



ETERNUS SF AdvancedCopy Manager V13.2

GUI User's Guide



Preface

++ Purpose

This manual explains how to operate the Web-GUI with ETERNUS SF AdvancedCopy Manager.

++ Reader

This manual is intended for system managers who use the ETERNUS SF AdvancedCopy Manager for storage management.

++ Organization

This manual consists of four chapters:

+ Chapter 1 AdvancedCopy Manager Web Client

This chapter explains how to operate the initial window.

+ Chapter 2 Authentication Feature Window Operation

This chapter explains how to operate the authentication feature (the security management) window.

+ Chapter 3 Backup Management Operations

This chapter explains how to operate the backup management window.

+ Chapter 4 Replication Management Operations

This chapter explains how to operate the replication management window.

++ Related Manuals

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

- ETERNUS SF AdvancedCopy Manager Overview Manual
Provides an overview of ETERNUS SF AdvancedCopy Manager.
- 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.

Users are recommended to read the ETERNUS SF AdvancedCopy Manager Operator's Guide first to gain an understanding of the general concepts of this software before reading the other manuals as required.

++ Abbreviation

- Microsoft (R) Windows (R) 2000 Professional, Microsoft (R) Windows (R) 2000 Server, and Microsoft (R) Windows (R) 2000 Advanced Server are abbreviated to Windows2000.
- 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.

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Chapter 1 AdvancedCopy Manager Web Client

This chapter explains the window structure of the AdvancedCopy Manager Web client and details how to operate the initial window.

1.1 Usage conditions

The following conditions must be met in order to use AdvancedCopy Manager Web clients:

Table: Web client usage conditions

Type	Conditions	Remarks
Operating OS	One of the following is required: <ul style="list-style-type: none">● Windows 2000● Windows Server 2003● Windows XP● Windows Vista	Solaris, HP-UX, AIX and Linux are not supported.
Web browser	For Windows 2000, Windows Server 2003 and Windows XP: One of the following is required: <ul style="list-style-type: none">● Microsoft(R) Internet Explorer 6.0 (6.0 only)● Netscape 7.X For Windows Vista: <ul style="list-style-type: none">● Microsoft(R) Internet Explorer 7.0	Browsers other than those to the left are not supported.
Java Plug-in	<ul style="list-style-type: none">● 1.4.2_14 or later● 5.0 update11 or later	Versions 6.0 and later are not supported.

Refer to “Downloading the Java Plug-in installer” for information on how to obtain Java Plug-ins.

1.2 Web Client and Window Structure

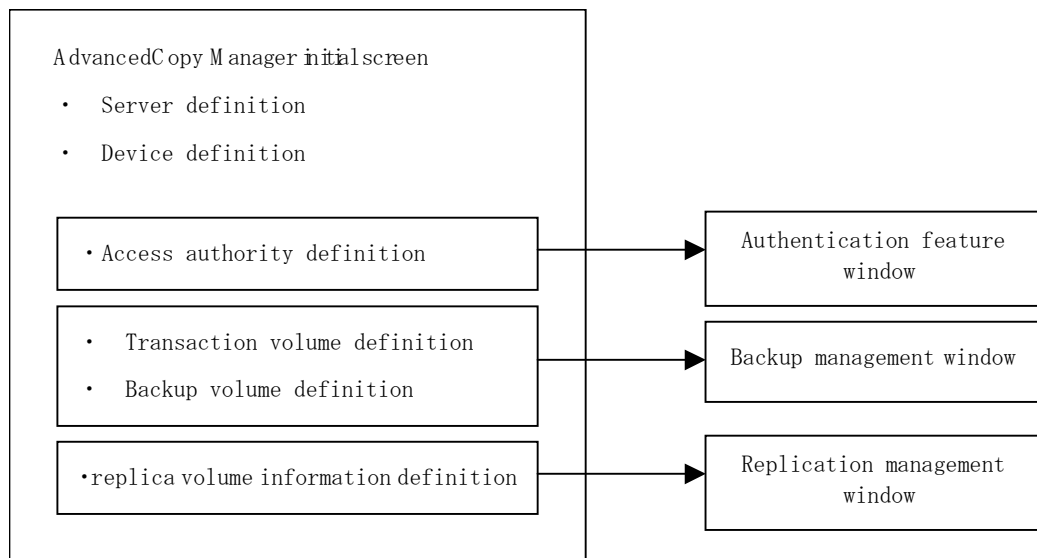
The AdvancedCopy Manager Web client offers the following management functions:

- Security management
- Backup management
- Replication management

Each management window is activated from the AdvancedCopy Manager initial window. On the initial window the user can define a Storage Management Server, a Storage Server for storage management, and device information.

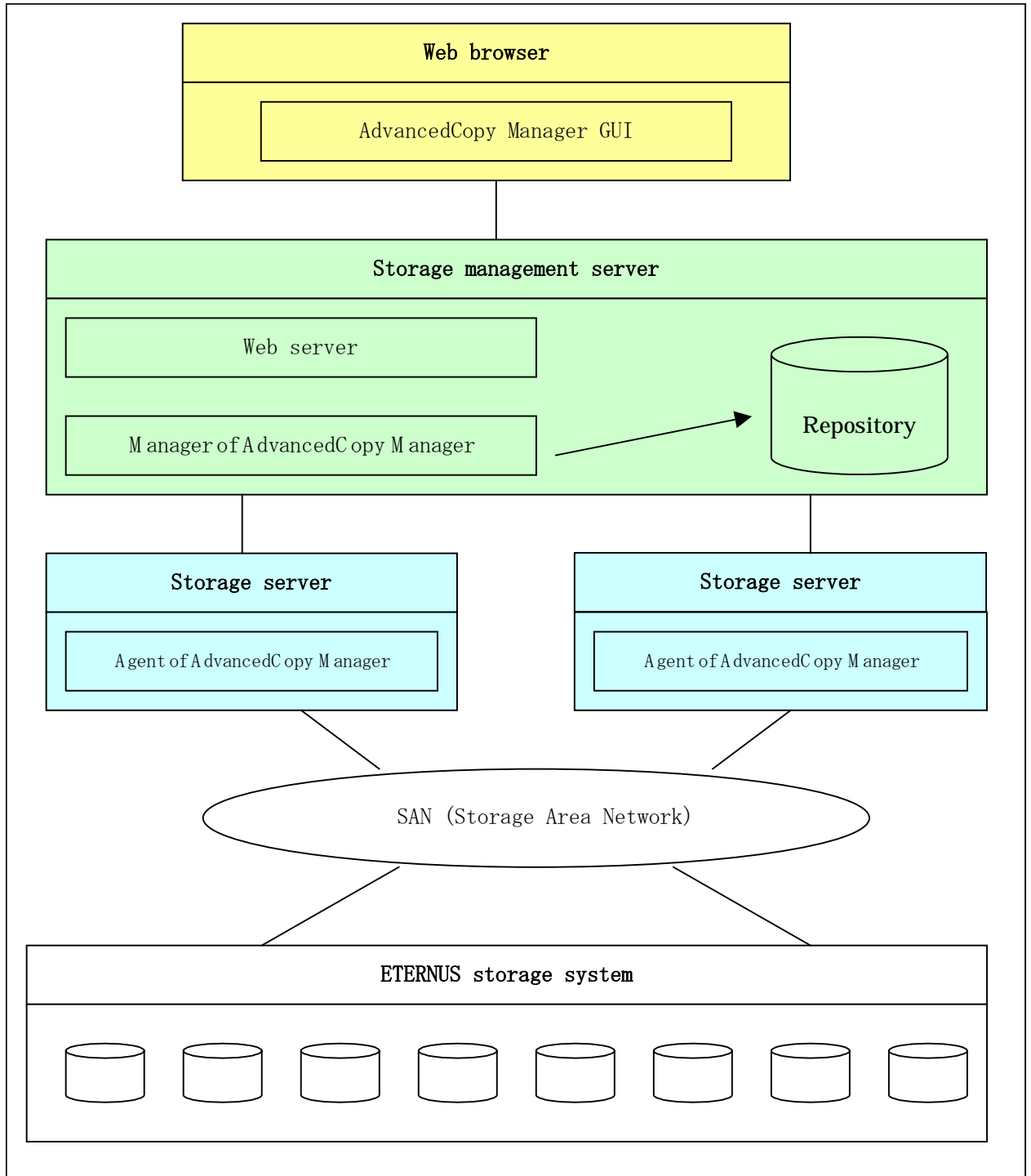
The AdvancedCopy Manager window structure is shown below.

Figure: AdvancedCopy Manager initial window



An example system environment configuration is shown below.

Figure: Example system environment configuration



The initial window and management windows of AdvancedCopy Manager are executed via the Web browser. Therefore, a Java Plug-in version must be installed in the client. For the required Java plug-in, refer to section "Usage_conditions".

For installation details, refer to "Setting up a client".

1.3 Initial Window

Activate the initial window by entering the AdvancedCopy Manager URL in the Web browser.
[AdvancedCopy Manager URL]

To access the Storage Management Server by its physical IP address, enter:

`http://storage-management-server-physical-IP-address (:port-number)/swstorage/index.html`

To access the Storage Management Server by its logical IP address (eg. in cluster operation), enter:

`http://storage-management-server-logical-IP-address (:port-number)/swstorage/index.html`

When the default (80) is set as a service target port number in the Web server setup, no port number need be specified. When a value other than the default is set, specify a port number.



Note

Storage Management Server access through a proxy is not supported.

For details, see "Browser and Java Plug-in settings."



Note

Usually the physical IP address of the Storage Management Server (mentioned above) and a logical IP address are entered when the AdvancedCopy Manager cluster is set up, or when the database is created during AdvancedCopy Manager installation. However, when identifying and using the IP address for the Storage Management Server machine being equipped with two or more network cards, and using an above-mentioned IP address and an above-mentioned Web screen, enter the IP address set up as in "GUI connection information setting command (stggiipset)" in the "ETERNUS SF AdvancedCopy Manager Operator's Guide".



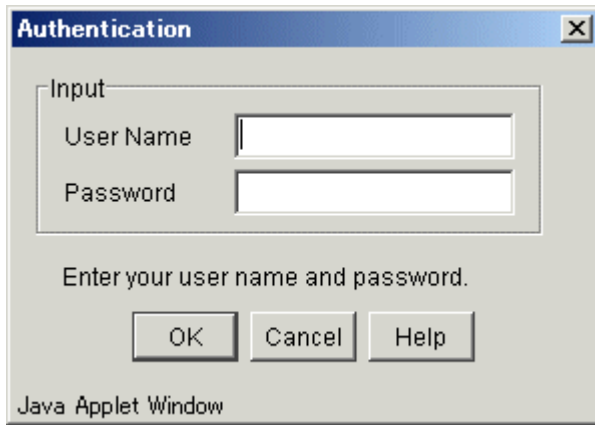
Note

If the Storage Management Server uses a logical IP address (such as for cluster operation), then appropriate settings in authentication-related files are required. For more information, see "Settings of authentication-related files."

1.3.1 User authentication

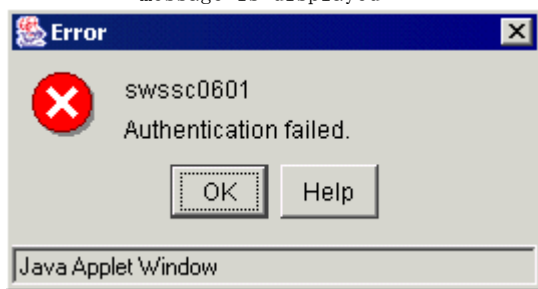
When the [AdvancedCopy Manager URL] is entered on the Web browser, the authentication dialog box is displayed. Enter the name and password of a user or privileged user registered with the AdvancedCopy Manager authentication feature (i.e. root user), and click [OK].

See "Authentication Feature Window Operation" for details on how to register users and access permissions.

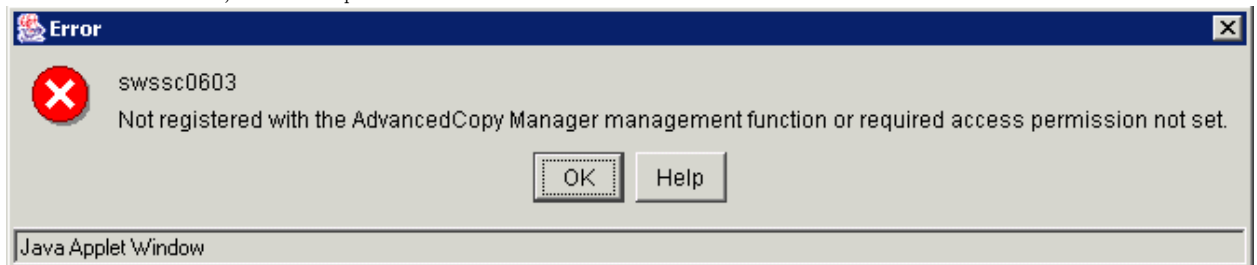


If user authentication fails, an error dialog is displayed as shown below. Enter the correct user name and password.

- If an unregistered user name or an incorrect password is entered, the following error message is displayed:



- A user name registered in the system was entered, but this user name is either not recorded in the AdvancedCopy Manager authentication system or does not have the required write, execute, or read permissions.



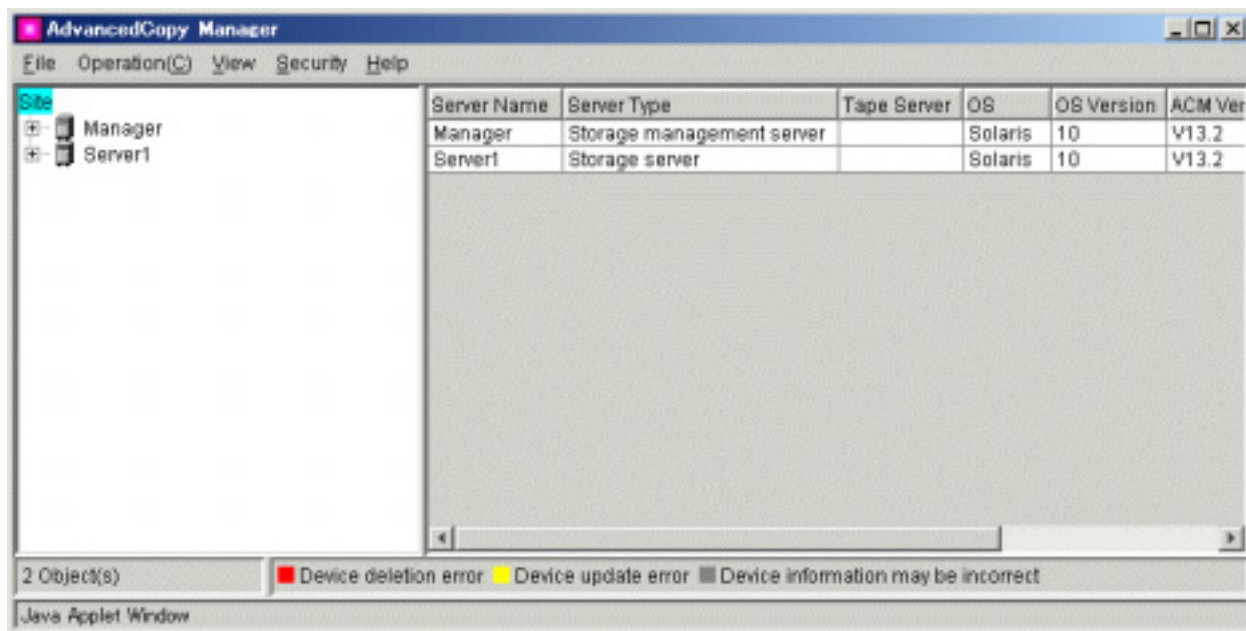
Point

The display item type, item sequence, and item display width set by a user on the initial window are retained for the user and are valid on the window when it is reactivated by the user. This configuration is valid each time the same user name is used.

1.3.2 Server list view

This is the first view displayed after user authentication.

This view displays server information, and is displayed when [Site] is double-clicked on the Tree window.



The display item of this screen can also be displayed using the "server information display command (stgxfwcmdisprv)" of AdvancedCopy Manager.

Refer to "Configuration management command" in the "ETERNUS SF AdvancedCopy Manager Operator's Guide" for details on commands.

1.3.2.1 Displayed Items

Items displayed on the server list view are listed below.

"Yes" in the display selection column indicates that the item is to be displayed and can be selected (see "Changing display items").

"Yes" in the default column indicates that the item is displayed when the screen is initialized.

Table: Items displayed on server list view

No.	Item name	Explanation	Display selection	Default
1	Server Name	Managing server name	-	Yes
2	Server Type	Server type (Storage Management Server or Storage Server)	Yes	Yes
3	Tape Server	Displays whether or not it is operating as a Tape Server. If operating as a Tape Server, "Y" is displayed.	Yes	Yes
4	OS	Type of installed OS	Yes	Yes
5	OS Version	Version of installed OS	Yes	Yes
6	ACM Version	Installed version of this product	Yes	Yes
7	IP Address	IP address of managing server	Yes	Yes
8	Port Number	Port number for communication with managing server	Yes	Yes

1.3.2.2 Operations

The supported operations are listed below.

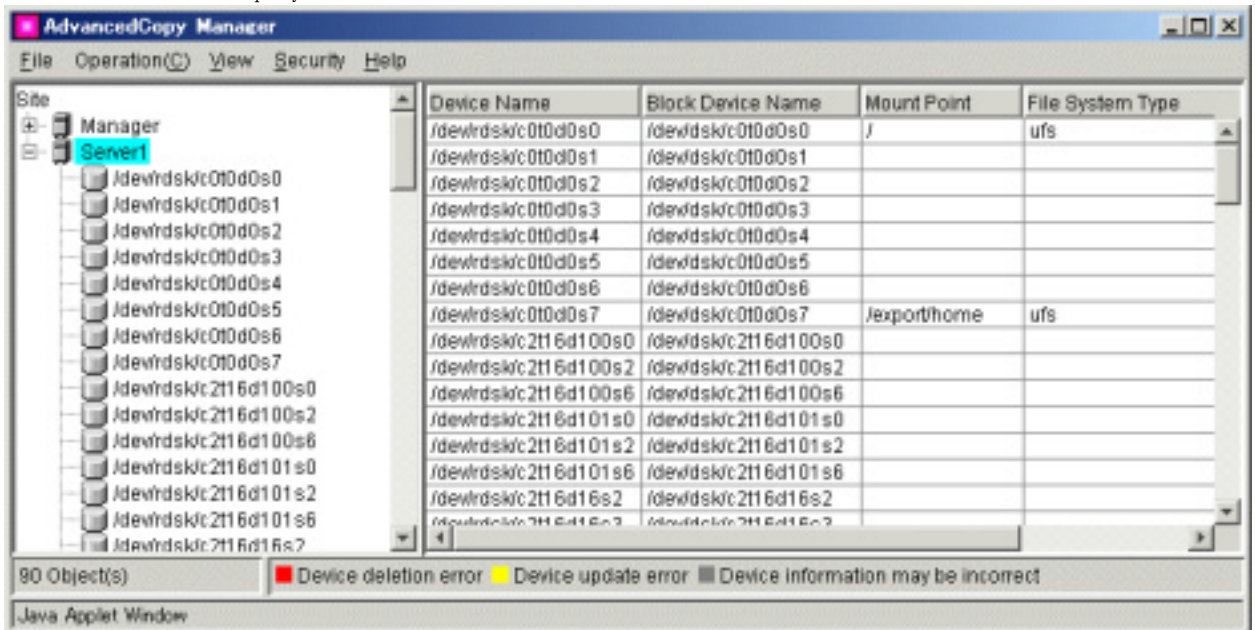
Table: Operations supported on the server list view

Operation	Explanation	Operation method
Add Server	Adds server.	See "Server registration method".
Update Server	Changes server information.	See "Server modification method".
Delete Server	Deletes sever.	See "Server deletion method".
Refresh Server	Acquires and reflects information about all server-managed devices	See "Acquisition/reflection of information on all devices".

1.3.3 Device list view

This view displays information about devices managed with a specified server.

This view is displayed when a server name is double-clicked in the Tree window.



Point

The display item of this screen can also be displayed using the "device information display command (stgxfwcmdispdev)" of AdvancedCopy Manager.

Refer to "Configuration management command" in the "ETERNUS SF AdvancedCopy Manager Operator's Guide" for details on commands.



Note

During acquisition/reflection of information on all devices, if the device has invalid settings and its information is reflected in the repository, then the name of the device in the Device List view becomes highlighted in gray. The following are examples of such cases:

- Though the settings are invalid, the user mistakenly continued processing by clicking in the "Confirmation of device information" dialog box.
- AdvancedCopy is supported, but the information to be handled is the device information in a cabinet where settings are not defined (including cases in which AdvancedCopy is not used in one cabinet for mirroring volumes between cabinets).

1.3.3.1 Display Item

The tables below list the items displayed on various server platforms: Windows, Solaris, HP-UX, Linux, and AIX. The table entries "SDX" and "SDX object" represent SynfinityDISK and PRIMECLUSTER Global Disk Services (subsequently referred to as GDS). For details, please refer to the manual of the relevant product.

"Yes" in the display selection column indicates that the item is to be displayed and can be selected (see "Changing display items").

"Yes" in the default column indicates that the item is displayed when the screen is initialized.

Table: Items displayed on device list view (Windows server)

No.	Item name	Explanation	Display selection	Default
1	Device Name	Name of device which AdvancedCopy Manager manages internally Displayed in the g?d? and g?d?p? formats g?: Disk array number(If there is no device mounted on the ETERNUS storage system, this value is 0.) d?: Disk number(*1) p?: Logical disk number(*2) For SDX object, format "disk class name/mirror volume name:g?d?p?" is used Disk class name: SDX object disk class name Mirror volume name: SDX object mirror volume name	-	Yes
2	Block Device Name	Block device name Displayed in the disk? and disk?p? formats disk?: Disk number displayed with disk administrator p?: Logical disk number(*2)	Yes	Yes
3	Mount Point	Drive letter	Yes	Yes
4	File System Type	File system type	Yes	Yes
5	Device Type	Device type [Normal/SDX(slice)]	Yes	Yes
6	Size (MB)	Size assigned to device (MB)	Yes	Yes

(*1) Number assigned uniquely in disk array device and different from the disk number in the disk administrator

(*2) Logical disk sequence number on the disk. The logical disk is defined in the disk administrator as explained below. The numbers are assigned sequentially from left to right in the disk administrator.

— For a basic partition, the logical disk consists of the entire partition

— For an extended partition, the logical disk consists of a logical drive in the partition

Table: Items displayed on device list view (Solaris server)

No.	Item name	Explanation	Display selection	Default
1	Device Name	RAW device name	-	Yes
2	Block Device Name	Block device name	Yes	Yes
3	Mount Point	Mount point name	Yes	Yes
4	File System Type	File system type	Yes	Yes
5	Device Type	Device type [Normal/SDX(Slice)/VxVM/SDX(Volume)]	Yes	Yes
6	Size (MB)	Size assigned to device (MB)	Yes	Yes

Table: Items displayed on device list view (HP-UX server)

No.	Item name	Explanation	Display selection	Default
1	Device Name	RAW device name or LVM subordinate's volume group name	-	Yes
2	Block Device Name	Block device name or LVM subordinate's volume group name	Yes	Yes
3	Mount Point	Mount point name	Yes	Yes
4	File System Type	File system type	Yes	Yes
5	Device Type	Device type [Normal/LVM/VxVM]	Yes	Yes
6	Size (MB)	Size assigned to device (MB)	Yes	Yes

Table: Items displayed on device list view (Linux server)

No.	Item name	Explanation	Display selection	Default
1	Device Name	Use a RAW device name if it has already been created; otherwise, use a block device name.	-	Yes
2	Block Device Name	Block device name	Yes	Yes
3	Mount Point	Mount point name	Yes	Yes
4	File System Type	File system type	Yes	Yes
5	Device Type	Device type [Normal/SDX(slice)/SDX(Volume)]	Yes	Yes
6	Size (MB)	Size assigned to device (MB)	Yes	Yes

Table: Items displayed on device list view (AIX server)

No.	Item name	Explanation	Display selection	Default
1	Device Name	RAW device name or LVM subordinate's volume group name	-	Yes
2	Block Device Name	Block device name or LVM subordinate's volume group name	Yes	Yes
3	Mount Point	Mount point name	Yes	Yes
4	File System Type	File system type	Yes	Yes
5	Device Type	Device type [LVM/VxVM]	Yes	Yes
6	Size (MB)	Size assigned to device (MB)	Yes	Yes

1.3.3.2 Operations

Supported operations on the device view list are listed below.

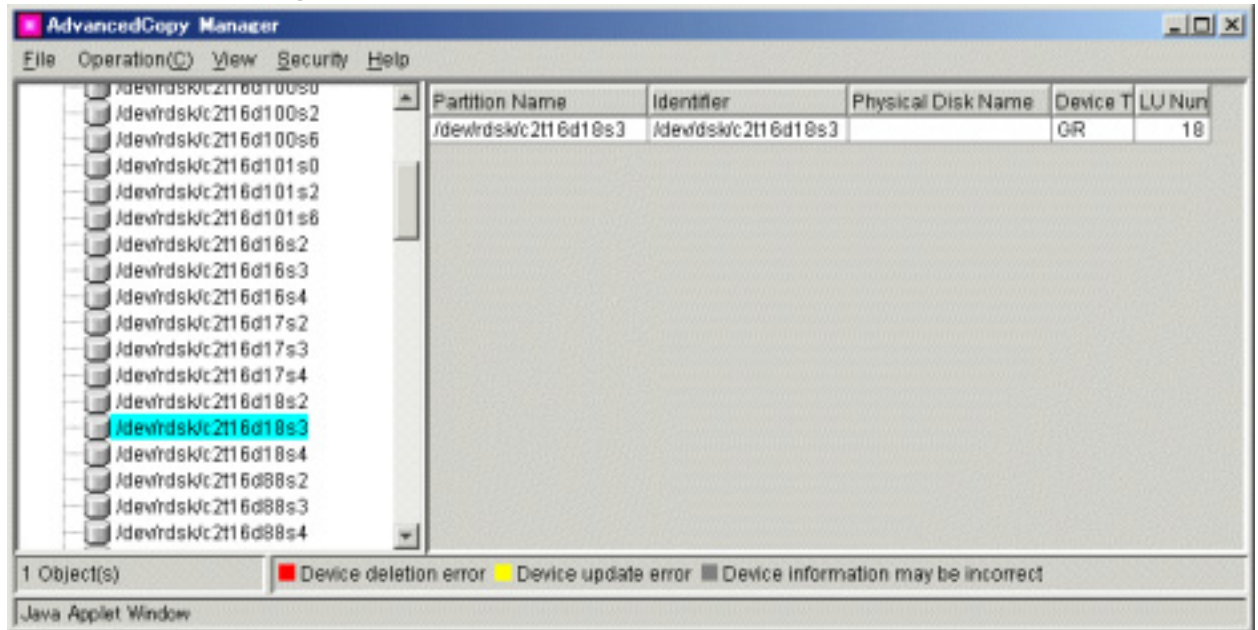
Table: Operation supported on device list view

Operation	Explanation	Operation method
Refresh Device	Acquires and reflects information about the specific device	See "Acquisition/reflection of information on a specific device".
Delete Device	Deletes device information.	See "Device information deletion method"
List Devices Using the Same Copy Area	The devices using the same copy area as the specified device can be displayed.	See "List devices using the same copy area"
List Devices in the Same Logical Group	The devices in the same logical group as the specified device can be displayed.	See "List devices in the same logical group"

1.3.4 Partition list view

This view displays information about the partitions that comprise the specified device.

This view is displayed when a device name is double-clicked in the Tree window.



Point

The display item of this screen can also be displayed using the "partition information display command (stgxfwcmdisppat)" of AdvancedCopy Manager.

Refer to "Configuration management command" in the "ETERNUS SF AdvancedCopy Manager Operator's Guide" for details on commands.

1.3.4.1 Display items

The tables below list the items displayed on various server platforms: Windows, Solaris, HP-UX, Linux, and AIX.

"Yes" in the display selection column indicates that the item is to be displayed and can be selected (see "Changing display items").

"Yes" in the default column indicates that the item is displayed when the screen is initialized.

Table: Items displayed on partition list view (Windows server)

No.	Item name	Explanation	Display selection	Default
1	Partition Name	Partition name If present on the ETERNUS storage system, the display format is the same as that in item No. 1 of Items displayed on device list view (Windows server). In cases other than the above, the display format is as follows: - For MBR disks: the S?p? format is used S?: Signature (8-digit hexadecimal notation) p?: Logical disk number (*1) - For GPT disks: G?p? G?: DiskId of the disk (32-digit hexadecimal character string) p?: Logical disk number (*1)	-	Yes
2	Identifier	Device name managed internally by AdvancedCopy Manager The display format is the same as that in item No. 1 of Items displayed on device list view (Windows server).	Yes	Yes
3	Physical Disk Name	Physical disk name The display format is the same as that in item No. 2 of Items displayed on device list view (Windows server).	Yes	Yes
4	Device Type	If present on the ETERNUS storage system, "GR".	Yes	Yes
5	LU Number	If present on the ETERNUS storage system, LU number.	Yes	Yes

(*1) Logical disk sequence number of the disk. The logical disk is defined by the disk administrator as explained below. The numbers are assigned sequentially from the top left to the right by the disk administrator.

- For a basic partition, the logical disk consists of the entire partition.
- For an extended partition, the logical disk consists of a logical drive in the partition.

Table: Items displayed on partition list view (Solaris server)

No	Item name	Explanation	Display selection	Default
1	Partition Name	RAW device name For SDX(slice) object, format "RAW device name:c?t?d?" is used.	-	Yes
2	Identifier	Block device name For SDX(slice) object, format "block device name:c?t?d?" is used.	Yes	Yes
3	Physical Disk Name	This item is left blank.	Yes	Yes
4	Device Type	If present on the ETERNUS storage system, this is "GR".	Yes	Yes
5	LU Number	If present on the ETERNUS storage system, this is the LU number.	Yes	Yes

Table: Items displayed on partition list view (HP-UX server)

No.	Item name	Explanation	Display selection	Default
1	Partition Name	RAW device name or LVM subordinate's volume group name	-	Yes
2	Identifier	Block device name or LVM subordinate's volume group name	Yes	Yes
3	Physical Disk Name	This item is left blank.	Yes	Yes
4	Device Type	If present on the ETERNUS storage system, this is "GR".	Yes	Yes
5	LU Number	If present on the ETERNUS storage system, this is the LU number.	Yes	Yes

Table: Items displayed on partition list view (Linux server)

No.	Item name	Explanation	Display selection	Default
1	Partition Name	When the RAW device name is being created, it is a RAW device name; otherwise, it is a block device name. For the slice unit of SDX object, format "RAW device name:sd?" is used.	-	Yes
2	Identifier	Block device name. For the slice unit of SDX object, format "block device name:sd?" is used.	Yes	Yes
3	Physical Disk Name	This item is left blank.	Yes	Yes
4	Device Type	If present on the ETERNUS storage system, this is "GR".	Yes	Yes
5	LU Number	If present on the ETERNUS storage system, this is the LU number.	Yes	Yes

Table: Items displayed on partition list view (AIX server)

No.	Item name	Explanation	Display selection	Default
1	Partition Name	RAW device name or LVM subordinate's volume group name	-	Yes
2	Identifier	Block device name or LVM subordinate's volume group name	Yes	Yes
3	Physical Disk Name	This item is left blank.	Yes	Yes
4	Device Type	If present on the ETERNUS storage system, this is "GR".	Yes	Yes
5	LU Number	If present on the ETERNUS storage system, this is the LU number.	Yes	Yes

1.3.4.2 Operations

No operations are supported by the partition list view.

1.3.5 Server registration method

This section describes how to register server information.

The following table shows the operations that can be used to display the [Add Server] screen.

Table: [Add Server] screen display method

Selection from server list view	Operation
Basic tree	Select [Add server...] from the pop-up menu that is displayed when the mouse is right-clicked. Or Select [Add server...] from the [Operation] menu.

Enter the required items, and then click the [OK] button to add the server.

The input items are explained below.

Table: Items to be specified for the addition of a server

No.	Item name	Selection	Value	Explanation
1	Server name	User defined	Maximum of 255 bytes (*1)	Specifies the name of the Storage Server to be added. The name must be less than 255 bytes (*2) and a unique server name for AdvancedCopy Manager in order for it to manage the server. Non-cluster operation: Host name recognized by the operating system Cluster operation: AdvancedCopy Manager logical node name specified during cluster setup
		Use hostname	-	
2	IP address	-	Value conforming to IPv4 rule	Specify a physical IP address if the server is managed as a physical server. Specify a logical IP address if the IP address is made redundant and managed (as a logical server), as in a cluster environment.
3	Port number	-	1024 to 65535	Port number assigned to service name stgxfws if the server is managed as a physical server. Port number specified during cluster setup, as in a cluster environment.

(*1) The following characters can be used: single-byte alphanumeric characters, minus sign (-), underscore (_), hash (#), and period (.). The first character must be a single-byte alphanumeric character. (note that a double-byte character causes an error.)



Point

This operation can also be carried out using the "server information add command (stgxfwcmaddsrv)" of AdvancedCopy Manager.

Refer to "Configuration management command" in the "ETERNUS SF AdvancedCopy Manager Operator's Guide" for details of commands.

1.3.6 Server modification method

This chapter explains how to change server information.

The [Server Update] screen can be used to change the following server information:

- Storage Server IP address
- Storage Server port number
- Storage Management Server name
- Storage Server name

This is also used when the Tape Server management function is installed on the target server later.



Point

- If the `-f` option of the server information change command (`stgxfwcmmodsrv`) is used, the server information of all servers in systems managed by AdvancedCopy Manager can be changed as a package while maintaining server information consistency. Use the server information change command (`stgxfwcmmodsrv`) to change server information as a package. Refer to "Changing the operating environment" and "Configuration management command" in the "ETERNUS SF AdvancedCopy Manager Operator's Guide" applicable to the relevant operating system for the procedures for using the server information change command (`stgxfwcmmodsrv`) to change server information and for command details.
- The various "Update server" screen operations can also be executed using the server information change command (`stgxfwcmmodsrv`), of the AdvancedCopy Manager commands, with option other than the `-f` option. Refer to "Configuration management command" in the "ETERNUS SF AdvancedCopy Manager Operator's Guide" for details of commands.



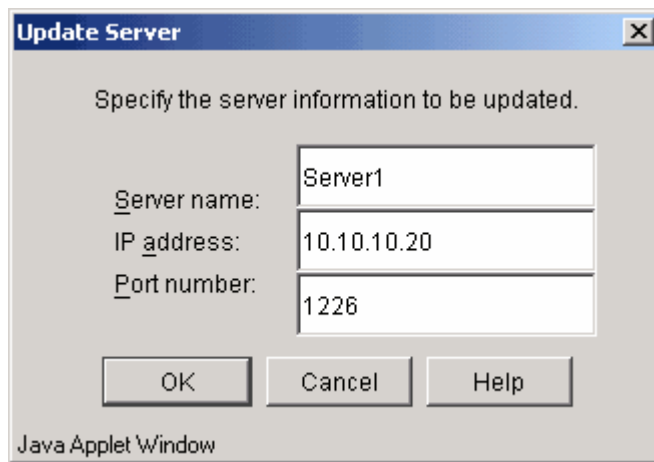
Note

If the `-f` option of the server information change command (`stgxfwcmmodsrv`) is not used, use the Management server information change command (`stgcmmodnode`) to change the server information listed below. Refer to "Configuration management command" in the "ETERNUS SF AdvancedCopy Manager Operator's Guide" applicable to the relevant operating system for the command details.

- IP address of the Storage Management Server
- Port number of the Storage Management Server

1.3.6.1 How to change the Storage Server IP address

1. When you define the Storage Server used as the candidate for change as a replication source or replication destination volume using a replication management function, please delete the setup of the original / replica volume by referring to "Deleting an original volume or replica volume" in the "ETERNUS SF AdvancedCopy Manager Operator's Guide".
2. Stop the AdvancedCopy Manager service in the target Storage Server. For details on how to stop the service, refer to "Starting and stopping daemons" in the "ETERNUS SF AdvancedCopy Manager Operator's Guide".
3. Change the system IP address in the Storage Server.
If the Storage Server transaction is running as a cluster operation, change the logical IP address for the Storage Server transaction.
4. Activate the AdvancedCopy Manager service in the Storage Server. For details of how to activate the service, refer to "Starting and stopping daemons" in the "ETERNUS SF AdvancedCopy Manager Operator's Guide".
5. The following operations can be used to display the [Update Server] screen:
 - Right-click the server to be updated in the server list view and select [Update Server...] from the popup menu.
 - Or
 - Select the server whose information is to be changed from the server list view, and select [Update Server...] on the [Operation] menu.



6. Change the information as required and click [OK].

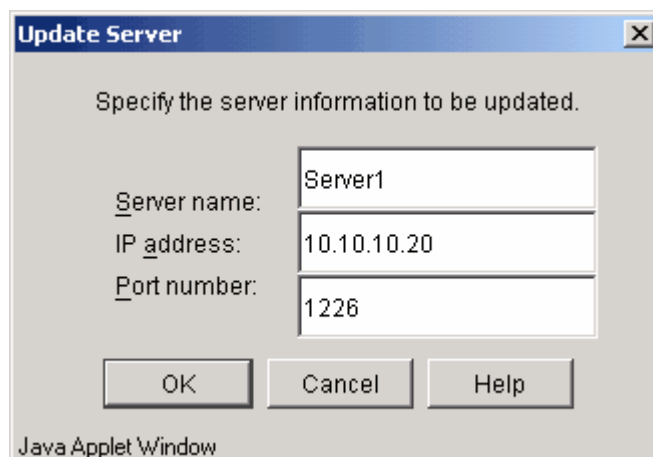
1.3.6.2 How to change the Storage Server port number

1. When you want to change the Storage Server that is being used as a replication source or destination volume for a replication management function, delete the original / replica volume. For details, refer to "Deleting an original volume or replica volume" in the ETERNUS SF AdvancedCopy Manager Operator's Guide.
2. Stop the AdvancedCopy Manager service in the target Storage Server. For details on how to stop the service, refer to "Starting and stopping daemons" in the "ETERNUS SF AdvancedCopy Manager Operator's Guide".
3. In the Storage Server, change the port number for the AdvancedCopy Manager communication service (stgxfws).

When the Storage Server is a Solaris OE server, HP-UX, or Linux server, change the communication service (stgxfws) port number written in the /etc/services. When the Storage Server is a Windows server, change the communication service (stgxfws) port number written in the Windows installation directory %system32%drivers%etc%services.

If the Storage Server transaction is running as a cluster operation, change the port number of the Communications Service (stgxfws_logical node name) for the Storage Server transaction.

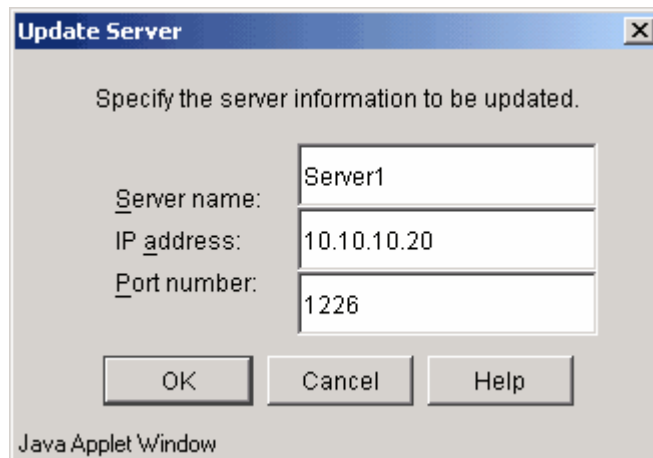
4. Activate the AdvancedCopy Manager service in the Storage Server. For details on how to activate the service, refer to "Starting and stopping daemons" in the "ETERNUS SF AdvancedCopy Manager Operator's Guide".
5. The following operations can be used to display the [Update Server] screen:
 - Right-click the server to be updated in the server list view and select [Update Server...] from the popup menu.
 - Or
 - Select the server whose information is to be changed from the server list view, and select [Update Server...] on the [Operation] menu.



6. Change the information as required and click [OK].

1.3.6.3 How to change the Storage Management Server name

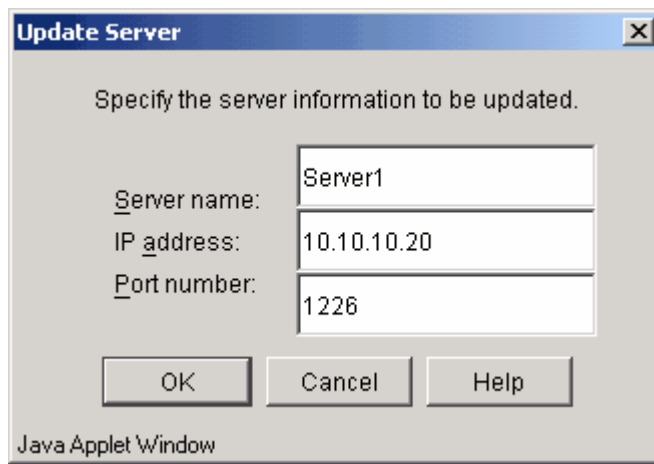
1. Determine whether the target Storage Management Server to be changed is also used as a Storage Server. If it is, refer to the chapter entitled, "How to change the Storage Server name." Then, perform Procedure 4.
2. The following operations can be used to display the [Update Server] screen:
 - Right-click the server to be updated in the server list view and select [Update Server...] from the popup menu.Or
 - Select the server whose information is to be changed from the server list view, and select [Update Server...] on the [Operation] menu.



3. Change the information as required and click [OK].
4. Execute the Management server information change command (stgcmmodnode) in each Storage Server managed by this Storage Management Server. For details of changing server information, refer to the "Management server information change command (stgcmmodnode)" in the "ETERNUS SF AdvancedCopy Manager Operator's Guide".

1.3.6.4 How to change the Storage Server name

1. In the Storage Server to be changed, when the definition is given as an original or replica volume using a replication management function, please delete the original/ replica volume. For details, refer to "Deleting an original volume or replica volume" in the "ETERNUS SF AdvancedCopy Manager Operator's Guide".
2. The following operations can be used to display the [Update Server] screen:
 - Right-click the server to be updated in the server list view and select [Update Server...] from the popup menu.Or
 - Select the server whose information is to be changed from the server list view, and select [Update server...] on the [Operation] menu.



3. Change the information as required and click [OK].

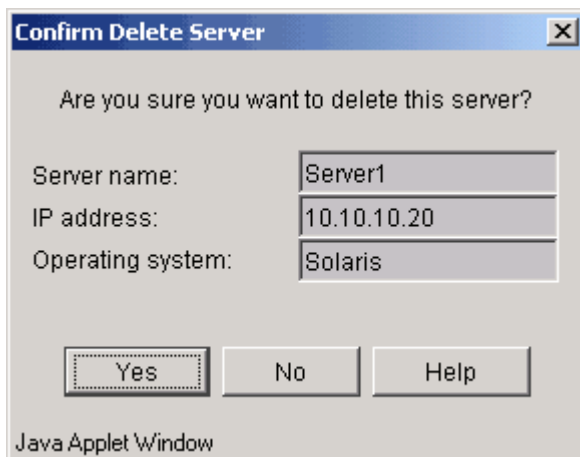
1.3.7 Server deletion method

This section describes how to delete server information.

The following table shows the operations that can be used to display the [Delete Server] screen.

Table: [Delete Server] screen display method

Selection from server list view	Operation
Server to be deleted	Select [Delete server...] from the pop-up menu that is displayed when the mouse is right-clicked. Or Select [Delete server...] from the [Operation] menu.



Click [OK] to delete the server.



Note

- A Storage Management Server cannot be deleted.
- If server information is to be deleted, the following information must be deleted first:
 - [If the backup function is used]
 - Backup history
 - Backup policy
 - Tape backup policy
 - Work volume and backup volume information
 - Tape backup management class

[If the replication function is used]
— Replication volume information



Point

This operation can also be carried out using the "server information deletion command (stgxfwcmdelsrv)" of AdvancedCopy Manager.

Refer to "Configuration management command" in the "ETERNUS SF AdvancedCopy Manager Operator's Guide" for details on commands.

1.3.8 Device information registration method

This section describes how to register device information.

The following two methods can be used to register device information:

- Acquisition/reflection of information on all devices
- Acquisition/reflection of information on specific device



Point

Use this method not only when starting operation but also when changing the device configuration because registration, deletion, and update are implemented by comparing the present device control information with the detected device information.



Note

Device information on the following cannot be registered with AdvancedCopy Manager because its management is outside its scope.

- GPT disk (for an HP-UX server)



Point

This operation can also be carried out using the "device information acquisition/reflection command (stgxfwcmsetdev)" of AdvancedCopy Manager.

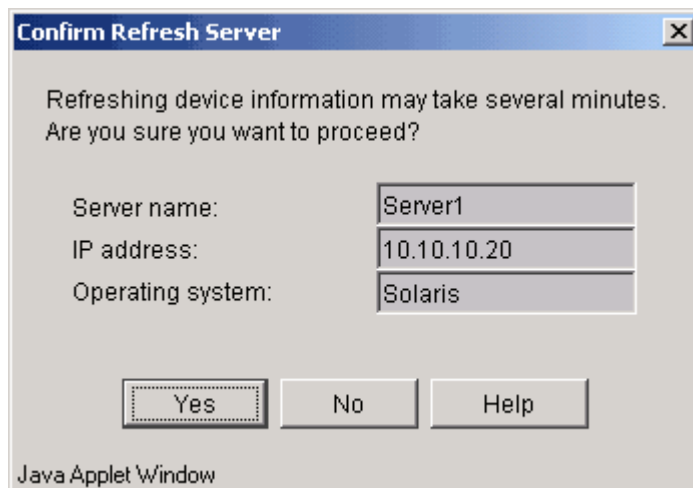
For details on commands, see the "ETERNUS SF AdvancedCopy Manager Operator's Guide", "Configuration Management Commands" in the edition corresponding to the operating system used.

1.3.8.1 Acquisition/reflection of information on all devices

Acquire and reflect all server-managed devices.

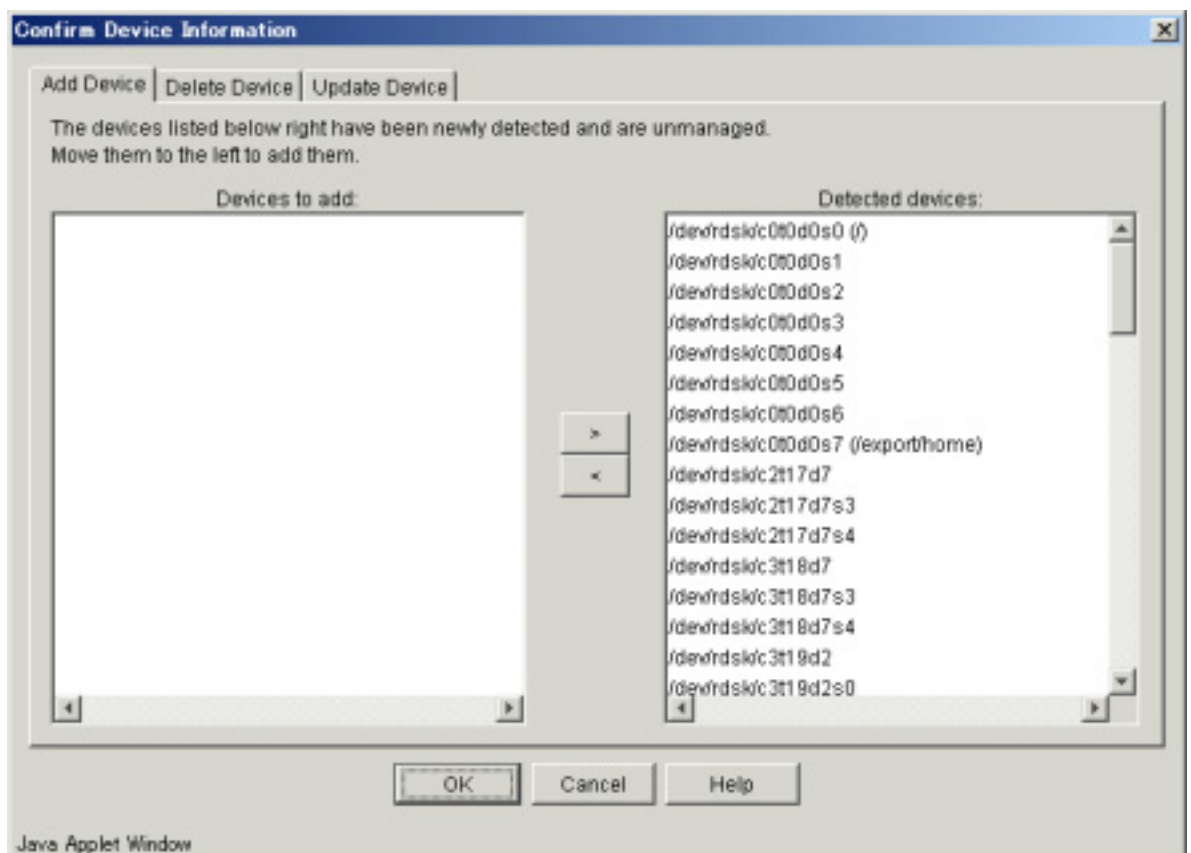
Use this method for the initial registration of device information

1. The following operations can be used to display the [Refresh Server] screen:
 - Right-click the server for which device information is to be registered in the server list view, and select [Refresh Server...] from the popup menu.
- Or
- Select a target server on the server list view, and select [Refresh Server...] on the [Operation] menu to display the dialog shown below.



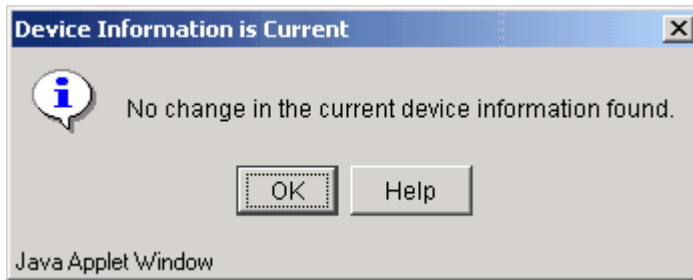
The time needed for this operation depends on the total number of devices defined in the selected Storage Server. If many devices are already defined, perform this operation when there is low CPU I/O load on the system. The standard time necessary for one device (partition) is about 0.5 seconds when the system is under no load.

2. Select [Yes] to acquire information about all devices defined with the selected server.

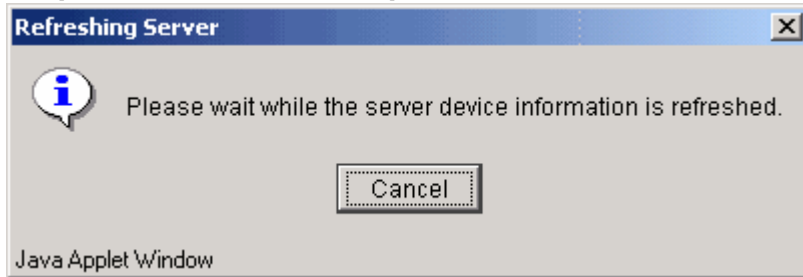


Under Linux, the device name generated by udev is displayed, but the information acquisition mode setup command (stgxfwcmsetmode) can be used to switch the display to the normal device name.

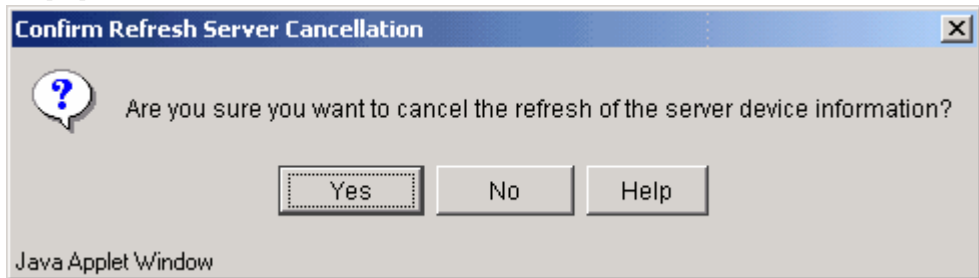
If the currently managed device information is acquired, the following dialog is displayed.



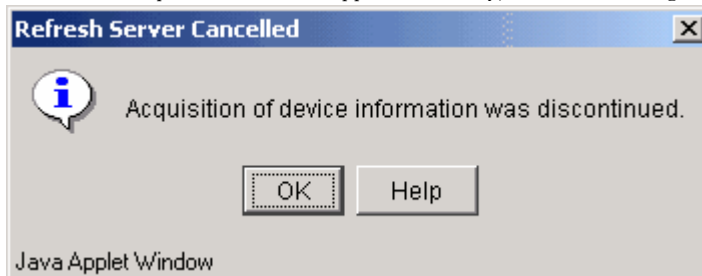
3. To stop the device information acquisition, click [Cancel].



The confirmation dialog shown below is displayed. Click [Yes] to stop the acquisition or [No] to continue it.

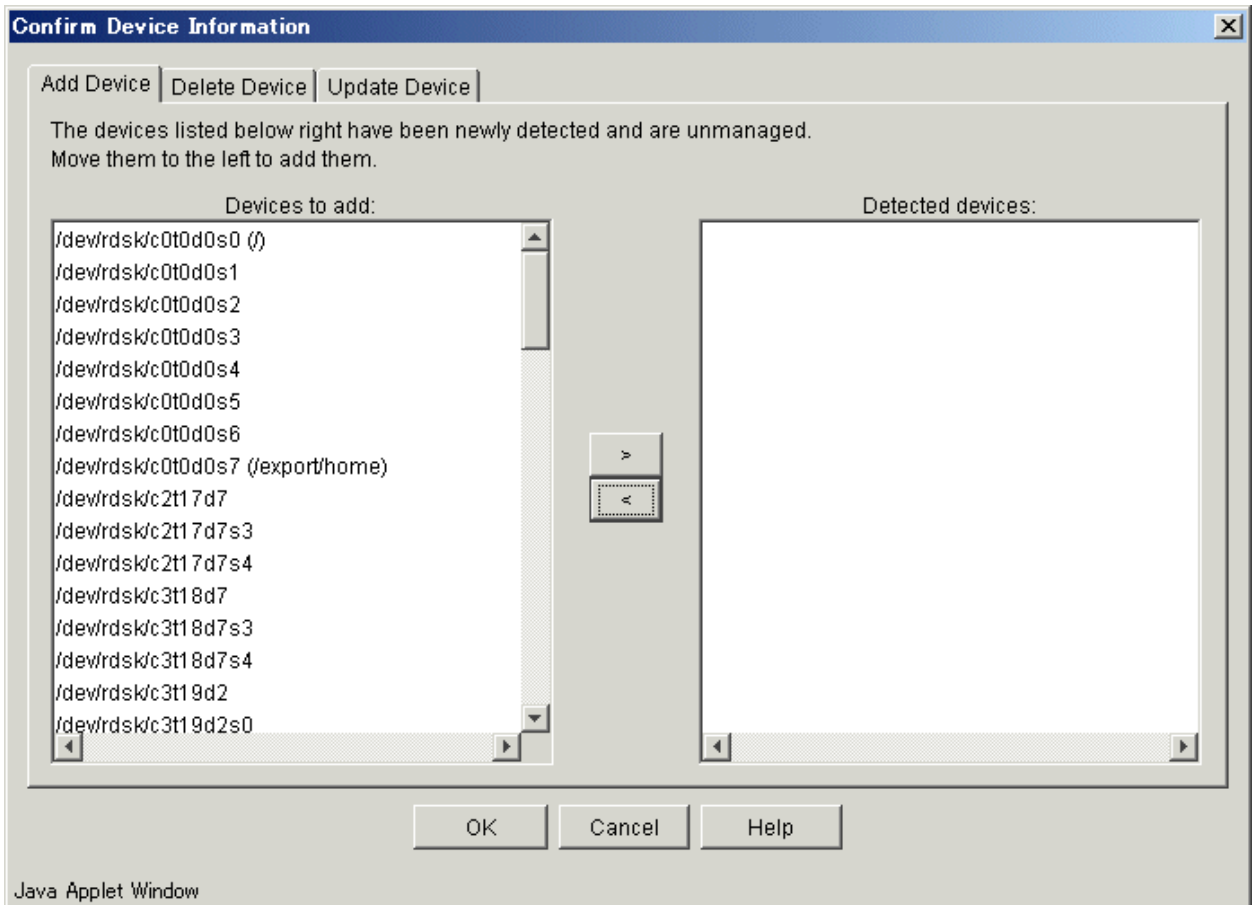


When the acquisition is stopped normally, the following dialog is displayed.

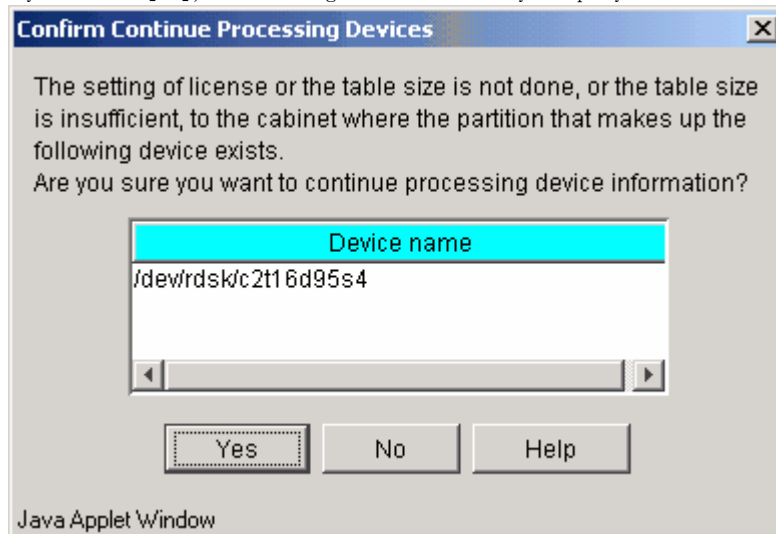


4. For the acquired device information, you can specify the addition of detected device information and the deletion of device information which is a management object but is undetected.

The following is an example of the screen displayed when the user requests addition of a newly detected device.



5. If you click [OK], the dialog shown below may display.



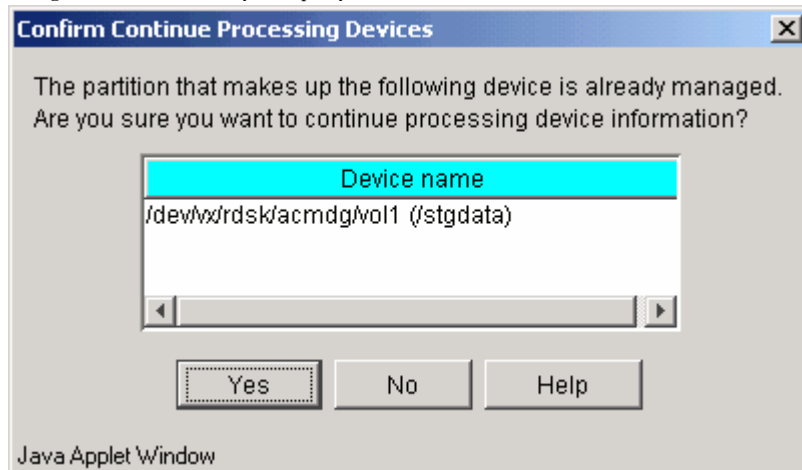
The ETERNUS/GR cabinet containing the partitions of the displayed device may have invalid settings. In this case, click [Yes] after verifying that it is okay to continue processing. For example, if AdvancedCopy is supported but you want to manage the device information in a cabinet where settings are not defined (including cases in which AdvancedCopy is not used in one cabinet for mirroring volumes between cabinets.)

If you click [No], operation returns to step 4.



Note Ensure that the AdvancedCopy license setting is correct and that the cache table size is correctly set. Also, make sure that the cache table is large enough.

6. If you click [OK] in the dialog of step 4 or you click [Yes] in the dialog of step5, the dialog shown below may display.



If the LUN slice of the ETERNUS/GR cabinet containing the partitions of the displayed device is shared with another device, click [Yes] (for example, when the backup server is in operation.)

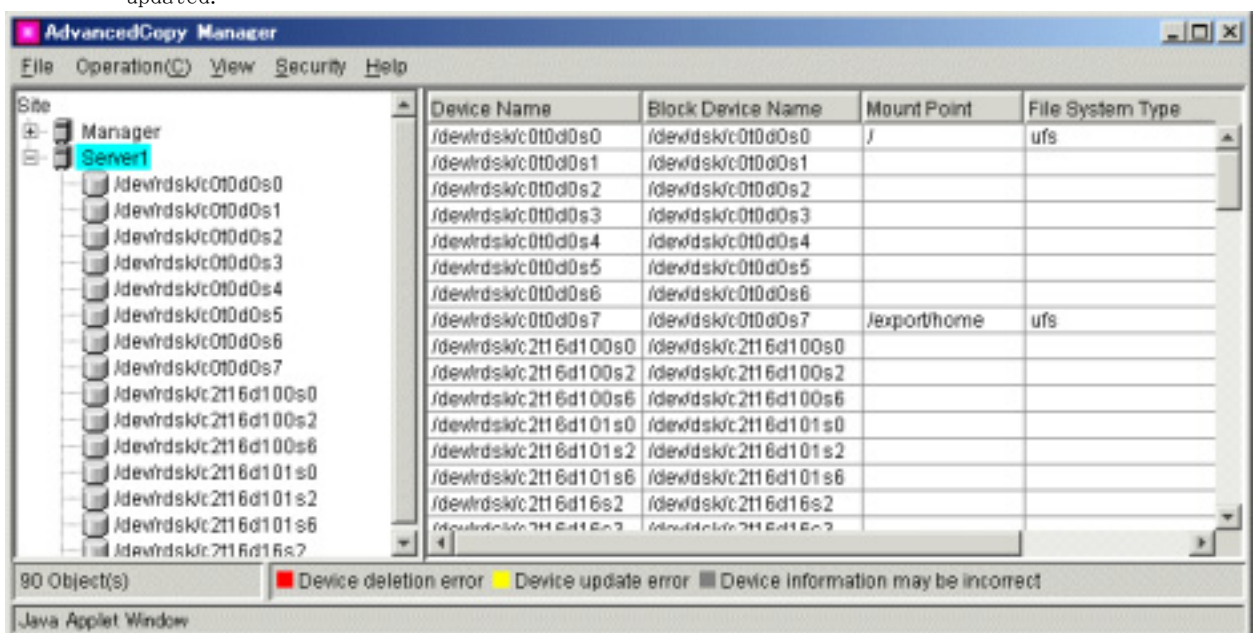
If you click [No], operation returns to step 4.



When managing logical servers operating on a single physical server, ensure that each device is only registered once.

7. The settings for the specified device are reflected on the system in the following cases:
 - If the dialog explained in step 5 or step 6 is not displayed
 - Or
 - If [Yes] is selected in the dialog of step 6

If the device information has been changed, the information of the detected device is updated.





Note

In step 5, the device subject to processing may have invalid settings when [Yes] in the dialog box is clicked. In this case, the name of the device in the Device List view becomes highlighted in gray.



Note

If an error occurs when the device information is changed, the color of the corresponding device name changes to red or yellow. The colors have the following meanings:

- Red
Information of this device is under management but undetected. An error occurs when trying to delete it.
- Yellow
Information different from the currently managed information is acquired. An error occurs when updating the current information.

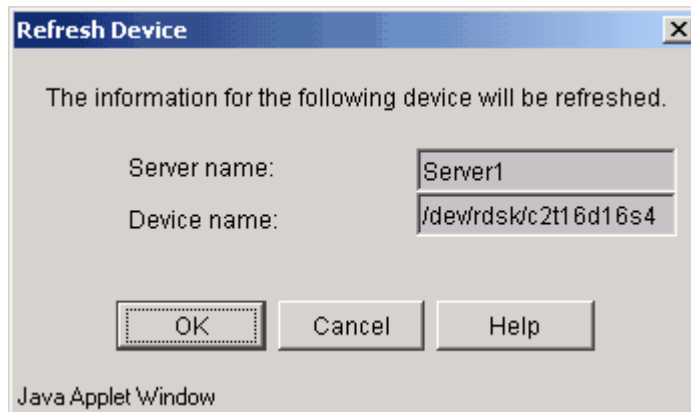
Execute the action described in the error message displayed in the error dialog and then re-execute the device information acquisition.

1.3.8.2 Acquisition/reflection of information on a specific device

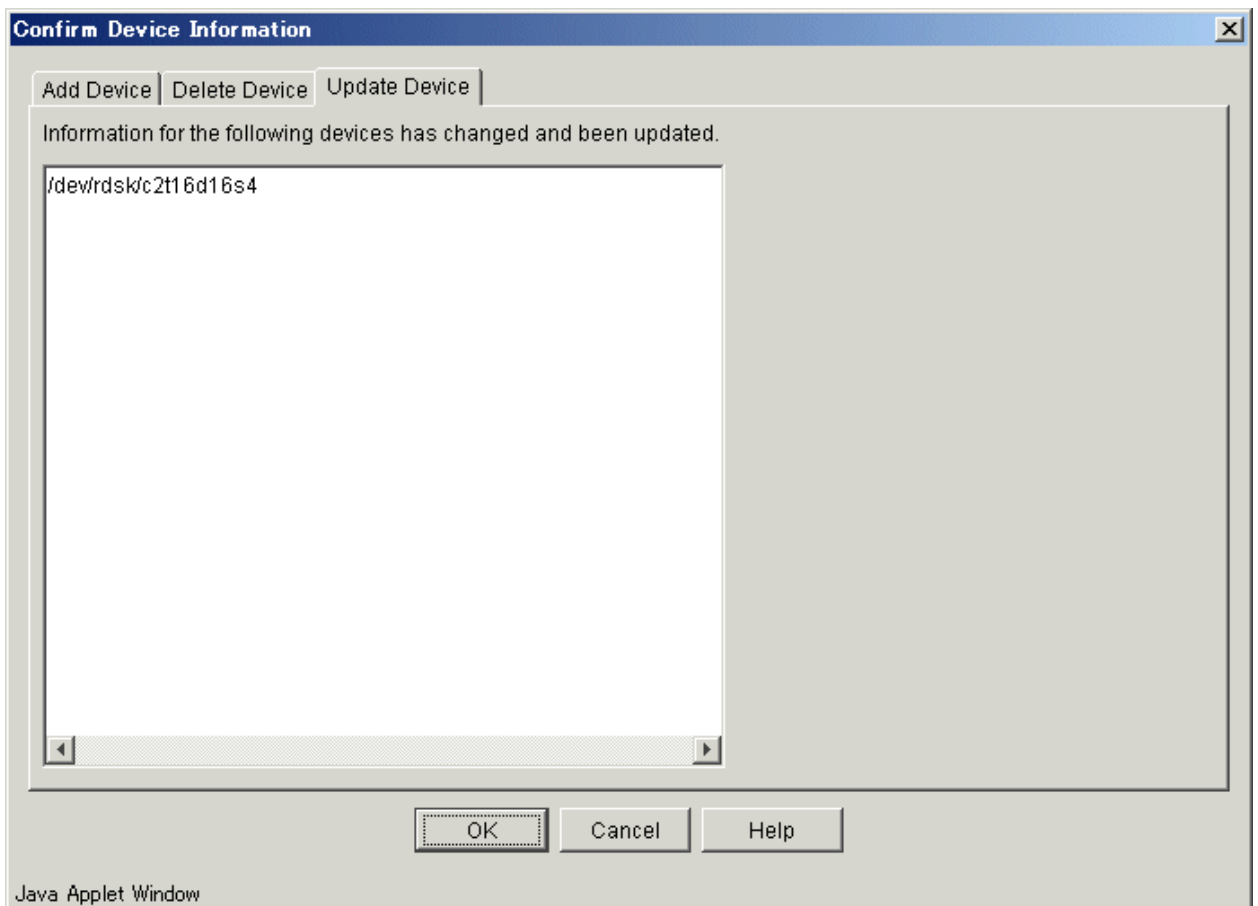
Acquire and reflect specific device information.

Use this method to update registered device information.

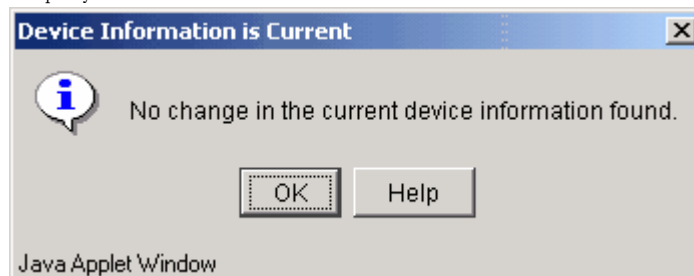
1. The following operations can be used to display the [Refresh Device] screen:
 - Right-click the device for which information is to be refreshed in the device list view, and select [Refresh Device...] from the popup menu.Or
 - Select the target device on the device list view and select [Refresh Device...] on the [Operation] menu to display the dialog shown below.



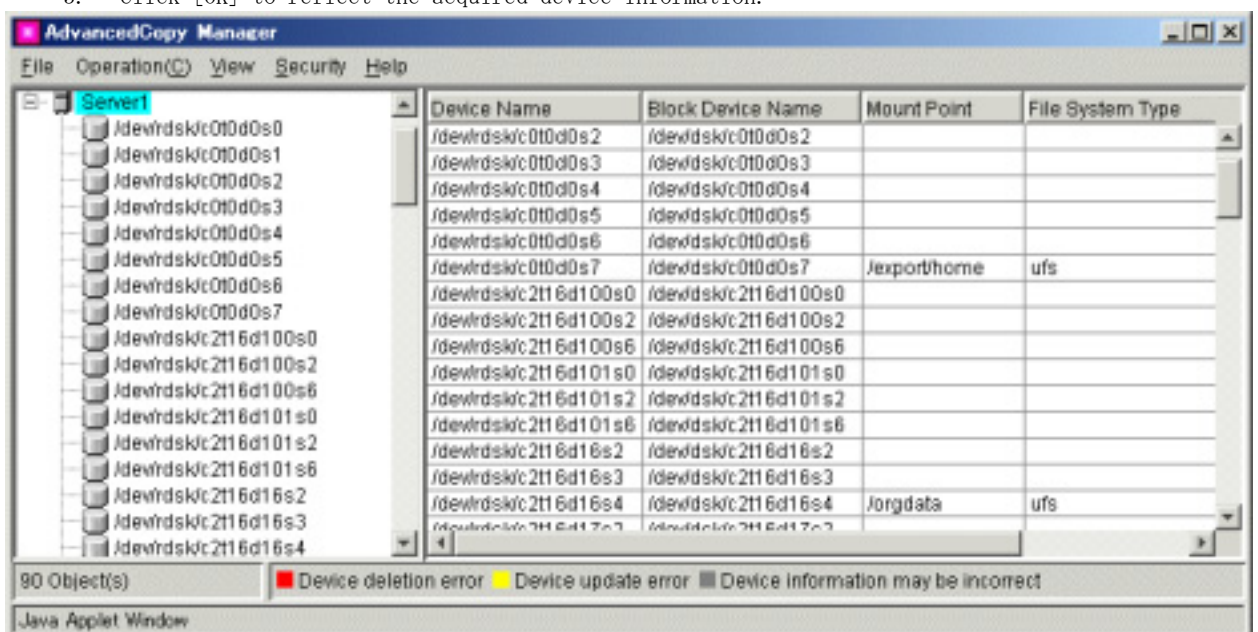
2. Select [OK] to display the dialog shown below and acquire information on a specific device.



If the currently managed device information is acquired, the following dialog is displayed.



3. Click [OK] to reflect the acquired device information.



1.3.9 Device information deletion method

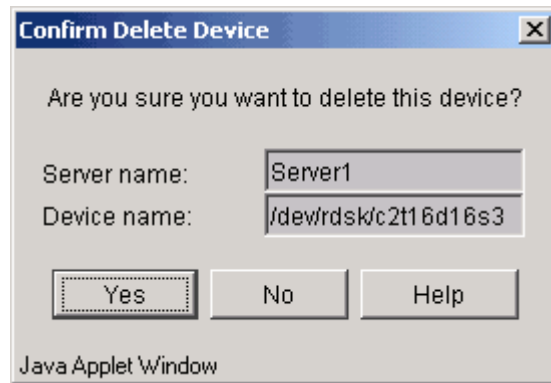
This section describes how to delete device information.

Acquiring and/or reflecting device information causes the system to compare processing with the device information on the current managing device. However, this method deletes device information regardless of whether the information can be detected on the current managing device.

The following table shows the operations that can be used to display the [Delete Device] screen.

Table: [Delete Device] screen display method

Selection from device list view	Operation
Device to be deleted	Select [Delete device...] from the pop-up menu that is displayed when the mouse is right-clicked. Or Select [Delete device...] from the [Operation] menu.



Click [OK] to delete the device.



This operation can also be carried out using the "device information deletion command (stgxfwcmdeldev)" of AdvancedCopy Manager.

Refer to "Configuration management command" in the "ETERNUS SF AdvancedCopy Manager Operator's Guide" for details of commands.

1.3.10 Activating each management window

This section describes how to activate each management window.

Select the management window to be activated from the [File] menu. The selected management window is displayed.

1.3.11 Changing display items

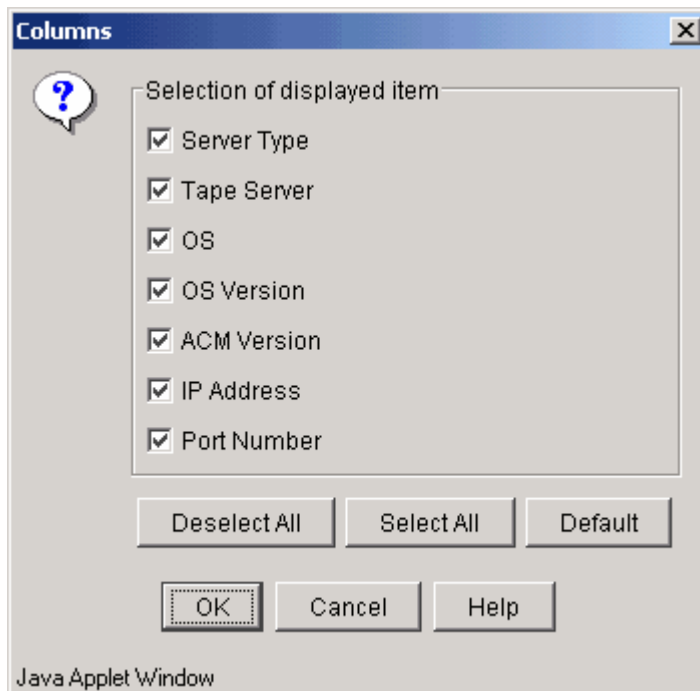
This section describes how to change display items.

It is possible to configure which items are listed in the list window currently displayed.

Select "Columns" from the "View" menu to display the configuration window.

When the server list window is displayed:

Select the items to be displayed and click the "OK" button to change the display items.



If "Deselect All" is clicked, all display items will be deselected.

If "Select All" is clicked, all display items will be selected.

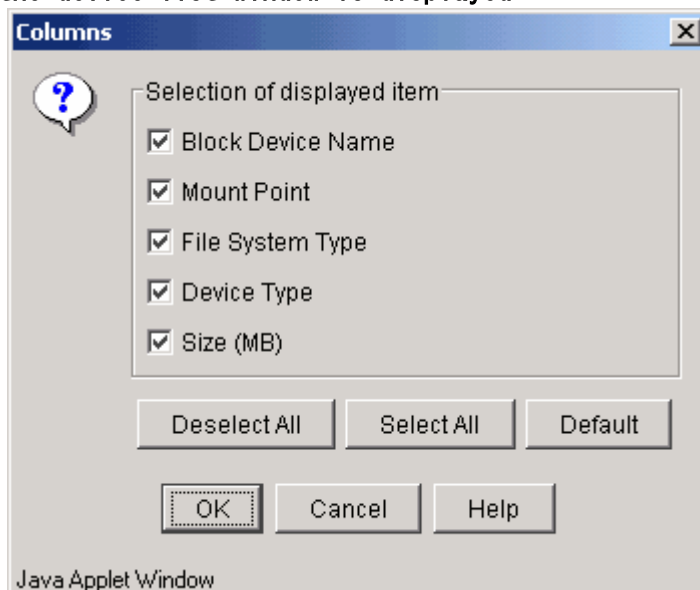
If "Default" is clicked, those items marked "Yes" in the "Default" column of Items displayed on server list view will be selected. Use this option to restore the initial settings.



Note

Only the items marked "Yes" in the "Display selection" column of Items displayed on server list view can be set.

When the device list window is displayed:



When you click [Deselect All], none of the selection target items are displayed on the device list view.

When you click [Select All], all of the selection target items are displayed.

When you click [Default], items with "Yes" in the default columns of the tables listed below are displayed. Click [Default] to initialize the setting.

- Items displayed on device list view (Windows servers)
- Items displayed on device list view (Solaris servers)
- Items displayed on device list view (HP-UX servers)
- Items displayed on device list view (Linux servers)
- Items displayed on device list view (AIX servers)

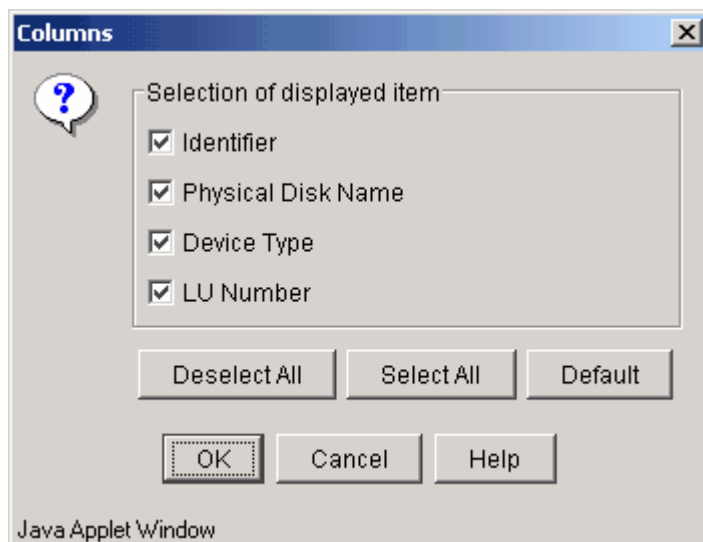


Note

Device List Window display items that have "Yes" in the display selection columns (Windows servers, Solaris servers, HP-UX servers, Linux servers, AIX servers) can be the target of this selection.

When the partition list window is displayed:

Select the items to be displayed and click the "OK" button to change the display items.



If "Deselect All" is clicked, all display items will be deselected.

If "Select All" is clicked, all display items will be selected.

If "Default" is clicked, those items marked "Yes" in the "Default" column of the tables listed below will be selected. Use this option to restore the initial settings.

- Items displayed on partition list view (Windows servers)
- Items displayed on partition list view (Solaris servers)
- Items displayed on partition list view (HP-UX servers)
- Items displayed on partition list view (Linux servers)
- Items displayed on partition list view (AIX servers)



Note

Only Partition List Window display items that are marked "Yes" in the "Display selection" column (Windows servers, Solaris servers, HP-UX servers, Linux servers, AIX servers) can be set.

1.3.12 List devices using the same copy area

This section describes how to check the devices that use the same copy area.

The devices using the same copy area as the specified device can be displayed.

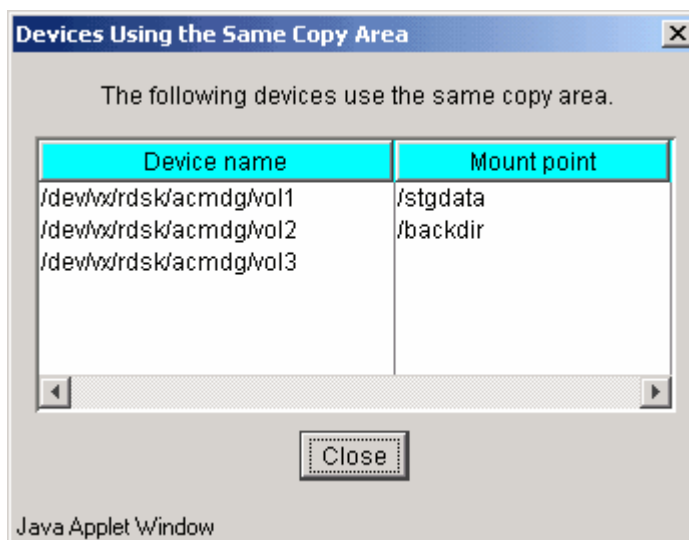
A device cannot be selected in the following cases:

- Device is not in the ETERNUS storage system with the AdvancedCopy function mounted
- SDX object in units of logical volumes
- VxVM volume is not supported
- Device is not set up (For the cabinet containing this device, the AdvancedCopy license setting may be undefined, the cache table size may be unspecified, or the cache table may be too small.)

The following table shows the operations that can be used to display the [Devices Using the Same Copy Area] screen.

Table: [List Devices Using the Same Copy Area] screen display method

Selection from device list view	Operation
Device to be checked	Select [List Devices Using the Same Copy Area] from the pop-up menu that is displayed when the mouse is right-clicked. Or Select [List Devices Using the Same Copy Area] from the [Operation] menu.



1.3.13 List devices in the same logical group

This section describes how to check the devices in the same logical group.

The devices in the same logical group as the specified device can be displayed.

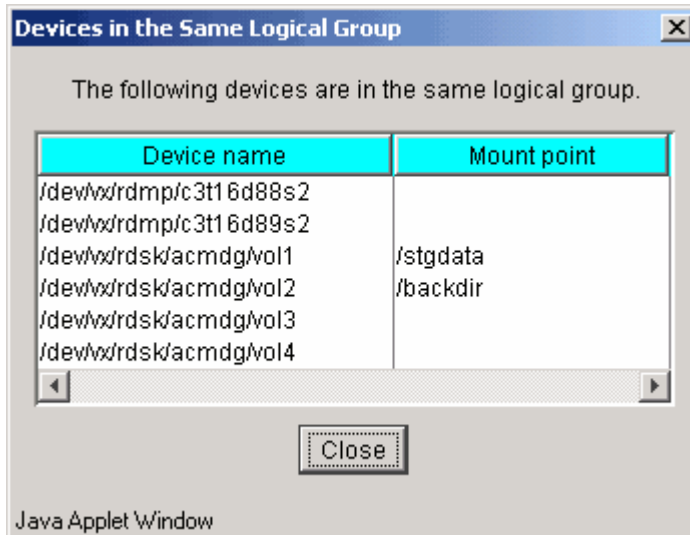
No device can be selected in the following cases:

- No device related to LVM or VxVM

The following table shows the operations that can be used to display the [Devices in the Same Logical Group] screen.

Table: [List Devices in the Same Logical Group] screen display method

Selection from device list view	Operation
Device to be checked	Select [List Devices in the Same Logical Group] from the pop-up menu that is displayed when the mouse is right-clicked. Or Select [List Devices in the Same Logical Group] from the [Operation] menu.



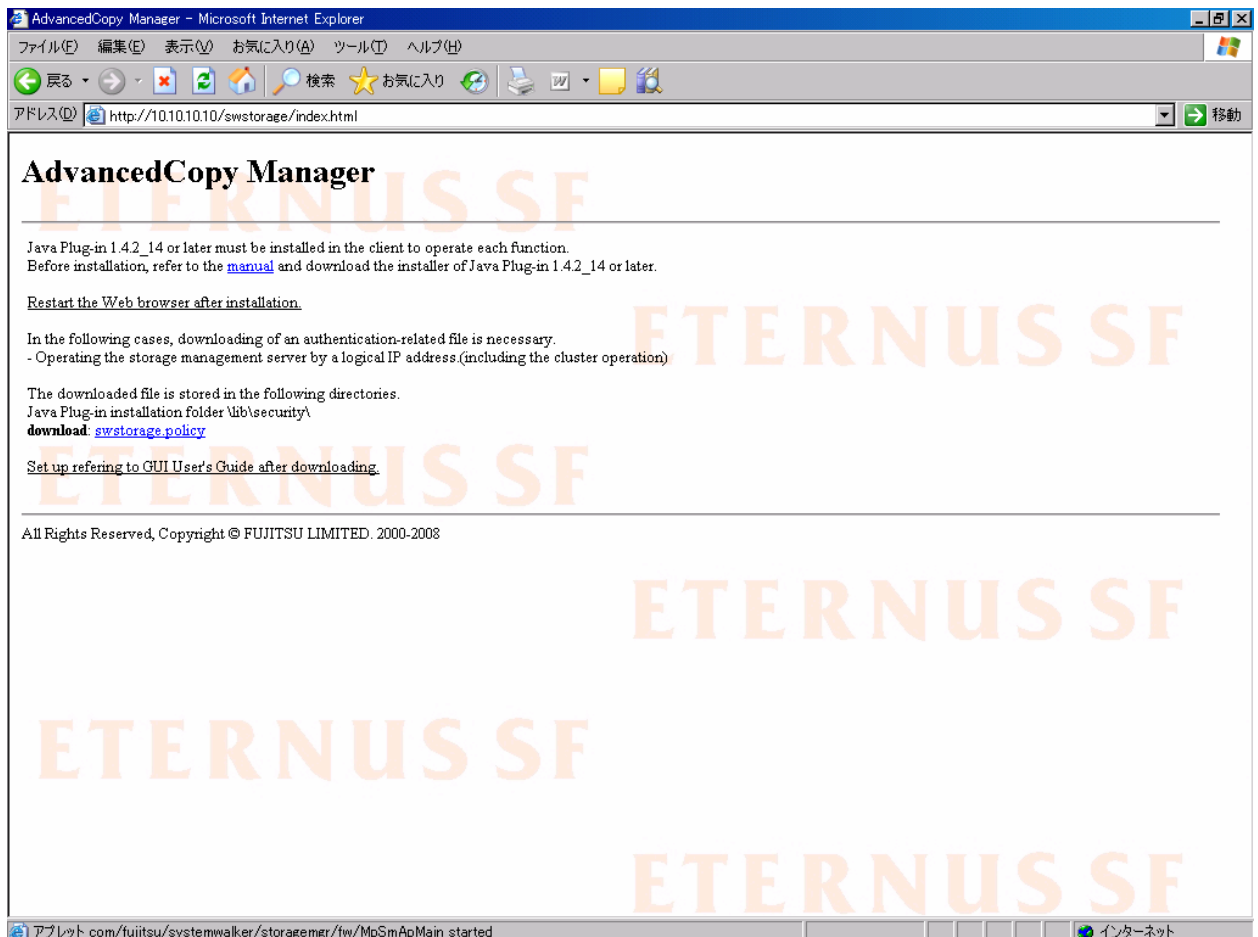
Note

The details displayed are based on information registered in AdvancedCopy Manager. Therefore, when the configuration has been changed, there is a device not registered in a logical group. Subsequently, after it registers, the correct information is not displayed.

In this case, please execute the acquisition of device information on the registration of the device that is not registered, and then perform the "Acquisition/reflection of information on all devices" processing again.

1.3.14 Setting up a client

This section describes software settings required for the initial window and each management window.



1. 3. 14. 1 Downloading the Java Plug-in installer

The Java Plug-in listed in the section “Usage_conditions” or later must be installed in the client to use the initial window and each management window. Download the installer for JRE (including the Java Plug-in) from the Sun Microsystems, Inc. Java2 Runtime Environment download web site.

The URLs as at December, 2007 are:

<http://java.sun.com/j2se/1.4.2/download.html> (version 1.4.2)

http://java.sun.com/javase/downloads/index_jdk5.jsp (5.0)

(Note that the URL may be changed without prior notice.)



Note

If an older version of the Java Plug-in is already installed on the client, first uninstall the older version, and then install a newer version of Java Plug-in that meets the usage conditions.



Note

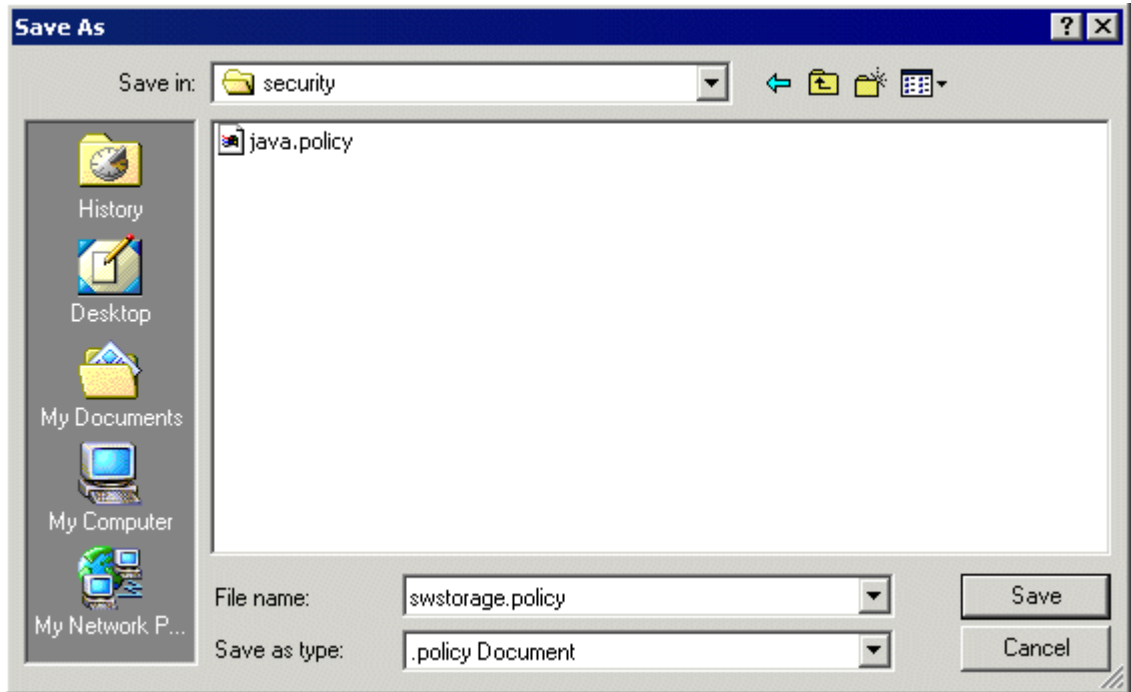
Be sure to restart the Web browser.

1. 3. 14. 2 Settings of authentication-related files

The settings of authentication-related files must be defined when:

- The Storage Management Server uses a logical IP address (such as for cluster operation), and

- If multiple network cards are mounted in the **Storage Management Server**.
1. From the Web browser, enter the AdvancedCopy Manager URL then, on the screen displayed, click `swstorage.policy`. This displays the download dialog box for Web browser downloads. If [Save to file] or [Save this file to disk] is selected, the following dialog box is displayed.
Save the file to the directory containing the Java Plug-ins installation folder `¥lib¥security`.



2. After saving the file, change the IP address on the first line in the saved file to the IP address to be entered as the URL. Edit it as follows:

- The Storage Management Server uses a logical IP address that is "50.50.50.50":
"10.10.10.10" -> "50.50.50.50"
- "60.60.60.60" is the IP address specified for the URL, and the address is different from the IP address set on the Storage Management Server:
"10.10.10.10" -> "60.60.60.60"

The GUI connection information setting command (`stgguipset`) can be used to display the GUI connection IP address that is set at the Storage Management Server. For details of this command, see "GUI connection information setting command (`stgguipset`)" in the "ETERNUS SF AdvancedCopy Manager Operator's Guide" corresponding to the operating system used.

In the above cases, if the port number used to provide service is not the default value (80) in a Web server setting, then use an editor to add " :port-number" as a suffix to the IP address.

- Example: Port number "8080" is used in a Web server setting to provide service
"10.10.10.10" -> "50.50.50.50:8080"

```
grant codeBase "http://50.50.50.50:8080/swstorage-j/archive/-" {
    permission java.net.SocketPermission
    "20.20.20.20:1024-", "accept, connect, listen, resolve";
};
```

3. Replace "20.20.20.20" on the second line of the stored file with the target physical address. If there is more than one target physical address, then copy and paste the second line as many times as the number of target physical IP addresses before the last line, and enter a description of each address on the same line.
 - If the Storage Management Server uses a logical IP address, describe all physical IP addresses.
Describe all physical addresses of the active machine and every standby machine, particularly for cluster operation.
 - All the valid IP addresses, including the IP address to be specified as the URL, on the Storage Management Server, if multiple network cards are mounted in the Storage Management Server

Example: Physical IP address "70.70.70.70" and "80.80.80.80"

```
grant codeBase "http://50.50.50.50:8080/swstorage-j/archive/-" {
    permission java.net.SocketPermission
    "70.70.70.70:1024-", "accept, connect, listen, resolve";
    permission java.net.SocketPermission
    "80.80.80.80:1024-", "accept, connect, listen, resolve";
};
```

4. Add the final following line in the description to the Java Plug-in installation folder `%lib%\security\java.security` file, which is the authentication setup file.

```
# The default is to have a single system-wide policy file,
# and a policy file in the user's home directory.
policy.url.1=file:${java.home}/lib/security/java.policy
policy.url.2=file:${user.home}/.java.policy
policy.url.3=file:${java.home}/lib/security/swstorage.policy
```



Note

Due to variations in the different versions of Web browsers, the authentication-related files might be saved with incorrect file names. For example, "swstorage.policy" may be changed to "swstorage.policy.policy." If the file name is incorrect, the Web client cannot be used normally.

Therefore, after saving the file, check whether its name is correct. If the file name is incorrect, change it to "swstorage.policy."



Note

After modifying the data in the authentication setting file, be sure to restart the Web browser.

1.3.14.3 Running the software in an environment where the Windows firewall is enabled

To use any management window in an environment where Windows XP Service Pack 2 or Windows Vista has been applied, configure the settings of the Windows firewall function by performing the following steps:

For Windows XP Service Pack 2/Windows 2003 SP1 or later

1. Open the [Windows Firewall] window from [Control Panel].
2. Check the registered programs and services on the [Exceptions] tab.
Take action as follows according to the registration status of the Web browser used:

Procedure for an unregistered Web browser:

1. Click the [Add Program] button, and the [Add Program] dialog box is then displayed.
2. Select the Web browser from the list.
3. Click the [Change Scope] button, and the [Change Scope] dialog box is then displayed.
4. Specify the IP address of the Storage Management Server in [Custom List], and click the [OK] button.
 - If the Storage Management Server operates with a logical IP address, all physical IP addresses must be entered.
In cluster operation in particular, all physical IP addresses of the operating machine and standby machines must be entered.
 - If the IP address specified for the Storage Management Server is not the IP address specified for the URL, all valid IP addresses for the Storage Management Server, including the IP address specified for the URL, must be entered.
5. Click the [OK] button in the [Add Program] dialog box.
6. Click the [OK] button, and the [Windows Firewall] window closes.

Procedure for a registered Web browser:

1. Select the Web browser from the list of programs and services on the [Exceptions] tab.
2. Click the [Edit] button, and the [Edit] dialog box is then displayed.
3. Click the [Change Scope] button, and the [Change Scope] dialog box is then displayed.
4. If [Custom List] has been selected, add the IP address of the Storage Management Server, and click the [OK] button.
If [My Network (subnet) only] has been selected and the user's network has the Storage Management Server, click the [OK] button without making a change.
 - If the Storage Management Server operates with a logical IP address, all physical IP addresses must be entered.
In cluster operation in particular, all physical IP addresses of the operating machine and standby machines must be entered.
 - If the IP address specified for the Storage Management Server is not the IP address specified for the URL, all valid IP addresses for the Storage Management Server, including the IP address specified for the URL, must be entered.
5. Click the [OK] button in the [Edit] dialog box.
6. Click the [OK] button, and the [Windows Firewall] window closes.

For Windows Vista

1. Open the [Windows Firewall] window from [Control Panel].
2. Click [Update settings], and display the [Windows firewall settings] dialog.
3. Check the registered programs and services on the [Exceptions] tab.
Take action as follows according to the registration status of the Web browser used:

Procedure for an unregistered Web browser:

1. Click the [Add Program] button. The [Add Program] dialog box is displayed.
2. Select the Web browser from the list.
3. Click the [Change Scope] button. The [Change Scope] dialog box is displayed.

4. Specify the IP address of the Storage Management Server in [Custom List], and then click the [OK] button.
 - If the Storage Management Server operates with a logical IP address, all physical IP addresses must be entered.
In cluster operation particularly, all physical IP addresses of the operating machine and standby machines must be entered.
 - If the IP address specified for the Storage Management Server is not the IP address specified for the URL, all valid IP addresses for the Storage Management Server, including the IP address specified for the URL, must be entered.
5. Click the [OK] button in the [Add Program] dialog box.
6. Click the [OK] button in the [Windows firewall settings] dialog.
7. The [Windows Firewall] window closes.

Procedure for a registered Web browser:

1. Select the Web browser from the list of programs and services on the [Exceptions] tab.
2. Click the [Properties] button. The [Edit program] dialog is displayed.
3. Click the [Change Scope] button. The [Change Scope] dialog box is displayed.
4. If [Custom List] has been selected, add the IP address of the Storage Management Server, and click the [OK] button.
If [My Network (subnet) only] has been selected and the user's network has the Storage Management Server, click the [OK] button without making a change.
 - If the Storage Management Server operates with a logical IP address, all physical IP addresses must be entered.
In cluster operation particularly, all physical IP addresses of the operating machine and standby machines must be entered.
 - If the IP address specified for the Storage Management Server is not the IP address specified for the URL, all valid IP addresses for the Storage Management Server, including the IP address specified for the URL, must be entered.
5. Click the [OK] button in the [Edit program] dialog.
6. Click the [OK] button in the [Windows firewall settings] dialog.
7. The [Windows Firewall] window closes.

1.3.14.4 Browser and Java Plug-in settings

This section describes browser and Java Plug-in settings.

Configuring Java Plug-in Settings

In principle, a Java Plug-in operates with the default values at the time of installation, and these values need not be changed.

As an example of this, "Table Relationship between Java Plug-in settings and Web browser window operations" shows the relationship between the settings in the Java Plug-in properties screen and Web screen operations under Windows 2000. Note that care is required, because Web screens may not operate correctly with some screen property settings. The screen property display method for Windows 2000 is described below.

1. When a Java Plug-in is installed, open the [Java Plug-in Properties] window as follows:

Select [Settings] -> [Control Panel] -> [Java Plug-in].
2. The following table outlines the relationship between the settings in the [Java Plug-in Properties] window and Web browser window operations.

Table: Relationship between Java Plug-in settings and Web browser window operations

Tag	Set value	Setting	Default value	Remarks
Basic	Java Console	Optional	Do not start console	This is an optional setting, but if "Display the console" is specified, the operating status of the Web browser window is displayed on the Java console, and it can be used as data for troubleshooting if an error occurs in the window.
Advanced	Java Runtime Environment	Use Java Plug-in default	Use Java Plug-in default	Set the Runtime level for Web browser window operations. Do not specify any other level. If this is not checked, a problem may occur.
	Java Runtime parameters	None	None	The settings are irrelevant.
Proxies	Use browser settings	Always check this check box.	Checked	If this is not checked, a problem may occur.
Cache	Enable Caching	Checking this check box is recommended.	Checked	If this is checked, any management window that has been opened once takes less time to open when called from the initial window.

Proxy settings of the Web browser

To use the Web browser, specify either the IP address or the server name of the **Storage Management Server** in the Web browser. Also, disable any proxy of the Web browser for the IP address or the server name specified.

- For Netscape Navigator 7.x or later
Select [Preferences] from the [Edit] menu to open the [Preferences] dialog box. From the displayed categories (tree), select [Advanced] -> [Proxies], click "Manual proxy configuration," and enter the IP address of the Storage Management Server into the "Do not use proxy servers" box.
- For Internet Explorer 6.0 or later
Select [Internet Options] from the [Tools] menu to open the [Internet Options] dialog box. In the dialog box, select the Connections tab, and click the [LAN Settings] button. When the [Local Area Network (LAN) Settings] dialog box opens, click the [Advanced] button to display [Proxy settings] dialog box. Enter the IP address of the Storage Management Server into the "Do not use proxy server for addresses beginning with:" box.

Character encoding of the Web browser

Set the character encoding of the Web browser to Japanese.

For example, to use Netscape Navigator 7.x or later, select [Character encoding] from the View menu, and check "Auto-detect", then "Japanese".

1.3.15 Required Access Permission

Access permissions required on the initial window are listed in "Table Access permissions required on initial window". The access permissions for the initial window are determined by the logical sum of the access permissions for the backup management function and the replication management function.

For details about access permissions, see "Authentication Feature Window Operation".

Table: Access permissions required on initial window

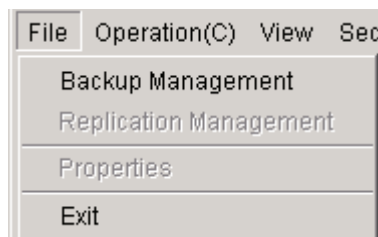
Operation	Write permission	Execute permission	Read permission
Server information display	Yes	Yes	Yes
Device information display	Yes	Yes	Yes
Partition information display	Yes	Yes	Yes
Columns	Yes	Yes	Yes
Refresh	Yes	Yes	Yes
List Devices Using the Same Copy Area	Yes	Yes	Yes
List Devices in the Same Logical Group	Yes	Yes	Yes
Add Server	Yes	No	No
Update Server	Yes	No	No
Delete Server	Yes	No	No
Refresh Server	Yes	No	No
Refresh Device	Yes	No	No
Delete Device	Yes	No	No

Yes: Operation possible
No: Operation impossible

The [File] menu in the initial window shows the management functions under the AdvancedCopy Manager. This display differs depending on which management functions the user has access permission for. Only those management functions for which the user has access permissions can be selected. Management functions for which the user does not have access permissions are grayed out and cannot be selected.

The following figure shows an example in which the user has Read permission for backup management but does not have any permission for replication management.

Figure: File menu



Chapter 2 Authentication Feature Window Operation

This chapter describes the Authentication Feature of the AdvancedCopy Manager management and provides details on the use of the AdvancedCopy Manager window.

2.1 Security Management with Authentication Feature

When the AdvancedCopy Manager Web-GUI is used, Backups/Replication can easily be managed.

However, the convenience of the Web-GUI also raises the possibility that a careless click of the mouse can accidentally overwrite data. The Authentication Feature in AdvancedCopy Manager allows you to set the following permissions for each user in order to minimize the chance of such accidents occurring:

- Write permission
With this permission, all windows can be operated and displayed. It is the strongest authority in the authentication feature of AdvancedCopy Manager.
- Execute permission
With this permission, all windows can be displayed and backup/replication management functions can be performed.
- Read permission
With this permission, all windows can be displayed but none of them can be operated.

Storage Management Server with Solaris or Linux

After AdvancedCopy Manager has been installed, only root users are registered as authentication feature users. They are not displayed in the [Authentication Feature Management Screen]. Write permission is set unconditionally for these users.

Only root users can add users, delete users, and change access permissions.

Authentication information in AdvancedCopy Manager must satisfy the following conditions:

- The user name must consist of between two and eight alphanumeric characters. (Symbols such as the colon cannot be used.)
- The password for each user name must consist of 28 or less alphanumeric characters.

Storage Management Server with Windows

After installation, the only account registered for the authentication mechanism is the startup account specified at the time the Manager of AdvancedCopy Manager was installed. However, the account is not displayed in the [Authentication Feature Management Screen]. The update permission is unconditionally assigned to the account.

The startup account can add and delete user accounts and change a user's access permission.

Authentication information in AdvancedCopy Manager must satisfy the following conditions:

- The user name must consist of up to 20 alphanumeric.
- The user password must consist of up to 14 alphanumeric characters.

If the reference permission or update permission is assigned to a user who does not belong to the Administrators group and the user is subsequently added to the Administrators group, update permission is unconditionally assigned to the user.



Note

Note the following points about using the software under Windows 2000/Windows Server 2003.

- NetBIOS over TCP/IP setting

When using the software under Windows 2000/Windows Server 2003, do not disable "NetBIOS over TCP/IP" in the advanced TCP/IP settings. The setting is enabled by default at the time of Windows 2000/Windows Server 2003 installation. If it is accidentally disabled, enable it by performing the following steps.

- 1- Open [Network and Dialup Connections], and open the Properties dialog box from [Local Area Connection].
- 2- Click the [Advanced] button in [TCP/IP Properties] to open the [Advanced TCP/IP Settings] dialog box.

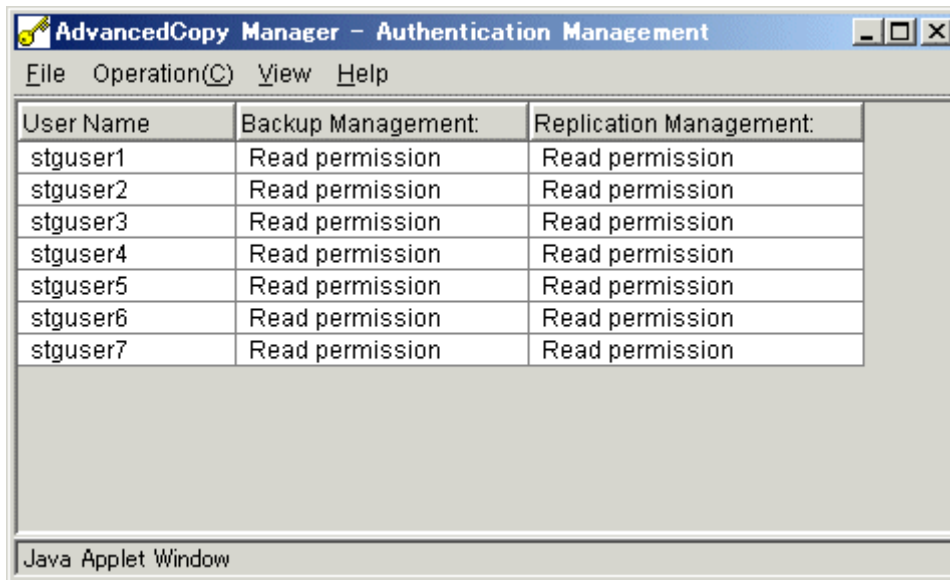
- 3- Select the WINS tab, and check "Enable NetBIOS over TCP/IP" .
- Access control using a user's principal name
User authentication and access control are not available if the user has entered a principal name in Windows 2000/Windows Server 2003. The user's principal name is a type of user account that can be used by installing Active Directory in Windows 2000/Windows Server 2003. A user's principal name is represented as "user-name@DNS-name".
- Password length in Windows 2000/Windows Server 2003
Up to 127 alphanumeric characters can be specified for a password in Windows 2000/Windows Server 2003, but up to 40 alphanumeric characters can be specified in AdvancedCopy Manager.

2.2 Authentication Feature Management Screen

To display the Authentication Feature Management screen, logon to AdvancedCopy Manager using one of the startup accounts. Click on [Security] -> [View]. The view option displays the current user name and access permissions. To add, delete, or change permissions of the Authentication Feature users, logon to AdvancedCopy Manager using one of the startup accounts. Then click on [Security] -> [Users and Permissions].

Storage management server with Solaris or Linux

Figure: Authentication Feature Management Screen for a Storage Management Server running Solaris or Linux



User Name	Backup Management:	Replication Management:
stguser1	Read permission	Read permission
stguser2	Read permission	Read permission
stguser3	Read permission	Read permission
stguser4	Read permission	Read permission
stguser5	Read permission	Read permission
stguser6	Read permission	Read permission
stguser7	Read permission	Read permission

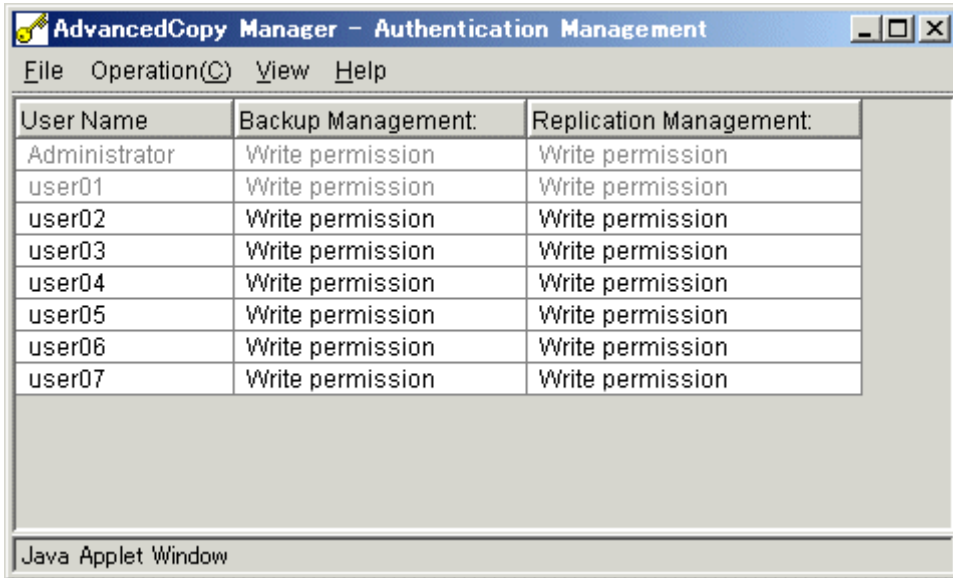


Note

- Only root users can use the [Authentication Feature Management Screen].
- User names are displayed in numerical/alphabetical order.
- Names of root users are not displayed in the window. Root users cannot execute operations such as "Add user," "Change access permission," and "Delete user" for other root users.
- Changes made in this window to a user's access permissions become valid when the user logs in.

Storage Management Server with Windows

Figure: [Authentication Feature Management Screen] when the Storage Management Server is running Windows



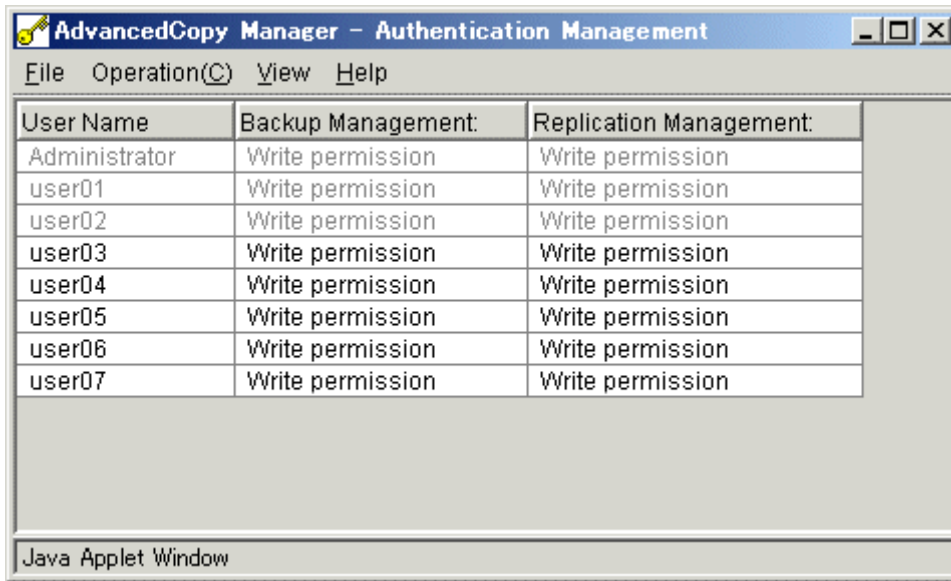
User Name	Backup Management:	Replication Management:
Administrator	Write permission	Write permission
user01	Write permission	Write permission
user02	Write permission	Write permission
user03	Write permission	Write permission
user04	Write permission	Write permission
user05	Write permission	Write permission
user06	Write permission	Write permission
user07	Write permission	Write permission



Note

- The [Authentication Feature Management Screen] is available only to the startup account specified when the Manager of AdvancedCopy Manager is installed.
- User names are displayed in alphanumeric order. The names of users who belong to the Administrators group are grayed out.
- The user name of the startup account is not displayed. The [Add User], [Change Access Permission] and [Delete User] functions applicable to that user cannot be accessed.
- The displayed name of a user who is performing an authentication mechanism operation is grayed out, and no operations are available to this user.
- After a user's access permission is changed in the [Authentication Feature Management Screen], the changes come into effect the next time the user logs in.
- If the operation permission or reference permission is assigned to a user who does not belong to the Administrators group and the user is subsequently added to the Administrators group, the displayed name of the user is grayed out and the update permission is assigned. In the [Authentication Feature Management Screen], however, the previously assigned access permission (operation permission and reference permission) is displayed. To avoid a misunderstanding, use the [Change Access Permission] function to change the user's access permission so that it matches the updated permission.

Figure: When a user is added to the Administrators group after the user's access permission is assigned



2.2.1 Table view

The registered user list and access information are displayed.

Table: Table view

Header	Explanation
User name	The registered user name is displayed.
Backup Management	Backup Management access permission is given to user
Replication Management	Relationship Management access permission is given to the user

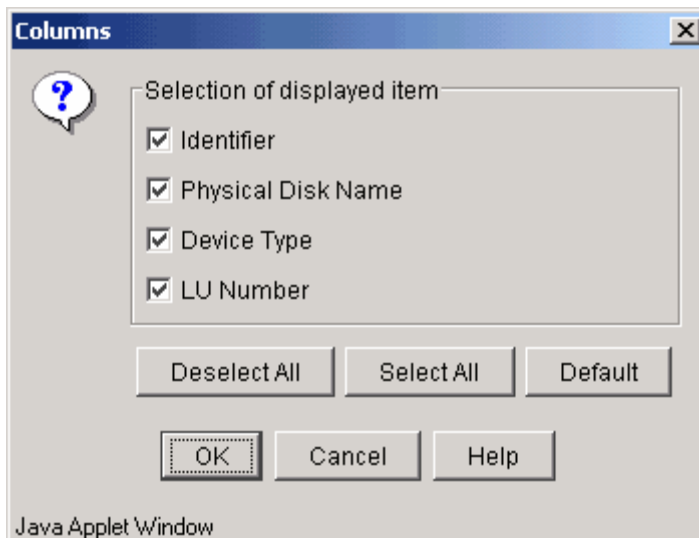
2.2.2 Menu bar

The menus displayed on the menu bar are explained below.

2.2.2.1 File menu

The only function available is [Exit].

Figure: File menu



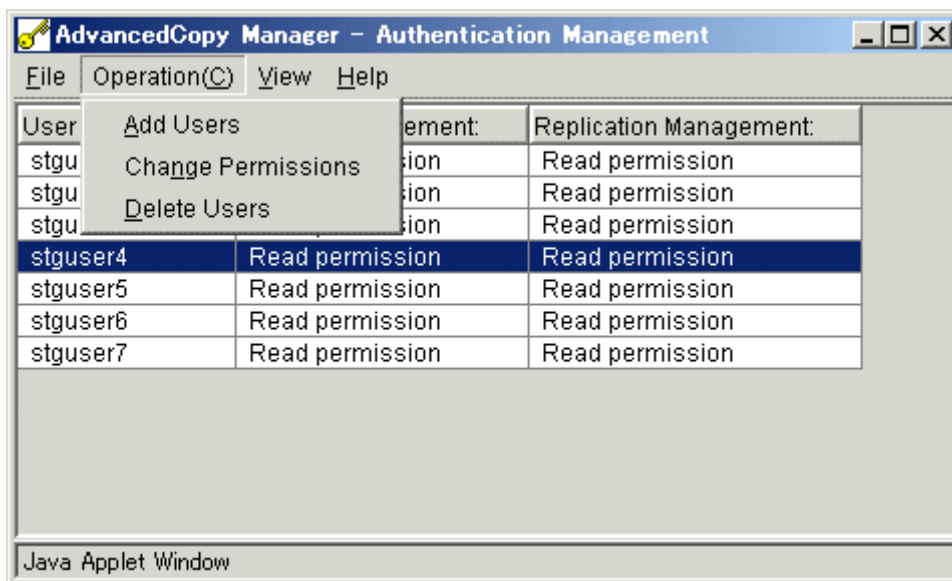
2.2.2.2 Operation menu

This menu is used to open the dialogs of each operation. The tasks on this menu can also be accessed by right-clicking the [Authentication Feature Management Screen] and selecting them from the popup menu. The available operations are explained below.

- "Add User"
A user can be registered. For details, refer to "Add User Dialog."
- "Change access permission"
Access permission given to a user can be changed. For details, refer to "Change Access Permission Dialog."
- "Delete User"
A registered user can be deleted. For details, see "Delete User Dialog."

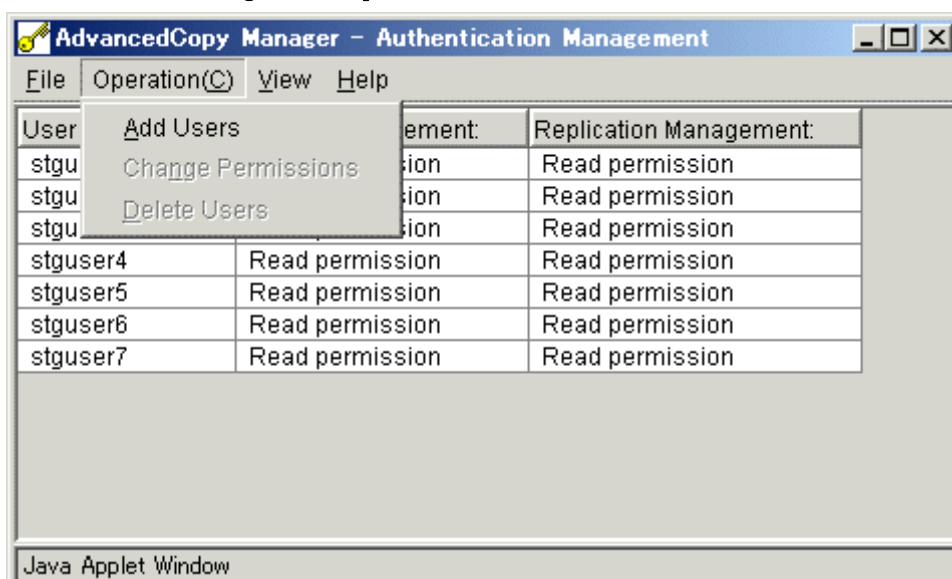
To perform a task for a specific user, select the user, then click [Operation] and select the desired function. To process two or more users, select all of the users in advance.

Figure: Operation menu (with one user selected)



If no user is selected and you click the [Operation] menu, the only option available is Add user.

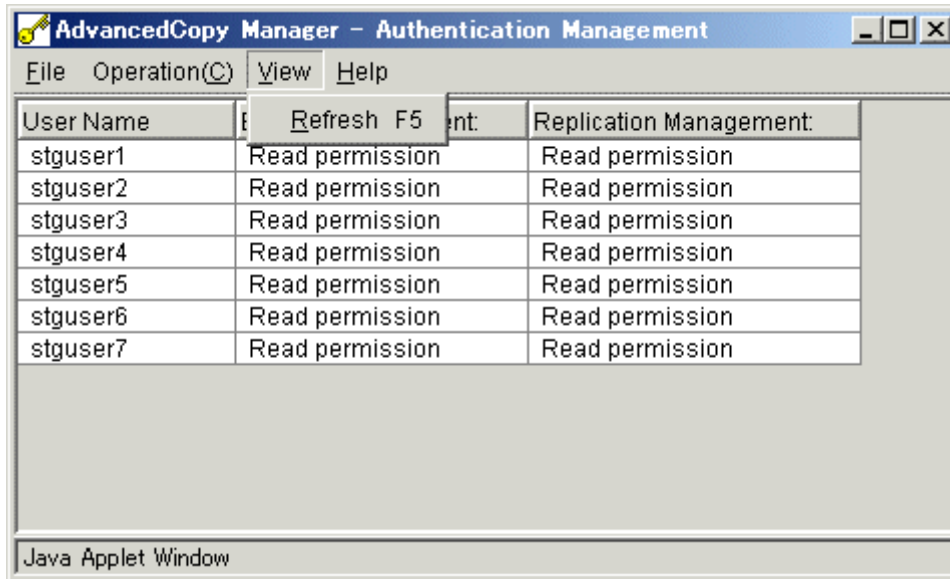
Figure: Operation menu (with no users selected)



2.2.2.3 View menu

The only option in this menu is [Refresh]. Select [Refresh] to immediately display access permission changes.

Figure: View menu

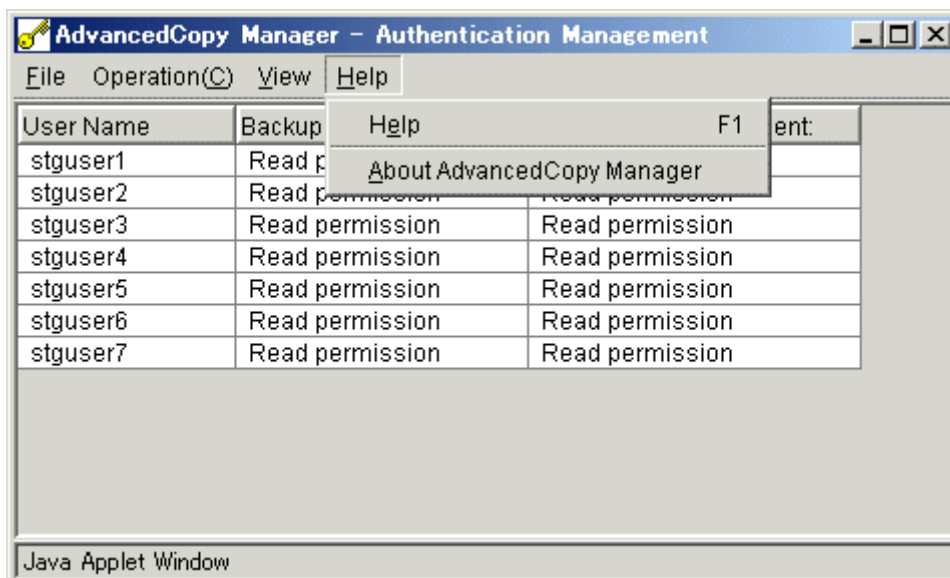


When [Refresh] is executed, the user names are displayed in numerical and alphabetical order.

2.2.2.4 Help menu

The [Help] menu has two options. [Help] displays help for this window and [Version] display the version number of AdvancedCopy Manager.

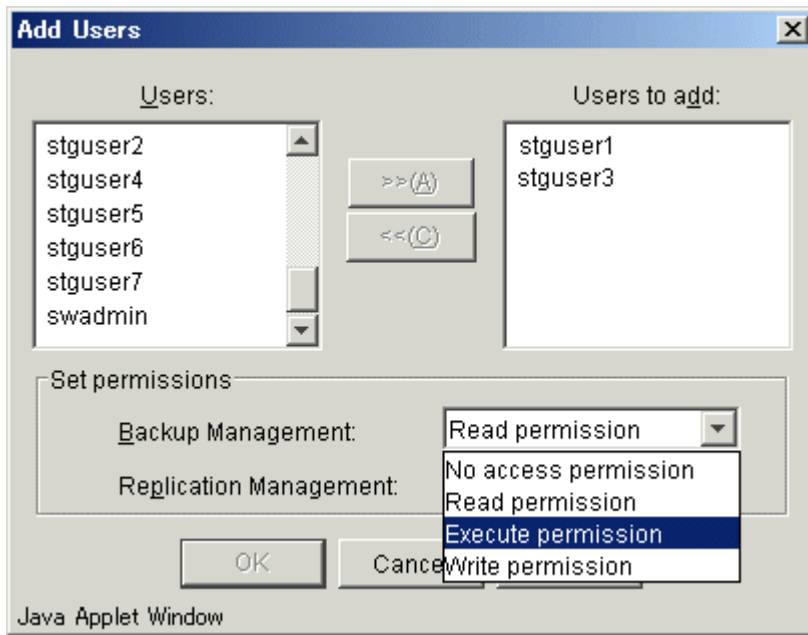
Figure: Help menu



2.2.3 Add User Dialog

A user can be registered in this dialog. Select the user to be registered from the list and move it to the "Users to be added" list. Select the access permission for this user, and then click the [OK] button. Two or more users can be selected to be added.

Figure: Add User dialog



Note

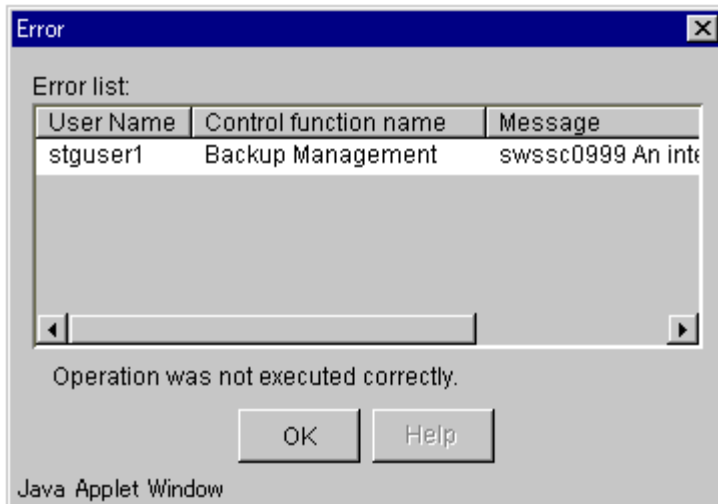
- User names registered on the Storage Management Server are displayed.
- A user name registered with a management function is not displayed in the user name list dialog.
- If a selected user cannot be found, the warning dialog shown in follow Figure is displayed and the [Authentication Feature Management Screen] is displayed.

Figure: Warning dialog indicating that the user selected to be registered was not found



- If this screen is opened without performing any access permission operations, the [>>], [<<], and [OK] buttons and each of the managed access permissions are grayed out. The initial value for the access permission is read permission.
- If an error occurs when defining multiple users, only the definition for the affected user need be repeated. In the example shown in follow Figure, there were three user definition errors. Select one message at a time to obtain help information pertaining to each error.

Figure: Dialog indicating an error with access permissions



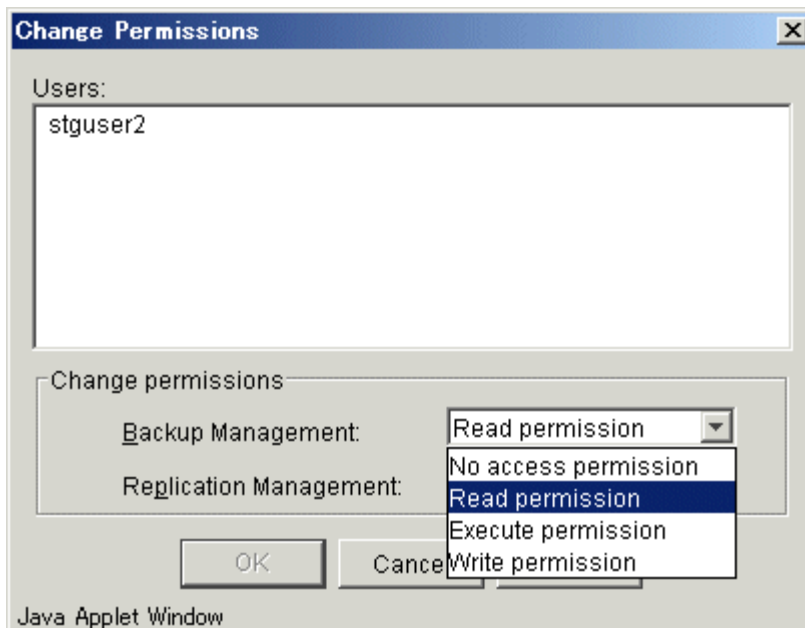
Note If the Storage Management Server runs Windows

- The displayed user name is the local user name registered on the Storage Management Server. If the Storage Management Server is the primary or backup domain controller, "Domain User Name" is displayed.
- A user to be added must have the local login permission to the system. If a user without the local login permission is added, authentication of the user causes an error.
- The names of users who belong to the Administrators group are displayed in gray. Only update permission can be assigned as the access permission for any of the users. Moreover, only update permission can be assigned to multiple user processes that include a user who belongs to the Administrators group.

2.2.4 Change Access Permission Dialog

An access permission given to a selected user can be changed in this dialog. Select the desired access permission from the combo box and then click the [OK] button. When two or more users are selected, the specified access permission is set for all of the selected users.

Figure: Change Access Permission dialog





Note If the Storage Management Server runs Solaris or Linux

- When this dialog is opened by specifying a user, the user's current access permissions for each management function are displayed. When this dialog is displayed by selecting multiple users, "no access permission" is displayed as the default access permission for each management function. "Write permission" is displayed for a user in the Administrators group as the default access permission. Only the Write permission can be set when processing multiple users and one or more of those users belong to the Administrators group.
- If an error occurs when defining multiple users, only the definition for the affected user need be repeated.



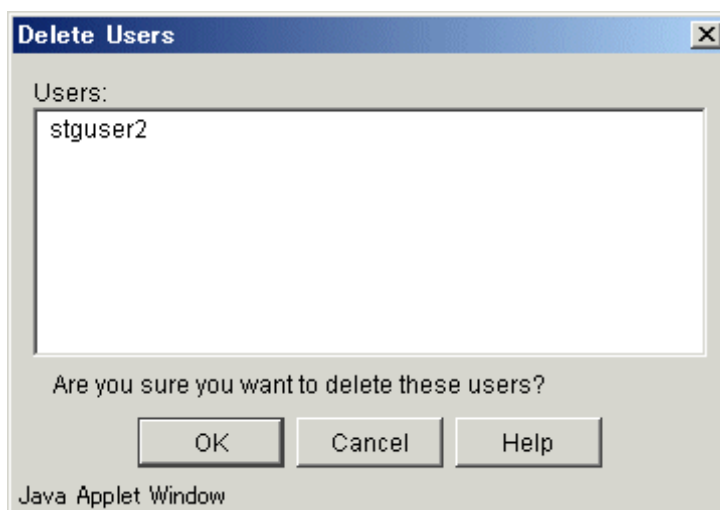
Note If the Storage Management Server runs Windows

- When this window is opened with a user selected, the user's access permissions for the current management task are displayed. If it is opened with multiple users' access permissions selected, "No access permission" is displayed as the default value for each access permission in this management task. The default access permission of a user who belongs to the Administrators group is "Write permission", and is the only permission available. Moreover, only the update permission can be assigned or displayed for multiple user processes that include a user who belongs to the Administrators group.
- If a definition error occurs for some of the selected users when changes are made, only repeat the changes for the users who experienced the error.

2.2.5 Delete User Dialog

A selected user can be deleted with this dialog. Check the user name and then click the [OK] button. When two or more users are selected, the users are deleted simultaneously.

Figure: Delete User dialog



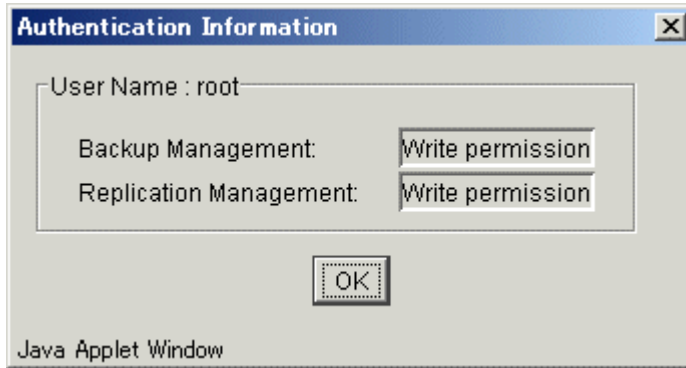


If an error occurs when deleting multiple users, only the delete operation for the affected user need be repeated.

2.2.6 Authentication information dialog

Permission information about logged-in users is displayed in this dialog. This dialog is also displayed when [View] is selected from the [Authentication Feature] menu.

Figure: Authentication Information Dialog



Chapter 3 Backup Management Operations

This chapter describes the backup management window functions of AdvancedCopy Manager and provides details of how to operate its functions.

3.1 Backup Management Window Configuration

The purpose of backup management is to reduce the amount of backup operation and management work in distributed systems. It provides the following functions through the Web browser:

- Backup policy management function
This function allows the user to set up and manage the number of backup preservation generations and backup interval days in order to create the backup policy for volumes to be backed up. Regarding the interval days, delay in performing a scheduled backup is reported in an information display to the user.
- Backup function
The backup function enables users to back up Transaction Volumes.
- Restore function
The restore and recovery function enables users to recover Transaction Volumes.
- Backup history information management function
This function allows the user to reference and delete backup history information.
- Backup management setup function
This function allows the user to set up Storage information and device information from the [Backup Management] window.



Note

Operations related to the tape backup function included in AdvancedCopy Manager Enterprise Edition are not available in the [Backup Management] window. To use the tape backup function, use the command described in the “ETERNUS SF AdvancedCopy Manager Operator’s Guide for Tape Backup Option” .

3.2 Backup Management Window

When [Backup Management] is selected from the [File] menu of the AdvancedCopy Manager initial window, the backup management server list is displayed.

The following backup management tree view shows the selection target items (1) to (7). Each item has its own list view.

Figure Tree view



The following table shows the selection target items and their corresponding list view.

Table: Selection target items and their corresponding views

No.	Selection target item	List view
1	Backup management	Server list view
2	HP-UX server	Transaction view
3	Solaris server, Linux server, or AIX server	Transaction view
4	Windows server	Transaction view
5	Transaction Volume (folder)	Transaction Volume list view
6	Transaction Volume	Backup history list view
7	Backup Volume (folder)	Backup Volume list view



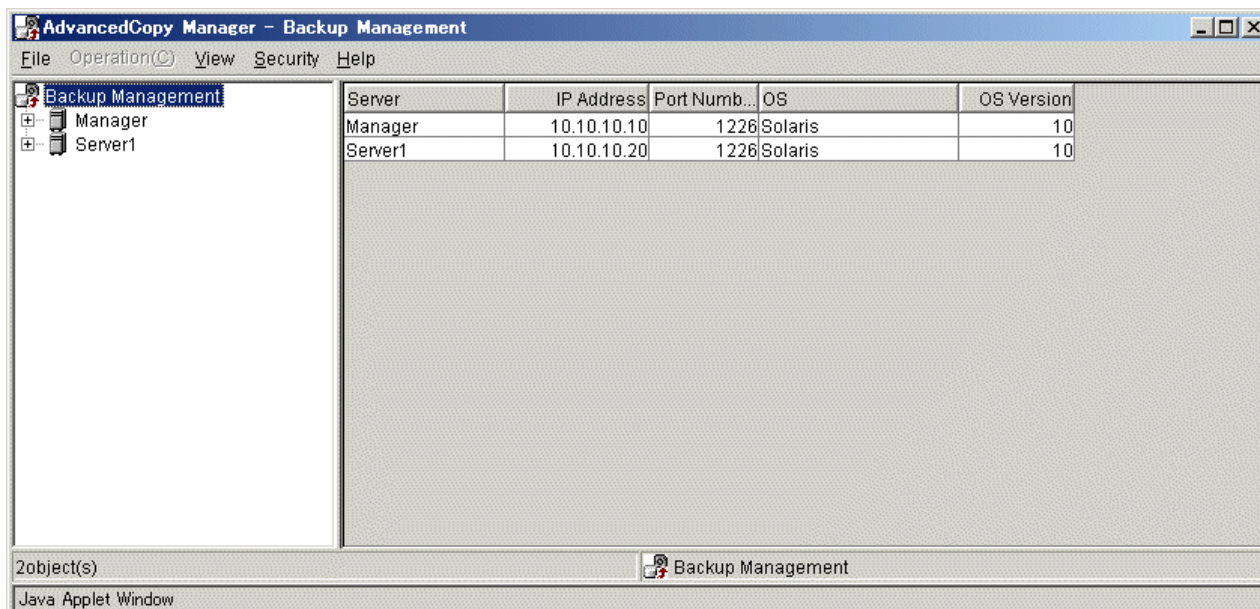
Note

The [Backup Management] window collects information when it first displays the window. Collected information is held without being updated until the window is closed. Please choose [Refresh] from a [View] menu to update the displayed information.

3.2.1 Server list view

This view displays the list of servers that perform backup management as well as information about the servers. Displayed information includes the IP address, port number, OS type, and OS version.

This view is displayed when [Backup Management] is selected on the backup management tree view.



3.2.1.1 Display items

The following table shows the items displayed.

Table: Display items on the server list view

No.	Display item	Description
1	Server name	Name of the managed server
2	IP address	IP address of the managed server
3	Port number	Port number used to communicate with the managed server
4	OS type	Type of the installed OS
5	OS version	Version of the installed OS

3.2.1.2 Operations

Selecting "Solaris OS server", "Windows server", "HP-UX server" or "Linux server" on the server list view enables execution of the following operations:

- Setting up server information
Server information can be set as follows:
Selecting [Set Server Information] from the [Operation] menu on the transaction view displays the [Set Storage Server Configuration Information] window.

See the "Set Storage Server Configuration Information window" for details.
- Setting up device information
Device information can be set as follows:
Selecting [Set Device Information] from the [Operation] menu on the transaction view displays the Set Device Information window.
See the "Set Device Information window" for details.



Note

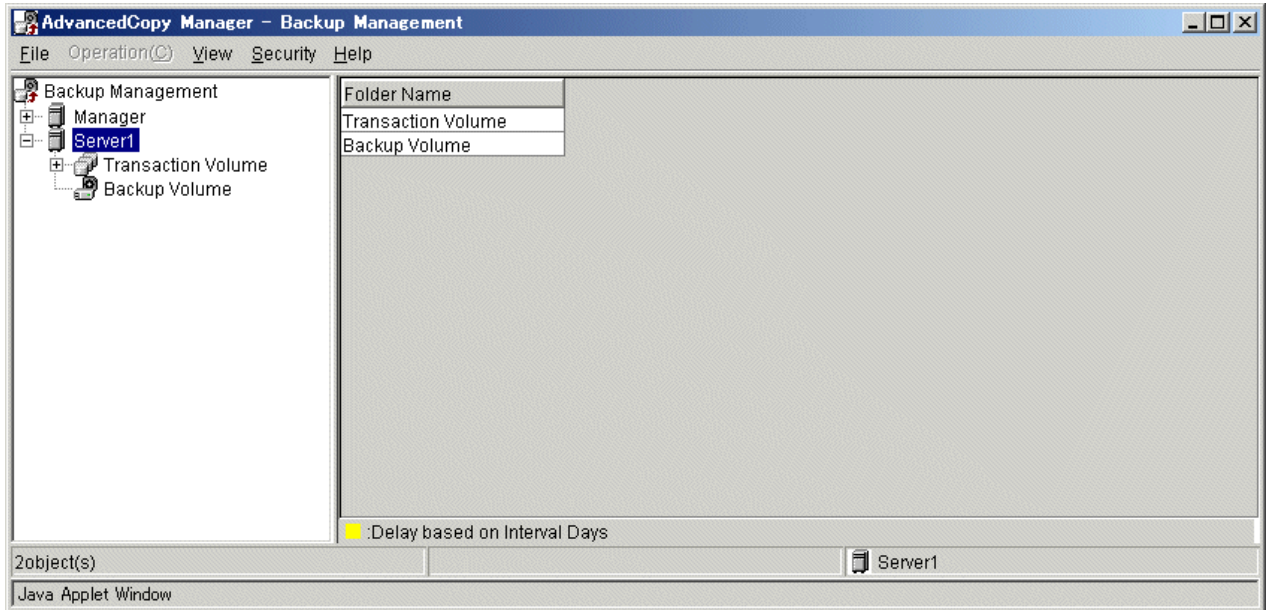
Select the server from the list display on the right side of the server list view, not from the tree panel on the left side.

- Resource adjustment information
Perform resource adjustment of the backup management information.
From the [Operations] menu, select [Resource adjustment] to display the [Resource adjustment] screen.
Refer to "Adjust resources window" for details.

3.2.2 Transaction view

The transaction view displays the name of a folder such as a "Transaction Volume" and "Backup Volume."

This view is displayed when either "Solaris OS server", "Windows server", "HP-UX server," or "Linux server" is selected as Storage Server on the tree view.



3.2.2.1 Display items

The following table shows the items displayed.

Table: Display items on the transaction view

No.	Display item	Description
1	Folder name	The following volume types on the selected server: <ul style="list-style-type: none"> ● Transaction Volume ● Backup Volume

3.2.2.2 Operations

When a target folder is selected in the transaction screen, the operations below can be performed.



Note

Select the folder from the list display on the right side of the transaction screen, not from the tree panel on the left side.

- Defining the backup policy

The backup policy can be defined as follows:

The following table shows the operations that can be used to display the [Set backup policy] window:

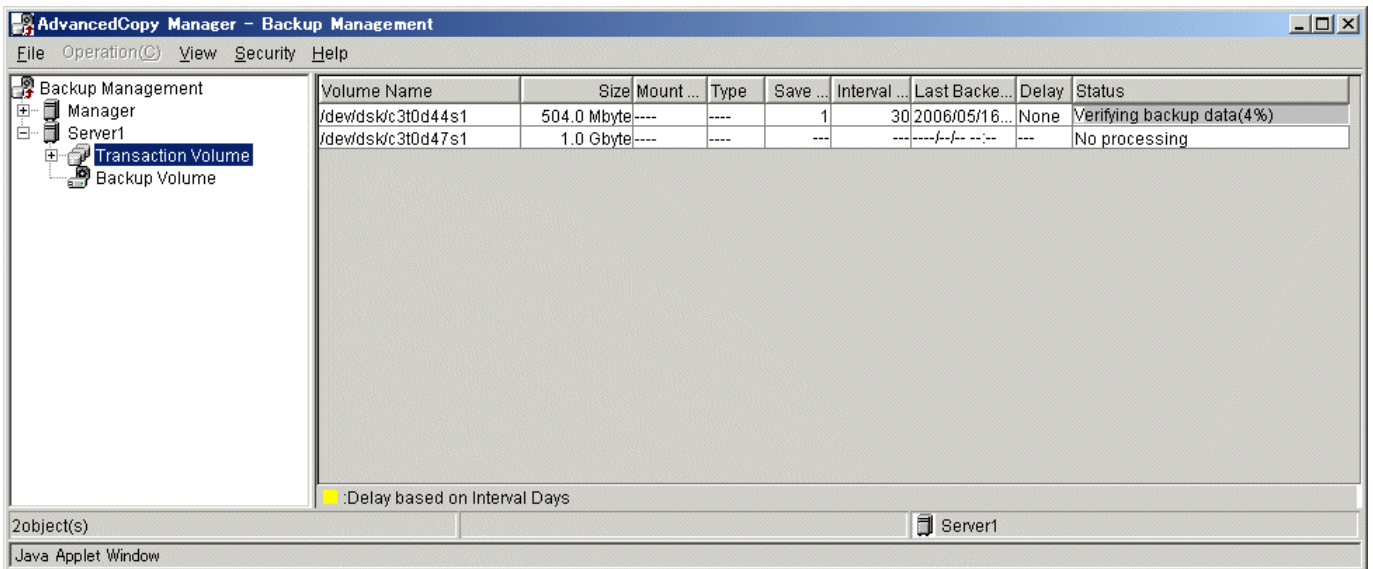
Selection on transaction screen	Operation
Transaction volume	Click the right mouse button, and then select [Definition of Backup Policy] from the popup menu. Or Select [Definition of Backup Policy] from the [Operation] menu.

3.2.3 Transaction Volume list view

The Transaction Volume List view displays the list of Transaction Volumes.

From the tree display, select [Transaction Volume] under the target Storage server to display this screen.

The display items in this view represent the "Device usage status display command (swstdevdisp) with the - t option specified", the "Backup policy display command (swstbkpoldisp)" and the "Execution status display command (swstexecstat)" of AdvancedCopy Manager. To learn more details about these commands, refer to "Backup Management Commands" in "ETERNUS SF AdvancedCopy Manager Operator's Guide".



3.2.3.1 Display items

The following table shows the items displayed.

Table: Display items on the transaction volume list view

No.	Display item	Description
1	Volume Name	Displays the volume name.
2	Size	Displays the volume size. For a logical volume of VxVM, the size of the area that is actually used for copying is displayed.
3	Type	Displays the device file system type.
4	Mount Point name	Displays the name of the mount point of the transaction volume (drive letter).
5	Number of preservation generations	Displays the number of preservation generations defined in the backup policy.
6	Interval Days	Displays the interval days defined in the backup policy.
7	Most recent backup date	Displays the last date that the volume was backed up.
8	Delay	When the number of days specified in [Interval days] has been exceeded since the backup data was last collected, this displays the number of days the backup is delayed.

No.	Display item	Description	
9	Status	Displays the condition of currently ongoing processes.	
		● No undergoing processing.	No processing is being performed.
		● Startup backup preparation	The start command for backup synchronization is being executed.
		● Backup preparation in progress (nn%)	The percentage that has been completed.
		● Backup preparation in progress (failed)	This status means that EC has failed.
		● Backup preparation in progress (halt)	This status means that EC has been halted.
		● Completed preparation for backup	This status means that EC is completed.
		● Canceling backup preparation	The synchronous processing cancel command is being executed.
		● Backup operation in progress	The backup execution command is being executed.
		● Verification backup data in progress (nn%)	Percentage of completion of backup by OPC function
		● Verification backup data in progress (failed)	This status means backup by OPC function has failed.
		● Verification backup data in progress (halt)	This status means backup by OPC function has been halted.
		● Restore operation in progress	The restore command is being executed.
		● Verification restore data in progress (nn%)	Percentage of completion of restore by the OPC function
		● Verification restore data in progress (failure)	This status means that restoration by OPC function has failed.
		● Verification restore data in progress (halt)	This status means that restoration by OPC function has been halted.
		● Cancel restore operation in progress	The cancel restore command is being executed.
		● Define backup policies in progress	The backup policy setup command is being executed.
		● Delete backup policies in progress	The backup policy delete command is being executed.
		● Delete histories in progress	The history information delete command is being executed.
		● Canceling tracking	The tracking cancel command is being executed.
		● gds-error	A GDS error has occurred.

3.2.3.2 Delay view

When the information for a Transaction Volume is displayed in yellow, it means that the number of days specified in [Interval days] has been exceeded since the last time backup data was collected

3.2.3.3 Operations

The Transaction Volume list view is used to start synchronous processing, backup, restore, deletion of history, cancel synchronization process, definition of backup policy, and deletion of backup policy for a Transaction Volume.

In the Transaction Volume List view, select a Transaction Volume which you want to manage, and then right-click the mouse. From the popup menu brought up, choose the item on which you want to transact. After this, each resulting view is displayed.

Alternatively, after selecting a Transaction Volume which you want to manage in the Transaction Volume List view, you can choose the item from the [Operation] menu to display the view with which you want to transact.

To learn more details to manage this window, refer to each operation window.



Select the transaction volume from the list display on the right side of the transaction volume list screen, not from the tree panel on the left side.

When a normal Transaction Volume is selected

The following table shows the list of operation windows for a normal Transaction Volume.

Table: List of operations for a normal Transaction Volume

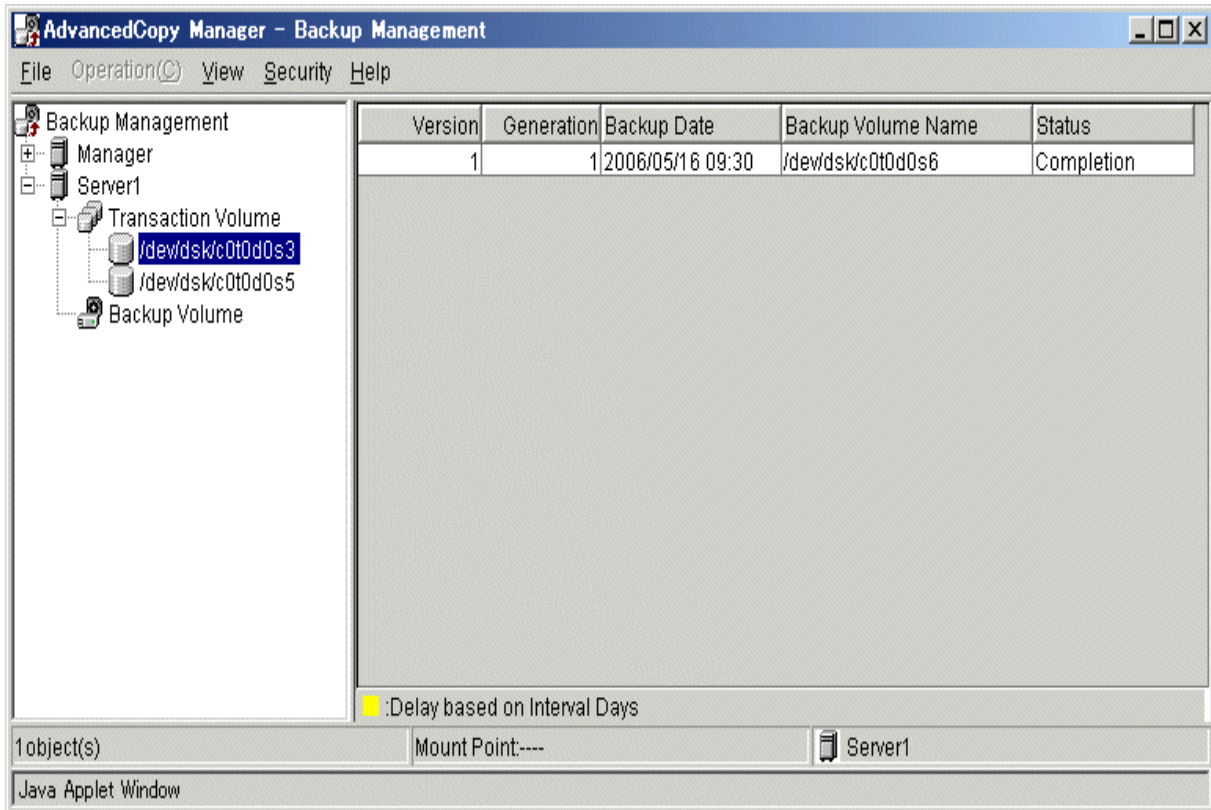
Operation	Description	Operation window
Start Synchronization Processing	Start backup synchronization processing of the Transaction Volume.	Start Synchronization Processing (by volume) window
Backup	Backs up the Transaction Volume.	Backup window (normal work volume)
Restore	Restores the Transaction Volume according to the latest copy of backup history information.	Restore window (Transaction Volume specified)
Deletion of history	Deletes all backup histories of the Transaction Volume.	History deletion window (by volume)
Cancel Synchronization Processing	Delete the entire backup history of the Transaction Volume.	Delete History (by volume) window
Definition of backup policy	Defines the backup policy for the Transaction Volume.	Set Backup Policy window (by volume)
Delete backup policy	Deletes the backup policy for the Transaction Volume.	Delete Backup Policy window (by volume)

3.2.4 Backup history list view

The backup history view displays the list of backup histories of the Transaction Volume by generation. This view is displayed when the Transaction Volume on the target Storage Server is selected on the tree view.

The display items correspond to the "History information display command (swsthistdisp)" of the AdvancedCopy Manager command. See "Backup Management Commands," in the "ETERNUS SF AdvancedCopy Manager Operator's Guide" for details of the command.

Backup history list view for a normal Transaction Volume



3.2.4.1 Display items

The following table shows the items displayed when a normal Transaction Volume is selected.

Table: Display items on the backup history list view (normal Transaction Volume)

No.	Display item	Description
1	Absolute generation number	Displays the absolute generation number. Absolute generation numbers increase sequentially when the data that was backed up first is assumed to be 1.
2	Relative generation number	Displays the relative generation number. Relative generation numbers in descending order, when the latest data is assumed to be 1.
3	Backup date	Displays the date when backup was started.
4	Backup volume name	Displays the name of the volume that was backed up.
5	Status	Displays the copy status of the backup data. <ul style="list-style-type: none"> ● Completed ● Copying (xx%) ● Failed ● Halt ● gds-error

3.2.4.2 Operations

You can delete restoration/backup histories.

In the Backup History List view, choose the backup history which you want to manage and then right-click your mouse. From the popup menu that is brought up, choose the item which you want to transact. Then the view for the transaction appears.

Alternatively, after selecting a backup history which you want to manage in the Backup History List view, you can choose the item from the [Operation] menu to display the window which you want to transact.

To learn more details on how to manage this window, refer to each operation window.



Note

Select the backup history from the list display on the right side of the backup history list screen, not from the tree panel on the left side.

When a backup history for a normal Transaction Volume is selected

The following table shows the list of operations that can be executed when a backup history for a normal Transaction Volume is selected.

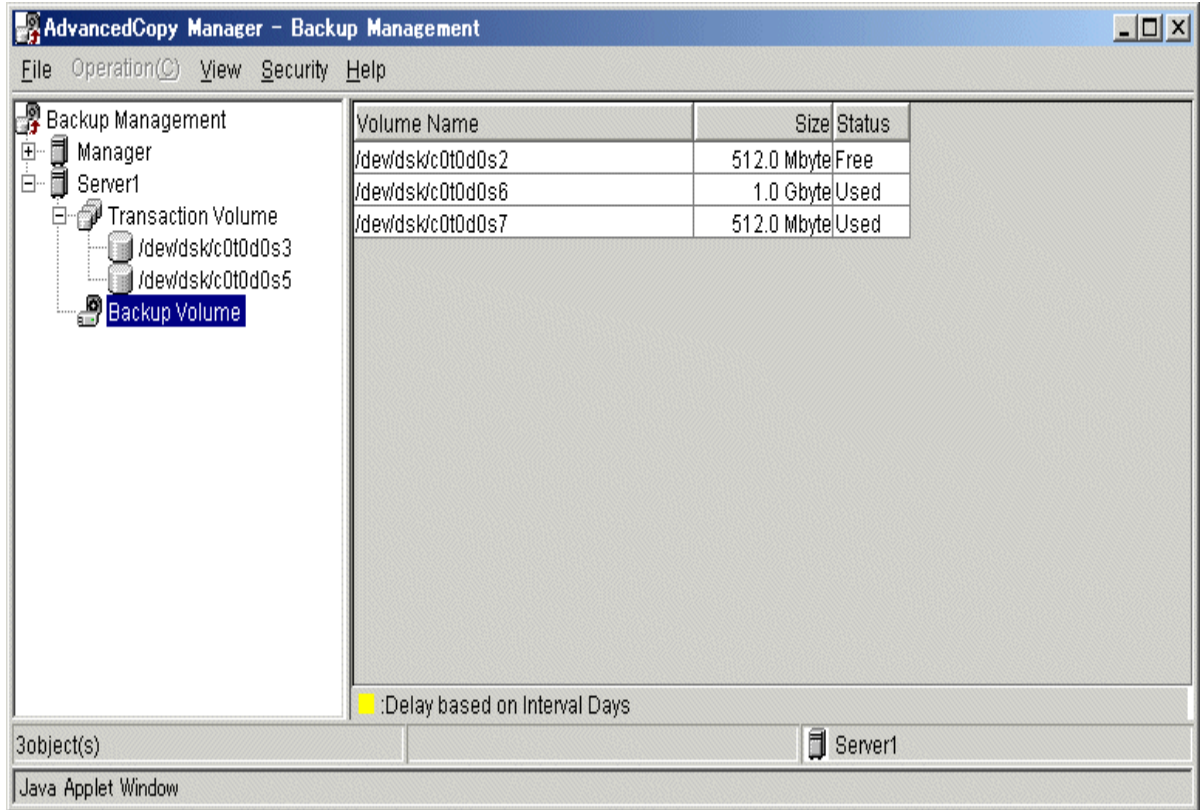
Table: List of operations on the backup history list view (normal Transaction Volume)

Operation	Description	Operation window
Restore	Restores the selected backup history according to the backup history information.	Restore window
Deletion of history	Deletes the selected backup history.	History deletion window (by volume)

3.2.5 Backup Volume list view

This view is displayed when the [Backup Volume] on the server to be displayed is selected on the tree view.

The display items correspond to the "History information display command (swstdevdisp) with the - b option specified". See "Backup Management Commands," in the "ETERNUS SF AdvancedCopy Manager Operator's Guide" for the relevant operating system for details of the command.



3.2.5.1 Display items

The following table shows the items displayed on the Backup Volume list view.

Table: Display items on the Backup Volume list view

No.	Display item	Description
1	Volume name	Displays the Backup Volume name.
2	Size	Displays the volume size. For a logical volume of VxVM, the size of the area that is actually used for copying is displayed.
3	Status	Displays whether the Backup Volume state is "Unused" or "In use." Free: Idle Used: Generation managed

3.2.5.2 Operations

You cannot perform any operation in the Backup Volume List view.

3.2.6 Operating display items on the list view

3.2.6.1 Changing display items

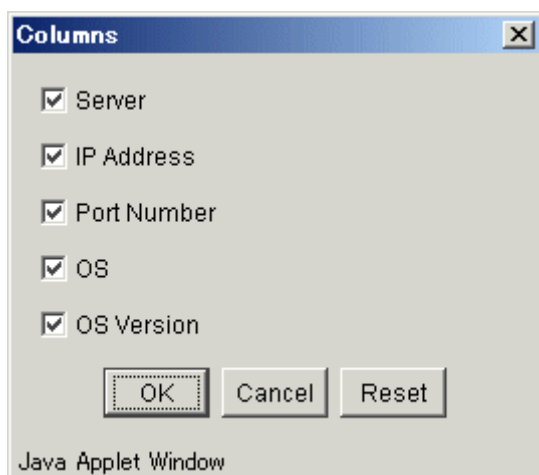
You can specify which items to display in each list view. By default, all items are displayed.

The [Setup display item] screen can be displayed using the following operations.

Table: [Setup display item] screen display method

Selection in each list screen	Operation
Title line of the displayed item	Right-click the mouse, and then select [Change Display Item] from the popup menu. Or Select [Setup Display Item] from the [View] menu.

Note that the items displayed in this screen differ for the various list screens.



Each item can be individually selected from this window. Selecting [Reset] redisplay the initial state. Select the display item and click [OK] to change the item displayed. Click the [Reset] button to redisplay the initial state.

3.2.6.2 Rearranging display item

Perform the following procedure to rearrange the items displayed on each list view:

1. Drag the title of an item to be moved to the desired position.
2. Drop the title at the desired position.

Items that were moved are left-justified in the list view.

3.3 Backup Management Operation window

The following operation windows are available for backup management.

- Set Storage Server Configuration Information window
- Set Device Information window
- Adjust resources window
- Set Backup Policy window
- Delete Backup Policy window
- Start Synchronous Processing window
- Cancel Synchronous Processing window
- Backup window
- Restore window
- History deletion window
- Volume selection window

3.3.1 Set Storage Server Configuration Information window

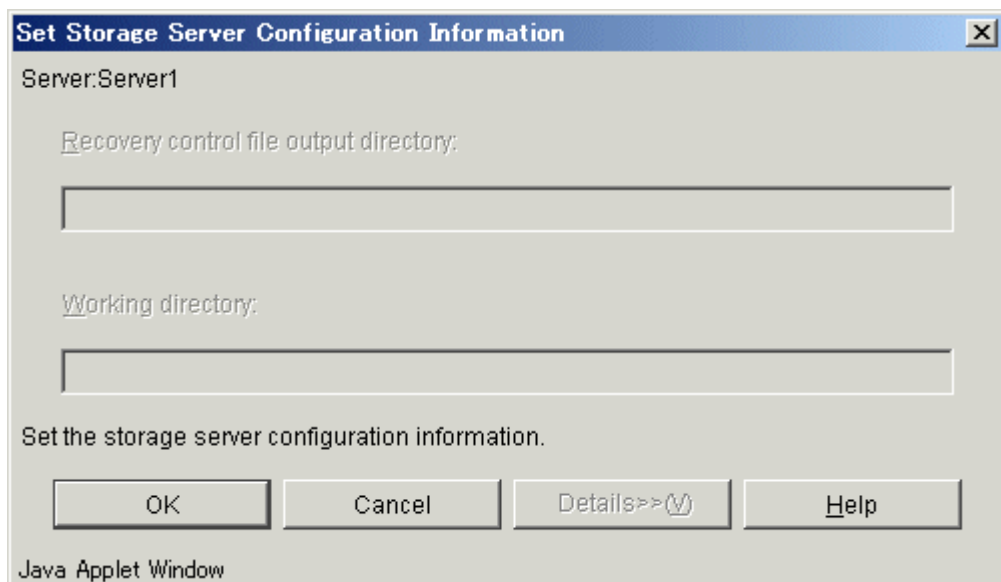
Use this window to set the Storage Server configuration information.

Set Storage Server Configuration Information window

The following operations can be used to display the [Set Server Configuration Information] window.

Table: [Set Server Configuration Information] screen display method

Selection in server list view	Operation
Server	Right-click the mouse, and then select [Set Server Configuration Information] from the popup menu. Or Select [Set Server Configuration Information] from the [Operation] menu.



The following table shows the setup items and display items.

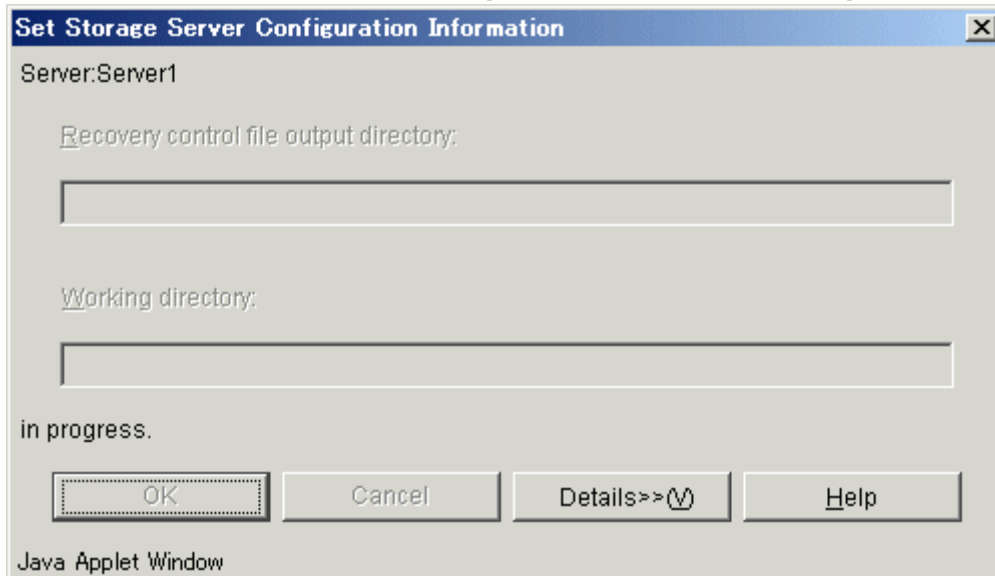
Table: [Set Server Configuration Information] window display items

Item No.	Display item name	Description
1	Recovery control file output destination directory	Specifies the storage location of the recovery control file created during backup
2	Working directory	Specifies the work directory used for database recovery tasks during restoration

After setting the configuration items, click the [OK] button.

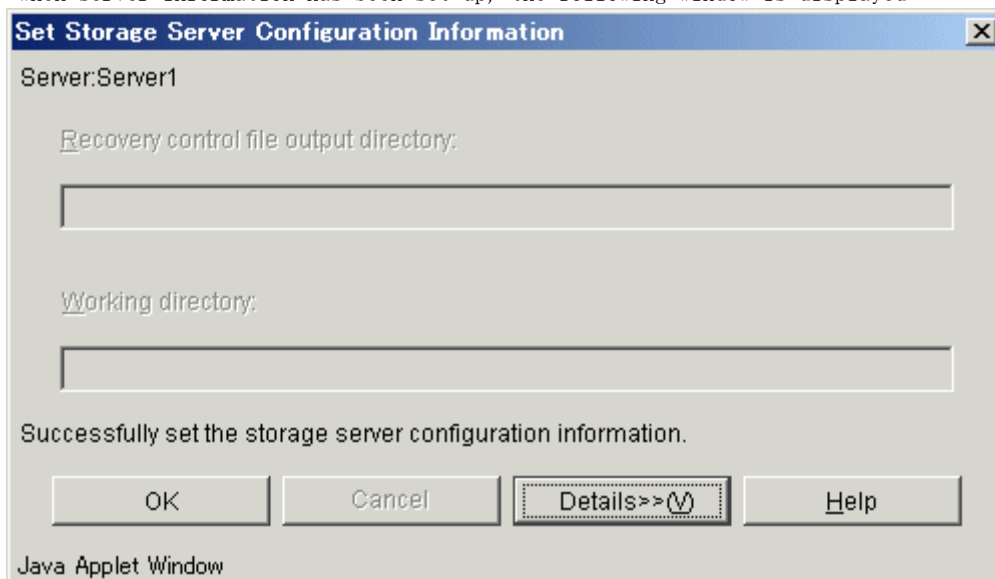
In progress window

While server information is being set up, the following window is displayed:



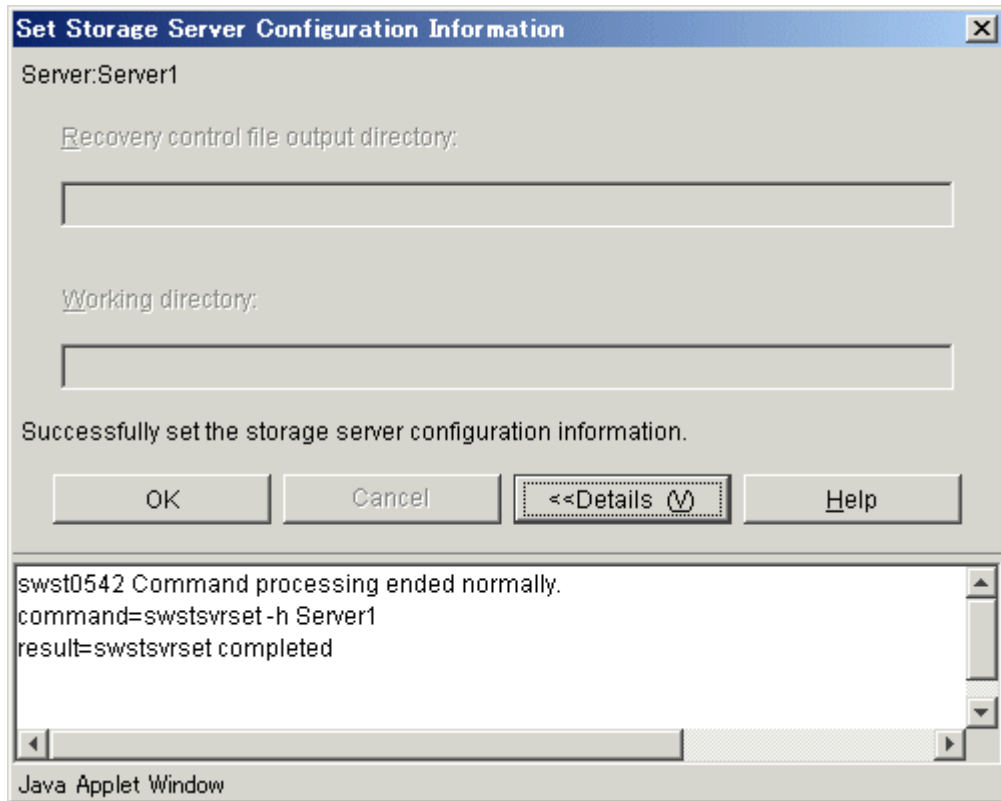
Completion window

When server information has been set up, the following window is displayed:



Click the [OK] button to redisplay the server list view. Click the [Details>>] button to open the details window.

Detailed information is displayed as follows:



Click the [OK] button to redisplay the server list view. Click the [<<Details] button to close the details window.



When the Storage Management Server also serves as the Storage Server, you need to perform the above configuration on the Storage Management Server as well.

3.3.2 Set Device Information window

The device information setup window sets up device information.

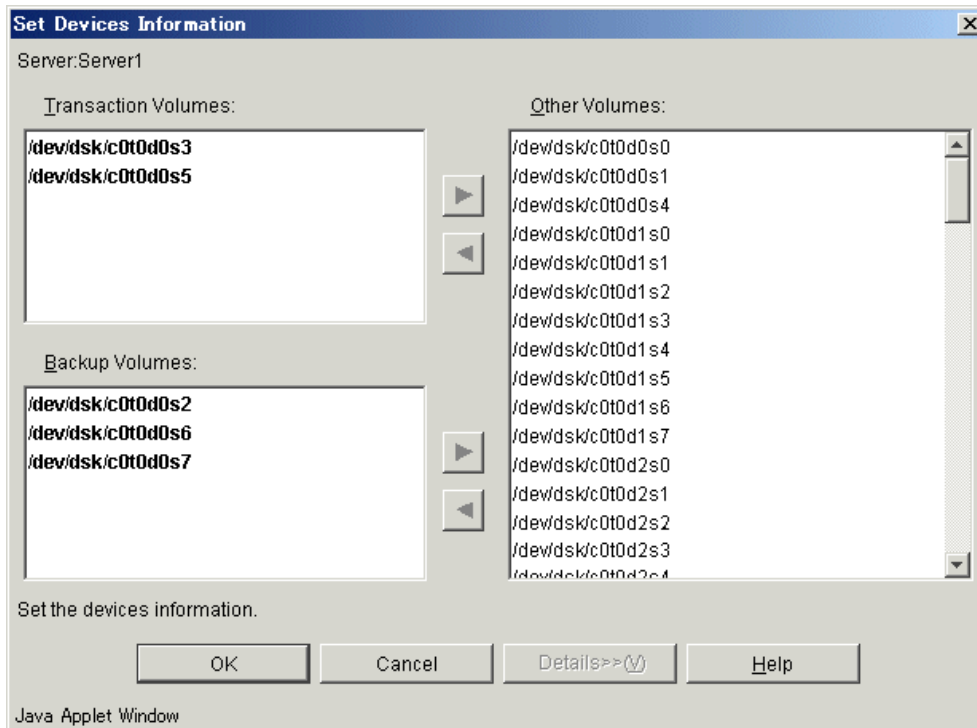
Set Device Information window

The following operations can be used to display the [Set Device Information] window.

Table: [Set Device Information] window display method

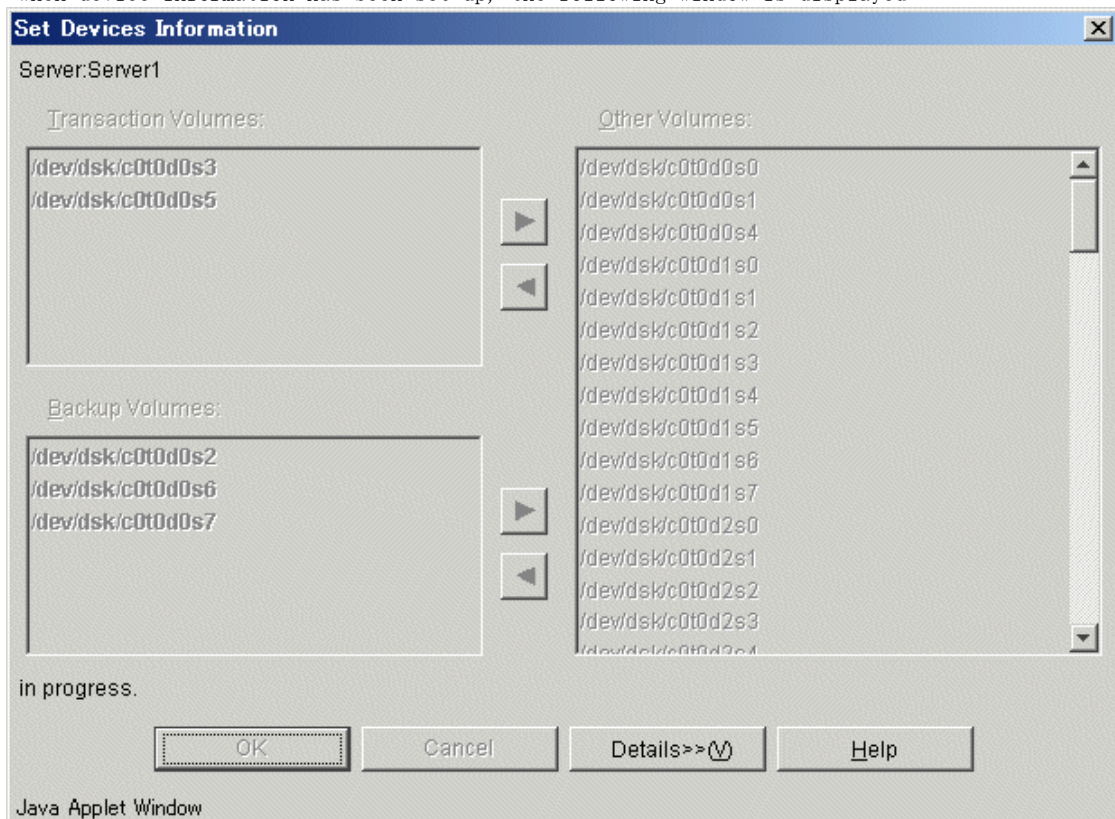
Selection in server list view	Operation
Server	Right-click the mouse, and then select [Set Device Information] from the popup menu. Or Select [Set Device Information] from the [Operation] menu.

Volumes that have not been set up as Transaction or Backup Volume are displayed in the "Other Volume" field.



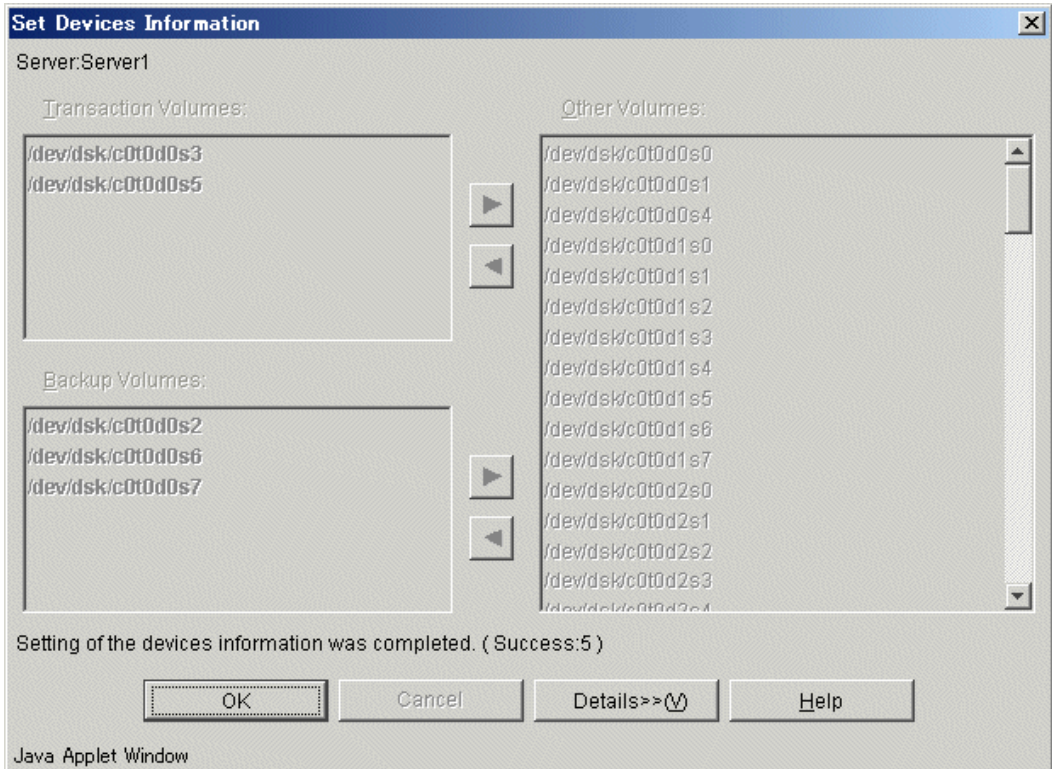
In progress window

When device information has been set up, the following window is displayed:



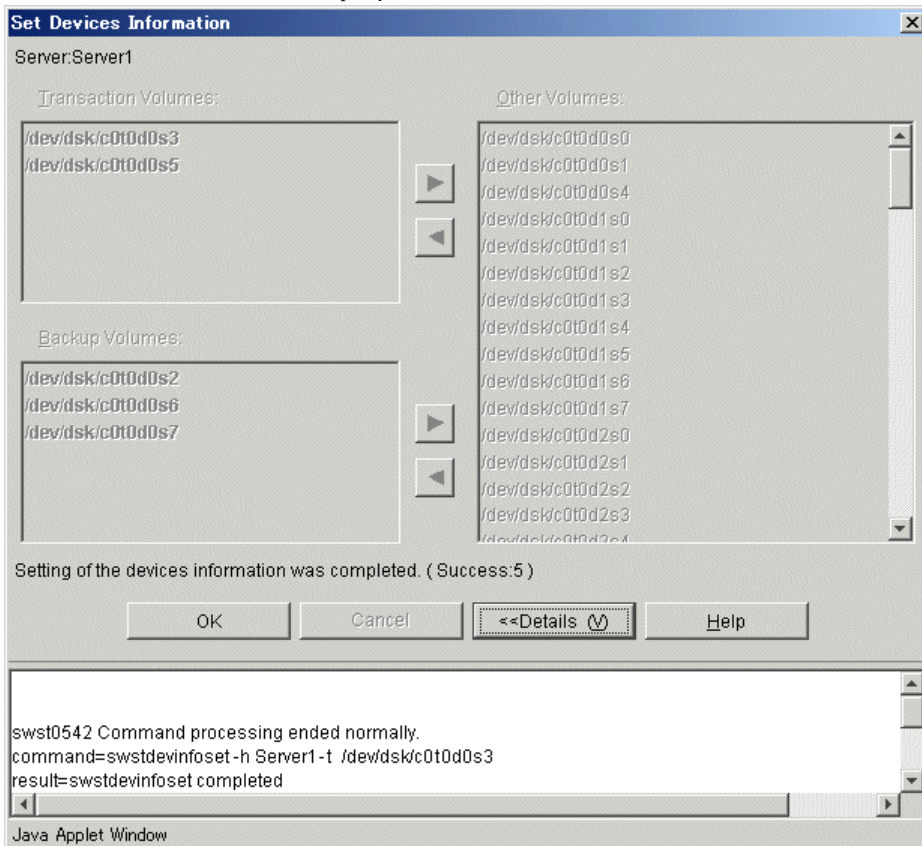
Completion window

When device information has been set up, the following window is displayed:



Click the [OK] button to redisplay the server list view. Click the [Details>>] button to open the details window.

Detailed information is displayed as follows:



Click the [OK] button to redisplay the server list view. Click the [<<Details] button to close the details window.

3.3.3 Adjust resources window

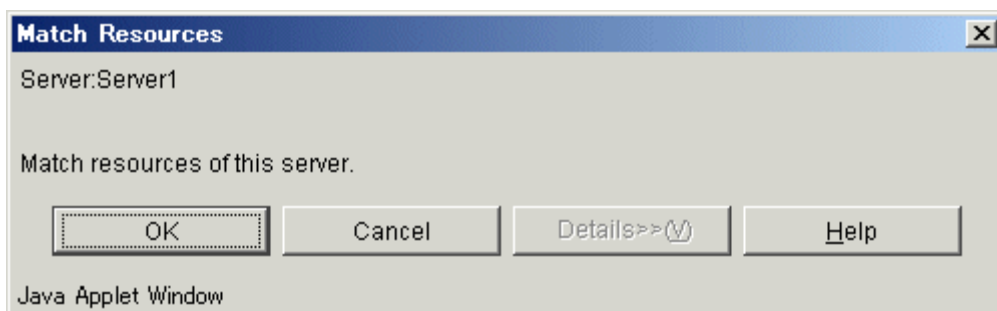
The adjust resources window adjusts resources.

Adjust resources window

The following operations can be used to display the [Adjust Resources] window.

Table: [Adjust Resources] window display method

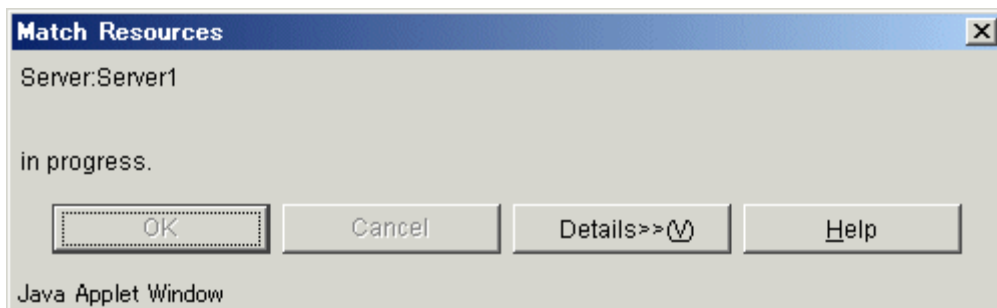
Selection in server list view	Operation
Server	Right-click the mouse, and then select [Adjust Resources] from the popup menu. Or Select [Adjust Resources] from the [Operation] menu.



Click the [OK] button to adjust resources.

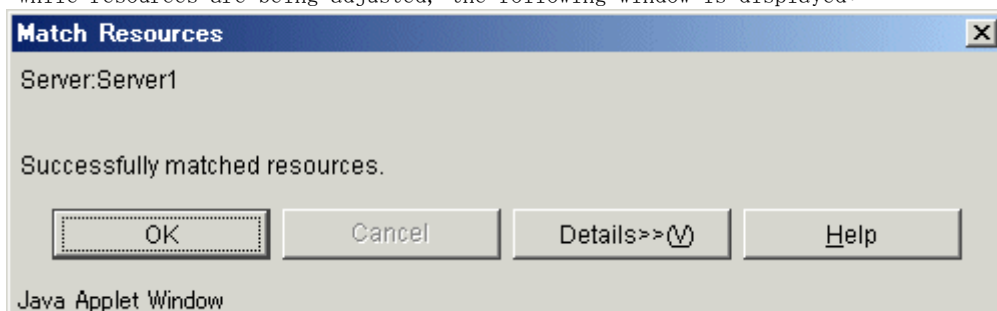
In progress window

While resources are being adjusted, the following window is displayed:



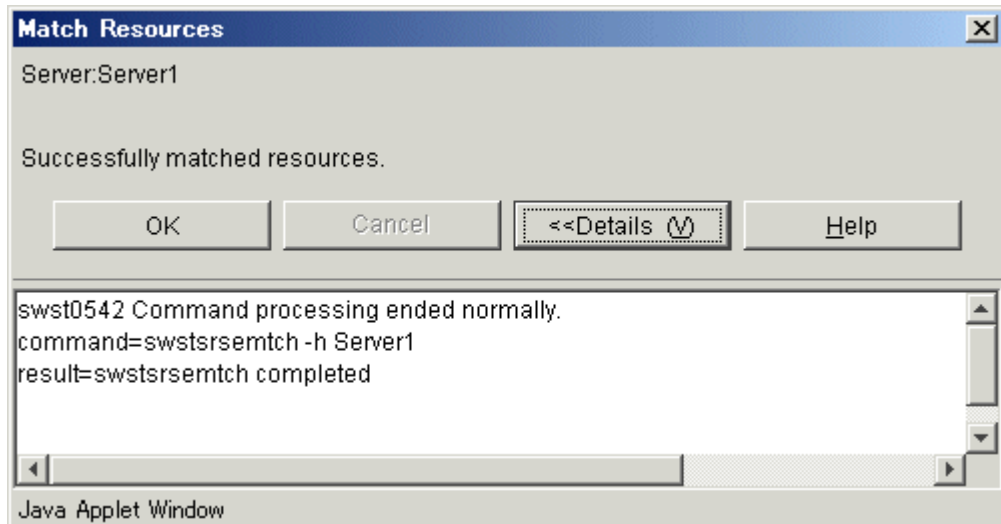
Completion window

While resources are being adjusted, the following window is displayed:



Click the [OK] button to redisplay the server list view. Click the [Details>>] button to open the details window.

Detailed information is displayed as follows:



Click the [OK] button to redisplay the server list view. Click the [<<Details] button to close the details window.

3.3.4 Set Backup Policy window

The backup policy can be defined for a Transaction Volume by using one of the following methods:

- All Transaction Volumes
The backup policy is defined for all of the Transaction Volumes at once.
- Transaction Volume
The backup policy is defined for a Transaction Volume.

3.3.4.1 Set Backup Policy window (all Transaction Volumes)

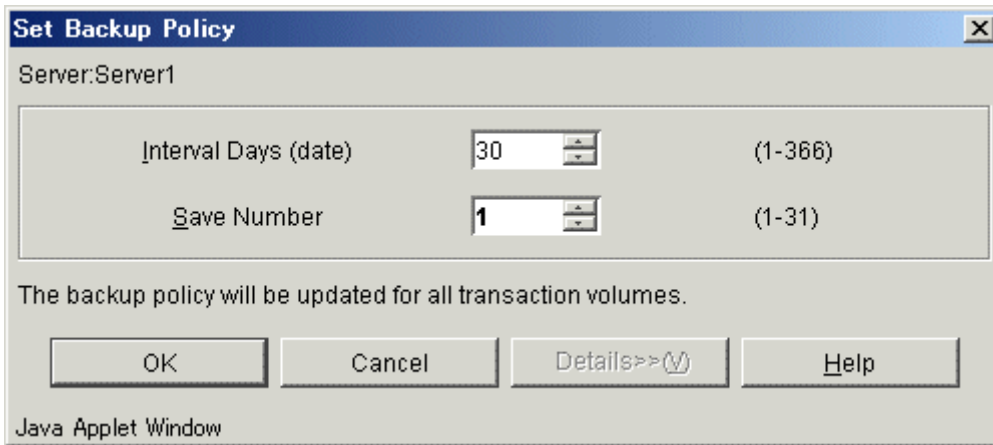
Configure/modify backup policy collectively for all Transaction Volumes.

Set Backup Policy window

The following operations can be used to display the [Set Backup Policy] window:

Table: [Set Backup Policy] window display method

Selection at transaction volume list view	Operation
Transaction volume	Right-click the mouse, and then select [Set Backup Policy] from the popup menu. Or Select [Set Backup Policy] from the [Operation] menu.



The following table shows the setup items and display items.

Table: [Set Backup Policy] window display items

Item No.	Display item name	Description
1	Interval number of days	Specifies the interval in number of days. A value from 1 to 366 can be set. The initial value is 30.
2	Number of generations kept	Specifies the number of generations to be kept. A value from 1 to 31 can be set. The initial value is 2.

Note: If the above items are not specified, the initial value or the previously specified value is set.

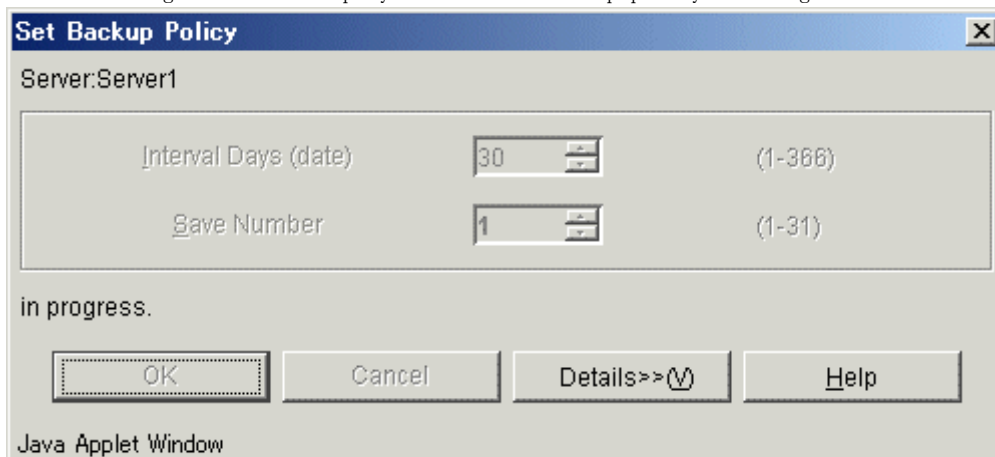


Note

If the displayed initial values are left unchanged when the backup policy has been already set, the backup policy is not changed. To reset the backup policy to the displayed initial values ([Interval Days] is 30 or [Save Number] is 2) click the spin buttons on the input field.

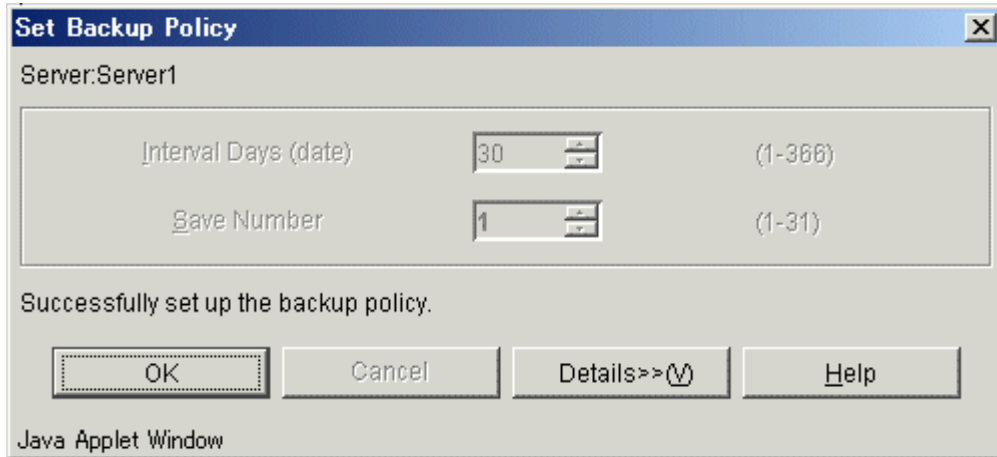
In progress window

The following window is displayed while the backup policy is being defined:



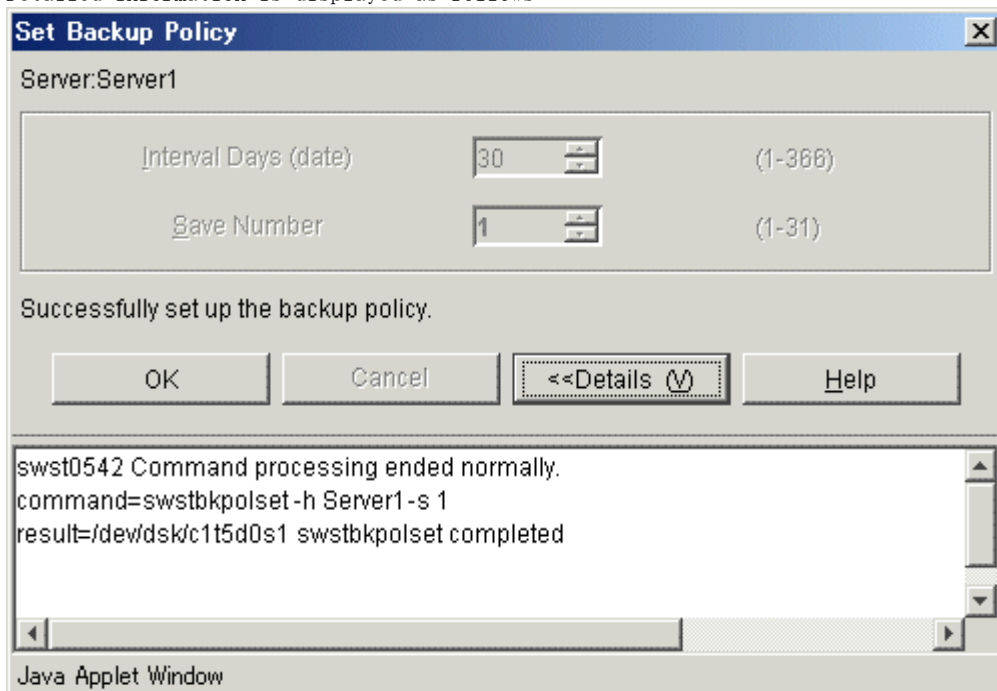
Completion window

When the backup policy has been defined, the following window is displayed:



Click the [OK] button to redisplay the transaction volume list view. Click the [Details>>] button to open the details window.

Detailed information is displayed as follows:



Click the [OK] button to redisplay the transaction volume list view. Click the [<<Details] button to close the details window.

3.3.4.2 Set Backup Policy window (by volume)

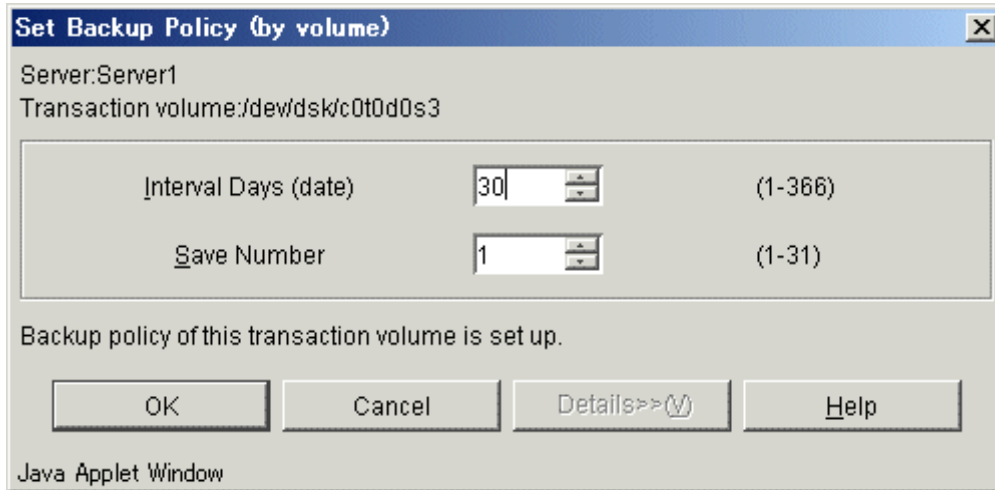
This window defines the backup policy for a Transaction Volume selected on the Transaction Volume list view.

Set Backup Policy window

Perform the following operation to display the [Set Backup Policy (by volume)] window:

Table: [Set Backup Policy (by volume)] window display method

Selection on the Transaction Volume list view	Operation
Normal Transaction Volume	Select [Set Backup Policy] from the popup menu appearing after the right mouse button is clicked. Or, Select [Set Backup Policy] from the [Operation] menu.



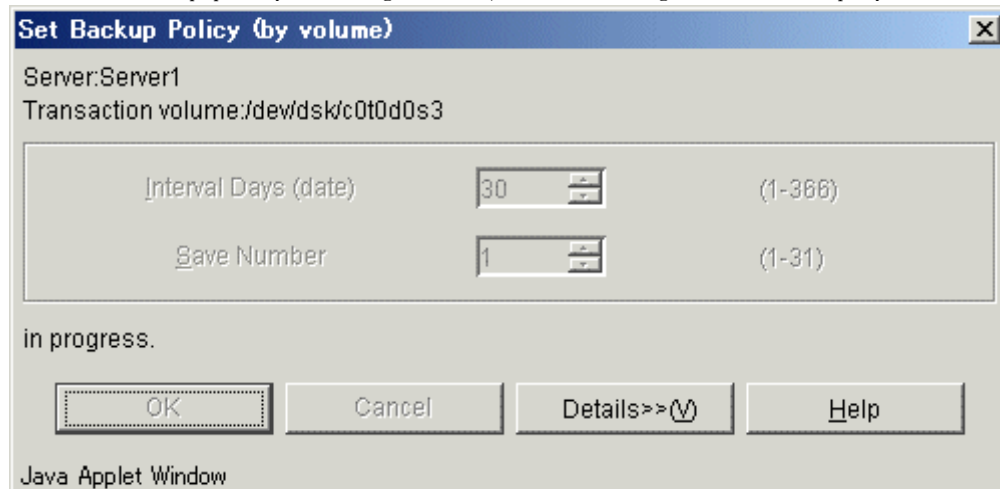
The following table shows the setup items and the display items.

Table: [Set Backup Policy (by volume)] window display items

Item No.	Display item name	Description
1	Interval number of days	Specifies the interval in number of days. A value from 1 to 366 can be set. The initial value is 30.
2	Number of generations kept	Specifies the number of generations to be kept. A value from 1 to 31 can be set. The initial value is 2.

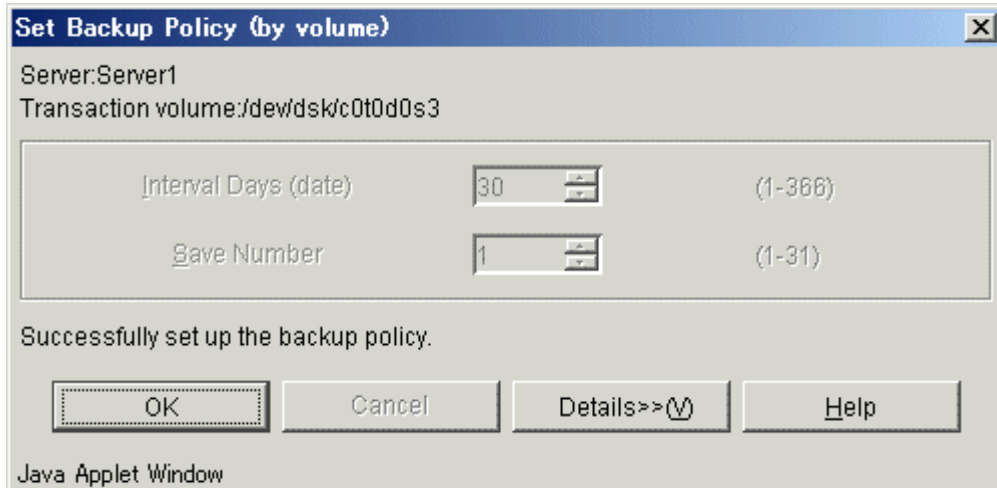
In progress window

While the backup policy is being defined, the following window is displayed:



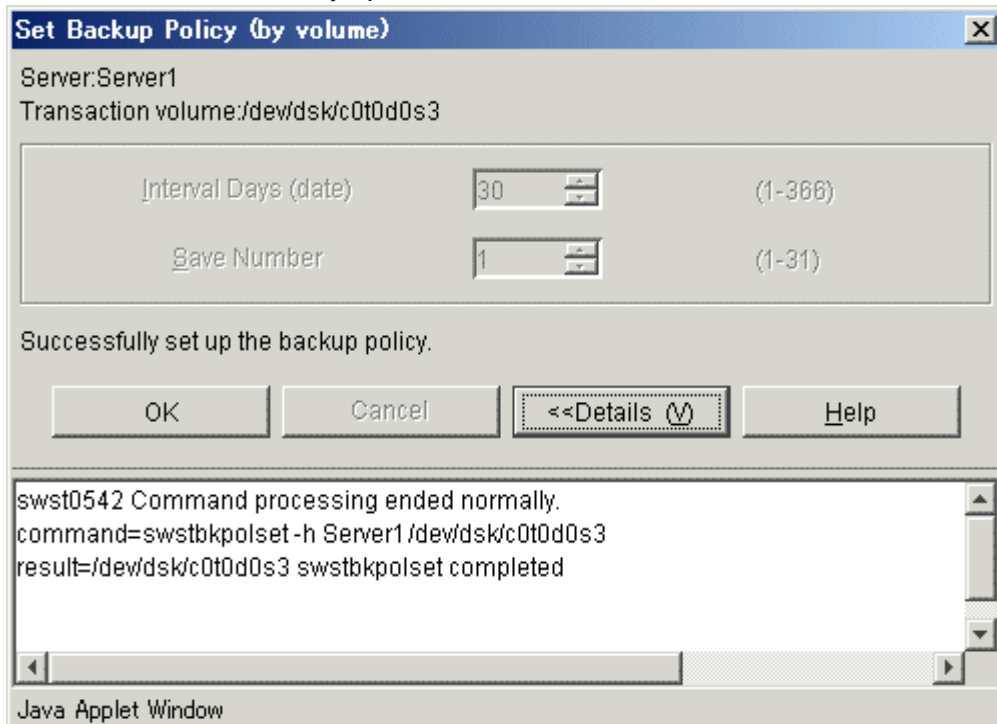
Completion window

When the backup policy definition has completed, the following window is displayed:



Click the [OK] button to redisplay the Transaction Volume list view. Click the [Details>>] button to open the details window.

Detailed information is displayed as follows:



Click the [OK] button to redisplay the Transaction Volume list view. Click the [<<Details] button to close the details window.

3.3.5 Delete Backup Policy window

The backup policy deletion screen deletes the backup policy for a Transaction Volume. The backup policy can be deleted by either of the following:

- Volume
The backup policy for a selected Transaction Volume is deleted.

3.3.5.1 Delete Backup Policy window (by volume)

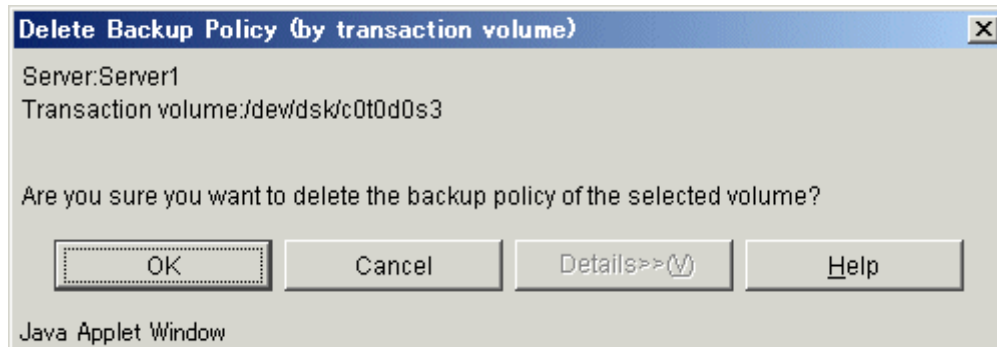
This window deletes the backup policy for a Transaction Volume selected on the Transaction Volume list view.

Delete Backup Policy window

Perform the following operation to display the [Delete Backup Policy (by transaction volume)] window:

Table: [Delete Backup Policy (by transaction volume)] window display method

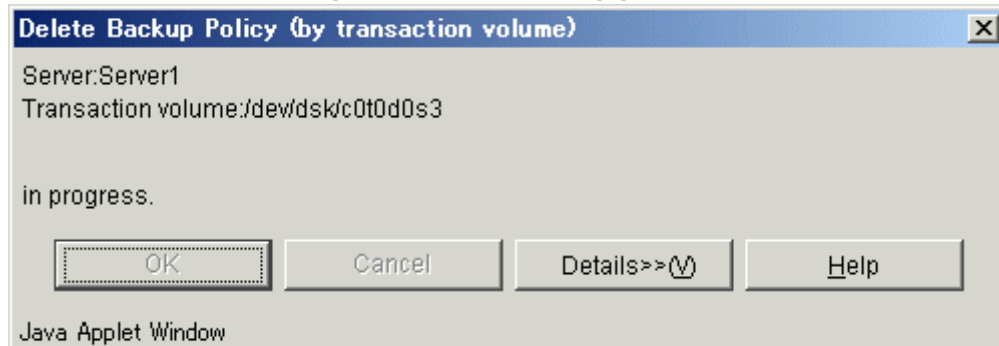
Selection on the Transaction Volume list view	Operation
Normal Transaction Volume	Select [Delete Backup Policy] from the popup menu appearing after the right mouse button is clicked. Alternatively select [Delete Backup Policy] from the [Operation] menu.



Click the [OK] button to delete the backup policy. Click the [Cancel] button to cancel deleting the backup policy.

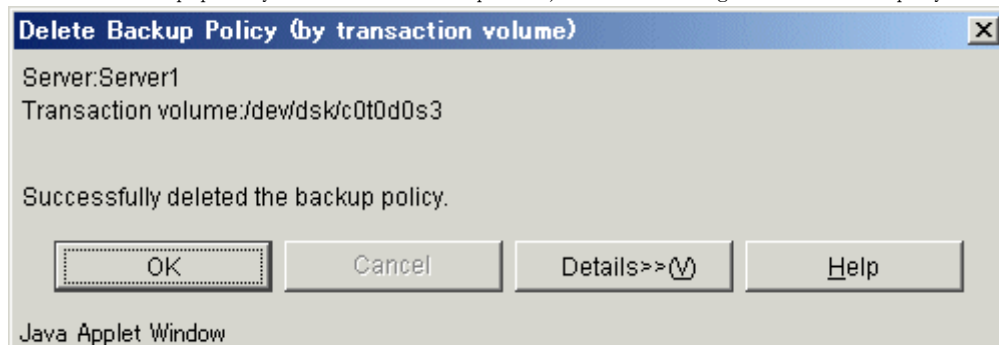
In progress window

The following window is displayed while the backup policy is being deleted:



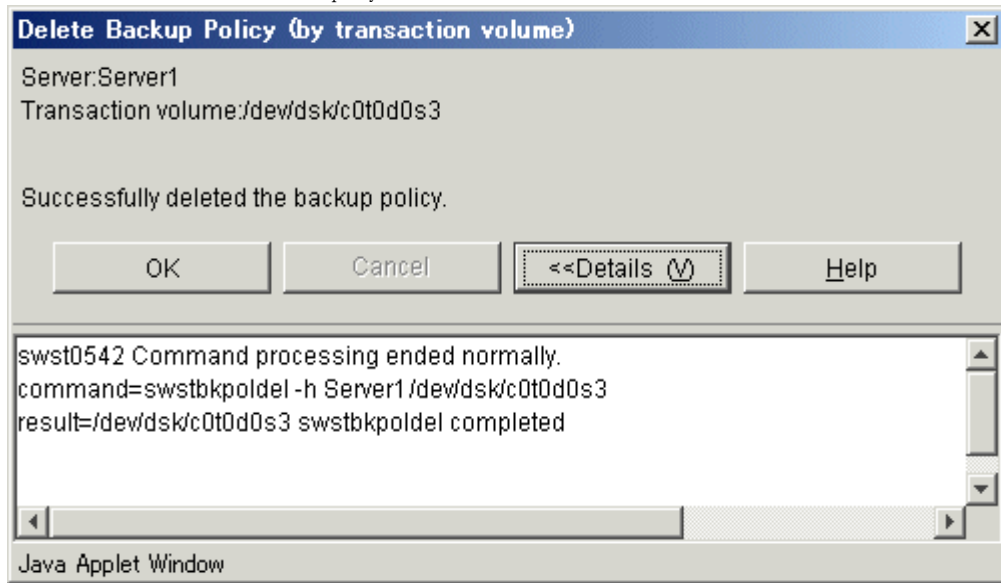
Completion window

When the backup policy deletion has completed, the following window is displayed:



Click the [OK] button to redisplay the Transaction Volume list view. Click the [Details>>] button to open the details window.

Detailed information is displayed as follows:



Click the [OK] button to redisplay the Transaction Volume list view. Click the [<<Details] button to close the details window.

3.3.6 Start Synchronous Processing window

The Start Synchronous Processing window begins Start Synchronous Processing for a Transaction Volume selected on the Transaction Volume list view.

When Start Synchronous Processing is begun, this window uses the EC function of the disk array unit GR series to begin copying from the selected Transaction Volume to an unused Backup Volume.

Start Synchronous Processing can be executed as follows:

- Transaction Volume

3.3.6.1 Start Synchronous Processing window (by volume)

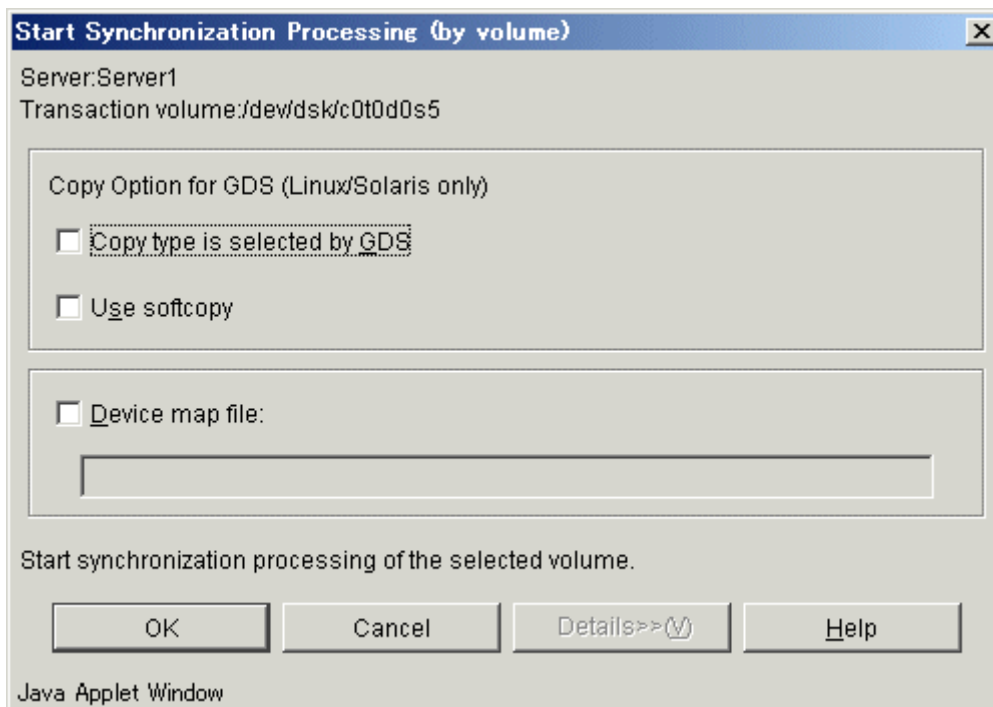
This window starts Synchronous Processing for a Transaction Volume selected on the Transaction Volume list view.

Start Synchronous Processing window

Perform the following operation to display the [Start Synchronization Processing (by volume)] window:

Table: [Start Synchronization Processing (by volume)] window display method

Selection on the Transaction Volume list view	Operation
Normal Transaction Volume	Select [Start Synchronous Processing] from the popup menu appearing after right-clicking the mouse. Alternatively select [Start Synchronous Processing] from the [Operation] menu.



The following table shows the setup items and display items.

Table: [Start Synchronization Processing (by volume)] window display items

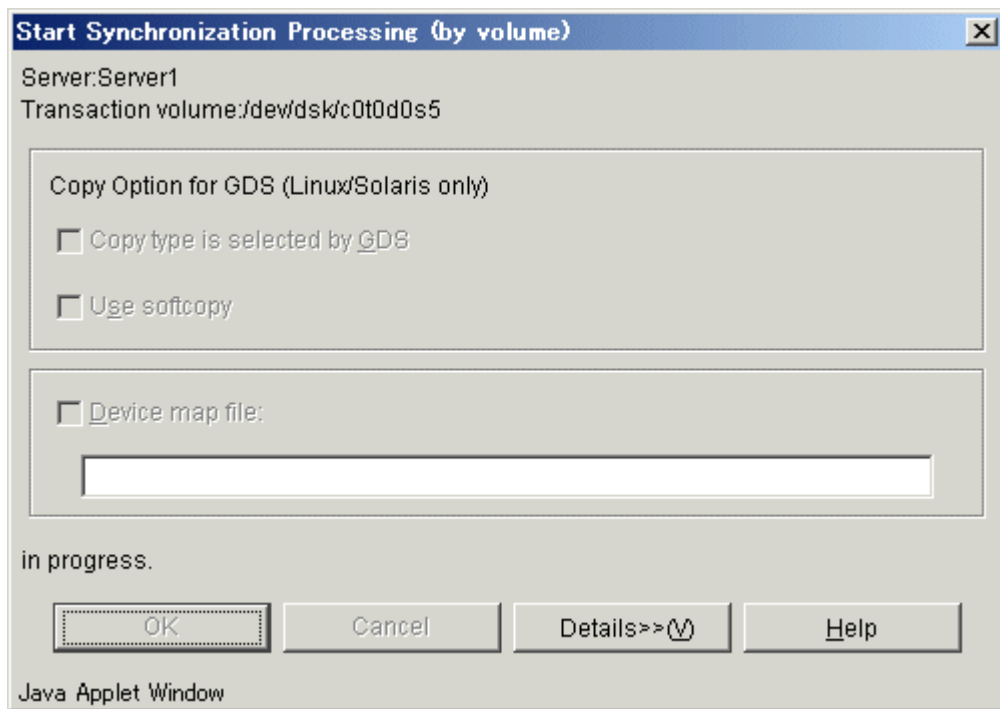
Item No.	Display item name	Description
1	Copy Option for GDS (Linux/Solaris only)	Specifies the SDX object copy processing method. Specify this item if backup synchronous processing is performed. <ul style="list-style-type: none"> ● Copy type selected by GDS ● Use softcopy
2	Device map name	Specifies the output destination backup volume. Specify this item if backup synchronous processing is performed. Specify the full path of the device map filename on the Storage Server. Example: /home/usrl/devmap1 If not specified, the output destination backup volume is selected automatically.

For more information about the device map file, see "Preparing device map file" in the "ETERNUS SF AdvancedCopy Manager Operator's Guide".

Click the [OK] button to Start Synchronous Processing. Click the [Cancel] button to cancel Synchronous Processing.

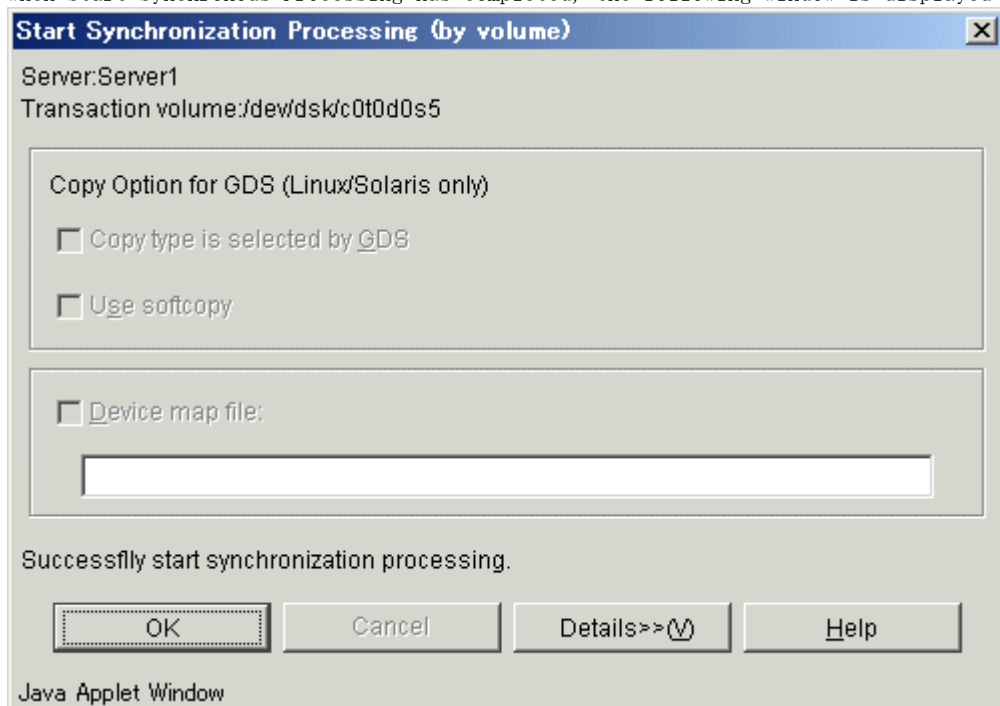
In progress window

The following window is displayed while Start Synchronous Processing is being executed:



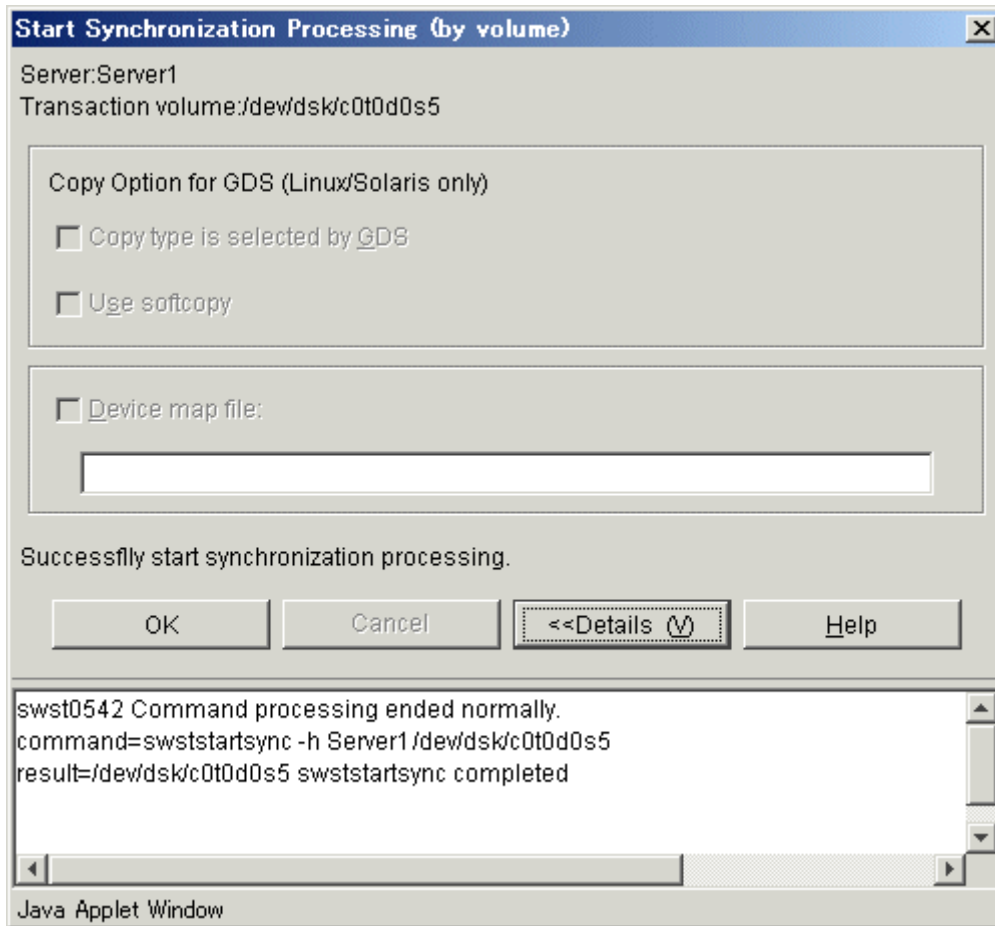
Completion window

When Start Synchronous Processing has completed, the following window is displayed:



Click the [OK] button to redisplay the Transaction Volume list view. Click the [Details>>] button to open the details window.

Detailed information on the outcome of the Start Synchronous Processing function can be displayed as follows:



Click the [OK] button to redisplay the Transaction Volume list view. Click the [<<Details] button to close the details window.

3.3.7 Cancel Synchronous Processing window

The Cancel Synchronous Processing window cancels the synchronous processing that the selected Transaction Volume is executing.

Synchronous Processing can be canceled by the following:

- Transaction
- Volume

3.3.7.1 Cancel Synchronous Processing window (by volume)

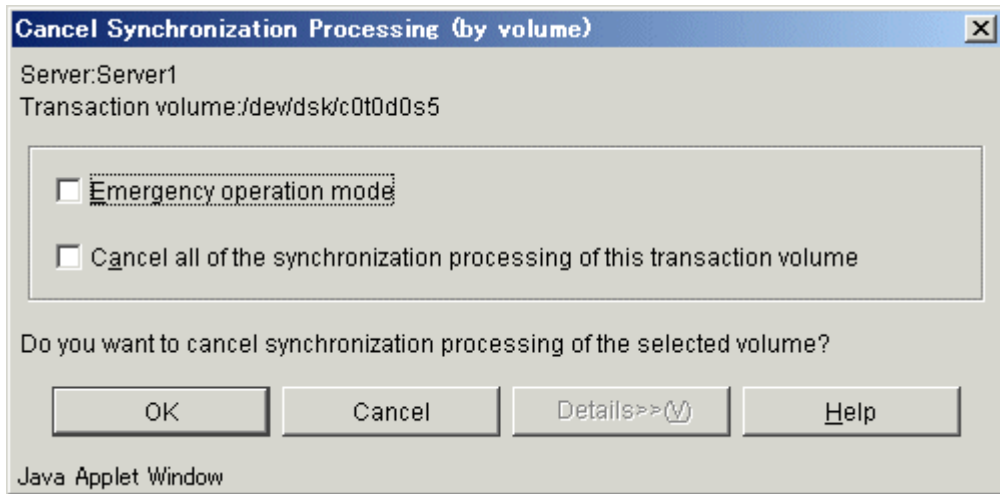
This window cancels the backup synchronous processing that is being executed for the Transaction Volume selected at the transaction volume list view.

Cancel Synchronous Processing window

Perform the following operation to display the [Cancel Synchronization Processing (by volume)] window:

Table: [Cancel Synchronization Processing (by volume)] window display method

Selection on the Transaction Volume list view	Operation
Normal Transaction Volume	Select [Cancel Synchronization processing] from the popup menu appearing after right-clicking the mouse. Alternatively select [Cancel Synchronization Processing] from the [Operation] menu.



The following table shows the setup items and the display items.

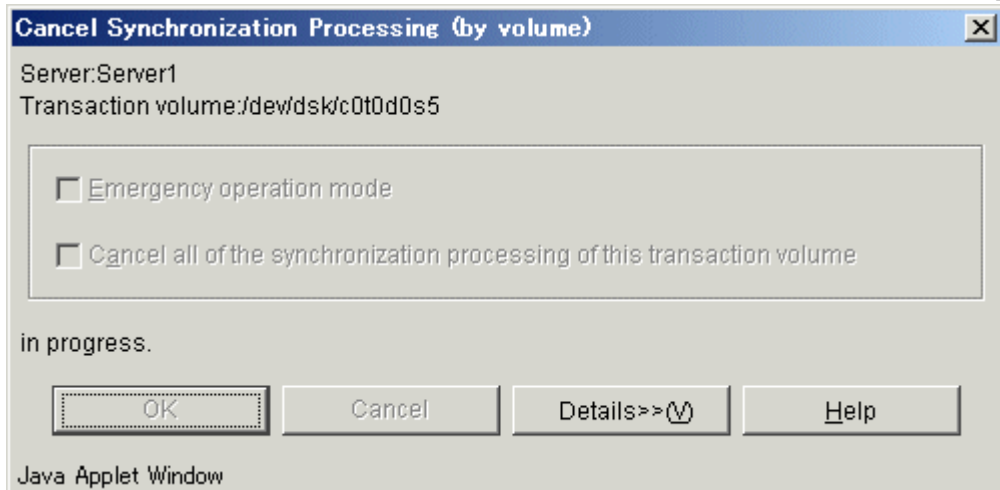
Table: [Cancel Synchronization Processing (by volume)] window display items

Item No.	Display item name	Description
1	Emergency operation mode	Runs in emergency operation mode
2	Cancel all of the synchronization processing of this transaction volume	Halts all synchronous processing that has been set for the selected transaction volume.

Set each option, and then click the [OK] button to cancel synchronous processing. Click the [Cancel] button to cancel "Cancel Synchronous Processing".

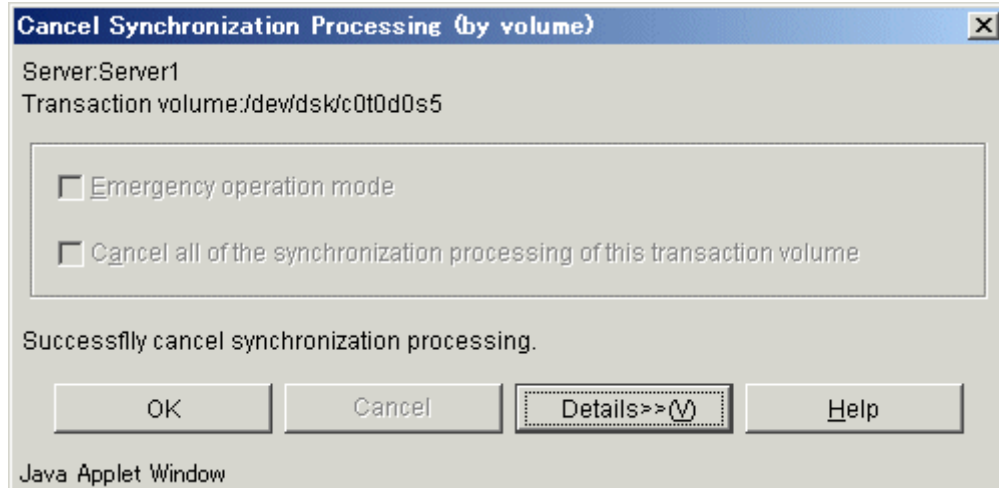
In progress window

While Cancel Synchronous Processing is being executed, the following window is displayed:



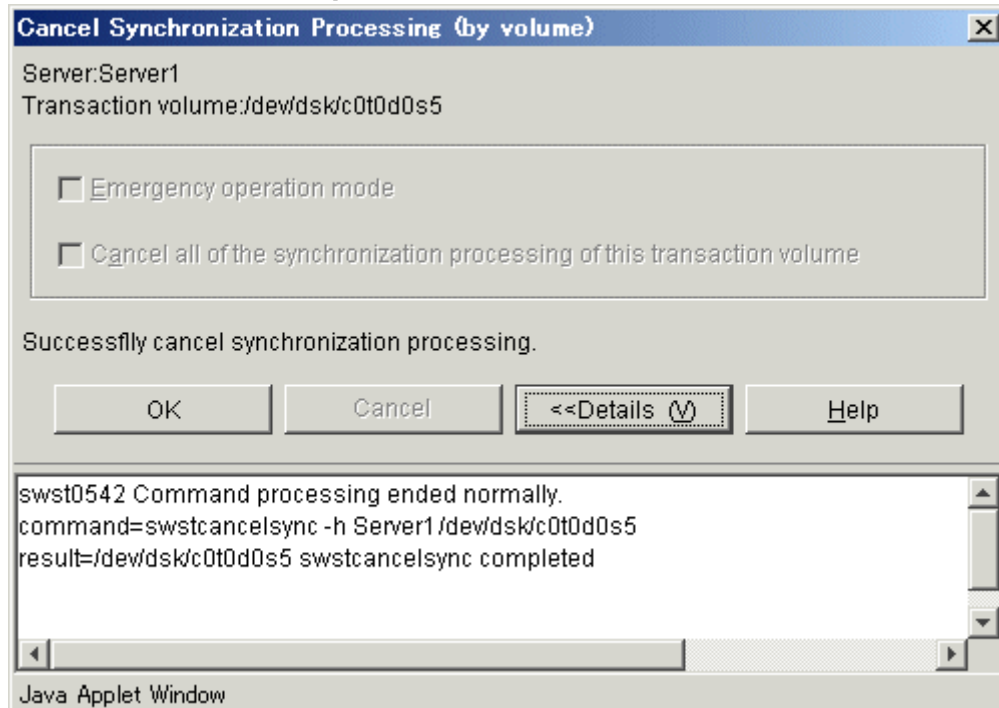
Completion window

When Cancel Synchronous Processing is complete, the following window is displayed:



Click the [OK] button to redisplay the Transaction Volume list view. Click the [Details>>] button to open the details window.

Detailed information is displayed as follows:



Click the [OK] button to redisplay the Transaction Volume list view. Click the [<<Details] button to close the details window.

3.3.8 Backup window

The backup window backs up a Transaction Volume selected on the Transaction Volume list view.

The Transaction Volume can be backed up by the following:

- Transaction Volume

3.3.8.1 Backup window (by Volume)

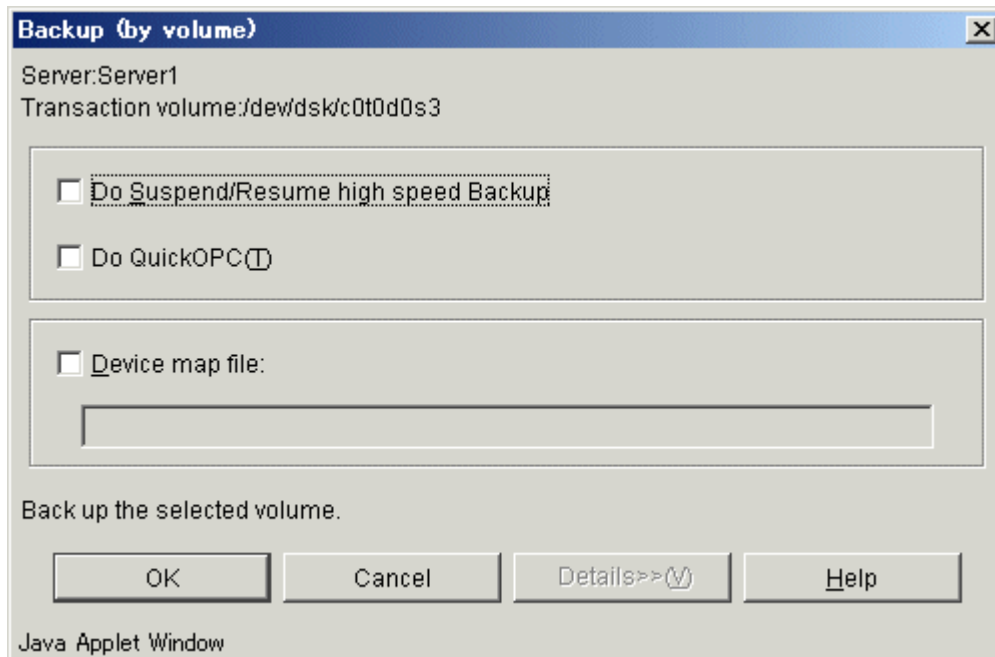
This window backs up a normal Transaction Volume selected on the Transaction Volume list view.

Backup window

Perform the following operation to display the [Backup (by volume)] window:

Table: [Backup (by volume)] window display method

Selection on the Transaction Volume list view	Operation
Normal Transaction Volume	Select [Backup] from the popup menu appearing after right-clicking the mouse. Alternatively select [Backup] from the [Operation] menu.



The following table shows the setup items and display items.

Table: [Backup (by volume)] window display items

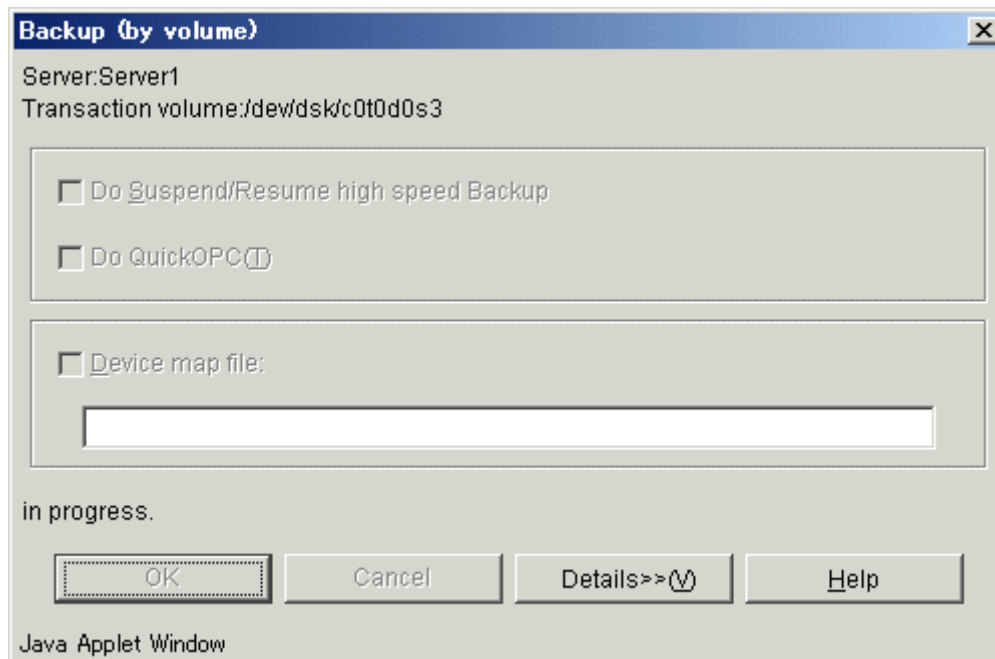
Item No.	Display item name	Description
1	Do Suspend/Resume high speed Backup	Specify if the asynchronous high-speed backup that uses the Suspend/Resume function is used.
2	Do QuickOPC	Specify if differential snapshot high speed backup is used. This option cannot be specified if synchronous processing is performed.
3	Device map name	Specifies the output destination backup volume. Specify if snapshot high speed backup is performed. Specify the full path of the device map filename on the Storage Server. Example: /home/user1/devmap1 If not specified, the output destination backup volume is selected automatically.

For details of the device map file, refer to "Preparing device map file" in "ETERNUS SF AdvancedCopy Manager Operator's Guide".

If [Device Map] is not checked, the target Backup Volume is automatically selected. Click the [OK] button to start the backup. Click the [Cancel] button to cancel the backup.

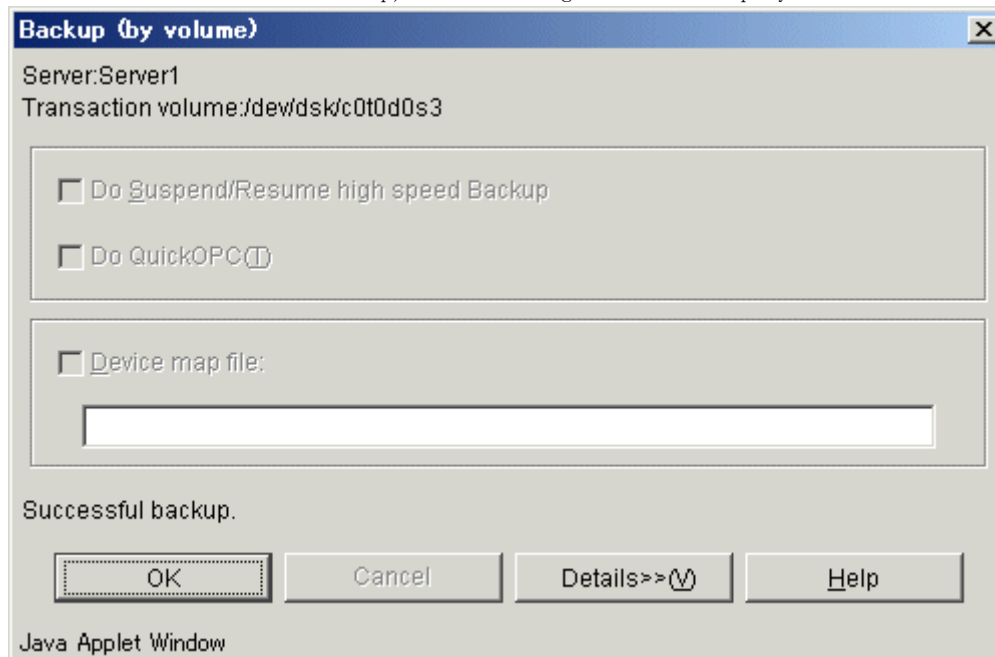
In progress window

The following window is displayed while a volume is being backed up:



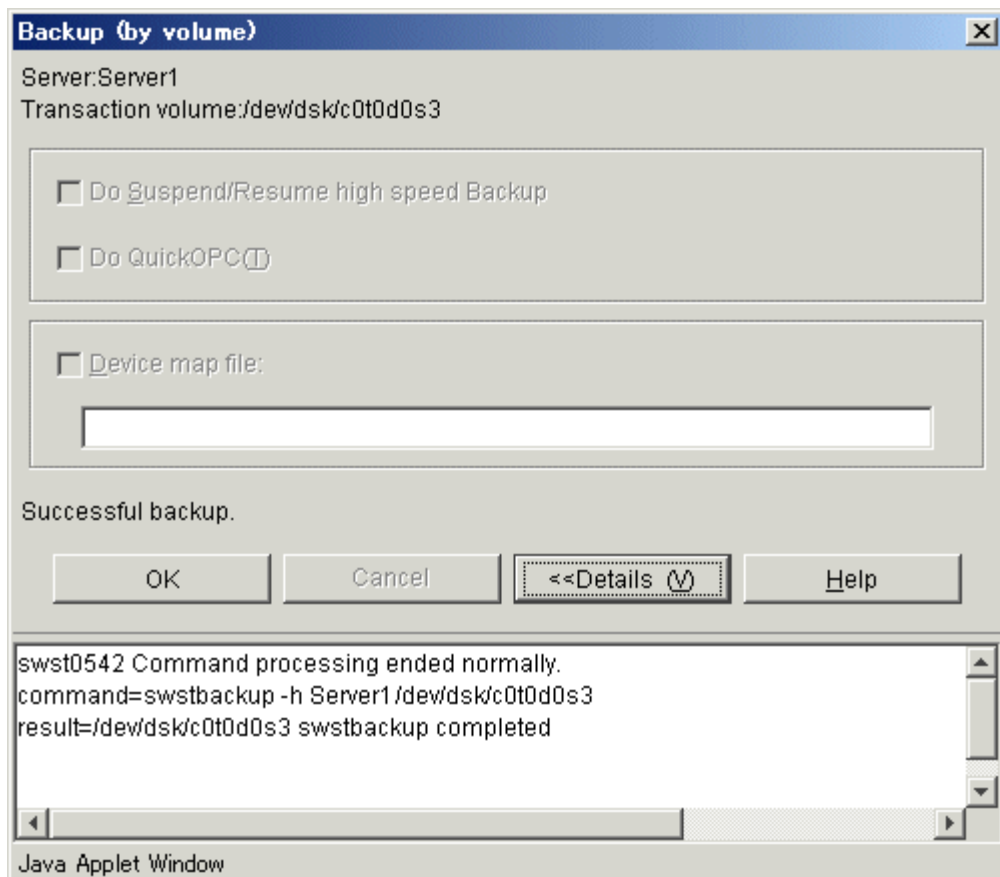
Completion window

When a volume has been backed up, the following window is displayed:



Click the [OK] button to redisplay the Transaction Volume list view. Click the [Details>>] button to open the details window.

Detailed information is displayed as follows:



Click the [OK] button to redisplay the Transaction Volume list view. Click the [<<Details] button to close the details window.

3.3.9 Restore window

The restore window restores a Transaction Volume.

Use either of the following methods to specify restore:

- Transaction Volume specified
- Backup history specified

3.3.9.1 Restore window (Transaction Volume specified)

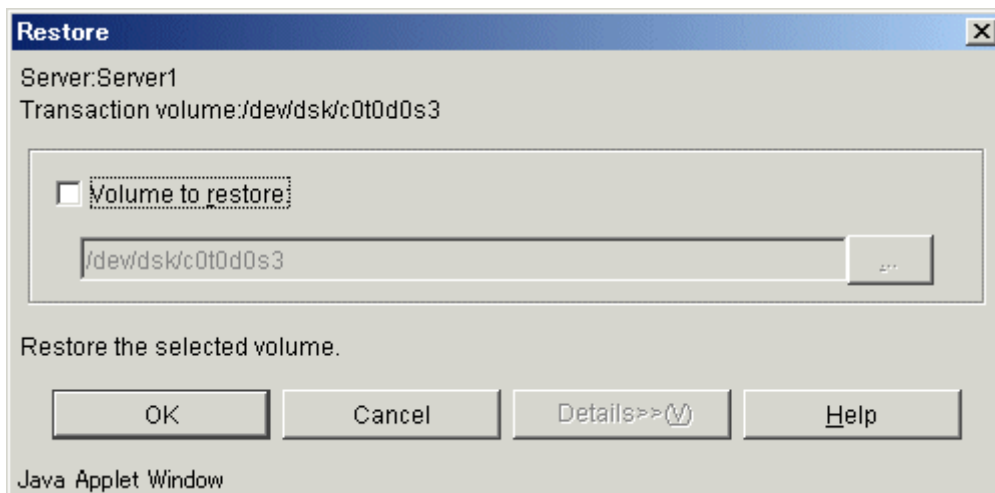
This window restores a Transaction Volume selected on the Transaction Volume list view with the latest history.

Restore window

The following operations can be used to display the [Restore] window:

Table: [Restore (Transaction volume specified)] window display method

Selection in the transaction volume list view	Operation
Transaction volume	Right-click the mouse, and then select [Restore] from the popup menu. Or Select [Restore] from the [Operation] menu.



The following table shows the setup items and display items.

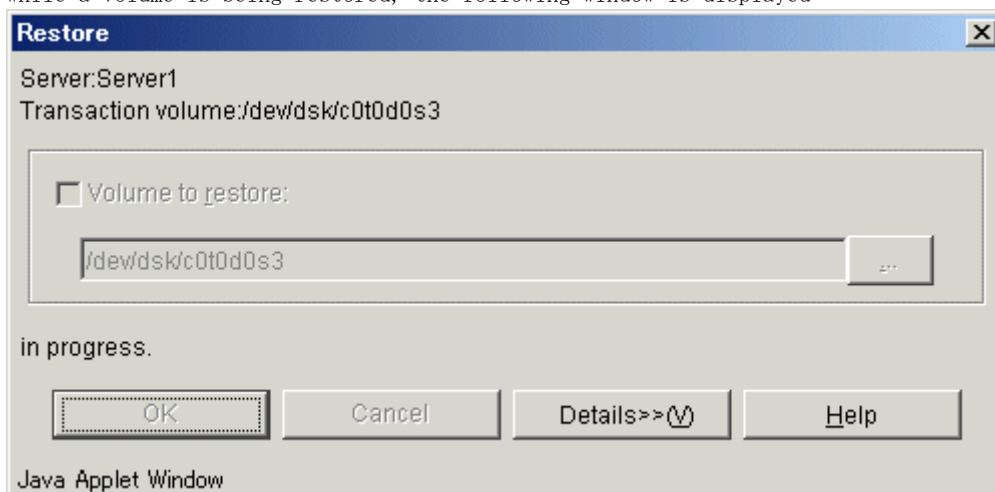
Table: [Restore (Transaction volume specified)] window display items

Item No.	Display item name	Description
1	Volume to restore	Specifies the restore destination volume name. The transaction volume selected on the transaction volume list screen is displayed as the initial value. When the [...] button is clicked, the volume selection screen is displayed and the restore destination volume can be specified.

Click the [OK] button to restore a volume. Click the [Cancel] button to redisplay the Transaction Volume list view.

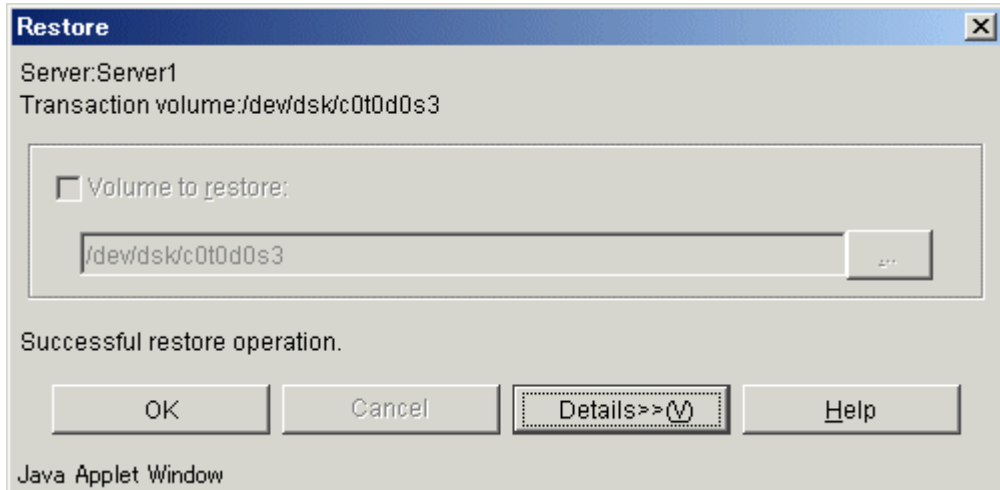
In progress window

While a volume is being restored, the following window is displayed:



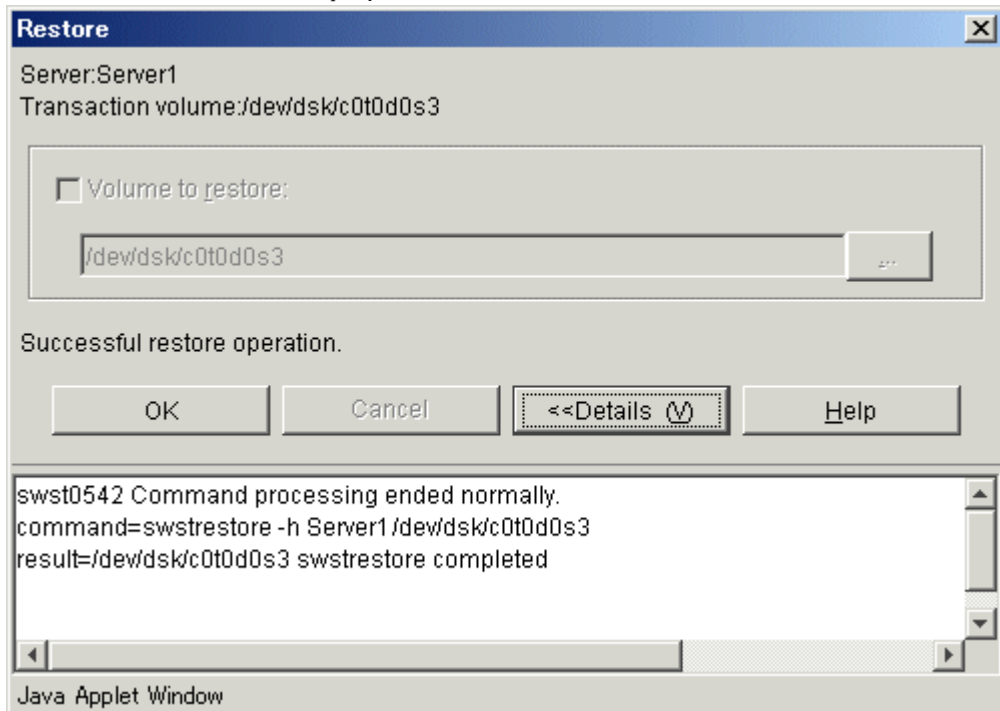
Completion window

When restore processing is complete, the following window is displayed:



Click the [OK] button to redisplay the Transaction Volume list view. Click the [Details>>] button to open the details window.

Detailed information is displayed as follows:



Click the [OK] button to redisplay the Transaction Volume list view. Click the [<<Details] button to close the details window.

3.3.9.2 Restore window (backup history specified)

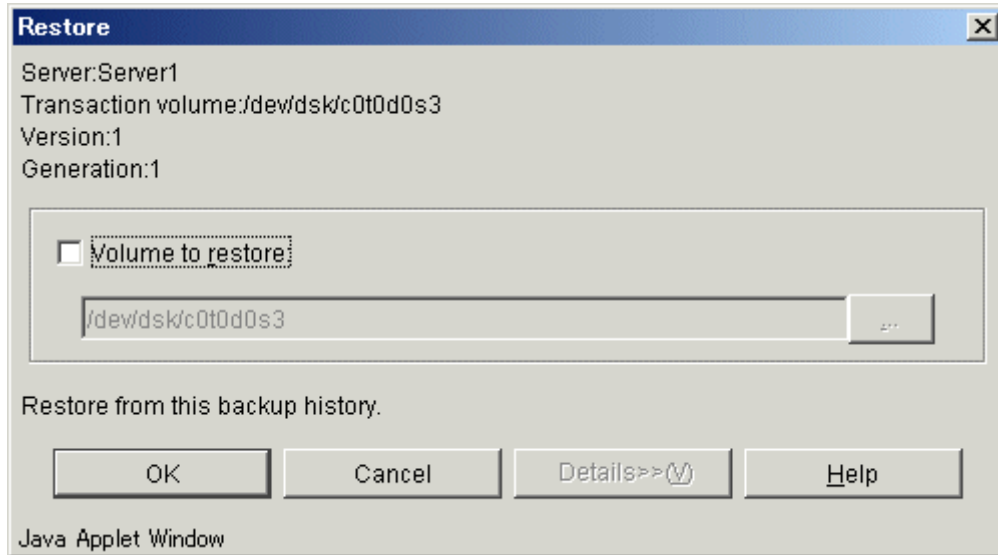
This window restores a Transaction Volume with a backup history selected from the backup history list.

Restore window

The following operations can be used to display the [Restore] window:

Table: [Restore (Backup history specified)] window display method

Selection in the backup history list view	Operation
Backup history	Right-click the mouse and then select [Restore] from the popup menu. Or Select [Restore] from the [Operation] menu.



The following table shows the setup items and the display items.

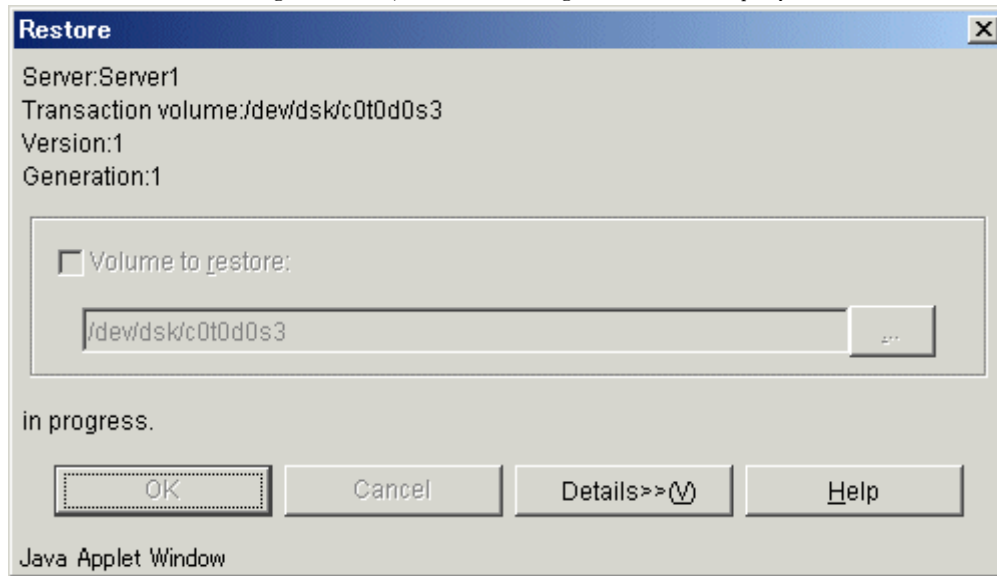
Table: [Restore (Backup history specified)] window display items

Item No.	Display item name	Description
1	Volume to restore	Specifies the restore destination volume name. The transaction volume selected from the tree panel is displayed as the initial value. When the [...] button is clicked, the volume selection screen is displayed and the restore destination volume can be specified.

Click the [OK] button to restore a volume. Click the [Cancel] button to redisplay the backup history list view.

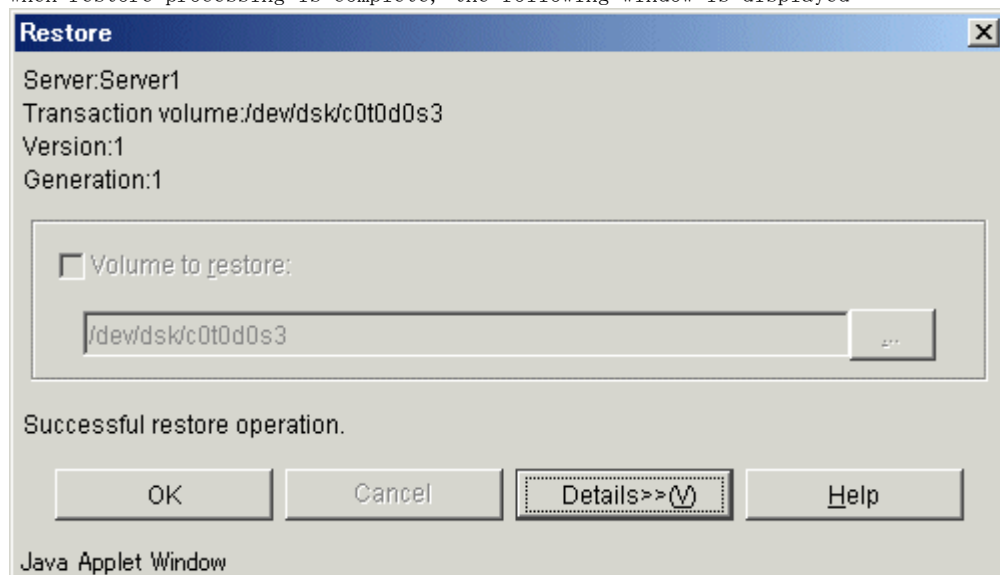
In progress window

While a volume is being restored, the following window is displayed:



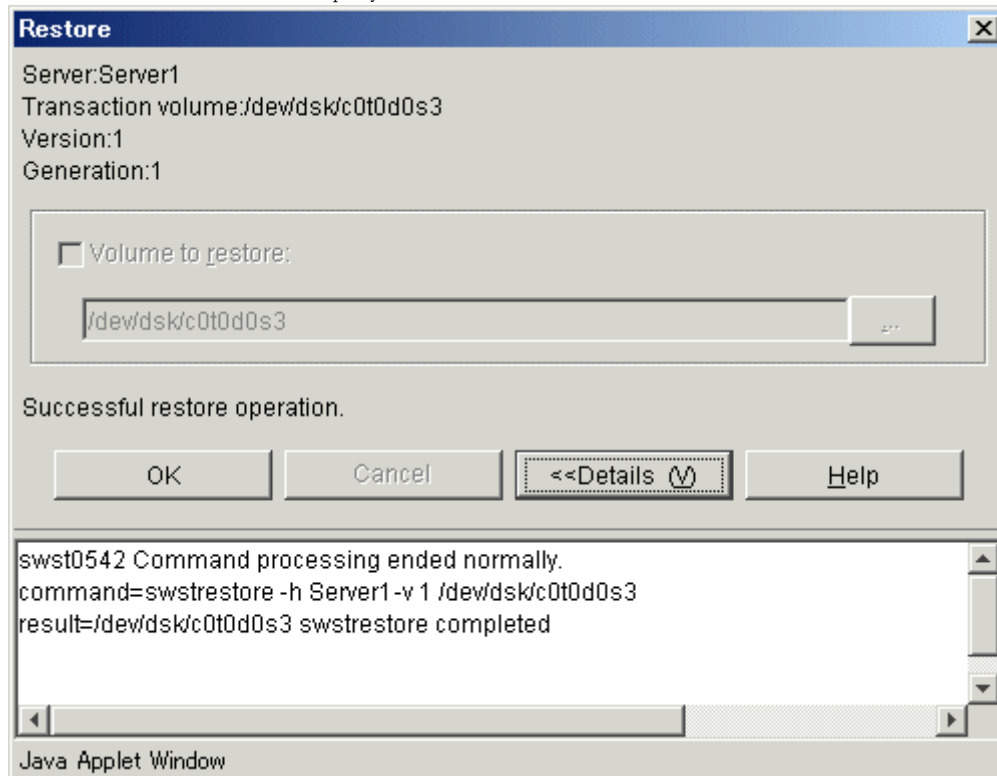
Completion window

When restore processing is complete, the following window is displayed:



Click the [OK] button to redisplay the backup history list view. Click the [Details>>] button to open the details window.

Detailed information is displayed as follows:



Click the [OK] button to redisplay the backup history list view. Click the [<<Details] button to close the details window.

3.3.10 Recovery window

This has been deleted.

3.3.11 History deletion window

The history deletion window deletes backup history information

Use either of the following methods to delete a backup history:

- Deleting a backup history with a Transaction Volume selected
- Deleting a backup history with a backup history selected

3.3.11.1 Deleting a backup history with a Transaction Volume selected

This method deletes all backup history information items of the Transaction Volume selected

Backup history can be deleted by either of the following:

- Transaction Volume
All backup history items for the selected Transaction Volume are deleted.

3.3.11.1.1 Delete Backup History window (by volume)

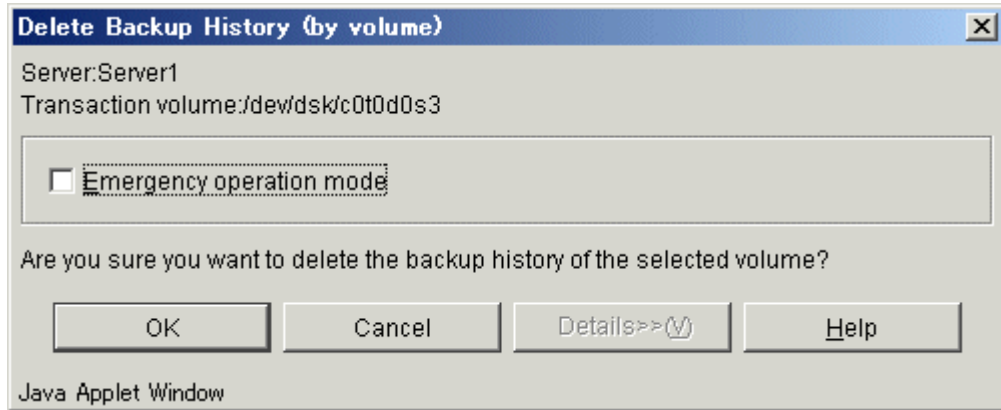
This window deletes a backup history of the Transaction Volume selected on the Transaction Volume list.

Delete Backup History window

Perform the following operation to display the [Delete History (by volume)] window:

Table: [Delete Backup History (by volume)] window display method

Selection on the Transaction Volume list view	Operation
Normal Transaction Volume	Select [Delete History] from the popup menu appearing after the mouse is right-clicked. Alternatively, select [Delete History] from the [Operation] menu.



The following table shows the setup items and the display items.

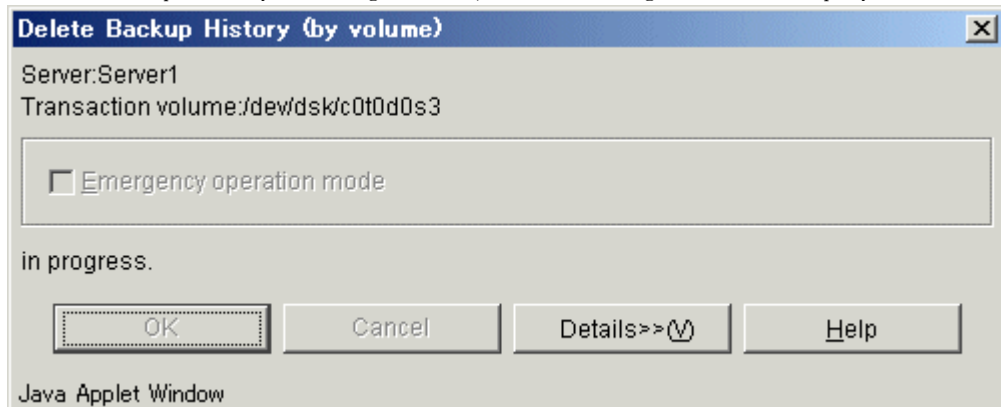
Table: [Delete Backup History (by volume)] window display items

Item No.	Display item name	Description
1	Emergency operation mode	Runs in the emergency operation mode. If this option is specified, OPC session confirmation is not performed.

Specify options, then click the [OK] button to delete a backup history. Click the [Cancel] button to cancel deleting a backup history.

In progress window

While a backup history is being deleted, the following window is displayed:

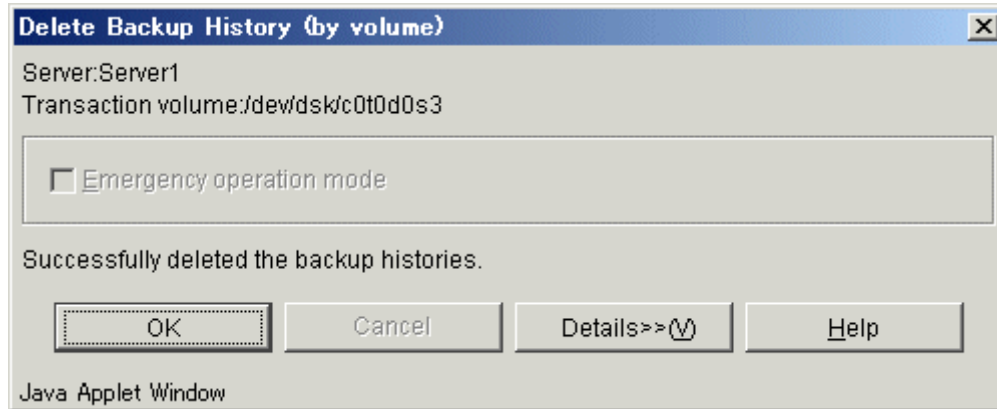


Note

In some Web client operating environments, part of the screen may not display correctly, but this does not affect the deletion processing.

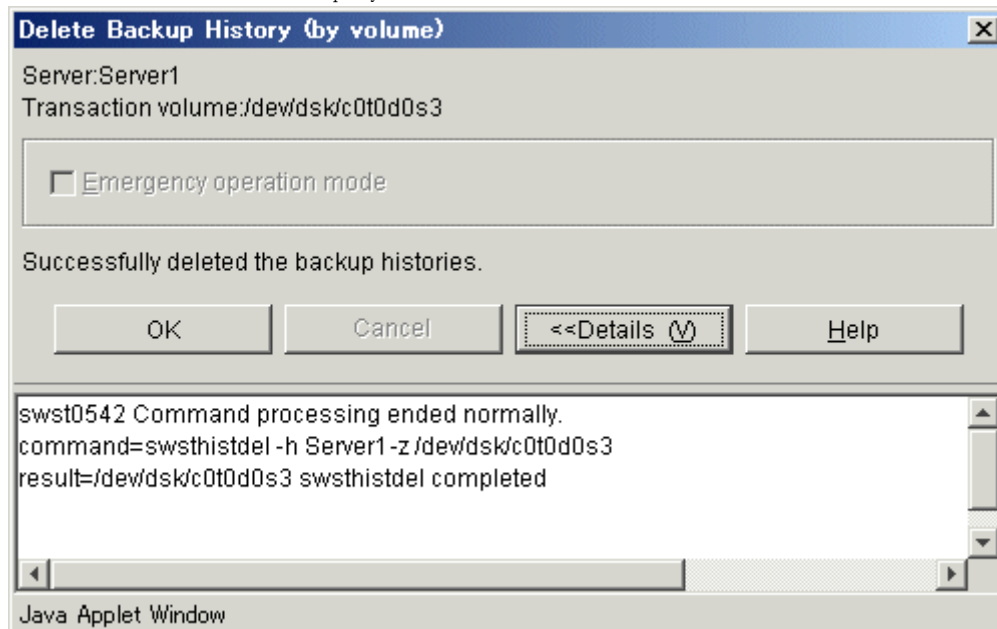
Completion window

When a backup history has been deleted, the following window is displayed:



Click the [OK] button to redisplay the Transaction Volume list view. Click the [Details>>] button to open the details window.

Detailed information is displayed as follows:



Click the [OK] button to redisplay the Transaction Volume list view. Click the [<<Details] button to close the details window.

3.3.11.2 Deleting a backup history with a backup history selected

This method deletes backup history information by generation for the selected Transaction Volume.

A backup history can be deleted by either of the following:

- Transaction Volume
Backup history information of the selected Transaction Volume is deleted.

3.3.11.2.1 Delete Backup History window (by volume)

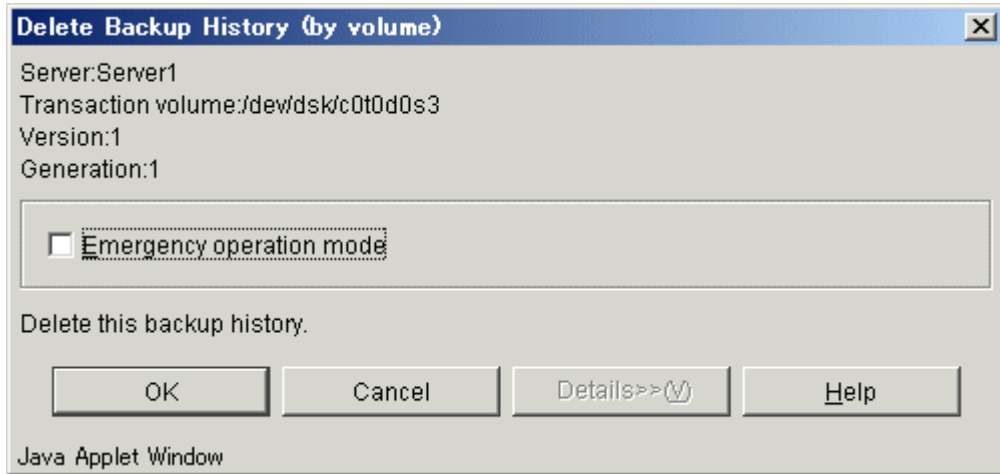
This window deletes a backup history item selected on the backup history list.

Delete Backup History window

Perform the following operation to display the [Delete History by (volume)] window:

Table: [Delete Backup History (by volume)] window display method

Selection on the backup history list view	Operation
Backup history of the normal Transaction Volume	Select [Delete History] from the popup menu appearing after the right-clicking the mouse. Alternatively select [Delete History] from the [Operation] menu.



The following table shows the setup items and display items.

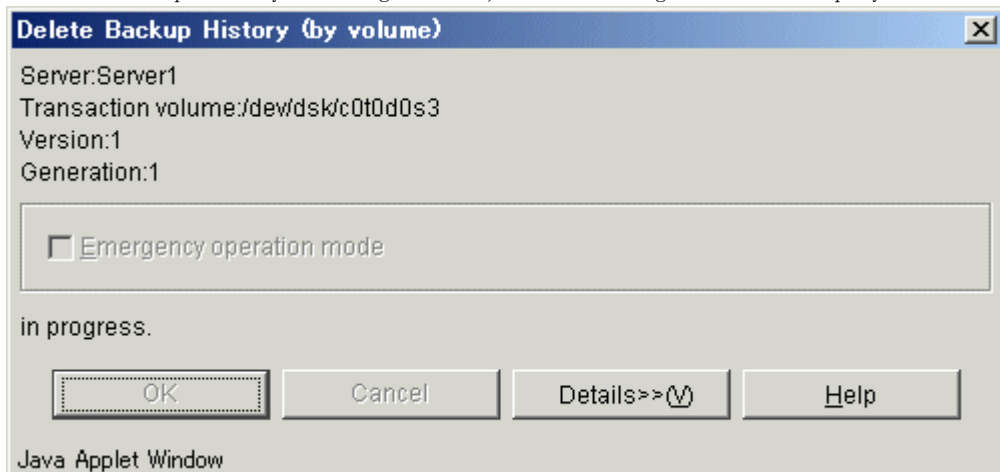
Table: [Delete Backup History (by volume)] window display items

Item No.	Display item name	Description
1	Emergency operation mode	Runs in the emergency operation mode. If this option is specified, OPC session confirmation is not performed.

Specify options, and then click the [OK] button to delete a backup history. Click the [Cancel] button to cancel deleting a backup history.

In progress window

While a backup history is being deleted, the following window is displayed:

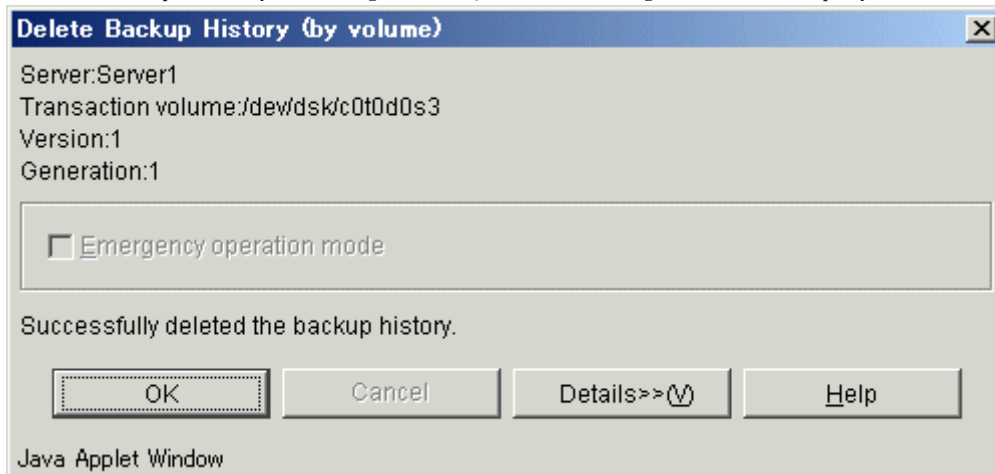


Note

In some Web client operating environments, part of the screen may not display correctly, but this does not affect the deletion processing.

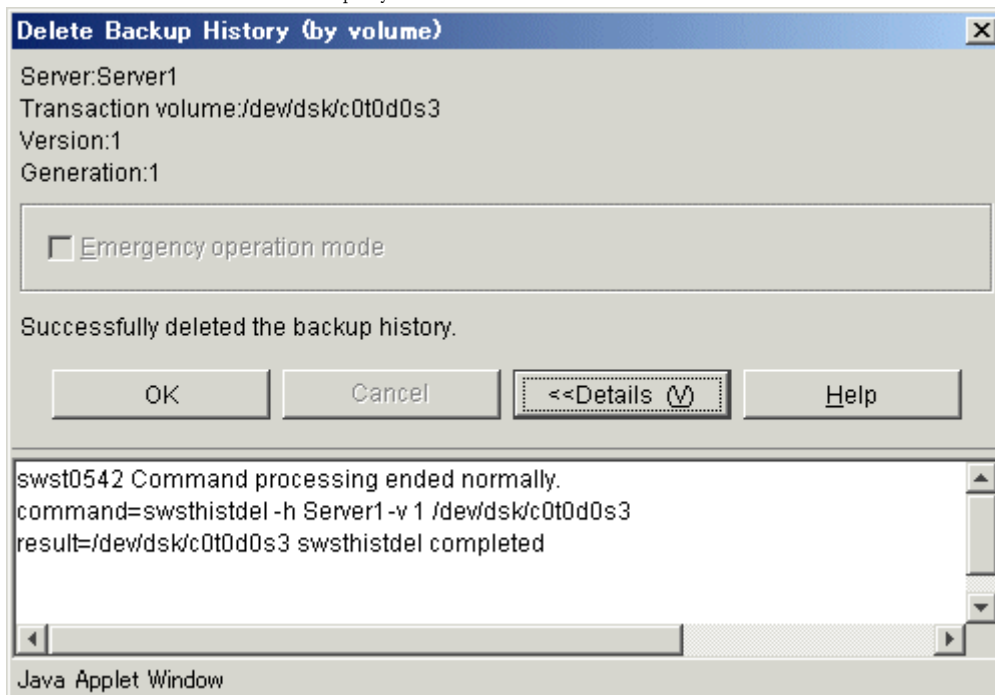
Completion window

When a backup history is being deleted, the following window is displayed:



Click the [OK] button to redisplay the backup history list view. Click the [Details>>] button to open the details window.

Detailed information is displayed as follows:

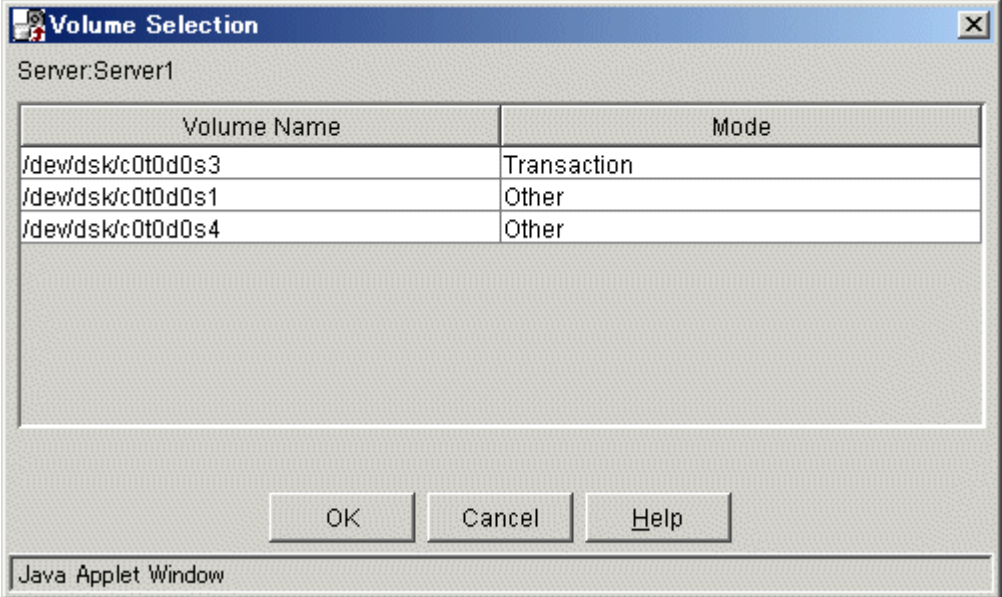


Click the [OK] button to redisplay the backup history list view. Click the [<<Details] button to close the details window.

3.3.12 Volume selection window

When restoring a volume to other than the Transaction Volume, the restore destination volume can be selected on the volume selection window.

The volume list displays the Transaction Volume selected on the Transaction Volume list view or backup history list view. It also displays the volumes other than the Transaction or Backup volume having the same size as the Transaction Volume.



3.4 Required Access Permission

This section describes the access permission required for the backup window.

See "Authentication Feature Window Operation" for details of the access permission.

Table: Access permission requirements for backup-related windows

Operation name	Write permission	Execute permission	Read permission
Window display	Yes	Yes	Yes
Backup	Yes	Yes	No
Restore	Yes	Yes	No
Deletion of history	Yes	Yes	No
Start Synchronous Processing	Yes	Yes	No
Cancel Synchronous Processing	Yes	Yes	No
Adjust resources	Yes	Yes	No
Definition of backup policy	Yes	No	No
Delete Backup Policy	Yes	No	No
Set device information	Yes	No	No
Set Server Information	Yes	No	No

Yes: Operation enabled

No: Operation disabled

Chapter 4 Replication Management Operations

This chapter provides information on the Replication Management functions and how to operate them.



Note

Only the Manager and Agent of ETERNUS SF AdvancedCopy Manager version 13.0 or later can use a replication management screen.

4.1 Composition of a Replication Management Screen

The purpose of the Replication management is to reduce the amount of Replication operation and management work in distributed systems. It provides the following functions via the Web browser:

- Set Replication Information Screen
Replication processing is configured.
- Synchronous replication function
This describes how synchronous replication using EC/REC can be performed.
- Snapshot replication function
This describes how snapshot replication using OPC/QuickOPC/SnapOPC can be performed.

4.2 Replication Management Window

When [Replication Management] is selected from the AdvancedCopy Manager initial window, the Replication management server list is displayed.

A replication management screen can choose two kinds of display methods, as described below:

- View by Volume
- View by Group

By using the “View” screen, the display method can be changed by choosing “View by Volume”, or “View by Group”.

The following Replication management tree view shows the selection target items (1) to (8). Each item has its corresponding list view.

Figure: Tree view

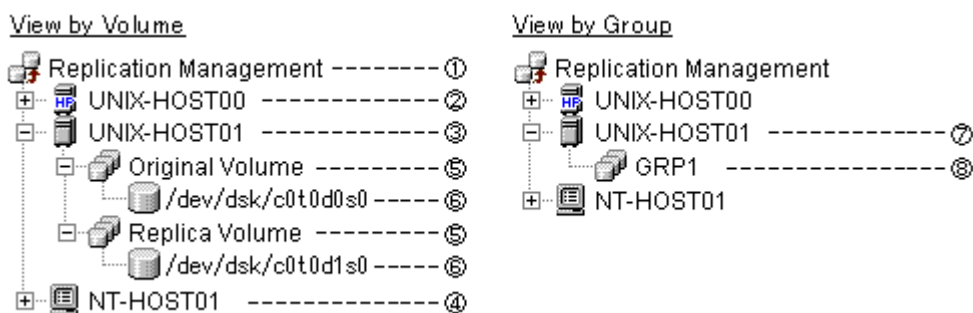
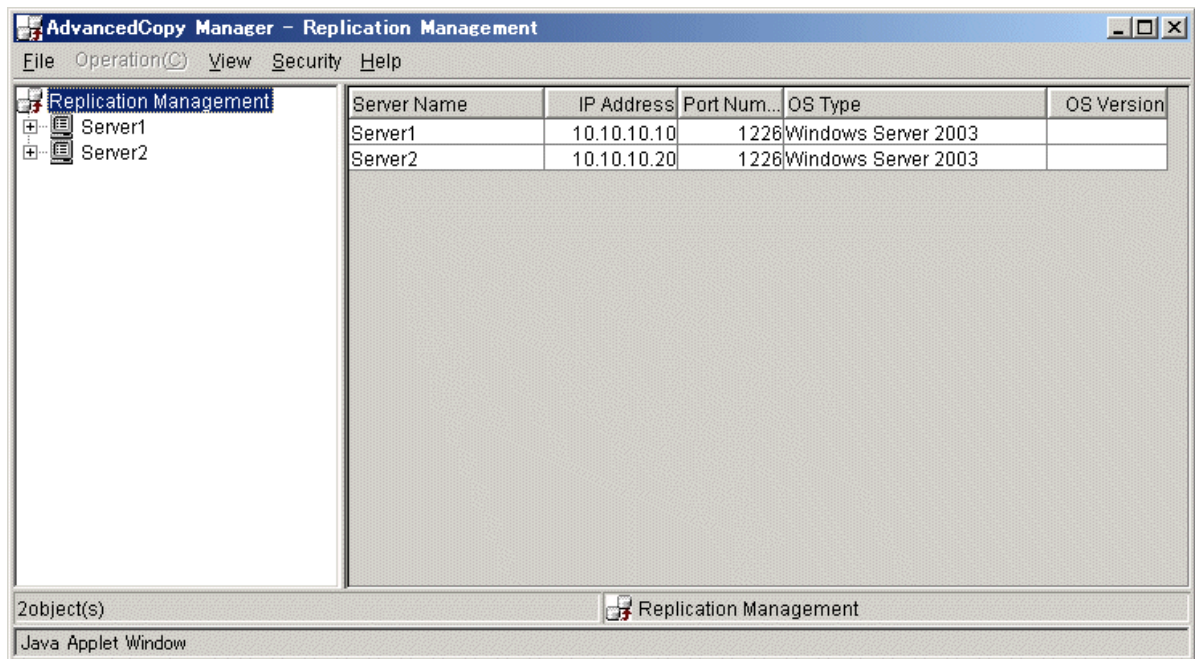


Table: Selection target items and their corresponding views

No.	Selection target item	List view
1	Replication Management	Server list view
2	Storage Server (HP-UX server)	Original/Replica Volume view
3	Storage Server (Solaris server, Linux server or AIX server)	Original/Replica Volume view
4	Storage Server (Windows server)	Original/Replica Volume view
5	Original Volume (Folder) or Replication Volume (Folder)	Original Volume list view or Replica Volume list view
6	Original Volume or Replication Volume	Original Volume details view or Replica Volume details view
7	Storage server	Group view
8	Group	Group details view

4.2.1 Server list view

This view displays the list of the servers registered into the Storage Management Server. The view is displayed when [Replication Management] is selected on the tree view.



4.2.1.1 Display items

The items displayed in the server list view are shown below.

Table: Display items in the server list view

No.	Item name	Explanation
1	Server name	Name of the managed server
2	IP Address	IP address of the managed server
3	Port Number	Port number used to communicate with the managed server
4	OS Type	Type of installed operating system
5	OS Version	Version of the installed operating system

4.2.1.2 Operations

Selecting the server from the server list view enables the execution of the following operations:



Select the server from the list display on the right side of the server list view, not from the tree panel on the left side.

- Configure the replication volume information
The original volumes and the replica volumes used by replication operation can be configured.
If [Set Replication Volume Information] is chosen from [Operation], the [Set Replication Volume Information] window is displayed.

For details, refer to "Set Replication Volume Information window".

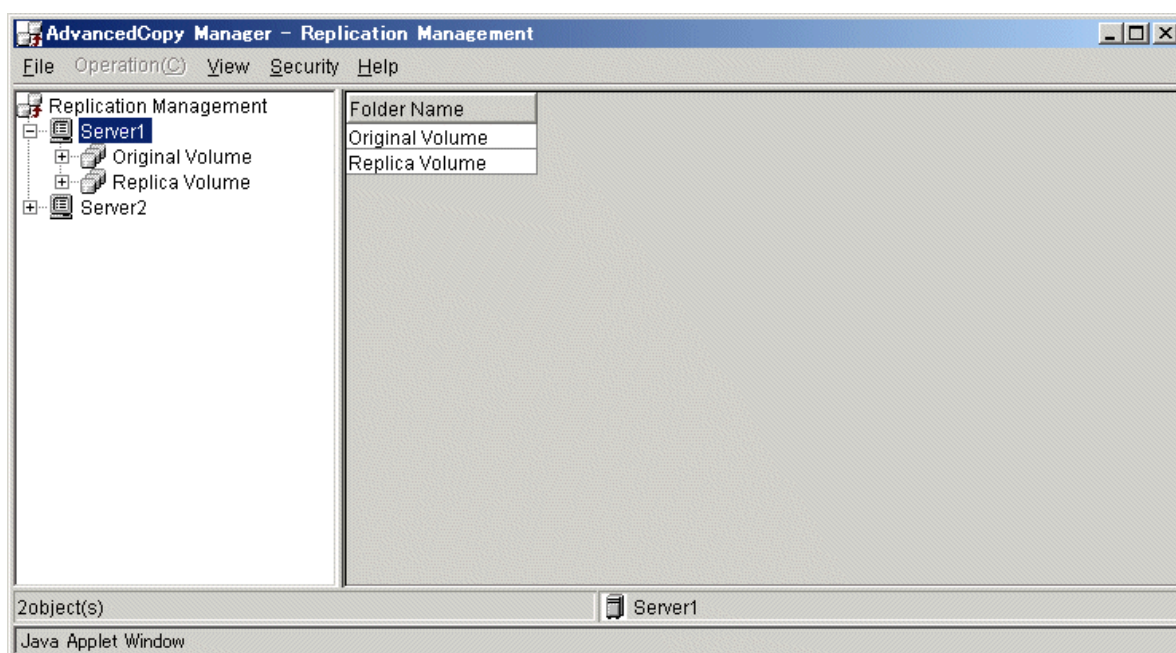
- Resource adjustment
Resource adjustment of replication management information is performed.
If "Resource Adjustment" is chosen from "Operation", "Perform Resource Adjustment window" is displayed.

For details, refer to "Perform Resource Adjustment window".

4.2.2 Original/Replica Volume view

The original volumes and the replica volumes are displayed.

This view is displayed when the Storage Server is selected on the tree view of a volume unit.



4.2.2.1 Display items

The item displayed is shown below.

Table: Display items on the original/replica volume view

No.	Item name	Explanation
1	Folder Name	This displays the volume type of the following volumes in the selected server. <ul style="list-style-type: none"> ● Original Volume ● Replica Volume

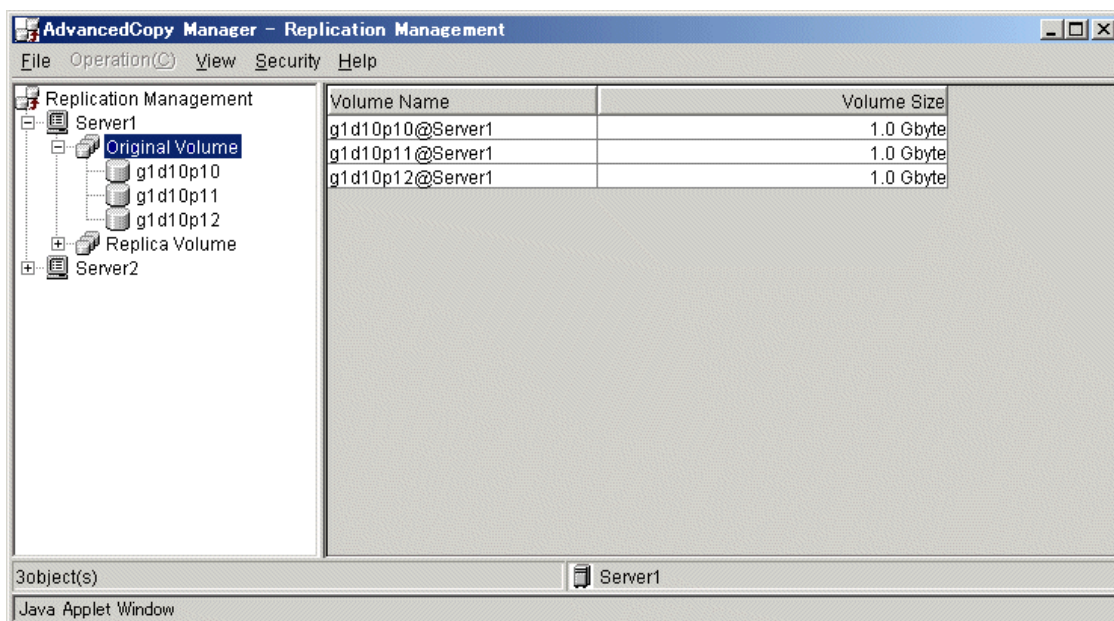
4.2.2.2 Operations

No operation can be carried out on this screen.

4.2.3 Original/Replica Volume list view

The "original volumes" and the "replica volumes" of Storage Server are displayed.

This view is displayed when either [Original Volume] or [Replica Volume] is selected on the tree view of a volume unit.



4.2.3.1 Display items

The items displayed in this view are shown below.

Table: Display items on the original/replica volume list view

No.	Item name	Explanation
1	Volume Name	Name of the original/replica volume which exists in the server selected in the tree
2	Volume Size	Displays the size of the volume For a logical volume of VxVM, the size of the area that is actually used for copying is displayed.

4.2.3.2 Operations

Selecting the volume from the Original/Replica Volume list view enables execution of the following operations:

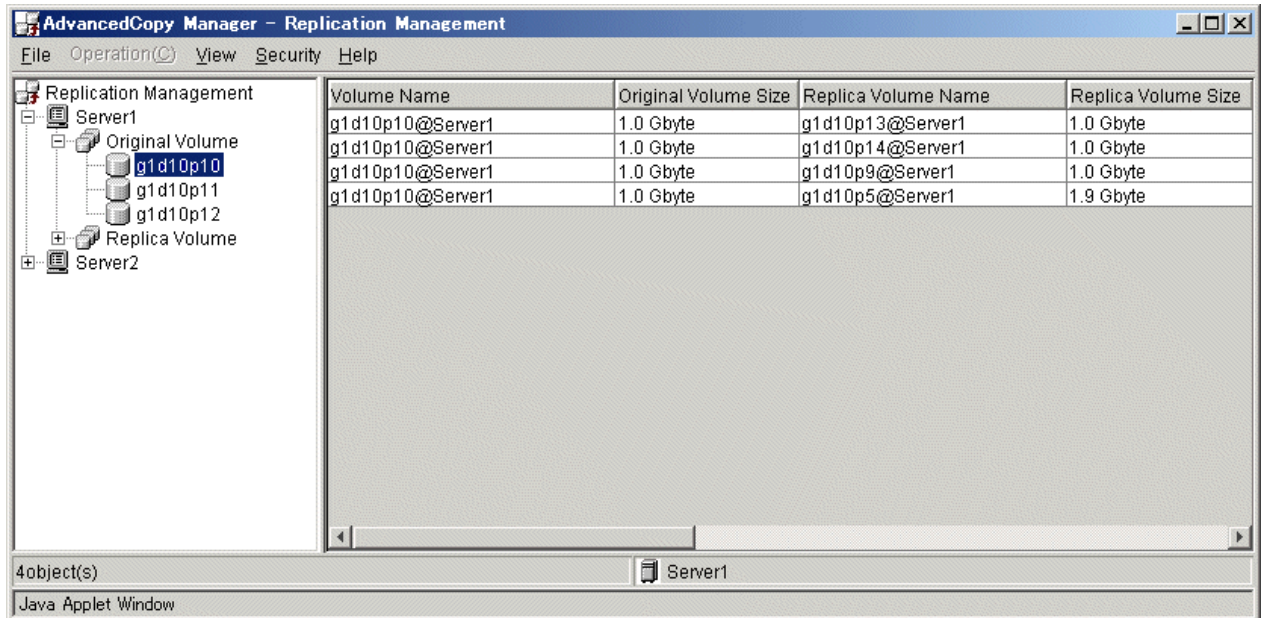


Select the replication volume from the list display on the right side of the replication source volume/replication destination volume list view, not from the tree panel on the left side.

- Display the transfer buffer status
The buffer information used in the Consistency mode of REC is displayed.
If [Display the transfer buffer status] is chosen from [Operation], the [Transfer Buffer Status] window is displayed.
For details, refer to "Transfer Buffer Status window".
- Change the buffer setting
The buffer information used in the Consistency mode of REC is changed.
If [Change the transfer buffer setting] is chosen from [Operation], the [Change Buffer Setting] window is displayed.
For details, refer to "Change Buffer Setting window".

4.2.4 Original/Replica Volume details view

The detailed information of the "original volume" or "replica volume" is displayed. This view is displayed when the original volume or the replica volume is selected on the tree view of a volume unit.



4.2.4.1 Display items

The items displayed in this view are shown below.

Table: Display items on the original/replica volume details view

No.	Item name	Explanation
1	Volume Name	Name of the volume selected in the tree
2	Original/Replica Volume Size	Displays the size of the volume
3	Replica/Original Volume Name	Name of the replica/original volume and its server name
4	Replica/Original Volume Size	Displays the size of the volume
5	Copy	Displays the copying direction <ul style="list-style-type: none"> ● Uni-directional: One-way copying from an original volume to a replica volume is allowed. ● Bi-directional: Bidirectional copying is allowed.
7	Op-Server	Specifies the operation server. <ul style="list-style-type: none"> ● Original: Sets the replication source server as the operation server. ● Replica: Sets the replication destination server as the operation server. ● Both: Sets both the copy-source server and copy-destination server as operation server

No.	Item name	Explanation
8	Direction	Specifies the copy direction. <ul style="list-style-type: none"> ● Regular: This applies when the copy from Original to Replica volume is being performed. ● Reverse: This applies when the copy from Replica to Original volume is being performed. ● ----: Copying is not being performed now.
9	Tracking	Specifies the existence of tracking processing. <ul style="list-style-type: none"> ● On: Tracking is in progress. ● Off: Tracking is not in progress. ● ----: Snapshot processing is not being performed now.
10	Update	When it corresponds to either of the following, it displays the amount of data updated after the previous replica creation as a percentage. <ul style="list-style-type: none"> ● The Status is "----" and Tracking is "On". (meaning that the physical copy is not being carried out) ● The Status is "Copy-on-write". In any case but the above, it displays "----." In GDS Snapshot, "----" is always displayed.
11	Recovery Mode	Indicates the recovery mode for synchronous processing between cabinets. <ul style="list-style-type: none"> ● Automatic: Automatic recovery mode. ● Manual: Manual recovery mode. ● ----: Synchronous duplication (REC) is not being performed between cabinets.
12	Split Mode	Indicates the split mode for synchronous processing between cabinets. <ul style="list-style-type: none"> ● Automatic: Automatic split mode ● Manual: Manual split mode. ● ----: Synchronous duplication (REC) is not being performed between cabinets.
13	Transfer Mode	Indicates the transfer mode for synchronous processing between cabinets. <ul style="list-style-type: none"> ● Synchronous: Synchronous mode ● Asynchronous: Asynchronous mode ● Stack: Stack mode ● Consistency: Consistency mode ● ----: Synchronous duplication (REC) is not being performed between cabinets.
14	Rate of copying progress	<ul style="list-style-type: none"> ● Displays the rate of copying progress as a percentage. ● ----: Copying is not being performed, or SnapOPC is in progress.

No.	Item name	Explanation
15	Execute status	<p>Displays the condition of the currently ongoing process.</p> <ul style="list-style-type: none"> ● ----: Copying is not being performed. ● Synchronous: Total copy or incremental copy is being performed. ● Equivalent: Equivalency maintains status. ● Replicated: Replication established status ● Copy-on-write: SnapOPC processing is being performed. ● Copy-on-write(active): SnapOPC+ processing is being performed (latest Snap generation). ● Copy-on-write(inactive): SnapOPC+ processing is being performed (past Snap generations). ● Failed: Error suspend status. ● Halt: Hard suspend status. ● Snapshot: Snapshot processing is being performed. ● ?????: The copy status cannot be determined. ● gds-error: Copying with GDS ended abnormally.
16	Group name	<p>The group name is displayed.</p> <p>If groups are not registered, "----" is displayed.</p>
17	Snap generation	<p>Under SnapOPC+, the Snap generation number (1 to 8) is displayed.</p> <p>For processing other than SnapOPC+, "---" is displayed.</p> <p>In the Snap generation numbers, 1 indicates the oldest generation, and the numbers increase up to the latest generation.</p>



Note

To display the copy status at the other server during bidirectional replication, check the "Display reverse copy status" option in the [View] menu.

4. 2. 4. 2 Operations

Selecting the replica volume on the "Original/Replica Volume details view" enables execution of the following operations:



Note

Select the replication volume from the list display on the right side of the replication source volume/replication destination volume list view, not from the tree panel on the left side.

- Start the synchronous process
Synchronous replication processing (EC/REC) is started or resumed.
If [Start Synchronous Processing] is chosen from [Operation], the [Start Synchronous Processing (by volume)] window is displayed.
For details of this, refer to "Start Synchronous Processing window (by volume)".
- Create the replicate
Snapshot replication processing (OPC/QuickOPC/SnapOPC) start or synchronous replication processing (EC/REC) is suspended.
If [Replicate] is chosen from [Operation], the [Replicate (by volume)] window is

displayed.

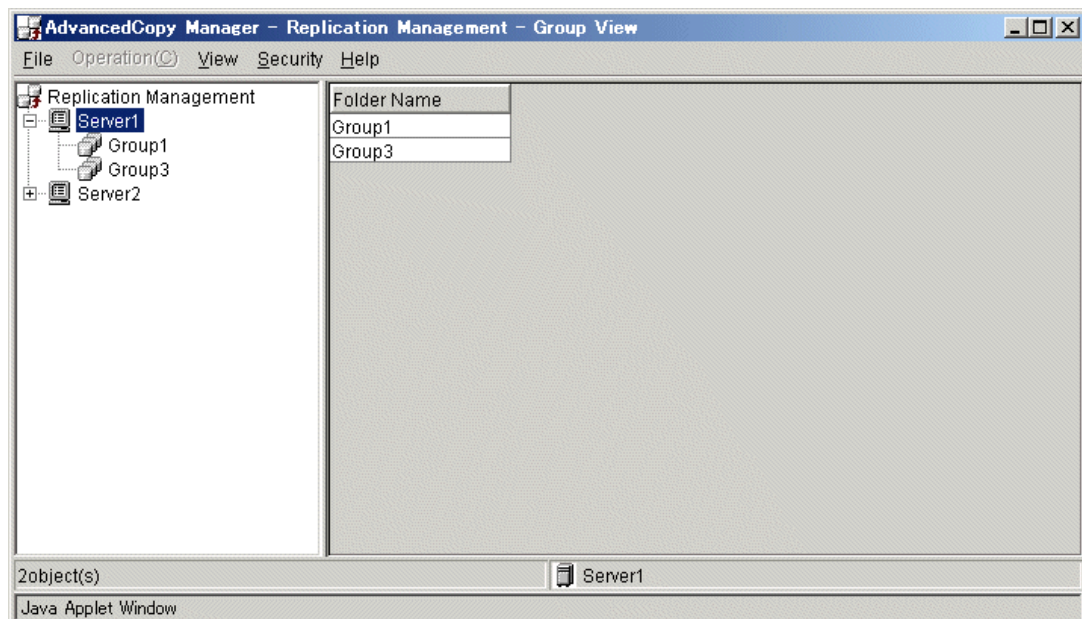
For details of this, refer to "Replicate window (by volume)".

- Cancel the replication process
Snapshot replication processing (OPC/QuickOPC/SnapOPC) and synchronous replication processing (EC/REC) are canceled.
If [Cancel Replication Processing] is chosen from [Operation], the [Stop Replication Processing (by volume)] window is displayed.
For details of this, refer to "Stop Replication Processing window (by volume)".
- Change the synchronization mode
Transmission Mode of synchronous replication processing (EC/REC) is changed.
If [Change Synchronization Mode] is chosen from [Operation], the [Change Synchronization Mode (by volume)] window is displayed.
For details of this, refer to "Change Synchronization Mode window (by volume)".
- Reverse the synchronous processing direction
The copy direction is reversed in the case of synchronous replication processing (EC/REC) which is in the suspended state.
If [Reverse Synchronous Processing Direction] is chosen from [Operation], the [Reverse Synchronous Processing Direction (by volume)] window is displayed.
For details of this, refer to "Reverse Synchronous Processing Direction window (by volume)".
- Delete the replication volume information
The original volume / replica volume used by replication operation can be deleted.
If [Delete Replication Volume Information] is chosen from [Operation], the [Delete Replication Volume Information] window is displayed.
For details of this, refer to "Delete Replication Volume Information window".

4. 2. 5 Group view

This displays a list of the groups that are registered.

This view is displayed when the Storage Server is selected from the tree view of a group unit.



4.2.5.1 Display items

The items displayed in this view are shown below.

Table: Display items on the group view

No.	Item name	Explanation
1	Folder Name	Name of the group which exists in the server selected in the tree

4.2.5.2 Operations

Selecting the group from the "Group view" enables execution of the following operations:



Note

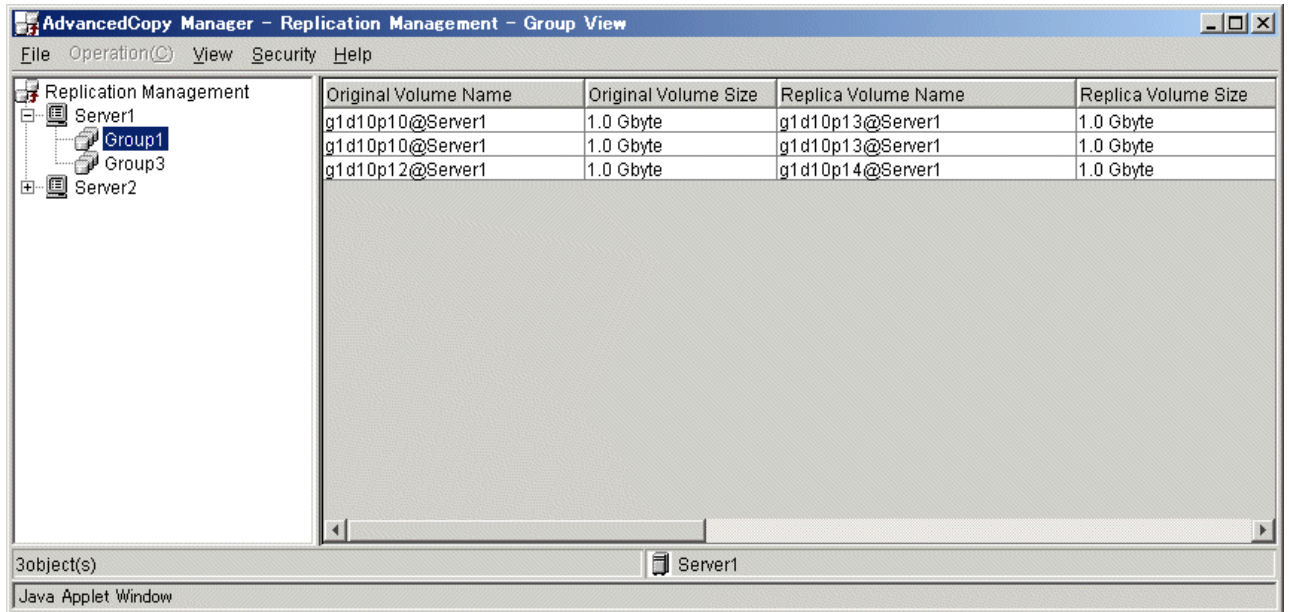
Select the group from the list display on the right side of the group list view, not from the tree panel on the left side.

- Start the synchronous process
Synchronous replication processing (EC/REC) is started or resumed.
If [Start Synchronous Process] is chosen from [Operation], the [Start Synchronous Processing (by group)] window is displayed.
For details of this, refer to "Start Synchronous Processing window(by group)".
- Create the replica
Snapshot replication processing start (eg, OPC/QuickOPC/SnapOPC) or synchronous replication processing (eg, EC/REC) is suspended.
If [Replicate] is chosen from [Operation], the [Replicate (by group)] window is displayed.
For details, refer to "Replicate window(by group)".
- Cancel the replication process
Snapshot replication processing (eg, OPC/QuickOPC/SnapOPC) and synchronous replication processing (eg, EC/REC) are canceled.
If [Cancel Replication Processing] is chosen from [Operation], the [Stop Replication Processing (by group) window is displayed.
For details of this, refer to "Cancel Replication Processing window Cancel Replication Processing window(by group)".
- Change the synchronization mode
Transmission Mode of synchronous replication processing (EC/REC) is changed.
If [Change Synchronization Mode] is chosen from [Operation], the [Change Synchronization Mode (by group)] window is displayed.
For details of this, refer to "Change Synchronization Mode window(by group)".
- Reverse the synchronous processing direction
The copy direction is reversed in the case of synchronous replication processing (eg, EC/REC) which is in the suspended state.
If [Reverse Synchronous Processing Direction] is chosen from [Operation], the [Reverse Synchronous Processing Direction (by group)] window is displayed.
For details of this, refer to "Reverse Synchronous Processing Direction window(by group)".

4.2.6 Group details view

This displays the detailed information of a replication volume in the group.

This view is displayed when a group is selected from the tree view of a group unit.



4.2.6.1 Display items

The items displayed in this view are shown below.

Table: Display items in the group details view

No.	Item name	Explanation
1	Volume Name	Name of the volume which exists in the group selected from the tree
2	Original Volume Size	Displays the size of the volume
3	Replica Volume Name	Name of the Replica volume and its server name
4	Replica Volume Size	Displays the size of the Replica volume
5	Copy	Displays the copying direction <ul style="list-style-type: none"> ● Unidirectional: One-way copying from an original volume to a replica volume is allowed. ● Bidirectional: Bidirectional copying is allowed.
7	Op-Server	Specifies the operation server. <ul style="list-style-type: none"> ● Original: Sets the replication source server as the operation server. ● Replica: Sets the replication destination server as the operation server. ● Both: Sets both the copy-source server and copy-destination server as operation servers
8	Direction	Specifies the copy direction. <ul style="list-style-type: none"> ● Regular: This applies when copy from Original to Replica volume is being performed. ● Reverse: This applies when copy from Replica to Original volume is being performed. ● ----: Copying is not currently being performed.

No.	Item name	Explanation
9	Tracking	<p>Specifies whether tracking processing is being performed.</p> <ul style="list-style-type: none"> ● On: Tracking is in progress. ● Off: Tracking is not in progress. ● ----: Snapshot processing is not currently being performed.
10	Update	<p>When it corresponds to either of the following, this displays the amount of data updated after the previous replica creation as a percentage.</p> <ul style="list-style-type: none"> ● The Status is "----" and the Tracking is "On". (This means that tracking is being performed, but physical copying is not) ● The Status is "Copy-on-write". (SnapOPC is being performed). <p>If other than the above, "----." is displayed. In GDS Snapshot, "----" is always displayed.</p>
11	Recovery Mode	<p>Indicates the recovery mode for synchronous processing between cabinets.</p> <ul style="list-style-type: none"> ● Automatic: Automatic recovery mode. ● Manual: Manual recovery mode. ● ----: Synchronous duplication (REC) is not being performed between cabinets.
12	Split Mode	<p>Indicates the split mode for synchronous processing between cabinets.</p> <ul style="list-style-type: none"> ● Automatic: Automatic split mode ● Manual: Manual split mode. ● ----: Synchronous duplication (REC) is not being performed between cabinets.
13	Transfer Mode	<p>Indicates the transfer mode for synchronous processing between cabinets.</p> <ul style="list-style-type: none"> ● Synchronous: Synchronous mode ● Asynchronous: Asynchronous mode ● Stack: Stack mode ● Consistency: Consistency mode ● ----: Synchronous duplication (REC) is not being performed between cabinets.
14	Rate of copying progress	<ul style="list-style-type: none"> ● Displays the rate of copying progress as a percentage. ● ----: Copying is not being performed, or SnapOPC is in progress.

No.	Item name	Explanation
15	Execution status	<p>Displays the condition of currently ongoing process.</p> <ul style="list-style-type: none"> ● ----: Copying is not being performed. ● Synchronous: Total copy or incremental copy is being performed. ● Equivalent: Equivalency maintains status. ● Replicated: Replication established status ● Copy-on-write: SnapOPC processing is being performed. ● Copy-on-write(active): SnapOPC+ processing is being performed (latest Snap generation). ● Copy-on-write(inactive): SnapOPC+ processing is being performed (past Snap generations). ● Failed: Error suspend status. ● Halt: Hard suspend status. ● Snapshot: Snapshot processing is being performed. ● ?????: Copying status cannot be determined. ● gds-error: Copying with GDS ended abnormally.
16	Group Name	<p>Specifies the group name.</p> <p>"-----" is displayed when not registered with a group.</p>
17	Snap generation	<p>Under SnapOPC+, the Snap generation number (1 to 8) is displayed.</p> <p>For processing other than SnapOPC+, "----" is displayed.</p> <p>In the Snap generation numbers, 1 indicates the oldest generation, and the numbers increase up to the latest generation.</p>



Note

To display the copy status at the other server during bidirectional replication, check the "Display reverse copy status" option in the [View] menu.

4.2.6.2 Operations

Selecting the replica volume on "Group details view" enables execution of the following operations:



Note

Select the group from the list display on the right side of the group details screen, not from the tree panel on the left side.

- Start synchronous process
Synchronous replication processing (eg, EC/REC) is started or resumed.
If [Start Synchronous Process] is chosen from [Operation], the [Start Synchronous Processing (by volume)] window is displayed.
For details of this, refer to "Start Synchronous Processing window (by volume)".

- Create the replica
 Snapshot replication processing (eg, OPC/QuickOPC/SnapOPC) start or synchronous replication processing (eg, EC/REC) is suspended.
 If [Replicate] is chosen from [Operation], the [Replicate (by volume)] window is displayed.
 For details of this, refer to "Replicate window (by volume)".
- Cancel the replication process
 Snapshot replication processing (eg, OPC/QuickOPC/SnapOPC) and synchronous replication processing (eg, EC/REC) are canceled.
 If [Cancel Replication Processing] is chosen from [Operation], the [Stop Replication Processing (by volume)] window is displayed.
 For details of this, refer to "Stop Replication Processing window (by volume)".
- Change the synchronization mode
 Transmission Mode of synchronous replication processing (EC/REC) is changed.
 If [Change Synchronization Mode] is chosen from [Operation], the [Change Synchronization Mode (by volume)] window is displayed.
 For details of this, refer to "Change Synchronization Mode window (by volume)".
- Reverse the synchronous processing direction
 The copy direction of the case synchronous replication processing (EC/REC) which is in a suspension state is reversed.
 If [Reverse Synchronous Processing Direction] is chosen from [Operation], the [Reverse Synchronous Processing Direction (by volume)] window is displayed.
 For details of this, refer to "Reverse Synchronous Processing Direction window (by volume)".
- Delete the replication volume information
 The original volume/replica volume used by replication operation can be deleted.
 If [Delete Replication Volume Information] is chosen from [Operation], the [Delete Replication Volume Information] window is displayed.
 For details of this, refer to "Delete Replication Volume Information window".

4.3 Replication Management Operation window

The following operation windows are available for Replication management

- Set Replication Volume Information window
- Start Synchronous Processing window
- Change Synchronization Mode window
- Replicate window
- Cancel Replication Processing window
- Reverse Synchronous Processing Direction window
- Delete Replication Volume Information window
- Perform Resource Adjustment window
- Transfer Buffer Status window
- Change Buffer Setting window

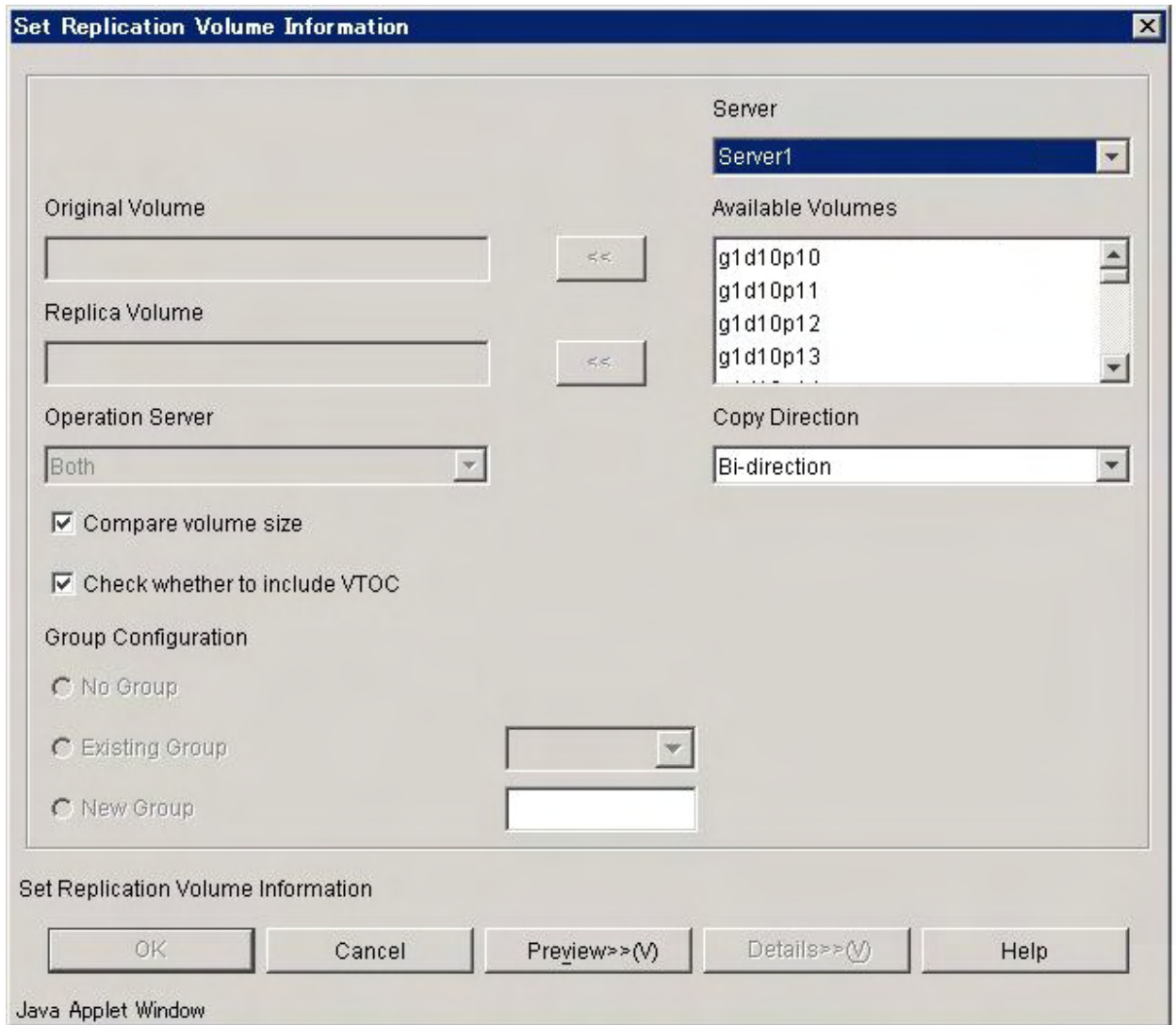
4.3.1 Set Replication Volume Information window

The original and replica volumes are configured.

The following operations can be used to display the [Set Replication Volume Information] window:

Table: [Set Replication Volume Information] window display method

Selection in server list view	Operation
Server	Right-click the mouse and select [Set Replication Volume Information] from the popup menu. Or Select [Set Replication Volume Information] from the [Operation] menu.



For the chosen server, the available volumes are displayed.

Select any of these volumes as "Original/Replica" volumes.

Configure each option and click the [OK] button.

The selected original volume and replica volume are set as replication volume and can be used for replication process.

Setting and display items are shown below.

Table: Setting items and display items on the set replication volume information window

No.	Item name	Explanation
1	Server	Select the server to which volume is connected. The volume name is displayed in a list box.
2	Available Volumes	List of volumes available in the selected server. Only one selection can be made at a time.
3	Original Volume	This original volume is shown in volume_name@server_name format. Only one is displayed. This control is not editable.
4	Replica Volume	This replica volume is shown in volume_name@server_name format. Only one is displayed. This control is not editable.
5	<<	Click this button to set the entity selected from the [Available Volumes] list box as the "Original/ Replica" volume name.

No.	Item name	Explanation
6	Operation Server	Specifies the operation server. When the servers to which original volume and replica volume belong are different, this combo box is active. <ul style="list-style-type: none"> ● Original: The replication source server is the operation server. ● Replica: The replication destination server is the operation server. ● Both: Both the replication source server and replication destination server are operation servers
7	Copy Direction	Specifies the copying direction. <ul style="list-style-type: none"> ● Unidirectional copy: One-way copying from an original volume to a replica volume is allowed. ● Bidirectional copy: Bidirectional copying is allowed.
8	Compare volume size	Check the size of original volume and replica volume by clicking in the checkbox. When the sizes differ, a setup of replication volume cannot be performed.
9	Check whether to include VTOC is included	If this checkbox is selected, the system checks whether VTOC is included in the replication source volume/replication destination volume. If a slice that includes a Solaris VTOC is specified, deselect this checkbox.
10	Group Configuration	Specifies the group name. <ul style="list-style-type: none"> ● No Group: The volume does not belong to a group. ● Existing Group: The volume belongs to the existing group. ● New Group: The volume belongs to a new group.

4.3.2 Start Synchronous Processing window

Start and restart the synchronous replication processing (eg, for EC/REC).

4.3.2.1 Start Synchronous Processing window (By Volume)

The following operations can be used to display the [Start Synchronous Processing (by volume)] window:

Table: [Start Synchronous Processing (by volume)] window display method

Selection in Original/Replica Volume details view	Operation
Original volume or replica volume	Right-click the mouse and select [Start Synchronous Processing] from the popup menu. Or Select [Start Synchronous Processing] from the [Operation] menu.

*

Start Synchronous Processing (By Volume) [X]

Original Volume : g1d10p10@Server1
 Replica Volume : g1d10p13@Server1

Transfer Mode <input checked="" type="radio"/> Asynchronous <input type="radio"/> Synchronous <input type="radio"/> Stack <input type="radio"/> Consistency	Recovery Mode <input checked="" type="radio"/> Automatic <input type="radio"/> Manual	Split Mode <input type="radio"/> Automatic <input type="radio"/> Manual
Option <input checked="" type="radio"/> Normal Copy <input type="radio"/> Skip initial Copy <input type="radio"/> Resume with Remain Mode	Copy Option for GDS (Linux/Solaris only) <input type="radio"/> Copy type is selected by GDS <input type="radio"/> Use softcopy	

Perform communication processing with Non-Operation Server
 Perform preprocessing and postprocessing on Destination Volume
 Start synchronous processing in the opposite direction

Start Synchronous Processing

Java Applet Window

Select each required option and click the [OK] button.

Synchronous processing starts, and the state of replication is displayed on the status field.



Note

This operation cannot be performed on non-operation server.

Setting and display items are shown below.

Table: Setting items and display items on the start synchronous processing window (By Volume)

No.	Item name	Explanation
1	Original Volume	The original volume is shown in volume_name@server_name format.
2	Replica Volume	The replica volume is shown in volume_name@server_name format.

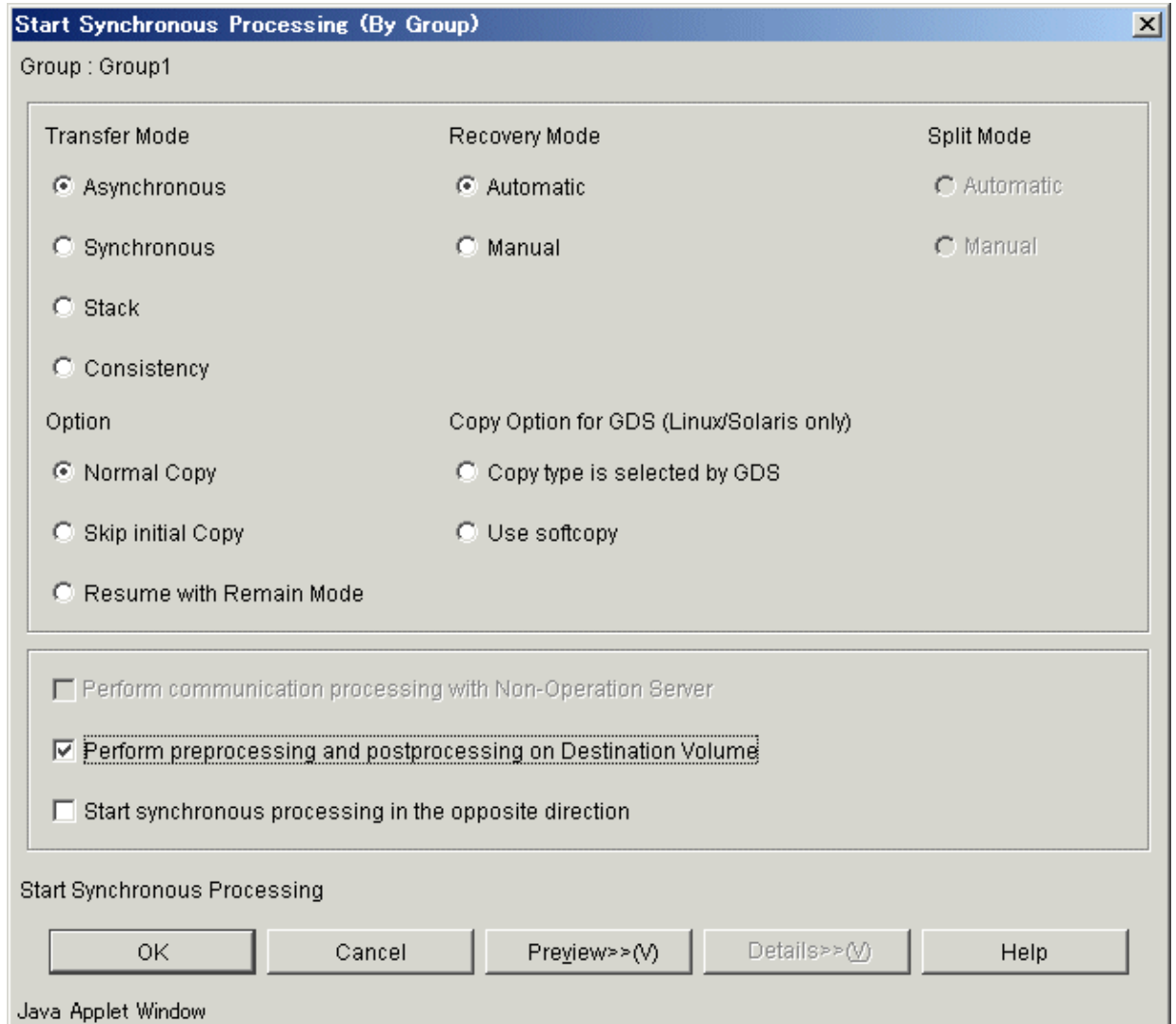
No.	Item name	Explanation
3	Transfer Mode	Specifies the transfer mode of synchronous processing between cabinets. When the status is "Replicated", it cannot be set up. <ul style="list-style-type: none"> ● Asynchronous: Asynchronous mode ● Synchronous: Synchronous mode ● Stack: Stack mode ● Consistency: Consistency mode
4	Recovery Mode	Specifies the recovery mode of synchronous processing between cabinets. When the status is "Replicated", it cannot be set up. <ul style="list-style-type: none"> ● Automatic: Automatic recovery mode ● Manual: Manual recovery mode
5	Split Mode	Specifies the split mode of synchronous processing between cabinets. When the status is "Replicated", it cannot be set up. <ul style="list-style-type: none"> ● Automatic: Automatic split mode ● Manual: Manual split mode
6	Option	Specifies the options of a synchronous processing start. <ul style="list-style-type: none"> ● Normal Copy ● Skip initial Copy ● Resume with Remain Mode
7	Copy Option for GDS (Linux/Solaris only)	Specifies the options in the case of operating an SDX object for each logic volume. <ul style="list-style-type: none"> ● Copy type is selected by GDS ● Use softcopy
8	Perform communication processing with Non-Operation Server	Check the following volume state in a non-operation server by clicking in the checkbox. <ul style="list-style-type: none"> ● Before synchronous processing ● Executing synchronous processing ● After synchronous processing When the servers to which original volume and replica volume belong differ, this combo box is active.
9	Perform pre-processing and post-processing on Destination Volume	Click this checkbox to start executing pre-processing and post-processing of the replication destination volume. However, deselect this checkbox before restarting synchronous processing after a forced suspend.
10	Start synchronous processing in the opposite direction	Start the Synchronous processing from replica volume to original volume by clicking in the checkbox.

4.3.2.2 Start Synchronous Processing window (By Group)

The following operations can be used to display the [Start Synchronous Processing (by group)] window:

Table: [Start Synchronous Processing (by group)] window display method

Selection in group list view	Operation
Group	Right-click the mouse and select [Start Synchronous Processing] from the popup menu. Or Select [Start Synchronous Processing] from the [Operation] menu.



Select each option and click [OK].

Synchronous processing starts, and the status of replication is displayed on the status field.



Note

This operation cannot be performed on a non-operation server.

The setting and display items are shown below.

Table: Setting items and display items on the start synchronous processing window (By Group)

No.	Item name	Explanation
1	Group	The group name is shown.
2	Transfer Mode	Specifies the transfer mode of synchronous processing between cabinets. When the status is "Replicated", it cannot be set up. <ul style="list-style-type: none"> ● Asynchronous: Asynchronous mode ● Synchronous: Synchronous mode ● Stack: Stack mode ● Consistency: Consistence mode
3	Recovery Mode	Specifies the recovery mode of synchronous processing between cabinets. When the status is "Replicated", it cannot be set up. <ul style="list-style-type: none"> ● Automatic: Automatic recovery mode ● Manual: Manual recovery mode
4	Split Mode	Specifies the split mode of synchronous processing between cabinets. When the status is "Replicated", it cannot be set up. <ul style="list-style-type: none"> ● Automatic: Automatic split mode ● Manual: Manual split mode
5	Option	Specifies the options for synchronous processing start. <ul style="list-style-type: none"> ● Normal Copy ● Skip initial Copy ● Resume with Remain Mode
6	Copy Option for GDS (Linux/Solaris only)	Specifies the options in the case of operating an SDX object for each logic volume. <ul style="list-style-type: none"> ● Copy type is selected by GDS ● Use softcopy
7	Perform communication processing with Non-Operation Server	Check the following volume state in a non-operation server by clicking in the checkbox. <ul style="list-style-type: none"> ● Before synchronous processing ● Executing synchronous processing ● After synchronous processing When the servers to which original volume and replica volume belong differ, this combo box is active.
8	Perform pre-processing and post-processing on Destination Volume	Click this checkbox to start executing pre-processing and post-processing of the replication destination volume. However, deselect this checkbox before restarting synchronous processing after a forced suspend.
9	Start synchronous processing in the opposite direction	Start the Synchronous processing from replica volume to original volume by clicking in the checkbox.

4.3.3 Change Synchronization Mode window

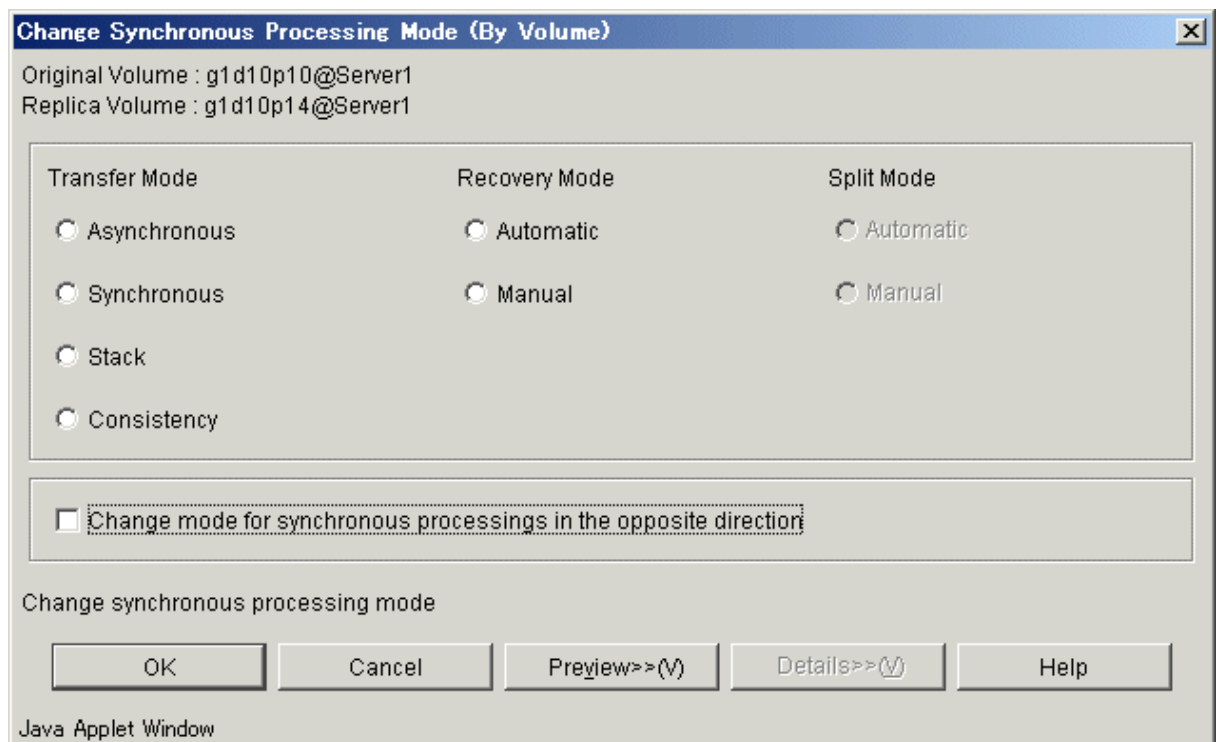
Change the transmission mode of inter-cabinet synchronous replication processing (REC).

4.3.3.1 Change Synchronization Mode window (By Volume)

The following operations can be used to display the [Change Synchronization Mode (by volume)] window:

Table: [Change Synchronization Mode (by volume)] window display method

Selection in Original/Replica Volume Details view	Operation
Volume name	Right-click the mouse and select [Change Synchronization Mode] from the popup menu. Or Select [Change Synchronization Mode] from the [Operation] menu.



Select each option and click the [OK] button.
The synchronization processing mode is changed.



Note

This operation cannot be performed on a non-operation server.
When the [Change Synchronization Mode (by volume)] window is displayed, all the values that were previously set will be shown.

The setting and display items are shown below.

Table: Setting items and display items on the change synchronization mode window (By Volume)

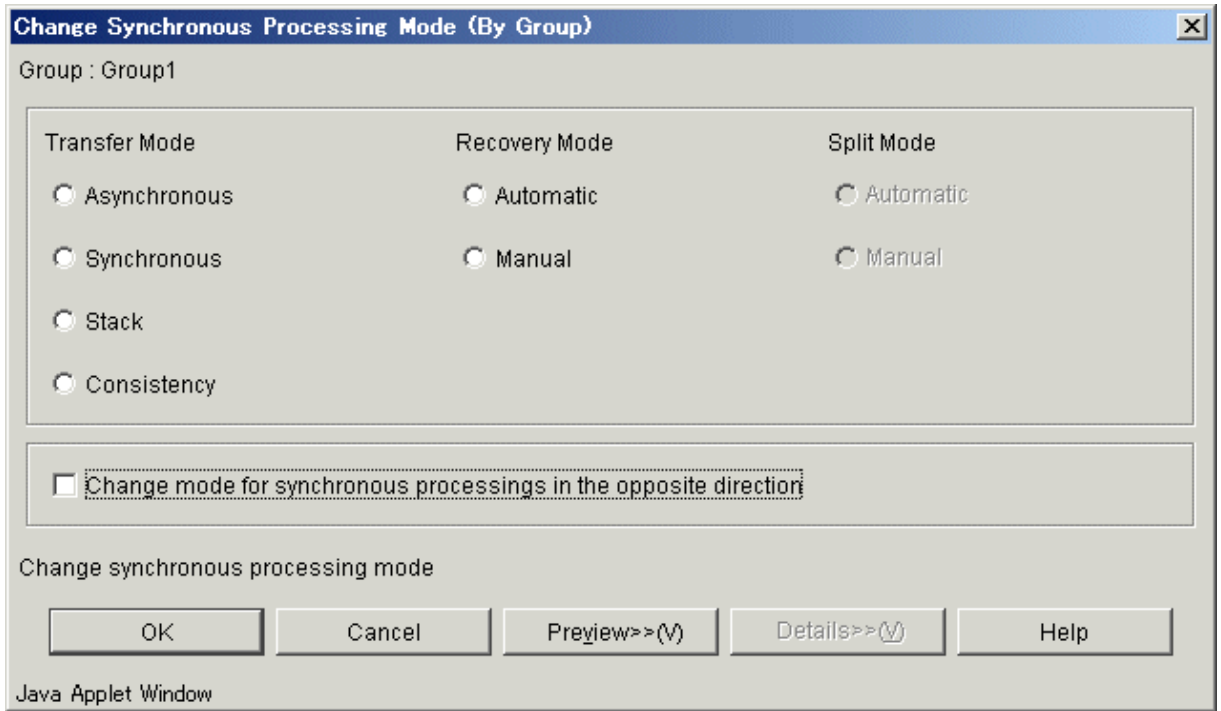
No.	Item name	Explanation
1	Original Volume	The original volume is shown in volume_name@server_name format.
2	Replica Volume	The replica volume is shown in volume_name@server_name format.
3	Transfer Mode	Specifies the transfer mode of synchronous processing between cabinets. <ul style="list-style-type: none"> ● Asynchronous: Asynchronous mode ● Synchronous: Synchronous mode ● Stack: Stack mode ● Consistency: Consistency mode
4	Recovery Mode	Specifies the recovery mode of synchronous processing between cabinets. <ul style="list-style-type: none"> ● Automatic: Automatic recovery mode ● Manual: Manual recovery mode
5	Split Mode	Specifies the split mode of synchronous processing between cabinets. This mode can be set only when the transfer mode is "Synchronous". <ul style="list-style-type: none"> ● Automatic: Automatic split mode ● Manual: Manual split mode
6	Change mode for synchronous processing in the opposite direction	Change the mode for synchronous processing from replica volume to original volume by clicking in the checkbox.

4.3.3.2 Change Synchronization Mode window (By Group)

The following operations can be used to display the [Change Synchronization Mode (by group)] window:

Table: [Change Synchronization Mode (by group)] window display method

Selection in group list view	Operation
Group	Right-click the mouse and select [Change Synchronization Mode] from the popup menu. Or Select [Change Synchronization Mode] from the [Operation] menu.



Select each option and click the [OK] button
The synchronous processing mode is changed.



Note

This operation cannot be performed on a non-operation server.

When the [Change Synchronization Mode (by group)] window is displayed, all the values previously set will be shown.

The setting and display items are shown below.

Table: Setting items and display items on the change synchronization mode window (By Group)

No.	Item name	Explanation
1	Group Name	The group name is shown.
2	Transfer Mode	Specifies the transfer mode of synchronous processing between cabinets. <ul style="list-style-type: none"> ● Asynchronous: Asynchronous mode ● Synchronous: Synchronous mode ● Stack: Stack mode ● Consistency: Consistence mode
3	Recovery Mode	Specifies the recovery mode of synchronous processing between cabinets. <ul style="list-style-type: none"> ● Automatic: Automatic recovery mode ● Manual: Manual recovery mode
4	Split Mode	Specifies the split mode of synchronous processing between cabinets. This mode can be specified only when the "Transfer mode" is "Synchronous". <ul style="list-style-type: none"> ● Automatic: Automatic split mode ● Manual: Manual split mode

No.	Item name	Explanation
5	Change mode for synchronous processing in the opposite direction	You can change the mode for synchronous processing from replica volume to original volume by clicking in the checkbox.

4.3.4 Replicate window

Start snapshot replication processing (OPC/QuickOPC/SnapOPC/SnapOPC+) or suspend synchronous replication processing (EC/REC).

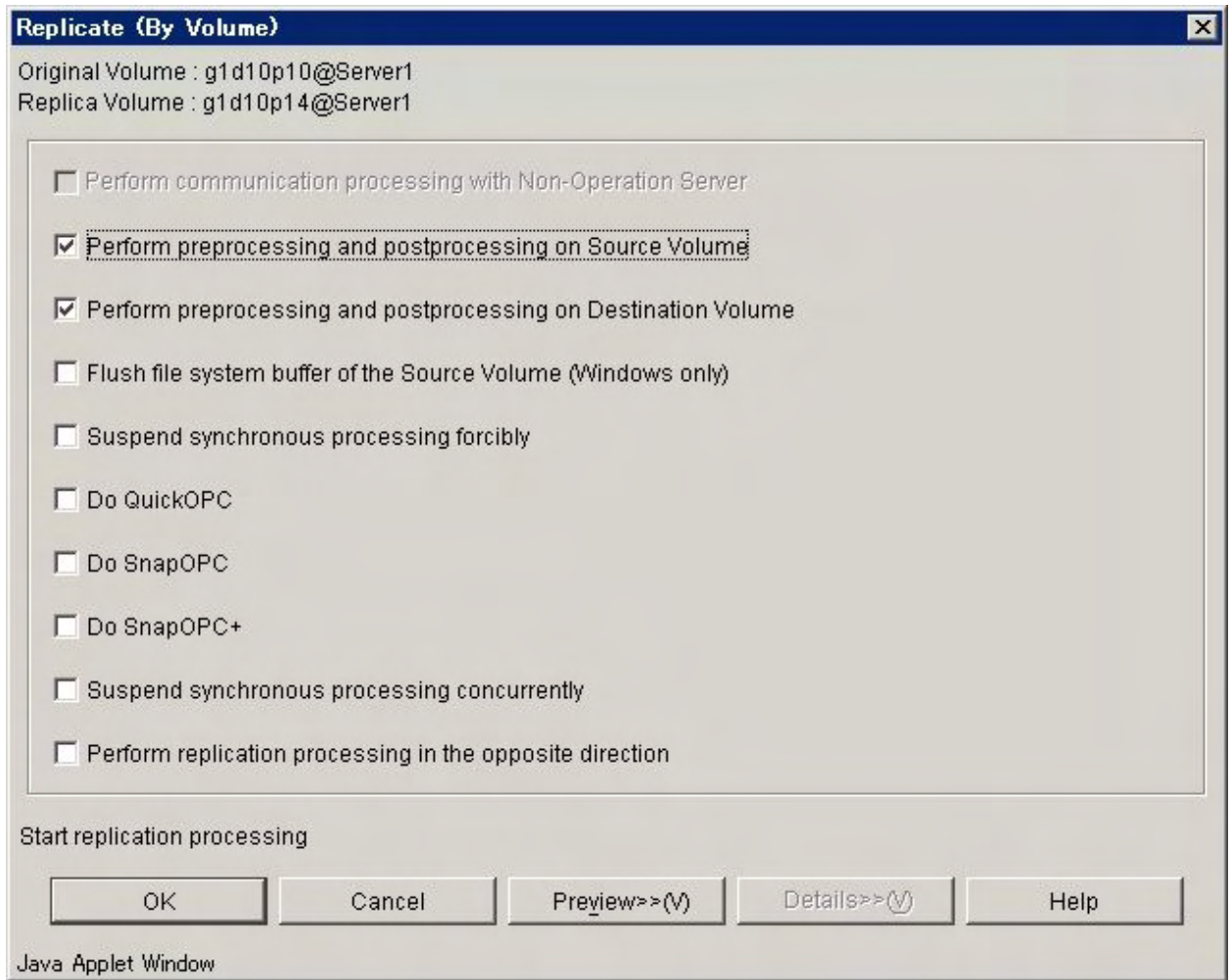
- Synchronous processing is not performed.
Snapshot replication processing (OPC/QuickOPC/SnapOPC/SnapOPC+) can be started.
- Synchronous processing is performed.
When synchronous processing is in an equivalence maintenance state, synchronous replication processing (EC/REC) can be suspended.

4.3.4.1 Replicate window (By Volume)

The following operations can be used to display the [Replicate (by volume)] window:

Table: [Replicate (by volume)] window display method

Selection in Original/Replica Volume Details view	Operation
Original volume Or Replica volume	Right-click the mouse and select [Replicate] from the popup menu. Or Select [Replicate] from the [Operation] menu.



Set up each option and click the [OK] button.
Replication processing starts.



Note

This operation cannot be performed on a non-operation server.

Setting and display items are shown below.

Table: Setting items and display items on the replicate window (By Volume)

No.	Item name	Explanation
1	Original Volume	The original volume is shown in volume_name@server_name format.
2	Replica Volume	The replica volume is shown in volume_name@server_name format.
3	Perform communication with Non-Operation Server	Check the following volume state in the non-operation server by clicking in the checkbox. <ul style="list-style-type: none"> ● Before replication processing ● During execution of replication processing ● After replication processing When the servers to which original volume and replica volume belong are different, this combo box is active.
4	Perform pre-processing and post-processing on Source Volume	Click this checkbox to start executing pre-processing and post-processing of the replication source volume.

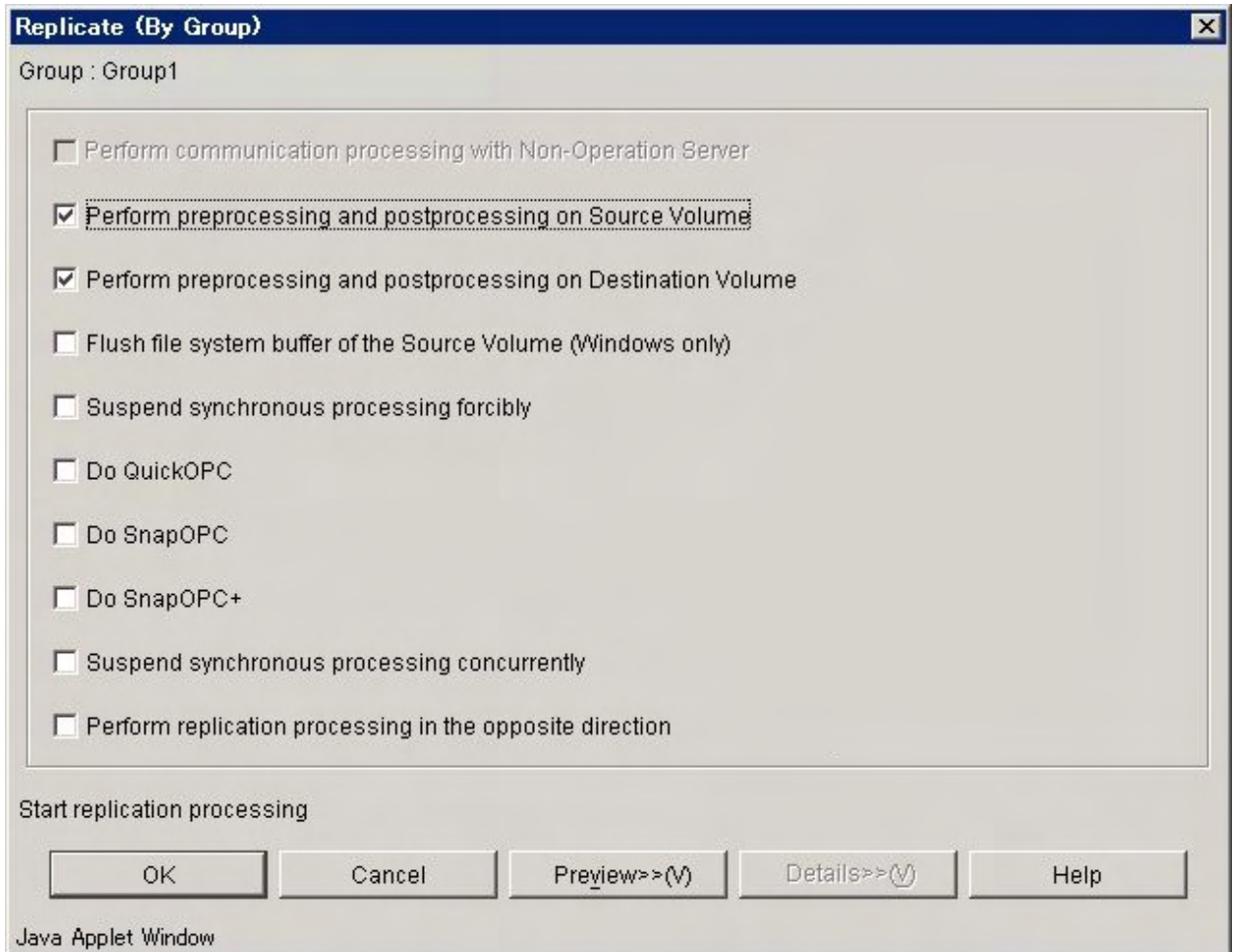
No.	Item name	Explanation
5	Perform pre-processing and post-processing on Destination Volume	Click this checkbox to start executing pre-processing and post-processing of the replication destination volume. However, deselect this checkbox before restarting synchronous processing after a forced suspend.
6	Flush file system buffer of the Source Volume (Windows only)	Flushing processing is performed to the file system buffer of the original volume by clicking in the checkbox.
7	Suspend synchronous processing forcibly	Synchronous processing can be forcibly suspended by clicking this checkbox. This checkbox is enabled under the following conditions: <ul style="list-style-type: none"> ● The replication source volume and replication destination volume belong to the same server. ● The copy processing status is "sync" or "halt". When restarting synchronous processing after a forcible suspend, deselect the [Perform pre-processing and post-processing on Destination volume] checkbox on the [Start synchronous processing] screen before restarting the synchronous processing.
8	Do QuickOPC	Perform QuickOPC processing by clicking in the checkbox.
9	Do SnapOPC	Perform SnapOPC processing by clicking in the checkbox. In the following cases, this checkbox cannot be specified. <ul style="list-style-type: none"> ● When the servers to which original volume and replica volume belong are different. ● When synchronous processing is being performed.
10	Do SnapOPC+	If this checkbox is selected, SnapOPC+ processing can be performed. This checkbox cannot be selected in the following cases: <ul style="list-style-type: none"> ● The replication source volume and replication destination volume belong to different servers. ● Synchronization processing is currently being executed.
11	Suspend synchronous processing concurrently	Suspend synchronous processing concurrently by clicking in the checkbox.
12	Perform replication processing in the opposite direction	Perform replication processing in the opposite direction by clicking in the checkbox.

4.3.4.2 Replicate window (By Group)

The following operations can be used to display the [Replicate (by group)] window:

Table: [Replicate (by group)] window display method

Selection in group list view	Operation
Group	Right-click the mouse and select [Replicate] from the popup menu. Or Select [Replicate] from the [Operation] menu.



Set up each option and click the [OK] button.
Replication processing starts.



Note

This operation cannot be performed on a non-operation server.
Setting and display items are shown below.

Table: Setting items and display items on the replicate window (By Group)

No.	Item name	Explanation
1	Group Name	The group name is shown.
2	Perform communication with a Non-Operation Server	Check the following volume state in a non-operation server by clicking in the checkbox. <ul style="list-style-type: none"> ● Before replication processing ● Executing replication processing ● After replication processing When the servers to which original volume and replica volume belong are different, this combo box is active.
3	Perform pre-processing and post-processing on the Source Volume	Click this checkbox to start executing pre-processing and post-processing of the replication source volume.
4	Perform pre-processing and post-processing on the Destination Volume	Click this checkbox to start executing pre-processing and post-processing of the replication destination volume. However, deselect this checkbox before restarting synchronous processing after a forced suspend.

No.	Item name	Explanation
5	Flush file system buffer of the Source Volume (Windows only)	Flushing processing is performed to the file system buffer of the original volume by clicking in the checkbox.
6	Suspend synchronous processing forcibly	Synchronous processing can be forcibly suspended by clicking this checkbox. This checkbox is enabled under the following conditions: <ul style="list-style-type: none"> ● The replication source volume and replication destination volume belong to the same server. ● The copy processing status is "sync" or "halt". When restarting synchronous processing after a forcible suspend, deselect the [Perform pre-processing and post-processing on Destination volume] checkbox on the [Start synchronous processing] screen before restarting the synchronous processing.
7	Do QuickOPC	Perform QuickOPC processing by clicking in the checkbox.
8	Do SnapOPC	Perform SnapOPC processing by clicking in the checkbox. In the following cases, this checkbox cannot be specified. <ul style="list-style-type: none"> ● When the servers to which original volume and replica volume belong are different. ● When synchronous processing is being performed.
9	Do SnapOPC+	If this checkbox is selected, SnapOPC+ processing can be performed. This checkbox cannot be selected in the following cases: <ul style="list-style-type: none"> ● The replication source volume and replication destination volume belong to different servers. ● Synchronization processing is currently being executed.
10	Suspend synchronous processing concurrently	Suspend synchronous processing concurrently by clicking in the checkbox.
11	Perform replication processing in the opposite direction	Perform replication processing in the opposite direction by clicking in the checkbox.

4.3.5 Cancel Replication Processing window

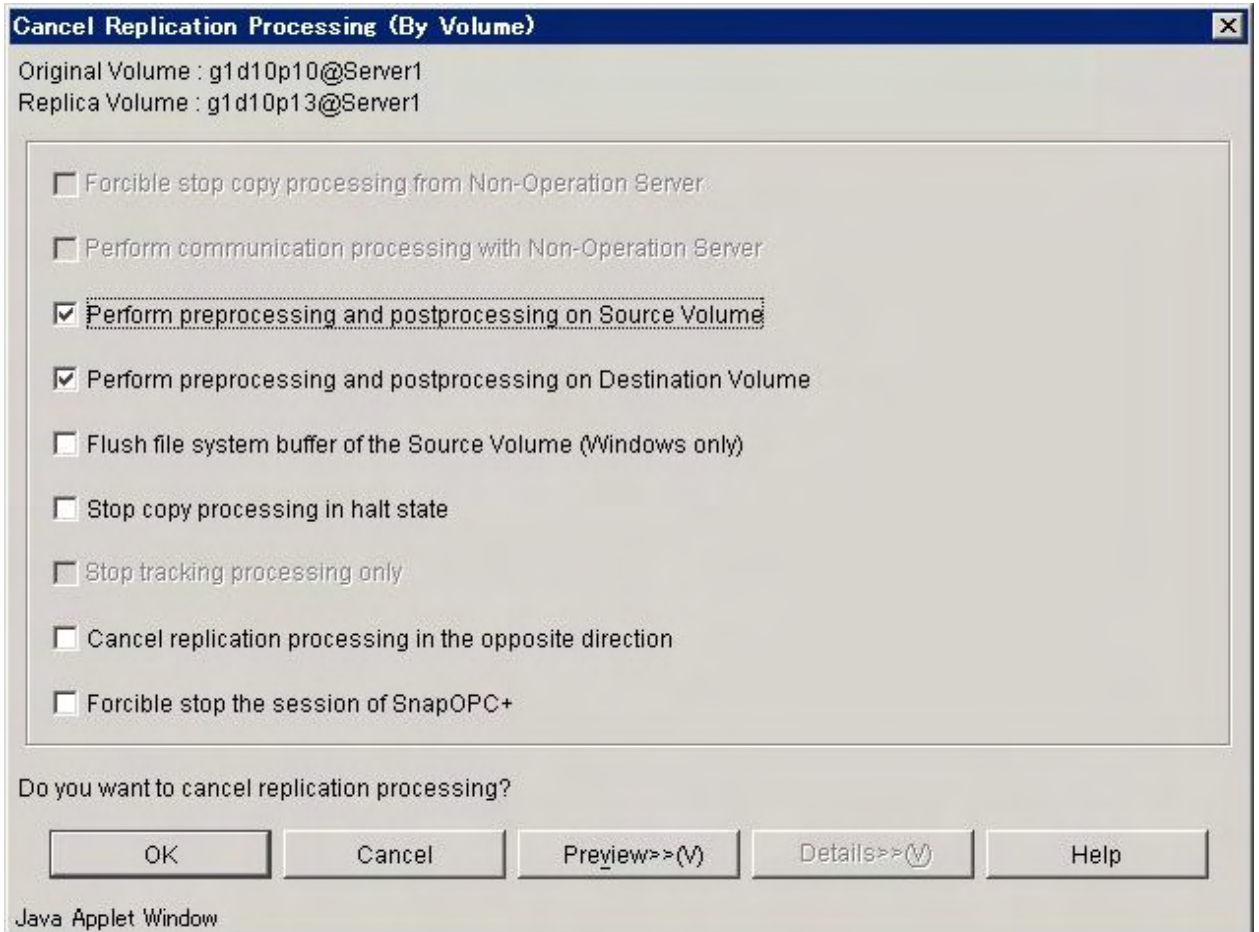
This window allows the cancellation of snapshot replication processing (OPC/QuickOPC/SnapOPC/SnapOPC+) and synchronous replication processing (EC/REC).

4.3.5.1 Cancel Replication Processing window (By Volume)

The following operations can be used to display the [Stop Replication Processing (by volume)] window:

Table: [Cancel Replication Processing (by volume)] window display method

Selection in Original/Replica Volume Details view	Operation
Original volume Or Replica volume	Right-click the mouse and select [Cancel Replication Processing] from the popup menu. Or Select [Cancel Replication Processing] from the [Operation] menu.



Select each option and click the [OK] button.
 Cancel replication processing or tracking processing by specifying the options.



This operation can be performed on a non-operation server.

Setting and display items are shown below.

Table: Setting items and display items on the cancel replication processing window (By Volume)

No.	Item name	Explanation
1	Original Volume	The original volume is shown in volume_name@server_name format.
2	Replica Volume	The replica volume is shown in volume_name@server_name format.
3	Forcibly stop copy processing from a Non-Operation Server	Forcibly stop copy processing from non-operation server by clicking in the checkbox. The following conditions make this checkbox active. <ul style="list-style-type: none"> ● Non-operation server ● Replication between servers

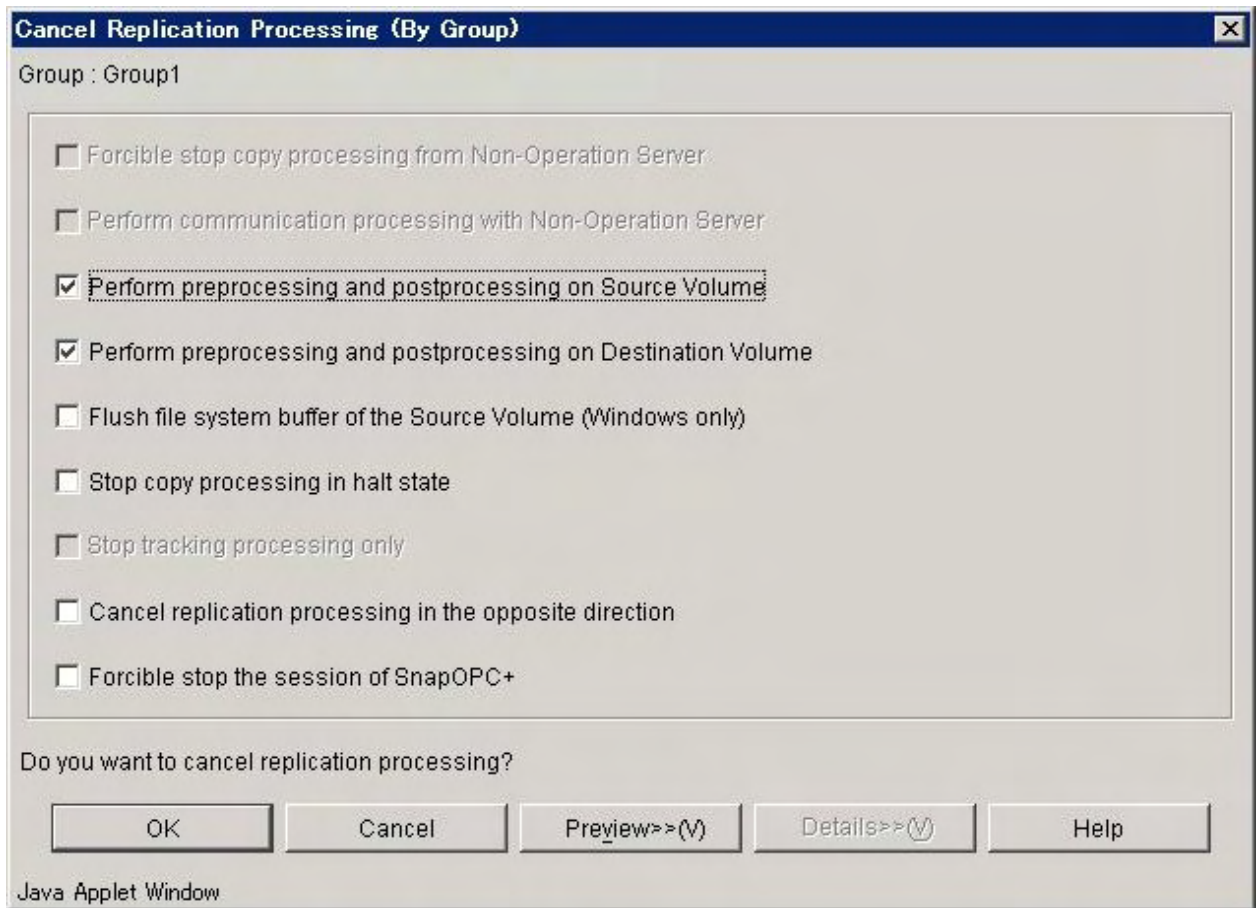
No.	Item name	Explanation
4	Perform communication processing with a Non-Operation Server	Check the following volume state in non-operation server by clicking in the checkbox. <ul style="list-style-type: none"> ● Before replication processing ● Executing replication processing ● After replication processing When the servers to which original volume and replica volume belong are different, this combo box is active.
5	Perform pre-processing and post-processing on Source Volume	Click this checkbox to start executing pre-processing and post-processing of the replication source volume. This checkbox is enabled only when the copy status is "equivalent".
6	Perform pre-processing and post-processing on Destination Volume	Click this checkbox to start executing pre-processing and post-processing of the replication destination volume. This checkbox is enabled only when the copy status is "equivalent".
7	Flush file system buffer of the Source Volume (Windows only)	Flushing is processed to the file system buffer of the original volume instead of the lock processing by clicking in the checkbox. This checkbox can only be specified when the copy state is "equivalent".
8	Stop copy processing in "HALT" status	Stop copy processing in "halt" status by clicking in the checkbox. This checkbox cannot be specified, except when the copy state is "halt".
9	Stop tracking processing only	Stop tracking processing only by clicking in the checkbox. This option stops only the tracking processing, not the snapshot processing. The following conditions make this checkbox active. <ul style="list-style-type: none"> ● Status is not "----" ● Tracking is "on"
10	Cancel current replication processing in the opposite direction	Cancel replication processing from replica volume to original volume by clicking in the checkbox.
11	Forcible stop the session of SnapOPC+	Forcible stop the session of SnapOPC+ session by clicking in the checkbox. This checkbox stops the Snap generation specified for stopping and all earlier Snap generations.

4.3.5.2 Cancel Replication Processing window (By Group)

The following operations can be used to display the [Stop Replication Processing (by group)] window:

Table: [Cancel Replication Processing (by group)] window display method

Selection in group list view	Operation
Group	Right-click the mouse and select [Cancel Replication Processing] from the popup menu. Or Select [Cancel Replication Processing] from the [Operation] menu.



Select each option and click the [OK] button.

Cancel replication processing or tracking processing by specifying the option.



This operation can be performed on non-operation server.

Setting and display items are shown below.

Table: Setting items and display items on the cancel replication processing window (By Group)

No.	Item name	Explanation
1	Group Name	The group name is shown.
2	Forcibly stop copy processing from Non-Operation Server	Forcibly stop copy processing from non-operation server by clicking in the checkbox. The following conditions make this checkbox active. <ul style="list-style-type: none"> ● Non-operation server ● Replication between servers
3	Perform communication processing with Non-Operation Server	Check the following volume state in non-operation server by clicking in the checkbox. <ul style="list-style-type: none"> ● Before replication processing ● Executing replication processing ● After replication processing When the servers to which original volume and replica volume belong are different, this combo box is active.

No.	Item name	Explanation
4	Perform pre-processing and post-processing on Source Volume	Click this checkbox to start executing pre-processing and post-processing of the replication source volume. This checkbox is enabled only when the copy status is "equivalent".
5	Perform pre-processing and post-processing on Destination Volume	Click this checkbox to start executing pre-processing and post-processing of the replication destination volume. This checkbox is enabled only when the copy status is "equivalent".
6	Flush file system buffer of the Source Volume (Windows only)	Flushing is processed to the file system buffer of the original volume instead of the lock processing by clicking in the checkbox. This checkbox cannot be specified, except when the copy state is "equivalent".
7	Stop copy processing in "HALT" status	Stop copy processing in "halt" status by clicking in the checkbox. This checkbox cannot be specified, except when the copy state is "halt".
8	Stop tracking processing only	Stop tracking processing only by clicking in the checkbox. This option stops only the tracking processing, not the snapshot processing. The following conditions make this checkbox active. <ul style="list-style-type: none"> ● Status is not "----" ● Tracking is "on"
9	Cancel current replication processing in the opposite direction	Cancel replication processing from replica volume to original volume by checking the checkbox.
10	Forcibly stop SnapOPC+ session	Forcibly stop the SnapOPC+ session by clicking in the checkbox. This checkbox stops the Snap generation specified for stopping and all earlier Snap generations.

4.3.6 Reverse Synchronous Processing Direction window

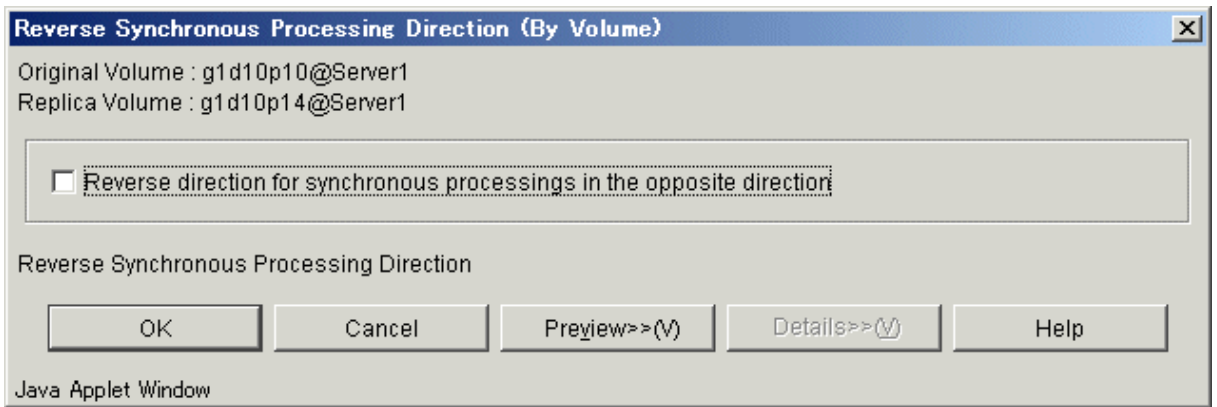
The copy direction of the case synchronous replication processing (EC/REC) which is in a suspension state is reversed.

4.3.6.1 Reverse Synchronous Processing Direction window (By Volume)

The following operations can be used to display the [Reverse Synchronous Processing Direction (by volume)] window:

Table: [Reverse Synchronous Processing Direction (by volume)] window display method

Selection in Original/Replica Volume Details view	Operation
Original volume Or Replica volume	Right-click the mouse and select [Reverse Synchronous Processing Direction] from the popup menu. Or Select [Reverse Synchronous Processing Direction] from the [Operation] menu.



When the [OK] button is clicked, the direction of the replication is reversed.



Note

The synchronous processing reversing is effective only for the following conditions.

- The status of the replication volume is "replicated".
- The copy direction type is "Bi-directional".

The synchronous processing reversing can be executed only with the operation server.

Setting and display items are shown below.

Table: Setting items and display items on the reverse synchronous processing direction window (By Volume)

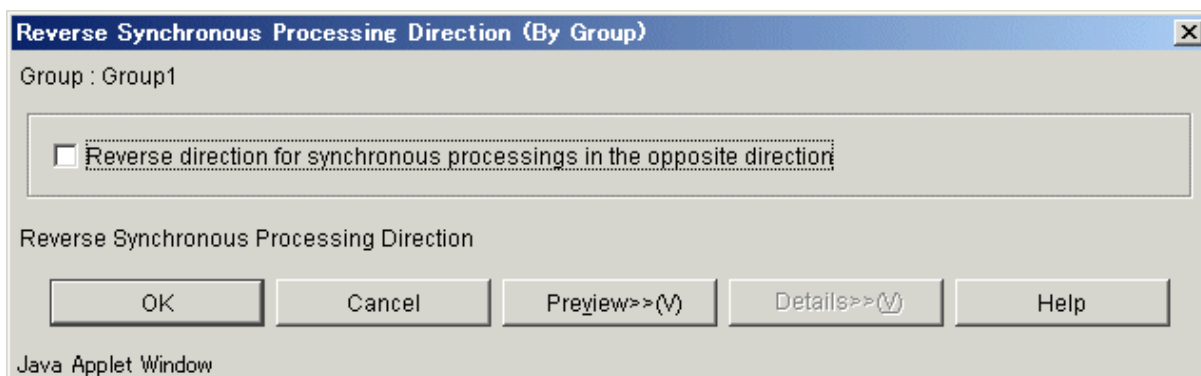
No.	Item name	Explanation
1	Original Volume	The original volume is shown in volume_name@server_name format.
2	Replica Volume	The replica volume is shown in volume_name@server_name format.
3	Reverse direction for synchronous processing in the opposite direction	Reverse direction for synchronous processing in the opposite direction by clicking in the checkbox.

4. 3. 6. 2 Reverse Synchronous Processing Direction window (By Group)

The following operations can be used to display the [Reverse Synchronous Processing Direction (by group)] window:

Table: [Reverse Synchronous Processing Direction (by group)] window display method

Selection in group list view	Operation
Group	Right-click the mouse and select [Reverse Synchronous Processing Direction] from the popup menu. Or Select [Reverse Synchronous Processing Direction] from the [Operation] menu.



When the [OK] button is clicked, the direction of the replication is reversed.



Note

The synchronous processing reversing is effective only for the following conditions.

- The status of the replication volume is "replicated".
- The copy direction type is "Bi-directional".

The synchronous processing reversing can be executed only with the operation server.

Setting and display items are shown below.

Table: Setting items and display items on the reverse synchronous processing direction window (By Group)

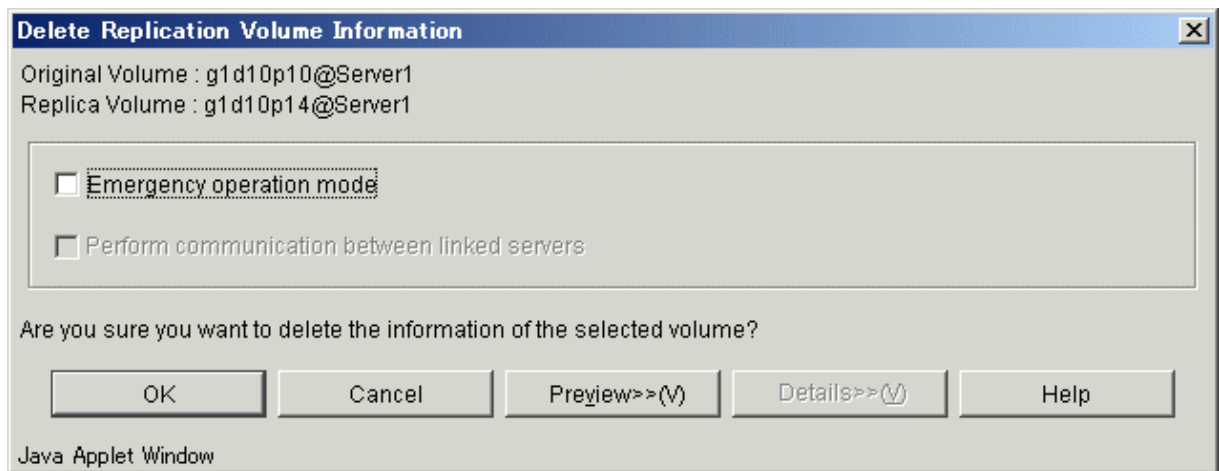
No.	Item name	Explanation
1	Group Name	The group name is shown.
2	Reverse direction for synchronous processing in the opposite direction	Reverse direction for synchronous processing in the opposite direction by checking the checkbox.

4.3.7 Delete Replication Volume Information window

The following operations can be used to display the [Delete Replication Volume Information] window:

Table: [Delete Replication Volume Information] window display method

Selection in Original/Replica Volume Details view	Operation
Original volume Or Replica volume	Right-click the mouse and select [Delete Replication Volume Information] from the popup menu. Or Select [Delete Replication Volume Information] from the [Operation] menu.



Select each option and click the [OK] button.

Replication volume information is deleted.



Note

The replication volume information deletion processing can be executed only with the operation server.

Setting and display items are shown below.

Table: Setting items and display items on the reverse synchronous processing direction window

No.	Item name	Explanation
1	Original Volume	The original volume is shown in volume_name@server_name format.
2	Replica Volume	The replica volume is shown in volume_name@server_name format.
3	Emergency operation mode	Replica volume information is deleted without the execution state of the advanced copy by clicking in the checkbox.
4	Perform communication between linked servers	Communicates between servers on the replication volume while processing the deletion by clicking in the checkbox. Use this option only when recovery of one of the linked servers is not expected to be successful. The option is valid only for replication between servers.

4.3.8 Perform Resource Adjustment window

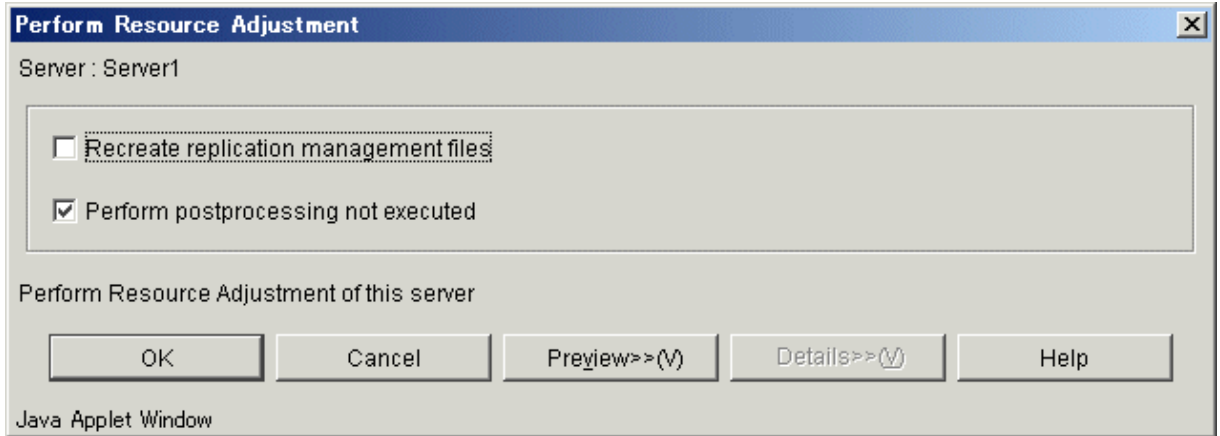
Execute recovery to make replication management information consistent if a system failure or other problem has caused the replication management information to become inconsistent.

The following operations can be used to display the [Perform Resource Adjustment] window:

Table: [Perform Resource Adjustment] window display method

Selection in server list view	Operation

Selection in server list view	Operation
Server	Right-click the mouse and select [Perform Resource Adjustment] from the popup menu. Or Select [Perform Resource Adjustment] from the [Operation] menu.



Select the required option and click the [OK] button.
Normal replication management information is created again.

Setting and display items are shown below.

Table: Setting items and display items on the perform resource adjustment window

No.	Item name	Explanation
1	Original Volume	The original volume is shown in volume_name@server_name format.
2	Replica Volume	The replica volume is shown in volume_name@server_name format.
3	Recreate replication management files	When this checkbox is clicked, replication management information in the Storage Management Server repository is downloaded to the Storage Server, and the replication management information is restored.
4	Perform post-processing not executed	Perform any post-processing that has not been performed by clicking in the checkbox.

4.3.9 Transfer Buffer Status window

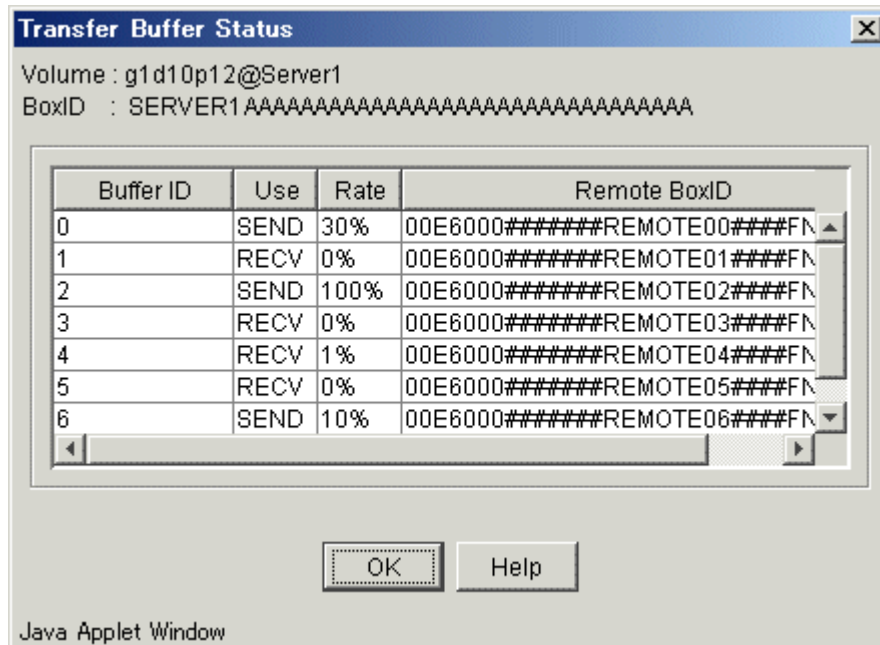
Displays information for the transfer buffer when REC is performed in Consistency mode.

The following operations can be used to display the [Transfer Buffer Status] window:

Table: [Transfer Buffer Status] window display method

Selection in Original/Replica Volume List view	Operation
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Selection in Original/Replica Volume List view	Operation
Volume	Right-click the mouse and select [Transfer Buffer Status] from the popup menu. Or Select [Transfer Buffer Status] from the [Operation] menu.



Confirm the information and then click the [OK] button.



Note

The display of the transfer buffer status can be executed only at the replication between different servers.

The buffer's rate for the reception is always displayed as 0%.

Setting and display items are shown below.

Table: Setting items and display items on the transfer buffer status window

No.	Item name	Explanation
1	Volume	The volume is shown in volume_name@server_name format.
2	BoxID	Display the box identifier for the cabinet specified for the volume.
3	Buffer ID	Display the buffer identifier.
4	Use	Display the usage in the buffer.
5	Rate	Display the use rate of the buffer by percent.
6	Remote BoxID	Display the case identifier of the case set as a connection destination.

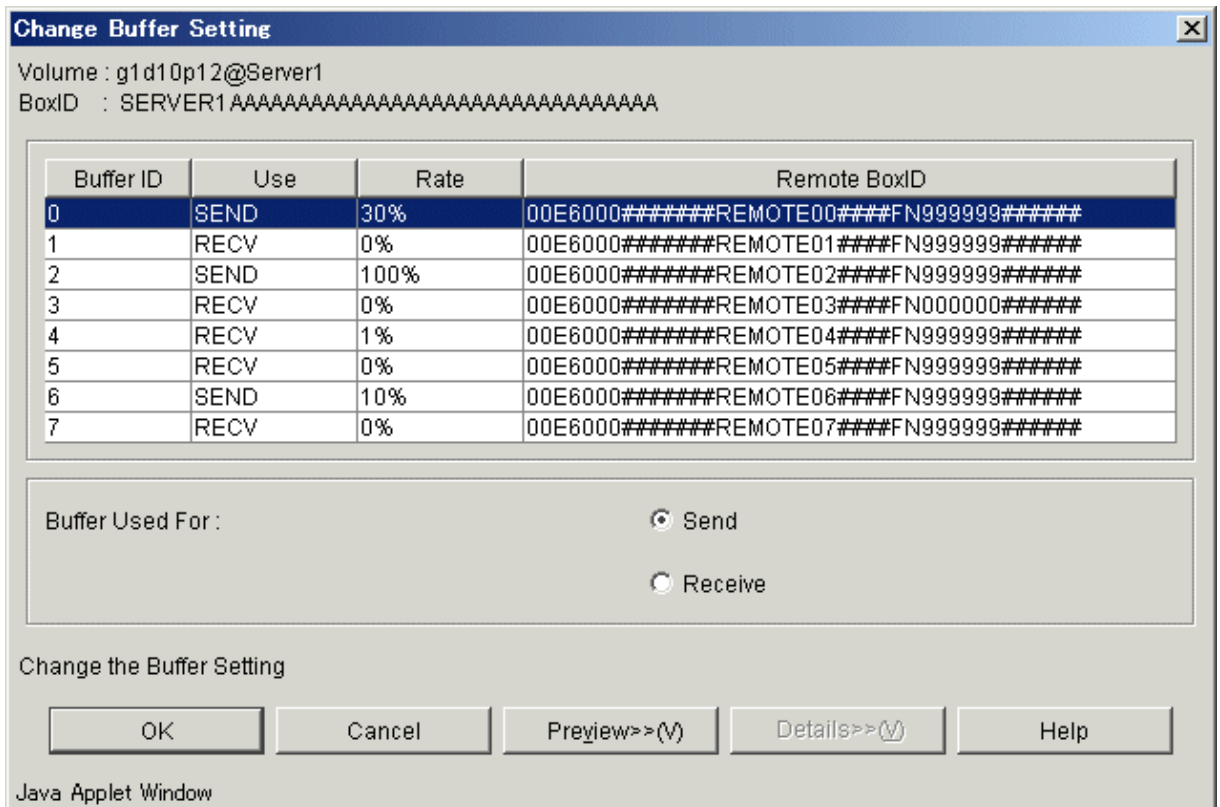
4.3.10 Change Buffer Setting window

This section describes how to change the setting of the buffer used in the asynchronous Consistency mode of REC.

The following operations can be used to display the [Change Buffer Setting] window:

Table: [Change Buffer Setting] window display method

Selection in Original/Replica Volume list view	Operation
Volume	Right-click the mouse and select [Change Buffer Setting] from the popup menu. Or Select [Change Buffer Setting] from the [Operation] menu.



Change the set value and then click the [OK] button.

The buffer setting is changed.



Note

The buffer setting change can be executed only at the replication between different servers. Moreover, it is necessary to set the buffer beforehand.
The buffer's rate for the reception is always displayed as 0%.

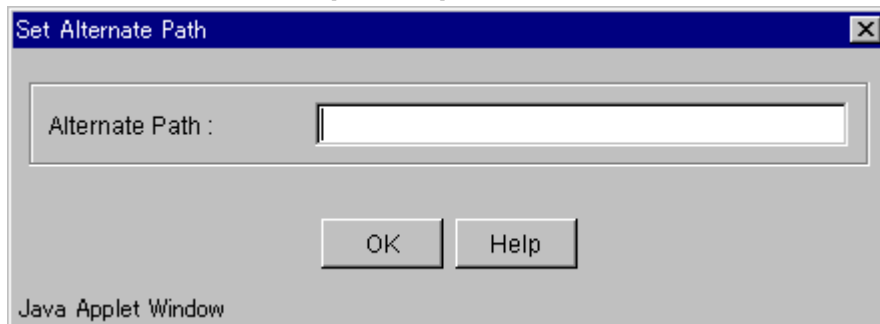
Setting and display items are shown below.

Table: Setting items and display items on the change buffer setting window

No.	Item name	Explanation
1	Volume	The volume is shown in volume_name@server_name format.
2	BoxID	Display the box identifier for the cabinet specified for the volume.
3	Buffer ID	Display the buffer identifier.
4	Use	Display the usage in the buffer.
5	Rate	Display the use rate of the buffer as a percentage.
6	Remote BoxID	Display the case identifier of the case set as a connection destination.
7	Buffer Used For	Set the usage in the changed buffer. ● Send: Sets it for the transmission. ● Receive: Sets it for the reception.

Set Alternate Path window

When the volume selected in "Original/Replica Volume list view" is a logical volume of the SDX object, an alternative path is specified on the following window.



4.4 Required Access Permission

This section describes the access permission required for the backup window. See "Authentication Feature Window Operation" for details of the access permission.

Table: Access permission requirements for replication-related windows

Operation name	Write permission	Execute permission	Read permission
Window display	Yes	Yes	Yes
Transfer Buffer Status	Yes	Yes	Yes
Start Synchronous Processing	Yes	Yes	No
Change Synchronization Mode	Yes	Yes	No
Replicate	Yes	Yes	No
Cancel Replication Processing	Yes	Yes	No
Reverse Synchronous Processing Direction	Yes	Yes	No
Perform Resource Adjustment	Yes	Yes	No
Set Replication Volume Information	Yes	No	No
Delete Replication Volume Information	Yes	No	No
Change Buffer Setting	Yes	No	No

Yes: Operation enabled

No: Operation disabled