

Hitachi Copy Manager for IBM[®] TPF Operations Guide

Hitachi Universal Storage Platform V
Hitachi Universal Storage Platform VM
Hitachi TagmaStore[™] Universal Storage Platform
Hitachi TagmaStore[™] Network Storage Controller
Hitachi Lightning 9900[™] V Series
Hitachi Lightning 9900[™]

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Acronyms and Abbreviations



Preface

This document provides detailed descriptions of the ZFDRS commands for Hitachi Copy Manager for IBM® TPF operations with Hitachi RAID storage systems.

Please read this document carefully to understand how to use this product, and maintain a copy for reference purposes.

This preface includes the following information:

- [Intended Audience](#)
- [Product Version](#)
- [Document Revision Level](#)
- [Changes in this Revision](#)
- [Document Organization](#)
- [Referenced Documents](#)
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- [Getting Help](#)
- [Comments](#)

Notice: The use of Hitachi Copy Manager for IBM® TPF and all other Hitachi Data Systems products is governed by the terms of your agreement(s) with Hitachi Data Systems.

Intended Audience

This document is intended for system administrators, Hitachi Data Systems representatives, and Authorized Service Providers who are involved in installing, configuring, and operating the Hitachi RAID storage system(s).

This document assumes the following:

- The user has a background in data processing and understands direct-access storage device (DASD) systems and their basic functions.
- The user is familiar with the Hitachi RAID storage system(s) (e.g., Universal Storage Platform V/VM) and has read the *User and Reference Guide* for the storage system(s) (e.g., *Hitachi Universal Storage Platform V/VM User and Reference Guide*, MK-96RD635).
- The user is familiar with the Hitachi ShadowImage feature.
- The user is familiar with the Hitachi TrueCopy feature.
- The user is familiar with the Hitachi Universal Replicator feature.
- The user is familiar with the data replication requirements.
- The user is familiar with the IBM[®] Transaction Processing Facility (TPF) operating system.

Product Version

This document revision applies to Copy Manager for TPF version BB and higher.

Document Revision Level

Revision	Date	Description
MK-92RD131-00	July 2002	Initial Release
MK-92RD131-01	February 2004	Revision 1, supersedes and replaces MK- MK-92RD131-00
MK-92RD131-02	August 2004	Revision 2, supersedes and replaces MK-92RD131-01
MK-92RD131-03	May 2007	Revision 3, supersedes and replaces MK-92RD131-02
MK-92RD131-04	May 2008	Revision 4, supersedes and replaces MK-92RD131-03
MK-92RD131-05	April 2009	Revision 5, supersedes and replaces MK-92RD131-04
MK-92RD131-06	August 2009	Revision 6, supersedes and replaces MK-92RD131-05

Changes in this Revision

- Added the ZFDRS RCUREC CDVDEF command.
- Changed the OFFREC command device to be called a control device.
- Corrected error in ZFDRS COPYMGR format to use RCUREC and not CDVREC.
- Corrected the ZFDRS CONFIG example to use a password.
- Added the IOSDA parameter to the ZFDSR RCUREC command.

Document Organization

The following table provides an overview of the contents and organization of this document. Click the [chapter title](#) in the left column to go to that chapter. The first page of each chapter provides links to the sections in that chapter.

Chapter	Description
Overview of Copy Manager for TPF	Provides an overview of Copy Manager for TPF operations.
ZFDRS Commands for Copy Manage for TPF	Provides detailed descriptions of the ZFDRS commands for the Copy Manager for TPF software.
Troubleshooting	Provides troubleshooting information and instructions for calling technical support.
Acronyms and Abbreviations	Defines the acronyms and abbreviations used in this document.

Referenced Documents

- Other Hitachi Copy Manager for TPF documents:
 - *Hitachi Copy Manager for IBM® TPF Administrator's Guide*, MK-92RD129
 - *Hitachi Copy Manager for IBM® TPF Messages and Codes*, MK-92RD130
- Hitachi Universal Storage Platform V/VM documents:
 - *User and Reference Guide*, MK-96RD635
 - *Hitachi TrueCopy for IBM® z/OS® User's Guide*, MK-96RD623
 - *Hitachi ShadowImage for IBM® z/OS® User's Guide*, MK-96RD619
 - *Hitachi Universal Replicator for IBM® z/OS® User's Guide*, MK-96RD625
 - *Storage Navigator User's Guide*, MK-96RD621
- Hitachi TagmaStore™ Universal Storage Platform and Network Storage Controller documents:
 - *Universal Storage Platform User and Reference Guide*, MK-94RD231
 - *Network Storage Controller User and Reference Guide*, MK-95RD279
 - *Hitachi TrueCopy for IBM® z/OS® User and Reference Guide*, MK-94RD214
 - *Hitachi ShadowImage for IBM® z/OS® User's Guide*, MK-94RD212
 - *Hitachi Universal Replicator for z/OS® User's Guide*, MK-94RD224
 - *Storage Navigator User's Guide*, MK-94RD206
- Hitachi Lightning 9900™ V Series documents:
 - *User and Reference Guide*, MK-92RD100
 - *Hitachi TrueCopy – S/390® User and Reference Guide*, MK-92RD107
 - *Hitachi ShadowImage – S/390® User's Guide*, MK-92RD109
 - *Storage Navigator User's Guide*, MK-92RD101
- Hitachi Lightning 9900™ documents:
 - *User and Reference Guide*, MK-90RD008
 - *Hitachi TrueCopy – S/390® User and Reference Guide*, MK-91RD050
 - *Hitachi ShadowImage – S/390® User's Guide*, MK-90RD012
 - *Remote Console User's Guide*, MK-90RD003
- IBM documents:
 - *TPF Database Reference*, SH31-0143-14
 - *IBM 3990 Transaction Processing Facility Support RPOs*, GA32-0134-03

Document Conventions





The term “Hitachi RAID storage system” refers to all supported Hitachi storage systems, unless otherwise noted.

The terms used for the Hitachi RAID storage systems refer to all models of the storage system, unless otherwise noted. For example, “Universal Storage Platform V” refers to all models of the USP V, unless otherwise noted.

This document uses the following typographic conventions:

Convention	Description
Bold	Indicates text on a window, other than the window title, including menus, menu options, buttons, fields, and labels. Example: Click OK .
<i>Italic</i>	Indicates a variable, which is a placeholder for actual text provided by the user or system. Example: copy <i>source-file target-file</i> Note: Angled brackets (< >) are also used to indicate variables.
screen/code	Indicates text that is displayed on screen or entered by the user. Example: # pairdisplay -g oradb
< > angled brackets	Indicates a variable, which is a placeholder for actual text provided by the user or system. Example: # pairdisplay -g <group> Note: Italic font is also used to indicate variables.
[] square brackets	Indicates optional values. Example: [a b] indicates that you can choose a, b, or nothing.
{ } braces	Indicates required or expected values. Example: { a b } indicates that you must choose either a or b.
vertical bar	Indicates that you have a choice between two or more options or arguments. Examples: [a b] indicates that you can choose a, b, or nothing. { a b } indicates that you must choose either a or b.
underline	Indicates the default value. Example: [<u>a</u> b]

This document uses the following icons to draw attention to information:

Icon	Meaning	Description
	Note	Calls attention to important and/or additional information.
	Tip	Provides helpful information, guidelines, or suggestions for performing tasks more effectively.
	Caution	Warns the user of adverse conditions and/or consequences (e.g., disruptive operations).
	WARNING	Warns the user of severe conditions and/or consequences (e.g., destructive operations).

Convention for Storage Capacity Values

Physical storage capacity values (e.g., disk drive capacity) are calculated based on the following values:

- 1 KB = 1,000 bytes
- 1 MB = 1,000² bytes
- 1 GB = 1,000³ bytes
- 1 TB = 1,000⁴ bytes
- 1 PB = 1,000⁵ bytes

Logical storage capacity values (e.g., logical device capacity) are calculated based on the following values:

- 1 KB = 1,024 (2¹⁰) bytes
- 1 MB = 1,024 KB or 1,024² bytes
- 1 GB = 1,024 MB or 1,024³ bytes
- 1 TB = 1,024 GB or 1,024⁴ bytes
- 1 PB = 1,024 TB or 1,024⁵ bytes
- 1 block = 512 bytes

Getting Help

If you need to call the Hitachi Data Systems Support Center, make sure to provide as much information about the problem as possible, including:

- The circumstances surrounding the error or failure.
- The exact content of any error message(s) displayed on the host(s).
- The exact content of any error message(s) displayed on Storage Navigator.
- The service information messages (SIMs), including reference codes and severity levels, logged at the host and displayed by Storage Navigator.

The Hitachi Data Systems customer support staff is available 24 hours/day, seven days a week. If you need technical support, please call:

- United States: (800) 446-0744
- Outside the United States: (858) 547-4526

Comments

Please send us your comments on this document: doc.comments@hds.com. Include the document title, number, and revision, and refer to specific section(s) and paragraph(s) whenever possible.

Thank you! (All comments become the property of Hitachi Data Systems.)

Overview of Copy Manager for TPF

The Hitachi Copy Manager for IBM® TPF software allows Transaction Processing Facility (TPF) users to control DASD copy functions on Hitachi RAID storage systems from TPF. Copy Manager for TPF provides a TPF interface that is simple to install and use. With one TPF operator entry, the TPF user can control sessions on the following Hitachi products for IBM over the entire TPF complex: ShadowImage (local copy), synchronous TrueCopy (remote copy), TrueCopy Asynchronous (remote copy), or Universal Replicator (remote copy). Copy Manager for TPF provides users the ability to establish, split, delete, or resync those sessions with one entry. With no TPF control program changes, Copy Manager for TPF requires minimal effort to incorporate into a TPF complex.

This document provides detailed descriptions of the ZFDRS commands for the Hitachi Copy Manager for TPF software. For further information on Copy Manager for TPF operations, please refer to the *Hitachi Copy Manager for TPF Administrator's Guide*. For information on the error codes and messages output by the Copy Manager for TPF software, please refer to the *Hitachi Copy Manager for TPF Messages and Codes* document.

ZFDRS Commands for Copy Manager for TPF

This chapter provides detailed descriptions of the ZFDRS commands for the Copy Manager for TPF software:

- ❑ [ZFDRS ESTABLISH – Establish copying of devices](#)
- ❑ [ZFDRS SPLIT – Split copying of devices](#)
- ❑ [ZFDRS PRESET – Control Preset SPLIT](#)
- ❑ [ZFDRS RESUME \(RESYNC\) – Resume copying of devices](#)
- ❑ [ZFDRS REVERSE – Reverse resume \(resync\) copying of devices](#)
- ❑ [ZFDRS DELETE – Delete copying of devices](#)
- ❑ [ZFDRS Local STATUS – Display copying device status for ShadowImage](#)
- ❑ [ZFDRS Remote STATUS – Display copying device status for TrueCopy](#)
- ❑ [ZFDRS Remote STATUS – Display copying device status for Universal Replicator](#)
- ❑ [ZFDRS STATUS SYSTEM – Display TPF system copying status](#)
- ❑ [ZFDRS STATUS DUMP – Display ShadowImage, TrueCopy, or Universal Replicator status bits](#)
- ❑ [ZFDRS CONFIG – Initialize a set](#)
- ❑ [ZFDRS CONFIG – Display copy pair configuration definition table](#)
- ❑ [ZFDRS CONFIG – Maintain copy pair configuration definition table](#)
- ❑ [ZFDRS COPYMGR INIT – Initialize or display the Copy Manager system control record](#)
- ❑ [ZFDRS COPYMGR – Define Copy Manager system control records](#)
- ❑ [ZFDRS COPYMGR – Define Copy Manager system default record ID](#)
- ❑ [ZFDRS SETREC INIT – Initialize the set index record](#)
- ❑ [ZFDRS SETREC – Define a set in the set index record](#)
- ❑ [ZFDRS OFFREC INIT – Initialize the offline volume control device definition record](#)

- [ZFDRS OFFREC – Define a control device in the offline volume control device definition record](#)
- [ZFDRS RCUREC INIT – Initialize the remote control unit command device definition record](#)
- [ZFDRS RCUREC – Define a command device in the remote control unit command device definition record](#)
- [ZFDRS RCUREC CDVDEF – Send a “define command device request” to a local or remote control unit](#)

For further information on Copy Manager for TPF operations, refer to the *Hitachi Copy Manager for TPF Administrator's Guide*.

For information on the Copy Manager for TPF error codes and messages, refer to the *Hitachi Copy Manager for TPF Messages and Codes* document.

For further information on device copy, refer to the following IBM documents:

- *TPF Database Reference*
- *IBM 3990 Transaction processing Facility Support RPQs*

ZFDRS ESTABLISH – Establish copying of devices

The ESTABLISH command issues an Establish Pair command to the devices in a set's copy pair configuration definition record. The command can be issued to all, some, or one device in a chosen set.

Requirements and Restrictions

The set's copy pair configuration definition records must be set up correctly.

The specified volume pair status must be simplex.

Format

```

                                     +- --SLOW-- |
>>--ZFDRS -----Local-----ESTablish-----SETname-setname----->
      +- -Remote--+                                     +- --FAST-- |
                                     |
      +- --ALL-----+
>-- -----><
      +- --Dev-XXXX-----+ +- -TVONline----+ +- -NOCOPY--+
      +- --SSSid -XXXX-+
                                     |
>-- -----><
      +- BP--+      +- PASSWORD-password --+

```

Local

The *Local Replication* copy pair configuration definition records will be used.

Remote

The *Remote Replication* copy pair configuration definition records will be used.

SET-setname

Variable length set name up to 16 characters.

SLOW

Defines that the synchronization process is run slowly. This default setting minimizes the impact on the source volume performance.

FAST

Defines that the synchronization process is run quickly. This setting could impact the source volume performance. Consult with Hitachi Data Systems TPF Engineering before using this parameter.

ALL

Specifies that all copy pairs defined in the set's copy pair configuration definition record(s) are to be processed.

DEV-xxxx

Specifies a single device is to be processed.

SSSID-xxxx

Specifies that all devices for a single SSID are to be processed.

BP

Bypass checks that all ensure devices are in the correct state for the requested action.

TVONline

This parameter causes the pair to be established without checking to see if target volume is online to any host. Extreme care must be exercised if using this parameter. Active volumes in use by a host can be overwritten if used accidentally on the incorrect volumes. The PASSWORD option is required when using TVONLINE.

PASSword-password

The TVONLINE parameter requires a password. The customer defines this password during their installation of Copy Manager for TPF (see the *Copy Manager for TPF Administrator's Guide*).

NOCOPY

This parameter is valid for TrueCopy only. NOCOPY causes the pair to be established without copying the data. The VSN will be copied. This can be used as a way to ensure the entire set is in the correct state to begin a copy without overwriting any of the data on the volumes except the VOLSER.

Additional Information

Online help information is available for this functional message. To display the help information, enter one of the following:

```
ZFDRS
ZFDRS HELP
ZFDRS HELP ESTABLISH
```

Examples

```
ZFDRS LOCAL ESTABLISH SET-PRODCOPY
ZFDRS R EST SET-TESTCOPY NOCOPY
ZFDRS R EST SET-TESTCOPY SSID-1700
ZFDRS L EST SET-TESTMONDAY FAST D-7102
```

ZFDRS SPLIT – Split copying of devices

The SPLIT command issues a Split Pair command to the devices in a set's copy pair configuration definition record. The command can be issued to all, some, or one device in a chosen set.

Requirements and Restrictions

The set's copy pair configuration definition records being used must be set up correctly.

When using ShadowImage, the specified volume pair status must be duplex.

When using TrueCopy or Universal Replicator, the specified volume pair status must be duplex or pending duplex.

Format

```
>>--ZFDRS  -----Local-----SPLit  -----SETname-setname----->
      +- -Remote--+

      +- --ALL-----+
>-- -----><
      +- --Dev-XXXX-----+      +- BP--+
      +- --SSSid -XXXX-+
```

Local

The *Local Replication* copy pair configuration definition records will be used.

Remote

The *Remote Replication* copy pair configuration definition records will be used.

SET-setname

Variable length set name up to 16 characters.

ALL

Specifies that all copy pairs defined in the set's copy pair configuration definition record(s) are to be processed.

DEV-xxxx

Specifies a single device is to be processed.

SSSID-xxxx

Specifies all devices in a single SSID are to be processed.

BP

Bypass checks that all ensure devices are in the correct state for the requested action.

Additional Information

Online help information is available for this functional message. To display the help information, enter one of the following:

```
ZFDRS  
ZFDRS HELP  
ZFDRS HELP SPLIT
```

Examples

```
ZFDRS LOCAL SPLIT SET-TESTSET1  
ZFDRS REMOTE SPL SET-TESTSET2 BP  
ZFDRS L SPL SET-SHADOWIMAGE1 D-1000
```

ZFDRS PRESET – Control Preset SPLIT

Use this command to define, remove, and query preset point-in-time split.

Requirements and Restrictions

The set's copy pair configuration definition records must be set up correctly.

Asynchronous pairs must be established before entry is made.

For ShadowImage, the specified volume pair status (Asynchronous Copy) must be duplex.

For TrueCopy or Universal Replicator, the specified volume pair status (Asynchronous Copy) must be duplex or pending duplex.

Format

```
>>--ZFDRS ---Remote ---PREset -----DEFine ----SEtname-setname----->
      +- -Local----+          +- -CANcel--+
                                   +- -STatus--+

>---- Time-hhmmss -----><
              +- DATE-mmddyy --+
```

Remote

The *Remote Replication* copy pair configuration definition records will be used.

Local

The *Local Replication* copy pair configuration definition records will be used.

SET-setname

Variable length set name up to 16 characters that is to be initialized.

TIME-hhmmss

Time for this set to split.

DATE-mmddyy

Date for this set to split.. If not entered, the date defaults to today.

Additional Information

Online help information is available for this functional message. To display the help information, enter one of the following:

```
ZFDRS
ZFDRS HELP
ZFDRS HELP PRESET
```

Examples

```
ZFDRS R PRESET DEF SET-POINTINTIME TIME-221500 DATE-102013
ZFDRS R PRESET STATUS SET-POINTINTIME
ZFDRS R PRESET CANCEL SET-POINTINTIME
ZFDRS LOCAL PRESET DEF SET-SIPOINTINTIME TIME-230000 DATE-031314
```

ZFDRS RESUME (RESYNC) – Resume copying of devices

The RESUME command issues a Resume Pair command to the devices in a set's copy pair configuration definition record. Use this command to resume copy operations after copying has been split. The command can be issued to all, some, or one device in a chosen set.

Requirements and Restrictions

The set's copy pair configuration definition records must be set up correctly.

The specified volume pair status must be split.

Format

```
>>--ZFDRS -----Local-----RESume ----SETname-setname----->
      +- -Remote--+ +- -RESync--+          +- --SLOW-- |
                                           +- --FAST-- |

      +- --ALL-----+
>-- -----><
      +- --Dev-XXXX-----+ +- TVONLINE--+
      +- --SSSid -XXXX--+

>-- -----><
      +- BP--+      +- PASSWORD-password --+
```

Local

The *Local Replication* copy pair configuration definition records will be used.

Remote

The *Remote Replication* copy pair configuration definition records will be used.

SET-setname

Variable length set name up to 16 characters.

SLOW

Defines that the synchronization process is run slowly. This default setting minimizes the impact on the source volume's performance.

FAST

Defines that the synchronization process is run quickly. This setting could impact the source volume's performance. Consult with Hitachi Data Systems TPF Engineering before using this parameter.

ALL

Specifies that all copy pairs defined in the set copy pair configuration definition record(s) are to be processed.

SSSID-xxxx

Specifies all devices in a single SSID are to be processed.

DEV-xxxx

Specifies a single device is to be processed.

BP

Bypass checks that all ensure devices are in the correct state for the requested action.

TVONline

This parameter will cause the pair to be established without checking to see if the target volume is online to any host. Extreme care must be exercised if using this parameter. Active volumes in use by a host can be overwritten if used accidentally on the incorrect volumes. The PASSWORD option is required when using this parameter.

PASSword-password

TVONLINE parameter requires a password. The customer defines this password during their installation of Copy Manager for TPF (see the *Copy Manager for TPF Administrator's Guide*).

Additional Information

Online help information is available for this functional message. To display the help information, enter one of the following:

```
ZFDRS  
ZFDRS HELP  
ZFDRS HELP RESUME
```

Examples

```
ZFDRS LOCAL RESUME SET-DAILYCOPY1  
ZFDRS L RES SET-SET2 SSS-1708  
ZFDRS R RES SET-SET3 FAST D-7102
```


ZFDRS REVERSE – Reverse resume (resync) copying of devices

The REVERSE command issues a reverse resume (resync) pair command to the devices in a set's copy pair configuration definition record. Use this command to reverse resume (resync) copy operations after copying has been split. The command can be issued to all, some, or one device in a chosen set.

Requirements and Restrictions

The set's copy pair configuration definition records being used must be set up correctly.

The specified volume pair status must be split.

Format

```
>>--ZFDRS -----Local-----REVerse ----SETname-setname----->
      +- -Remote--+          +- --SLOW--|
                                     +- --FAST--|

      +- --ALL-----+
>-----><
      +- --Dev-XXXX-----+ +- TVONLINE--+
      +- --SSSid -XXXX-+

>-----><
      +- BP--+ +- PASSWORD-password --+
```

Local

The *Local Replication* copy pair configuration definition records will be used.

Remote

The *Remote Replication* copy pair configuration definition records will be used.

SET-setname

Variable length set name up to 16 characters.

SLOW

Defines that the synchronization process is run slowly. This default setting minimizes the impact on the source volume's performance.

FAST

Defines that the synchronization process is run quickly. This setting could impact the source volume's performance. Consult with Hitachi Data Systems TPF Engineering before using this parameter.

ALL

Specifies that all copy pairs defined in the set copy pair configuration definition record(s) are to be processed.

DEV-xxxx

Specifies a single device is to be processed.

SSSID-xxxx

Specifies a single SSID is to be processed.

BP

Bypass checks that all ensure devices are in the correct state for the requested action.

TVONline

This parameter will cause the pair to be established without checking to see if target volume is online to any host. Extreme care must be exercised if using this parameter. Active volumes in use by a host can be overwritten if used accidentally on the incorrect volumes. The PASSWORD option is required when using this parameter.

PASSword-password

TVONLINE parameter requires a password. The customer defines this password during their installation of Copy Manager for TPF (see the *Copy Manager for TPF Administrator's Guide*).

Additional Information

Online help information is available for this functional message. To display the help information, enter one of the following:

```
ZFDRS
ZFDRS HELP
ZFDRS HELP REVERSE
```

Examples

```
ZFDRS LOCAL REVERSE
ZFDRS L REV SET-SET2 SSS-1708
ZFDRS L REV SET-SET3 FAST D-7102
```

ZFDRS DELETE – Delete copying of devices

The DELETE command issues a Delete Pair command to the devices in a set's copy pair configuration definition record. Use this command to stop copy operations and delete the source/target pairing immediately (buffered I/O is not processed). The command can be issued to all, some, or one device in a chosen set.

Requirements and Restrictions

The set's copy pair configuration definition record being used must be set up correctly.

The specified volume pair status must be split.

Format

```
>>--ZFDRS -----Local-----DElete ----- SETname-setname ----->
      +- -Remote--+

      +- --ALL-----+
>-----><
      +- --Dev-XXXX-----+ +- BP--+
      +- --SSSid -XXXX-+
```

Local

The *Local Replication* copy pair configuration definition records will be used.

Remote

The *Remote Replication* copy pair configuration definition records will be used.

SET-setname

Variable length set name up to 16 characters.

ALL

Specifies that all copy pairs defined in the copy pair configuration definition record(s) are to be processed.

DEV-xxxxx

Specifies a single device is to be processed.

SSSID-xxxxx

Specifies a single SSID is to be processed.

BP

Bypass checks that all ensure devices are in the correct state for the requested action.

Additional Information

Online help information is available for this functional message. To display the help information, enter one of the following:

```
ZFDRS  
ZFDRS HELP  
ZFDRS HELP DELETE
```

Examples

```
ZFDRS LOCAL DELETE SET-SET1  
ZFDRS L DEL SET-SET2 BP  
ZFDRS L DEL SET-TESTSET D-4220  
ZFDRS R DEL SET-HURRUN1 SSS-1AA0 BP
```

ZFDRS Local STATUS – Display copying device status for ShadowImage

The Local STATUS command issues a Display Status command to the devices in a set's copy pair configuration definition record. Use this command to display the status of copy operations. The command can be issued to all, some, or one device in a chosen set.

Requirements and Restrictions

The copy pair configuration definition record being used must be set up correctly.

Format

```
>>--ZFDRS ---Local----SStatus ---SETname-setname----->
                                     +- --ALL-----|
                                     +- --Dev-xxxx----+
                                     +- --SSSid-xxxx--+
                                     +- --DUplex-----+
                                     +- --PENDDuplex--+
                                     +- --Simplex-----+
                                     +- --SPLITOPr----+
                                     +- --SPLITExc----+
                                     +- --PENDSplit---+
                                     +- --RESync-----+
                                     +- --Quicksplit--+
                                     +- --REVresync---+
                                     +- --Invalid-----+
```

Local

The *Local Replication* copy pair configuration definition records will be used.

SET-setname

Variable length set name up to 16 characters.

ALL

Specifies that all copy pairs defined in the copy pair configuration definition record are to be processed.

DEV-xxxxx

Specifies a single device is to be processed.

SSSID-xxxxx

Specifies a single source SSID is to be processed.

DUPLEX

Display all modules in *duplex* status.

PENDDUPLEX

Display all modules that are *pending duplex* status.

SIMPLEX

Display all modules in *simplex* status.

SPLITOPR

Display all modules in *split by operation (operator)* status.

SPLITEXC

Display all modules in *split by exception* status.

PENDSPLIT

Display all modules in *pending split* status.

RESYNC

Display all modules in *resynchronizing (resuming)* status.

QUICKSPLIT

Display all modules that are in quick split status.

REVRESYNC

Display all modules in *reverse resynchronizing (resuming)* status.

INVALID

Display all *invalid* modules.

Additional Information

Online help information is available for this functional message. To display the help information, enter one of the following:

```
ZFDRS  
ZFDRS HELP  
ZFDRS HELP STATUS
```

Examples

```
ZFDRS LOCAL STATUS SET-SET1  
ZFDRS L STA SET-SET2 DEV-5400  
ZFDRS L STA SET-SET3 PENDDUP
```

ZFDRS Remote STATUS – Display copying device status for TrueCopy

The Remote STATUS command issues a Display Status command to the devices in a set's copy pair configuration definition record. Use this command to display the status of copy operations. The command can be issued to all, some, or one device in a chosen set.

Requirements and Restrictions

The set's copy pair configuration definition record must be set up correctly.

Format

```
>>--ZFDRS ----Remote---Status ---SETname-setname----->
                                     +- --ALL-----|
                                     +- --Dev-xxxx----+
                                     +- --SSSid-xxxx--+
                                     +- --DUplex-----+
                                     +- --PENDDuplex--+
                                     +- --SIMplex-----+
                                     +- --SPLITSVol----+
                                     +- --SPLITOPr-----+
                                     +- --SPLITTVPcu--+
                                     +- --SPLITCU-----+
                                     +- --SPLITSMPx----+
                                     +- --SPLITTVol----+
                                     +- --SPLITIML-----+
                                     +- --SPLITINit----+
                                     +- --PENDSIMP-----+
                                     +- --PENDSplit----+
                                     +- --SPLITPS-----+
                                     +- --Invalid-----+
```

Remote

TrueCopy copy pair configuration definition records will be used.

SET-setname

Variable length set name up to 16 characters.

ALL

Specifies that all copy pairs defined in the copy pair configuration definition record are to be processed.

DEV-xxxx

Specifies a single device is to be processed.

SSSID-xxxx

Specifies a single SSID is to be processed.

DUPLEX

Displays all mods in *duplex* status.

PENDDUPLEX

Displays all mods in *pending duplex* status.

SIMPLEX

Displays all mods in simplex status.

SPLITSVOL

Displays all mods in split by *source volume* status.

SPLITOPR

Displays all mods in split by *operation (operator)* status.

SPLITTVPCU

Displays all mods in split by *target volume PCU* status.

SPLITCU

Displays all mods in split by *control unit PCU* status.

SPLITSMPX

Displays all mods in split by *target volume in simplex* status.

SPLITTVOL

Displays all mods in split by *target volume* status.

SPLITIML

Displays all mods in split by *CU IML* status.

SPLITINIT

Displays all mods in *split during initial copy* status.

PENDSIMP

Displays all mods in *pending simplex* status.

PENDSPLIT

Displays all mods in *pending split* status.

SPLITPS

Displays all mods in split by *PS off* status.

INVALID

Displays all *invalid* mods.

Additional Information

Online help information is available for this functional message. To display the help information, enter one of the following:

```
ZFDRS  
ZFDRS HELP  
ZFDRS HELP STATUS
```

Examples

```
ZFDRS R STATUS SET-SET1  
ZFDRS R STA SET-SET2 DEV-5400  
ZFDRS R ST SET-SET3 PENSPLIT
```

ZFDRS Remote STATUS – Display copying device status for Universal Replicator

The Remote STATUS command issues a Display Status command to the devices in a set's copy pair configuration definition record. Use this command to display the status of copy operations. The command can be issued to all, some, or one device in a chosen set.

Requirements and Restrictions

The set's copy pair configuration definition record must be set up correctly.

Format

```
>>--ZFDRS  ----Remote---Status  ---SETname-setname----->
                                     +- --ALL-----|
                                     +- --Dev-xxxx----+
                                     +- --SSSid-xxxx--+
                                     +- --Simplex-----+
                                     +- --PendDuplex--+
                                     +- --DUplex-----+
                                     +- --SPLITOPr----+
                                     +- --SPLITTVSUSP--+
                                     +- --SPLITTVDKC--+
                                     +- --SPLITDKC----+
                                     +- --SPLITTVSX----+
                                     +- --SPLITTVINT--+
                                     +- --SPLITIML----+
                                     +- --SPLITINIT--+
                                     +- --PENDSPLIT--+
                                     +- --PENDSIMP----+
                                     +- --SPLITPS-----+
                                     +- --SPLITDIFJ----+
                                     +- --SPLITDIFX----+
                                     +- --SPLITDIFM----+
                                     +- --SPLITXFOR----+
                                     +- --SPLITJFOR----+
                                     +- --Invalid-----+
```

Remote

TrueCopy copy pair configuration definition records will be used.

SET-setname

Variable length set name up to 16 characters.

ALL

Specifies that all copy pairs defined in the copy pair configuration definition record are to be processed.

DEV-xxxx

Specifies a single device is to be processed.

SSSID-xxxx

Specifies a single SSID is to be processed.

SIMPLEX

Displays all mods in *simplex* status.

PENDDUPLEX

Displays all mods that are *pending duplex* status.

DUPLEX

Displays all mods in *duplex* status.

SPLITOPR

Displays all mods in *split by operation (operator)* status.

SPLITTVSUSP

Displays all mods in *split because target volume being suspended* status.

SPLITTVDKC

Displays all mods in *split because target volume state was updated by the primary DKC* status.

SPLITDKC

Displays all mods in *split due to DKC internal state* status.

SPLITTVSX

Displays all mods in *split because target volume changed to simplex state* status.

SPLITTVINT

Displays all mods in *split due to the target volume internal state* status.

SPLITIML

Displays all mods in *split due to primary DKC power off/on* status.

SPLITINIT

Displays all mods in *split during initial copy* status.

PENDSPLIT

Displays all mods in *pending split* status.

PENDSIMP

Displays all mods in *pending simplex* status.

SPLITPS

Displays all mods in *split due to DKC PS off* status.

SPLITDIFJ

Displays all mods in *split in the case that differential data is held as JNL* status.

SPLITDIFX

Displays all mods in split *in the case that differential data can not be held as JNL due to DKC internal state status.*

SPLITDIFM

Displays all mods in split *in the case that differential data isnot managed as JNL status.*

SPLITXFOR

Displays all mods in split *in the case that JNL resync can not be executed (Force all copy can not be executed) status.*

SPLITJFOR

Displays all mods in split *in the case that JNL resync can not be executed (Force all copy can be executed) status.*

INVALID

Displays all *invalid* mods.

Additional Information

Online help information is available for this functional message. To display the help information, enter one of the following:

```
ZFDRS  
ZFDRS HELP  
ZFDRS HELP STATUS
```

Examples

```
ZFDRS R STATUS SET-SET1  
ZFDRS R STA SET-SET2 DEV-5400  
ZFDRS R ST SET-SET3 PENSPLIT
```

ZFDRS STATUS SYSTEM – Display TPF system copying status

The STATUS SYSTEM command displays the last ShadowImage or TrueCopy operation requested on the TPF system. The display includes the set acted upon and a time and date stamp.

Requirements and Restrictions

The set index record (SETREC) must be set up correctly.

Format

```
>>--ZFDRS -----Local-----SStatus -----SYSTEM----->  
      +- -Remote--+
```

Additional Information

Online help information is available for this functional message. To display the help information, enter one of the following:

```
ZFDRS  
ZFDRS HELP  
ZFDRS HELP STATUS
```

Examples

```
ZFDRS LOCAL STATUS SYSTEM  
ZFDRS R ST SYSTEM
```

ZFDRS STATUS DUMP – Display ShadowImage, TrueCopy, or Universal Replicator status bits

The STATUS DUMP command issues a Display Status command of a device in a set's copy pair configuration definition record. This command displays the entire internal status reply for that device in dump format. The command can only be issued to one device in a chosen set.

Requirements and Restrictions

The set's copy pair configuration definition record being used must be set up correctly.

Format

```
>>--ZFDRS -----Remote----Status ---SETname-setname----DUMP---Dev-xxxx--->
      +- -Local---+
```

Remote

The *Remote Replication* copy pair configuration definition records are used.

Local

The *Local Replication* copy pair configuration definition records are used.

SET-setname

Variable length set name up to 16 characters.

DEV-xxxx

Specifies a single device is to be processed.

Additional Information

Online help information is available for this functional message. To display the help information, enter one of the following:

- ZFDRS
- ZFDRS HELP
- ZFDRS HELP STATUS

Examples

```
ZFDRS L STATUS SET-SET1 DUMP D-4000
ZFDRS R ST SET-SET2 DUMP DEV-5400
```

ZFDRS CONFIG – Initialize a set

Use this command to initialize a set's copy pair configuration definition records.

Requirements and Restrictions

The set must be defined in the set index record.

The copy pair configuration definition records must be initialized with the correct record ID.

All existing volume pairs defined for the set must be simplex or invalid status.

Format

```
>>--ZFDRS ---Local -----COnfig --- --INIT---SETname-setname----- BP ----->
      +- -Remote--+
      +- PASSWORD-password --+
```

Local

The *Local Replication* copy pair configuration definition records will be used.

Remote

The *Remote Replication* copy pair configuration definition records will be used.

SET-setname

Variable length set name up to 16 characters that is to be initialized.

PASSword-password

The INIT parameter requires a password. The customer defines this password during their installation of Copy Manager for TPF (see the *Copy Manager for TPF Administrator's Guide*).

BP

Bypass checks that all devices in this set are in the correct state (simplex or invalid) for the requested action.

Additional Information

Online help information is available for this functional message. To display the help information, enter one of the following:

```
ZFDRS  
ZFDRS HELP  
ZFDRS HELP CONFIG
```

Example

```
ZFDRS L CO INIT SET-NEWSET PASSWORD-SECRET
```


ZFDRS CONFIG – Display copy pair configuration definition table

Use this command to display the Local Replication (ShadowImage) or the Remote Replication (TrueCopy or Universal Replicator) configuration.

Requirements and Restrictions

The set being used must be defined correctly in the set index record.

The copy pair configuration definition records for the set must be set up correctly.

Format

```
>>--ZFDRS -----Local-----Config DIsplay -----SETname-setname----->
      +- -Remote--+

      +- --ALL-----+
>-- -----><
      +- --Dev-XXXX-----+
      +- --SSSid -XXXX-+
```

Local

The *Local Replication* copy pair configuration definition records will be used.

Remote

The *Remote Replication* copy pair configuration definition records will be used.

SET-setname

Variable length set name up to 16 characters.

ALL

Specifies that all copy pairs defined in the copy pair configuration definition record are to be displayed.

DEV-xxxxx

Specifies a single device is to be displayed.

SSSID-xxxxx

Specifies a single SSID is to be displayed.

Additional Information

Online help information is available for this functional message. To display the help information, enter one of the following:

```
ZFDRS  
ZFDRS HELP  
ZFDRS HELP CONFIG DISPLAY
```

Examples

```
ZFDRS LOCAL CONFIG DISPLAY SET-SET1  
ZFDRS REMOTE CONFIG DISPLAY SET-SET2 SSSID-A000  
ZFDRS LOCAL CONFIG DISPLAY SET-SET3 DEV-7102
```

ZFDRS CONFIG – Maintain copy pair configuration definition table

Use this command to maintain the Local Replication (ShadowImage) or the Remote Replication (TrueCopy or Universal Replicator) configuration.

Requirements and Restrictions

The set being used must be defined correctly in the set index record.

The copy pair configuration definition records for the set must be set up correctly.

If changing or removing volume pair definition in a set, that volume pair must have simplex or invalid status.

All records in a set are keyed by the device number. A record in a SET may be referenced only by the device number.

The device number in a set may not be changed.

The device number in a set may only be used once.

A target definition in a set may only be used once (that is, no two source volumes may use the same target volume within a single set).

Format

```
>>--ZFDRS -----Local-----Config--- --Change-- ---SETname-setname---->
      +- -Remote--+                +- --Add----- |
                                      +- --REMove--  |

>-- --Dev-XXXX--- ----->
      +- --SSSid -XX----- |
      +- --SSEr-YYYYYY---- |
      +- --SLcu-XX----- |
      +- --SVol-XX----- |
      +- --TSSid-XX----- |
      +- --TSEr-YYYYYY---- |
      +- --TLcu-XX----- |
      +- --TVol-XX----- |
      +- --CGID-XX----- |
      +- --JNLG-XX----- |
      +- --COMMENT-cccccc- |
      +- --COUNT-cc----- |
      +- --LASTDEV-dddd--- |

>-- ----- SOURCE-----+          >-----><
      +- NOSOURCE--+                +- -BP
```

Local

The *Local Replication* copy pair configuration definition records will be used.

Remote

The *Remote Replication* copy pair configuration definition records will be used.

CHAnge

Change an existing volume pair's definition in a set.

ADD

Add a new volume pair and its definition to a set.

REMove

REMOVE an existing volume pair in a set.

SET-*setname*

Variable length set name up to 16 characters.

DEV

Device to add, change, or remove in the set.

SSSID

Source volume SSID (valid only for change or add operations).

SSER

Source volume control unit serial number(valid only for change or add operations).

SLCU

Source volume LCU number(valid only for change or add operations).

SVOL

Source volume number in LCU(valid only for change or add operations).

TSSID

Target volume subsystem ID(valid only for change or add operations).

TSER

Target volume control unit serial number (TrueCopy or Universal Replicator only). When defining a ShadowImage pair, the SSER value is used(valid only for change or add operations).

TLC

Target volume LCU number(valid only for change or add operations)..

TVOL

Target volume number in LCU(valid only for change or add operations).

CGID

Consistency Group ID(valid only for change or add operations).

JNLG

Journal Group number(valid only for change or add operations).

COMMENT

A six (6) character comment field(valid only for change or add operations).

COUNT

Specifies the count of pairs to generate or change. The default count is 1. For each new pair generated or changed, the Device number, the SVOL number and the TVOL number are incremented by 1 (one). No other data fields are changed. Count is only valid for change or add operations).

LASTDEV

Specifies a the end of a range of pairs to generate or change. The range is from DEVICE parameter to the LASTDEV parameter. The default value for LASTDEV is the value entered in the DEVICE field. For each new pair generated or changed, the Device number, the SVOL number and the TVOL number are incremented by 1 (one). No other data fields are changed. Count is only valid for change or add operations).

BP

Bypass checks that all ensure devices are in the correct state (simplex or invalid) for Change or Remove operations.

SOURCE

Indicates that the source volume specified (SVOL) is the same volume as the device to which the command will be issued (DEV). ShadowImage defaults to SOURCE, and TrueCopy defaults to NOSOURCE(valid only for change or add)..

NOSOURCE

Indicates that the source volume specified (SVOL) is a different volume than the device to which the command will be issued (DEV). ShadowImage defaults to SOURCE, and TrueCopy defaults to NOSOURCE(valid only for change or add)..

Additional Information

Online help information is available for this functional message. To display the help information, enter one of the following:

```
ZFDRS
ZFDRS HELP
ZFDRS HELP CONFIG
```

Examples

```
ZFDRS LOCAL CONFIG CHANGE SET-SET1 DEV-7201 SSSID-A400 COMMENT-TEST01
ZFDRS R CO A SET-SET2 D-7209 SSE-11234 SSS-A400 SV-00 SL-1 TV-40 TSS-A409
TL-8 COMMENT-HD1000
ZFDRS LOCAL CONFIG REMOVE SET-SET3 DEV-7208
```

The next two entries are equivalent. They both generate pairs for devices 3000 to 3007.

```
ZFDRS R CO A SET-SET2 D-3000 SSE-331122 SSS-A400 SV-00 SL-1 TV-40 TSS-A409
TL-8 COMMENT-HD1000 COUNT-8
ZFDRS R CO A SET-SET2 D-3000 SSE-331122 SSS-A400 SV-00 SL-1 TV-40 TSS-A409
TL-8 COMMENT-HD1000 LASTDEV-3007
```

The next two entries are equivalent. They both change the TARGET SSSID of the pairs for devices 3000 to 3007.

```
ZFDRS R CO C SET-SET2 D-3000 TSS-1234 COUNT-8
ZFDRS R CO A SET-SET2 D-3000 TSS-1234 LASTDEV-3007
```

ZFDRS COPYMGR INIT – Initialize or display the Copy Manager system control record

The COPYMGR INIT command initializes the Copy Manager system control record. The COPYMGR DISPLAY command displays the Copy Manager system control record.

Requirements and Restrictions

The COPYMGR system control record FACE type, ordinal, and record ID must be defined by the customer in the Copy Manager assembler program, BHDZ (see the *Copy Manager for TPF Administrator's Guide*).

The fixed file record to be used for the Copy Manager system control record must have the record ID that was defined in Copy Manager Assembler program, BHDZ (see ZFDRS COPYMGR and the *Copy Manager for TPF Administrator's Guide*).

Format

```
>>--ZFDRS --- COPYMGR ----- INIT ----- PASSWORD-password -----  
--<<
```

INIT

Clears the Copy Manager system control record.

PASSword-password

The INIT parameter requires a password. The customer defines this password during their installation of Copy Manager for TPF (see *Copy Manager for TPF Administrator's Guide*).

Additional Information

Online help information is available for this functional message. To display the help information, enter one of the following:

```
ZFDRS  
ZFDRS HELP  
ZFDRS HELP COPYMGR
```

Example

```
ZFDRS COPYMGR INIT PASSWORD-SECRET
```

ZFDRS COPYMGR – Define Copy Manager system control records

Use this command to define the location of Copy Manager's system control records. This command provides for a default record ID to be defined for the Copy Manager system.

Requirements and Restrictions

The COPYMGR system control record FACE type, ordinal, and record ID must be defined by the customer in the Copy Manager assembler program, BHDZ (see the *Copy Manager for TPF Administrator's Guide*).

The fixed file record to be used for the Copy Manager system control record must have the record ID that was defined in Copy Manager Assembler program, BHDZ (see ZFDRS COPYMGR and the *Copy Manager for TPF Administrator's Guide*).

The COPYMGR system control record must be initialized before the first use of this function (before the first use of the Define Copy Manager system control record function). See ZFDRS COPYMGR INIT or the *Copy Manager for TPF Administrators Guide*.

Format

```
>>--ZFDRS ---COPYMGR -----SETREC ----->
      +- -OFFREC-----+      +- -ADD-----+
      +- -RCUREC-----+      +- -CHAnge----+
      +- -DISPLAY-----+      +- -REMove----+

>---- FAcetype-nnnnnnn --- ORD-xxxxxxxxx ----->
                                           +- RECID-rrrr----+
```

SETREC

The set index record.

OFFREC

The offline volume command device definition record.

RCUREC

The Remote Control Unit command device definition record.

ADD

Add a new Copy Manager control record to the Copy Manager system control record.

REM

Remove a Copy Manager control record from the Copy Manager system control record.

CHA

Change a Copy Manager control record in the Copy Manager system control record

DISPLAY

Display all the Copy Manger control records and the system default record ID.

FACE-*nnnnnnnn*

Beginning FACE type (without the '#' preceding) of this Copy Manager control record (valid only for change and add operations).

ORD-*xxxxxxxxxx*

Ordinal of this Copy Manager control record (valid only for change and add operations).

RECID-*rrrr*

The record ID of this Copy Manager control record. For a hexadecimal record ID, enter the four-character hexadecimal value (RECID-C1C1). For an upper case alphabetic record ID, enter the two-character value (RECID-AA). If omitted, the default record ID defined in the COPYMGR system control record (defined by ZFDRS COPYMGR DEFAULTRECID) will be used (Valid only for change and add operations).

Additional Information

Online help information is available for this functional message. To display the help information, enter one of the following:

```
ZFDRS
ZFDRS HELP
ZFDRS HELP COPYMGR
```

Examples

```
ZFDRS COPYMGR SETREC ADD FACETYPE-CMRECS ORD-100 RECID-HD
ZFDRS COPYMGR OFFREC ADD FACETYPE-CMRECS ORD-101 RECID-HD
ZFDRS COPYMGR RCUREC ADD FACETYPE-CMRECS ORD-102 RECID-HD
ZFDRS COPYMGR DISPLAY
```

ZFDRS COPYMGR – Define Copy Manager system default record ID

Use this command to define the default record ID to be used throughout the Copy Manager processes. This record ID will be used for all record retrieval unless the default record ID overridden

Requirements and Restrictions

The COPYMGR system control record FACE type, ordinal, and record ID must be defined by the customer in the Copy Manager assembler program, BHDZ (see the *Copy Manager for TPF Administrator's Guide*).

The fixed file record to be used for the Copy Manager system control record must have the record ID that was defined in Copy Manager Assembler program, BHDZ (see ZFDRS COPYMGR and the *Copy Manager for TPF Administrator's Guide*).

The COPYMGR system control record must be initialized before the first use of this function (before the first use of the DEFAULTRECID Copy Manager system control record function). See ZFDRS COPYMGR INIT or the *Copy Manager for TPF Administrators Guide*.

Format

```
>>--ZFDRS ---COPYMGR -----DEFAULTRECID ----- RECID-rrrr -----><
```

RECID-rrrr

The record ID of this Copy Manager control record. For a hexadecimal record ID, enter the four-character hexadecimal value (RECID-C1C1). For an upper case alphabetic record ID, enter the two-character value (RECID-AA).

Additional Information

Online help information is available for this functional message. To display the help information, enter one of the following:

```
ZFDRS  
ZFDRS HELP  
ZFDRS HELP COPYMGR
```

Examples

```
ZFDRS COPYMGR DEFAULTRECID RECID-FA01  
ZFDRS COPYMGR DEF RECID-HD
```

ZFDRS SETREC INIT – Initialize the set index record

The SETREC INIT command initializes the set index record.

Requirements and Restrictions

The SETREC must be defined in the COPYMGR control record (see ZFDRS COPYMGR and the *Copy Manager for TPF Administrator's Guide*).

The fixed file record to be used for the set index record (SETREC) must have the same record ID as the record ID defined in the COPYMGR control record for SETREC (see ZFDRS COPYMGR and the *Copy Manager for TPF Administrator's Guide*).

If there are existing SET's defined in the set index record, all pairs in all set's must be simplex or invalid status.

Format

```
>>--ZFDRS --- SETREC ----- INIT ----- PASSWORD-password -----
><

      +- BP--+
```

INIT

Clears the set index record.

PASSword-password

The INIT parameter requires a password. The customer defines this password during their installation of Copy Manager (see *Copy Manager for TPF Administrator's Guide*).

BP

Bypass checks that all ensure devices are in the correct state (simplex or invalid) for the requested action.

Additional Information

Online help information is available for this functional message. To display the help information, enter one of the following:

```
ZFDRS  
ZFDRS HELP  
ZFDRS HELP SETREC
```

Example

```
ZFDRS SETREC INIT PASSWORD-SECRET BP
```

ZFDRS SETREC – Define a set in the set index record

Use this command to define sets or change definition of sets or remove sets in the set index record. This command will display all the sets in the set index record along with each set's definition.

Requirements and Restrictions

The SETREC must be defined in the COPYMGR control record (see ZFDRS COPYMGR and the *Copy Manager for TPF Administrator's Guide*).

The fixed file record to be used for the set index record (SETREC) must have the same record ID as the record ID defined in the COPYMGR control record for SETREC (see ZFDRS COPYMGR and the *Copy Manager for TPF Administrator's Guide*).

If there are existing set's defined in the set index record, all pairs in all set's must be simplex or invalid status.

The set index record must be initialized (see ZFDRS SETREC INIT). The set index record will support up to 58 sets (58 total sets of both local and remote sets).

If changing or removing a set definition, all existing volume pairs defined for that set must be simplex or invalid status.

Format

```
>>--ZFDRS  ---SETREC  -----  -----  Local ----->
                                     +- -ADD-----+      +- -Remote---+
                                     +- -CHange---+
                                     +- -REMove---+
                                     +- -DISplay-+

----- SETname-nnnnnnnnnnnnnnnnn -----> FAcetype-nnnnnnn ----->

-----ORD-xxxxxxxxx ----->
                                     +- RECid-rrrr--+      +- BP--+

-----NOASYNC -----NOHUR-----NOOFFLINE----->
+- ---ASYNC---+      +- --HUR---+      +- --OFFLINE---+

-----NOHOPcontrolunit-----><
+- ---HOPcontrolunit---+
```

ADD

Add a new Set name to the set index record.

REM

Remove an existing set name from the set index record.

CHA

Change the properties (location) of a set name from the set index record.

DISPLAY

Display all the sets defined in the set index record.

Local

Define the *Local Replication* set name. Local or Remote is required for the Add, Change, Remove and Display operations.

Remote

Define The *Remote Replication* set name. Local or Remote is required for the Add, Change, Remove and Display operations.

SET-setname

Variable length set name up to 16 characters that is to be defined. Required for the Add, Change, Remove and Display operations.

FACE-nnnnnnnn

Beginning FACE type (without the '#' preceding) of this set name. Valid only for the Add or Change operations.

ORD-xxxxxxxxxx

Beginning ordinal of this set name. Valid only for the Add or Change operations.

RECID-rrrr

The record ID of all copy pair configuration definition record's for this set name. For a hexadecimal record ID, enter the four-character hexadecimal value (RECID-C1C1). For an upper case alphabetic record ID, enter the two-character value (RECID-AA). If omitted, the default record ID defined in the set index record (defined by ZFDRS SETREC) will be used. Valid only for the Add or Change operations.

NOASYNC

Indicates that this set will use Synchronous Copy for Local Replication or Remote Replication. NOASYNC is the Default. Valid only for the Add or Change operations.

ASYNC

Indicates that this set will use Asynchronous Copy for Local Replication or Remote Replication. NOASYNC is the default. Valid only for the Add or Change operations.

NOHUR

Indicates that this set will use TrueCopy Copy for Remote Replication. NOHUR is the Default. Valid only for the Add or Change operations.

HUR

Indicates that this set will use Universal Replicator Copy for Remote Replication. NOHUR is the Default. Valid only for the Add or Change operations.

NOOFFLINE

Indicates that volumes that are offline to TPF may not be used as a device number (SDA) in a set. Device numbers (SDAs) that are offline to TPF will show a status of Invalid. NOOFFLINE is the Default. Valid only for the Add or Change operations.

OFFLINE

Indicates that volumes that are offline to TPF may be used as a device number in a set. NOOFFLINE is the Default. Valid only for the Add or Change operations.

NOHOPCONTROLUNIT

Indicates that this set may not use remote control unit controlled replication. NOHOPCONTROLUNIT is the Default. Valid only for the Add or Change operations.

HOPCONTROLUNIT

Indicates that this set may use remote control unit controlled replication. NOHOPCONTROLUNIT is the Default. Valid only for the Add or Change operations.

BP

Bypass checks that all volume pairs for this set name are in the correct state (simplex or invalid). Valid only for the Change or Remove operations.

Additional Information

Online help information is available for this functional message. To display the help information, enter one of the following:

```
ZFDRS  
ZFDRS HELP  
ZFDRS HELP SETREC
```

Examples

```
ZFDRS SETREC ADD LOCAL SET-TESTSET FACE-TSDB2 ORD-300 RECID-HD  
ZFDRS SETREC CHA R SET-TCSET1 FACE-TSDB2 ORD-300  
ZFDRS SETREC L DISPLAY
```

ZFDRS OFFREC INIT – Initialize the offline volume control device definition record

The OFFREC INIT command initializes the offline volume control device definition record.

Requirements and Restrictions

The OFFREC must be defined in the COPYMGR control record (see ZFDRS COPYMGR and the *Copy Manager for TPF Administrator's Guide*).

The fixed file record to be used for the offline volume control device definition record (OFFREC) must have the same record ID as the record ID defined in the COPYMGR control record for OFFREC (see ZFDRS COPYMGR and the *Copy Manager for TPF Administrator's Guide*).

Format

```
>>--ZFDRS --- OFFREC ----- INIT ----- PASSWORD-password -----  
><
```

INIT

Clears the offline volume control device definition record.

PASSword-password

The INIT parameter requires a password. The customer defines this password during their installation of Copy Manager (see *Copy Manager for TPF Administrator's Guide*).

Additional Information

Online help information is available for this functional message. To display the help information, enter one of the following:

```
ZFDRS  
ZFDRS HELP  
ZFDRS HELP OFFREC
```

Example

```
ZFDRS OFFREC INIT PASSWORD-SECRET
```


ZFDRS OFFREC – Define a control device in the offline volume control device definition record

Use this command to define or change or remove control devices in the offline volume control device definition record. This command will display all the control devices in the sets in the offline volume control device definition record.

Requirements and Restrictions

The OFFREC must be defined in the COPYMGR control record (see ZFDRS COPYMGR and the *Copy Manager for TPF Administrator's Guide*).

The fixed file record to be used for the offline volume control device definition record (OFFREC) must have the same record ID as the record ID defined in the COPYMGR control record for OFFREC (see ZFDRS COPYMGR and the *Copy Manager for TPF Administrator's Guide*).

The offline volume control device definition record (OFFREC) must be initialized (see ZFDRS OFFREC INIT). The offline volume control device definition record will support up to 80 control devices (80 control units).

Format

```
>>--ZFDRS  ---OFFREC  -----  ----- SERIAL-ssssssssss -----  
→  
                                     +- -ADD-----+  
                                     +- -CHange---+  
                                     +- -REMove---+  
                                     +- -DISplay--+  
  
-----SEtname-nnnnnnnnnnnnnnnn -----→ CONdev-dddd -----><
```

ADD

Add a new control device to the offline volume control device definition record.

REM

Remove an existing control device from the offline volume control device definition record.

CHA

Change the properties of a control device in the offline volume control device definition record.

DISPLAY

Display all the control devices in the offline volume control device definition record.

SET-nnnnnnnnnnnnnnnnn

Variable length set name up to 16 characters that is to be defined. Required for the Add, Change, Remove and Display operations. Required for the Add and Remove operation. Valid for the Change operation.

SERial-ssssssssssss

Control Unit Serial Number. Required for the Add and Remove operation. Valid for the Change operation.

CONDEV-dddd

The offline control device's SDA for the specified serial number and setname. Required for the Add operation. Valid for the Change operation.

Additional Information

Online help information is available for this functional message. To display the help information, enter one of the following:

```
ZFDRS  
ZFDRS HELP  
ZFDRS HELP OFFREC
```

Examples

```
ZFDRS OFFREC ADD SERIAL-556633 SET-TESTBUILD1 CONDEV-3200  
ZFDRS OFFREC CHA SER-556633 SET-TESTBUILD1 CONDEV-4800  
ZFDRS OFFREC REM SET-556633 SET-TESTBUILD1  
ZFDRS OFFREC DISPLAY
```

ZFDRS RCUREC INIT – Initialize the remote control unit command device definition record

The RCUREC INIT command initializes the Remote Control Unit command device definition record.

Requirements and Restrictions

The RCUREC must be defined in the COPYMGR control record (see ZFDRS COPYMGR and the *Copy Manager for TPF Administrator's Guide*).

The fixed file record to be used for the Remote Control Unit command device definition record (RCUREC) must have the same record ID as the record ID defined in the COPYMGR control record for RCUREC (see ZFDRS COPYMGR and the *Copy Manager for TPF Administrator's Guide*).

Format

```
>>--ZFDRS --- RCUREC ----- INIT ----- PASSWORD-password -----  
><
```

INIT

Clears the offline volume command device definition record.

PASSword-password

The INIT parameter requires a password. The customer defines this password during their installation of Copy Manager (see *Copy Manager for TPF Administrator's Guide*).

Additional Information

Online help information is available for this functional message. To display the help information, enter one of the following:

```
ZFDRS  
ZFDRS HELP  
ZFDRS HELP RCUREC
```

Example

```
ZFDRS RCUREC INIT PASSWORD-SECRET
```

ZFDRS RCUREC – Define a command device in the remote control unit command device definition record

Use this command to define or change or remove command devices in the Remote Control Unit command device definition record. This command will display all the command devices in the remote control unit command device definition record.

Requirements and Restrictions

The RCUREC must be defined in the COPYMGR control record (see ZFDRS COPYMGR and the *Copy Manager for TPF Administrator's Guide*).

The fixed file record to be used for the Remote Control Unit command device definition record (RCUREC) must have the same record ID as the record ID defined in the COPYMGR control record for RCUREC (see ZFDRS COPYMGR and the *Copy Manager for TPF Administrator's Guide*).

The Remote Control Unit command device definition record (RCUREC) must be initialized (see ZFDRS RCUREC INIT). The Remote Control Unit command device definition record supports up to 30 command devices (30 remote control units).

Format

```
>>--ZFDRS  ---RCUREC  ----->  IOSDA-xxxx  ---->
                                     +- -ADD-----+
                                     +- -CHange---+
                                     +- -REMove---+
                                     +- -DISplay-+

---TARSErIal-ssssssssssss  ----TARSSid-iiii  --- TARVol-vv  ----TARLcu-ll--->
->

---R0SErIal-ssssssssssss  ----R0SSid-iiii  --- R0Vol-vv  ----R0Lcu-ll---->

---R1SErIal-ssssssssssss  ----R1SSid-iiii  --- R1Vol-vv  ----R1Lcu-ll---->

---R2SErIal-ssssssssssss  ----R2SSid-iiii  --- R2Vol-vv  ----R2Lcu-ll---->

---R3SErIal-ssssssssssss  ----R3SSid-iiii  --- R3Vol-vv  ----R3Lcu-ll---->

---R4SErIal-ssssssssssss  ----R4SSid-iiii  --- R4Vol-vv  ----R4Lcu-ll---->

---R5SErIal-ssssssssssss  ----R5SSid-iiii  --- R5Vol-vv  ----R5Lcu-ll---->
```

ADD

Add a new command device to the Remote Control Unit command device definition record.

REM

Remove an existing command device from the Remote Control Unit command device definition record.

CHA

Change the properties of a Command Device in the Remote Control Unit command device definition record.

DISPLAY

Display all the command devices in the Remote Control Unit command device definition record.

IOSDA-xxxx

IOSDA is the TPF SDA of the local control unit's command device. All remote control unit I/O for the specified control unit will be sent to this defined SDA. IOSDA is required for add operations.

TARSerial-ssssssssssss

Target Control Unit Serial Number. Required for the Add and Remove operation. Not Valid for the Change operation.

TARSSID

SSID number of the Target control unit's command device.(valid only for change or add operations).

TARLCU

LCU number of the Target control unit's command device.(valid only for change or add operations).

TARVOL

Volume number of the Target control unit's command device.(valid only for change or add operations).

R0Serial

R0 (base or source) Control Unit Serial Number. Required for the Add and Remove operation. Not Valid for the Change operation.

R0SSID

SSID number of the R0 (base or source) control unit's command device.(valid only for change or add operations).

R0LCU

LCU number of the R0 (base or source) control unit's command device.(valid only for change or add operations).

R0VOL

Volume number of the R0 (base or source) control unit's command device.(valid only for change or add operations).

R1SERial

R1 (First hop) Control Unit Serial Number. Required for the Add and Remove operation. Not Valid for the Change operation.

R1SSID

SSID number of the R1 (First hop) control unit's command device.(valid only for change or add operations).

R1LCU

LCU number of the R1 (First hop) control unit's command device.(valid only for change or add operations).

R1VOL

Volume number of the R1 (first hop) control unit's command device.(valid only for change or add operations).

R2SERial (to R5SERIAL)

R2-R5 (Second through fifth hop) Control Unit Serial Number. Required for the Add and Remove operation. Not Valid for the Change operation.

R2SSID (to R5SSID)

SSID number of the R2-R5 (Second through fifth hop) control unit's command device.(valid only for change or add operations).

R2LCU (to R5LCU)

LCU number of the R2-R5 (Second through fifth hop) control unit's command device.(valid only for change or add operations).

R2VOL (to R5VOL)

Volume number of the R2-R5 (Second through fifth hop) control unit's command device.(valid only for change or add operations).

ZFDRS RCUREC CDVDEF – Send a “define command device request” to a local or remote control unit

Use this command to send a “Define command device request” to a local or remote control unit. This command will result in a command device being defined internally in a local or remote control unit.

Important: HDS TPF Engineering will identify the correct volume to be used as a command device. Use this command only after consulting HDS TPF Engineering.

Requirements and Restrictions

The RCUREC must be defined in the COPYMGR control record (see ZFDRS COPYMGR and the *Copy Manager for TPF Administrator's Guide*).

The definitions for the remote target control unit must be defined in the RCUREC (see ZFDRS RCUREC and the *Copy Manager for TPF Administrator's Guide*).

Format

```
>>--ZFDRS  ---RCUREC  ----->
                                     +- -CDVDEF-----+
                                     +- -CDVDIS---+
                                     +- -CDVREM---+

---TARSErIal-ssssssssssss ----->

---R0SErIal-ssssssssssss ----->

---R1SErIal-ssssssssssss ----->

---R2SErIal-ssssssssssss ----->

---R3SErIal-ssssssssssss ----->

---R4SErIal-ssssssssssss ----->

---R5SErIal-ssssssssssss ----->
```

CDVDEF

Define a command device in a local or remote control unit.

CDVDIS

Display a command device status bits in a local or remote control unit..

CDVREM

Remove a command device in a local or remote control unit.

TARSerial-ssssssssssss

Target Control Unit Serial Number. Required for CDVADD, CDVDIS and CDVREM command.

R0Serial

R0 (base or source) Control Unit Serial Number. If entered, the CDVDEF or CDVREM or CDVDIS will act upon the "next" (R1 or Target) control unit. This must be entered to define the R1 or Target control unit command device.

R1Serial

R1 (First hop) Control Unit Serial Number. If entered, the CDVDEF or CDVREM or CDVDIS will act upon the "next" (R2 or Target) control unit. This must be entered to define the R2 or target control unit command device.

R2Serial (to R5SERIAL)

R2-R5 (Second through fifth hop) Control Unit Serial Number. If entered, the CDVDEF or CDVREM or CDVDIS will act upon the corresponding R3 to R5 or target control unit. This must be entered to define the corresponding R3 to R5 or target control unit command device.

Additional Information

Online help information is available for this functional message. To display the help information, enter one of the following:

```
ZFDRS
ZFDRS HELP
ZFDRS HELP RCUREC
```

Examples

```
ZFDRS RCUREC ADD TARSERIAL-984576 TARSSID-3400 TARVOL-01 TARLCU-1F R0SERIAL-
122334 ROSSID-2301 ROVOL-02 R0LCU-1E

ZFDRS RCUREC ADD TARSE-984588 TARSS-3400 TARV-01 TARL-1F R0SE-122334 ROSS-
2301 ROV-02 R0L-1E R1SE-454511 R1SS-4101 R1V-00 R1L-0F

ZFDRS RCUREC CHA TARSE-556633 ROVOL-18

ZFDRS RCUREC REM TARSET-556633

ZFDRS RCUREC DISPLAY
```


Troubleshooting

This chapter provides troubleshooting information for Copy Manager for TPF and instructions for calling technical support.

- [Immediate Halt of ShadowImage, TrueCopy, or Universal Replicator Session](#)
- [Troubleshooting](#)
- [Calling the Support Center](#)

Immediate Halt of ShadowImage, TrueCopy, or Universal Replicator Session

To bypass normal procedures and end ShadowImage, TrueCopy, or Universal Replicator sessions:

1. If the TPF system is available: Use the Delete Pair command with **BP**:
ZFDRS L DEL SET-*setname* BP or **ZFDRS R DEL SET-*setname* BP**
2. If the TPF system is not available: Contact your Hitachi Data Systems representative to stop ShadowImage, TrueCopy, or Universal Replicator at the control unit SVP.

Troubleshooting

The *Copy Manager for TPF Messages and Codes* document lists the error codes output by the Copy Manager for TPF software. This document is maintained in the standard IBM format and may be utilized by coverage and operations as a standalone document.

For troubleshooting information on copy operations, please refer to the applicable User's Guide (e.g., *Hitachi ShadowImage for IBM z/OS User's Guide*), or contact your Hitachi Data Systems representative.

For general troubleshooting information, refer to the User and Reference Guide for the storage system (e.g., *Hitachi Universal Storage Platform V/VM User and Reference Guide*), or contact your Hitachi Data Systems representative.

If you need to call the Hitachi Data Systems Support Center, please refer to [Calling the Support Center](#) for information and instructions.

[Table 3-1](#) shows the command acceptance for each TrueCopy pair status. [Table 3-2](#) shows the command acceptance for each ShadowImage pair status. [Table 3-2](#) shows the command acceptance for each Universal Replicator pair status.

Table 3-1 Command Acceptance for each TrueCopy Pair Status

Command Type	Current Volume	Simplex	Duplex-P	Duplex	Suspend
Define TCz path	P-VOL	Accept	Accept	Accept	Accept
	S-VOL	—	Accept	Accept	Accept
Remove TCz path	P-VOL	Accept	C126/01/0F/E9	C126/01/0F/E9	C126/01/0F/E9
	S-VOL	—	C126/01/0F/E9	C126/01/0F/E9	C126/01/0F/E9
Define TCz/SIz pair	P-VOL	Accept	C211/01/0F/12	C211/01/0F/12	C211/01/0F/12
	S-VOL	—	69F5/01/0E	69F5/01/0E	69F5/01/0E
Resume TCz/SIz pair	P-VOL	C21A/01/0F/11	C21A/01/0F/12	C21A/01/0F/12	Accept
	S-VOL	—	69F5/01/0E	69F5/01/0E	69F5/01/0E
Suspend single TCz/SIz pair	P-VOL	C055/01/0F/1B	Accept	Accept	C195/01/0F/19
	S-VOL	—	C0F1/01/0F/1C	Accept	C0C5/01/0F/19
Remove TCz/SIz pair	P-VOL	Accept	Accept	Accept	Accept
	S-VOL	—	Accept *	Accept *	Accept *
Sense TCz path status	P,S-VOL	Accept	Accept	Accept	Accept
Sense TCz/SIz pair status	P,S-VOL	Accept	Accept	Accept	Accept
Report all SIz paired LVIs	P,S-VOL	Accept	Accept	Accept	Accept

Else Accept: Error code / Key code / Format message / Reason code

* P-VOL status is Suspend, and S-VOL status is Simplex.

Table 3-2 Command Acceptance for each ShadowImage Pair Status

Command Type	Current Volume	Simplex	Duplex-P	Duplex	Split-P	V-Split	Suspend	Resync or Resync-Rev.
Define pair	P-VOL 2pair	Accept	2343/01/0F/E8	2343/01/0F/E8	2343/01/0F/E8	2343/01/0F/E8	2343/01/0F/E8	2343/01/0F/E8
	P-VOL 3pair	—	2332/01/0F/12	2332/01/0F/12	2332/01/0F/12	2332/01/0F/12	2332/01/0F/12	2332/01/0F/12
	S-VOL	—	23A0/01/04	23A0/01/04	23A0/01/04	23A0/01/04	23A0/01/04	23A0/01/04
	S-VOL→ Simplex	—	2337/01/0F/E8	2337/01/0F/E8	2337/01/0F/E8	2337/01/0F/E8	2337/01/0F/E8	2337/01/0F/E8
Resume pair	P-VOL	233A/01/0F/11	2310/01/0F/E8	2310/01/0F/E8	2354/01/0F/E8	Accept	Accept	2310/01/0F/E8
	S-VOL	—	2310/01/0F/E8	2310/01/0F/E8	2354/01/0F/E8	Accept	Accept	2310/01/0F/E8
Suspend single pair	P-VOL	2333/01/0F/1B	Accept	Accept	2310/01/0F/E8	2310/01/0F/E8	2310/01/0F/E8	2310/01/0F/E8
	S-VOL	—	Accept	Accept	2310/01/0F/E8	2310/01/0F/E8	2310/01/0F/E8	2310/01/0F/E8
Suspend multiple pair	P-VOL	2344/01/0F/1B	2310/01/0F/E8	Accept	2310/01/0F/E8	2310/01/0F/E8	2310/01/0F/E8	2310/01/0F/E8
	S-VOL	—	2310/01/0F/E8	Accept	2310/01/0F/E8	2310/01/0F/E8	2310/01/0F/E8	2310/01/0F/E8
Remove pair	P-VOL	2333/01/0F/1B	Accept *	Accept *	Accept *	2353/01/0F/E8	Accept *	Accept *
	S-VOL	—	Accept *	Accept *	Accept *	2353/01/0F/E8	Accept *	Accept *
Sense pair status	P,S-VOL	Accept	Accept	Accept	Accept	Accept	Accept	Accept

Else Accept: Error code / Key code / Format message / Reason code

* The data between P-VOL and S-VOL is not synchronized.

Table 3-3 Command Acceptance for each Universal Replicator Pair Status

Command Type	Current Volume	Simplex	Duplex-P	Duplex	Suspending	Suspend	SSWS	Deleting
Create a path	P-VOL	Accept	Accept	Accept	Accept	Accept	-	Accept
	S-VOL	-	Accept	Accept	Accept	Accept	Accept	Accept
Remove a path	P-VOL	Accept	C126/01/0F/E9	C126/01/0F/E9	C126/01/0F/E9	C126/01/0F/E9	-	C126/01/0F/E9
	S-VOL	-	C126/01/0F/E9	C126/01/0F/E9	C126/01/0F/E9	C126/01/0F/E9	C126/01/0F/E9	C126/01/0F/E9
Create a pair	P-VOL	Accept	4612/01/0F/11	4612/01/0F/11	4612/01/0F/11	4612/01/0F/11	-	4612/01/0F/11
	S-VOL	4600/01/04	4600/01/04	4600/01/04	4600/01/04	4600/01/04	4600/01/04	4600/01/04
Suspend pair	P-VOL	4617/01/0F/15	Accept	Accept	Not Accept	Not Accept	-	Not Accept
	S-VOL	4617/01/0F/15	Accept	Accept	Not Accept	Not Accept	Not Accept	Not Accept
Suspend pair reverse	P-VOL	4617/01/0F/15	4619/01/0F/16	4619/01/0F/16	4619/01/0F/16	4619/01/0F/16	-	4619/01/0F/16
	S-VOL	4617/01/0F/15	Accept	Accept	Not Accept	Accept	Accept	Not Accept
Resume pair	P-VOL	4617/01/0F/15	Not Accept	Not Accept	Not Accept	Accept	-	Not Accept
	S-VOL	4617/01/0F/15	Not Accept	Not Accept	Not Accept	Not Accept	Not Accept	Not Accept
Remove pair	P-VOL	4617/01/0F/15	Accept	Accept	Not Accept	Accept	-	Not Accept
	S-VOL	4617/01/0F/15	Accept	Accept	Not Accept	Accept	Accept	Not Accept
Sense path status	P,S-VOL	Accept	Accept	Accept	Accept	Accept	Accept	Accept
Sense pair status	P,S-VOL	Accept	Accept	Accept	Accept	Accept	Accept	Accept
Sense all SIz pairs status	P,S-VOL	Accept	Accept	Accept	Accept	Accept	Accept	Accept

Calling the Support Center

If you need to call the Hitachi Data Systems Support Center, make sure to provide as much information about the problem as possible, including:

- The circumstances surrounding the error or failure.
- The exact content of any error message(s) displayed on the host system(s).
- The exact content of any error message(s) displayed by Storage Navigator.
- The service information messages (SIMs), including reference codes and severity levels, logged at the host and displayed by Storage Navigator.

The Hitachi Data Systems customer support staff is available 24 hours/day, seven days a week. If you need technical support, please call:

- United States: (800) 446-0744
- Outside the United States: (858) 547-4526



Acronyms and Abbreviations

DASD	direct-access storage device
DEV	device
HUR	Hitachi Universal Replicator/Hitachi Universal Replicator for IBM z/OS
LCU	logical control unit
LDEV	logical device
LVI	logical volume image
M-VOL	main volume (for TrueCopy for z/OS)
NSC	Hitachi TagmaStore Network Storage Controller
P-VOL	primary volume (for Universal Replicator for z/OS)
RCU	remote control unit (for TrueCopy for z/OS)
R-VOL	remote volume (for TrueCopy for z/OS)
SDA	symbolic device address
SIM	service information message
SIz	Hitachi ShadowImage for IBM z/OS
SLCU	source logical control unit
SSER	source serial number
SSID	storage system identification
S-VOL	source volume (for ShadowImage for z/OS) secondary volume (for Universal Replicator for z/OS)
TCz	Hitachi TrueCopy for IBM z/OS
TLCU	target logical control unit
TPF	Transaction Processing Facility
TSER	target serial number
T-VOL	target volume (for ShadowImage for z/OS)
URz	Hitachi Universal Replicator for IBM z/OS
USP	Hitachi TagmaStore Universal Storage Platform
USP V	Hitachi Universal Storage Platform V
USP VM	Hitachi Universal Storage Platform VM
VOLSER	volume serial number
VSN	volume serial number

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