

ETERNUS SF

AdvancedCopy Manager SRA

Version 2.6

User's Guide

Windows(64)

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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

- "FUJITSU Storage" is described as "Fujitsu Storage".
- Each individual model name of ETERNUS Disk storage system is listed with "FUJITSU Storage" or "Fujitsu Storage" omitted from it.
- Windows operating system names are abbreviated as follows.

Product Name	Notation	
Microsoft(R) Windows Server(R) 2022 Standard Microsoft(R) Windows Server(R) 2022 Datacenter	Microsoft Windows Server 2022	Windows
Microsoft(R) Windows Server(R) 2019 Standard Microsoft(R) Windows Server(R) 2019 Datacenter	Microsoft Windows Server 2019	
Microsoft(R) Windows Server(R) 2016 Standard Microsoft(R) Windows Server(R) 2016 Datacenter	Microsoft Windows Server 2016	
Microsoft(R) Windows Server(R) 2012 R2 Standard Microsoft(R) Windows Server(R) 2012 R2 Datacenter	Microsoft Windows Server 2012 R2	
Microsoft(R) Windows Server(R) 2012 Standard Microsoft(R) Windows Server(R) 2012 Datacenter	Microsoft Windows Server 2012	

- Software names are abbreviated as follows.

Formal Name	Abbreviation
VMware(R) vCenter Site Recovery Manager(TM)	VMware SRM or VMware Site Recovery Manager
Fujitsu Storage ETERNUS SF AdvancedCopy Manager	AdvancedCopy Manager
AdvancedCopy Manager Copy Control Module	Copy Control Module

- Manual names are abbreviated as follows.

Formal Name	Abbreviation
Fujitsu Storage ETERNUS SF AdvancedCopy Manager V16.x Operation Guide for Copy Control Module	ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module
Fujitsu Storage ETERNUS SF Express V16.x / Storage Cruiser V16.x / AdvancedCopy Manager V16.x Installation and Setup Guide	ETERNUS SF AdvancedCopy Manager Installation and Setup Guide
Fujitsu Storage ETERNUS SF Express V16.x / Storage Cruiser V16.x / AdvancedCopy Manager V16.x Migration Guide	ETERNUS SF AdvancedCopy Manager Migration Guide

- 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".

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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 "2.4 Replication Settings".

Figure 1.1 During normal operation

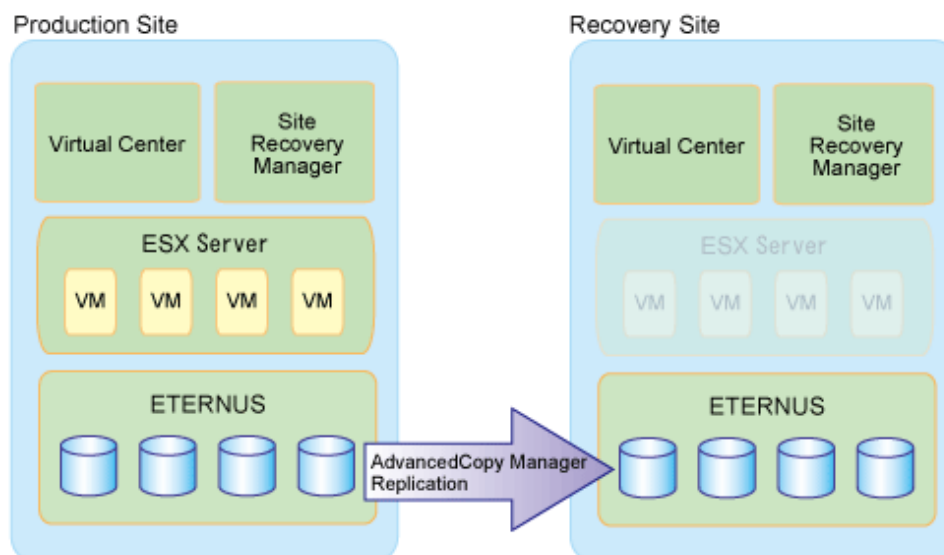


Figure 1.2 Operation during a disaster

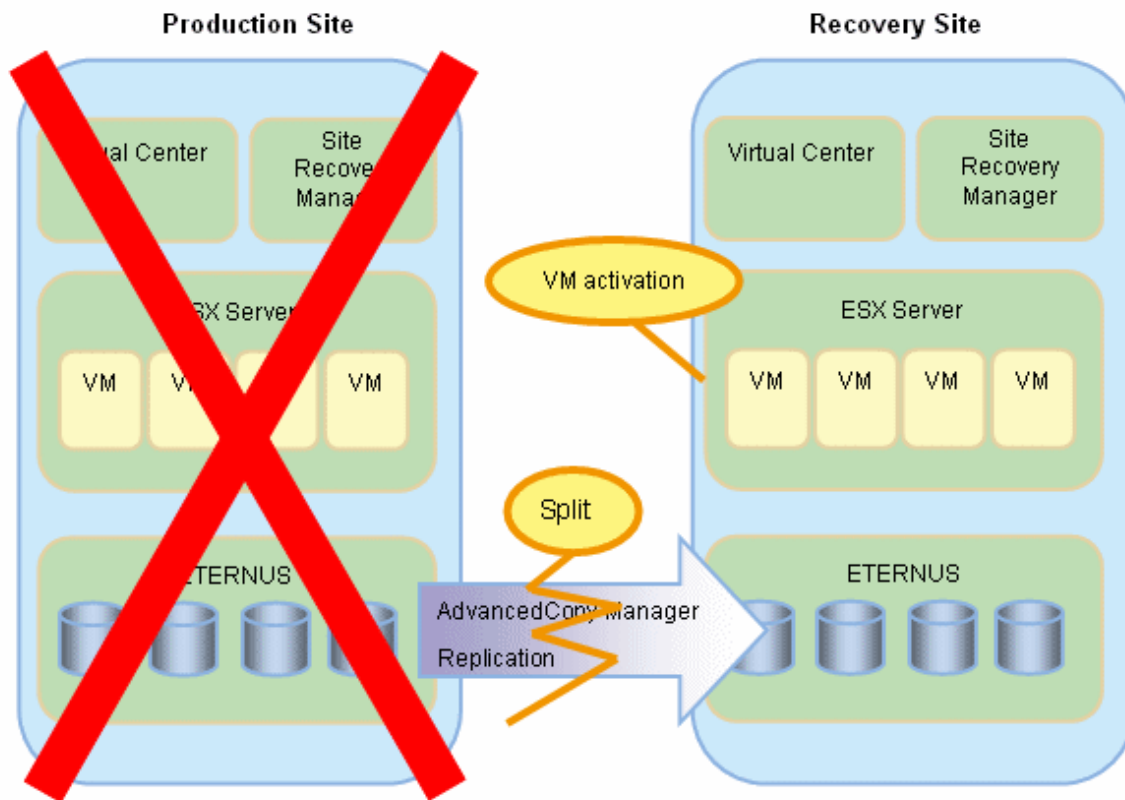
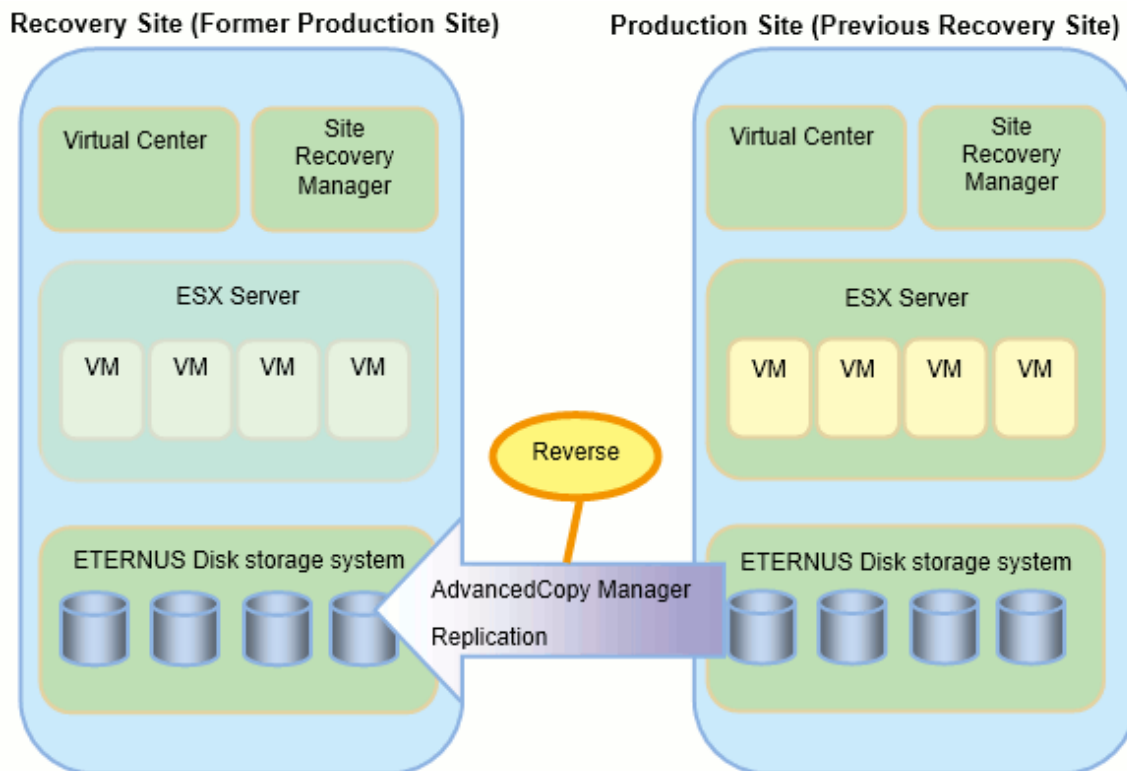


Figure 1.3 Failback operation



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.

Point

- 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

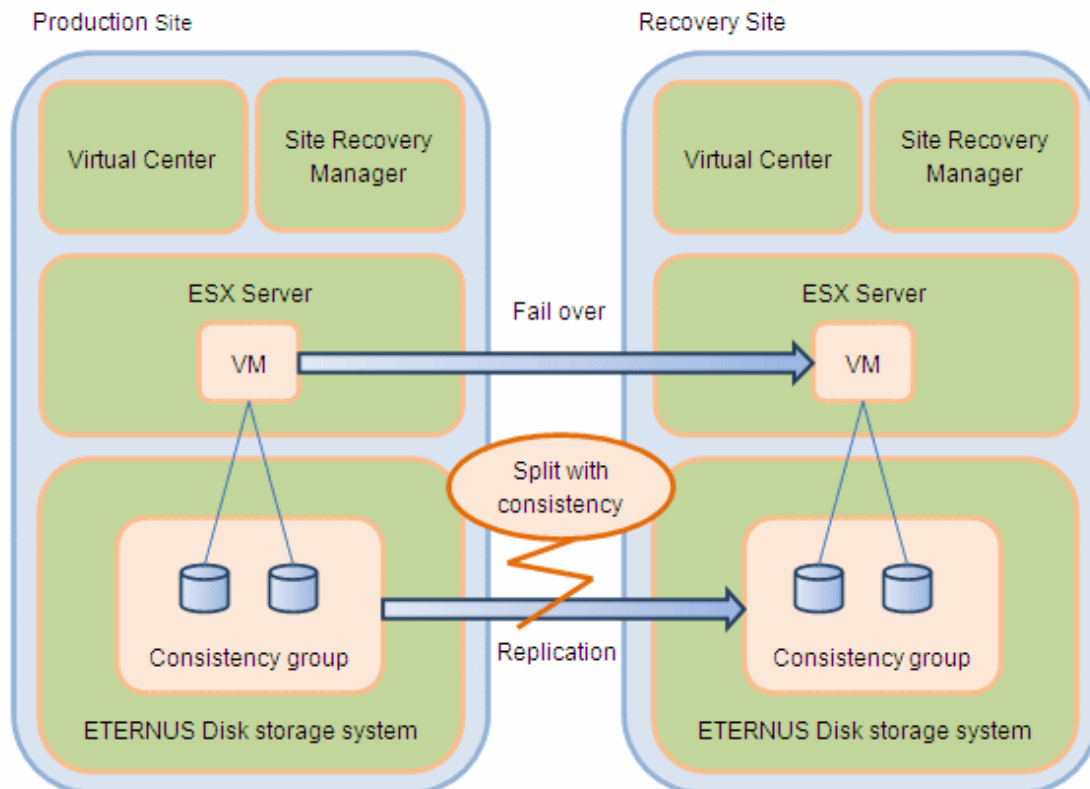
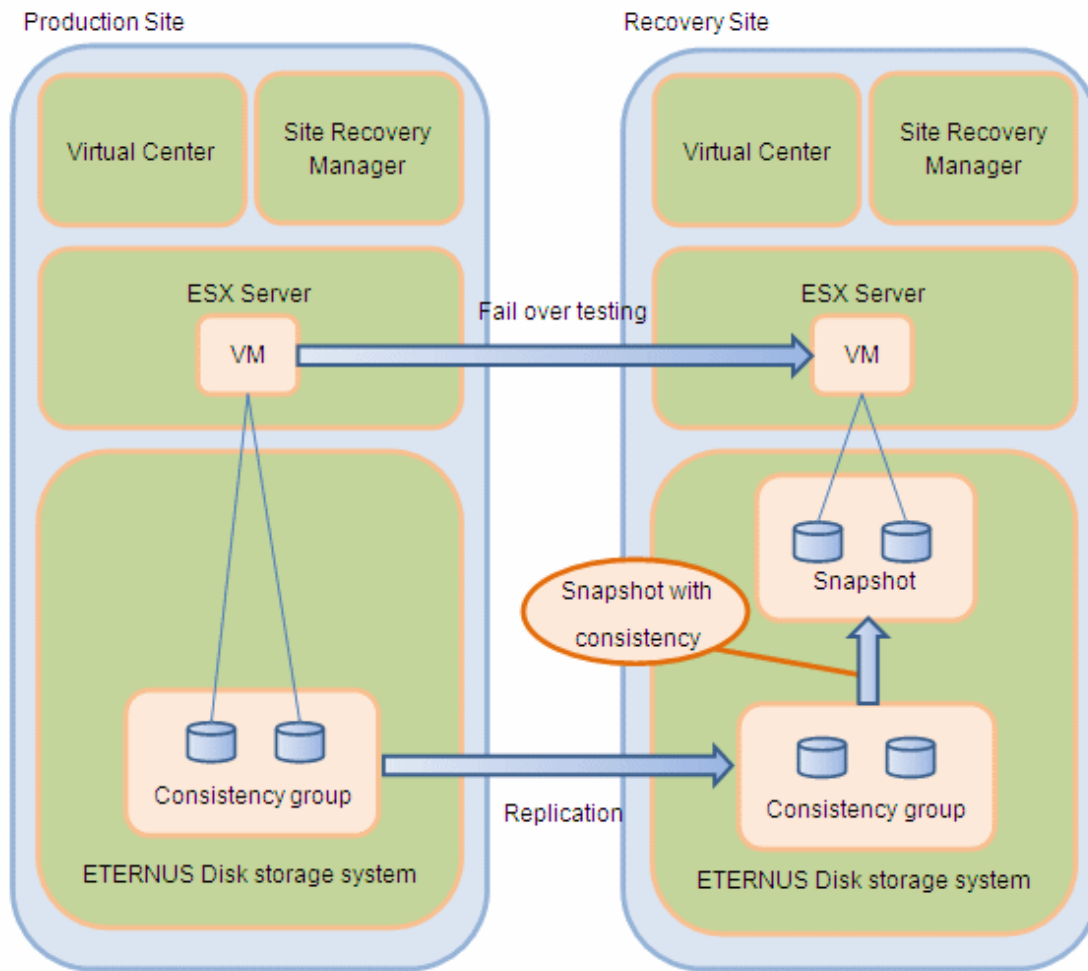


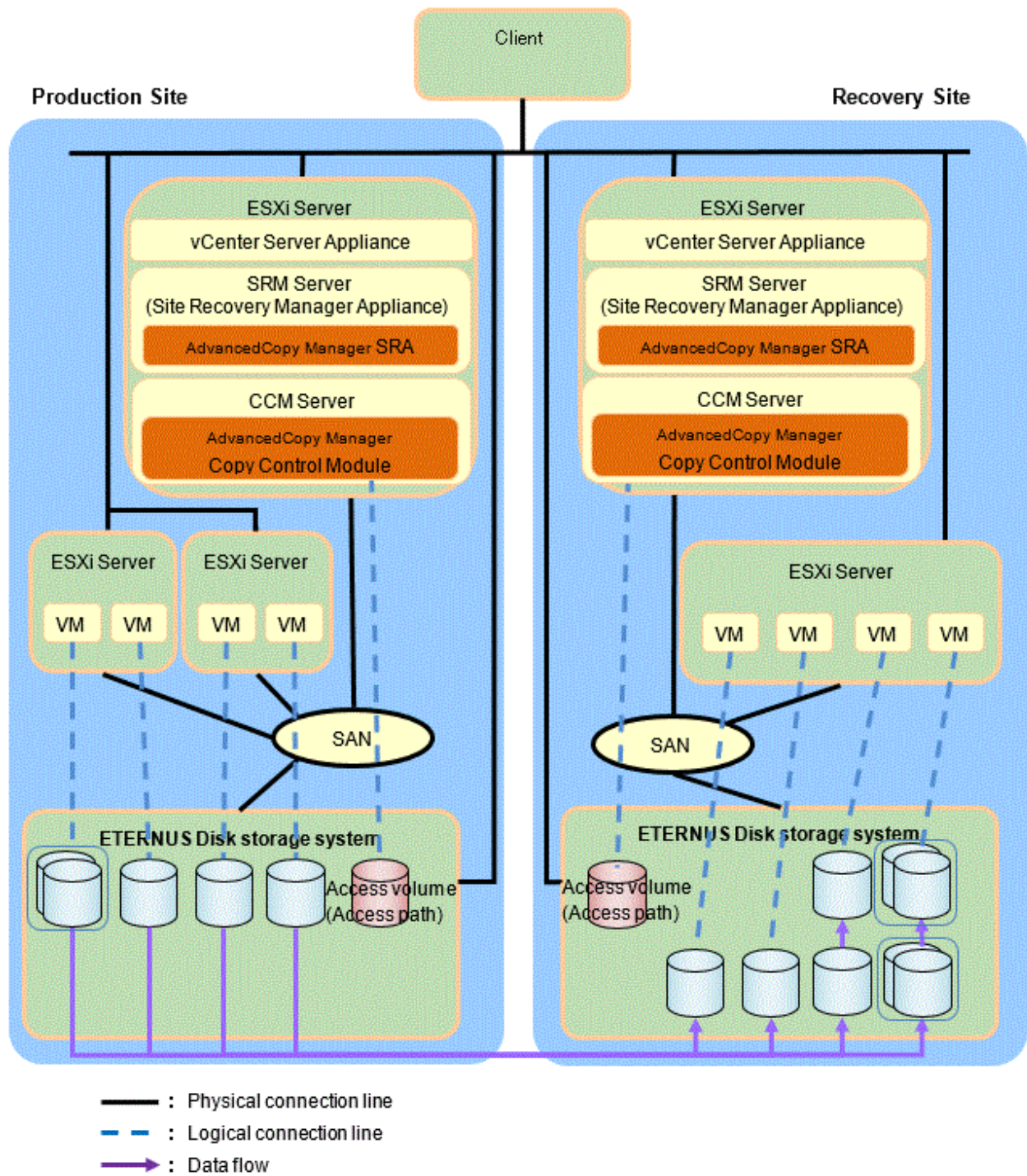
Figure 1.5 Testing the recovery plan for the consistency group



1.2 System Configuration

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

Figure 1.6 Example configuration for AdvancedCopy Manager SRA



The explanations of each server are as follows.

Server type	Description
SRM server	An appliance of VMware Site Recovery Manager. AdvancedCopy Manager SRA is installed in this server.
CCM server	This server communicates with AdvancedCopy Manager SRA of the SRM server to operate the ETERNUS Disk storage system. The Copy Control Module is installed in this server.



Note

- 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 ETERNUS DX410 S2, DX440 S2 ETERNUS DX8100 S2 ETERNUS DX8700 S2

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.



.....

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

1.3.2.1 SRM Server

Refer to the compatibility information published by VMware ("VMware Compatibility Guide") for the supported VMware SRM version.

1.3.2.2 CCM Server

Operating Systems

Confirm that Windows is the system environment where the AdvancedCopy Manager is installed.



.....

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 shows the required software.

- AdvancedCopy Manager V16.3 or later
- OpenSSH 0.0.1.0 or later



.....

Only IPv4 is the version of the IP address that can be used by the CCM Server. IPv6 is not available.

.....

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 2.5 or earlier, refer to "[C.1 Version Upgrade from AdvancedCopy Manager SRA 2.5 or earlier](#)".

1. "[2.1 Configuring the CCM Server](#)"
2. "[2.2 LU allocation](#)"
3. "[2.3 Installing and Configuring AdvancedCopy Manager SRA](#)"
4. "[2.4 Replication Settings](#)"
5. "[2.5 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 Configuring the CCM Server

To use the AdvancedCopy Manager SRA function, configure the CCM server.

1. Copy Control Module confirmation.

Check whether the Copy Control Module has been installed in the server that communicates with AdvancedCopy Manager SRA and operates the ETERNUS Disk storage system. If it has not been installed, refer to "ETERNUS SF AdvancedCopy Manager Installation and Setup Guide" and install the module.

2. ETERNUS Disk storage system connection.

To operate the ETERNUS Disk storage system using the CCM server from the Production Site and the Recovery Site, configure the network environment. 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 CCM 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. OpenSSH installation.

If OpenSSH has not been installed in the CCM server, perform the following procedure.

- When the CCM server OS is Windows Server 2022 or Windows Server 2019

Follow the procedure provided by Microsoft in the following URL.

https://docs.microsoft.com/en-us/windows-server/administration/openssh/openssh_install_firstuse

- When the CCM server OS is Windows Server 2016, Windows Server 2012 R2, or Windows Server 2012

Follow the following procedure.

- a. Access the following URL to download the "OpenSSH-Win64.zip" file.

<https://github.com/PowerShell/Win32-OpenSSH/releases>

- b. Extract the downloaded zip file to a folder in the CCM server.
- c. Start PowerShell with administrator privileges and move to the folder extracted in Step b.
- d. Execute "install-sshd.ps1" to install OpenSSH.
- e. Start the OpenSSH SSH Server service. After that, change the startup setting to "Automatic".
- f. If a firewall is configured between the SRM server and the CCM server, allow the following port number to pass through the firewall.

Port Number/Protocol	Communication Start Direction
22/tcp	From SRM server to CCM server

4. User account confirmation.

Check the user account that is used by AdvancedCopy Manager SRA to log in with OpenSSH.

To allow AdvancedCopy Manager SRA to use the Copy Control Module command, the user account must be a built-in Administrator account or a user account that belongs to the Administrators group.



Information

If an account other than the above is used, an error occurs when the Copy Control Module command is executed. Note that it may take several tens of minutes until the error occurs.

2.2 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.



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.

2.3 Installing and Configuring AdvancedCopy Manager SRA

Install and configure AdvancedCopy Manager SRA.

2.3.1 Installing AdvancedCopy Manager SRA

Upload "FUJITSU_ETERNUS_SF_AdvancedCopy_Manager_SRA2.6.tar.gz" to the SRM server.

For the upload method, follow the procedure provided by VMware.

2.3.2 Registering the CCM Server

Execute the "advsetenv" command in the SRM server in both the Production Site and the Recovery Site, and register the user account checked in "User account confirmation" under "2.1 Configuring the CCM Server" to AdvancedCopy Manager SRA.

```
advsetenv -ip ipAddress -user userName -password password
```

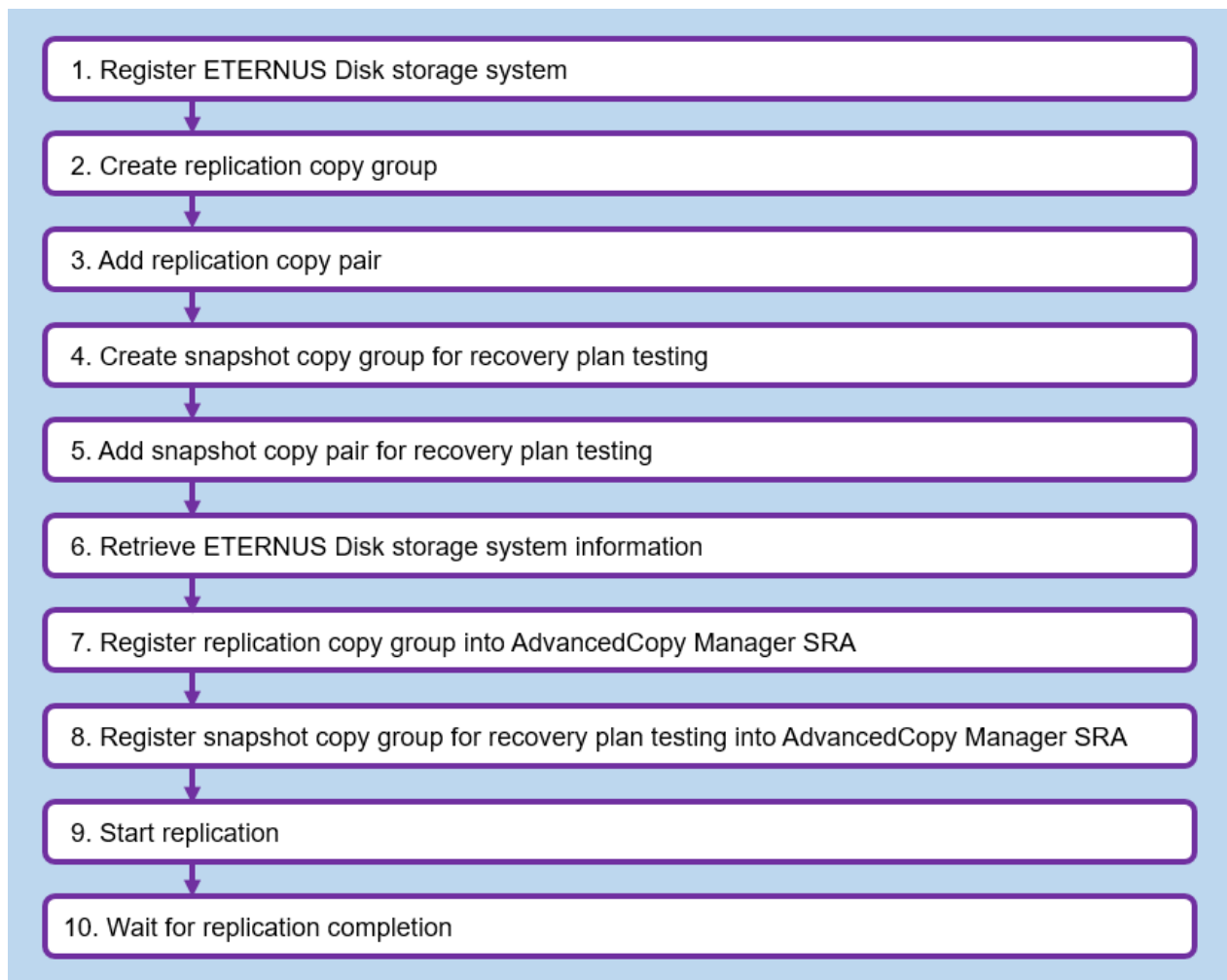


Example

```
# docker exec 296c10219650 /srm/sra/advsetenv -ip 192.0.2.10 -user ***** -password *****
Successful completion.
#
```

2.4 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.

2.4.1 Register ETERNUS Disk storage system

The ETERNUS Disk storage system used for replication must first be registered to Copy Control Module on the CCM 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 CCM 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 CCM server at each site, register it with the same ETERNUS name.



Example

- Execution example at the Production Site

```
C:\>acarray add -a E8000P -ip 192.0.2.30 -user ***** -password ***** -path E:  
Successful completion.  
  
C:\>  
C:\>acarray add -a E8000R -boxid 00ETERNUSDXM##ET44S20A####KK0000000010## -remote  
Successful completion.  
  
C:\>
```

2.4.2 Create replication copy groups

Define the replication copy group name and execute the following command to create the copy group on the CCM 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.

2.4.3 Add replication copy pairs

Execute the following command on the CCM 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

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 groups

```
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:\>
```

2.4.4 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

- Execution example for consistency groups

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

C:\>
```

- Execution example for non-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 S2 (firmware version V10L30 or earlier)
 - ETERNUS DX410 S2/DX440 S2 (firmware version V10L30 or earlier)
 - ETERNUS DX8100 S2/DX8700 S2 (firmware version V10L30 or earlier)

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)

2.4.5 Add snapshot copy pairs for recovery plan testing

Execute the following command on the CCM 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 failback, 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

- Execution 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:\>
```

- Execution example for non-consistency groups

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

C:\>
```

2.4.6 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.4.1 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.



- ```
docker exec 296c10219650 /srm/sra/advgetdevs 192.0.2.30
Serial No. = 001324
BoxID = 00ETERNUSDXH##ET84S20A####ID001324#####
 (3030455445524E555344584823234554383453323041232323234944303031333234232323232323)

LUNName LUN Blocks

0000:2_12 6(0x0006) 65536000(3200MB)
0001:2_12 18(0x0012) 49152(24MB)
#
```

- ```
# docker exec 1af6b63f8fc1 /srm/sra/advgetdevs 192.0.2.40
Serial No. = 0000000010
BoxID = 00ETERNUSDXM##ET44S20A####KK0000000010##
        (3030455445524E555344584D23234554343453323041232323234B4B303030303030303031302323)

LUNName                                LUN                                Blocks
-----
0002:2_22                             0(0x0000)                          47448064(    23168MB)
0003:2_22                             1(0x0001)                          47448064(    23168MB)
#
```



2.4.7 Registration of replication copy groups into AdvancedCopy Manager SRA

For information on the command, refer to "[A.5.2 advsetgr add \(Copy Control Module copy group registration command\)](#)".

- ```
advsetgr add -cg copy_group_name
```

- ```
advsetgr add -g copy_group_name
```



- ```
docker exec 296c10219650 /srm/sra/advsetgr add -g REPGRP1
Successful completion.
#
```

- Execution example at the Recovery Site

```
docker exec 1af6b63f8fc1 /srm/sra/advsetgr add -g REPGRP1
Successful completion.
#
```

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 information on the command, refer to "[A.5.3 advsetgr change \(Copy Control Module copy group update command\)](#)".

- For consistency groups:

```
advsetgr change -cg copy_group_name
```

- For non-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.

## 2.4.8 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.5.2 advsetgr add \(Copy Control Module copy group registration command\)](#)".

```
advsetgr add -sg copy_group_name
```



### Example

```
docker exec 296c10219650 /srm/sra/advsetgr add -sg SNAPGRP1
Successful completion.
#
```

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.

For information on the command, refer to "[A.5.3 advsetgr change \(Copy Control Module copy group update command\)](#)".

```
advsetgr change -sg copy_group_name
```

## 2.4.9 Start replication

To start replication, execute the following command in the CCM 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}
```



**P** 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 (accc suspend -force) and Resume (accc resume) operations are performed even after the blocked copy route status is resolved.



## Example

```
C:\>acec start -g REPGRPl -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=3030455445524e555344584d23234554343453323041232323234b4b303030303030303031302323/Olu=45/
Adr_high=0/Adr_low=0

Succeeded : 1
Failed : 0

C:\>
```

#### 2.4.10 Wait for replication completion

Wait for the completion of the replication processing.

Execute the following command on the CCM 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".

```
accec 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:\>
```

## 2.5 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:

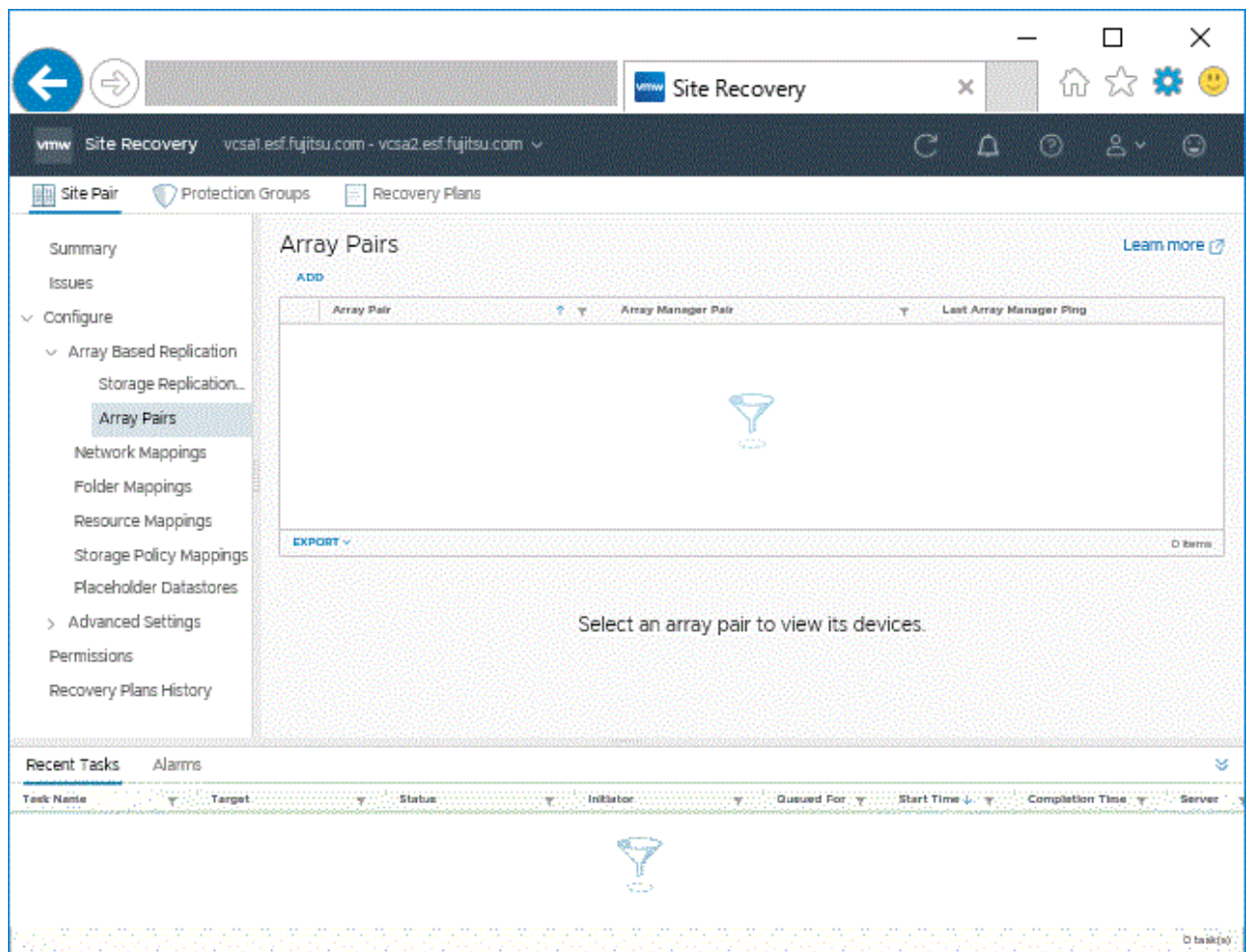
- For the procedure using vSphere Client

Refer to "2.5.1 Procedure for vSphere 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.

### 2.5.1 Procedure for vSphere Client

1. On the vSphere Client Home page, click the **Site Recovery** icon.
2. Click **OPEN Site Recovery**.
3. Click **VIEW DETAILS** in the Site Recovery screen.
4. Select **Array Pairs** to open the Array Pairs screen.

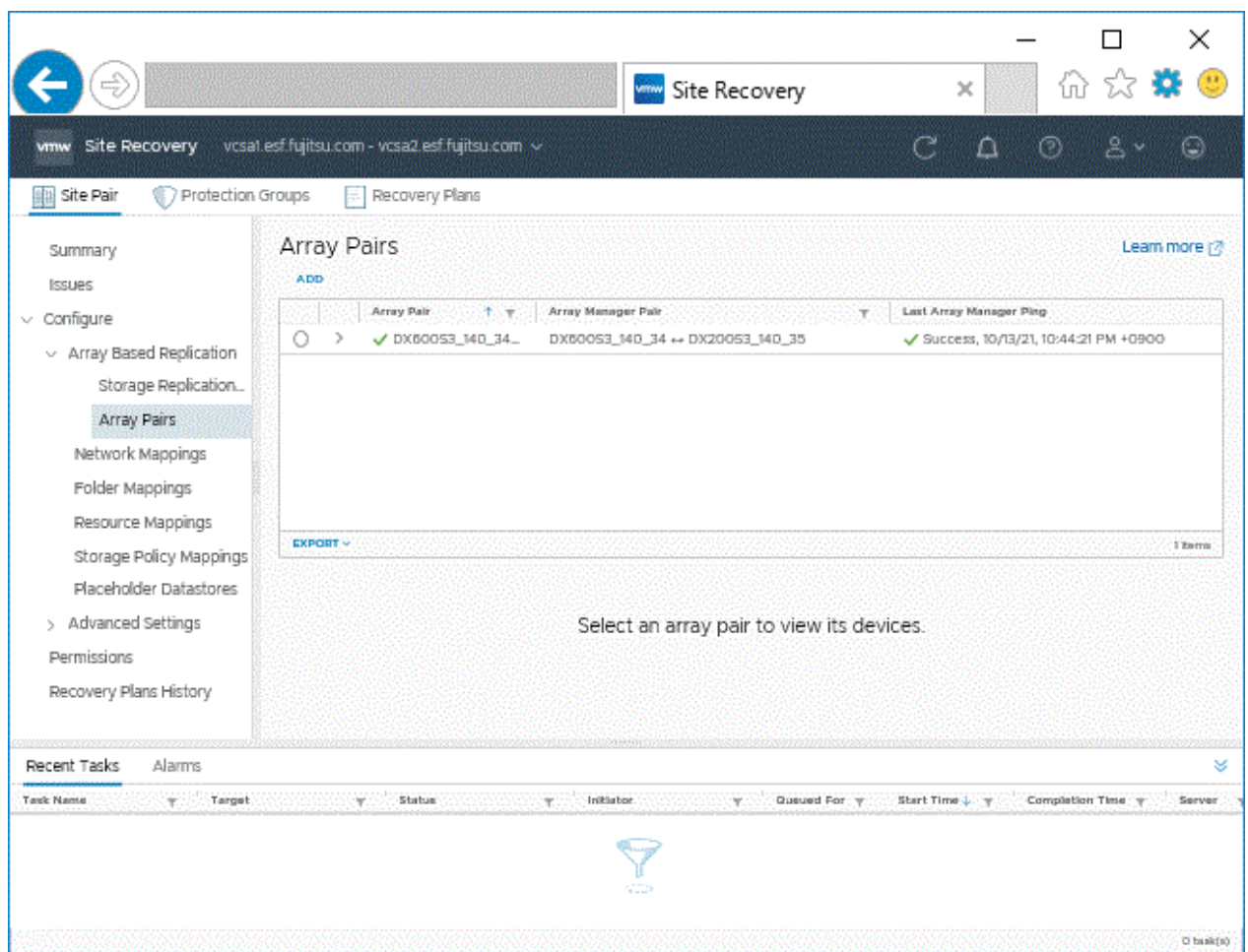


- When adding an ETERNUS Disk storage system

1. Click **ADD** in the Array Pairs screen.
2. In the **Storage replication adapter** page, select "ETERNUS SF AdvancedCopy Manager SRA" and then click **NEXT**.



3. In the **Local array manager** page, perform the following operations and then 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. In the **Remote array manager** page, perform the following operations and then 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.
  5. In the **Array pairs** page, select an array pair to be enabled and then click **NEXT**.
  6. In the **Ready to complete** page, check the configuration and then click **FINISH**.
- When changing the displayed name or IP address of an ETERNUS Disk storage system
    1. Select the array pair that has an ETERNUS Disk storage system to change and then select **Edit Local Array Manager** or **Edit Remote Array Manager**.
    2. In the **Edit Local Array Manager** page or the **Edit Remote Array Manager** page, perform the following operations and click **SAVE**.
      - 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.
  - When deleting an ETERNUS Disk storage system



1. Select the array pair to delete and then select **Disable** from the **Array Pair** menu.
2. Select **Remove** from the **Array Manager Pair** menu.



- When the replication is added/deleted/changed
  1. Select the array pair that has an ETERNUS Disk storage system for which replication was added/deleted/changed.
  2. Click **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".

```
accec 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.

```
accec cancel -g copy_group_name -force
```



#### Example

```
C:\>accec 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
- 3.2.7 Change the IP address, user, and password of the CCM server



## 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 |
| 2.4.1 Register ETERNUS Disk storage system                                                  | Yes                             | No                         | No                        | No                                                | No                                               |
| 2.4.2 Create replication copy groups                                                        | Yes                             | Yes                        | No                        | No                                                | No                                               |
| 2.4.3 Add replication copy pairs                                                            | Yes                             | Yes                        | Yes                       | No                                                | No                                               |
| 2.4.4 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                                              |
| 2.4.5 Add snapshot copy pairs for recovery plan testing                                     | Yes                             | Yes (NOTE)                 | No                        | Yes                                               | Yes                                              |
| 2.4.6 Retrieve ETERNUS Disk storage system information                                      | Yes                             | Yes                        | Yes                       | Yes                                               | Yes                                              |
| 2.4.7 Registration of replication copy groups into AdvancedCopy Manager SRA                 | Yes                             | Yes                        | Yes                       | No                                                | No                                               |
| 2.4.8 Register snapshot copy groups for recovery plan testing into AdvancedCopy Manager SRA | Yes                             | No                         | No                        | Yes                                               | Yes                                              |
| 2.4.9 Start replication                                                                     | Yes                             | Yes                        | Yes                       | No                                                | No                                               |
| 2.4.10 Wait for replication completion                                                      | Yes                             | Yes                        | Yes                       | No                                                | No                                               |
| 2.5 Register/Change/Delete ETERNUS Disk storage systems to VMware SRM                       | Yes                             | Yes                        | Yes                       | No                                                | No                                               |

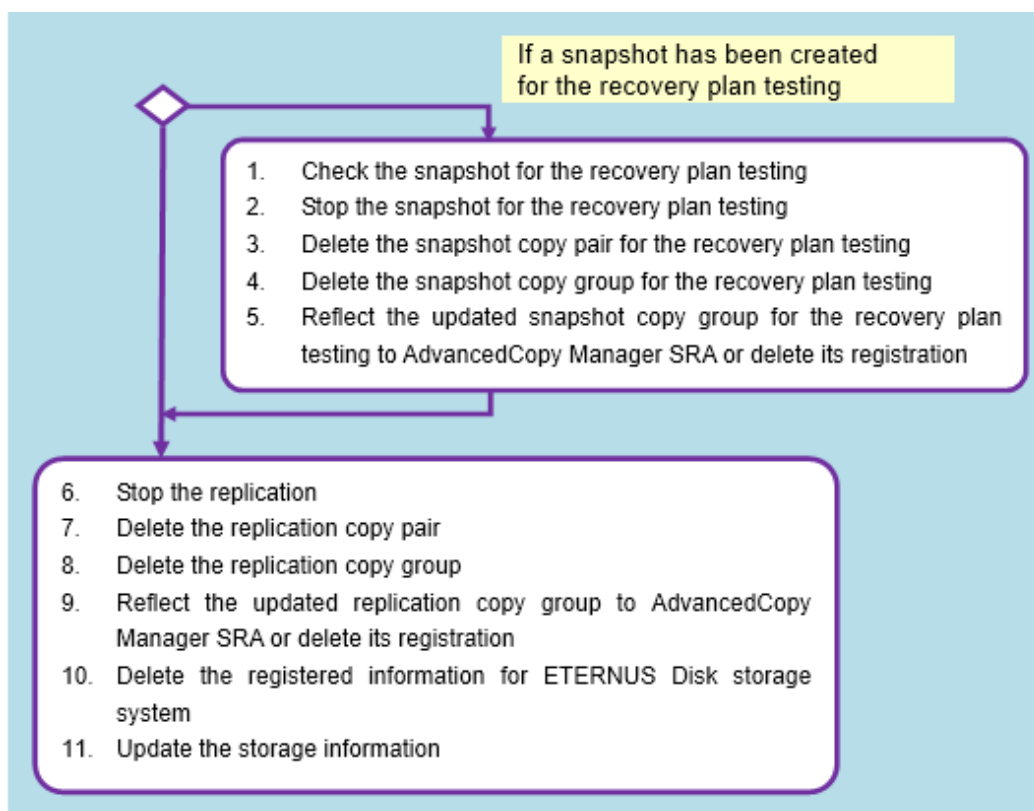
Yes : This operation is required.

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 CCM 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 commands, 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 (00ETERNUSDHX##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 CCM 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 commands, 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 CCM 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 CCM 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.5.3 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.5.4 advsetgr remove \(Copy Control Module copy group deletion command\)](#)".

```
advsetgr remove -sg copy_group_name
```



#### Example

```
docker exec 296c10219650 /srm/sra/advsetgr remove -sg SNAPGRP1
Successful completion.
#
```

### 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 CCM 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 CCM 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 CCM 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.5.3 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.5.3 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.5.4 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.5.4 advsetgr remove \(Copy Control Module copy group deletion command\)](#)".

```
advsetgr remove -g copy_group_name
```





## Example

```
docker exec 296c10219650 /srm/sra/advsetgr remove -g REPGRP1
Successful completion.
#
```

### 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 CCM 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 ["2.5 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 ["2.4.9 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 ["2.4.4 Create snapshot copy groups for recovery plan testing"](#).
- To add snapshot copy groups for recovery plan testing, refer to ["2.4.5 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 S2 (firmware version V10L30 or earlier)
  - ETERNUS DX410 S2/DX440 S2 (firmware version V10L30 or earlier)
  - ETERNUS DX8100 S2/DX8700 S2 (firmware version V10L30 or earlier)

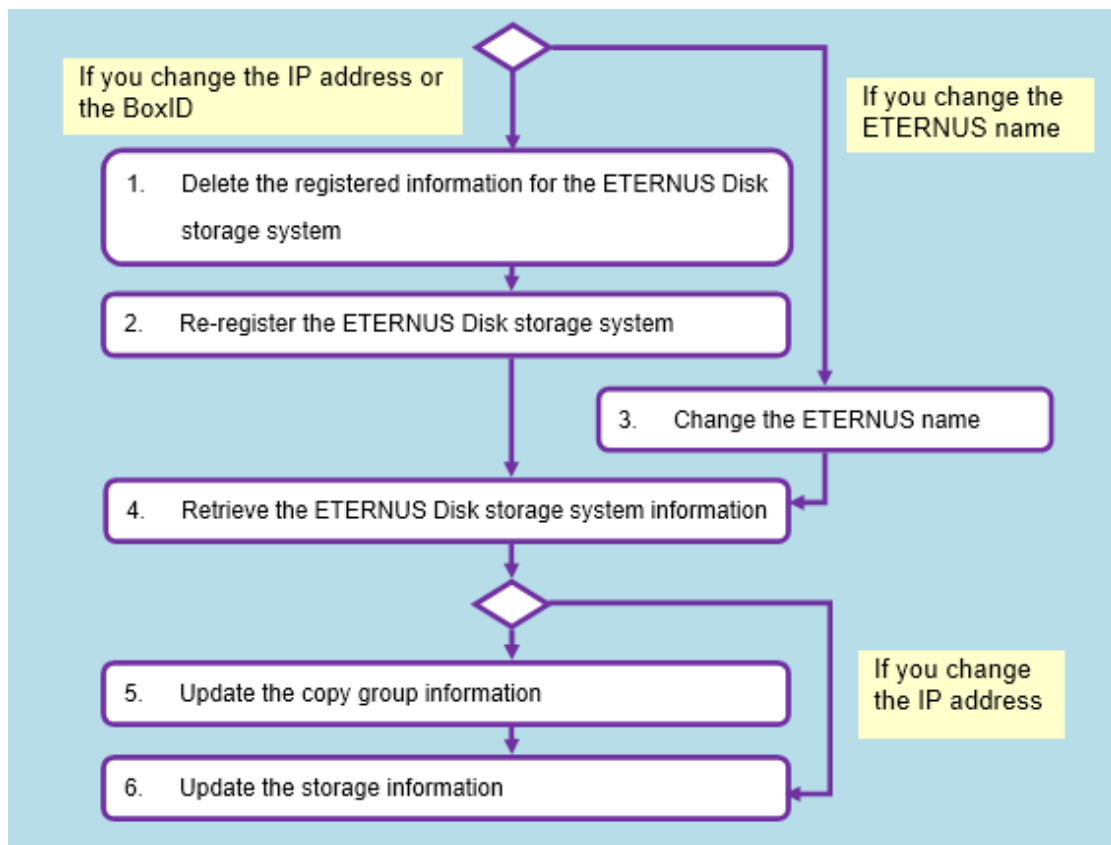
Since the above ETERNUS Disk storage systems do not support ATS locking for Snap Data Volumes (SDV), recovery plan testing may fail. To use SnapOPC+, disable ATS locking on the ESX server at the Recovery Site.

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 CCM 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 CCM 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 CCM 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 192.0.2.30 -user ***** -password ***** -path z:
Successful completion.
```

```
C:\>
```

If you want to change the Box ID, execute the following command on the CCM 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 CCM 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.4.1 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

```
docker exec 296c10219650 /srm/sra/advgetdevs 192.0.2.30
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)
#
```

### 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.5.3 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

```
docker exec 296c10219650 /srm/sra/advsetgr change -g REPGRP1
Successful completion.
#
```

### 3.2.5.6 Update storage information

Update the storage information of VMware SRM. For details, refer to "[2.5 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](#)".

### 3.2.7 Change the IP address, user, and password of the CCM server

To change the IP address, user, and password of the CCM server, re-register the CCM server information to the AdvancedCopy Manager SRA.



See

To register the CCM server information, refer to "[2.3.2 Registering the CCM Server](#)".

## 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 Execution Method

The commands for AdvancedCopy Manager SRA are executed as follows.

1. Log in to the SRM server using the administrator account.
2. Execute the following command to switch to the root user.

```
su root
```

3. Execute the following command to check the Image ID of AdvancedCopy Manager SRA. In the command execution result, check the value of "IMAGE ID" column in the row whose "REPOSITORY" column is "fujitsu\_sra".

```
docker images
```

#### Example

```
docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
fujitsu_sra v2.6 2453dc9a10b9 5 days ago 1.08GB
#
```

4. Execute the following command to check the Container ID of AdvancedCopy Manager SRA. In the command execution result, check the value of "CONTAINER ID" column in the row whose "IMAGE" column is the Image ID of AdvancedCopy Manager SRA.

```
docker ps -l
```

#### Example

```
docker ps -l
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
296c10219650 2453dc9a10b9 "/bin/sh -c /bin/bash" 1 days ago Up 6 days sleepypanini
#
```

5. Execute the AdvancedCopy Manager SRA command as follows.

```
docker exec containerID /srm/sra/commandName commandArguments
```

#### Example

```
docker exec 296c10219650 /srm/sra/advsetgr add -g REPGRP1
```

### A.2 Command Summary

The commands are classified as follows.

#### CCM server information registration command

| Function                                                                      | Command   | Explanation                                                       |
|-------------------------------------------------------------------------------|-----------|-------------------------------------------------------------------|
| <a href="#">A.3.1 advsetenv (CCM server information registration command)</a> | advsetenv | Registers the CCM server information to AdvancedCopy Manager SRA. |

### ETERNUS Disk storage system information collection/display command

| Function                                                                                                             | Command    | Explanation                                                                                                 |
|----------------------------------------------------------------------------------------------------------------------|------------|-------------------------------------------------------------------------------------------------------------|
| <a href="#">A.4.1 advgetdevs (Command for collecting and displaying information on ETERNUS Disk storage systems)</a> | 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 href="#">A.5.1 advsetgr query (Copy Control Module copy group display command)</a>    | advsetgr query  | Displays the Copy Control Module copy groups registered in AdvancedCopy Manager SRA.             |
| <a href="#">A.5.2 advsetgr add (Copy Control Module copy group registration command)</a> | advsetgr add    | Registers a Copy Control Module copy group in AdvancedCopy Manager SRA.                          |
| <a href="#">A.5.3 advsetgr change (Copy Control Module copy group update command)</a>    | advsetgr change | Updates the settings of a Copy Control Module copy group registered in AdvancedCopy Manager SRA. |
| <a href="#">A.5.4 advsetgr remove (Copy Control Module copy group deletion command)</a>  | advsetgr remove | Removes a Copy Control Module copy group registered in AdvancedCopy Manager SRA                  |

## A.3 CCM Server Information Registration Command

The following explains the command for registering the CCM server information to AdvancedCopy Manager SRA.

### A.3.1 advsetenv (CCM server information registration command)

#### NAME

advsetenv - Registers the CCM server information to AdvancedCopy Manager SRA

#### SYNOPSIS

```
advsetenv -ip ip-address -user username -password password
```

#### DESCRIPTION

Registers the CCM server information to AdvancedCopy Manager SRA.

#### OPTIONS

**-ip *ip-address***

IP address of the CCM server.

**-user *username***

This option specifies the OpenSSH user name of the CCM server.

**-password *password***

This option specifies the password for the user name specified with the -user option.



## EXIT STATUS

=0: Completed successfully  
>0: Terminated abnormally

## EXAMPLES

```
docker exec 296c10219650 /srm/sra/advsetenv -ip 192.0.2.10 -user ***** -password *****
Successful completion.
#
```

The displayed contents are as follows:

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

## A.4 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.4.1 advgetdevs (Command for collecting and displaying information on ETERNUS Disk storage systems)

#### 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

```
docker exec 296c10219650 /srm/sra/advgetdevs 192.0.2.30
Serial No. = 000327
BoxID = 00E8000M900####E890S20A####GG000327#####
 (303045383030304D3930302323234538393053323041232323234747303030333237232323232323)
```

| LUNName       | LUN        | Blocks              |
|---------------|------------|---------------------|
| 0001:acmgroup | 29(0x001D) | 125829120( 61440MB) |

0001:srm  
#

30(0x001E)

8388608( 4096MB)

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.<br><br>The character string and ASCII code specify the same content.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| LUName     | <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"><li>- When the affinity function is used:<ul style="list-style-type: none"><li>- Affinity/LUN Group name</li></ul></li><li>- When LUN Mapping is used:<ul style="list-style-type: none"><li>- ETERNUS DX900 S5/DX8700 S3/DX8900 S3/DX8900 S4 (FC connection):<ul style="list-style-type: none"><li>- CE#&lt;w&gt;CM#&lt;x&gt;CA#&lt;y&gt;FC#&lt;z&gt;<br/>&lt;w&gt;: CE number (0-9/A-B)<br/>&lt;x&gt;: CM number (0-1)<br/>&lt;y&gt;: CA number (0-3)<br/>&lt;z&gt;: Port number (0-3)</li></ul></li><li>- ETERNUS DX900 S5/DX8700 S3/DX8900 S3/DX8900 S4 (iSCSI connection):<ul style="list-style-type: none"><li>- CE#&lt;w&gt;CM#&lt;x&gt;CA#&lt;y&gt;iSCSI#&lt;z&gt;<br/>&lt;w&gt;: CE number (0-9/A-B)<br/>&lt;x&gt;: CM number (0-1)<br/>&lt;y&gt;: CA number (0-3)<br/>&lt;z&gt;: Port number (0-3)</li></ul></li><li>- Systems other than the above (FC connection):<ul style="list-style-type: none"><li>- CM#&lt;x&gt;CA#&lt;y&gt;FC#&lt;z&gt;<br/>&lt;x&gt;: CM number (0-7)<br/>&lt;y&gt;: CA number (0-3)<br/>&lt;z&gt;: Port number (0-3)</li></ul></li><li>- Systems other than the above (iSCSI connection):<ul style="list-style-type: none"><li>- CM#&lt;x&gt;CA#&lt;y&gt;iSCSI#&lt;z&gt;<br/>&lt;x&gt;: CM number (0-7)<br/>&lt;y&gt;: CA number (0-3)<br/>&lt;z&gt;: Port number (0-3)</li></ul></li></ul></li></ul> |
| LUN        | <decimal_LU_number><br>(<hexadecimal_LU_number>)         | Logical volume number in decimal and hexadecimal formats.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Blocks     | decimal_number                                           | LU extent size and size. <ul style="list-style-type: none"><li>- Extent size: Block units</li><li>- Size: MB units</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

## 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 this command.
- Do not login to the target ETERNUS Disk storage system from ETERNUS Web GUI while this command is running.
- For LUN that is not registered to Host Affinity, the information cannot be obtained by this command.

## A.5 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.5.1 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

```
docker exec 296c10219650 /srm/sra/advsetgr query
<REPLICATION_GROUP>
RECGRP1
RECGRP2
<TEST_SNAPSHOT_GROUP>
SNAPGRP1
<CONSISTENCY_REPLICATION_GROUP>
CONSISTENCYGRP1
<CONSISTENCY_TEST_SNAPSHOT_GROUP>
CONSISTENCYGRP1_snap
<BACKUP_SNAPSHOT_GROUP>
#
```

The displayed contents are as follows:

| Place                                                     | Description                                                                                                                                               |
|-----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <REPLICATION_GROUP><br>REPGRP1<br>REPGRP2                 | Displays the Copy Control Module copy groups that are registered in AdvancedCopy Manager SRA and used for replication.                                    |
| <TEST_SNAPSHOT_GROUP><br>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><br>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><br>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

```
docker exec 296c10219650 /srm/sra/advsetgr 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

#

The displayed contents are as follows:

| Place                                                                                    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <REPLICATION_PAIR><br>RECGRP1,E8000P/0x45:E8000R/0x4F<br>RECGRP2,E8000P/0x49:E8000R/0x53 | Displays the information for Copy Control Module replication copy groups and copy pairs registered in AdvancedCopy Manager SRA in the following format:<br><br>AAAA,BBBB/CCCC/DDDD/EEEE<br><ul style="list-style-type: none"> <li>- AAAA: Copy group name</li> <li>- BBBB: Copy source ETERNUS name</li> <li>- CCCC: Copy source logical volume number</li> <li>- DDDD: Copy destination ETERNUS name</li> <li>- EEEE: Copy destination logical volume number</li> </ul> |
| <TEST_SNAPSHOT_PAIR><br>SNAPGRP1,E8000P/0x45:E8000P/0x46                                 | 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:<br><br>AAAA,BBBB/CCCC/DDDD/EEEE<br><ul style="list-style-type: none"> <li>- AAAA: Copy group name</li> </ul>                                                                                                                                                             |

| Place                                                                                                                                                                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                       | <ul style="list-style-type: none"> <li>- BBBB: Copy source ETERNUS name</li> <li>- CCCC: Copy source logical volume number</li> <li>- DDDD: Copy destination ETERNUS name</li> <li>- EEEE: Copy destination logical volume number</li> </ul>                                                                                                                                                                                                                                                                                                                            |
| <CONSISTENCY_GROUP_REPLICATION_PAIR><br>CONSISTENCYGRP1,E8000P/0x3:E8000R/0x3<br>CONSISTENCYGRP1,E8000P/0x4:E8000R/0x4<br>CONSISTENCYGRP2,E8000P/0x5:E8000R/0x5       | 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:<br><br>AAAA,BBBB/CCCC:DDDD/EEEE <ul style="list-style-type: none"> <li>- AAAA: Copy group name</li> <li>- BBBB: Copy source ETERNUS name</li> <li>- CCCC: Copy source logical volume number</li> <li>- DDDD: Copy destination ETERNUS name</li> <li>- EEEE: Copy destination logical volume number</li> </ul>                                                            |
| <CONSISTENCY_GROUP_TEST_SNAPSHOT_PAIR><br>CONSISTENCYGRP1_snap, E8000P/0x3:E8000P/0x13<br>CONSISTENCYGRP1_snap, E8000P/0x4:E8000P/0x14                                | 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 as a copy group corresponding to the consistency group, in the following format:<br><br>AAAA,BBBB/CCCC:DDDD/EEEE <ul style="list-style-type: none"> <li>- AAAA: Copy group name</li> <li>- BBBB: Copy source ETERNUS name</li> <li>- CCCC: Copy source logical volume number</li> <li>- DDDD: Copy destination ETERNUS name</li> <li>- EEEE: Copy destination logical volume number</li> </ul> |
| <BACKUP_SNAPSHOT_PAIR>                                                                                                                                                | This display field is not used.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Warning: adv0412 No TEST_SNAPSHOT_PAIR<br>corresponding to E8000P/0x49<br>Warning: adv0412 No<br>CONSISTENCY_GROUP_TEST_SNAPSHOT_PAIR<br>corresponding to E8000P/0x05 | Outputs a warning message if there is a warning for any registered copy pair.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

## A.5.2 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

```
docker exec 296c10219650 /srm/sra/advsetgr add -g REPGRP1
Successful completion.
#
```

The displayed contents are as follows:

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

## A.5.3 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

```
docker exec 296c10219650 /srm/sra/advsetgr change -g REPGRP1
Successful completion.
#
```

The displayed contents are as follows:

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

## A.5.4 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

```
docker exec 296c10219650 /srm/sra/advsetgr remove -g REPGRP1
Successful completion.
#
```

The displayed contents are as follows:

| Place                  | Description                                                                                                                                                                                    |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Successful completion. | The result of the command execution is displayed.<br>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 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<br><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 " <a href="#">B.2 Data Files to Collect</a> ". |

---

**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 " <a href="#">B.2 Data Files to Collect</a> "). |

---

**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 the "acgroup create" command. 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 "acarray add" command. 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 " <a href="#">advsetgr add</a> " 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.<br><br>Check the copy groups registered in AdvancedCopy Manager SRA with the " <a href="#">advsetgr query</a> " command.<br><br>Check the copy groups registered in Copy Control Module with the "acgroup list" 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 "acpair add" command. 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 " <a href="#">advgetdevs</a> " command and try again.<br><br>If the error persists, collect the data required to solve the problem and contact Fujitsu Technical Support. For details, refer to " <a href="#">B.2 Data Files to Collect</a> ". |

#### 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 " <a href="#">advgetdevs</a> " command and try again.<br><br>If the error persists, collect the data required to solve the problem and contact Fujitsu Technical Support. For details, refer to " <a href="#">B.2 Data Files to Collect</a> ". |

#### 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 status of the file system.<br><br>If the file system is normal, collect the data required to solve the problem and contact Fujitsu Technical Support. For details, refer to " <a href="#">B.2 Data Files to Collect</a> ". |

#### 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 status of the file system.<br><br>If the file system is normal, collect the data required to solve the problem and contact Fujitsu Technical Support. For details, refer to " <a href="#">B.2 Data Files to Collect</a> ". |

#### 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"> <li>- Check that the ETERNUS Disk storage system is running</li> <li>- Check that the network settings of the ETERNUS Disk storage system are correct</li> <li>- Check that the IP address is correct by using the "<a href="#">advgetdevs</a>" command.</li> <li>- Check whether other users are connected and processing operations in the ETERNUS Disk storage system.</li> </ul> |

#### 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 " <a href="#">B.2 Data Files to Collect</a> ". |

#### 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 CCM server has been registered in the AdvancedCopy Manager SRA with the "<a href="#">advsetenv</a>" command.</p> <p>Check that the "<a href="#">advgetdevs</a>" command has been performed in the ETERNUS Disk storage system for the specified IP address.</p> <p>Check that the Copy Control Module copy group has been registered in the AdvancedCopy Manager SRA with the "<a href="#">advsetgr</a>" command.</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 | <p>Check if the command exists.</p> <p>If the command does not exist, reinstall Copy Control Module.</p> |

|  |                                                                                                                                                                                   |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | If the command exists, collect the data required to solve the problem and contact Fujitsu Technical Support. For details, refer to " <a href="#">B.2 Data Files to Collect</a> ". |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### 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                    | <p><i>LABEL</i> : One of the following strings used for displaying the type of unconfigured snapshot</p> <ul style="list-style-type: none"> <li>- CONSISTENCY_GROUP_TEST_SNAPSHOT_PAIR : Snapshot for the recovery plan testing that corresponds to a consistency group</li> <li>- TEST_SNAPSHOT_PAIR : Snapshot for recovery plan testing that corresponds to a group other than a consistency group</li> </ul> <p><i>DEVICE</i>: Replication LU (ETERNUS name/Logical volume number) at the local site (site where the command is issued)</p>                                                                           |
| System action                 | Continues processing.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| System administrator response | <p>A snapshot pair for recovery plan testing, that corresponds to the registered replication copy pair is not registered.</p> <p>If recovery plan testing is performed for a replication copy pair, an error occurs.</p> <p>When performing a recovery plan testing, register its corresponding snapshot copy pair with the "<a href="#">advsetgr</a>" command.</p> <p>For the procedure to register a snapshot LU for the recovery plan testing, refer to "<a href="#">3.2.1 Add an ETERNUS Disk storage system, replication copy group/copy pair, and snapshot copy group/copy pair for recovery plan testing</a>".</p> |

#### adv0413

|               |                                                                                                                                                                                                                                                                   |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Text          | The copy status of the device is invalid.                                                                                                                                                                                                                         |
| Explanation   | <p>The copy type/direction/status of the replication LU is not as expected in AdvancedCopy Manager SRA.</p> <p>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.</p> |
| System action | Stops processing the relevant device.                                                                                                                                                                                                                             |

|                               |                                                                                                                                                                                                                                                                                                  |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| System administrator response | Check the copy status of ETERNUS for the relevant device with the "acec query" command. For information on the command, refer to the "ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module".<br><br>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:<br><br>Check if the snapshot LU for recovery plan testing is registered.<br>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.<br><br>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 " <a href="#">advsetgr remove</a> " 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 " <a href="#">B.2 Data Files to Collect</a> ". |

#### 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<br><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 " <a href="#">advsetgr change</a> " 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> ]<br>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"> <li>- Includes a device pair whose copy direction is invalid is included.</li> <li>- Copy phase shows that the session is not in an equivalent state.</li> <li>- Device pair whose copy status is "REC not in progress" is included.</li> <li>- Recovery plan testing is already in progress.</li> </ul> |
| Parameters                    | <i>GROUP</i> : Consistency group name<br><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. |

---

**adv0425**

|                               |                                                                                                                                                                                                                                                                              |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Text                          | Failed to connect to the CCM.                                                                                                                                                                                                                                                |
| Explanation                   | An error occurred while attempting to communicate with the CCM server.                                                                                                                                                                                                       |
| System action                 | Discontinues processing.                                                                                                                                                                                                                                                     |
| System administrator response | <ul style="list-style-type: none"><li>- Check that the CCM server is running</li><li>- Check that the network settings of the CCM server are correct</li><li>- Check whether the correct IP address, user, and password are specified for the "advsetenv" command.</li></ul> |

---

**adv0426**

|                               |                                                                                                                                                                                                                       |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Text                          | The contents in the CCM information is incorrect                                                                                                                                                                      |
| Explanation                   | The information in AdvancedCopy Manager SRA is incorrect.                                                                                                                                                             |
| System action                 | Discontinues processing.                                                                                                                                                                                              |
| System administrator response | Execute the "advsetenv" command and try again.<br><br>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". |

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**adv0427**

|                               |                                                                                                                                                                                                                    |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Text                          | Failed to create the CCM information                                                                                                                                                                               |
| Explanation                   | The information could not be created with AdvancedCopy Manager SRA.                                                                                                                                                |
| System action                 | Discontinues processing.                                                                                                                                                                                           |
| System administrator response | Check the status of the file system.<br><br>If the file system is normal, collect the data required to solve the problem and contact Fujitsu Technical Support. For details, refer to "B.2 Data Files to Collect". |

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## B.2 Data Files to Collect

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

| Type                                                         | Server     | Data                                                                                                                                                                                                               |
|--------------------------------------------------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Log files                                                    | SRM server | The "/srm/sra/conf" directory in the AdvancedCopy Manager SRA container.<br>It can be copied to the host using the following command.<br><code>docker cp containerID:/srm/sra/conf copyDestinationDirectory</code> |
|                                                              |            | The "/srm/sra/log" directory in the AdvancedCopy Manager SRA container.<br>It can be copied to the host using the following command.<br><code>docker cp containerID:/srm/sra/log copyDestinationDirectory</code>   |
| VMware log files                                             | SRM server | Data collected with the SRM log collector.<br>For information on the SRM log collector, refer to the VMware SRM Administration Guide.                                                                              |
| Information required for Copy Control Module troubleshooting | CCM Server | A file collected by executing the troubleshooting data collection command.<br>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.



### Point

Confirm that the version of VMware SRM is supported by AdvancedCopy Manager SRA 2.6.

## C.1 Version Upgrade from AdvancedCopy Manager SRA 2.5 or earlier

### C.1.1 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 2.6. 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.1.2 Checking and Deleting the SRA Information

After VMware SRM is migrated, the protection groups, recovery plans, and array pairs must be set again. Check and record the currently registered settings of each item before migrating VMware SRM. After recording the settings, delete the protection groups, recovery plans, and array pairs from VMware SRM.

For the checking and deleting procedure, refer to the VMware manuals.

### C.1.3 Uninstalling earlier versions of AdvancedCopy Manager SRA

Uninstall the existing earlier version of AdvancedCopy Manager SRA. If required, also uninstall Java Runtime Environment.

### C.1.4 Migrating VMware SRM

Migrate VMware SRM. For the migration procedure of VMware SRM, refer to the VMware manuals.



## Note

Although the migration procedure for VMware SRM provides an option to install a storage replication adapter (SRA), do not install it during the migration of VMware SRM. Perform the procedure in "[C.1.7 Installing and Configuring AdvancedCopy Manager SRA 2.6](#)" to install an SRA.

## C.1.5 Upgrading the version of Copy Control Module

If Copy Control Module V16.3 or later is not installed on the server, which communicates with AdvancedCopy Manager SRA and operates the ETERNUS Disk storage system, at both the Production Site and the Recovery Site, upgrade it.



## See

For the Copy Control Module version upgrade procedure, refer to the "ETERNUS SF AdvancedCopy Manager Migration Guide".

## C.1.6 Configuring the CCM Server

Configure the CCM server.



## See

For the configuration procedure of the CCM server, refer to "[2.1 Configuring the CCM Server](#)".

## C.1.7 Installing and Configuring AdvancedCopy Manager SRA 2.6

Install and configure AdvancedCopy Manager SRA 2.6.



## See

For the installation and configuration procedures, refer to "[2.3 Installing and Configuring AdvancedCopy Manager SRA](#)".

## C.1.8 Obtaining the ETERNUS Disk storage system information

Execute the "[advgetdevs](#)" 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.

```
advgetdevs IP_address_of_ETERNUS_Disk_storage_system
```

For command execution example, refer to "[2.4.6 Retrieve ETERNUS Disk storage system information](#)".

## C.1.9 Registering the copy group in AdvancedCopy Manager SRA

For the created copy group, execute the "[advsetgr add](#)" 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.

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 "[2.4.7 Registration of replication copy groups into AdvancedCopy Manager SRA](#)" and "[2.4.8 Register snapshot copy groups for recovery plan testing into AdvancedCopy Manager SRA](#)".

## C.1.10 Checking the replication

Execute the "acec query" 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####KK0000000010##)
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 "acec start" 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 "[2.4.9 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.1.11 Wait for replication completion

Wait for the completion of the replication processing.

Execute the "acec query" 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 "[2.4.10 Wait for replication completion](#)".

## C.1.12 Resetting the SRA Information

Reset the protection groups, recovery plans, and array pairs checked in "[C.1.2 Checking and Deleting the SRA Information](#)".

For the setting procedure, refer to the VMware manuals.