ETERNUS SF
AdvancedCopy Manager V13.2

Overview

Preface

Purpose

This manual provides an overview of the ETERNUS SF AdvancedCopy Manager.

This manual describes the ETERNUS SF AdvancedCopy Manager product features that relate to backup and replication management in a large-scale storage area network and describes the functions provided by this product.

Reader

This manual is intended for system managers who use or want to evaluate AdvancedCopy Manager.

Knowledge of the following facilitates an understanding of the concepts described in this manual:

- Large-scale storage area networks
- The Fujitsu storage system ETERNUS
- The importance of backup and disaster recovery operations
- Ordinary hard copies, such snapshot, differential, and incremental copy
- Cluster environments

Organization

This manual consists of 4 chapters.

Chapter 1 Overview of AdvancedCopy Manager

This chapter provides an overview of ETERNUS SF AdvancedCopy Manager.

Chapter 2 AdvancedCopy Manager Functions

This chapter explains the ETERNUS SF AdvancedCopy Manager functions.

Chapter 3 AdvancedCopy Manager Features

This chapter explains the ETERNUS SF AdvancedCopy Manager features.

Chapter 4 AdvancedCopy Manager Operating Environment

This chapter explains the operating environment for ETERNUS SF AdvancedCopy Manager.

Related manuals

This ETERNUS SF AdvancedCopy Manager manual is included in the following series of manuals:

- ETERNUS SF AdvancedCopy Manager Overview

  Provides an overview of ETERNUS SF AdvancedCopy Manager (this manual).

- ETERNUS SF AdvancedCopy Manager Installation Guide

  Describes the installation procedure for ETERNUS SF AdvancedCopy Manager.

- ETERNUS SF AdvancedCopy Manager Operator's Guide

  Describes the operating procedures for ETERNUS SF AdvancedCopy Manager.

  A different operator's guide is provided for each supported operating system.

- ETERNUS SF AdvancedCopy Manager GUI User's Guide

  Describes the operating procedures for the Web-GUI of ETERNUS SF AdvancedCopy Manager.

- ETERNUS SF AdvancedCopy Manager Message Guide

  Explains the messages output by ETERNUS SF AdvancedCopy Manager and associated troubleshooting information.

- ETERNUS SF AdvancedCopy Manager Operator's Guide for a Cluster Environment

  Describes the installation and customization procedures for ETERNUS SF AdvancedCopy Manager in a cluster environment.

● ETERNUS SF AdvancedCopy Manager Operator's Guide for a Tape Backup Option

Describes the operating procedures for a tape backup with ETERNUS SF AdvancedCopy Manager.

++ Abbreviation

● Microsoft(R) Windows(R) 2000 Professional, Microsoft(R) Windows(R) 2000 Server, and Microsoft(R) Windows(R) 2000 Advanced Server are abbreviated to Windows 2000.

● Microsoft(R) Windows Server(R) 2003, Standard Edition, Microsoft(R) Windows Server(R) 2003, Enterprise Edition, Microsoft(R) Windows Server(R) 2003, Enterprise Edition for Itanium-based systems are abbreviated as Windows Server 2003.

● Microsoft(R) Windows(R) XP Professional, and Microsoft(R) Windows(R) XP Home Edition are abbreviated as Windows XP.

● Microsoft(R) Windows Vista(R) Home Basic, Microsoft(R) Windows Vista(R) Home Premium, Microsoft(R) Windows Vista(R) Business, Microsoft(R) Windows Vista(R) Enterprise, and Microsoft(R) Windows Vista(R) Ultimate are abbreviated as Windows Vista.

● Solaris (TM) Operating System is referred to as Solaris.

● "ETERNUS SF AdvancedCopy Manager" is abbreviated as "AdvancedCopy Manager".

● A Manager of ETERNUS SF AdvancedCopy Manager is abbreviated to Manager of AdvancedCopy Manager.

● An Agent of ETERNUS SF AdvancedCopy Manager is abbreviated to Agent of AdvancedCopy Manager.

● ETERNUS2000, ETERNUS3000, ETERNUS4000, ETERNUS6000, ETERNUS8000, and ETERNUS GR series are referred to as ETERNUS storage system.

● The LT270, LT230, LT220, LT160, and LT130 are referred to as ETERNUS Tape Library.

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Table of Contents

Chapter 1 Overview of AdvancedCopy Manager

This chapter provides a product overview of the ETERNUS SF AdvancedCopy Manager (hereafter referred to as AdvancedCopy Manager).

1.1 What is AdvancedCopy Manager

Purpose

ETERNUS SF AdvancedCopy Manager (ACM) is a Storage Management Software that provides reliable high-speed backup/restore and replication capabilities utilizing the Advanced Copy hardware functionality of Fujitsu ETERNUS storage systems.

AdvancedCopy Manager significantly reduces operational downtime for backup and replication requirements in large volume transaction intensive environments.

The product has been developed to collaborate closely with a range of mainstream database environments, including Symfoware Server, Oracle Database, SQL Server, DB2 and Exchange Server, to provide high speed reliable data copies where high uptime or continuous operation is paramount.

Benefits of installation

Using the ETERNUS copy functionality, AdvancedCopy Manager facilitates copying between storage devices both within the same ETERNUS storage system and across multiple ETERNUS in the SAN or remotely located storage devices via high speed communications mediums.

These functions make ETERNUS SF AdvancedCopy Manager an effective and highly reliable disaster recovery solution, minimizing the risk of lost data and downtime.

Features

The advantages of data copy using ACM with ETERNUS include:

● The backup command finishes within seconds, allowing the physical copying to take place in the background, in parallel with normal operations.

● Backup is performed internally by the ETERNUS storage system, minimizing the CPU usage on the host system.

● I/O is limited to within the ETERNUS storage system, where high-speed data copy can be maintained. Where Remote Equivalent Copy (REC) is used, there may be some additional overhead but the copy can still be maintained at a very high copy speed.

● Backup can be performed in a much shorter timeframe using the differential copy capability of the One Point Copy (OPC) and Equivalent Copy (EC) methods.

● Restorations can be performed at high speeds using the same advanced copy functionality depending on the type of backups originally performed.

Provided functions

● Advanced Copy functions
  ― Snapshot high-speed copy
  ― Synchronous high-speed copy
  ― Other copy functions
● Backup/Restore functions
● Replication functions

1.2 AdvancedCopy Manager Architecture

AdvancedCopy Manager software includes a management component, which is installed on the Storage Management Server and is known as the Management Module, and an agent component, which is installed on the Storage Server and is referred to as the Storage Server Agent.

1.2.1 Storage Management Server

Only one Storage Management Server exists in any one AdvancedCopy Manager configuration. The AdvancedCopy Manager Management Module and Agent Module are installed on the Storage Management Server. If the Storage Management server is also connected to ETERNUS, it can also perform the role of the storage server.
The Storage Management Server's primary role is briefly described as follows:

● Serve as centralized control center.
● Maintain a database of storage servers and associated devices such as transaction volumes, backup volumes and replication pairs.
● Accept commands from web base GUI and execute the relevant ACM function.

1.2.2 Storage Server

A Storage Server is a server that is connected to ETERNUS and executes the backup and replication related commands. The AdvancedCopy Manager Agent Module is installed on the Storage Server.

1.2.3 Tape Server

A Tape Server performs backup tasks to tape media in conjunction with Storage Server backup tasks. Either one or more Tape Servers can be configured in one system. The AdvancedCopy Manager Tape Manager must be installed on a Tape Server. ETERNUS SF TSM (hereafter referred to as TSM) is also installed on a Tape Server. TSM is a file backup management product which is called internally by the Tape Server to perform backup management.

1.3 AdvancedCopy Manager Configuration Options

The Fujitsu storage system ETERNUS requires a Storage Management Server and at least one Storage Server. However, it is possible for both of these components to exist on a single server. This section describes the three possible configuration scenarios.

1.3.1 Single Server

If there is only one Storage Server, install the Manager component of AdvancedCopy Manager. Since the Manager also provides AdvancedCopy Manager Agent functions, the Storage Management Server role and Storage Server role can be performed on one Storage Server.

Figure: Single Server Configuration
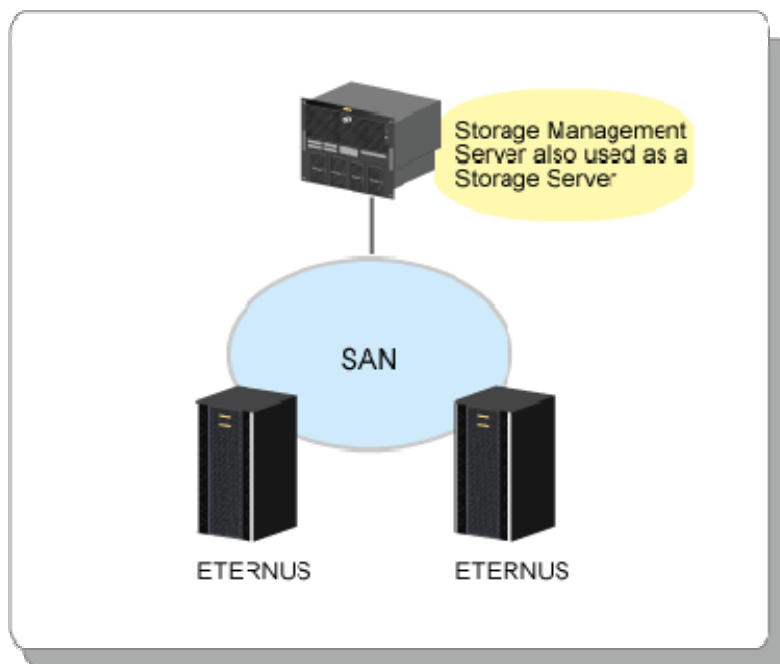
1.3.2 Multiple Storage Servers

If two or more Storage Servers are installed, the following two configurations are possible:
- ● A single Storage Server can perform the role of both Storage Management Server and Storage Server managing one or more ETERNUS storage systems.
- ● A server dedicated to the role of Storage Management Server can manage one or more Storage Servers
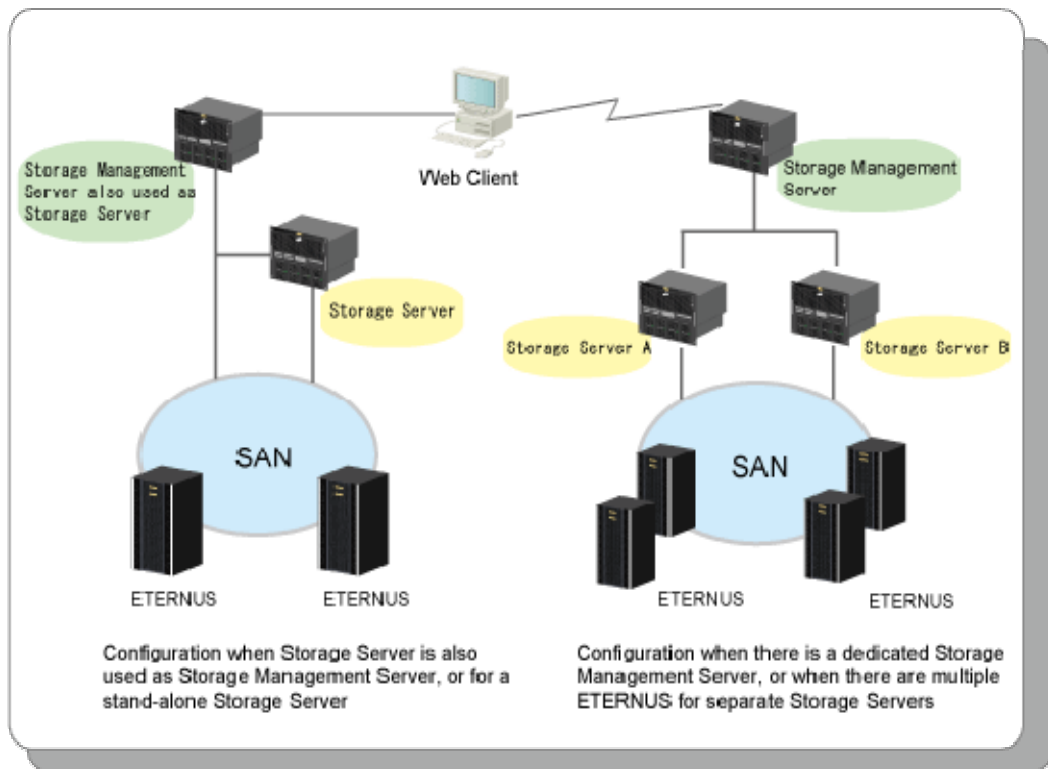
Multiple Storage Servers can manage multiple ETERNUS storage systems hosted by different Storage Servers, all of which are managed by a single Storage Management Server.

A Web Client can used to manage one or more AdvancedCopy Manager configurations via an internet connection.

The Management Module uses some system resources so the performance of a Storage Server on which it is installed may be adversely affected. For this reason it is recommended that the Storage Management Server functionality (the Management Module) should be installed on a dedicated server.

The following figure shows a configuration containing multiple Storage Servers.

Figure: Multiple Storage Server configuration

Backup can only function within a single ETERNUS storage system connected to a single Storage Server, while Replication can be performed across multiple Storage Servers or ETERNUS storage systems.

The following table shows the available copy modes.

Table: Copy Mode Availability

		Intra-ETERNUS	Inter-ETERNUS
Intra-Server	Functionality	Backup and replication	Only replication
	Copy Mode	OPC/EC/QuickOPC/SnapOPC/SnapOPC+	REC
	Diagram		

		Intra-ETERNUS	Inter-ETERNUS
Inter-Server	Functionality	Only replication	Only replication
	Copy Mode	OPC/EC/QuickOPC/SnapOPC	REC
	Diagram		

1.3.3 Other configurations

AdvancedCopy Manager is supported in the following cluster systems but may vary according to the host operating system version:

● SynfinityCLUSTER
● PRIMECLUSTER
● VERITAS Cluster Server
● Sun Cluster
● Microsoft® Cluster Server
● MC/ServiceGuard
● High Availability Cluster Multi-Processing

The following table shows the cluster systems that can be used with various types of operating systems.

Table: Cluster systems usable with operating system types

OS type	Cluster system
Solaris	SynfinityCLUSTER PRIMECLUSTER VERITAS Cluster Server Sun Cluster
Linux	PRIMECLUSTER
Windows	SynfinityCLUSTER Microsoft® Cluster Server
HP-UX	MC/ServiceGuard VERITAS Cluster Server
AIX	High Availability Cluster Multi-Processing VERITAS Cluster Server

Refer to "Support" in the "ETERNUS SF AdvancedCopy Manager Operator's Guide for a Cluster Environment" for details.

Chapter 2　AdvancedCopy Manager Functions

This chapter describes the typical functions of AdvancedCopy Manager.

2.1 Advanced Copy Functions

AdvancedCopy Manager supports two distinct copy modes:

● Snapshot high-speed copy
  Snapshot high-speed copy uses the ETERNUS OPC function. This creates a snapshot of
  the data, and records the update history in the history backup management information
  repository of AdvancedCopy Manager. Copy types available using this feature are:
  — One Point Copy (OPC)
  — QuickOPC
  — SnapOPC
  — SnapOPC+

● Synchronous high-speed copy
  Synchronous high-speed copy uses the synchronization function of ETERNUS. This
  function maintains the transaction volume and the backup volume pair in a state of
  equivalence. Both volumes remain fully accessible to any application until a split
  is performed and the update history is recorded in the history backup management
  information repository (until a backup image is created). Both volumes are
  temporarily rendered inaccessible while the split is performed then immediately
  restored to a state where they are again accessible.
  Copy types available using this feature include:
  — Equivalent Copy (EC)
  — Suspend/Resume
  — Remote Equivalent Copy (REC)

Both snapshot and synchronous high-speed copying can be performed differentially. Once
an initial copy has been made, only the updated parts are copied. Using the ETERNUS remote
copy function snapshot or synchronous high-speed copying can be performed between ETERNUS
storage systems at different locations.

2.1.1 Snapshot High-Speed Copy

AdvancedCopy Manager supports both Snapshot backup and differential copying. Point in Time
recovery for high transaction database environments where roll-forward has been enabled
is also available. These features are particularly effective in minimizing system
downtime and server I/O load.

One Point Copy (OPC)

OPC executes a disk copy of the entire volume. The copy can be performed while the source
volume remains fully accessible using the ETERNUS priority copy feature.

When the OPC command is invoked, ETERNUS creates a point in time snapshot of the source
volume and then immediately returns a notification to the operator that the backup is
complete, before any physical copying has even occurred. This allows for access to be
returned to the transaction or source volume with little or no interruption while the copy
is performed as a background process at the hardware level in the ETERNUS.

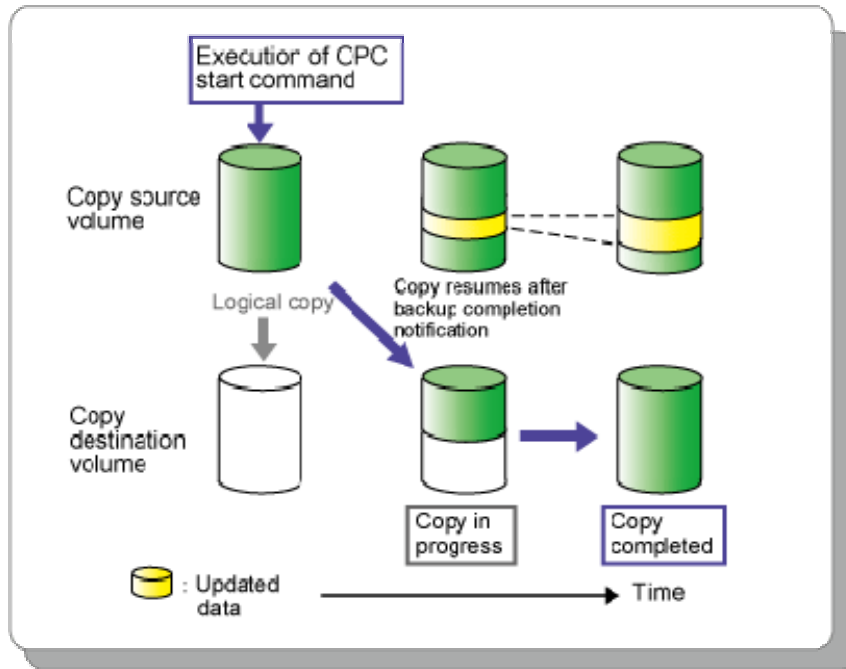OPC is highly effective for the following applications:
  ● Generation backups where near continuous uptime is critical such as internet

business applications
- ● OPC is the primary method for restoration from a backup volume irrespective of the backup copy method thus minimizing resultant downtime
- ● Maintenance of data used for archival purposes
- ● Where minimizing server I/O load is critical to overall business application performance.

The following diagram represents the process used in a One Point Copy (OPC).

Figure: One Point Copy (OPC)

Execution of CPC start command

Copy source volume

Logical copy

Copy destination volume

Copy resumes after backup completion notification

Copy in progress

Copy completed

: Updated data

Time

Quick One Point Copy (QuickOPC)

QuickOPC is differential copy and requires that an initial copy exists.

When the QuickOPC command is invoked, it will determine if an initial copy exists, then will copy only updated blocks of data that have been tracked since the initial copy was created to the backup volume for that specific QuickOPC session.

If QuickOPC detects that an initial copy does not exist, it will create the initial copy using OPC. The differential copy method used in QuickOPC significantly reduces the time required for physical data copying in order to create a Point in Time snapshot whilst minimizing the I/O load on the storage system host server.

QuickOPC is highly effective where:
- ● Backup to disk where uptime is critical
- ● Creation of frequent restore points or generation backups

The following diagram represents the differential copy process used in a QuickOPC Copy after an initial copy has been created.

Figure: Quick One Point Copy (QuickOPC)
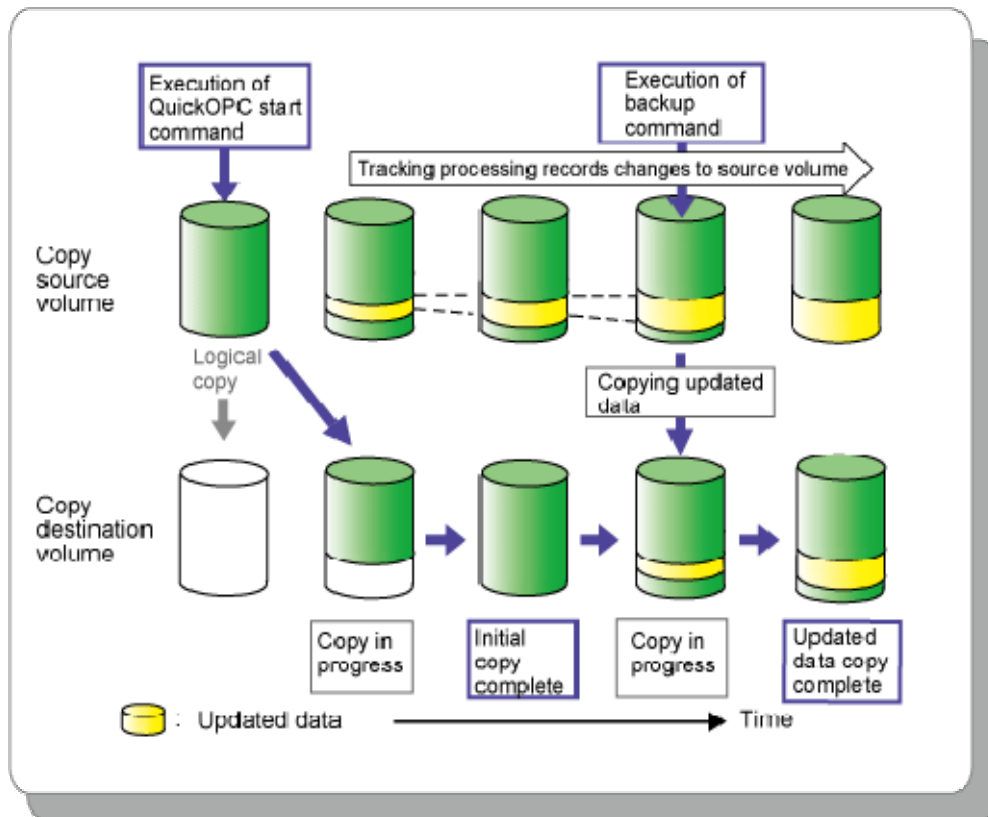
Snapshot One Point Copy (SnapOPC)

SnapOPC uses the Copy-On-Write method to create a copy of the source volume as it was before any updates are made.

In a SnapOPC copy, the destination volume does not need to be of the same size as the source volume, using a Snap Data Volume (SDV in ETERNUS) instead as the copy destination. The SDV is usually only a fraction of the size of a source volume.

When an update is required to be made to the source volume, the change is held in an internal table while the original data on the source volume is first copied to the SDV. The change is then applied to the source volume. This method of backup copy is called Copy-On-Write. The Snap Data Volume (SDV) stores only original data that is to be modified or updated on the source volume.

The size of the SDV is relative to the rate of modification on the source volume and a utility is used to provide an accurate estimate of the size. If the source volume is relatively stable, only a relatively small SDV volume is required.

Although the physical size of the SDV maybe smaller, the logical size (that is, the size presented to the O/S) of the destination volume is in effect the same as the source volume. ACM achieves this by combining the original data copied to the SDV with the unmodified data on the source volume to form a logical view of the destination volume.

However, it should be understood that SnapOPC may be unsuitable for some purposes as the copy method can reduce access performance in the source volume, and any loss of data on the source volume would render the copied data unusable.

SnapOPC is typically used for:
- Temporary source for a cascade copy to alternate media such as tape
- Backup to disk for file servers and other data with a low modification rates

Figure: Snapshot One Point Copy (SnapOPC)
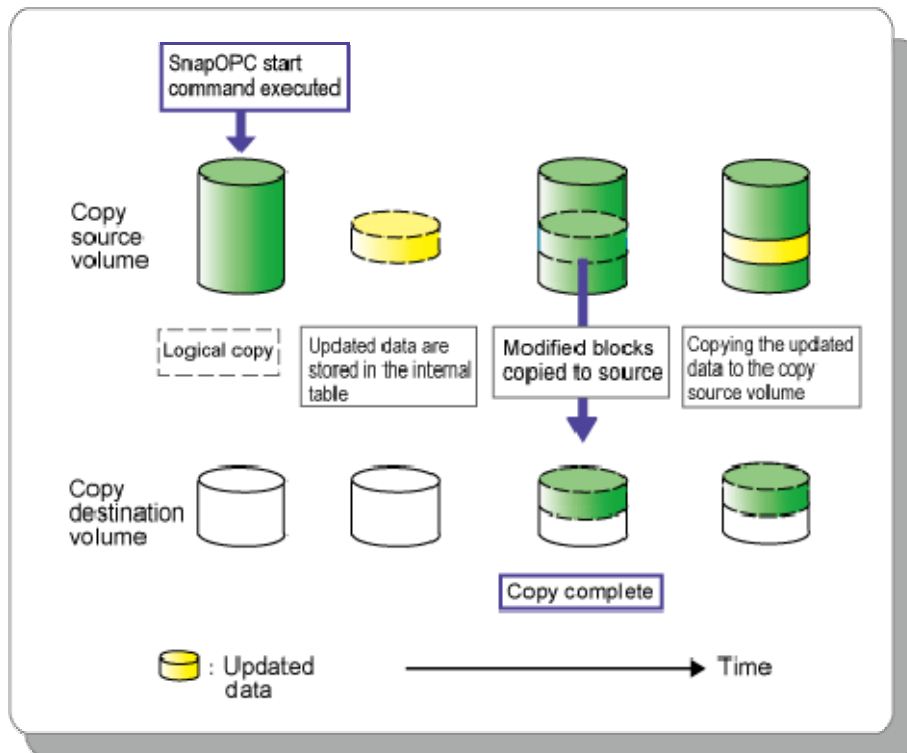
Snapshot One Point Copy+ (SnapOPC+)

Like SnapOPC, SnapOPC+ uses the Copy-On-Write method to create a copy of the source volume as it was before any updates are made.
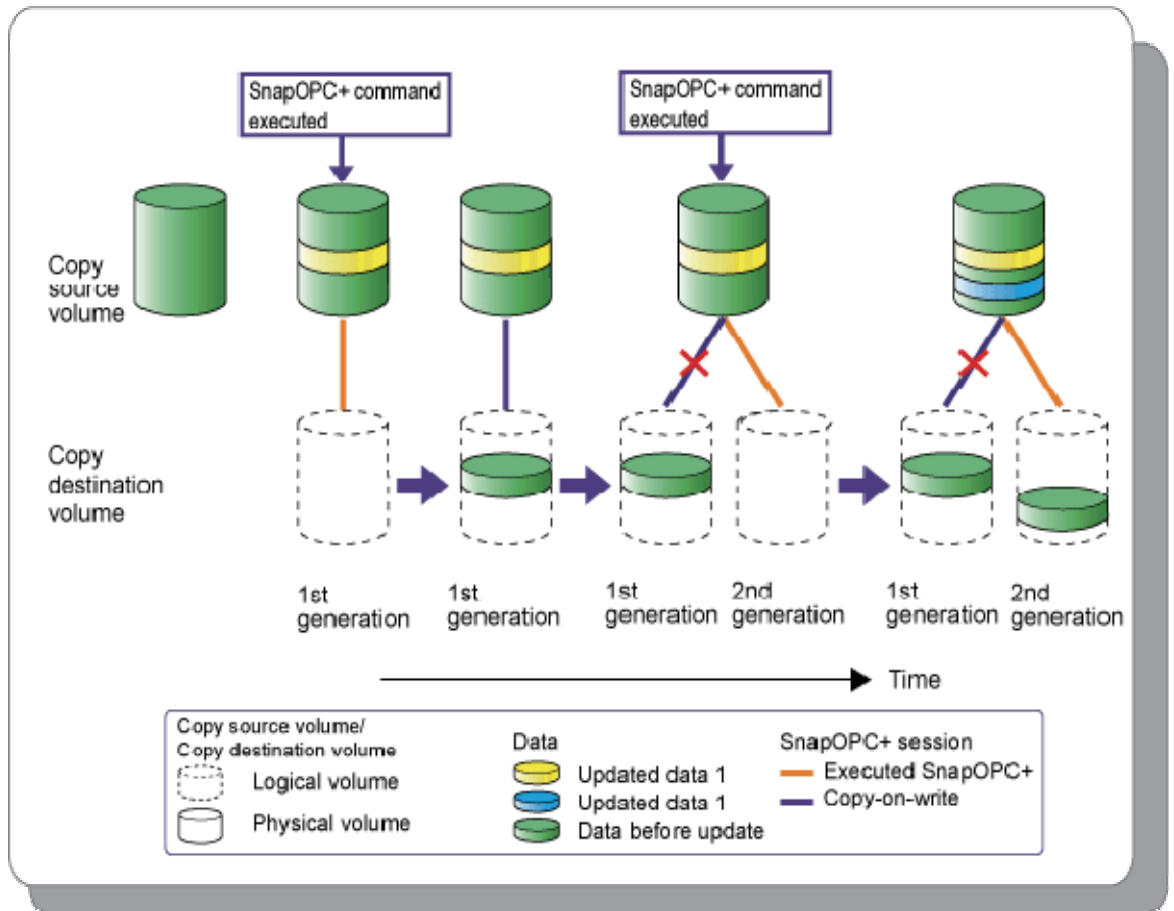
SnapOPC+ can save the copy source volume data as it was before any updates are made in snap generation units (units in which replication volumes were created). Since copy is performed only to the new copy destination volume, the access load on the copy source volume and the physical size used on the copy destination volume can be smaller than with SnapOPC. However, the replication function cannot be used for restoration when SnapOPC+ is used. If restoration is required, use manual copy from the copy destination volume.

Due to the mechanism and features of SnapOPC+, it is assumed that SnapOPC+ is used as a backup to enable recovery if soft faults, such as operator mistakes and software errors, occur. In order to also be prepared for hardware faults, Fujitsu recommends that, in conjunction with SnapOPC+, OPC/QuickOPC/EC/REC should be used to make a complete copy of data.

SnapOPC+ is typically used for:
- Temporary source for an cascade copy to alternate media such as tape
- Backup to disk for file servers and other data with a low modification rates

Figure: Snapshot One Point Copy+ (SnapOPC)

SnapOPC+ command executed

SnapOPC+ command executed

Copy source volume

Copy destination volume

1st generation

1st generation

1st generation

2nd generation

1st generation

2nd generation

Time

Copy source volume/
Copy destination volume

Logical volume

Physical volume

Data

Updated data 1

Updated data 1

Data before update

SnapOPC+ session

Executed SnapOPC+

Copy-on-write

2.1.2 Synchronous High-Speed Copy

Equivalent Copy (EC)

The Equivalent Copy feature of AdvancedCopy Manager invokes a process of synchronization between source and destination volumes to create a synchronized copy of the source volume. The purpose of the synchronization is to reach and maintain a state of equivalence with the source volume in order to create a temporary copy or archival backup.

The source volume remains available and accessible as there is no need to stop or suspend access to the source volume while the copy is built using the synchronization process. When a state of equivalence with the source volume has been attained, the destination volume continues to be maintained as an image of the source volume.

At any subsequent point while the source volume and the destination copy are in this state of equivalence, the destination copy can be split from the source, thus creating a backup with history or a replica copy as at that point in time.

Equivalent Copy is highly effective for:
- ● Making backups much more quickly than with conventional backup processes, because backup data can be collected in parallel with ordinary transactions
- ● Reducing processing time and costs by means of distributed processing using copy data

Figure: Equivalent Copy (EC)
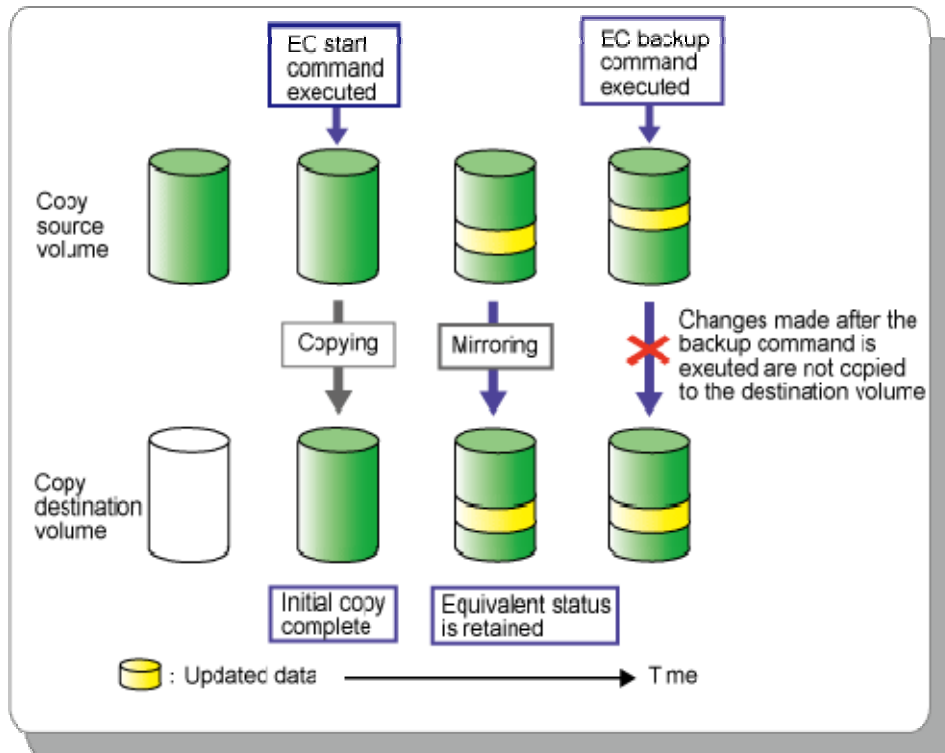
Suspend/Resume Function (EC)

The *Suspend/Resume* option of the AdvancedCopy Manager Equivalent Copy (EC) function is used to create a backup after an initial copy has been built using the EC synchronization process. At this point, the copy source and copy destination volumes (Volume Pair) will have attained a state of equivalence.

The EC session is then suspended using the *Suspend* option, detaching the destination volume from the EC session to create a copy which can be used as a backup with history or as a source volume for a subsequent copy to an archive device. This copy could also be mounted and become available for use by other applications.

While the session is suspended all updates to the copy source volume continue to be tracked so that they can be applied to the destination volume should that EC session be subsequently resumed.

This allows the same destination volume to be reused as the base for a continuing backup, thus reducing the time required for backup.

The *Resume* option will invoke a re-synchronization process of the same source and destination volume pair where all of the tracked changes to the source volume will be applied to the destination volume to attain a state of equivalence again.

A suspend and resume process can be performed on the same volume pair as many times as required.

Figure: Suspend/Resume function (EC)
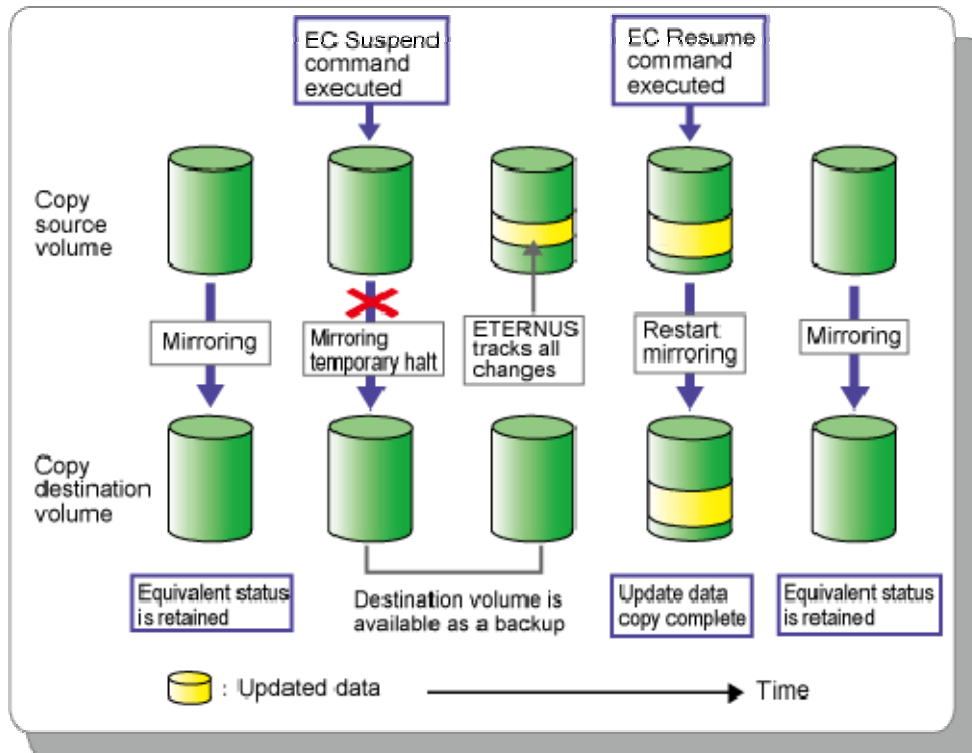
Remote Equivalent Copy (REC)

Remote Equivalency Copy (REC) is used to perform EC in the following circumstances:
- ● REC replication is possible between different ETERNUS storage systems but hosted by a common Storage Server. These may exist on the same SAN but may be in geographically remote locations.
- ● REC Replication is possible between ETERNUS storage systems hosted by different Storage Servers.

REC has two transmission modes; synchronous and asynchronous.
Synchronous mode guarantees that the copy destination will always match the copy source.
Asynchronous transfer mode is typically used in the following circumstances:
- ● where there may be a significant communications lag between the devices
- ● used to avoid adversely affecting server performance and write performance on the copy source.

Asynchronous mode has two primary sub-modes which provide greater control over data transmission according to transaction intensity and or data volume, or available bandwidth between copy source and copy destination.
The default Asynchronous mode must however be selected to perform a split (create a backup or replica).

REC is highly effective for:
- ● Remote backup of a disaster countermeasure system or similar

Figure: Remote Equivalent Copy (REC)
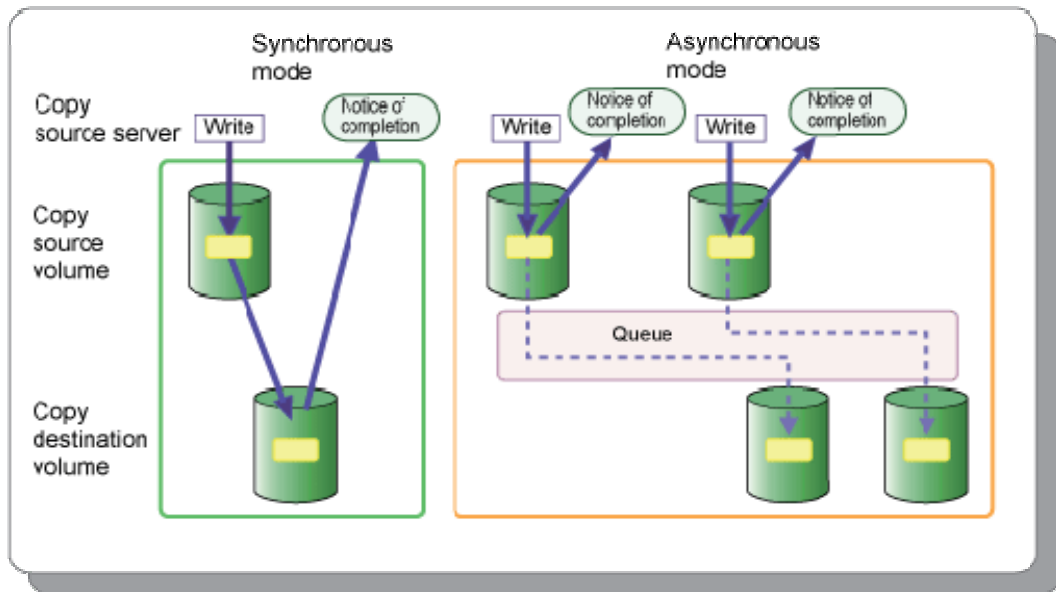
2.1.3 Additional Features

Concurrent Copying

The AdvancedCopy Manager multiple copy function allows concurrent copying from a single source volume to multiple destinations. Only one of these destinations can be in a different ETERNUS.

Cascade Copying

Cascade copying involves specifying the destination of one copy process as the source of a subsequent copy. One copy might be used as a nearby operational backup and another as a remote copy for disaster recovery or archive.

Possible copy combinations for cascade copy are:
- A copy made with OPC used as the source for REC
- A copy made with EC used as the source for REC
- A copy made with REC used as the source for OPC
- A copy made with REC used as the source for SnapOPC
- A copy made with REC used as the source for EC

2.2 AdvancedCopy Manager Backup and Restore

This section describes the backup and restore functions provided by AdvancedCopy Manager.

2.2.1 Backup

Features of backup using AdvancedCopy Manager include the following:
- High-speed backup between volumes regardless of volume capacities
- The advanced copy functions of ETERNUS (One Point Copy and Equivalent Copy) are used to significantly reduce the operational impact of a backup or restoration.
- Online backup is supported in mainstream database environments.
- Faster backups can be made by performing updates of differential copies.
- AdvancedCopy Manager can automatically select destination volumes to be used for backup. Alternatively, you can define explicit relationships between source volumes and backup volumes.

2.2.2 Restore

The backup management information stored by AdvancedCopy Manager allows data to be restored from the most suitable backup volume to a transaction volume. This is performed using the OPC hardware function and the history management information saved by AdvancedCopy Manager to restore to a point in time.

By default, data will be restored to the transaction volume that was the backup source; however, it is possible to change the restore destination.

2.2.3 Tape Backup

AdvancedCopy Manager provides an integrated tape backup capability that delivers disk to disk to tape backup functionality when used in conjunction with an ETERNUS Tape Library. Backup to tape is enabled by installing a dedicated Tape Server and AdvancedCopy Manager software.

Backup to disk is implemented as normal using the same hardware functions of ETERNUS (One Point Copy and Equivalent Copy) and a subsequent backup to tape is then performed from the AdvancedCopy Manager backup volume to tape.

In addition, data saved to tape for disaster recovery purposes can be recovered to a disk array unit if that suits the data recovery environment.

This maximises transaction volume uptime by taking advantage of the ETERNUS hardware functions.

2.3 Replication

Replication in AdvancedCopy Manager uses the same advanced copy functions (OPC and EC) of ETERNUS to perform high-speed replication. It can be used explicitly as a replication mechanism or as an online backup function with history.

For the purpose of this overview, replication is defined as copying that is intended for concurrent use by other applications. The destination volume in a replication remains accessible, unlike destination volumes in backup which are typically unmounted.

Replication is not limited to within a single Storage Server nor a single ETERNUS storage system. Using REC, the replication can also be performed across different ETERNUS storage systems regardless of geographical locations.

Features of replication using AdvancedCopy Manager
- With the AdvancedCopy Manager replication function, replication can be configured in two directional modes:
  — Uni-directional: copying can only be performed from the source volume to the destination volume
  — Bi-directional: copying can be performed in either direction between the two volumes
- If the copy source and copy destination volumes are both in the same ETERNUS and hosted by the same Storage Server, data can be copied in real-time.
- High-speed replication can be executed at the following databases without interrupting operations that are in progress:
  — Symfoware Server (Fujitsu)
  — Oracle Database (Oracle Corporation)
  — SQL Server (Microsoft Corporation)
  — Exchange Server (Microsoft Corporation)
  — DB2 (International Business Machines Corporation)

Chapter 3　　AdvancedCopy Manager Features

AdvancedCopy Manager includes a number of features that support the ETERNUS hardware functions. Backup configuration and generation management are provided, and history information is managed to enable data restoration from the latest or previous generations of backed up data. AdvancedCopy Manager also provides web client operation and user authentication capabilities.

The table below provides a comparison of AdvancedCopy Manager features available in backup and replication.

Table: Comparison of AdvancedCopy Manager features in Backup and Replication

AdvancedCopy Manager feature	Backup	Replication
Backup policy and generation management	Yes	No
History management	Yes	No
Storage management	Yes	Yes
Destination volume selection	Automatic / Manual	Manual
Command line operation	Yes	Yes
Web client operation	Yes	Yes
Authentication management	Yes	Yes

3.1 Policy Management

The policy management function specifies the number of preserved backup generations and the number of days that should elapse between backups of a transaction volume. If this interval has been exceeded, the number of days' delay can be displayed.

3.2 History Management

The history management function manages information relating to preserved backup generations containing previously backed up data. Backup history can be displayed to check information such as the backup volume names and backup date of backup data under generation management.

3.3 Storage Configuration Management

The storage configuration management function manages the configurations of source volumes (volumes to be backed up) and destination volumes (volumes to which a backup should be saved).

3.4 Management using a Web Client

A comprehensive array of ACM functionality is available in a Web Browser Client interface as a user friendly alternative to executing tasks manually at the CLI. The computer on which the web client is running does not need to any AdvancedCopy Manager software installed.

The following functionality is available using the web client:

- Security management
- Device configuration
- Progress status
- Backup management
- Replication management

Chapter 4 AdvancedCopy Manager Operating Environment

This chapter describes the AdvancedCopy Manager operating environment.

4.1 System Conditions

Both Manager and Agent Modules of a Storage Management Server are supported on the following operating platforms:

● Windows
● Solaris
● Linux

The Storage Server agent module is additionally supported on the following operating platforms:

● HP-UX
● AIX

The Tape Sever is supported on the following operating platform:

● Solaris

Different product levels of AdvancedCopy Manager have differences in functionality. Therefore, Fujitsu recommends that the Management Module and Agent module have the same revision level.

Refer to the following for compatibility details:

● "Hardware conditions" and "Software conditions" in the "ETERNUS SF AdvancedCopy Manager Installation Guide"
● "AdvancedCopy Manager operating environment" in the "ETERNUS SF AdvancedCopy Manager Operator's Guide" for the relevant platform.

4.2 Supported Devices

AdvancedCopy Manager supports backup at the device level, and supports partition, volume group, slice, and similar devices. Volume compatibility depends on the active system configuration.

Refer to "AdvancedCopy Manager device support" in the "ETERNUS SF AdvancedCopy Manager Operator's Guide" for the relevant operating platform for details.