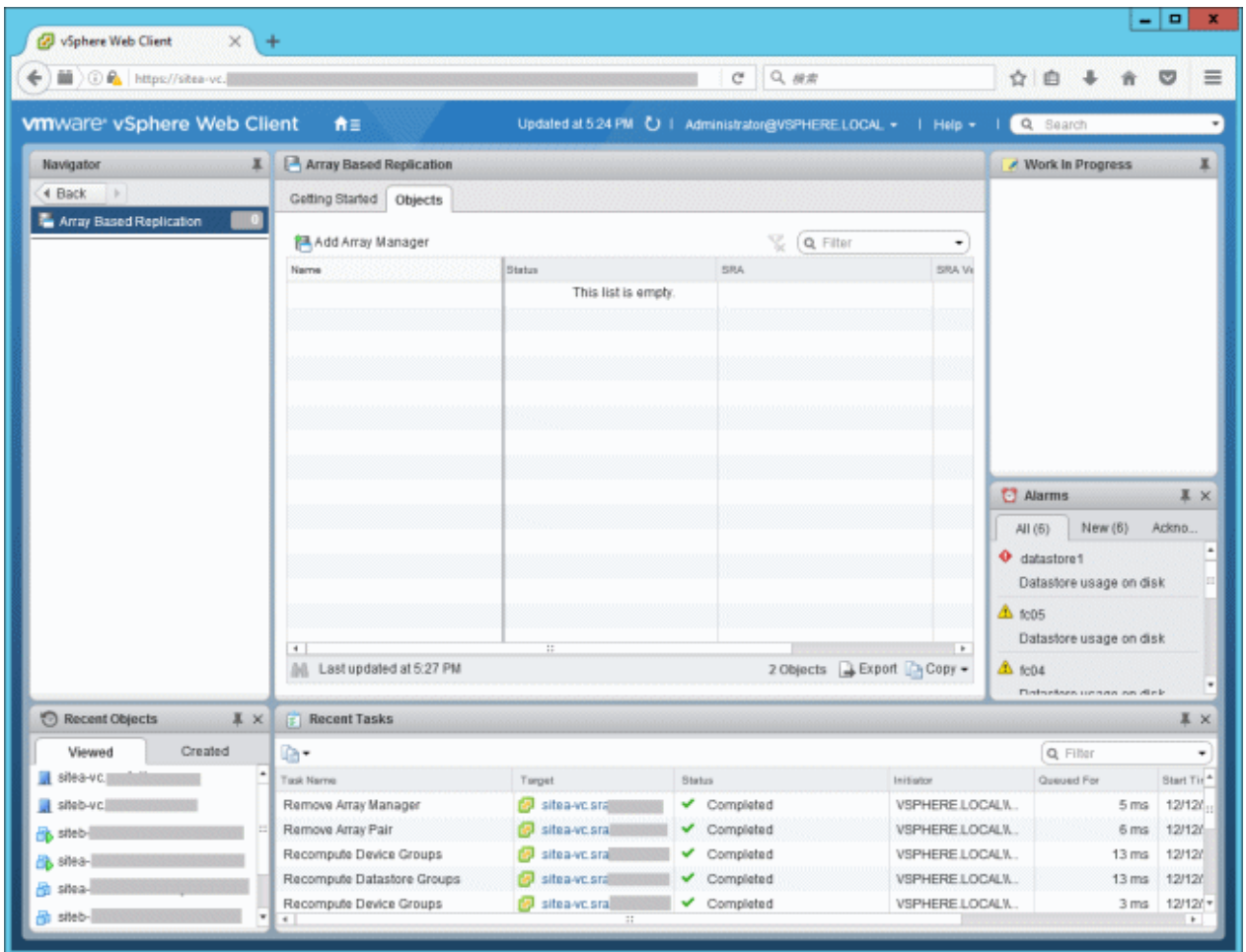
Select the relevant ETERNUS Disk storage system from the top left tree, open the **Device** tab, and click **Refresh**.



2.4.2 Procedure for vSphere Web Client

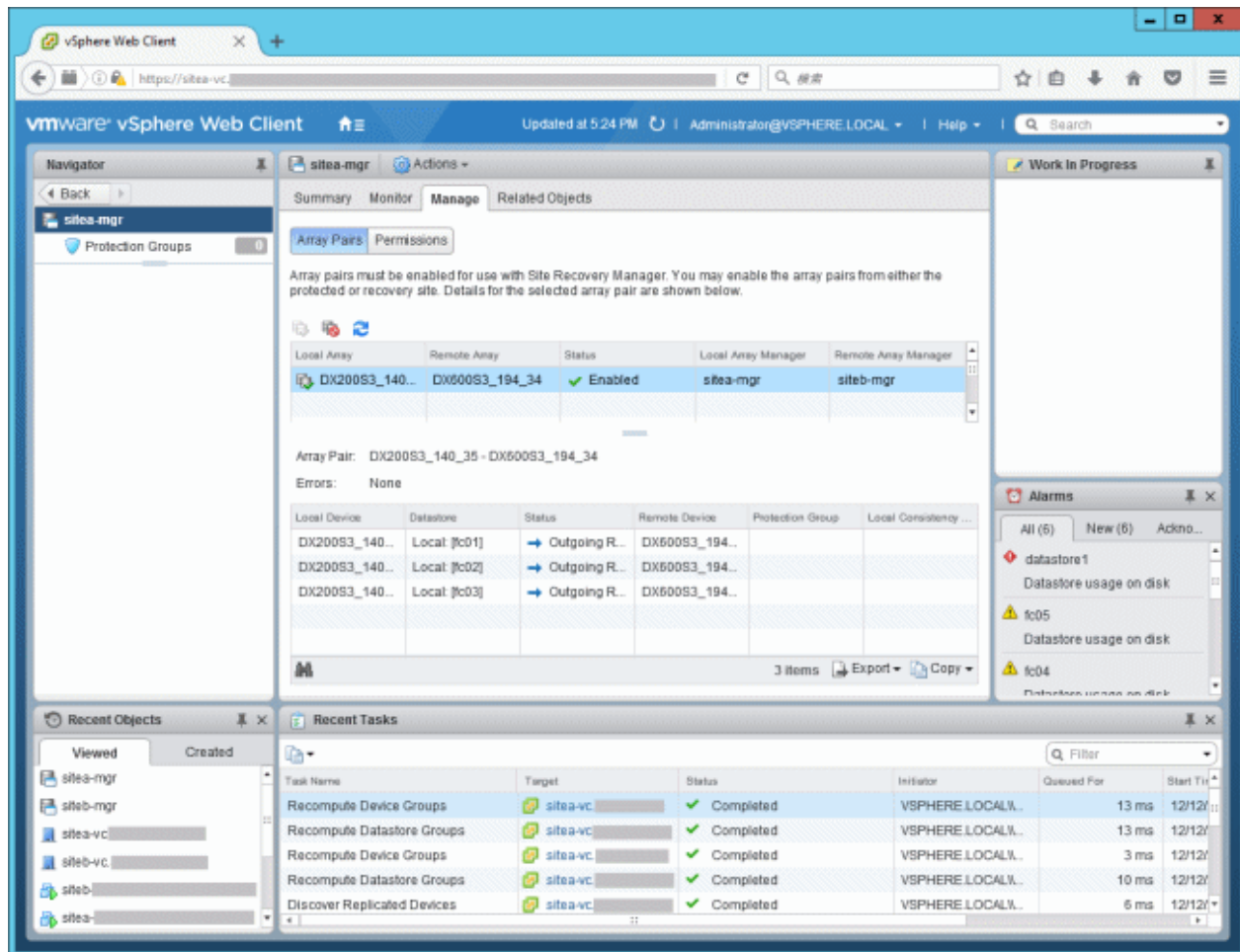
1. On the vSphere Web Client Home page, click the **Site Recovery** icon.

2. Select **Array Based Replication** in the **Navigator** screen to open the **Array Based Replication** screen.



- When adding an ETERNUS Disk storage system
 1. Click the **Add Array Manager** icon in the **Objects** tab.
 2. In the **Options** page, select either of the following options and click **Next**.
 - **Add a pair of array managers**
 - **Add a single array manager**
 3. On the **Location** page, select an array manager site or a pair of sites and click **Next**.
 4. On the **SRA Type** page, select "ETERNUS SF AdvancedCopy Manager SRA" from the **SRA Type** table and click **Next**.
 5. In the **Configure array manager** page, perform the following operations and click **Next**.
 - Enter the display name of the ETERNUS Disk storage system in the **Display Name** field.
 - Enter the IP address of the ETERNUS Disk storage system in the **IP Address of ETERNUS** field.
 6. If you select "**Add a pair of array managers**" in step 2, the **Configure paired array manager** page is displayed. Perform the following operations and click **Next**.
 - Enter the display name of the ETERNUS Disk storage system to be paired in the **Display Name** field.
 - Enter the IP address of the ETERNUS Disk storage system to be paired in the **IP Address of ETERNUS** field.
 7. On the **Enable array pairs** page, select an array pair to be enabled and then click **Next**.
However, if the corresponding ETERNUS Disk storage system is not recognized, an array pair cannot be selected. In this case, click **Next** without making a selection.
 8. Check the configuration in the **Ready to complete** page and click **Finish**.

- When changing the displayed name or IP address of an ETERNUS Disk storage system
 1. Select the ETERNUS Disk storage system to change in the **Objects** tab and select **Edit Array Manager** from the right-click menu.
 2. The configuration items in the **Option** page, the **Location** page, and the **Select SRA type** page cannot be changed. Therefore, click **Next** without making any changes.
 3. In the **Configure array manager** page, perform the following operations and click **Next**.
 - Enter the display name of the ETERNUS Disk storage system in the **Display Name** field.
 - Enter the IP address of the ETERNUS Disk storage system in the **IP Address of ETERNUS** field.
 4. The items of the **Enable array pairs** page cannot be configured. Click **Next**.
 5. Check the configuration in the **Ready to complete** page and click **Finish**.
- When deleting an ETERNUS Disk storage system
 1. In the **Objects** tab, click the link for the displayed name of the ETERNUS Disk storage system to delete to display the detailed information screen for array manager. However, if there is no corresponding ETERNUS Disk storage system, proceed to step 6.
 2. Select **Array Pairs** in the **Manage** tab.



3. Click each array pair displayed in the table and select **Disable** from the right-click menu.
4. On the vSphere Web Client Home page, click the **Site Recovery** icon.
5. Select **Array Based Replication** in the **Navigator** screen to open the **Array Based Replication** screen.

6. Select the ETERNUS Disk storage system to delete in the **Objects** tab and select **Remove Array Manager** from the right-click menu.
- When the replication is added/deleted/changed
1. In the **Objects** tab, click the link for the displayed name of the ETERNUS Disk storage system for which replication was added/deleted/changed to display the detailed information screen for array manager.
 2. Select **Array Pairs** in the **Manage** tab.
 3. Right-click the array pair and select **Discover Devices**.

Chapter 3 Operation

This chapter describes the steps necessary to recover from disaster and the actions required after changing the configuration.

3.1 Failback Procedure

To perform a failback for switching the operation to the Production Site after it is recovered, refer to "Site Recovery Manager Administration Guide" of VMware SRM. Failback operations are performed by running the SRM Reprotect workflow.

If the failback operation fails due to a failure in a replication copy session, manually stop the replication copy and restart the failback operation. Replication is started based on the previous replication configuration during a failback operation.

In addition, when you stop a replication, concurrently cancel the snapshot copy sessions for the recovery plan testing that are executed to a replication LU as the copy destination.

3.1.1 How to stop replications

Execute the following command at the site where the failback operation is performed and stop the replication. For information on the command, refer to the "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".

```
acec cancel -g copy_group_name -p source_ETERNUS_name/logical_volume_number:destination_ETERNUS_name/  
logical_volume_number -force
```

If all the copy pairs defined to a replication copy group are included, execute the following command to stop all the defined replications.

```
acec cancel -g copy_group_name -force
```



Example

```
C:\>acec cancel -g REPGRP1 -p E8000P/0x45:E8000R/0x4F -force  
  
E8000P/0x45:E8000R/0x4F  
# DATE : 2011/08/16 21:44:41 - << EC Disconnected >>  
  
Succeeded : 1  
Failed : 0  
  
C:\>
```

3.2 Configuration Changes

This section describes the steps to follow when the AdvancedCopy Manager SRA configuration is changed due to one of the following procedures:

- 3.2.1 Add an ETERNUS Disk storage system, replication copy group/copy pair, and snapshot copy group/copy pair for recovery plan testing
- 3.2.2 Delete the registered ETERNUS Disk storage system, replication copy group/copy pair, and snapshot copy group/copy pair for the recovery plan testing
- 3.2.3 Change the replication attribute
- 3.2.4 Change the attribute of snapshot copy group for recovery plan testing
- 3.2.5 Change the IP address, ETERNUS name, and Box ID of ETERNUS Disk storage system
- 3.2.6 Change the host affinity configuration, host definition, port parameter settings and LUN group definition in the ETERNUS Disk storage system connectivity definition

Note

- Do not change the configuration while the following operations are being performed.
 - Testing a recovery plan
 - Running a recovery plan
 - Reversing the replication after running a recovery plan (ReProtect)

3.2.1 Add an ETERNUS Disk storage system, replication copy group/copy pair, and snapshot copy group/copy pair for recovery plan testing

Perform the procedures shown in the table below for purpose.

Operations	Purpose				
	Add ETERNUS Disk storage system	Add replication copy group	Add replication copy pair	Add snapshot copy group for recovery plan testing	Add snapshot copy pair for recovery plan testing
2.3.1 Register ETERNUS Disk storage system	Yes	No	No	No	No
2.3.2 Retrieve ETERNUS Disk storage system information	Yes	Yes	Yes	Yes	Yes
2.3.3 Create replication copy groups	Yes	Yes	No	No	No
2.3.4 Add replication copy pairs	Yes	Yes	Yes	No	No
2.3.5 Create snapshot copy groups for recovery plan testing	Yes	Yes (NOTE)	No	Yes	No
3.2.2.1 Check snapshot for recovery plan testing	No	No	No	No	Yes
3.2.2.2 Stop snapshot for recovery plan testing	No	No	No	No	Yes
2.3.6 Add snapshot copy pairs for recovery plan testing	Yes	Yes (NOTE)	No	Yes	Yes
2.3.7 Registration of replication copy groups into AdvancedCopy Manager SRA	Yes	Yes	Yes	No	No
2.3.8 Register snapshot copy groups for recovery plan testing into AdvancedCopy Manager SRA	Yes	No	No	Yes	Yes
2.3.9 Start replication	Yes	Yes	Yes	No	No
2.3.10 Wait for replication completion	Yes	Yes	Yes	No	No
2.4 Register/Change/Delete ETERNUS Disk storage systems to VMware SRM	Yes	Yes	Yes	No	No

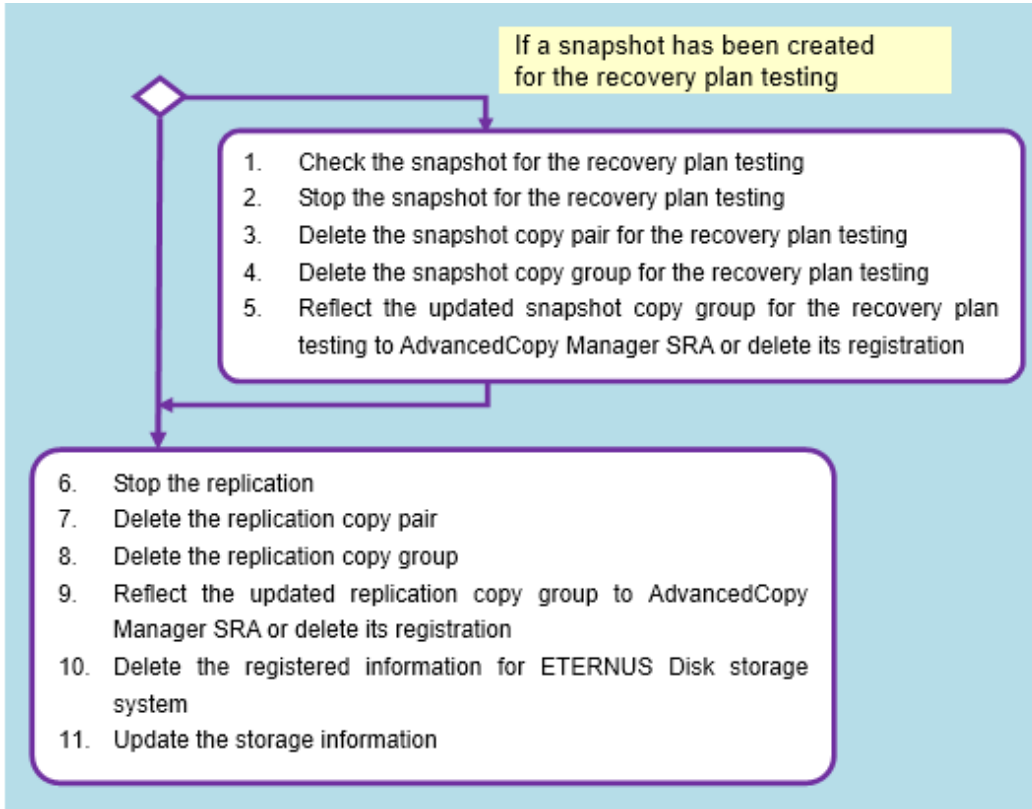
Yes : This operation is required.

No : This operation is not required.

NOTE: When using a consistency group, you must create snapshot copy groups and add snapshot copy pairs for the recovery plan testing.

3.2.2 Delete the registered ETERNUS Disk storage system, replication copy group/copy pair, and snapshot copy group/copy pair for the recovery plan testing

Perform the procedures shown in the figure below.



Operations	Purpose				
	Delete ETERNUS Disk storage system	Delete replication copy group	Delete replication copy pair	Delete snapshot copy group for recovery plan testing	Delete snapshot copy pair for recovery plan testing
3.2.2.1 Check snapshot for recovery plan testing	Yes	Yes	Yes	Yes	Yes
3.2.2.2 Stop snapshot for recovery plan testing	Yes	Yes	Yes	Yes	Yes
3.2.2.3 Delete snapshot copy pairs for recovery plan testing	Yes	Yes	Yes	No	Yes
3.2.2.4 Delete snapshot copy groups for recovery plan testing	Yes	Yes	Yes	Yes	No
3.2.2.5 Reflect the updated snapshot copy groups for recovery plan testing to AdvancedCopy Manager SRA or delete its registration	Yes	Yes	Yes	Yes	Yes

Operations	Purpose				
	Delete ETERNUS Disk storage system	Delete replication copy group	Delete replication copy pair	Delete snapshot copy group for recovery plan testing	Delete snapshot copy pair for recovery plan testing
3.2.2.6 Stop replication	Yes	Yes	Yes	No	No
3.2.2.7 Delete replication copy pairs	Yes	No	Yes	No	No
3.2.2.8 Delete replication copy group	Yes	Yes	No	No	No
3.2.2.9 Reflect updated replication copy group to AdvancedCopy Manager SRA or delete its registration	Yes	Yes	Yes	No	No
3.2.2.10 Delete registered information for ETERNUS Disk storage system	Yes	No	No	No	No
3.2.2.11 Update the storage information	Yes	Yes	Yes	No	No

Yes: This operation is required.

No: This operation is not required.

3.2.2.1 Check snapshot for recovery plan testing

Execute the following command on each SRM server at both the Production Site and the Recovery Site according to the snapshot type for recovery plan testing to check the snapshot status. For information on the command, refer to the "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".

- When using QuickOPC:

```
acopc query -g copy_group_name
```

- When using SnapOPC+:

```
acsnap query -g copy_group_name
```



Example

```
C:\>acopc query -g SNAPGRP1

Copy Group Name : SNAPGRP1
Copy Group Type : QuickOPC
Disk Array Name : E8000P (00ETERNUSDXH##ET84S20A####ID001324#####)

Source      <=> Target      SID  OPC Status      Copy Phase Copied Block
-----
E8000P/0x45 ==> E8000P/0x46 0xD3 "OPC Executing" "Tracking"      30719744

C:\>
```


3.2.2.2 Stop snapshot for recovery plan testing

If a snapshot session for recovery plan testing exists, execute the following command on the SRM server at the relevant site to stop the snapshot sessions. If you stop all the copy pair sessions that belong to the same copy group for recovery plan testing, you can omit the `-p` option. For information on the command, refer to the "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".

- When using QuickOPC:

```
acopc cancel -g copy_group_name [-p source_ETERNUS_name/  
logical_volume_number:destination_ETERNUS_name/  
logical_volume_number]
```

- When using SnapOPC+:

```
acsnap cancel -g copy_group_name [-p source_ETERNUS_name/  
logical_volume_number:destination_ETERNUS_name/  
logical_volume_number]
```

Example

```
C:\>acopc cancel -g SNAPGRP1  
  
E8000P/0x45:E8000P/0x46  
# DATE : 2011/08/17 18:32:54 - << Differential OPC Disconnected >>  
  
Succeeded : 1  
Failed : 0  
  
C:\>
```

3.2.2.3 Delete snapshot copy pairs for recovery plan testing

When deleting a snapshot copy pair for recovery plan testing, execute the following command on the SRM server at the relevant site. For information on the command, refer to the "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".

```
acpair remove -g copy_group_name -p source_ETERNUS_name/  
logical_volume_number:destination_ETERNUS_name/  
logical_volume_number
```

Example

```
C:\>acpair remove -g SNAPGRP1 -p E8000P/0x45:E8000P/0x46  
Successful completion.  
  
C:\>
```

3.2.2.4 Delete snapshot copy groups for recovery plan testing

When deleting a snapshot copy group for recovery plan testing, execute the following command on the SRM server at the relevant site. For information on the command, refer to the "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".

```
acgroup remove -g copy_group_name
```

Example

```
C:\>acgroup remove -g SNAPGRP1  
Successful completion.  
  
C:\>
```

3.2.2.5 Reflect the updated snapshot copy groups for recovery plan testing to AdvancedCopy Manager SRA or delete its registration

Reflect the updated snapshot copy groups for recovery plan testing as a consistency group or delete its registration and at the same time when you reflect the updated replication copy groups as a consistency group or delete its registration. Refer to "3.2.2.9 Reflect updated replication copy group to AdvancedCopy Manager SRA or delete its registration".

When deleting only a snapshot copy pair for recovery plan testing in a not consistency group, execute the following command on the SRM server at the relevant site. For information on the command, refer to "A.3.3 advsetgr change (Copy Control Module copy group update command)".

```
advsetgr change -sg copy_group_name
```

When deleting a snapshot copy group for recovery plan testing in a not consistency group or when deleting a snapshot copy pair for recovery plan testing in a not consistency group causes copy pairs to no longer exist in the copy group, execute the following command on the SRM server of the relevant site. For information on the command, refer to "A.3.4 advsetgr remove (Copy Control Module copy group deletion command)".

```
advsetgr remove -sg copy_group_name
```



Example

```
C:\>"C:\Program Files (x86)\VMware\VMware vCenter Site Recovery Manager\storage\sra
\FujitsuAdvancedCopyManager\advsetgr.exe" remove -sg SNAPGRP1
Successful completion.

C:\>
```

3.2.2.6 Stop replication

If you want to delete a replication copy group or a replication copy pair, execute the following command on the SRM server at the Production Site. For information on the command, refer to the "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".

```
acec cancel -g copy_group_name [-p source_ETERNUS_name/
logical_volume_number:destination_ETERNUS_name/logical_volume_number] -force [-r]
```



Example

```
C:\>acec cancel -g REPGRP1 -p E8000P/0x45:E8000R/0x4F -force

E8000P/0x45:E8000R/0x4F
# DATE : 2011/08/17 18:43:59 - << EC Disconnected >>

Succeeded : 1
Failed : 0

C:\>
```

3.2.2.7 Delete replication copy pairs

If you want to delete a replication copy pair, execute the following command on the SRM server at both the Production Site and the Recovery Site. For information on the command, refer to the "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".

```
acpair remove -g copy_group_name -p source_ETERNUS_name/
logical_volume_number:destination_ETERNUS_name/logical_volume_number
```

Example

```
C:\>acpair remove -g REPGRP1 -p E8000P/0x45:E8000R/0x4F
Successful completion.

C:\>
```

3.2.2.8 Delete replication copy group

If you want to delete a replication copy group, execute the following command on the SRM server at both the Production Site and the Recovery Site. For information on the command, refer to the "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".

```
acgroup remove -g copy_group_name
```

Example

```
C:\>acgroup remove -g REPGRP1
Successful completion.

C:\>
```

3.2.2.9 Reflect updated replication copy group to AdvancedCopy Manager SRA or delete its registration

When only deleting replication copy pairs in a consistency group, execute the following command on the SRM server at the Production Site and the Recovery Site. For information on the command, refer to "[A.3.3 advsetgr change \(Copy Control Module copy group update command\)](#)".

```
advsetgr change -cg copy_group_name
```

Performing this operation reflects updated snapshot copy groups for recovery plan testing in a consistency group at the same time.

If you want to delete only the replication copy pair in a non-consistency group, execute the following command on the SRM server at both the Production Site and the Recovery Site. For information on the command, refer to "[A.3.3 advsetgr change \(Copy Control Module copy group update command\)](#)".

```
advsetgr change -g copy_group_name
```

When deleting replication copy groups in a consistency group or if no copy pairs exist in the copy group after deleting replication copy pairs in the consistency group, execute the following command on the SRM server at the Production Site and the Recovery Site. For information on the command, refer to "[A.3.4 advsetgr remove \(Copy Control Module copy group deletion command\)](#)".

```
advsetgr remove -cg copy_group_name
```

This operation deletes all the snapshot copy groups for recovery plan testing in a consistency group at the same time.

If you want to delete a replication copy group in a not consistency group or if the last copy pair in a replication copy group in a not consistency group is deleted, execute the following command on the SRM server at both the Production Site and the Recovery. For information on the command, refer to "[A.3.4 advsetgr remove \(Copy Control Module copy group deletion command\)](#)".

```
advsetgr remove -g copy_group_name
```

Example

```
C:\>"C:\Program Files (x86)\VMware\VMware vCenter Site Recovery Manager\storage\sra
\FujitsuAdvancedCopyManager\advsetgr.exe" remove -g REPGRP1
Successful completion.
```

```
C:\>
```

3.2.2.10 Delete registered information for ETERNUS Disk storage system

If you want to delete the ETERNUS disk storage system registration information, execute the following command on the SRM server at both the Production Site and the Recovery Site. For information on the command, refer to the "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".

```
acarray remove -a ETERNUS_name
```



Example

```
C:\>acarray remove -a E8000P
Successful completion.

C:\>
```

3.2.2.11 Update the storage information

Update the storage information of VMware SRM. For details, refer to ["2.4 Register/Change/Delete ETERNUS Disk storage systems to VMware SRM"](#).

3.2.3 Change the replication attribute

When changing the replication attribute (transfer mode, Recovery mode, or Split mode), stop the replication and then start the replication with a new attribute. After that, reflect the updated replication copy group to AdvancedCopy Manager SRA.



See

- To stop the replication, refer to ["3.2.2.6 Stop replication"](#).
- To start the replication, refer to ["2.3.9 Start replication"](#).
- To reflect the updated replication copy group to AdvancedCopy Manager SRA, refer to ["3.2.2.9 Reflect updated replication copy group to AdvancedCopy Manager SRA or delete its registration"](#).

3.2.4 Change the attribute of snapshot copy group for recovery plan testing

When changing the attribute (QuickOPC or SnapOPC+) of a snapshot copy group for recovery plan testing, first delete the copy group. Then, specify a new attribute to create a copy group of the same name. After you add a copy pair, update the snapshot copy group for recovery plan testing to AdvancedCopy Manager SRA.



See

- To delete snapshot copy groups for recovery plan testing, refer to ["3.2.2.4 Delete snapshot copy groups for recovery plan testing"](#).
- To create snapshot copy groups for recovery plan testing, refer to ["2.3.5 Create snapshot copy groups for recovery plan testing"](#).
- To add snapshot copy groups for recovery plan testing, refer to ["2.3.6 Add snapshot copy pairs for recovery plan testing"](#).
- To reflect the updated snapshot copy group for recovery plan testing to AdvancedCopy Manager SRA refer to ["3.2.2.5 Reflect the updated snapshot copy groups for recovery plan testing to AdvancedCopy Manager SRA or delete its registration"](#). To reflect the updated snapshot copy groups for recovery plan testing in a consistency group, refer to ["3.2.2.9 Reflect updated replication copy group to AdvancedCopy Manager SRA or delete its registration"](#).

Note

- When using SnapOPC+, a Snap Data Volume (SDV) is required. In addition, it is recommended that you configure a Snap Data Pool (SDP) in case of an SDV capacity shortage.
- When using SnapOPC+ with any of the following ETERNUS Disk storage systems, caution is required for the ATS locking:
 - ETERNUS DX90 (all firmware versions)
 - ETERNUS DX90 S2 (firmware version V10L30 or earlier)
 - ETERNUS DX410/DX440 (all firmware versions)
 - ETERNUS DX410 S2/DX440 S2 (firmware version V10L30 or earlier)
 - ETERNUS DX8100/DX8400/DX8700 (all firmware versions)
 - ETERNUS DX8100 S2/DX8700 S2 (firmware version V10L30 or earlier)
 - ETERNUS4000 models 400 and 600 (all firmware versions)
 - ETERNUS8000 models 800, 1200 and 2200 (all firmware versions)

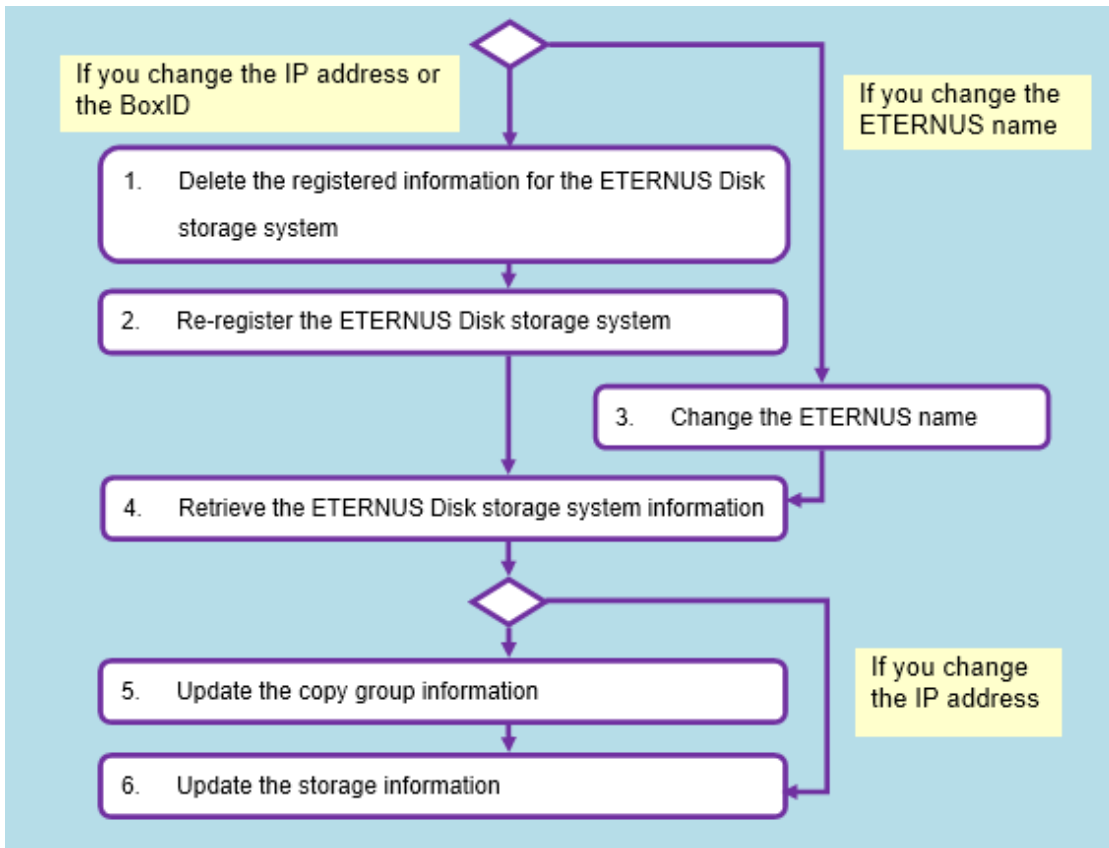
Since the above ETERNUS Disk storage systems do not support ATS locking for Snap Data Volumes (SDV), recovery plan testing may fail. To use SnapOPC+, disable ATS locking on the ESX server at the Recovery Site.

For more information, refer to the following documents:

- "vSphere Storage Guide" (ESXi 5.0, vCenter Server 5.0 or later)
 - "Fibre Channel SAN Configuration Guide" (ESX 4.1, ESXi 4.1, vCenter Server 4.1)
 - "iSCSI SAN Configuration Guide" (ESX 4.1, ESXi 4.1, vCenter Server 4.1)
-

3.2.5 Change the IP address, ETERNUS name, and Box ID of ETERNUS Disk storage system

Perform the procedures shown in the flowchart below.



Operations	Purpose		
	Change the IP address	Change the ETERNUS name	Change the Box ID
3.2.5.1 Delete registered information for ETERNUS Disk storage system	Yes	No	Yes
3.2.5.2 Re-register ETERNUS Disk storage system	Yes	No	Yes
3.2.5.3 Change the ETERNUS name	No	Yes	No
3.2.5.4 Retrieve ETERNUS Disk storage system information	Yes	Yes	Yes
3.2.5.5 Update copy group information	No	Yes	Yes
3.2.5.6 Update storage information	Yes	Yes	Yes

Yes: This operation is required.
 No: This operation is not required.

3.2.5.1 Delete registered information for ETERNUS Disk storage system

Execution of this procedure is required when you change the IP address or the Box ID of the ETERNUS disk storage system.

If you want to change the IP address, execute the following command on the SRM server at the Site in which the target ETERNUS disk storage system exists to delete the ETERNUS disk storage system registration information from the Copy Control Module.

If you want to change the Box ID, execute the following command on the SRM server at both the Production Site and the Recovery Site to delete the ETERNUS disk storage system registration information from the Copy Control Module.

For information on the command, refer to the "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".

```
acarray remove -a ETERNUS_name
```

Example

```
C:\>acarray remove -a E8000P
Successful completion.

C:\>
```

3.2.5.2 Re-register ETERNUS Disk storage system

Execution of this procedure is required when you change the IP address or Box ID of ETERNUS disk storage system.

If you want to change the IP address, execute the following command on the SRM server at the Site in which the target ETERNUS disk storage system exists to register the new IP address of ETERNUS disk storage system to the Copy Control Module. For information on the command, refer to the "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".

[If you use Copy command via SAN]

```
acarray add -a ETERNUS_name -ip new_ip_address -user user_name -password password -path access_volume
```

[If you use Copy command via LAN]

```
acarray add -a ETERNUS_name -ip new_ip_address -user user_name -password password -lan
```

Example

```
C:\>acarray add -a E8000P -ip 192.168.1.5 -user root -password root -path z:
Successful completion.

C:\>
```

If you want to change the Box ID, execute the following command on the SRM server at both the Production Site and the Recovery Site to register the new Box ID of ETERNUS disk storage system to the Copy Control Module. For information on the command, refer to the "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".

- Registration of the ETERNUS disk storage system at local site:

[If you use Copy command via SAN]

```
acarray add -a ETERNUS_name -ip IP_address -user user_name -password password -path access_volume
```

- [If you use Copy command via LAN]

```
acarray add -a ETERNUS_name -ip IP_address -user user_name -password password -lan
```

- Registration of the ETERNUS disk storage system at pair site:

```
acarray add -a ETERNUS_name -boxid BoxID -remote
```

Example

```
C:\>acarray add -a E8000R -boxid 00ETERNUSDXM##ET44S20A####KK000000010## -remote
Successful completion.

C:\>
```

3.2.5.3 Change the ETERNUS name

If you want to change the ETERNUS name, execute the following command on the SRM server at both the Production Site and the Recovery Site. For information on the command, refer to the "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".

- Changing the ETERNUS name at local site:

```
acarray change -a old_ETERNUS_name -new new_ETERNUS_name
```

- Changing the ETERNUS name at paired site:

```
acarray change -a old_ETERNUS_name -new new_ETERNUS_name -remote
```

Example

```
C:\>acarray change -a E4000 -new E4000P
Successful completion.

C:\>
```

3.2.5.4 Retrieve ETERNUS Disk storage system information

Execute the following command on the SRM server at both the Production Site and the Recovery Site to obtain configuration and logical volume information of the ETERNUS disk storage system connected to the server. For information on the command, refer to "[A.2.1 advgetdevs \(Command for collecting and displaying information on ETERNUS Disk storage systems\)](#)".

```
advgetdevs ETERNUS_ip_address
```

Point

The amount of time needed to complete this operation depends on the cabinet configuration of the ETERNUS disk storage system and the LU configuration (such as the number of LUNs, number of connection ports, and number of connected hosts). Expect between a few minutes and several tens of minutes under light load conditions.

Example

```
C:\>"C:\Program Files (x86)\VMware\VMware vCenter Site Recovery Manager\storage\sra
\FujitsuAdvancedCopyManager\advgetdevs.exe" 192.168.1.5
Serial No. = 001324
BoxID = 00ETERNUSDXH##ET84S20A####ID001324#####
        (3030455445524E5553445848232345543834533230412323232349443030313332342323232323)

LUNName          LUN              Blocks
-----
0000:6_243       6(0x0006)        65536000( 32000MB)
0001:6_243       18(0x0012)        49152( 24MB)

C:\>
```

3.2.5.5 Update copy group information

Execution of this procedure is required when you change the ETERNUS name or Box ID of ETERNUS disk storage system.

Execute the following command for all copy groups that are using the ETERNUS disk storage system in which the ETERNUS name or Box ID has been changed. For information on the command, refer to "[A.3.3 advsetgr change \(Copy Control Module copy group update command\)](#)".

- When using the replication copy group:

Execute the command on the SRM server at both the Production Site and the Recovery Site.

```
advsetgr change -g copy_group_name
```


- When using the copy group for recovery plan test

```
advsetgr change -sg copy_group_name
```



Example

```
C:\>"C:\Program Files (x86)\VMware\VMware vCenter Site Recovery Manager\storage\sra
\FujitsuAdvancedCopyManager\advsetgr.exe" change -g REPGRP1
Successful completion.
C:\>
```

3.2.5.6 Update storage information

Update the storage information of VMware SRM. For details, refer to "[2.4 Register/Change/Delete ETERNUS Disk storage systems to VMware SRM](#)".

3.2.6 Change the host affinity configuration, host definition, port parameter settings and LUN group definition in the ETERNUS Disk storage system connectivity definition

When changing the host affinity configuration, host definition, port parameter settings, and LUN group definition in the ETERNUS Disk storage system connectivity definition, perform the following steps for the recovery plan test using snapshots and replications for the devices in the associated LUN group:

- Snapshot for recovery plan testing
 1. Check the snapshot for recovery plan testing.
 2. Stop the snapshot for recovery plan testing.
 3. Obtain ETERNUS Disk storage system information.
 4. Reflect the updated copy group snapshot for recovery plan testing to AdvancedCopy Manager SRA.
 5. Update the storage information.
- Replication
 1. Stop replication.
 2. Obtain ETERNUS Disk storage system information.
 3. Reflect the update of replication copy group to AdvancedCopy Manager SRA.
 4. Update storage information.



See

- To check the snapshot for recovery plan testing, refer to "[3.2.2.1 Check snapshot for recovery plan testing](#)".
- To stop the snapshot for recovery plan testing, refer to "[3.2.2.2 Stop snapshot for recovery plan testing](#)".
- To obtain ETERNUS Disk storage system information, refer to "[3.2.5.4 Retrieve ETERNUS Disk storage system information](#)".
- To reflect the updated copy group of snapshot for recover plan testing to AdvancedCopy Manager SRA, refer to "[3.2.2.5 Reflect the updated snapshot copy groups for recovery plan testing to AdvancedCopy Manager SRA or delete its registration](#)".
- To update storage information, refer to "[3.2.2.11 Update the storage information](#)".
- To stop replication, refer to "[3.2.2.6 Stop replication](#)".

- To reflect the update of replication copy group to AdvancedCopy Manager SRA, refer to "[3.2.2.9 Reflect updated replication copy group to AdvancedCopy Manager SRA or delete its registration](#)".



Appendix A Command References

This appendix describes how to use the various commands available in AdvancedCopy Manager.

For Copy Control Module commands, refer to the "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".

A.1 Command Summary

The commands are classified as follows.

For the user account that can execute the commands, refer to "2.2 Configuring User Accounts".

ETERNUS Disk storage system information collection/display command

Table A.1 Command list

Function	Command	Explanation
A.2.1 advgetdevs (Command for collecting and displaying information on ETERNUS Disk storage systems)	advgetdevs	Collects information on ETERNUS Disk storage system specified by the IP address and displays a list of LUs.

Copy Control Module copy group management commands

The Copy Control Module copy groups registered in AdvancedCopy Manager SRA can be displayed. In addition, the Copy Control Module copy groups can be registered, updated, and deleted.

Function	Command	Explanation
A.3.1 advsetgr query (Copy Control Module copy group display command)	advsetgr query	Displays the Copy Control Module copy groups registered in AdvancedCopy Manager SRA.
A.3.2 advsetgr add (Copy Control Module copy group registration command)	advsetgr add	Registers a Copy Control Module copy group in AdvancedCopy Manager SRA.
A.3.3 advsetgr change (Copy Control Module copy group update command)	advsetgr change	Updates the settings of a Copy Control Module copy group registered in AdvancedCopy Manager SRA.
A.3.4 advsetgr remove (Copy Control Module copy group deletion command)	advsetgr remove	Removes a Copy Control Module copy group registered in AdvancedCopy Manager SRA.

A.2 ETERNUS Disk storage system information collection/display command

This section explains the command for collecting the information on the ETERNUS Disk storage system and displaying a list of LUs.

A.2.1 advgetdevs (Command for collecting and displaying information on ETERNUS Disk storage systems)

The following explains the advgetdevs command which collects information on the ETERNUS Disk storage system specified by IP address and display a list of LUs.

NAME

advgetdevs - Collects information on the ETERNUS Disk storage system specified by IP address and displays a list of LUs

SYNOPSIS

```
advgetdevs ipAddress
```

DESCRIPTION

This command collects information on ETERNUS Disk storage system specified by IP address and displays a list of LUs.

OPERANDS

ipAddress

IP address of the ETERNUS Disk storage system for retrieving the information.

EXIT STATUS

=0: Completed successfully

>0: Terminated abnormally

EXAMPLES

```
C:\> "C:\Program Files (x86)\VMware\VMware vCenter Site Recovery Manager\storage\sra
\FujitsuAdvancedCopyManager\advgetdevs.exe" 10.124.6.241
Serial No. = 000327
BoxID = 00E8000M900####E890S20A####GG000327#####
        (303045383030304D3930302323234538393053323041232323234747303030333237232323232323)
```

```
LUNName          LUN          Blocks
-----
0001:acmgroup    29(0x001D)   125829120(   61440MB)
0001:srm         30(0x001E)   8388608(    4096MB)
C:\>
```

Contents displayed

Field	Format	Description
Serial No.	-	Serial number of the target ETERNUS.
BoxID	<40-character_string> (<80-character_string_ASCII_code>)	ETERNUS Box ID. The character string and ASCII code specify the same content.
LUNName	<hexadecimal_Logical_volume_number>:<group_name>	<group_name> is the logical name automatically assigned to the target LU in the format below: <ul style="list-style-type: none"> - When the affinity function is used: <ul style="list-style-type: none"> - Affinity/LUN Group name - When LUN Mapping is used: <ul style="list-style-type: none"> - ETERNUS DX900 S5/DX8700 S3/ DX8900 S3/DX8900 S4 (FC connection): <ul style="list-style-type: none"> - CE#<w>CM#<x>CA#<y>FC#<z> <w>: CE number (0-9/A-B) <x>: CM number (0-1) <y>: CA number (0-3) <z>: Port number (0-3) - ETERNUS DX900 S5/DX8700 S3/ DX8900 S3/ DX8900 S4 (iSCSI connection): <ul style="list-style-type: none"> - CE#<w>CM#<x>CA#<y>iSCSI#<z> <w>: CE number (0-9/A-B) <x>: CM number (0-1)

Field	Format	Description
		<y>: CA number (0-3) <z>: Port number (0-3) - ETERNUS DX90 (FC connection): - CM#<x>FC#<y> <x>: CM number (0-1) <y>: Port number (0-3) - Systems other than the above (FC connection): - CM#<x>CA#<y>FC#<z> <x>: CM number (0-7) <y>: CA number (0-3) <z>: Port number (0-3) - Systems other than the above (iSCSI connection): - CM#<x>CA#<y>iSCSI#<z> <x>: CM number (0-7) <y>: CA number (0-3) <z>: Port number (0-3)
LUN	<decimal_LU_number> (<hexadecimal_LU_number>)	Logical volume number in decimal and hexadecimal formats.
Blocks	decimal_number	LU extent size and size. - Extent size: Block units - Size: MB units

NOTES

- The amount of time required to complete this operation depends on the cabinet configuration of the ETERNUS disk storage system and the LU configuration (such as the number of LUNs, number of connection ports, and number of connected hosts). Expect between a few minutes and several tens of minutes under light load conditions.
- If there is any change in ETERNUS Disk storage system cabinet information and LU information, it is required to re-obtain ETERNUS Disk storage system information with the advgetdevs command.
- Do not login to the target ETERNUS Disk storage system from ETERNUS Web GUI while the advgetdevs command is running.
- For LUN that is not registered to Host Affinity, the information cannot be obtained by the advgetdevs command.

A.3 Copy Control Module copy group management commands

This section describes the advsetgr command which manages and displays the Copy Control Module copy groups registered in AdvancedCopy Manager SRA. The advsetgr command can be used with various subcommand combinations.

A.3.1 advsetgr query (Copy Control Module copy group display command)

NAME

advsetgr query - Displays Copy Control Module copy groups

SYNOPSIS

```
advsetgr query [-detail]
```

DESCRIPTION

This command displays the Copy Control Module copy groups registered in AdvancedCopy Manager SRA.

OPTIONS

-detail

Specify this option to display detailed information for the copy pair registered in AdvancedCopy Manager SRA.

EXIT STATUS

=0: Completed successfully

>0: Terminated abnormally

EXAMPLES

- With the -detail option omitted

```
C:\>"C:\Program Files (x86)\VMware\VMware vCenter Site Recovery Manager\storage\sra
\FujitsuAdvancedCopyManager\advsetgr.exe" query
<REPLICATION_GROUP>
RECGRP1
RECGRP2
<TEST_SNAPSHOT_GROUP>
SNAPGRP1
<CONSISTENCY_REPLICATION_GROUP>
CONSISTENCYGRP1
<CONSISTENCY_TEST_SNAPSHOT_GROUP>
CONSISTENCYGRP1_snap
<BACKUP_SNAPSHOT_GROUP>

C:\>
```

The displayed contents are as follows:

Place	Description
<REPLICATION_GROUP> REPGRP1 REPGRP2	Displays the Copy Control Module copy groups that are registered in AdvancedCopy Manager SRA and used for replication.
<TEST_SNAPSHOT_GROUP> SNAPGRP1	Displays the Copy Control Module copy groups that are registered in AdvancedCopy Manager SRA, which are for snapshots used during the recovery plan test.
<CONSISTENCY_REPLICATION_GROUP> CONSISTENCYGRP1	Displays the Copy Control Module copy groups for replications that are registered in AdvancedCopy Manager SRA as a consistency group.
<CONSISTENCY_TEST_SNAPSHOT_GROUP> CONSISTENCYGRP1_snap	Displays the Copy Control Module copy groups for snapshots used in the recovery plan testing that correspond to the consistency group.
<BACKUP_SNAPSHOT_GROUP>	This display field is not used.

- With the -detail option

```
C:\>"C:\Program Files (x86)\VMware\VMware vCenter Site Recovery Manager\storage\sra
\FujitsuAdvancedCopyManager\advsetgr.exe" query -detail
<REPLICATION_PAIR>
RECGRP1,E8000P/0x45:E8000R/0x4F
RECGRP2,E8000P/0x49:E8000R/0x53
<TEST_SNAPSHOT_PAIR>
SNAPGRP1,E8000P/0x45:E8000P/0x46
<CONSISTENCY_GROUP_REPLICATION_PAIR>
CONSISTENCYGRP1,E8000P/0x3:E8000R/0x3
```

```

CONSISTENCYGRP1,E8000P/0x4:E8000R/0x4
CONSISTENCYGRP2,E8000P/0x5:E8000R/0x5
<CONSISTENCY_GROUP_TEST_SNAPSHOT_PAIR>
CONSISTENCYGRP1_snap,E8000P/0x3:E8000P/0x13
CONSISTENCYGRP1_snap,E8000P/0x4:E8000P/0x14
<BACKUP_SNAPSHOT_PAIR>

```

Warning: adv0412 No TEST_SNAPSHOT_PAIR corresponding to E8000P/0x49.

Warning: adv0412 No CONSISTENCY_GROUP_TEST_SNAPSHOT_PAIR corresponding to E8000P/0x05

C:\>

The displayed contents are as follows:

Place	Description
<pre> <REPLICATION_PAIR> RECGRP1,E8000P/0x45:E8000R/0x4F RECGRP2,E8000P/0x49:E8000R/0x53 </pre>	<p>Displays the information for Copy Control Module replication copy groups and copy pairs registered in AdvancedCopy Manager SRA in the following format:</p> <p>AAAA,BBBB/CCCC/DDDD/EEEE</p> <ul style="list-style-type: none"> - AAAA: Copy group name - BBBB: Copy source ETERNUS name - CCCC: Copy source logical volume number - DDDD: Copy destination ETERNUS name - EEEE: Copy destination logical volume number
<pre> <TEST_SNAPSHOT_PAIR> SNAPGRP1,E8000P/0x45:E8000P/0x46 </pre>	<p>Displays the information for Copy Control Module snapshot copy groups and copy pairs registered in AdvancedCopy Manager SRA, which are used for recovery plan testing, in the following format:</p> <p>AAAA,BBBB/CCCC/DDDD/EEEE</p> <ul style="list-style-type: none"> - AAAA: Copy group name - BBBB: Copy source ETERNUS name - CCCC: Copy source logical volume number - DDDD: Copy destination ETERNUS name - EEEE: Copy destination logical volume number
<pre> <CONSISTENCY_GROUP_REPLICATION_PAIR> CONSISTENCYGRP1,E8000P/0x3:E8000R/0x3 CONSISTENCYGRP1,E8000P/0x4:E8000R/0x4 CONSISTENCYGRP2,E8000P/0x5:E8000R/0x5 </pre>	<p>Displays the information for Copy Control Module copy groups and copy pairs for replication, which are registered in AdvancedCopy Manager SRA as a consistency group, in the following format:</p> <p>AAAA,BBBB/CCCC/DDDD/EEEE</p> <ul style="list-style-type: none"> - AAAA: Copy group name - BBBB: Copy source ETERNUS name - CCCC: Copy source logical volume number - DDDD: Copy destination ETERNUS name - EEEE: Copy destination logical volume number
<pre> <CONSISTENCY_GROUP_TEST_SNAPSHOT_PAIR> CONSISTENCYGRP1_snap,E8000P/0x3:E8000P/0x13 CONSISTENCYGRP1_snap,E8000P/0x4:E8000P/0x14 </pre>	<p>Displays the information for Copy Control Module copy groups and copy pairs for snapshot used at recovery plan testing, which are registered in AdvancedCopy Manager SRA</p>

Place	Description
	as a copy group corresponding to the consistency group, in the following format: AAAA,BBBB/CCCC/DDDD/EEEE - AAAA: Copy group name - BBBB: Copy source ETERNUS name - CCCC: Copy source logical volume number - DDDD: Copy destination ETERNUS name - EEEE: Copy destination logical volume number
<BACKUP_SNAPSHOT_PAIR>	This display field is not used.
Warning: adv0412 No TEST_SNAPSHOT_PAIR corresponding to E8000P/0x49 Warning: adv0412 No CONSISTENCY_GROUP_TEST_SNAPSHOT_PAIR corresponding to E8000P/0x05	Outputs a warning message if there is a warning for any registered copy pair.

A.3.2 advsetgr add (Copy Control Module copy group registration command)

NAME

advsetgr add - Registers Copy Control Module copy groups

SYNOPSIS

For consistency groups

```
advsetgr add -cg repgroup [-notest]
```

For non-consistency groups

```
advsetgr add {-g repgroup | -sg snapgroup}
```

DESCRIPTION

This command registers a Copy Control Module copy group in AdvancedCopy Manager SRA.

OPTIONS

-cg repgroup

Specify the copy group name for the replication to be registered as a consistency group.

Preparation of a replication copy group of the specified name and a snapshot copy group for the recovery plan testing with "_snap" added to the name is required.

-notest

Specify this option if you do not plan on conducting a recovery plan testing of the consistency group to be registered.

If this option is specified, preparation of a snapshot copy group for recovery plan testing with "_snap" added to the replication copy group name is not required.

-g repgroup

Specify the copy group name for the replication to be registered as a non-consistency group.

-sg snapgroup

Specify the copy group name for a snapshot using a recovery plan test.

EXIT STATUS

=0: Completed successfully
>0: Terminated abnormally

EXAMPLES

```
C:\>"C:\Program Files (x86)\VMware\VMware vCenter Site Recovery Manager\storage\sra
\FujitsuAdvancedCopyManager\advsetgr.exe" add -g REPGRP1
Successful completion.
```

```
C:\>
```

The displayed contents are as follows:

Place	Description
Successful completion.	The result of the command execution is displayed. If the command completed successfully, the aforementioned message is displayed. If terminated abnormally, an error message is displayed.

A.3.3 advsetgr change (Copy Control Module copy group update command)

NAME

advsetgr change - Updates Copy Control Module copy group settings

SYNOPSIS

For consistency groups

```
advsetgr change -cg repgroup [-notest]
```

For non-consistency groups

```
advsetgr change {-g repgroup | -sg snapgroup}
```

DESCRIPTION

This command updates the settings of a Copy Control Module copy group registered in AdvancedCopy Manager SRA.

This command must be executed when a copy pair is added or removed from a copy group to update the change in AdvancedCopy Manager SRA.

OPTIONS

-cg *repgroup*

Specify the replication copy group name as a consistency group.

Preparation of a replication copy group of the specified name and a snapshot copy group for the recovery plan testing with "_snap" added to the name is required.

-notest

Specify this option if you do not plan on conducting a recovery plan testing of the consistency group to be registered.

If this option is specified, preparation of a snapshot copy group for recovery plan testing with "_snap" added to the replication copy group name is not required.

-g *repgroup*

Specify the replication copy group name as a non-consistency group.

-sg *snapgroup*

Specify the copy group name for a snapshot using a recovery plan test.

EXIT STATUS

=0: Completed successfully
>0: Terminated abnormally

EXAMPLES

```
C:\>"C:\Program Files (x86)\VMware\VMware vCenter Site Recovery Manager\storage\sra
\FujitsuAdvancedCopyManager\advsetgr.exe" change -g REPGRP1
Successful completion.
```

```
C:\>
```

The displayed contents are as follows:

Place	Description
Successful completion.	The result of the command execution is displayed. If the command is completed successfully, this message is displayed. If the command terminates abnormally, an error message is displayed.

A.3.4 advsetgr remove (Copy Control Module copy group deletion command)

NAME

advsetgr remove - Removes a registered Copy Control Module copy group

SYNOPSIS

For consistency groups

```
advsetgr remove -cg repgroup
```

For non-consistency groups

```
advsetgr remove {-g repgroup | -sg snapgroup}
```

DESCRIPTION

This command removes previously registered Copy Control Module copy groups from AdvancedCopy Manager SRA.

OPTIONS

-cg *repgroup*

Specify the replication copy group name as a consistency group.

-g *repgroup*

Specify the replication copy group name as a non-consistency group.

-sg *snapgroup*

Specify the copy group name for a snapshot using a recovery plan test.

EXIT STATUS

=0: Completed successfully
>0: Terminated abnormally

EXAMPLES

```
C:\>"C:\Program Files (x86)\VMware\VMware vCenter Site Recovery Manager\storage\sra
\FujitsuAdvancedCopyManager\advsetgr.exe" remove -g REPGRP1
```

Successful completion.

C:\>

The displayed contents are as follows:

Place	Description
Successful completion.	The result of the command execution is displayed. If the command is completed successfully, this message is displayed. If the command terminates abnormally, an error message is displayed.

Appendix B Troubleshooting

This appendix describes the messages output during the use of AdvancedCopy Manager SRA and the actions to take when problems occur.

For the messages output by Copy Control Module, refer to the "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".

B.1 AdvancedCopy Manager SRA Messages

Message format

A message consists of a message ID and text.

The items shown in the following table are used to explain the messages:

Table B.1 Table: Message format

Item	Content
Message ID	ID used to identify the message
Text	The message that is output
Explanation	The reason and conditions for which the message was output
Parameters	The meaning of the parameters included in the message text
System action	The action taken by the system when this message is output
System administrator response	The action to be taken by the system administrator in response to this message

Message explanation

adv0001

Text	The ACM commands do not exist. Command name = [<i>CMDNAME</i>]
Explanation	AdvancedCopy Manager does not recognize this command.
Parameters	<i>CMDNAME</i> : Command name
System action	Discontinues processing.
System administrator response	Reinstall AdvancedCopy Manager.

adv0002

Text	The ACM command failed. Command name = [<i>CMDNAME</i>] Error code = [<i>CODE</i>]
Explanation	The command failed and returned the specified error.
Parameters	<i>CMDNAME</i> : Command name <i>CODE</i> : OS Error code
System action	Discontinues processing.
System administrator response	Check the error code and remove the cause of the error.

adv0010

Text	The command line arguments are incorrect
Explanation	An illegal parameter was passed from VMware SRM.
System action	Discontinues processing.
System administrator response	Collect the data required to solve the problem and contact Fujitsu Technical Support. For details, refer to "B.2 Data Files to Collect".

adv0011

Text	An unexpected error occurred
System action	Discontinues processing.
System administrator response	Collect the data required to solve the problem, and contact Fujitsu Technical Support. For details, refer to " B.2 Data Files to Collect ".

adv0012

Text	A memory allocation failed
Explanation	An operation to allocate an area has failed.
System action	Discontinues processing.
System administrator response	Investigate the memory usage status - increase the memory if there is a shortage or collect the data required to solve the problem and contact Fujitsu Technical Support (for details, refer to " B.2 Data Files to Collect ").

adv0013

Text	This command was unable to run due to insufficient permissions
Explanation	The user does not have permission to execute this command.
System action	Discontinues processing.
System administrator response	Make sure that the user belongs to the Administrators group.

adv0016

Text	The specified copy group was not found. copy group=[<i>GROUP</i>]
Explanation	The specified copy group is not registered in Copy Control Module.
Parameters	<i>GROUP</i> : Copy group name
System action	Discontinues processing.
System administrator response	Create a copy group by using Copy Control Module command (acgroup create). For information on the command, refer to the "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".

adv0017

Text	The specified disk array was not found. IP address=[<i>IP</i>]
Explanation	The specified ETERNUS Disk storage system is not registered in Copy Control Module.
Parameters	<i>IP</i> : IP address of ETERNUS Disk storage system
System action	Discontinues processing.
System administrator response	Register the ETERNUS Disk storage system by using the Copy Control Module command (acarray add). For information on the command, refer to the "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".

adv0019

Text	The registered copy groups do not exist.
Explanation	The registered copy groups do not exist.

System action	Discontinues processing.
System administrator response	Register a copy group by using the <code>advsetgr add</code> command. For information on this command, refer to " A.3.2 advsetgr add (Copy Control Module copy group registration command) ".

adv0020

Text	The specified copy group has an invalid copy type. copy type=[<i>TYPE</i>]
Explanation	The copy type of the specified copy group is invalid.
Parameters	<i>TYPE</i> : Copy type
System action	Discontinues processing.
System administrator response	Specify a copy group that has correct copy type and try again.

adv0021

Text	The disk array in the specified copy group does not have sufficient copy license. eternus name =[<i>NAME</i>]
Explanation	The ETERNUS Disk storage system used in the specified copy group does not have an appropriate copy license to execute this operation.
Parameters	<i>NAME</i> : ETERNUS name
System action	Discontinues processing.
System administrator response	Register the appropriate copy license and execute the command again.

adv0022

Text	The specified copy group is already registered. copy group=[<i>GROUP</i>]
Explanation	The specified copy group is already registered in AdvancedCopy Manager SRA. With or without a consistency group, copy groups of the same group name cannot be redundantly registered.
Parameters	<i>GROUP</i> : Copy group name
System action	Discontinues processing.
System administrator response	Specify the correct copy group and try again. Check the copy groups registered in AdvanceCopy Manager SRA with the <code>advsetgr query</code> command. For information on the command, refer to " A.3.1 advsetgr query (Copy Control Module copy group display command) ". Check the copy groups registered in Copy Control Module with the <code>acgroup list</code> command. For information on the command, refer to the "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".

adv0023

Text	The specified copy group is not registered. copy group=[<i>GROUP</i>]
Explanation	The specified copy group is not registered in AdvancedCopy Manager SRA. Alternatively, the specified copy group type (replication or snapshot) does not match the registered copy group type.
Parameters	<i>GROUP</i> : Copy group name
System action	Discontinues processing.
System administrator response	Check that the specified option is correct and then execute the command again.

adv0024

Text	The specified copy group does not have copy pair. copy group=[<i>GROUP</i>]
Explanation	Copy pairs are not registered in the specified copy group.
Parameters	<i>GROUP</i> : Copy group name
System action	Discontinues processing.
System administrator response	Register a copy pair by using the Copy Control Module command (acpair add). For information on the command, refer to the "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".

adv0400

Text	The contents in the ETERNUS information is incorrect
Explanation	The information in AdvancedCopy Manager SRA is incorrect.
System action	Discontinues processing.
System administrator response	Execute the advgetdevs command (for details, refer to " A.2.1 advgetdevs (Command for collecting and displaying information on ETERNUS Disk storage systems) ") and try again. If the error persists, collect the data required to solve the problem and contact Fujitsu Technical Support. For details, refer to " B.2 Data Files to Collect ".

adv0401

Text	The contents in the ETERNUS logical unit information is incorrect
Explanation	The information in AdvancedCopy Manager SRA is incorrect.
System action	Discontinues processing.
System administrator response	Execute the advgetdevs command (for details, refer to " A.2.1 advgetdevs (Command for collecting and displaying information on ETERNUS Disk storage systems) ") and try again. If the error persists, collect the data required to solve the problem and contact Fujitsu Technical Support. For details, refer to " B.2 Data Files to Collect ".

adv0402

Text	Failed to create the ETERNUS information
Explanation	The information could not be created with AdvancedCopy Manager SRA.
System action	Discontinues processing.
System administrator response	Check the access permission and the free disk space in <VMware_SRM_install_directory>\storage\sra\FujitsuAdvancedCopyManager\conf.

adv0403

Text	Failed to create the ETERNUS logical unit information
Explanation	The information could not be created with AdvancedCopy Manager SRA.
System action	Discontinues processing.

System administrator response	Check the access permission and the free disk space in <VMware_SRM_install_directory>\storage\sra\FujitsuAdvancedCopyManager \conf.
-------------------------------	---

adv0404

Text	Failed to connect to the ETERNUS
Explanation	An error occurred while attempting to communicate with the ETERNUS Disk storage system.
System action	Discontinues processing.
System administrator response	<ul style="list-style-type: none"> - Check that the ETERNUS Disk storage system is running - Check that the network settings of the ETERNUS Disk storage system are correct - Check that the IP address is correct by using the advgetdevs command (for details, refer to "A.2.1 advgetdevs (Command for collecting and displaying information on ETERNUS Disk storage systems)"). - Check whether other users are connected and processing operations in the ETERNUS Disk storage system.

adv0405

Text	The function cannot be used. function = [<i>FUNC</i>]
Explanation	The specified function is not supported.
Parameters	<i>FUNC</i> : Function name
System action	Discontinues processing.
System administrator response	Collect the data required to solve the problem and contact Fujitsu Technical Support. For details, refer to " B.2 Data Files to Collect ".

adv0407

Text	VMware Site Recovery Manager is not installed
System action	Discontinues processing.
System administrator response	Install VMware Site Recovery Manager.

adv0408

Text	The file for VMware Site Recovery Manager does not exist
Explanation	There are no files for VMware linkage.
System action	Discontinues processing.
System administrator response	<p>Check that the advgetdevs command has been performed in the ETERNUS Disk storage system for the specified IP address. For information on the command, refer to "A.2.1 advgetdevs (Command for collecting and displaying information on ETERNUS Disk storage systems)".</p> <p>Check that the Copy Control Module copy group has been registered in the AdvancedCopy Manager SRA with the advsetgr command. For information on the command, refer to "A.3 Copy Control Module copy group management commands".</p>

adv0409

Text	The command for VMware Site Recovery Manager failed. Command name = <i>[CMDNAME]</i>
Explanation	The VMware linkage command could not be executed.
Parameters	<i>CMDNAME</i> : Command name
System action	Discontinues processing.
System administrator response	Check if the command exists. If the command does not exist, reinstall Copy Control Module. If the command exists, collect the data required to solve the problem and contact Fujitsu Technical Support. For details, refer to " B.2 Data Files to Collect ".

adv0410

Text	ETERNUS SF AdvancedCopy Manager Copy Control Module is not installed.
Explanation	Copy Control Module is not installed.
System action	Discontinues processing.
System administrator response	Install Copy Control Module.

adv0411

Text	ETERNUS SF License Manager is not installed.
Explanation	License Manager is not installed.
System action	Discontinues processing.
System administrator response	Install License Manager, register the license, and try again.

adv0412

Text	No <i>[LABEL]</i> corresponding to <i>[DEVICE]</i> .
Explanation	There is a replication LU for which a snapshot LU for recovery plan testing is not specified.
Parameters	<i>LABEL</i> : One of the following strings used for displaying the type of unconfigured snapshot <ul style="list-style-type: none"> - <i>CONSISTENCY_GROUP_TEST_SNAPSHOT_PAIR</i>: Snapshot for the recovery plan testing that corresponds to a consistency group - <i>TEST_SNAPSHOT_PAIR</i>: Snapshot for recovery plan testing that corresponds to a group other than a consistency group <i>DEVICE</i> : Replication LU (ETERNUS name/Logical volume number) at the local site (site where the command is issued)
System action	Continues processing.
System administrator response	A snapshot pair for recovery plan testing, that corresponds to the registered replication copy pair is not registered. If recovery plan testing is performed for a replication copy pair, an error occurs. When performing a recovery plan testing, register its corresponding snapshot copy pair with the <i>advsetgr</i> command. For the procedure to register a snapshot LU for the recovery plan testing, refer to " 3.2.1 Add an ETERNUS Disk storage system, replication copy group/copy pair, and snapshot copy group/copy pair for recovery plan testing ".

adv0413

Text	The copy status of the device is invalid.
Explanation	The copy type/direction/status of the replication LU is not as expected in AdvancedCopy Manger SRA. Or, since the copy status of replication LU is not recovered after a certain period time with all the paths halted, the processing is stopped.
System action	Stops processing the relevant device.
System administrator response	Check the copy status of ETERNUS for the relevant device with the Copy Control Module command (acec query). Recover the copy session as required according to the status of the site.

adv0414

Text	The definition of the snapshot environment is invalid.
Explanation	The copy definition of the snapshot LU for the recovery plan testing is invalid.
System action	Discontinues processing for the relevant device.
System administrator response	- For recovery plan testing: Check if the snapshot LU for recovery plan testing is registered. Or, check that the copy type of the registered snapshot LU is quickOPC or snapOPC+.

adv0416

Text	The copy group was not found. copy group=[<i>GROUP</i>]
Explanation	The copy group name registered in AdvancedCopy Manager SRA is not registered in Copy Control Module. Or, the copy group information could not be obtained from Copy Control Module.
Parameters	<i>GROUP</i> : Copy group name
System action	Continues processing.
System administrator response	Check if the displayed copy group name is registered in Copy Control Module. If it is deleted, remove the copy group name from AdvancedCopy Manager SRA with the advsetgr remove command. For information on this command, refer to " A.3.4 advsetgr remove (Copy Control Module copy group deletion command) ".

adv0417

Text	The function cannot be used.
Explanation	An unsupported function was executed.
System action	Suspends processing.
System administrator response	Collect the data required to solve the problem and contact Fujitsu Technical Support. For details, refer to " B.2 Data Files to Collect ".

adv0418

Text	The consistency snapshot group is not found. Group name=[<i>GROUP</i>]
Explanation	When requesting to register or change a consistency group, the corresponding snapshot copy group for recovery plan testing does not exist.

Parameters	<i>GROUP</i> : Copy group name that does not exist
System action	Continues processing.
System administrator response	When conducting a recovery plan testing at the site where the consistency group was registered or changed, create snapshot Copy Control Module copy groups for the recovery plan testing with "_snap" added to the Copy Control Module copy group name as a consistency group, and try again. If a recovery plan testing is not being conducted, specify the -notest option when registering or changing the consistency group with the advsetgr command so that snapshot copy groups for the recovery plan testing are not registered or changed.

adv0419

Text	The configuration of consistency snapshot group is invalid. Group name=[<i>GROUP</i>]
Explanation	Cannot perform a registration or change processing because the content of the corresponding snapshot copy group (copy type or LU pair) is invalid when requesting a registration or change of the consistency group.
Parameters	<i>GROUP</i> : The content of the copy group name is invalid
System action	Suspends processing.
System administrator response	Check the content of the snapshot Copy Control Module copy groups for recovery plan testing, properly correct the definition of copy type and LU pair, and then register or change the consistency group again.

adv0420

Text	Duplicate device name error. Device name=[<i>DEVICE</i>]
Explanation	Devices making up a consistency group or a snap shot copy group for recovery plan testing that corresponds to the consistency group are already registered in the copy group. Or, the devices making up any group other than the consistency group are already registered in another consistency group or snapshot copy group for recovery plan testing that corresponds to the consistency group.
Parameters	<i>DEVICE</i> : Redundant device name
System action	Suspends processing.
System administrator response	Devices making up a consistency group and a snapshot copy group for recovery plan testing that corresponds to the consistency group cannot be registered to another group. Double check the devices that need to be registered or changed to recreate Copy Control Module groups so that the devices are not redundant.

adv0421

Text	The disk array in the specified copy group does not support consistency group. Eternus name=[<i>ETNAME</i>] Group name=[<i>GROUP</i>]
Explanation	Cannot perform a registration or change processing in AdvancedCopy Manager SRA because the devices making up a consistency group or snapshot copy group for recovery plan testing that corresponds to the consistency group cannot use the concurrent suspend function or the concurrent OPC function.
Parameters	<i>ETNAME</i> : Device that does not correspond to the concurrent suspend function or the concurrent OPC function <i>GROUP</i> : Group name which contains devices that do not correspond to the concurrent suspend function or the concurrent OPC function
System action	Suspends processing.

System administrator response	By using devices that support the concurrent suspend function and the concurrent OPC function as devices that make up a consistency group and a snapshot copy group for recovery plan testing that corresponds to the consistency group, redesign the Copy Control Module copy group to re-execute a registration or change processing.
-------------------------------	---

adv0422

Text	There is unmatched between SRA configuration and CCM configuration. Group name=[<i>GROUP</i>]
Explanation	The consistency group processing failed because an inconsistency was detected between the registered content in AdvancedCopy Manager SRA and the registered Copy Control Module copy groups while processing a consistency group or a snapshot copy group for the recovery plan testing that corresponds to the consistency group.
Parameters	<i>GROUP</i> : Consistency group name or snapshot copy group name for recovery plan testing that corresponds to the consistency group
System action	Suspends processing.
System administrator response	Check the content of the Copy Control Module copy group registered as a consistency group or a snapshot copy group for recovery plan testing that corresponds to the consistency group and, if necessary, re-create and re-register the Copy Control Module copy group with the change subcommand of the advsetgr command. After that, update the storage information for VMware SRM and re-execute a failover or recovery plan testing.

adv0423

Text	The copy status of consistency group device pair is invalid. Group name = [<i>GROUP</i>] Device pair = [<i>PAIR</i>]
Explanation	The consistency group processing failed because the copy status of the device pairs making up a consistency group is invalid. "Copy status is invalid" indicates the following: <ul style="list-style-type: none"> - Includes a device pair whose copy direction is invalid is included. - Copy phase shows that the session is not in an equivalent state. - Device pair whose copy status is "REC not in progress" is included. - Recovery plan testing is already in progress.
Parameters	<i>GROUP</i> : Consistency group name <i>PAIR</i> : <ETERNUS name>/<Logical volume number> ,<Copy destination ETERNUS name>/<Copy destination logical volume number> (Pair information defined to a Copy Control Module copy group. If any device pair cannot be identified, "---- ,----" is output.)
System action	Suspends processing.
System administrator response	Check the copy status of the device pairs making up a consistency group to cancel invalid copy states, properly perform a replication, and then re-execute failover or recovery plan testing.

adv0424

Text	Data inconsistency might have occurred between the devices in the consistency group during the failover process. Group name=[<i>GROUP</i>]
Explanation	A data inconsistency may have occurred between LUs making up a consistency group during the failover processing.

Parameters	<i>GROUP</i> : Consistency group name
System action	Continues processing.
System administrator response	The failover was forcibly suspended because a copy error was detected during the failover. This may have caused a data inconsistency to occur between the LUs making up a consistency group. For migration failovers, properly start a replication for all the devices of the consistency group and then re-execute a failover.

B.2 Data Files to Collect

If a problem occurs, collect the following data and contact Fujitsu Technical Support:

Type	Data
Log files	<VMware_SRM_instal_directory>\storage\sra\FujitsuAdvancedCopyManager\conf
	<VMware_SRM_install_directory>\storage\sra\FujitsuAdvancedCopyManager\log
VMware log files	Data collected with the SRM log collector. For information on the SRM log collector, refer to the VMware SRM Administration Guide.
Information required for Copy Control Module troubleshooting	A file collected by executing the troubleshooting data collection command. For information on the command, refer to the "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".

Appendix C Version Upgrade Procedure

This chapter describes the procedure to upgrade the AdvancedCopy Manager SRA version at the same time as the VMware SRM version.

C.1 Version Upgrade from AdvancedCopy Manager SRA 1.4 or earlier

C.1.1 Prior confirmation

Confirm the following defined contents before upgrading the version since the contents of the definition file of AdvancedCopy Manager SRA 1.4 (formerly: ETERNUS SF AdvancedCopy Manager Adapter for VMware SRM) or earlier must be set in Copy Control Module after the version upgrade. Perform this confirmation at both the Production Site and the Recovery Site.

- Access path definition file (<VMware_SRM_install_directory>\scripts\SAN\FujitsuAdvancedCopyManager\conf\accesspath.dat)
 - Box ID for ETERNUS Disk storage system
 - Drive letter to access ETERNUS Disk storage system (access path)
- Group definition file (<VMware_SRM_install_directory>\scripts\SAN\FujitsuAdvancedCopyManager\conf\SRMGRP)
 - Replication copy source/copy destination information (Box ID and LU number of ETERNUS Disk storage system)



Note

- The configured copy session for the replication continues to be available even for AdvancedCopy Manager SRA 2.4. You do not have to stop the copy session for version upgrades.
- For installation work during a version upgrade, make sure VMware SRM is stopped.

C.1.2 Setting up the ETERNUS Disk storage system

For a datastore LU in the ESX server, new settings are not required for the ETERNUS Disk storage system.

With AdvancedCopy Manager SRA 2.4, when performing a recovery plan testing, a snapshot LU for the recovery plan testing that corresponds to the datastore LU is required at the Recovery Site. It is also required at the Production Site when you perform a recovery plan testing during a failback. If a snapshot LU for the recovery plan testing is not set up at the Recovery Site, create it to connect to the ESX server. In addition, create a snapshot LU as necessary for the recovery plan testing to the Production Site as well as connecting to the ESX server.



See

For details on the required number and size of LU, refer to Step 3 (LU allocation) in the "2.1.1 Preparation".

C.1.3 Uninstalling earlier versions of AdvancedCopy Manager SRA

Uninstall the existing earlier version of AdvancedCopy Manager SRA.

C.1.4 Upgrading the VMware SRM version

Upgrade the VMware SRM version. For the VMware SRM version upgrade procedure, refer to the VMware SRM Administration Guide. In addition, if the required software for VMware SRM also requires a version upgrade, upgrade them at the same time.

C.1.5 Installing/upgrading the version of Copy Control Module

If Copy Control Module 15.2 or later is not installed on the SRM server at both the Production Site and the Recovery Site, install or upgrade it.



For the Copy Control Module installation/version upgrade procedure, refer to the "ETERNUS SF AdvancedCopy Manager Installation and Setup Guide" or "ETERNUS SF AdvancedCopy Manager Migration Guide".

C.1.6 Installing AdvancedCopy Manager SRA 2.4

Install AdvancedCopy Manager SRA 2.4.



For the installation procedure, refer to "[2.1 Installation](#)".

C.1.7 Registering the ETERNUS Disk storage system

Register the system to Copy Control Module on each SRM server at both the Production Site and the Recovery Site.

Define the name for ETERNUS Disk storage system to be replicated and execute the following Copy Control Module command on each SRM server at both the Production Site and the Recovery Site to register the system at the local site and the remote site as a replication source and replication destination.

To register ETERNUS Disk storage system in Copy Control Module, use the contents of the pre-extracted access definition file for the Box ID and access volume (access path). For information on the command, refer to the "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".

- Registering the ETERNUS Disk storage system at the local site
[If you use Copy command via SAN]

```
acarray add -a ETERNUS_name -ip IP_address -user user_name -password password -path access_volume
```

- [If you use Copy command via LAN]

```
acarray add -a ETERNUS_name -ip IP_address -user user_name -password password -lan
```

- Registering ETERNUS Disk storage system at the remote site

```
acarray add -a ETERNUS_name -boxid BoxID -remote
```

For command execution examples, refer to "[2.3.1 Register ETERNUS Disk storage system](#)".

C.1.8 Obtaining the ETERNUS Disk storage system information

Execute the following command on each SRM server at both the Production Site and the Recovery Site to obtain the enclosure / LU information of the ETERNUS Disk storage system connected to the server.

Even if the command has been executed before the version upgrade, the command should be re-executed for every ETERNUS Disk storage system at both sites.

For information on the command, refer to "[A.2.1 advgetdevs \(Command for collecting and displaying information on ETERNUS Disk storage systems\)](#)".

```
advgetdevs IP_address_of_ETERNUS_Disk_storage_system
```

For command execution examples, refer to "[2.3.2 Retrieve ETERNUS Disk storage system information](#)".

C.1.9 Creating a copy group

Execute the following command on each SRM server at both the Production Site and the Recovery Site to create a copy group for the replication and a snapshot copy group for the recovery plan testing. (If the recovery plan testing is not performed during the failback, you do not need to create a snapshot copy group for the recovery plan testing at the Production Site.)

For information on the command, refer to the "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".

- Creating a replication copy group

```
acgroup create -g replication_copy_group_name -type REC -a ETERNUS_name -remote remote_ETERNUS_name
```

- Creating a snapshot copy group for recovery plan testing

```
acgroup create -g snapshot_copy_group_name_for_recovery_plan_testing -type [QuickOPC|SnapOPCP] -a ETERNUS_name
```

For command execution example, refer to "[2.3.3 Create replication copy groups](#)" and "[2.3.5 Create snapshot copy groups for recovery plan testing](#)".

C.1.10 Adding a copy pair

Execute the following command on each SRM server at both the Production Site and the Recovery Site to register all the LU pair information in the Copy Control Modules at both sites for replication and recovery plan testing to the copy groups.

The logical volume number used when registering a replication pair to Copy Control Module corresponds to the pair information (SRC-LU, DST-LU) in the pre-extracted group definition file. Define all pair information to their respective copy groups.

For information on the command, refer to the "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".

- Registering an LU pair for replication

```
acpair add -g replication_copy_group_name -p source_ETERNUS_name/  
logical_volume_number:destination_ETERNUS_name/logical_volume_number
```

- Registering a snapshot LU pair for recovery plan testing

```
acpair add -g snapshot_copy_group_name_for_recovery_plan_testing -p source_ETERNUS_name/  
logical_volume_number:destination_ETERNUS_name/logical_volume_number
```

For command execution example, refer to "[2.3.4 Add replication copy pairs](#)" and "[2.3.6 Add snapshot copy pairs for recovery plan testing](#)".

C.1.11 Registering the copy group in AdvancedCopy Manager SRA

For the copy group created in "[C.1.9 Creating a copy group](#)", execute the following command on each SRM server at both the Production Site and the Recovery Site to register it in AdvancedCopy Manager SRA. For information on the command, refer to "[A.3.2 advsetgr add \(Copy Control Module copy group registration command\)](#)".

- Registering a copy group for replication

```
advsetgr add -g replication_copy_group_name
```

- Registering a snapshot copy group for recovery plan testing

```
advsetgr add -sg snapshot_copy_group_name_for_recovery_plan_testing
```

For command execution example, refer to the "[2.3.7 Registration of replication copy groups into AdvancedCopy Manager SRA](#)" and "[2.3.8 Register snapshot copy groups for recovery plan testing into AdvancedCopy Manager SRA](#)".

C.1.12 Checking the replication

Execute the following command on each SRM server at both the Production Site and the Recovery Site to check if a copy session for a replication is configured even after upgrading the version of AdvancedCopy Manager SRA.

For information on the command, refer to the "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".

```
acec query -g replication_copy_group_name
```

For command execution example, refer to "2.3.10 Wait for replication completion".

If a copy session for the replication is not specified even though a LU pair is properly set up, execute the following command on the SRM server at the Production Site to start the replication. For information on the command, refer to the "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".

```
acec start -g replication_copy_group_name -p source_ETERNUS_name/  
logical_volume_number:destination_ETERNUS_name/logical_volume_number -transfer { sync | consist }
```

For command execution example, refer to "2.3.9 Start replication".

C.1.13 Waiting for the replication to complete

Wait for the replication to complete.

Execute the following command on the SRM server at the Production Site to display the replication status and wait for the replication to reach the equivalence maintained status (paired). For information on the command, refer to the "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".

```
acec query -g replication_copy_group_name
```

For command execution example, refer to "2.3.10 Wait for replication completion".

C.2 Version Upgrade from AdvancedCopy Manager SRA 1.5

C.2.1 Prior confirmation

The definition information in Copy Control Module is available even after version upgrades. However, the copy group name registered in AdvancedCopy Manager SRA should be confirmed before upgrading the version of AdvancedCopy Manager SRA because it needs to be reset after the version upgrade.

Execute the following advsetgr query command for the SRM server at the Recovery Site to confirm the registered copy group name for the replication and the snapshot copy group name for the recovery plan testing.

```
C:\>"C:\Program Files\VMware\VMware Site Recovery Manager\scripts\SAN\FujitsuAdvancedCopyManager  
\advsetgr.exe" query  
<REPLICATION_GROUP>  
REPGRP1  
REPGRP2  
<TEST_SNAPSHOT_GROUP>  
SNAPGRP1  
SNAPGRP2  
C:\>
```



Note

- The configured copy session for the replication is available even for AdvancedCopy Manager SRA 2.4. You do not have to stop the copy session for the version upgrade.
- For installation work during a version upgrade, make sure VMware SRM is stopped.

C.2.2 Setting up the ETERNUS Disk storage system

For a datastore LU of the ESX server, new settings are not required for the ETERNUS Disk storage system.

With AdvancedCopy Manager SRA 2.4, a snapshot LU for recovery plan testing that corresponds to the datastore LU is required at the Recovery Site. In addition, it is also required at the Production Site when you perform a recovery plan testing during the failback. If no

snapshot is set for recovery plan testing at the Recovery Site, create a snapshot LU for recovery plan testing to connect to the ESX server. In addition, when you perform a recovery plan testing during the failback, if no snapshot is set up for recovery plan testing at the Production Site, create a snapshot LU for recovery plan testing at the Production Site to connect to the ESX server.



For details on the required number and size of LU, refer to Step 3 (LU allocation) in the "[2.1.1 Preparation](#)".

C.2.3 Uninstalling earlier versions of AdvancedCopy Manager SRA

The definition information in Copy Control Module is available even after a version upgrade. However, the copy group names registered in AdvancedCopy Manager SRA should be confirmed before upgrading the version of AdvancedCopy Manager SRA because it needs to be reset after the version upgrade.

C.2.4 Upgrading the version of VMware SRM

Upgrade the version of VMware SRM. As for the required software for VMware SRM, if version upgrade is also required for it, do it at the same time. For the VMware SRM version upgrade procedure, refer to the VMware SRM Administration Guide.

C.2.5 Installing AdvancedCopy Manager SRA 2.4

Install AdvancedCopy Manager SRA 2.4.



For the installation procedure, refer to "[2.1 Installation](#)".

C.2.6 Obtaining the ETERNUS Disk storage system information

Execute the following command on each SRM server at both the Production Site and the Recovery Site to obtain the enclosure / LU information of the ETERNUS Disk storage system connected to each SRM server at both sites. Even if the command was executed before the version upgrade, it is required to re-execute the command for every ETERNUS Disk storage system at both sites.

For information on the command, refer to "[A.2.1 advgetdevs \(Command for collecting and displaying information on ETERNUS Disk storage systems\)](#)".

```
advgetdevs IP_address_of_ETERNUS_Disk_storage_system
```

For command execution example, refer to "[2.3.2 Retrieve ETERNUS Disk storage system information](#)".

C.2.7 Creating a copy group for recovery plan testing

Create a copy group for the recovery plan testing at the Recovery Site since the snapshot for the recovery plan testing that was optional for AdvancedCopy Manager SRA 1.5 (former name: AdvancedCopy Manager Adapter) is required. If a snapshot copy group for recovery plan testing exists at the Recovery Site, you can use it as is.

In addition, if you perform recovery plan testing during a failback, create a copy group for recovery plan testing at the Production Site, as well.

Execute the following command on the SRM server at the site where you create a copy group for recovery plan testing and create a copy group in Copy Control Module. For information on the command, refer to the "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".

```
acgroup create -g snapshot_copy_group_name_for_recovery_plan_testing -type [QuickOPC|SnapOPCP] -a ETERNUS_name
```

For command execution example, refer to "[2.3.5 Create snapshot copy groups for recovery plan testing](#)".

C.2.8 Adding a copy pair for recovery plan testing

If a new snapshot copy group for recovery plan testing has been created in "C.2.7 Creating a copy group for recovery plan testing", add an LU pair to the copy group. If a snapshot copy pair for recovery plan testing exists, a new copy pair does not need to be added. For information on the command, refer to the "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".

```
acpair add -g snapshot_copy_group_name_for_recovery_plan_testing -p source_ETERNUS_name/  
logical_volume_number:destination_ETERNUS_name/destination_logical_volume_number
```

For command execution example, refer to "2.3.6 Add snapshot copy pairs for recovery plan testing".

C.2.9 Registering the copy group in AdvancedCopy Manager SRA

For the created copy group, execute the following command on each SRM server at both the Production Site and the Recovery sites to register it in AdvancedCopy Manager SRA. The copy group names to be registered are the copy group names registered in and extracted from the pre-upgrade AdvancedCopy Manager SRA and the snapshot copy group name for recovery plan testing created in "C.2.7 Creating a copy group for recovery plan testing". For information on the command, refer to "A.3.2 advsetgr add (Copy Control Module copy group registration command)".

In addition, even if any copy group name is registered in pre-upgrade AdvancedCopy Manager SRA, all the copy group names should be re-registered into AdvancedCopy Manager SRA.

- Registering a copy group name for replication

```
advsetgr add -g replication_copy_group_name
```

- Registering a snapshot copy group name for recovery plan testing

```
advsetgr add -sg snapshot_copy_group_name_for_recovery_plan_testing
```

For command execution example, refer to the "2.3.7 Registration of replication copy groups into AdvancedCopy Manager SRA" and "2.3.8 Register snapshot copy groups for recovery plan testing into AdvancedCopy Manager SRA".

C.2.10 Checking the replication

Execute the following command on each SRM server at both the Production Site and the Recovery Site to check if a copy session for a replication is configured even after upgrading the AdvancedCopy Manager SRA version. For information on the command, refer to the "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".

```
acec query -g replication_copy_group_name
```

Example

```
C:\>acec query -g REPGRP1  
  
Copy Group Name      : REPGRP1  
Copy Group Type      : REC  
Disk Array Name      : E8000R (00ETERNUSDXM##ET44S20A####KK000000010##)  
Remote Disk Array Name : E8000P (00ETERNUSDXH##ET84S20A####ID001324#####)  
  
Source      <=> Target      SID(RSID)  EC Status      Copy Phase Copied Block Rcv  Split Xfer  
-----  
E8000P/0x45 ==> E8000R/0x4F 0xB4(0xA8) "EC Executing" "Paired"          30720000 auto ---- consist  
  
C:\>
```

If a copy session for the replication is not configured though a replication copy pair is properly set, execute the following command on the SRM server at the Production Site to start the replication. For information on the command, refer to the "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".

```
acec start -g replication_copy_group_name -p source_ETERNUS_name/  
logical_volume_number:destination_ETERNUS_name/logical_volume_number -transfer { sync | consist }
```

For command execution example, refer to ["2.3.9 Start replication"](#).

In addition, before starting the replication, cancel the snapshot copy sessions for the recovery plan testing that are executed for a replication LU used as the copy destination.

C.2.11 Wait for replication completion

Wait for the completion of the replication processing.

Execute the following command on the SRM server at the Production Site to check the replication status and wait until the replication status changes to "Paired". For information on the command, refer to the "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".

```
acec query -g replication_copy_group_name
```

For command execution example, refer to ["2.3.10 Wait for replication completion"](#).

C.3 Version Upgrade from AdvancedCopy Manager SRA 2.0 or later

The definition information in Copy Control Module and the copy group registered in AdvancedCopy Manager SRA are available even after a version upgrade. They do not need to be reset after the version upgrade.

Uninstall the earlier version of AdvancedCopy Manager SRA and install AdvancedCopy Manager SRA 2.4.



See

.....
For the installation procedure, refer to ["2.1 Installation"](#).
.....



Note

-
- The configured copy session for the replication is available even for AdvancedCopy Manager SRA 2.4. You do not have to stop the copy session for version upgrades.
 - For installation work during a version upgrade, make sure VMware SRM is stopped.
-