CONTENTS

Preface

Chapter 1  Product Overview
Introduction to TimeFinder ................................................................. 22
TimeFinder/Clone overview ............................................................... 23
SnapVX overview ............................................................................ 24
Introduction to zDP ................................................................. 26
Product options ........................................................................... 27
SRDF Controls for z/TPF ............................................................... 27
ResourcePak for z/TPF ................................................................. 27

Chapter 2  Installation
Preinstallation steps ......................................................................... 30
Reviewing the hardware and software requirements ....................... 30
Downloading maintenance ................................................................. 31
TimeFinder Controls for z/TPF distribution ......................................... 32
z/TPF source customization ............................................................ 33
TimeFinder Controls for z/TPF installation .......................................... 34
Functional entries .......................................................................... 35
Installation considerations ............................................................... 35
Using TimeFinder Across The Links (multi-hop TimeFinder controls) .... 35
Using Offline Module Access integration ........................................... 36
Using QOS Controls for z/TPF ......................................................... 36
Migration from an earlier release of TimeFinder ................................. 36

Chapter 3  TimeFinder Operations
Operations ........................................................................................ 40
Configuring TimeFinder control records ........................................... 42
TimeFinder configuration procedure ................................................ 42
Operations verification ...................................................................... 43
TimeFinder/Clone operations verification .......................................... 44
TimeFinder/SnapVX operations verification ....................................... 47
Clipping a TimeFinder target device ................................................ 49
Monitoring TimeFinder operations .................................................. 49
Mixed vendor tolerance .................................................................... 50
TimeFinder Across the Links ............................................................ 50
Cascaded operations ....................................................................... 51
QoS Controls for z/TPF ................................................................. 51
Session Controls for z/TPF ............................................................ 52
z/VM gatekeeper support ................................................................. 52
Defining gatekeeper devices ............................................................ 53
Patches with z/VM for gatekeeper devices ......................................... 53
Defining z/TPF devices to z/VM ....................................................... 54

Chapter 4  TimeFinder Commands
ZUTIM Help ...................................................................................... 56
<table>
<thead>
<tr>
<th>Command</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZUTIM MIGRATE</td>
<td>146</td>
</tr>
<tr>
<td>ZUTIM LINK</td>
<td>141</td>
</tr>
<tr>
<td>ZUTIM INITIALIZE CLEAR</td>
<td>CONTINUE</td>
</tr>
<tr>
<td>ZUTIM INCREMENT</td>
<td>135</td>
</tr>
<tr>
<td>ZUTIM DISPLAY CTLRCD</td>
<td>123</td>
</tr>
<tr>
<td>ZUTIM DISPLAY PROPERTIES</td>
<td>126</td>
</tr>
<tr>
<td>ZUTIM DISPLAY STATUS</td>
<td>128</td>
</tr>
<tr>
<td>ZUTIM DISPLAY</td>
<td>109</td>
</tr>
</tbody>
</table>

**Example information**

- **Parameters:**
  - 106
- **Requirements and restrictions:**
  - 109
- **Examples:**
  - 107

- **Example:**
  - 146
- **Additional information:**
  - 146
- **Parameters:**
  - 146
- **Format:**
  - 106
Chapter 5 TimeFinder Procedures

TimeFinder control record initialization and configuration ........................................ 196
z/TPF database requirements ................................................................................... 196
Control Record Initialization .................................................................................... 196
TimeFinder Group Configuration .............................................................................. 196
Configuring a TimeFinder group describing SRDF/A R2 devices as a TimeFinder Source ........................................................................................................... 200
VM gatekeeper definition ........................................................................................ 203
TimeFinder Group Properties ................................................................................... 206
Configuring a TimeFinder/SnapVX zDP Group ......................................................... 208

Appendix A Messages

Message format ........................................................................................................... 216
Messages ..................................................................................................................... 216
UTIM0000I ............................................................................................................. 216
UTIM0001T ............................................................................................................. 216
UTIM0003E ............................................................................................................. 217
UTIM0004E ............................................................................................................. 217
UTIM0005E ............................................................................................................. 217
UTIM0006E ............................................................................................................. 217
UTIM0007E ............................................................................................................. 217
UTIM0008I ............................................................................................................. 218
UTIM009E ............................................................................................................. 218
UTIM010E ............................................................................................................. 218
UTIM011E ............................................................................................................. 218
UTIM012E ............................................................................................................. 218
UTIM013E ............................................................................................................. 219
UTIM014E ............................................................................................................. 219
UTIM015E ............................................................................................................. 219
UTIM016E ............................................................................................................. 219
UTIM017E ............................................................................................................. 219
UTIM018E ............................................................................................................. 220
UTIM019I ............................................................................................................. 220
UTIM020E ............................................................................................................. 220
UTIM021E ............................................................................................................. 220
UTIM022E ............................................................................................................. 220
| UTIM0218I | ................................................................. | 243 |
| UTIM0219T | ................................................................. | 243 |
| UTIM0220T | ................................................................. | 244 |
| UTIM0221I | ................................................................. | 244 |
| UTIM0222I | ................................................................. | 244 |
| UTIM0223I | ................................................................. | 244 |
| UTIM0224I | ................................................................. | 244 |
| UTIM0225I | ................................................................. | 245 |
| UTIM0226I | ................................................................. | 245 |
| UTIM0255W | ................................................................. | 245 |
| UTIM0999I | ................................................................. | 245 |
| UTIM1000I | ................................................................. | 246 |
| UTIM1001I | ................................................................. | 246 |
| UTIM1002I | ................................................................. | 246 |
| UTIM1003I | ................................................................. | 246 |
| UTIM1004W | ................................................................. | 246 |
| UTIM1005I | ................................................................. | 246 |
| UTIM1006I | ................................................................. | 247 |
| UTIM1007I | ................................................................. | 247 |
| UTIM1008T | ................................................................. | 247 |
| UTIM1009I | ................................................................. | 247 |
| UTIM1010I | ................................................................. | 247 |
| UTIM1011E | ................................................................. | 248 |
| UTIM1012E | ................................................................. | 248 |
| UTIM1013E | ................................................................. | 248 |
| UTIM1014I | ................................................................. | 248 |
| UTIM1025I | ................................................................. | 249 |
| UTIM1026I | ................................................................. | 249 |
| UTIM1027I | ................................................................. | 249 |
| UTIM1028I | ................................................................. | 249 |
| UTIM1029E | ................................................................. | 249 |
| UTIM1030E | ................................................................. | 250 |
| UTIM1031I | ................................................................. | 250 |
| UTIM1033I | ................................................................. | 250 |
| UTIM1034I | ................................................................. | 250 |
| UTIM1035T | ................................................................. | 250 |
| UTIM1036I | ................................................................. | 251 |
| UTIM1041I | ................................................................. | 251 |
| UTIM1042I | ................................................................. | 251 |
| UTIM1043I | ................................................................. | 251 |
| UTIM1049I | ................................................................. | 251 |
| UTIM1050I | ................................................................. | 252 |
| UTIM1051I | ................................................................. | 252 |
| UTIM1052I | ................................................................. | 252 |
| UTIM1053I | ................................................................. | 252 |
| UTIM1054I | ................................................................. | 252 |
| UTIM1056I | ................................................................. | 253 |
| UTIM1057I | ................................................................. | 253 |
| UTIM1058I | ................................................................. | 253 |
| UTIM1059I | ................................................................. | 253 |
| UTIM1060I | ................................................................. | 253 |
| UTIM1061I | ................................................................. | 254 |
| UTIM1063I | ................................................................. | 254 |
| UTIM1064I | ................................................................. | 254 |
| UTIM1070I | ................................................................. | 254 |
### Contents

<table>
<thead>
<tr>
<th>Indicator Code</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>UTIM1071I</td>
<td>254</td>
</tr>
<tr>
<td>UTIM1072I</td>
<td>255</td>
</tr>
<tr>
<td>UTIM1255W</td>
<td>255</td>
</tr>
<tr>
<td>UTIM1256I</td>
<td>255</td>
</tr>
<tr>
<td>E1UI0001I</td>
<td>255</td>
</tr>
<tr>
<td>E1UI0002W</td>
<td>255</td>
</tr>
<tr>
<td>E1UI0003W</td>
<td>255</td>
</tr>
<tr>
<td>E1U90001I</td>
<td>256</td>
</tr>
<tr>
<td>E1U90002I</td>
<td>256</td>
</tr>
<tr>
<td>E1xx0001E</td>
<td>257</td>
</tr>
</tbody>
</table>

### Appendix B  TimeFinder Indicators

- TimeFinder operation return codes ............................................................. 260
- Byte 0 - TPF return codes ........................................................................ 260
- Byte 1 - Storage system return codes ...................................................... 261
## FIGURES

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cascaded clone</td>
<td>51</td>
</tr>
</tbody>
</table>
Figures
# TABLES

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Storage system requirements</td>
<td>30</td>
</tr>
<tr>
<td>2 Mainframe hardware and software requirements</td>
<td>30</td>
</tr>
<tr>
<td>3 TPF source customization</td>
<td>33</td>
</tr>
<tr>
<td>4 Display TimeFinder Controls for TPF V8.0 configuration</td>
<td>37</td>
</tr>
<tr>
<td>5 Backup TimeFinder control records</td>
<td>37</td>
</tr>
<tr>
<td>6 Migrate TimeFinder Controls for z/TPF control records</td>
<td>37</td>
</tr>
<tr>
<td>7 Display configuration control records commands</td>
<td>37</td>
</tr>
<tr>
<td>8 Accept TimeFinder Controls for z/TPF V8.0 configuration</td>
<td>38</td>
</tr>
<tr>
<td>9 TimeFinder operations command example</td>
<td>38</td>
</tr>
<tr>
<td>10 TimeFinder Controls for z/TPF database requirements</td>
<td>196</td>
</tr>
<tr>
<td>11 Byte 0 - TPF return codes</td>
<td>260</td>
</tr>
<tr>
<td>12 TimeFinder/Clone return codes</td>
<td>261</td>
</tr>
<tr>
<td>13 TimeFinder SnapVX Return Codes</td>
<td>265</td>
</tr>
<tr>
<td>14 General return codes</td>
<td>271</td>
</tr>
</tbody>
</table>
As part of an effort to improve its product lines, EMC periodically releases revisions of its software and hardware. Therefore, some functions described in this document might not be supported by all versions of the software or hardware currently in use. The product release notes provide the most up-to-date information on product features.

Contact your EMC representative if a product does not function properly or does not function as described in this document.

Note: This document was accurate at publication time. New versions of this document might be released on EMC Support http://support.EMC.com. Check to ensure that you are using the latest version of this document.

Purpose

This guide provides instructions for the operation of EMC TimeFinder Controls for z/TPF.

Audience

Readers of this guide are expected to be familiar with the following topics:

◆ Storage system operation
◆ TPF operating system

Related documentation

Related documents include:

◆ EMC TPF Product Suite Release Notes
◆ EMC SRDF Controls for z/TPF Product Guide
◆ EMC ResourcePak for z/TPF Product Guide
◆ VMAX 3 Family with HYPERMAX OS Product Guide

Conventions used in this document

EMC uses the following conventions for special notices:

Note: A note presents information that is important, but not hazard-related.

IMPORTANT

An important notice contains information essential to software or hardware operation.
**Typographical conventions**

EMC uses the following type style conventions in this document:

**Normal** Used in running (nonprocedural) text for:
- Names of interface elements, such as names of windows, dialog boxes, buttons, fields, and menus
- Names of resources, attributes, pools, Boolean expressions, buttons, DQL statements, keywords, clauses, environment variables, functions, and utilities
- URLs, pathnames, filenames, directory names, computer names, links, groups, service keys, file systems, and notifications

**Bold** Used in procedures for:
- Names of interface elements, such as names of windows, dialog boxes, buttons, fields, and menus
- What the user specifically selects, clicks, presses, or types

**Italic** Used in all text (including procedures) for:
- Full titles of publications referenced in text
- Emphasis, for example, a new term
- Variables

**Courier** Used for:
- System output, such as an error message or script
- URLs, complete paths, filenames, prompts, and syntax when shown outside of running text

**Courier bold** Used in procedures for specific user input, such as commands

**Courier italic** Used in procedures for:
- Variables on the command line
- User input variables

< > Angle brackets enclose parameter or variable values supplied by the user

[] Square brackets enclose optional values

| Vertical bar indicates alternate selections — the bar means “or”

{} Braces enclose content that the user must specify, such as x or y or z

... Ellipses indicate nonessential information omitted from the example

In addition to the command example conventions described above, the following rules apply to the command syntax descriptions:

- **Captilization** indicates the portions of keywords that must be typed (for example, ALL or GROup). They must be spelled exactly as shown.

- **Variables** appear in lowercase and italics (for example, cccccccc). They represent user-supplied names or values in the syntax.

**Where to get help**

**Product information**

For documentation, release notes, software updates, or for information about EMC products, licensing, and service, go to EMC Online Support (registration required) at:

https://support.EMC.com

**Technical support**

EMC offers a variety of support options.
Support by Product — EMC offers consolidated, product-specific information on the Web at:

https://support.EMC.com/products

The Support by Product web pages offer quick links to Documentation, White Papers, Advisories (such as frequently used Knowledgebase articles), and Downloads, as well as more dynamic content, such as presentations, discussion, relevant Customer Support Forum entries, and a link to EMC Live Chat.

EMC Live Chat — Open a Chat or instant message session with an EMC Customer Engineer (CE).

eLicensing support

To activate your entitlements and obtain your storage system license files, visit the Service Center on http://support.EMC.com, as directed on your License Authorization Code (LAC) letter e-mailed to you.

For help with missing or incorrect entitlements after activation (that is, expected functionality remains unavailable because it is not licensed), contact your EMC Account Representative or Authorized Reseller.

For help with any errors applying license files through Solutions Enabler, contact the EMC Customer Support Center.

If you are missing a LAC letter, or require further instructions on activating your licenses through the Online Support site, contact EMC’s worldwide Licensing team at licensing@emc.com or call:

◆ North America, Latin America, APJK, Australia, New Zealand: SVC4EMC (800-782-4362) and follow the voice prompts.
◆ EMEA: +353 (0) 21 4879862 and follow the voice prompts.

Your comments

Your suggestions will help us continue to improve the accuracy, organization, and overall quality of the user publications. Send your opinions of this document to:

VMAXContentFeedback@emc.com
CHAPTER 1
Product Overview

This chapter provides an introduction to TimeFinder Controls for z/TPF, including its features, requirements, and options. The topics include:

◆ Introduction to TimeFinder ................................................................. 22
◆ TimeFinder/Clone overview ............................................................... 23
◆ SnapVX overview ............................................................................. 24
◆ Introduction to zDP ............................................................................ 26
◆ Product options .................................................................................. 27
Introduction to TimeFinder

EMC® TimeFinder® is a family of VMAX replication products that allows you to non-disruptively create and manage point-in-time copies of data, enabling simultaneous action of business tasks that were previously sequential. For example, TimeFinder allows you to create a point-in-time copy of critical data while this data continues to be used in production operations.

The ability to access source data during the TimeFinder copy operation can increase the availability of the application. TimeFinder can also shorten backup windows, maintenance windows and improve service levels.

The TimeFinder product family is used in environments configured with the following:

- VMAX3 Family arrays
- VMAX™ Family arrays
- DMX™ arrays

VMAX3 Family arrays require HYPERMAX OS 5977 or later, VMAX Family arrays require Enginuity 5876 or later and DMX arrays require Enginuity 5773.

**Note:** Unless noted, features that were introduced in HYPERMAX OS 5977 and later, are not supported on storage systems running Enginuity 5876 or earlier versions.

This manual provides the command and parameter details for using the EMC TimeFinder Controls for z/TPF, which is a TimeFinder product that supports the z/TPF mainframe environment as one of the components of the EMC Product Suite for z/TPF.

**NOTICE**

For a comprehensive description of the TimeFinder replication concepts and features, refer to the *EMC Symmetrix TimeFinder Product Guide*. TimeFinder concepts
TimeFinder/Clone overview

TimeFinder/Clone produces point-in-time copies of full volumes or of individual datasets. TF/Clone operations involve full volumes where the amount of data at the source is the same as the amount of data at the target.

**Note:** All TF/Clone commands and syntax are supported with HYPERMAX OS 5977.

In addition to providing real-time, non-disruptive backup and restore, TF/Clone can compress the cycle time for such processes as:

- Application testing
- Software development
- Loading or updating a data warehouse

TF/Clone also provides significant configuration flexibility because clone copies do not require VMAX mirror positions. The clone copies can have any configuration except VDEV (virtual device); that is, they can have any form of RAID protection. The source devices can have any configuration except VDEV.
SnapVX overview

**SnapVX definition**
SnapVX creates pointer-based logical full-volume copies (snapshots) directly in thin pools, eliminating the need for target devices and source-to-target pairing.

SnapVX requires:
- TimeFinder Controls for z/TPF 8.0
- HYPERMAX OS 5977

**Traditional TimeFinder definition**
Traditional TimeFinder operations, such as TF/Clone and TF/Snap, require a physical target device to be specified in the command to execute a full volume copy.

**Benefits**
This TimeFinder SnapVX “target-less” copy process offers the following advantages:
- Reduction in required physical storage capacity — As physical target devices for each individual copy are no longer required.
- No additional storage (tracks) are needed for multiple copies of the same source device — The snapshots do not need to allocate additional tracks for the same identical data.
- Scaling the size of a device is no longer an issue — Copies are not limited to physical device limitations.
- Reduction in processing time — Setting the protection and indirection bits for each physical cylinder track on a target device is no longer required.
- Increased number of copies per source device — The number of snapshots for a single source device is now up to 256.

**Links to physical devices**
When an application requires the point-in-time data, you can create a link from the snapshot to one or more target devices. If these targets are mapped to the host, the point-in-time data is then visible to the host. You can create links in Copy mode for a permanent copy on the target device, or in NoCopy mode for temporary use.

If there are multiple snapshots and the application needs to find a particular point-in-time copy for the host, the same target device may be linked and relinked until the correct snapshot is located.

For details on how SnapVX executes the copy process, refer to the TimeFinder section in the *EMC Symmetrix Concepts Guide*, which illustrates the point-in-time process to produce one or more snapshots.

**Soft snapshot definition**
The TimeFinder term, *soft snapshot*, refers to a copy that has been processed using the new “target-less” replication technology that allows you to perform a point-in-time copy using thin devices, without specifying a physical target destination device. The term “soft” refers to the fact the snapshot was created without an association to a target device. This snapshot can be linked and unlinked to multiple target devices.

**NOTICE**
All snapshots require HYPERMAX OS 5977 and higher.
| Hard snapshot definition | The TimeFinder term, *hard snapshot*, refers to a snapshot that is created with specific source and target device. |
Introduction to zDP

z Systems Data Protector (zDP) delivers the capability to recover from logical data corruption with minimal data loss. zDP achieves this by providing multiple, frequent, consistent point-in-time copies of data in an automated fashion from which an application level recovery can be conducted, or the environment restored to a point prior to the logical corruption.

By providing easy access to multiple different point-in-time copies of data (with a granularity of minutes), precise remediation of logical data corruption can be performed using application-based recovery procedure. zDP results in minimal data loss compared to the previous method of restoring data from daily or weekly backups.

zDP enables you to create and manage multiple point-in-time snapshots of volumes. A snapshot is a pointer-based, point-in-time image of a single volume. These point-in-time copies are created using the SnapVX feature of HYPERMAX OS. SnapVX is a space-efficient method for making volume level snapshots of thin devices and consuming additional storage capacity only when updates are made to the source volume. There is no need to copy each snapshot to a target volume as SnapVX separates the capturing of a point-in-time copy from its usage. Capturing a point-in-time copy does not require a target volume. Using a point-in-time copy from a host requires linking the snapshot to a target volume. You can make multiple snapshots (up to 256) of each source volume.

These snapshots share allocations to the same track image whenever possible while ensuring they each continue to represent a unique point-in-time image of the source volume. Despite the space efficiency achieved through shared allocation to unchanged data, additional capacity is required to preserve the pre-update images of changed tracks captured by each point-in-time snapshot.
Product options

EMC offers the following software options for EMC storage systems. An EMC Customer Service Engineer configures the storage system for these options at installation or service time.

**SRDF Controls for z/TPF**

SRDF Controls for z/TPF V8.0 monitors SRDF status and controls SRDF processing.

*Note:* The *EMC SRDF Controls for z/TPF Product Guide* provides information on these commands.

**ResourcePak for z/TPF**

ResourcePak® for z/TPF V8.0 is a collection of EMC utility programs that provide EMC storage system feature functionality, configuration and statistical reporting, and extended features for SRDF Controls for z/TPF and TimeFinder Controls for z/TPF.

*Note:* The *EMC ResourcePak for z/TPF Product Guide* provides more information.
Product Overview
CHAPTER 2
Installation

This chapter provides the information necessary to install the TimeFinder Controls for z/TPF software. The topics include:

◆ Preinstallation steps ................................................................. 30
◆ TimeFinder Controls for z/TPF distribution ...................................... 32
◆ z/TPF source customization .......................................................... 33
◆ TimeFinder Controls for z/TPF installation ......................................... 34
◆ Functional entries ........................................................................ 35
◆ Installation considerations .......................................................... 35
◆ Migration from an earlier release of TimeFinder ................................. 36
Preinstallation steps

Before you begin installing TimeFinder Controls for z/TPF, perform the following steps:

- Review the hardware and software requirements.
- Check EMC Online Support for any product updates or current release notes.

Reviewing the hardware and software requirements

The TimeFinder Controls for z/TPF has the hardware and Enginuity requirements shown in Table 1. Before you install TimeFinder Controls for z/TPF, make sure your storage system meets these requirements:

Table 1  Storage system requirements

<table>
<thead>
<tr>
<th>Item</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware</td>
<td>All currently supported DMX, VMAX, or VMAX 3 storage systems.</td>
</tr>
<tr>
<td>Enginuity release</td>
<td>5773 and later or HYPERMAX OS.(^a)</td>
</tr>
<tr>
<td>Gatekeeper devices</td>
<td>You can define a gatekeeper device, through which all TimeFinder operations for devices in a TimeFinder Set are to be issued. This gatekeeper device can be a general file, general dataset, or other online device.</td>
</tr>
</tbody>
</table>

\(^a\) This minimum supported release level is accurate at the time of publication and is subject to change. Please check the Release and End of Life Service Dates on support.EMC.com for the most current information. Contact your EMC Customer Support Engineer to verify that your system meets these requirements. Use of certain features requires higher Enginuity levels. These requirements are noted where appropriate later in this guide.

Note: Have your EMC Customer Engineer verify this configuration before you perform any TimeFinder commands.

TimeFinder Controls for z/TPF has the mainframe hardware and software requirements listed in Table 2 on page 30. Before you install TimeFinder Controls for z/TPF, make sure your mainframe system meets these requirements.

Table 2  Mainframe hardware and software requirements

<table>
<thead>
<tr>
<th>Item</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware</td>
<td>Any system that supports current IBM mainframe operating systems</td>
</tr>
<tr>
<td>Software</td>
<td>z/TPF version 1.1 or later operating system environment</td>
</tr>
</tbody>
</table>

Note: When running z/TPF as a guest under z/VM on a storage system running Enginuity 5773 TimeFinder requires volumes to be defined as unsupported device types, or if using gatekeepers, that the gatekeepers be defined as an unsupported device to z/VM. At Enginuity 5874 and later, the TimeFinder Controls for z/TPF requirement for unsupported devices under z/VM is lifted. If z/TPF system devices are defined as unsupported to z/VM, z/VM must be modified to allow IPL of an unsupported device by a secondary CP. Alternatively, you may define the TPF volumes as DASD to z/VM only if they are not defined as mini disks.
Downloading maintenance

**Note:** If there is no current maintenance, keep these instructions for future use when you do need to download maintenance.

You can download any maintenance updates and current release or service notes from the EMC online support website:

https://support.EMC.com

You must be a valid EMC customer before you can access EMC Support. Make sure your license for this software is registered. If it is not, you will not be able to access the download section of the EMC Support website.

On the page for your product, you will see files for different product versions. For your version, you may see the following types of files:

- **ReadMe_vrm_Fixes.txt** - contains information about the release.
- **Service_Notes_prodvrm.pdf** - contains information discovered after initial release of the product.
- **prodvrm_fixes.zip** - contains the previous two documents as well as all OCO or source programs containing cumulative fixes to this service release.

Where:

- **vrm** = The version, revision level, and modification level of the software you want.
- **prod** = The product name.

Take the following steps to download these files:

1. Log on to:

   https://support.EMC.com

2. Choose Support > Support by Product. Search for TimeFinder Controls for z/TPF.

3. Take either of the following steps:

   - To download a copy of a document, click either **ReadMe_vrm_Fixes.txt** or **Service_Notes_prodvrm.pdf**.

     **Note:** **Service_Notes_prodvrm.pdf** is an Adobe Acrobat document. To view documents on EMC Support, you must have Adobe Acrobat Reader installed.

   - To download the zip file, click **prodvrm_fixes.zip**. Download the zip file to your home system, unpack the zip file, and follow the instructions contained in it.
TimeFinder Controls for z/TPF distribution

The TimeFinder Controls for z/TPF distribution kit consists of a tar file of LINUX file systems of all OCO or source programs containing cumulative fixes to this service release. This tar file may be packaged on a CD or as an electronic download from EMC Online Support.

To extract the TimeFinder Controls for z/TPF tar file to your LINUX file system, take the following steps:

1. Take one of the following steps:
   - If you are installing TimeFinder Controls for z/TPF from a CD, mount the CD on an open system host. Copy the contents of the CD to a working directory.
   - If you are installing TimeFinder Controls for z/TPF from EMC Online Support, take the following steps:
     a. Log into a privileged account on an open systems host (root on UNIX or administrator on Windows).
     b. Allocate a working directory on the open system for the installation.
     c. Log onto the EMC Online Support.
     d. Choose Support > Support by Product. Search for TimeFinder Controls for z/TPF. Note: If you are not able to access this location, contact EMC Customer Service.
     e. Select the product version you want to download. The product version consists of a tar file and the installation instructions.
     f. Download the installation kit into the working directory on the open system.

2. If your host is a Windows system, copy the tar file in the working directory and use FTP to transfer the tar file to LINUX.

   ftp hostname
   (username and password prompts)
   cd...
   25....is working directory name prefix binary 200 Representation type is image
   put ZTTFvrm.tar ZTTFvrm.tar

3. From LINUX, list the contents of the tar file, as follows:

   tar -tvf ZTTFvrm.tar

4. From LINUX, extract the contents of the tar file, as follows:

   tar -xvf ZTTFvrm.tar

This produces the following files:

<table>
<thead>
<tr>
<th>File name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TFReadMe</td>
<td>A ReadMe file.</td>
</tr>
<tr>
<td>TFRelNotes</td>
<td>Release Notes for TimeFinder Controls for z/TPF 8.0</td>
</tr>
</tbody>
</table>
### z/TPF source customization

*Table 3* describes z/TPF source customization required for TimeFinder. Sample code is included in `/TTFvrm_SAM`.

#### Table 3  TPF source customization

<table>
<thead>
<tr>
<th>Segment</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>umet.asm</td>
<td>Add ZUTIM as a BSS ONLY functional entry.</td>
</tr>
<tr>
<td>FCTB</td>
<td>Allocate ( n ) 4 K fixed file ordinals for record types: #EMCTF, #EMCTM, and #EMCTB. It is recommended that you allocate more than the required minimum number of ordinals to accommodate the possibility of the addition of DASD subsystems or TimeFinder groups. ( n = \left[ a \left( c/80 \right) + a \right] \times b + b + 2 ) where: ( a ) = the number of user defined sets in a group. Use the highest number of sets configured in a group. ( b ) = the number of user defined groups. ( c ) = the number of device pairs per set. Use the highest number of device pairs configured in a set.a</td>
</tr>
<tr>
<td>ucnfeq.mac b</td>
<td>Define BSS CINFC tag UMMETGST. Define MDBF subsystem unique user CINFC tag UMMEOMA. UMMEOMA is required for TimeFinder/Offline Module Access.</td>
</tr>
<tr>
<td>emcUEQ.mac b</td>
<td>Set global variable &amp;OMA to 1 if Offline Module Access is installed, 0 if not installed. The default setting is 1. Set global variable &amp;QOS to 1 if QOS Controls for TPF is installed, 0 if not installed. The default setting is 1. Set global variable &amp;SES to 1 if Session Controls for TPF is installed, 0 if not installed. The default setting is 1. Set global variable &amp;TF to 1 to indicate TimeFinder Controls is installed; 0 indicates the product is not installed. The default setting is 1. Set global variable &amp;RDF to 1 if SRDF Controls is installed; 0 if not installed. The default setting is 1.</td>
</tr>
<tr>
<td>usr.cntl</td>
<td>Add entries for E1Tx, E1Ux, and E1Ax program segments and run the appropriate off-line jobs to generate the allocator source (TABLEExx) and PAT source (PATxx).</td>
</tr>
<tr>
<td>riata.mac</td>
<td>Add RIATA ID=’X’A386’,XCP=YES. The VFA DELAY file attributes of the EMC TimeFinder control records must be modified prior to a Restore or Incremental Restore to ensure the updates made to them during these operations survive the synchronization process. Prior to a Restore or Incremental Restore, the VFAF and LOCKF attributes must be modified as follows: ZRTDM MODIFY RECID=A386,VFAF=DELAY,LOCKF=PROC</td>
</tr>
</tbody>
</table>
Installation

a. The result of (c/80) must be rounded up to the next whole integer.
b. Required for TimeFinder/Offline Module Access/QOS Controls/session controls integration.

TimeFinder Controls for z/TPF installation

Follow these steps to install TimeFinder Controls for z/TPF:

1. Unload TimeFinder Controls for z/TPF into appropriate source, object, and sample libraries.

2. Update the appropriate general functional message table. See the sample Functional Message Editor Table Entry in umet.asm supplied in the ZTTFvrm_SAM file.

3. Assemble the general functional message table.

4. Update the Basic Subsystem FCTB to allocate the appropriate number of 4 K fixed file #EMCTF, #EMCTM, and #EMCTB records. See the sample RAMFIL statements in ramfil.mac supplied in the ZTTFvrm_SAM file.

5. Generate and link the Basic Subsystem Face Table.

6. Update the Basic Subsystem RIAT with record id x'A386' attributes. See the sample RIATA calls in riata.mac supplied in the ZTTFvrm_SAM file.

7. Assemble the Basic Subsystem RIAT.

8. Update emcueq.mac to indicate whether Session Controls, QoS controls, and/or SRDF Controls are installed. The settings impact conditional assemblies that look at these global settings.

9. Define BSS CINFC tag UMMETGST. Refer to the sample UCNFEQ statements in ucnfeq.mac supplied in the ZTTFvrm_SAM file.

10. Update the Basic Subsystem allocator with program allocation input cards for TimeFinder. See the sample Program Allocation Input Deck statements in usr.cntl supplied in the ZTTFvrm_SAM file.

11. Generate the Basic Subsystem SAL table (TABLExx) and program allocation table (IPATxx).

12. Assemble the Basic Subsystem IPATxx.


14. Update image load, general file load, and online load decks with the generated Basic Subsystem allocator version.

15. Create a Basic Subsystem image load with modified FCTB, RIAT, functional message table, and TimeFinder E-Type segments.

16. Load and activate the image.

The load of the TimeFinder Controls for z/TPF program base is now complete.
Functional entries

If you are a new user, enter the following functional entries before you can use TimeFinder Controls for z/TPF:

1. Add resource SYMM for the Basic Subsystem to the processor resource ownership table.
   
   ```
   ZPROT ADD UT SYMM BSS
   ```
   
   **Note:** Substitute BSS with the Basic Subsystem name of the z/TPF complex.

2. Assign resource SYMM for the Basic Subsystem to one processor in the z/TPF complex.
   
   ```
   ZPROT ASN UT SYMM BSS
   ```
   
   **Note:** Substitute BSS with the Basic Subsystem name of the z/TPF complex.

3. Initialize the TimeFinder control records with record ID x'A386'.
   
   ```
   ZIFIL EMCTF/A386/00/0/nnnnnn/NNN/N
   ZIFIL EMCTM/A386/00/0/nnnnnn/NNN/N
   ZIFIL EMCTB/A386/00/0/nnnnnn/NNN/N
   ```

Installation considerations

This section explains TimeFinder Controls for z/TPF considerations.

Using TimeFinder Across The Links (multi-hop TimeFinder controls)

TimeFinder Across the Links allows z/TPF control of TimeFinder functions in a remote storage system through SRDF links.

If you are planning to use this TimeFinder feature, you should be aware of the following:

- The local and remote storage system must be connected through EMC SRDF links.
- SRDF links to remote control units must be operational prior to configuring remote TimeFinder groups and TimeFinder Sets. This enables TimeFinder functional entries “ZUTIM CONFIG ADD|REMove” on page 71 and “ZUTIM CONFIG CHANGE|DELETE” on page 74 to be used to discover and configure control records for remote TimeFinder groups.
- For best service and to maintain a central point of control in z/TPF, EMC recommends that you install SRDF Controls for z/TPF. See your EMC representative for ordering information. For additional information on this product, refer to the **EMC SRDF Controls for z/TPF Product Guide**.
- If TimeFinder Controls for z/TPF and SRDF Controls for z/TPF are loaded to the same TPF complex, the products must be at the same version levels to ensure compatibility.
Using Offline Module Access integration

Offline Module Access (OMA) for z/TPF maintains and displays memory resident control information and tables, enabling use of the EMC SymmAPI for z/TPF macro FDRSC. Offline Module Access for z/TPF is a component of EMC ResourcePak for z/TPF.

To enable OMA integration for TimeFinder Controls for z/TPF, you must update all user macros and assemble shipped source as outlined in “z/TPF source customization” on page 33 and “TimeFinder Controls for z/TPF installation” on page 34. If both TimeFinder Controls for z/TPF and ResourcePak for z/TPF are loaded to the same z/TPF complex, the products must be at the same version levels to ensure compatibility.

Using QOS Controls for z/TPF

Quality of Service (QOS) Controls for z/TPF provides TimeFinder Controls for z/TPF with a means of changing Quality of Service values for all source volumes in a TimeFinder group. QOS Controls for z/TPF is a component of EMC ResourcePak for z/TPF. QOS Controls for z/TPF is supported with Enginuity 5773 to 5876. QOS Controls for z/TPF is not supported with HYPERMAX OS 5977.

To enable QOS Controls for TimeFinder Controls for z/TPF, update all user macros and assemble shipped source as outlined in “z/TPF source customization” on page 33 and “TimeFinder Controls for z/TPF installation” on page 34.

If you load both TimeFinder Controls for z/TPF and ResourcePak for z/TPF to the same z/TPF complex, the products must be at the same version levels to ensure compatibility.

Migration from an earlier release of TimeFinder

Perform the following to migrate TimeFinder Controls for z/TPF control records from V7.1 format to V8.0 format.

Note: You must convert TimeFinder control records after loading TimeFinder Controls for z/TPF V8.0 programs. TimeFinder commands issued after loading V8.0 programs and before TimeFinder control record migration will be aborted with message:

UTIM0095E TimeFinder Version: dddd Modification dddd Revision: dddd Control record migration required.

"Appendix A", “Messages,” provides additional information.

The example entries in the following procedure must be tailored for your specific environment.

1. Allocate new programs and reassemble all user exit programs.

   Note: “TimeFinder Controls for z/TPF installation” on page 34 provides additional information.

2. Ensure no TimeFinder activity is in progress. SPLIT/CLIP any currently paired devices.
3. Display the current configuration for the later comparison. (Refer to Table 4.)

**Table 4** Display TimeFinder Controls for TPF V8.0 configuration

<table>
<thead>
<tr>
<th>Display command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZUTIM DIS GRO-cccccccc STA-ALL</td>
<td>Display TimeFinder status.</td>
</tr>
<tr>
<td>ZUTIM DIS GRO-cccccccc SET-cccccccc</td>
<td>Display TimeFinder sets for each TimeFinder group.</td>
</tr>
<tr>
<td>ZUTIM DIS GRO-cccccccc PRO-GEN</td>
<td>Display group properties.</td>
</tr>
<tr>
<td>ZUTIM DIS CTLRCD-CU</td>
<td>Display CU control record summary.</td>
</tr>
<tr>
<td>ZUTIM DIS CTLRCD-MA</td>
<td>Display master control record summary.</td>
</tr>
</tbody>
</table>

4. Backup TimeFinder control records. (Refer to Table 5.)

**Table 5** Backup TimeFinder control records

<table>
<thead>
<tr>
<th>Backup command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZUTIM CTLRCD BACKUP</td>
<td>Back up TimeFinder control records.</td>
</tr>
</tbody>
</table>

5. Load the new program base.

6. Migrate the TimeFinder Controls for z/TPF control records. (Refer to Table 6.)

**Table 6** Migrate TimeFinder Controls for z/TPF control records

<table>
<thead>
<tr>
<th>Configuration command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZUTIM MIGRATE</td>
<td>Migrate TimeFinder Controls for z/TPF control records from a V7.1.0 format to configuration control records in a V8.0 format.</td>
</tr>
</tbody>
</table>

**Note:** “ZUTIM MIGRATE” on page 146 provides more information.

7. Display TimeFinder Controls for z/TPF V8.0 configuration control record summaries, TimeFinder sets for each TimeFinder group, and TimeFinder group properties to verify the configuration. (Refer to Table 7.)

**Table 7** Display configuration control records commands

<table>
<thead>
<tr>
<th>Display command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZUTIM CON DIS GRO-cccccccc SET-cccccccc</td>
<td>Display TimeFinder sets for each TimeFinder group.</td>
</tr>
<tr>
<td>ZUTIM CON DIS GRO-cccccccc PRO-GEN</td>
<td>Display Configuration Group properties.</td>
</tr>
<tr>
<td>ZUTIM CON DIS CTLRCD-CU</td>
<td>Display Configuration CU control record summary.</td>
</tr>
<tr>
<td>ZUTIM CON DIS CTLRCD-MA</td>
<td>Display Configuration master control record summary.</td>
</tr>
</tbody>
</table>

**Note:** “ZUTIM CONfig DISplay CTLRCD” on page 79 and “ZUTIM CONfig DISplay” on page 77 provide more information.
8. Accept the migrated configuration filing it down to the TimeFinder Controls for z/TPF V8.0 control records. (Refer to Table 8.)

**Table 8 Accept TimeFinder Controls for z/TPF V8.0 configuration**

<table>
<thead>
<tr>
<th>Configuration command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZUTIM CON ACCEPT ALL</td>
<td>Accept the migrated configuration.</td>
</tr>
</tbody>
</table>

*Note: “ZUTIM CONfig ACCEPT|DISCARD” on page 68 provides additional information.*

9. Begin normal TimeFinder operations. (Refer to Table 9.)

**Table 9 TimeFinder operations command example**

<table>
<thead>
<tr>
<th>Operations command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZUTIM REE GRO-cccccccc</td>
<td>Initiate a TimeFinder Reestablish for TimeFinder group ccccccccc.</td>
</tr>
</tbody>
</table>
CHAPTER 3
TimeFinder Operations

This chapter contains an overview of EMC TimeFinder Operations, a description of its key components, and a high-level discussion of how to use these components in operations for business continuance. The topics include:

◆ Operations.................................................................  40
◆ Configuring TimeFinder control records .........................  42
◆ Operations verification..................................................  43
◆ Prompts operator to halt/proceed if not equal to zero ..........  48
◆ Monitoring TimeFinder operations.................................  49
◆ Mixed vendor tolerance..................................................  50
◆ TimeFinder Across the Links .........................................  50
◆ Cascaded operations......................................................  51
◆ QoS Controls for z/TPF ................................................  51
◆ Session Controls for z/TPF............................................  52
◆ z/VM gatekeeper support..............................................  52
TimeFinder Operations

Operations

TimeFinder offers the following operations, which are available through host commands described later in this guide:

- Initializing and configuring TimeFinder control records
  This set of commands uses information retrieved through interrogation of z/TPF and the storage systems in the z/TPF complex, and user defined storage configuration information of the storage system to configure the data structures used by TimeFinder. Configuration commands allow you to dynamically configure the TimeFinder pairs that are to be operated upon by subsequent TimeFinder operation.

- Operations verification
  This component applies pre-defined options defined for the TimeFinder group and command, validates any input options against defined permissions, and reports anything about the TimeFinder group which may prohibit successful operation of the command. In some cases, you are prompted to halt or proceed with the operation.

- Establishing a TimeFinder pair
  TimeFinder/Clone creates the clone pair and copies the entire contents of the clone source device to the clone target device.

- Splitting a TimeFinder pair
  TimeFinder/Clone splits the clone target from the clone source and makes it available to hosts through separate device addresses.
  In a production z/TPF environment, Exception Recording optionally may be started on all processors in the complex prior to issuing a split, and stopped after the split has completed using the supplied pre- and post-split user exits. To apply exception recording to a TimeFinder point in time copy, run Exception Restore on the TimeFinder/Clone target system.

- Reestablishing a TimeFinder target device
  TimeFinder/Clone recreates the clone pair. Any data written to the clone target while it was split from the clone source device is overwritten on the target. The target receives its updates from the source device.

- Restoring from a TimeFinder device
  TimeFinder/Clone recreates the clone pair. Any data written to the clone source while it was split from the clone target device is overwritten on the source. The source receives its updates from the target device. The clone pair must have been previously established or reestablished and split.

- Incrementally restore from a TimeFinder target device
  TimeFinder/Clone recreates the clone pair. Any data written to the clone source while it was split from the clone target device is overwritten on the source. The source receives its updates from the target device. The clone pair must have been previously established or reestablished and split.

- Create a Snapshot
  TimeFinder/SnapVX creates a snapshot of a device.
◆ Activate a Snapshot

TimeFinder/SnapVX sets a point in time for a created snapshot of a device.

◆ Link a Snapshot

TimeFinder/SnapVX links an activated snapshot to a device. It is possible to link a snapshot to a target or back to the source device (restore) and link in copy or nocopy mode.

◆ Rename a Snapshot

TimeFinder/SnapVX modifies the snapshot name for a created or an active snapshot. All Snapshot names associated with a TimeFinder/SnapVX group are modified.

◆ Unlink a Snapshot

TimeFinder/SnapVX unlinks an activated snapshot from a device. Unlink breaks the relationship between a snapshot and the linked device.

◆ Update a Snapshot

TimeFinder/SnapVX updates the copy mode of a linked device, changes the expiry date of an activated snapshot, or indicates whether a snapshot is to be preserved.

◆ Clipping a TimeFinder target device

This command modifies the first two characters of the volume label of a TimeFinder clone target or SnapVX linked target to a predefined value, and makes the TimeFinder target ready to the host if it was left not ready to the host by the previous SPLIT or LINK command. The CLIP command can also be used to make a TimeFinder target ready to the host without modifying the volume label.

◆ Terminate a TimeFinder/Clone Session or a TimeFinder/SnapVX Snapshot

This command terminates a split TimeFinder/Clone session or an activated and unlinked TimeFinder/SnapVX snapshot.

◆ Monitoring TimeFinder operations

The TimeFinder monitor is initiated following completion of any issued TimeFinder operation (as previously described). The TimeFinder monitor reports operation status summary for all logical subsystems being operated on until the requested operation has completed.

The following sections describe some of these operations in more detail.
Configuring TimeFinder control records

TimeFinder configuration enables you to:

- Open and close a configuration session for a named TimeFinder group.
- Add and remove named TimeFinder Sets from a TimeFinder group.
- Change and delete TimeFinder pairs from a TimeFinder Set.
- Rename TimeFinder groups and TimeFinder Sets.

Configuration displays provide various views of the TimeFinder configuration. The TimeFinder group is a clone group or a SnapVX group.

- A clone group consists of one unique clone target for each online and offline z/TPF module. The target of a source device in any clone group is a unique target. A source or target device can be configured only once in any one clone group.

- A SnapVX group may consist of one unique target for each online and offline z/TPF module. Target devices must be configured in order to link a snapshot to targets. If there is no intent to link a snapshot to target devices, a target need not be configured.

You can configure a TimeFinder target in multiple distinct TimeFinder groups. Although such a configuration can be useful for some purposes, it is important that the restrictions such a configuration imposes are understood.

Note: The same target may not beestablished with more than one source or linked to more than one snapshot at any given point in time. A clone target can only be reestablished with or incrementally restored to the source device to which it has most recently been attached.

The clone targets of a TimeFinder/Clone group which have been synchronized and split, or linked targets of a TimeFinder SnapVX snapshot constitute a distinct copy of a z/TPF database.

TimeFinder configuration procedure

TimeFinder configuration commands can be used if the TimeFinder control records have been cleared using “ZUTIM INITIALize CLEar|CONTinue|CANCel” on page 139, or if the TimeFinder control records have been previously configured using TimeFinder Controls for z/TPF V8.0.

This example is a generic procedure for configuring a new TimeFinder group.

1. Back up TimeFinder control records
   TimeFinder Controls for z/TPF V8.0 includes controls to backup and restore the TimeFinder control records to TimeFinder backup control records.

2. Open a configuration session for a TimeFinder group.
   Note: “ZUTIM CONfig OPEN|CLOSE” on page 82 provides more information.

If necessary, configuration control records are refreshed from existing TimeFinder control records. Create a configuration TimeFinder group control record for the TimeFinder group.
3. Add one or more TimeFinder Sets for one or more logical subsystems (LSS).

**Note:** “ZUTIM CONfig ADD|REMove” on page 71 provides more information.

For each TimeFinder Set added, create a TimeFinder CU control record describing the logical subsystem.

4. Change TimeFinder pairs for each TimeFinder Set in the TimeFinder group.

Define TimeFinder pair configuration information for the TimeFinder Sets in the TimeFinder group.

**Note:** “ZUTIM CONfig CHAnge|DElete” on page 74 provides more information.

5. Close the configuration session for the TimeFinder group.

**Note:** “ZUTIM CONfig OPEn|CLOse” on page 82 provides more information.

Indicate that the configuration session for the TimeFinder group is closed.

6. Accept the TimeFinder configuration:
   a. Validate that all configuration sessions are closed.
   b. Verify that configured TimeFinder device pairs are unique.
   c. Modify TimeFinder pair status for all TimeFinder Sets.
   d. Compress TimeFinder control records by removing empty TimeFinder Sets and empty TimeFinder groups.
   e. Calculate new super, local, and remote TimeFinder group counts.
   f. Replace existing TimeFinder control records with configuration control records.
   g. Refresh Group Status Control Area.

**Operations verification**

Operations verification:

- Applies options defined for the TimeFinder group and command,
- Validates any input options against defined permissions, and
- Reports anything about the TimeFinder group which may prohibit the successful operation of the command. In some cases, you may be prompted to halt or proceed with the operation.

The following list identifies some of the checks done for TimeFinder operations:

- Applies options defined for the command
- Validates input options against defined permissions
- Initiates one operation verification ECB for each Set in the TimeFinder group:
  - Event facility driven
TimeFinder Operations

- Verify Operations SDA or Gatekeeper is host accessible
- Verify TF/Clone Feature is licensed for use (5874 and later)
  - Check is bypassed for Split, Clip, and Terminate commands
  - If microcode indicates feature is not licensed, processing halts
- Verify TF/SnapVX Feature is licensed for use (HYPERMAX OS 5977 and later)
  - Check is bypassed for Clip and Terminate commands
  - If HYPERMAX OS indicates feature is not licensed, processing halts
- Verify SRDF/A active and consistent for TimeFinder Groups with general property ASYNC defined
  - Check is only done for Clone Split and SnapVX Activate or Create with auto Activate
  - If SRDF/A not active prompt operator to halt/proceed operation
  - If SRDF/A is active and the target is not consistent, processing halts

TimeFinder/Clone operations verification

◆ Operation verification for TimeFinder/Clone accumulates:
  - Clone pairs in a TimeFinder Set
  - Online clone target counts
  - Clone targets with 16 sessions
  - Clone session exists for clone pair
  - Clone pair attached counts
  - Source is target for different source
  - Target is source for different target
  - Target is source for partner device
  - Target is target for different source
  - SDDF sessions on source and target counts (Enginuity 5773 only)
  - SRDF/A R2 source not R/W counts
  - SRDF/A R2 target not R/W counts
  - Clone source not ready counts
  - Clone target not ready counts
  - Cascaded clone leg one not split

◆ Verify no online clone target counts:
  - All operations except Split and Terminate
  - Prompts operator to halt/proceed
  - Passes operation if targets are online and permission is set
• Does operation if option and permission are set
  ◆ Verify no background Split in progress:
    • All operations except Split
    • Halts operation if not equal to zero
  ◆ Verify clone source or target R2s R/W:
    • All operations except Split, Terminate, and Clip
    • Halts operation if not equal to zero
  ◆ Verify clone source or target RDF not ready:
    • All operations except Split, Terminate, and Clip
    • Prompts operator to halt/proceed if not equal to zero
  ◆ Verify less than sixteen (16) clone sessions on source or target:
    • All operations except Split, Terminate, and Clip
    • Halts operation if not equal to zero
  ◆ Verify no clone targets with NO clone session with source:
    • For Restore & Increstore operations:
      – Halts operation if not equal to zero
    • For Reestablish operation:
      – Passes command if:
        * Clone targets have clone session with source
        * SDDF option and permission is set
        * SDDF permission is set and NOSDDF specified in the functional entry
      – Otherwise, halts operation if not equal to zero
  ◆ Verify no clone source or target with SDDF sessions (5773 only):
    • All operations except Split & Terminate
    • Halts operation if not equal to zero
  ◆ Verify no clone target not ready:
    • Establish only
    • Halts operation if not equal to zero
  ◆ Verify no source is target for different source:
    • For all operations except Split & Terminate:
      – Prompts operator to halt/proceed if not equal to zero
    • For Terminate:
      – If clone session created for source and target, prompts operator to halt/proceed
TimeFinder Operations

- For Split:
  - Halts operation if not equal to zero and those sessions are not split
- Verify no target is source for different target:
  - For all operations except Split & Terminate:
    - Prompts operator to halt/proceed if not equal to zero
  - For Terminate:
    - If clone session created for source and target, prompts operator to halt/proceed
- Verify no target is target for different source:
  - For all operations except Split & Terminate:
    - Halts operation if not equal to zero
  - For Terminate:
    - If clone session created for source and target, prompts operator to halt/proceed
- Verify no target is source for partner device:
  - All operations except Split
  - Halts operation if not equal to zero
- Verify clone sessions created for source with target (or vice versa) counts:
  - Clip & Terminate only
  - Halts operation if not equal to zero
- Verify synchronization is not in progress:
  - Split operation only
  - Passes operation if synchronization of all clone pairs complete
  - Prompts operator to halt/proceed if:
    - FORCE option and permission is set
    - FORCE permission is set and FORCE specified in the functional entry
  - Otherwise, halts operation if count not equal to zero
- Verify clone pairs restored equals number of clone pairs in set:
  - For Split After Clone Restore (ACRE property option ON)
  - If clone pairs restored equals clone pairs in set
    - Prompts operator to halt/proceed with Split
  - Otherwise, halts operation
- Verify clone pairs established equals number clone pairs in set:
  - For Split NOT After Clone Restore (ACRE property option OFF)
  - If clone pairs established equals clone pairs in set
– Executes Split
  • Otherwise, prompts operator to halt/proceed with Split

◆ Verify no source already target of partner device:
  • Establish & Reestablish only
  • Halts operation if not equal to zero

◆ Verify no target already source of partner device:
  • Restore & Incstore only
  • Halts operation if not equal to zero

**TimeFinder/SnapVX operations verification**

◆ Operation verification for TimeFinder/SnapVX accumulates:
  • SnapVX source devices in a TimeFinder Set
  • Online target counts
  • SnapVX source or target with maximum sessions
  • Snapshot doesn’t exist for SnapVX source or target (unlink, update copy)
  • Snapshot on source
  • Snapshot on source active
  • Snapshot on source linked to source
  • Snapshot on source linked to target
  • SnapVX R2 source not R/W counts
  • SnapVX R2 target not R/W counts
  • SnapVX source RDF not ready counts
  • SnapVX target RDF not ready counts

◆ Operation Verification verifies the following for SnapVX Terminate:
  • If Terminate snapshot ID verify ID exists for SnapVX source
    – Issue warning message
  • If Terminate verify snapshot exists for SnapVX source
    – Issue warning message
  • If Snapshot linked to source or target
    – If Unlink Before Target specified, prompt operator to halt/proceed
    – Otherwise halt processing

◆ Operation Verification verifies the following for SnapVX Create:
  • Verify source with maximum snapshots
    – Halts operation if not equal to zero
  • Verify snapshot name already exists for any SnapVX source
– Halts operation if not equal to zero

◆ Operation Verification verifies the following for SnapVX Activate:
  • If SnapVX source with snapshots doesn’t equal SnapVX source in TimeFinder set
  • Prompt operator to halt/proceed

◆ Operation Verification verifies the following for SnapVX Link:
  • Verify no online target counts
    – Prompts operator to halt/proceed if targets online and permission is set
    – Does operation if option and permission are set
  • If SnapVX source with active snapshots doesn’t equal SnapVX source in TimeFinder set
    – Prompt operator to halt/proceed
  • Verify SnapVX source or target not R/W
    – Halts operation if not equal to zero
  • Verify SnapVX source or target RDF not ready
    – Prompts operator to halt/proceed if not equal to zero

◆ Operation Verification verifies the following for SnapVX Unlink:
  • Verify linked snapshots on source
    – Halts operation if not equal to zero
  • Verify snapshots linked to target equals SnapVX source in TimeFinder set
    – Prompt operator to halt/proceed
  • Verify RESTORE option with snapshots linked to source equals SnapVX source in TimeFinder set
    – Prompt operator to halt/proceed

◆ Operation Verification verifies the following for SnapVX Update:
  • Verify linked snapshots on source
    – Halts operation if not equal to zero
  • Verify EXP parameter with active snapshots on source not equal SnapVX source in TimeFinder set
    – Prompt operator to halt/proceed
  • Verify SnapVX source or target not R/W
    – Halts operation if not equal to zero
  • Verify SnapVX source or target RDF not ready
    – Prompts operator to halt/proceed if not equal to zero
Clipping a TimeFinder target device

Clipping a TimeFinder target device may be necessary in an environment where the TimeFinder targets are configured on a channel to the z/TPF host. To preclude any window in which duplicate volser exist in a z/TPF environment, a clone split or SnapVX link by EMC TimeFinder Controls for z/TPF leaves the TimeFinder target in a user not ready state by default.

Note: “ZUTIM CLip” on page 63, “ZUTIM DEFine PROp-EST|REE|SPL|RES|INC|CLI” on page 98, “ZUTIM LINK” on page 141 and “ZUTIM SETpro EST|REE|SPL|RES|INC|CLI|TER|CRT|LIN|UNL|UPD” on page 166 provide more information.

Clipping a TimeFinder target relabels the target, dependent on the user defined prefix and clip option for the MDBF subsystem of the TimeFinder source at the time of the split or SnapVX Activate, and changes the TimeFinder target state to ready.

Note: “ZUTIM DEFine PROp-CLI|NOC” on page 102 provides more information.

Monitoring TimeFinder operations

For each TimeFinder Set operated on by a TimeFinder operation, the TimeFinder monitor:

- Determines the status of each TimeFinder pair in the TimeFinder group
- Displays the TimeFinder pair status summary for each set in the TimeFinder group

The status summary identifies the number of TimeFinder pairs for each TimeFinder Set for which the requested operation:

- Has completed
- Is in progress
- Was not started

Use the available TimeFinder displays to identify any specific TimeFinder pairs for which the requested operation could not be started.

Note: “ZUTIM DISplay” on page 109 provides more information.

You can then use TimeFinder RANGE command(s) to put the TimeFinder pair in the desired state. You can enter RANGE commands while the TimeFinder Monitor is active for an operation on the entire TimeFinder group.

One TimeFinder operation for each distinct TimeFinder group may be active and monitored concurrently.

The TimeFinder Monitor is initiated by the TimeFinder Scheduler following completion of all command processes. The TimeFinder Scheduler delays initiation of the TimeFinder Monitor by a user defined delay value (default 3 seconds).

The TimeFinder Monitor re-initiates itself at a user defined interval (default 3 minutes) until the requested TimeFinder operation has completed for the TimeFinder group.
For TimeFinder commands that initiate synchronization, the TimeFinder monitor is re-initiated if there are still tracks left to be synchronized. The user can also enable persistent monitoring for commands that initiate synchronization. In this mode, the monitor is terminated by user command. This mode of operation is useful when monitoring migrations and cascaded TimeFinder solutions.

Note: “ZUTIM DEFINE PROP-INT|DEL” on page 96 provides more information.

Mixed vendor tolerance

By design, TimeFinder Controls for z/TPF does not allow you to configure the control structures for control units that do not understand EMC SymmAPI for z/TPF I/O commands. In a mixed vendor environment, you would only configure TimeFinder groups for the storage systems compatible with EMC SymmAPI for z/TPF.

TimeFinder Across the Links

TimeFinder Across the Links provides z/TPF control of TimeFinder functions in remote control units through SRDF links.

Note: The EMC Symmetrix Remote Data Facility (SRDF) Product Guide provides detailed information on SRDF operations.

Control units with z/TPF host access are considered local control units to z/TPF. Remote control units generally have no z/TPF host access but do have SRDF links connecting them to host attached local control units.

TimeFinder Across the Links provides the ability to direct TimeFinder operations across SRDF links to devices in remote storage systems. TimeFinder commands issued to remote storage systems:

- Pass through host attached local control units
- Travel across SRDF links
- Execute on the remote control units

Note: “ZUTIM CONFIG ADD|REMOVE” on page 71 describes how to configure remote TimeFinder groups.

One TimeFinder operation for each TimeFinder group may be active and monitored concurrently.

Note: EMC recommends using SRDF Controls for z/TPF with TimeFinder Controls for z/TPF when using TimeFinder Across the Links to maintain full control within z/TPF.

Multi-hop controls extends TimeFinder Across the Links up to 4 hops from the host connected storage system. A hop can be described as the link connecting one storage system to its SRDF partner storage system.
Cascaded operations

Starting with Enginuity 5874, TimeFinder Controls for z/TPF allows for cascaded clone operations. This allows a clone operation to take place with a device that is already involved in a clone operation without ending the first clone session.

For instance, as shown in Figure 1, you can use TimeFinder to clone device A to device B. Then, while the relationship between A and B is preserved, clone device B to device C.

![Cascaded Clone Diagram]

**Figure 1** Cascaded clone

QoS Controls for z/TPF

QoS Controls for z/TPF is a component of EMC ResourcePak for z/TPF. QoS Controls for z/TPF allows you to display and define the Quality of Service value for a TimeFinder group.

The QoS value determines the priority given to TimeFinder copy tasks:

- Establish
- Reestablish
- Restore
- Incremental Restore

The valid QoS values are 0 through 10 for storage systems running Enginuity 5773 and 0 through 17 for storage systems running Enginuity 5874 to 5876. The default value is 0 and is the highest priority.

If a TimeFinder group is being synchronized and the TimeFinder Monitor is active when you define the QoS value for that Group, the TimeFinder Monitor initiates QoS Controls for z/TPF. The QoS Controls then set the QoS value for all TimeFinder pairs in the TimeFinder group.

If the TimeFinder Monitor is not active, the TimeFinder Scheduler initiates QoS Controls for z/TPF to set the QoS value for all TimeFinder pairs in the TimeFinder group the next time a TimeFinder Establish, Reestablish, Split, Clip, Restore, or Incremental Restore is started.

---

Note: “ZUTIM CONFIG ADD|REMove” on page 71 describes how to configure multi-hop remote TimeFinder groups.
The QoS value for TimeFinder is set on the source volume. If a volume is the source for more than 1 TimeFinder group, and those groups have a different QoS value defined, the QoS value for the volume will reflect the value of the group that last issued a TimeFinder Establish, Reestablish, Restore, or Incremental Restore.

**Note:** The *EMC ResourcePak for z/TPF Product Guide* provides a description of QoS Controls for z/TPF.

### Session Controls for z/TPF

Session Controls for z/TPF is a component of EMC ResourcePak for z/TPF. Session Controls for z/TPF allows you to display and terminate TimeFinder Clone sessions and snapshot IDs associated with the source and/or target of a TimeFinder device pair. Session controls allows termination of TimeFinder sessions for device pairs in other TimeFinder Groups and must be used with caution.

Session Controls allows you to display all TimeFinder sessions or snapshot IDs associated with either the source or target devices in a TimeFinder Group. This includes TimeFinder sessions or snapshot IDs on the source or the target associated with a device not in the TimeFinder Group.

Session Controls allows you to delete the specified TimeFinder session or snapshot ID on the source and/or target devices in a TimeFinder Group. You can delete TimeFinder Clone session IDs by specifying the four-character TimeFinder session ID, or you can delete TimeFinder Clone Emulation and SnapVX snapshot IDs by specifying the eight character snapshot ID.

**Note:** The *EMC ResourcePak for z/TPF Product Guide* provides a description of Session Controls for z/TPF.

### z/VM gatekeeper support

z/VM gatekeeper support allows you to specify the TimeFinder operations device for each logical subsystem (to be) configured to EMC TimeFinder Controls for z/TPF. At Enginuity 5773 TimeFinder Controls for z/TPF on a TPF system running under z/VM, TimeFinder Controls for z/TPF requires that all devices to which EMC SymmAPI I/O operations will be issued, be defined as unsupported device types to z/VM. At Enginuity 5874 and later, the TimeFinder Controls for z/TPF requirement for unsupported devices under z/VM is lifted.

When running z/TPF in native mode, or under z/VM, EMC TimeFinder issues at least one device discovery I/O operation to each online module in the z/TPF complex during TimeFinder CTLRCD Refresh.

All EMC SymmAPI I/O operations following TimeFinder Control Record Refresh are directed to the TimeFinder operations SDA for each Set, or, if defined, to the gatekeeper SDA for each Set.

**Note:** “ZUTIM DISPLAY CTLRCD” on page 123 provides details about determining the operations SDA for each Set.
When running z/TPF as a guest under z/VM with all devices defined as unsupported to 
z/VM, z/VM requires the following patches:

- Add status modifier=yes for channel command x'27'
- Allow IPL of an unsupported device by a secondary CP

**Defining gatekeeper devices**

TimeFinder Controls for z/TPF also allows you to define a gatekeeper device per Set after 
TimeFinder control record configuration.

*Note:* “ZUTIM DEFINE PROp-GKD|NOG” on page 95 provides more information.

When you define a gatekeeper for a Set, EMC TimeFinder Controls for z/TPF issues all EMC 
SymmAPI I/O operations for that Set to the gatekeeper device. This gatekeeper device can 
be an online z/TPF module, a general file, or a general dataset.

Some TimeFinder commands require that the SymmAPI I/O operation be issued to a 
device other than the one for which the TimeFinder operation is intended. For this reason, 
EMC recommends that the gatekeeper device(s) you define are not included in any Sets 
configured in the TimeFinder group.

*Note:* “ZUTIM CONFIG ADD|REMOVE” on page 71 describes how to configure a device as 
part of a TimeFinder group.

When you do not configure the TimeFinder gatekeeper device as part of a TimeFinder 
group, you can use the same gatekeeper device for all Sets defining device pairs in the 
same storage system in the TimeFinder group.

**Patches with z/VM for gatekeeper devices**

When you run TimeFinder Controls for z/TPF with gatekeeper devices defined as 
unsupported to z/VM, z/VM requires that you install the following patch:

- Add status modifier=yes for channel command x'27'

When you run TimeFinder Controls for z/TPF with gatekeeper devices defined as 
unsupported to z/VM and one of the gatekeeper devices is a z/TPF IPL module, z/VM also 
requires you install the following patch:

- Allow IPL of an unsupported device by a secondary CP

To enable all possible modes of operation of TimeFinder Controls for z/TPF under z/VM, 
EMC recommends that you apply both patches to z/VM.

*Note:* For patch source, consult with your EMC representative.
Defining z/TPF devices to z/VM

EMC recommends, if possible, that you define all z/TPF devices as unsupported to z/VM, when running EMC TimeFinder Controls for z/TPF on a z/TPF system running under z/VM. At Enginuity 5874 and later, the TimeFinder Controls for z/TPF requirement for unsupported devices under z/VM is lifted. This solution is the least complex and most easily maintained.

The following CP commands define an address range as unsupported devices to z/VM:

- VARY OFF ccud-ccud
- SET RDEV ccud-ccud CLEAR
- SET RDEV ccud-ccud TY UNSUP DEVCL DASD DPS NO RESERVE_REL YES
- VARY ON ccud-ccud

The following CP commands define an address range as DASD devices to z/VM:

- VARY OFF ccud-ccud
- SET RDEV ccud-ccud CLEAR
- SET RDEV ccud-ccud TY DASD
- VARY ON ccud-ccud
CHAPTER 4
TimeFinder Commands

This chapter provides a description of EMC TimeFinder commands. The commands appear in alphabetical order. The topics include:

- ZUTIM Help ................................................................. 56
- ZUTIM ABORT ............................................................ 57
- ZUTIM ACTivate .......................................................... 60
- ZUTIM CLp ................................................................. 63
- ZUTIM CONfig ACCEPT|DISCARD .................................... 68
- ZUTIM CONfig ADD|REMove .......................................... 71
- ZUTIM CONfig CHAnge|DElete ......................................... 74
- ZUTIM CONfig DiSPlay .................................................. 77
- ZUTIM CONfig DiSPlay CTLRCD ....................................... 79
- ZUTIM CONfig DiSPlay PROp ........................................... 81
- ZUTIM CONfig OPen|CLOse ............................................. 82
- ZUTIM CONfig REName ................................................ 84
- ZUTIM CONfig VERify .................................................. 86
- ZUTIM CReaTe ............................................................. 89
- ZUTIM CTLRCD ........................................................... 93
- ZUTIM DEFine PROp-GKD|NOG ........................................ 95
- ZUTIM DEFine PROp-INT|DEL ......................................... 96
- ZUTIM DEFine PROp-EST|REE|SPL|RES|INC|CLI ..................... 98
- ZUTIM DEFine PROp-CLi|NOC .......................................... 102
- ZUTIM DEFine PROp-GEN ............................................ 105
- ZUTIM DiSPlay ............................................................ 109
- ZUTIM DiSPlay CTLRCD ............................................... 123
- ZUTIM DiSPlay PROp .................................................... 126
- ZUTIM DiSPay STAtus .................................................. 128
- ZUTIM ESTablish ........................................................ 132
- ZUTIM INCRESTORE ................................................... 135
- ZUTIM INITialize CLEar|CONTinue|CANCEl ...................... 139
- ZUTIM LINK ............................................................... 141
- ZUTIM MIGRATE .......................................................... 146
- ZUTIM PROceed|HALt .................................................. 148
- ZUTIM ESTablish ......................................................... 132
- ZUTIM REName .......................................................... 155
- ZUTIM RESTART .......................................................... 160
- ZUTIM RESTORE .......................................................... 162
- ZUTIM SETpro EST|REE|SPL|RES|INC|CLi|TER|CRT|LIN|UNL|UPD .................. 166
- ZUTIM SPLit ............................................................... 175
- ZUTIM TERminate ......................................................... 180
- ZUTIM UPDate .............................................................. 185
- ZUTIM UNLINK .............................................................. 188
- ZUTIM XCP ................................................................. 192
ZUTIM Help

Use this command to display all TimeFinder commands. Expanded help is available for each command.

Requirements and restrictions

None.

Format

ZUTIM Help

Additional information

None.

Examples

Example 1

Action: Display basic help.
User: ZUTIM Help
System

Example 2

Action: Display expanded help for CONFIGuration.
User: ZUTIM Help CON
System

Example 3

Action: Display TimeFinder version.
User: ZUTIM Help VER
System

TimeFinder Commands

56 EMC TimeFinder Controls for z/TPF Version 8.0 Product Guide
ZUTIM ABORT

Use this command to abort the execution of the previously entered Establish, Reestablish, Split, Restore, Increstore, Create, Activate, Link, Unlink, Update, Terminate, Rename, or Clip command.

Requirements and restrictions

Use the BYPASS option on the advice of EMC. EMC verifies that the TimeFinder Controls for z/TPF scheduler ECB is waiting on a stale event and no other EMC TimeFinder Controls for z/TPF ECBs exist.

Format

ZUTIM ABORT GROup-cccccccc [SET-cccccccc] [BYPASS]

Parameters

GROup-cccccccc One to eight alphanumeric character TimeFinder group name.
SET-cccccccccc One to eight alphanumeric character TimeFinder Set name identifying a storage system containing TimeFinder pairs.
BYPASS Abort and POSTC stale event or hung ECB.

Additional information

You can abort TimeFinder commands Establish, Reestablish, Split, Restore, Increstore, Create, Activate, Link, Unlink, Update, Terminate, Rename, and Clip at any time during execution. Aborting these commands while the command is in the process of issuing the operation to the TimeFinder device or clone pairs usually results in some TimeFinder device pairs in each TimeFinder Set being in the new state and others in the old state. The Abort command does not change the state of a TimeFinder source or target device.

Example

This example demonstrates how to abort an Establish command and stop any synchronization that may have begun.

Action Issue the Establish command for TimeFinder group A64TOB64.
User ZUTIM EST GRO-A64TOB64
System
CSMP0097I 15.09.25 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0019P TimeFinder Group A64TOB64
UTIM0019I TimeFinder control record refresh started
CSMP0097I 15.09.26 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1043I Local CU 000192604124 discovered for Clone Group A64TOB64 Set BED2C4D
UTIM0024P TimeFinder Group A64TOB64
UTIM0024I TimeFinder control record refresh completed
CSMP0097I 15.09.26 CPU-A SS-BSS SSU-SSU0 IS-01
E1T70000I TimeFinder Operation Verification Started
E1T70001I TimeFinder Group Properties Verification Started
Options Permissions
None
TimeFinder Commands

E1T70003I TimeFinder Device State Verification Started
CSMP0097I 15.09.32 CPU-A SS-BSS SSU-SSU0 IS-01
E1T70004I TimeFinder Operation Verification Completed
CSMP0097I 15.09.32 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0213P TimeFinder Group A64TOB64
UTIM0213I QOS Controls started
CSMP0097I 15.09.32 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0214P TimeFinder Group A64TOB64
UTIM0214I QOS Controls completed
CSMP0097I 15.09.32 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1000I Clone Group A64TOB64 Set BED2C4D started issuing Establish
CSMP0097I 15.09.40 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1031I Local TimeFinder Status Display
Clone Group: A64TOB64 Base Operation: Establish
Status: Monitor Active
Start Time: 01.09.25 Date: 01/19/16
____Operation Status____
<table>
<thead>
<tr>
<th>Opr</th>
<th>In</th>
<th>Not</th>
<th>Opr</th>
<th>RC</th>
<th>Itrks</th>
<th>Pct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set Name</td>
<td>CU</td>
<td>Serial #</td>
<td>SDA</td>
<td>Complete</td>
<td>Progress</td>
<td>Started</td>
</tr>
<tr>
<td>BED2C4D</td>
<td>000192604124</td>
<td>4C20</td>
<td>0</td>
<td>32</td>
<td>0</td>
<td>00000</td>
</tr>
</tbody>
</table>
End of Display

Action Issue the Abort command for TimeFinder group A64TOB64.
User ZUTIM ABO GRO-DRXBCV
System
CSMP0097I 15.09.48 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1031I Local TimeFinder Status Display
Clone Group: A64TOB64 Base Operation: Establish
Status: Monitor Active
Start Time: 01.09.25 Date: 01/19/16
____Operation Status____
<table>
<thead>
<tr>
<th>Opr</th>
<th>In</th>
<th>Not</th>
<th>Opr</th>
<th>RC</th>
<th>Itrks</th>
<th>Pct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set Name</td>
<td>CU</td>
<td>Serial #</td>
<td>SDA</td>
<td>Complete</td>
<td>Progress</td>
<td>Started</td>
</tr>
<tr>
<td>BED2C4D</td>
<td>000192604124</td>
<td>4C20</td>
<td>0</td>
<td>32</td>
<td>0</td>
<td>00000</td>
</tr>
</tbody>
</table>
UTIM1035T Clone Group A64TOB64 Establish aborted

Action Define Force permission for the Split Command for TimeFinder group A64TOB64. (This step would normally be set up in advance.)
User ZUTIM SET SPL GRO-A64TOB64 TYP-PER FORCE
System
CSMP0097I 15.10.34 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0027P TimeFinder Group A64TOB64
UTIM0027I Define complete
CSMP0097I 15.10.34 CPU-A SS-BSS SSU-SSU0 IS-01
E1TG0000I TimeFinder Split Properties Display
Local Clone Group - A64TOB64
-------------------------------------------------------------------------
Options
FORCE: OFF UNUSED: OFF UNUSED: OFF UNUSED: OFF
UNUSED: OFF URDY: OFF ACRE: OFF
Permissions
FORCE: ON UNUSED: OFF UNUSED: OFF UNUSED: OFF
UNUSED: OFF URDY: OFF ACRE: OFF
-------------------------------------------------------------------------
End of Display
**Action**

Force Split TimeFinder group A64TOB64. Operations Verification indicates that there are 32 device pairs synchronizing in TimeFinder Set BED2C4D, and requires an operator response to proceed with the Split.

**User**

ZUTIM SPL GRO-A64TOB64 FORCE

**System**

CSMP0097I 15.10.48 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0019P TimeFinder Group A64TOB64
UTIM0019I TimeFinder control record refresh started
CSMP0097I 15.10.49 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1043I Local CU 000192604124 discovered for Clone Group A64TOB64 Set BED2C4D
UTIM0024P TimeFinder Group A64TOB64
UTIM0024I TimeFinder control record refresh completed
CSMP0097I 15.10.49 CPU-A SS-BSS SSU-SSU0 IS-01
E1T70001I TimeFinder Operation Verification Started
Options Permissions
FORCE ON
E1T70003I TimeFinder Device State Verification Started
CSMP0097I 15.10.53 CPU-A SS-BSS SSU-SSU0 IS-01
TF Clone Group A64TOB64 Set BED2C4D: Clone pairs synchronizing = 32
CSMP0097I 15.10.55 CPU-A SS-BSS SSU-SSU0 IS-01
E1U90001I Review TimeFinder exceptions above for Group A64TOB64 Split: To proceed, enter: ZUTIM PROceed GROup-A64TOB64
To halt, enter: ZUTIM HALt GROup-A64TOB64

**Action**

Proceed with the force Split of TimeFinder group A64TOB64.

**User**

ZUTIM PRO GRO-A64TOB64

**System**

CSMP0097I 15.12.58 CPU-A SS-BSS SSU-SSU0 IS-01
E1T70004I TimeFinder Operation Verification Completed
CSMP0097I 15.12.58 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1000I Clone Group A64TOB64 Set BED2C4D started issuing Split
CSMP0097I 15.12.58 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1000I Clone Group A64TOB64 Set BED2C4D started issuing Split
CSMP0097I 15.12.58 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1001I Clone Group A64TOB64 Set BED2C4D completed issuing Split
CSMP0097I 15.13.03 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1034I Local Clone Group A64TOB64 multi-instant split complete
Background split continuing
CSMP0097I 15.13.03 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1031I Local TimeFinder Status Display
Clone Group: A64TOB64 Base Operation: Split
Status: Monitor Active
Start Time : 01.10.48 Date : 01/19/16
Operation Status

<table>
<thead>
<tr>
<th>Opr</th>
<th>In</th>
<th>Not</th>
<th>Opr RC</th>
<th>Itrks Pct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set Name</td>
<td>CU</td>
<td>Serial #</td>
<td>SDA</td>
<td>Complete</td>
</tr>
<tr>
<td>BED2C4D</td>
<td>000192604124</td>
<td>4C20</td>
<td>32</td>
<td>0</td>
</tr>
</tbody>
</table>

End of Display
UTIM1033I Local Clone Group A64TOB64 Split complete
TimeFinder Commands

ZUTIM ACTivate

Use the ACTivate command to make the point in time copy for a created Snapshot.

You can issue the ACTivate command for:

- The entire TimeFinder group
- An entire Set in the TimeFinder group
- One device or a range of devices in one or all Sets in the TimeFinder group

Requirements and restrictions

- When general property CTLRCD is ON, a control record refresh is initiated internally prior to issuing the ACT command. Any symbolic module number and DBI associated with the source devices in the TimeFinder group being operated on are rediscovered and saved in the TimeFinder control records.

- A “time-to-live” value may be associated with the Snapshot by defining the EXPiration general property for the TimeFinder Group. The property value is specified as number of days from 0-400 decimal. The general property value can be over-ridden by specifying the EXP-ddd parameter on the command line.

- After the ACT command has been issued, the user can LINk the Snapshot to the target devices configured for the TimeFinder Group.

Format

ZUTIM ACT GROup-cccccccc [SET-ccccc] [SDN-hhhhhhhh] [CNT-dddd] [VER-dddd] [EXP-ddd]

Parameters

- **GROup-cccccccc**: One to eight alphanumeric character TimeFinder group name.
- **SET-cccccccc**: One to eight alphanumeric character TimeFinder Set name.
- **SDN-hhhhhhhh**: One to eight hexadecimal digit starting source storage device number.
- **CNT-dddd**: One to four decimal digit count of source devices.
- **VER-dddd**: One to 4 decimal digit Snapshot version number. Maximum is 256.
- **EXPiration-ddd**: One to three decimal digit number of days until the Snapshot expires and is automatically terminated.

Additional information

TimeFinder operation verification for the ACT command verifies that:

- The SnapVX feature is licensed.
- If the ASYNC property is defined for the TimeFinder Group and Snapshot source devices are SRDF/A Target (R2) devices, validate SRDF/A active and secondary consistent.
The Snapshot name matches an existing snapshot name.

The SRP reserved capacity is not or will not be exceeded.

If a zDP group, all required options and permissions are defined.

If any of these conditions is not met, TimeFinder operation verification halts the operation or prompts the operator to halt or proceed with the operation, depending on the option and permission properties defined for the ACT operation and the TimeFinder group.

If no operations device or pre-defined gatekeeper device is available for one or more TimeFinder Sets in a TimeFinder group, operation verification notifies the operator and prompts the operator to halt or proceed with the operation.

Example

<table>
<thead>
<tr>
<th>Action</th>
<th>Activate SnapVX group A64B64SX version 0 to expire in one day. Display all created version of SnapVX group A64B64SX. Display a set in the group after the update completes.</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>ZUTIM ACT GRO-A64B64SX EXP-1</td>
</tr>
<tr>
<td>System</td>
<td>E1T700003I TimeFinder Operation Verification Started</td>
</tr>
</tbody>
</table>

Options         Permissions
None

E1T70003I TimeFinder Device State Verification Started
E1T70004I TimeFinder Operation Verification Completed
UTIM1000I SnapVX Group A64B64SX Set UYF1 started issuing Activate
UTIM1000I SnapVX Group A64B64SX Set UYF1 completed issuing Activate
UTIM1001I SnapVX Group A64B64SX Set UZC1 started issuing Activate
UTIM1001I SnapVX Group A64B64SX Set UZC1 completed issuing Activate
UTIM1031I Local TimeFinder Status Display SnapVX Group: A64B64SX Base Operation: Activate
Status: Monitor Active
Start Time : 02.10.01 Date : 11/27/15

<table>
<thead>
<tr>
<th>Set Name</th>
<th>CU Serial #</th>
<th>SDA</th>
<th>Complete</th>
<th>Progress</th>
<th>Started</th>
<th>Summary</th>
<th>Itrks</th>
<th>Pct</th>
</tr>
</thead>
<tbody>
<tr>
<td>UYF1</td>
<td>000196701170</td>
<td>4460</td>
<td>32</td>
<td>0</td>
<td>0</td>
<td>00000</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>UZC1</td>
<td>000196801233</td>
<td>4300</td>
<td>32</td>
<td>0</td>
<td>0</td>
<td>00000</td>
<td>0</td>
<td>100</td>
</tr>
</tbody>
</table>

End of Display

UTIM1033I Local SnapVX Group A64B64SX Activate complete
TimeFinder Commands

User  ZUTIM DIS GRO-A64B64SX STA-VER

System

CSMP0097I 16.10.17 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1031I Local TimeFinder Status Display
SnapVX Group: A64B64SX Base Operation: Activate
----------------------------------------------------------------------------
Snapshot Name: A64B64SX Ver:    0 ID: ADAD0001 Pre: N  Act: Y  Linked: N
Image Creation   Time : 02.10.08 Date : 11/27/15
Image Expiration Time : 02.10.07 Date : 11/28/15
----------------------------------------------------------------------------
Snapshot Name: A64B64SX Ver:    1 ID: ADAD0002 Pre: N  Act: Y  Linked: Y
Image Creation   Time : 00.58.03 Date : 11/27/15
End of Display

User  ZUTIM DIS GRO-A64B64SX SET-UYF1 VER-1

System

CSMP0097I 16.10.37 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1042I TF status for Local CU 000196701170
SnapVX Group: A64B64SX Set: UYF1 Base operation: Activate
MDBF SYMB Snapshot TGT Tracks Opr
SSN MOD SDA SRC DEV# TGT DEV# ID       Act Lin Def NR  To Cpy  Pct RC
A64  0110 4440 000000BD 00000A5D ADAD0001 Y   N   N   X         0   0 0000
A64  0111 4441 000000BE 00000A5E ADAD0001 Y   N   N   X         0   0 0000
A64  0112 4442 000000BF 00000A5F ADAD0001 Y   N   N   X         0   0 0000
A64  0113 4443 000000C0 00000A60 ADAD0001 Y   N   N   X         0   0 0000
A64  012D 445D 000000DA 00000A7A ADAD0001 Y   N   N   X         0   0 0000
A64  012E 445E 000000DB 00000A7B ADAD0001 Y   N   N   X         0   0 0000
A64  012F 445F 000000DC 00000A7C ADAD0001 Y   N   N   X         0   0 0000
End of Display
ZUTIM CLIp

Use the CLIp command to relabel the TimeFinder target volume and make it ready to the host.

You can issue this command for the entire TimeFinder group, for an entire Set in the TimeFinder group, or for one device or a range of devices in one or all Sets in the TimeFinder group.

Requirements and restrictions

- Do not use the CLIp command while the TimeFinder target is being synchronized from the clone source. Clipping a TimeFinder target while it is online to some host may impact operation if that host is using the TimeFinder target.
- To relabel the TimeFinder target, you must have previously defined the CLIp option and volser prefix for the relevant MDBF Subsystem and/or offline devices. TimeFinder Control Record Refresh must be enabled and executed for at least one TimeFinder operation (e.g. create, activate, linkestablish, reestablish, restore, increstore, split) after defining a clip prefix in order to propagate information to the TimeFinder Control Records.

Note: “ZUTIM DEFine PROp-CLI|NOC” on page 102 provides additional information.

- The Clip operation does not begin if any specified TimeFinder target is online to a host. EMC provides the ONLDEV option to allow you to bypass this restriction. This option must be defined for the Clip operation and TimeFinder group using “ZUTIM DEFine PROp-EST|REE|SPL|RES|INC|CLI” on page 98.

Format

ZUTIM CLIp GROup-cccccccc [SET-cccccccc] [SDN-hhhhhhhh] [CNT-dddd]

Parameters

GROup-cccccccc One to eight alphanumeric character TimeFinder group name.
SET-cccccccc One to eight alphanumeric character TimeFinder Set name identifying a storage system containing TimeFinder pairs.
SDN-hhhhhhhh One to eight hexadecimal digit starting device number.
CNT-dddd One to four decimal digit count of devices.

Additional information

- TimeFinder Controls for z/TPF can maintain TPF symbolic module information and MDBF DBI information for host attached devices only. Therefore, a clip prefix can be defined only for spare devices on remote control units.

Note: “ZUTIM DEFine PROp-CLI|NOC” on page 102 provides more information.
During control record refresh, the CLIp command does not update the symbolic module number or DBI associated with the source devices of a TimeFinder group in the TimeFinder control records. If you request relabel, then CLIp uses the latest symbolic module number and DBI found in the TimeFinder control records for the specified TimeFinder group to determine the two-character volser prefix to be used.

TimeFinder operation verification for the CLIp command determines if any clone targets are attached or online, and if a background split is in progress. If any of these conditions exists, TimeFinder operation verification will prompt the operator to halt or proceed with the operation.

If no operations device is available for one or more TimeFinder Sets in a TimeFinder group, operation verification notifies the operator and prompts the operator to halt or proceed with the operation.

Examples

Example Information

The examples in this section display the following information:

- **Set Name**: The TimeFinder Set name.
- **CU Serial #**: The control unit serial number.
- **Opr SDA**: The TimeFinder operation symbolic device address.
- **Complete**: The number of TimeFinder pairs for which the TimeFinder operation is complete.
- **In Progress**: The number of TimeFinder pairs for which the TimeFinder operation is active.
- **Not Started**: The number of TimeFinder pairs for which the TimeFinder operation was not initiated.
- **Opr RC Summary**: The return code summary for all TimeFinder operations for this TimeFinder Set.

Example 1

**Action**

Clip all clone targets in TimeFinder group TBA64B64. Offline Module Access is enabled.

**User**

ZUTIM CLI GRO-TBA64B64

**System**

CSMP0097I 15.51.07 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0019P TimeFinder Group TBA64B64
UTIM0019I TimeFinder control record refresh started
CSMP0097I 15.51.13 CPU-A SS-BSS SSU-SSU0 IS-01
E1T70000I TimeFinder Operation Verification Started
E1T70001I TimeFinder Group Properties Verification Started
Options Permissions
None
E1T70003I TimeFinder Device State Verification Started
CSMP0097I 15.51.13 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1043I Local CU 000195700086 discovered for Clone Group TBA64B64 Set UIFBSS
UTIM1043I Local CU 000195700086 discovered for Clone Group TBA64B64 Set UIFA64
UTIM1043I Local CU 000191000840 discovered for Clone Group TBA64B64 Set UAFB64
UTIM1043I Local CU 000192604124 discovered for Clone Group TBA64B64 Set UTLA64
UTIM1043I Local CU 000194901159 discovered for Clone Group TBA64B64 Set UHCB64
UTIM0024P TimeFinder Group TBA64B64
UTIM0024I TimeFinder control record refresh completed
CSMP0097I 15.51.20 CPU-A SS-BSS SSU-SSU0 IS-01
E1T70004I TimeFinder Operation Verification Completed
CSMP0097I 15.51.20 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1000I Clone Group TBA64B64 Set UIFBSS started issuing Clip
CSMP0097I 15.51.20 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1000I Clone Group TBA64B64 Set UIFA64 started issuing Clip
CSMP0097I 15.51.20 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1000I Clone Group TBA64B64 Set UTLA64 started issuing Clip
CSMP0097I 15.51.20 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1000I Clone Group TBA64B64 Set UAFB64 started issuing Clip
CSMP0097I 15.51.20 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1000I Clone Group TBA64B64 Set UHCB64 started issuing Clip
CSMP0097I 15.52.30 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1001I Clone Group TBA64B64 Set UIFBSS completed issuing Clip
CSMP0097I 15.52.30 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1001I Clone Group TBA64B64 Set UIFA64 completed issuing Clip
CSMP0097I 15.52.30 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1001I Clone Group TBA64B64 Set UAFB64 completed issuing Clip
CSMP0097I 15.52.30 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1001I Clone Group TBA64B64 Set UTLA64 completed issuing Clip
CSMP0097I 15.52.30 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1001I Clone Group TBA64B64 Set UHCB64 completed issuing Clip
CSMP0097I 15.52.30 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0103P TimeFinder Group TBA64B64
UTIM0103I OMA refresh initiated for all processors
CSMP0097I 15.54.35 CPU-A SS-BSS SSU-SSU0 IS-01
UOMA1000I 02.39.09 OMA Refresh Started
CSMP0097I 15.54.35 CPU-A SS-BSS SSU-SSU0 IS-01
UOMA1000I 02.39.09 OMA Refresh Started
CSMP0097I 15.54.35 CPU-A SS-BSS SSU-SSU0 IS-01
UOMA1001I 02.39.09 Refresh Complete
CSMP0097I 15.54.35 CPU-A SS-BSS SSU-SSU0 IS-01
UOMA0010W OMA unsupported for SSID 3840
UOMA1001I 02.39.09 Refresh Complete
CSMP0097I 15.54.35 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1031I Local TimeFinder Status Display
Clone Group: TBA64B64 Base Operation: Clip
Status: Monitor Active
Start Time : 01.51.07 Date : 10/09/13

<table>
<thead>
<tr>
<th>Set Name</th>
<th>CU Serial #</th>
<th>SDA Complete</th>
<th>Progress Started</th>
<th>pr summary</th>
<th>Itrks</th>
<th>Pct</th>
</tr>
</thead>
<tbody>
<tr>
<td>UIFBSS</td>
<td>000195700086</td>
<td>35E0</td>
<td>2</td>
<td>0</td>
<td>0000</td>
<td>100</td>
</tr>
<tr>
<td>UIFA64</td>
<td>000195700086</td>
<td>35E0</td>
<td>16</td>
<td>0</td>
<td>0000</td>
<td>100</td>
</tr>
<tr>
<td>UTLA64</td>
<td>000192604124</td>
<td>4C20</td>
<td>16</td>
<td>0</td>
<td>0000</td>
<td>100</td>
</tr>
<tr>
<td>UAFB64</td>
<td>000190100840</td>
<td>3061</td>
<td>16</td>
<td>0</td>
<td>0000</td>
<td>100</td>
</tr>
<tr>
<td>UHCB64</td>
<td>000194901159</td>
<td>3848</td>
<td>16</td>
<td>0</td>
<td>0000</td>
<td>100</td>
</tr>
</tbody>
</table>

End of Display

UTIM1033I Local Clone Group TBA64B64 Clip complete
TimeFinder Commands

Example 2

Action
Clip all clone targets in TimeFinder group TBA64B64. All
TimeFinder pairs are attached.

User
ZUTIM CLI GRO-TBA64B64

System

CSMP0097I 16.17.30 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0019P TimeFinder Group TBA64B64
UTIM0019I TimeFinder control record refresh started
CSMP0097I 16.17.30 CPU-A SS-BSS SSU-SSU0 IS-01
E1T70000I TimeFinder Operation Verification Started
E1T70001I TimeFinder Group Properties Verification Started
Options Permissions
None
E1T70003I TimeFinder Device State Verification Started
CSMP0097I 16.17.36 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1043I Local CU 000195700086 discovered for Clone Group TBA64B64 Set UIFBSS
UTIM1043I Local CU 000190100840 discovered for Clone Group TBA64B64 Set UAFB64
UTIM1043I Local CU 000192604124 discovered for Clone Group TBA64B64 Set UTLA64
UTIM1043I Local CU 000194901159 discovered for Clone Group TBA64B64 Set UHCB64
UTIM0024P TimeFinder Group TBA64B64
UTIM0024I TimeFinder control record refresh completed
CSMP0097I 16.17.43 CPU-A SS-BSS SSU-SSU0 IS-01
TF Clone Group TBA64B64 Set UIFBSS: Clone target attached = 2
CSMP0097I 16.17.44 CPU-A SS-BSS SSU-SSU0 IS-01
TF Clone Group TBA64B64 Set UAFB64: Clone target attached = 16
CSMP0097I 16.17.44 CPU-A SS-BSS SSU-SSU0 IS-01
TF Clone Group TBA64B64 Set UTLA64: Clone target attached = 16
CSMP0097I 16.17.44 CPU-A SS-BSS SSU-SSU0 IS-01
TF Clone Group TBA64B64 Set UHCB64: Clone target attached = 16
CSMP0097I 16.17.45 CPU-A SS-BSS SSU-SSU0 IS-01
TF Clone Group TBA64B64 Set UAFB64: Clone target attached = 16
CSMP0097I 16.17.45 CPU-A SS-BSS SSU-SSU0 IS-01
TF Clone Group TBA64B64 Set UTLA64: Clone target attached = 16
CSMP0097I 16.17.45 CPU-A SS-BSS SSU-SSU0 IS-01
TF Clone Group TBA64B64 Set UHCB64: Clone target attached = 16
UTIM0104P TimeFinder Group TBA64B64
UTIM0104T Operation Verification Failed - Operation not started

Example 3

Action
Clip the 4 clone targets paired with clone source device 1226-1229
in TimeFinder group TBA64B64 Set UIFA64.

User
ZUTIM CLI GRO-TBA64B64 Set-UIFA64 sdn-1226 cnt-4

System

ZUTIM CLI GRO-TBA64B64 SET-UIFA64 SDN-1226 CNT-4
CSMP0097I 16.31.05 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0019P TimeFinder Group TBA64B64 Set UIFA64
UTIM0019I TimeFinder control record refresh started
CSMP0097I 16.31.07 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1043I Local CU 000195700086 discovered for Clone Group TBA64B64 Set UIFA64
UTIM0024P TimeFinder Group TBA64B64 Set UIFA64
UTIM0024I TimeFinder control record refresh completed
CSMP0097I 16.31.07 CPU-A SS-BSS SSU-SSU0 IS-01
E1T70000I TimeFinder Operation Verification Started
E1T70001I TimeFinder Group Properties Verification Started
Options Permissions
None
E1T70003I TimeFinder Device State Verification Started
CSMP0097I 16.31.15 CPU-A SS-BSS SSU-SSU0 IS-01
E1T70004I TimeFinder Operation Verification Completed
CSMP0097I 16.31.15 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1000I Clone Group TBA64B64 Set UIFA64 started issuing Clip
CSMP0097I 16.31.15 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1000I Clone Group TBA64B64 Set UIFA64 completed issuing Clip
CSMP0097I 16.31.44 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1009I TimeFinder Status Display
Clone Group: TBA64B64 Set: UIFA64 Range Operation: Clip
Status:  Monitor Active
  Start Time : 02.31.05 Date : 10/09/13
  {Operation Status | }
  Opr | In | Not | Opr | RC
  Set Name | CU Serial # | SDA | Complete | Progress | Started | Summary | Itrks | Pct
  UIFA64 | 000195700086 | 35E0 | 4 | 0 | 0 | 0000 | 0 | 100
End of Display
UTIM1033I Local Clone Group TBA64B64 Clip complete
**ZUTIM CONfig ACCEPT|DISCARD**

Use this command to accept or discard all configuration changes made during the current configuration session.

**Requirements and restrictions**

The CONfig ACCEPT or DISCARD command are only accepted if all configuration sessions for all TimeFinder groups are closed.

**Format**

```
ZUTIM CONfig ACCEPT|DISCARD All
```

**Parameters**

- **ACCEPT**
  - Accept all configuration changes made during the configuration session.

- **DISCARD**
  - Discard all configuration changes made during the configuration session.

**Additional information**

- The CONfig DISCARD command resets all indicators in the TimeFinder Master Control Record and Group Status Table to indicate that there is no configuration session in existence.

- To enable fallback to the previous TimeFinder configuration, EMC recommends that you backup the TimeFinder control records prior to making changes to the TimeFinder configuration.

- The CONfig ACCEPT command performs the following steps:
  a. Verifies that all configuration sessions are closed and that configured TimeFinder pairs are unique.
  b. Modifies TimeFinder pair and TimeFinder group status accordingly.
  c. Removes any inactive TimeFinder Sets and/or TimeFinder groups.
  d. Recalculates super, local, and remote TimeFinder group counts.
  e. Replaces existing TimeFinder control records with configuration control records.
  f. Refreshes the Group Status Table.
Examples

Example 1

**Action**  
Discard all configuration changes made during the current configuration session.

**User**  
ZUTIM CON DISCARD ALL

**System**

CSMP0097I 01.47.56 CPU-A SS-BSS SSU-SSU0 IS-01  
UTIM1006I TimeFinder Configuration Discard command complete

Example 2

**Action**  
Accept all configuration changes made during the current configuration session, with one or more configuration sessions open.

**User**  
ZUTIM CON ACCEPT ALL

**System**

CSMP0097I 01.49.47 CPU-A SS-BSS SSU-SSU0 IS-01  
UTIM0089I TimeFinder configuration verifying sessions not open  
CSMP0097I 01.49.47 CPU-A SS-BSS SSU-SSU0 IS-01  
UTIM1049I Local CU 000184505047 Clone Group 0001 is Open  
UTIM1007I TimeFinder Configuration Accept command aborted

Example 3

**Action**  
Accept all configuration changes made during the current configuration session, with one or more TimeFinder devices that are configured more than once within a distinct group.

**User**  
ZUTIM CON ACCEPT ALL

**System**

CSMP0097I 12.44.13 CPU-A SS-BSS SSU-SSU0 IS-01  
UTIM0089I TimeFinder configuration verifying sessions not open  
CSMP0097I 12.44.13 CPU-A SS-BSS SSU-SSU0 IS-01  
UTIM0093I TimeFinder configuration verifying device pairs unique  
CSMP0097I 12.44.14 CPU-A SS-BSS SSU-SSU0 IS-01  
UTIM0110I Device conflicts defined in the same group for CU Serial Number(s):  
000196701170  
000195700080  
000196701175  
UTIM0111I Enter ZUTIM CONfig VERify CU-ssssssssssss to generate report(s)  
UTIM1007I TimeFinder configuration Accept aborted
Example 4

**Action**
Accept all configuration changes made during the current configuration session.

**User**
ZUTIM CON ACCEPT ALL

**System**

CSMP0097I 11.03.13 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0089I TimeFinder configuration verifying sessions not open
CSMP0097I 11.03.13 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0093I TimeFinder configuration verifying device pairs unique
CSMP0097I 11.03.15 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0092I TimeFinder configuration device pairs finalized
CSMP0097I 11.03.15 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0090I TimeFinder configuration groups finalized
CSMP0097I 11.03.15 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0120I TimeFinder configuration inactive sets removed
CSMP0097I 11.03.15 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0119I TimeFinder configuration inactive groups removed
CSMP0097I 11.03.15 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0094I TimeFinder control records updated
CSMP0097I 11.03.15 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0221I GST Refresh Started
CSMP0097I 11.03.16 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0222I GST Refresh Complete
CSMP0097I 11.03.16 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1006I TimeFinder configuration Accept complete
ZUTIM CONfig ADD|REMove

Use this command to add or remove a TimeFinder Set to/from the specified TimeFinder group.

Requirements and restrictions

You may only issue the CONfig ADD and REMove commands for an open configuration session.

Format

ZUTIM CONfig ADD|REMove GROup-ccccccccc SET-ccccccccc [SDA-ccud] [MHL1-dd.dd] [MHL2-dd.dd]

Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADD</td>
<td>Add a Set to the TimeFinder group.</td>
</tr>
<tr>
<td>REMove</td>
<td>Remove a Set from the TimeFinder group.</td>
</tr>
<tr>
<td>GROup-cccccccccc</td>
<td>One to eight alphanumeric character TimeFinder group name.</td>
</tr>
<tr>
<td>SET-cccccccccc</td>
<td>One to eight alphanumeric character TimeFinder Set name identifying a storage system containing TimeFinder pairs.</td>
</tr>
<tr>
<td>SDA-ccud</td>
<td>SDA designating the host attached operations device to which I/O can be issued to discover the storage system in the user defined Set.</td>
</tr>
</tbody>
</table>

**Note:** This parameter cannot be used with the REMove parameter.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MHL1-dd.dd</td>
<td>Hops one and two of the multi-hop list designating the RDFGroup path to the remote storage system. This parameter is optional.</td>
</tr>
</tbody>
</table>

**Note:** This parameter cannot be used with the REMove parameter.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MHL2-dd.dd</td>
<td>Hops three and four of the multi-hop list designating the RDFGroup path to the remote storage system. Optional. This parameter is optional.</td>
</tr>
</tbody>
</table>

**Note:** This parameter cannot be used with the REMove parameter.

Additional information

- The operations device specified on the input SDA must address an EMC storage system to enable TimeFinder Controls for z/TPF to discover the storage system using the EMC SymmAPI for z/TPF.

**Note:** “z/VM gatekeeper support” on page 52 provides more information.
You must ensure that the SDA and multi-hop list specified on an ADD command designates the expected remote storage system. If you specify an invalid multi-hop list on an ADD command, the command is aborted. You must remove (with the REMove command) the TimeFinder Set that could not be added successfully. You can then add (with ADD) the Set specifying the valid multi-hop list.

Consult with the local EMC Representative for SRDF configuration information.

The multi-hop list describes the RDFGroup path to the remote storage system from the locally attached storage system designated by the input SDA. You specify the multi-hop list with the parameters MHL1 and MHL2. Each parameter accepts up to two RDFGroup variables.

The multi-hop list can be anywhere from 0 to 4 RDFGroup/hops in length.

- You specify a single hop with a single RDFGroup/hop in parameter MHL1.
- You specify a two hop multi-hop list with the two RDFGroups/hops separated by a period in parameter MHL1.
- You specify a three hop multi-hop list with the first two RDFGroups/hops separated by a period in parameter MHL1, and the third RDFGroup/hop in parameter MHL2.
- You specify a four hop multi-hop list with the first two RDFGroups/hops separated by a period in parameter MHL1, and the third and fourth RDFGroups/hops separated by a period in parameter MHL2.

Omitting a multi-hop list on the ADD command indicates that the TimeFinder Set designates a locally attached storage system to be added.

To enable automatic and manual setting of the general property ASYNC, you must configure a TimeFinder group describing SRDF/A R2 as TimeFinder source volumes through the primary storage system of the SRDF/A storage system pair. To do so, specify the SRDF/A RDFGroup as the last RDFGroup in the multi-hop list on the ZUTIM CON ADD command.

Note: “ZUTIM CONfig CHAnge|DELete” on page 74 and “ZUTIM DEFine PROp-EST|REE|SPL|RES|INC|CLI” on page 98 provide more information.

Examples

Example 1

<table>
<thead>
<tr>
<th>Action</th>
<th>Add Set UYBB64 to TimeFinder group TBA64b64. Set UYBB64 designates a locally attached storage system.</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>ZUTIM CON ADD GRO-TBA64B64 SET-UYBB64 SDA-1A00</td>
</tr>
<tr>
<td>System</td>
<td></td>
</tr>
</tbody>
</table>

CSMP0097I 11.26.51 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1043I Local CU 000196700257 discovered for Clone Group TBA64B64 Set UYBB64
UTIM1006I TimeFinder configuration Add complete
Example 2

**Action**
Add TimeFinder Set UVAS to TimeFinder group MHOP4. TimeFinder Set UVAS designates a remote storage system 4 hops from the originating storage system designated by SDA 3608. All I/O issued to discover the remote storage system are issued to SDA 3608. The path to the remote storage system is described by the 4 hop multi-hop list MHL1-1.2 MHL2-3.4.

**User**
ZUTIM CON ADD GRO-MHOP4 SET-UVAS SDA-3608 MHL1-1.2 MHL2-3.4

**System**
CSMP0097I 20.02.31 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1043I Remote CU 000185400212 discovered for TimeFinder Group MHOP4 Set UVAS
CSMP0097I 20.02.31 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1006I TimeFinder configuration Add complete

Example 3

**Action**
Add TimeFinder Set UVA2UDC to remote TimeFinder group GROUP1MH. A configuration session for TimeFinder group GROUP1MH is not open.

**User**
ZUTIM CON ADD GRO-GROUP1MH SET-UVA2UDC SDA-33C0 MHL1-04

**System**
CSMP0097I 19.58.39 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1049I TimeFinder Group GROUP1MH is Closed
UTIM0087I TimeFinder configuration command disallowed
CSMP0097I 19.58.39 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1007I TimeFinder configuration Add aborted
ZUTIM CONfig CHAnge|DELete

Use this command to change or delete a TimeFinder device pair for the specified Set and TimeFinder group.

Requirements and restrictions

You may only enter the CONfig CHAnge and DELeete commands for an open configuration session.

Specifying TGT is optional for SnapVX groups. It is necessary to configure TGT devices if you intend to link the snapshot to target devices.

Parameter "TSD" is used only in conjunction with Offline Module Access for z/TPF, and is restricted for use with Clone groups.

Format

ZUTIM CONfig CHAnge|DELete GROup-cccccccc SET-cccccccc SRC-hhhhhhh TGT-hhhhhhh CNT-dddd [TSD-hhhh]

Parameters

<table>
<thead>
<tr>
<th>CHAnge</th>
<th>Change the TimeFinder device pair(s).</th>
</tr>
</thead>
<tbody>
<tr>
<td>DELeete</td>
<td>Delete the TimeFinder device pair(s).</td>
</tr>
<tr>
<td>GROup-cccccccc</td>
<td>One to eight alphanumeric character TimeFinder group name.</td>
</tr>
<tr>
<td>SET-cccccccccc</td>
<td>One to eight alphanumeric character TimeFinder Set name that identifies a storage system containing TimeFinder pairs.</td>
</tr>
<tr>
<td>SRC-hhhhhhhh</td>
<td>Hexadecimal start source device number of TimeFinder device pair(s) to configure.</td>
</tr>
<tr>
<td>TGT-hhhhhhhh</td>
<td>Hexadecimal start target device number of TimeFinder pair(s) to configure.</td>
</tr>
<tr>
<td>CNT-dddd</td>
<td>Decimal count of TimeFinder device pair(s) being configured.</td>
</tr>
<tr>
<td>TSD-hhhh</td>
<td>Hexadecimal start SDA of clone target(s) being configured.</td>
</tr>
</tbody>
</table>

Additional information

TimeFinder Configuration Change determines if a TimeFinder Set contains SRDF/A R2 TimeFinder source, R1 TimeFinder targets, or R2 TimeFinder targets. This TimeFinder Configuration Change sets appropriate indicators to enable appropriate operations verification for TimeFinder groups containing such Sets.

In addition, the general property ASYNC is set for a TimeFinder group describing SRDF/A R2 TimeFinder source if you configured the TimeFinder group through the primary storage system of an SRDF/A storage system pair by specifying the SRDF/A RDFGroup as the last RDFGroup in the multi-hop list.

Note: “ZUTIM CONfig ADD|REMove” on page 71 provides more information.
All TimeFinder device pairs you specify by a CONFIG CHANGE or DELETE command must be in AVAIL state. If the TimeFinder device pair state is not AVAIL, the command is aborted.

Ensure that snapshot or clone sessions are terminated for any TimeFinder device pairs prior to deletion.

**Note:** "ZUTIM TERMINATE" on page 180 provides more information.

The TSD parameter is used to define target SDAs for use in conjunction with Offline Module Access for z/TPF available with ResourcePak for z/TPF.

**Note:** The EMC ResourcePak for z/TPF User Guide provides more information.

### Examples

#### Example 1

**Action**
Delete the device pair in TimeFinder group TPF4 Set UVAS1 starting with source device x'0' and target device x'48' for a count of 1 device pair. In this example, source device x'0' is not in a valid state.

**User**
```
ZUTIM CON DEL GRO-TPF4 SET-UVAS1 SRC-0 TGT-48 CNT-1
```

**System**
```
CSMP0097I 02.51.51 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1011E CU 000184505047 SRC 00000000 invalid state
UTIM1007I TimeFinder Configuration Delete command aborted
```

#### Example 2

**Action**
Delete device pairs in TimeFinder group TPF4 Set UVAS starting with source device x'C6' and target device x'7E' for a count of 18 device pairs.

**User**
```
ZUTIM CON DEL GRO-TPF4 SET-UVAS SRC-C6 TGT-7E CNT-18
```

**System**
```
CSMP0097I 19.27.21 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1051I Clone Group TPF4 Set UVAS Delete request processed
UTIM1006I TimeFinder configuration Delete complete
```
Example 3

**Action**  
Delete the device pair in TimeFinder group TPF4 Set UVAS starting with source device x’C6’ and target device x’7E’ for a count of 18 device pair(s). In this example, source device x’C6’ is not paired with target device x’7E’.

**User**  
ZUTIM CON DEL GRO-TPF4 SET-UVAS SRC-C6 TGT-7E CNT-18

**System**

CSMP0097I 19.39.35 CPU-A SS-BSS SSU-SSU0 IS-01  
UTIM1027I Local CU 000184505047 TGT 007E not paired with input SRC  
UTIM1007I TimeFinder configuration Delete aborted

Example 4

**Action**  
Change the device pairs in TimeFinder group TPF4 Set UVAS1 starting with source device x’C6’ and target device x’7E’ for a count of 18 device pair(s).

**User**  
ZUTIM CON CHA GRO-TPF4 SET-UVAS1 SRC-C6 TGT-7E CNT-18

**System**

CSMP0097I 19.27.36 CPU-A SS-BSS SSU-SSU0 IS-01  
UTIM1051I Clone Group TPF4 Set UVAS1 Change request processed  
UTIM1006I TimeFinder configuration Change complete
ZUTIM CONfig DISplay

Use this command to display TimeFinder device pair information or configuration information for the storage system designated by the specified TimeFinder Set and group.

Requirements and restrictions

You may only use the CONfig DISplay command after TimeFinder configuration control records have been refreshed. TimeFinder configuration control records are refreshed when you enter a ZUTIM CON OPEN GRO-cccccccc command.

Format

ZUTIM CONfig DISplay GROup-ccccc Set-cccccccc [SDN-hhhhhhhhh] [CNT-dddd] [TYPe-CON|SES|TSD]

Parameters

- **GROup-ccccc**  
  One to eight alphanumeric character group name.
- **SET**  
  One to eight alphanumeric character TimeFinder Set name that identifies a storage system containing TimeFinder pairs.
- **SDN-hhhhhhh**  
  Start hexadecimal storage device number of range to be displayed.
- **CNT-dddd**  
  Decimal count of devices in range to be displayed.
- **TYPe-CON**  
  Display configuration summary.
- **TYPe-SES**  
  Display TimeFinder session information for the Set.
- **TYPe-TSD**  
  Display defined target SDAs. (For use with Offline Module Access for z/TPF, reference the *EMC ResourcePak for z/TPF User Guide* for more information.)

Examples

Example Information

The examples in this section illustrate the information described below:

- **MDBF SSN**  
  The MDBF subsystem name to which the TPF module belongs.
- **SYMBS MOD**  
  The symbolic model number of the device.
- **SDA**  
  The symbolic device address of the device.
- **SRC DEV #**  
  The storage device number of the Clone source device.
- **TGT DEV#**  
  The storage device number of the Clone target device.
- **TGT State**  
  Target state indicator.
  - **ATTAC** - Target is attached to this source device.
  - **SYNCD** - Target is synchronized with this source device.
  - **N/A** - Never attached.
- **TGT NR**  
  Target not ready indicator.
- **SRC State**  
  Source device state indicator.
Example 1

Display device pairs configured for TimeFinder group A64B64BU set 3040. The TimeFinder Set has never been established.

User ZUTIM CON DIS GRO-A64B64BU SET-3040

System

CSMP0097I 12.11.51 CPU-A SS-BSS SSU-SSU0 IS-01
TIM01041 TP configuration display for Local CU 000190100840
Clone Group: A64B64BU Set 3040 Configuration Status: Open
MDBF SYMB SRC TGT TGT TGT SRC Pair
SSN MOD SDA DEV# DEV# State NR State State
N/A 0000 0000 0000032E 00000086 N/A X AVAIL AVAIL
N/A 0000 0000 0000032F 00000087 N/A X AVAIL AVAIL
N/A 0000 0000 00000330 00000088 N/A X AVAIL AVAIL
N/A 0000 0000 00000331 00000089 N/A X AVAIL AVAIL
N/A 0000 0000 00000332 0000008A N/A X AVAIL AVAIL
N/A 0000 0000 00000333 0000008B N/A X AVAIL AVAIL
N/A 0000 0000 00000334 0000008C N/A X AVAIL AVAIL
N/A 0000 0000 00000335 0000008D N/A X AVAIL AVAIL
N/A 0000 0000 00000336 0000008E N/A X AVAIL AVAIL
N/A 0000 0000 00000337 0000008F N/A X AVAIL AVAIL
N/A 0000 0000 00000338 00000090 N/A X AVAIL AVAIL
N/A 0000 0000 00000339 00000091 N/A X AVAIL AVAIL
N/A 0000 0000 0000033A 00000092 N/A X AVAIL AVAIL
N/A 0000 0000 0000033B 00000093 N/A X AVAIL AVAIL
N/A 0000 0000 0000033C 00000094 N/A X AVAIL AVAIL
N/A 0000 0000 0000033D 00000095 N/A X AVAIL AVAIL
End of Display

Example 2

Display all configured TimeFinder device pairs for TimeFinder Set UVAS in TimeFinder group TPF4. The configuration control records have not been refreshed.

User ZUTIM CON DIS GRO-TPF4 SET-UVAS

System

CSMP0097I 18.50.04 CPU-A SS-BSS SSU-SSU0 IS-01
TIM00841 TimeFinder configuration ctl rcds not refreshed
ZUTIM CONfig DISplay CTRLCD

Use this command to display summary information for the TimeFinder Master configuration control record, and the TimeFinder Control Unit configuration control record.

Requirements and restrictions

You may only use the CONfig DISplay command after TimeFinder configuration control records have been refreshed. TimeFinder configuration control records are refreshed when you enter a ZUTIM CON OPEN GRO-cccccccc command.

Format

ZUTIM CONfig DISplay [LOCal|REMoTe] CTRLCD-MA|CU

Parameters

REMote       Display remote control record summary information.
LOCal        Display local control record summary information.
CTRLCD-MA    Display TimeFinder Master control record summary.
CTRLCD-CU    Display TimeFinder Control Unit control record summary for all TimeFinder Sets in all TimeFinder groups.

Examples

Example Information

Examples 1 and 2 display the following information:
Group        The Local, Remote, or Super TimeFinder group for which configuration session status is displayed.
Config Status Status of the TimeFinder group configuration session.
Set Name     The TimeFinder Set name.
MHL          The RDFGroup path to the remote storage system in which the set resides.
Serial #     The Control Unit serial number.
Model        The storage system model type.
Ucod         The Enginuity operating environment level loaded to the control unit.
SDA          The SDA to which all SymmAPI I/O operations will be issued. If a GKD is defined, all SymmAPI I/O operations will be issued to the gatekeeper.
MOD          The TPF symbolic module of the SDA. If a GKD is defined, this is the symbolic module of the GKD.
SSN          The MDBF subsystem name of the SDA. If a GKD is defined, this is the MDBF subsystem name of the GKD.
GKD          Gatekeeper SDA if defined, or NO if a gatekeeper is not defined for the TimeFinder Set.
Status       The configuration status of the TimeFinder Set: Added or Removed.
Example 1

Action  Display the control unit configuration control record summary.
User  ZUTIM CON DIS CTLRCD-CU
System

CSMP0097I 12.16.16 CPU-A SS-BSS SSU-SSU0 IS-01
E1UA0000I Configuration CU Control Record Summary
Local Clone Group - TBA64B64 Config Status - Open
Set Name-UIPA64   MHL-N/A
Serial #   Model   Ucod SDA MOD SSN GKD Status
000195700086 VMAX40K 5876 35E0 0100 BSS No   Added
Set Name-UTLA64   MHL-N/A
Serial #   Model   Ucod SDA MOD SSN GKD Status
000192604124 VMAX1  5875 4C20 0112 BSS No   Added
Set Name-UHCB64   MHL-N/A
Serial #   Model   Ucod SDA MOD SSN GKD Status
000194901159 VMAX1  5875 3840 0113 BSS No   Added
Set Name-UYBB64   MHL-N/A
Serial #   Model   Ucod SDA MOD SSN GKD Status
000196700257 VMAX20M 5977 1A00 0100 B64 No   Added
Local Clone Group - R2TGTS Config Status - Closed
Set Name-UHC1   MHL-N/A
Serial #   Model   Ucod SDA MOD SSN GKD Status
000194901159 VMAX1  5875 3848 0130 B64 No   Added
End of Display

Example 2

Action  Attempt to display configuration CU control record summary. Configuration control records have not been refreshed.
User  ZUTIM CON DIS CTLRCD-CU
System

CSMP0097I 18.14.00 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0084I TimeFinder configuration ctl rcds not refreshed

Example 4 displays the following information:

TimeFinder Version  The TimeFinder software version.
Modification  The TimeFinder software modification number.
Revision  The TimeFinder software revision number.
Super Groups  The number of TimeFinder Super Groups.
Local Groups  The number of local TimeFinder groups configured.
Remote Groups  The number of remote TimeFinder groups configured.

Example 3

Action  Display the local master configuration control record summary.
User  ZUTIM CON DIS CTLRCD-MA
System

CSMP0097I 22.24.29 CPU-C SS-BSS SSU-SSU0 IS-01
E1UA0000I Configuration Master Ctl Rcd Summary
TimeFinder Version: 0008 Modification: 0000 Revision: 0000
Super Groups:  1 Local Groups:  6 Remote Groups:  4
End of Display
ZUTIM CONfig DISplay PROp

Use this command to display the property characteristic of the specified TimeFinder group when a TimeFinder configuration session is open.

Requirements and restrictions

You can only use the CONfig DISplay command after TimeFinder configuration control records have been refreshed. TimeFinder configuration control records are refreshed when you enter a ZUTIM CON OPEN GRO-cccccccc command.

Format

ZUTIM CONfig DISplay GROup-cccccccc PROp-GEN|EST|REE|SPL|RES|INC|CLI|CRT|ACT|LIN|UNL|REN|UPD|TER

Parameters

- **GROup-cccccccc**: One to eight alphanumeric character TimeFinder group name.
- **PROp-GEN**: Display General properties.
- **PROp-EST**: Display Establish properties.
- **PROp-REE**: Display Reestablish properties.
- **PROp-SPL**: Display Split properties.
- **PROp-RES**: Display Restore properties.
- **PROp-INC**: Display Increstore properties.
- **PROp-CLI**: Display Clip properties.
- **PROp-CRT**: Display Create Properties
- **PROp-ACT**: Display Activate properties
- **PROp-LIN**: Display Link properties
- **PROp-UNL**: Display Unlink properties
- **PROp-REN**: Display Rename properties
- **PROp-UPD**: Display Update properties
- **PROp-TER**: Display Terminate properties

Example

**Action**: Display Split properties for TimeFinder Group TBA64B64.

**User**: ZUTIM CON DIS GRO-TBA64B64 PRO-SPL

**System**

CSMP0097I 12.31.52 CPU-A SS-BSS SSU-SSU0 IS-01
ELTG0000I TimeFinder Split Properties Display
Local Clone Group - TBA64B64
Options
FORCE: ON UNUSED: OFF UNUSED: OFF UNUSED: OFF
UNUSED: OFF URDY: OFF ACRE: OFF
Permissions
FORCE: ON UNUSED: OFF UNUSED: OFF UNUSED: OFF
UNUSED: OFF URDY: OFF ACRE: OFF
End of Display
ZUTIM CONfig OPEN|CLOSE

Use this command to open a configuration session for the specified TimeFinder group name.

Requirements and restrictions

- You may use the CONfig OPEN command:
  - After a ZUTIM INI CLEar command
  - If the TimeFinder control records were previously configured using TimeFinder Controls for z/TPF version 8.0
- You may issue the CONfig CLOSE command for a TimeFinder group that has been opened for configuration.

Format

```
ZUTIM CONfig OPEN|CLOSE GROUP-cccccccc [TYP-CLN|SVX]
```

Parameters

```
OPEN
  Open a configuration session.
CLOSE
  Close a configuration session.
GROUP-cccccccc
  One to eight alphanumeric character TimeFinder group name.
[TYP-CLN|SVX]
  Type of TimeFinder group. Specify on Open.
Where:
  CLN Clone group
  SVX SnapVX group (default)
```

Additional information

The first CONfig OPEN command of a new configuration session causes the TimeFinder Configuration control records to be refreshed from the TimeFinder control records.

Examples

Example 1

```
Action  Open a configuration session for TimeFinder group TPF41. In this example, this is the first configuration session to be opened since a previous configuration process.
User      ZUTIM CON OPEN GROUP-TPF41
System
  CSMP0097I 23.13.00 CPU-A SS-BSS SSU-SSU0 IS-01
  UTIM0086I TimeFinder configuration ctl rcd refresh initiated
  CSMP0097I 23.14.21 CPU-A SS-BSS SSU-SSU0 IS-01
  UTIM1006I TimeFinder configuration Open complete
  UTIM1049I TimeFinder Group TPF41 is Open
  UTIM1006I TimeFinder configuration Open complete
```
Example 2

Action: Open a configuration session for remote TimeFinder group GROUP1MH.
User: ZUTIM CON OPEN GRO-GROUP1MH
System
CSMP0097I 23.15.34 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1049I TimeFinder Group GROUP1MH is Open
UTIM1006I TimeFinder configuration Open complete

Example 3

Action: Close a configuration session for TimeFinder group TPF41.
User: ZUTIM CON CLOSE GRO-TPF41
System
CSMP0097I 23.17.05 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1049I TimeFinder Group TPF41 is Closed
UTIM1006I TimeFinder configuration Close complete

Example 4

Action: Close a refreshed configuration session for TimeFinder group GROUP2MH.
User: ZUTIM CON CLOSE GRO-GROUP2MH
System
CSMP0097I 23.18.40 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1049I TimeFinder Group GROUP2MH is Closed
UTIM1006I TimeFinder configuration Close complete
ZUTIM CONfig REName

Use this command to rename the TimeFinder group or set name.

Requirements and restrictions

You can only use the CONfig REName command after TimeFinder configuration control records have been refreshed. TimeFinder configuration control records are refreshed when you enter a ZUTIM CON OPEN GRO-cccccccc command. The CONfig REName command can only be used for TimeFinder Clone Emulation Groups at HYPERMAX OS 5977 and later if there are no snapshot IDs associated with the source devices.

If you rename the snapshot names for a SnapVX group, you must follow up with the CON REN command to change the SnapVX group name to match the new snapshot name.

When you rename the group name, you must use the new group name to CON CLOSE the group.

Format

ZUTIM CONfig REName GROup-cccccccc [SET-cccccccc] NAMe-cccccccc

Parameters

GROup-cccccccc One to eight alphanumeric character group name.
SET-cccccccc One to eight alphanumeric character set name.
NAMe-cccccccc New TimeFinder group or set name.

Additional information

If you specify the TimeFinder Set, the Set is renamed, as specified on the NAM parameter.
If you do not specify the TimeFinder Set, the group is renamed, as specified on the NAM parameter.

The new name is filed down to the TimeFinder control records by the CON ACCEPT ALL command.

Examples

Example 1

<table>
<thead>
<tr>
<th>Action</th>
<th>Attempt to rename TimeFinder group GROUP1 to GROUP2.</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>ZUTIM CON REN GRO-GROUP1 NAM-GROUP2</td>
</tr>
<tr>
<td>System</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CSMP0097I 19.06.35 CPU-A SS-BSS SSU-SSU0 IS-01</td>
</tr>
<tr>
<td></td>
<td>UTIM1056I Clone Group GROUP2 already exists</td>
</tr>
<tr>
<td></td>
<td>UTIM1007I TimeFinder configuration Rename aborted</td>
</tr>
</tbody>
</table>
Example 2

**Action**  
Rename TimeFinder group GROUP1 to TPF4.

**User**  
ZUTIM CON REN GRO-GROUP1 NAM-TPF4

**System**

CSMP0097I 19.10.32 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1006I TimeFinder configuration Rename complete

Example 3

**Action**  
Attempt to rename TimeFinder Set 1000212 in TimeFinder group TPF4 to 4005047.

**User**  
ZUTIM CON REN GRO-TPF4 SET-1000212 NAM-4005047

**System**

CSMP0097I 19.15.43 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1053I Clone Group TPF4 already contains Set 4005047
UTIM1007I TimeFinder configuration Rename aborted

Example 4

**Action**  
Rename TimeFinder Set 10000212 in TimeFinder group TPF4 to UDCS.

**User**  
ZUTIM CON REN GRO-TPF4 SET-1000212 NAM-UDCS

**System**

CSMP0097I 19.16.58 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1006I TimeFinder configuration Rename complete
**TimeFinder Commands**

### ZUTIM CONfig VERify

Use this command to verify that configured TimeFinder device pairs are unique for all groups and sets describing the specified physical control unit, and generates a report.

#### Requirements and restrictions

You can only use the CONfig VERify command if configuration control records have been refreshed. TimeFinder configuration control records are refreshed when you enter a ZUTIM CON OPEN GRO-cccccccc command. You should enter this command prior to entering the CONfig ACCEPT command.

*Note: “ZUTIM CONfig ACCEPT|DISCARD” on page 68 provides more information.*

#### Format

```
ZUTIM CONfig VERify CU-cccccccccccc
```

#### Parameters

- **VERify**
  - Verify that each device within the specified CU is configured only once within any distinct group.
- **CU-cccccccccccc**
  - The 12 character CU serial number of the CU to be verified.

#### Additional information

The CONfig VERify command determines if the CU specified is a local or remote CU and provides a report for all duplicate uses of source and target devices, and/or devices that are configured as both source and target in the same physical CU.

You cannot configure a device twice within the same TimeFinder Group. The generated report flags incorrectly configured devices accordingly.

The CONfig ACCEPT command detects only the first occurrence of illegally configured devices within each physical CU in the configuration and reports the physical CU serial number as in conflict and unacceptable.

#### Examples

**Example 1**

<table>
<thead>
<tr>
<th>Action</th>
<th>Verify that device pair configuration is unique for all TimeFinder Sets containing device pairs in CU 000196701175.</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>ZUTIM CON VERIFY CU-000196701175</td>
</tr>
<tr>
<td>System</td>
<td></td>
</tr>
</tbody>
</table>

UTIM1013I TimeFinder verification for Local CU 000196701175

TimeFinder Configuration Dupe TGT Report

<table>
<thead>
<tr>
<th>TGT</th>
<th>Group</th>
<th>Set</th>
<th>SRC</th>
<th>Acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>000007BD</td>
<td>DUPS</td>
<td>5</td>
<td>000007CD</td>
<td></td>
</tr>
</tbody>
</table>
### TimeFinder Commands

<table>
<thead>
<tr>
<th>SRC</th>
<th>Group</th>
<th>Set</th>
<th>TGT</th>
<th>Acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>000007BD</td>
<td>DUPS 1</td>
<td></td>
<td>000007CD</td>
<td></td>
</tr>
<tr>
<td>000007BE</td>
<td>DUPS 5</td>
<td></td>
<td>000007CE</td>
<td></td>
</tr>
<tr>
<td>000007BF</td>
<td>DUPS 6</td>
<td></td>
<td>000007CF</td>
<td></td>
</tr>
<tr>
<td>000007CD</td>
<td>DUPS 2</td>
<td></td>
<td>000007D0</td>
<td></td>
</tr>
<tr>
<td>000007CF</td>
<td>DUPS 1</td>
<td></td>
<td>000007CD</td>
<td>NO</td>
</tr>
<tr>
<td>000007D0</td>
<td>DUPS 2</td>
<td></td>
<td>000007CE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>DUPS 3</td>
<td></td>
<td>000007CE</td>
<td>NO</td>
</tr>
<tr>
<td></td>
<td>DUPS 1</td>
<td></td>
<td>000007CD</td>
<td></td>
</tr>
<tr>
<td></td>
<td>DUPS 2</td>
<td></td>
<td>000007CD</td>
<td>NO</td>
</tr>
<tr>
<td></td>
<td>DUPS 4</td>
<td></td>
<td>000007BB</td>
<td>NO</td>
</tr>
<tr>
<td></td>
<td>DUPS 3</td>
<td></td>
<td>000007CD</td>
<td>NO</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>000007CE</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>000007CE</td>
<td>NO</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>000007BF</td>
<td>NO</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>000007CF</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>000007D0</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>000007CE</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>000007CE</td>
<td>NO</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>000007CD</td>
<td>NO</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>000007CF</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>000007D0</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>000007CF</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>000007CD</td>
<td>NO</td>
</tr>
</tbody>
</table>

### TimeFinder Configuration Dupe SRC Report

<table>
<thead>
<tr>
<th>SRC</th>
<th>Group</th>
<th>Set</th>
<th>TGT</th>
<th>Acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>000007BD</td>
<td>DUPS 1</td>
<td></td>
<td>000007CD</td>
<td></td>
</tr>
<tr>
<td>000007BE</td>
<td>DUPS 3</td>
<td></td>
<td>000007D1</td>
<td>NO</td>
</tr>
<tr>
<td>000007BF</td>
<td>DUPS 2</td>
<td></td>
<td>000007D0</td>
<td></td>
</tr>
<tr>
<td>000007CD</td>
<td>DUPS 1</td>
<td></td>
<td>000007BE</td>
<td>NO</td>
</tr>
<tr>
<td>000007CE</td>
<td>DUPS 2</td>
<td></td>
<td>000007CF</td>
<td></td>
</tr>
<tr>
<td>000007CF</td>
<td>DUPS 1</td>
<td></td>
<td>000007BF</td>
<td>NO</td>
</tr>
<tr>
<td>000007D0</td>
<td>DUPS 4</td>
<td></td>
<td>000007CD</td>
<td>NO</td>
</tr>
</tbody>
</table>

### TimeFinder Configuration Source/Target Conflict Report

<table>
<thead>
<tr>
<th>Device</th>
<th>Group</th>
<th>Set</th>
<th>Group</th>
<th>Set</th>
<th>Acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>000007BD</td>
<td>DUPS 1</td>
<td></td>
<td>000007CD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>000007BD</td>
<td>DUPS 5</td>
<td></td>
<td>000007BE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>000007BD</td>
<td>DUPS 2</td>
<td></td>
<td>000007D0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>000007CD</td>
<td>DUPS 1</td>
<td></td>
<td>000007BE</td>
<td></td>
<td>NO</td>
</tr>
<tr>
<td>000007CE</td>
<td>DUPS 2</td>
<td></td>
<td>000007CF</td>
<td></td>
<td>NO</td>
</tr>
<tr>
<td>000007CE</td>
<td>DUPS 3</td>
<td></td>
<td>000007D0</td>
<td></td>
<td>NO</td>
</tr>
<tr>
<td>000007CE</td>
<td>DUPS 4</td>
<td></td>
<td>000007D0</td>
<td></td>
<td>NO</td>
</tr>
<tr>
<td>000007CD</td>
<td>DUPS 1</td>
<td></td>
<td>000007CD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>000007CE</td>
<td>DUPS 1</td>
<td></td>
<td>000007CF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>000007CE</td>
<td>DUPS 2</td>
<td></td>
<td>000007CD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>000007CD</td>
<td>DUPS 3</td>
<td></td>
<td>000007CF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>000007CD</td>
<td>DUPS 4</td>
<td></td>
<td>000007CD</td>
<td></td>
<td>NO</td>
</tr>
</tbody>
</table>

End of Report
Example 2

**Action**
Verify that device pair configuration is unique for all TimeFinder Sets containing device pairs in CU 000197100061.

**User**
ZUTIM CON VERIFY CU-000197100061

**System**
CSMP0097I 16.26.50 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1014I Timefinder verification for Local CU 000197100061

TimeFinder Configuration Dupe TGT Report

<table>
<thead>
<tr>
<th>TGT</th>
<th>Group</th>
<th>Set</th>
<th>SRC</th>
<th>Acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*** No duplicate TGTs configured ***</td>
</tr>
</tbody>
</table>

TimeFinder Configuration Dupe SRC Report

<table>
<thead>
<tr>
<th>SRC</th>
<th>Group</th>
<th>Set</th>
<th>TGT</th>
<th>Acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*** No duplicate SRCs configured ***</td>
</tr>
</tbody>
</table>

TimeFinder Configuration Source/Target Conflict Report

<table>
<thead>
<tr>
<th>Source</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>--------</td>
<td>--------</td>
</tr>
</tbody>
</table>

*** No Source/Target conflicts configured ***

End of Report

Example 3

**Action**
Verify that device pair configuration is unique for all TimeFinder groups of all logical subsystems in physical CU 0000000005047. TimeFinder Configuration control records have not been refreshed.

**User**
ZUTIM CON VERIFY CU-0000000005047

**System**
CSMP0097I 19.41.15 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0084I TimeFinder configuration ctl rcds not refreshed
CSMP0097I 19.41.15 CPU-A SS-BSS SSU-SSU0 IS-01
End of Report
ZUTIM CReaTe

Use this command to begin creating a snapshot of the source devices defined in the TimeFinder Group.

You can issue the CReaTe command for:

- The entire TimeFinder group
- An entire Set in the TimeFinder group
- One device or a range of devices in one or all Sets in the TimeFinder group

Requirements and restrictions

- When general property CTLRCD is ON, a control record refresh occurs before the snapshot is created. Any symbolic module number and DBI associated with the source devices in the TimeFinder group being operated on are rediscovered and saved in the TimeFinder control records.
- Any desired CRT property options and permissions must be defined for proper operation of the ZUTIM CRT command. To enter one or more of the CRT options in the functional entry, the permission property for the option must be defined.

Note: “ZUTIM SETpro EST|REE|SPL|RES|INC|CLI|TER|CRT|LIN|UNL|UPD” on page 166 provides additional information.

- The user can specify that the Snapshot is to be preserved by specifying the PREServe parameter on the command line. Preserved Snapshots are not terminated as part of SnapShot Termination Policy or Snapshot Save Policy.
- The user can specify that the Snapshot is activated instantly by specifying the ACTIvate parameter on the command line. Instant activation is the default for a zDP Group. If the ACTIvate parameter is not specified, the user must activate the snapshot (with the ACTivate command) to define the point in time the copy.
- A “time-to-live” value may be associated with the Snapshot by defining the EXPIration general property for the TimeFinder Group. The property value is specified as number of days from 0-400 decimal. The general property value can be over-ridden by specifying the EXP-ddd parameter on the command line.
- Processing for a TimeFinder zDP Group is passed to the TimeFinder zDP scheduler. Snapshot creation and instant activation for a TimeFinder zDP Group is controlled by the TimeFinder zDP Cycle Scheduler and Processor.

Format

ZUTIM CRT GROup-cccccccc [SET-cccccccc] [SDN-hhhhhhhh] [CNT-dddd] [VER-dddd] [PAR-CDP|CDS|CMR] [PREServe] [ACTIvate] [EXP-ddd]
Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GROup-cccccccc</td>
<td>One to eight alphanumeric character TimeFinder group name.</td>
</tr>
<tr>
<td>SET-cccccccc</td>
<td>One to eight hexadecimal digit starting source storage device number.</td>
</tr>
<tr>
<td>SDN-hhhhhhh</td>
<td>One to eight hexadecimal digit starting source storage device number.</td>
</tr>
<tr>
<td>CNT-dddd</td>
<td>One to 4 decimal digit count of source devices.</td>
</tr>
<tr>
<td>VER-dddd</td>
<td>One to 4 decimal digit Snapshot version number. Maximum is 256.</td>
</tr>
<tr>
<td>PAR-CDP</td>
<td>Start TimeFinder zDP cycle.</td>
</tr>
<tr>
<td>PAR-CDS</td>
<td>Stop TimeFinder zDP cycle.</td>
</tr>
<tr>
<td>PAR-CMR</td>
<td>Restart TimeFinder zDP cycle.</td>
</tr>
<tr>
<td>PREServe</td>
<td>Indicate this Snapshot is to be preserved. Permission must be defined for the CRT operation for the Group.</td>
</tr>
<tr>
<td>ACTIvate</td>
<td>Instant Activate. Permission must be defined for the CRT operation for the Group.</td>
</tr>
<tr>
<td>EXP-ddd</td>
<td>Decimal Expiration timer: 0-400</td>
</tr>
</tbody>
</table>

Additional information

TimeFinder operation verification for the CRT command verifies that:

- The SnapVX feature is licensed.
- The Snapshot to be created does not exceed the maximum number of Snapshots allowed per device. Maximum is 256.
- The Snapshot name doesn't match an existing Snapshot name.
- The SRP reserved capacity is not or will not be exceeded.
- If zDP, all required options and permissions are defined.

If any of these conditions is not met, TimeFinder operation verification halts the operation or prompts the operator to halt or proceed with the operation, depending on the option and permission properties defined for the CRT operation and the TimeFinder group.

If no operations device or pre-defined gatekeeper device is available for one or more TimeFinder Sets in a TimeFinder group, operation verification notifies the operator and prompts the operator to halt or proceed with the operation.
Examples

Example 1

Action
Create SnapVX group A64B64SX.

User
ZUTIM CRT GRO-A64B64SX

System

UTIM0019P TimeFinder Group A64B64SX
UTIM0019I TimeFinder control record refresh started
UTIM1043I Local CU 000196701170 discovered for SnapVX Group A64B64SX Set UYF1
UTIM1043I Local CU 000196801233 discovered for SnapVX Group A64B64SX Set UZC1
UTIM0024P TimeFinder Group A64B64SX
UTIM0024I TimeFinder control record refresh completed
E1T70000I TimeFinder Operation Verification Started
E1T70001I TimeFinder Group Properties Verification Started
  Options Permissions
    None
E1T70003I TimeFinder Device State Verification Started
E1T70004I TimeFinder Operation Verification Completed
UTIM1000I SnapVX Group A64B64SX Set UYF1 started issuing Create
UTIM1000I SnapVX Group A64B64SX Set UZC1 started issuing Create
UTIM1001I SnapVX Group A64B64SX Set UZC1 completed issuing Create
UTIM1001I SnapVX Group A64B64SX Set UYF1 completed issuing Create
UTIM1031I Local TimeFinder Status Display
SnapVX Group: A64B64SX Base Operation: Create
Status: Monitor Active
  Start Time : 00.56.13 Date : 11/27/15

<table>
<thead>
<tr>
<th>Set</th>
<th>Name</th>
<th>CU Serial #</th>
<th>SDA</th>
<th>Complete</th>
<th>Progress</th>
<th>Started</th>
<th>Summary</th>
<th>Itrks</th>
<th>Pct</th>
</tr>
</thead>
<tbody>
<tr>
<td>UYF1</td>
<td>000196701170</td>
<td>4460</td>
<td>32</td>
<td>0</td>
<td>0</td>
<td>00000</td>
<td>0</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>UZC1</td>
<td>000196801233</td>
<td>4300</td>
<td>32</td>
<td>0</td>
<td>0</td>
<td>00000</td>
<td>0</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

End of Display

UTIM1033I Local SnapVX Group A64B64SX Create complete

Example 2

Action
Create SnapVX group A64B64SX version 1 with instant activate.

User
ZUTIM SET CRT GRO-A64B64SX TYP-PER ACTI

System

UTIM0027P TimeFinder Group A64B64SX
UTIM0027I Define complete
E1T00000I TimeFinder Create Properties Display
Local SnapVX Group - A64B64SX

--------
Options
  PRESERVED: OFF  ACTIVATE OFF
Permissions
  PRESERVED: OFF  ACTIVATE ON
--------

End of Display
User  ZUTIM CRT GRO-A64B64SX ACTI VER-1

System

UTIM0019P TimeFinder Group A64B64SX
UTIM0019I TimeFinder control record refresh started
UTIM1043I Local CU 000196701170 discovered for SnapVX Group A64B64SX Set UYF1
UTIM1043I Local CU 000196801233 discovered for SnapVX Group A64B64SX Set UZC1
UTIM0024P TimeFinder Group A64B64SX
UTIM0024I TimeFinder control record refresh completed
E1T7000I TimeFinder Operation Verification Started
E1T70001I TimeFinder Group Properties Verification Started
Options Permissions
ACTIVATE ON
E1T70003I TimeFinder Device State Verification Started
CSMP0097I 13.31.26 CPU-A SS-BSS SSU-SSU0 IS-01
E1T70004I TimeFinder Operation Verification Completed
UTIM1000I SnapVX Group A64B64SX Set UZC1 started issuing Create
UTIM1000I SnapVX Group A64B64SX Set UYF1 started issuing Create
UTIM1001I SnapVX Group A64B64SX Set UYF1 completed issuing Create
UTIM1001I SnapVX Group A64B64SX Set UZC1 completed issuing Create
UTIM1031I Local TimeFinder Status Display
SnapVX Group: A64B64SX Base Operation: Create
Status: Monitor Active
Start Time : 00.57.56 Date : 11/27/15

<table>
<thead>
<tr>
<th>Set Name</th>
<th>CU Serial #</th>
<th>SDA</th>
<th>Complete</th>
<th>Progress</th>
<th>Started</th>
<th>Summary</th>
<th>Itrks</th>
<th>Pct</th>
</tr>
</thead>
<tbody>
<tr>
<td>UYF1</td>
<td>000196701170</td>
<td>4460</td>
<td>32</td>
<td>0</td>
<td>0</td>
<td>00000</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>UZC1</td>
<td>000196801233</td>
<td>4300</td>
<td>32</td>
<td>0</td>
<td>0</td>
<td>00000</td>
<td>0</td>
<td>100</td>
</tr>
</tbody>
</table>

End of Display

UTIM1033I Local SnapVX Group A64B64SX Create complete

User  ZUTIM DIS GRO-A64B64SX SET-UYF1 VER-1

System

ZUTIM DIS GRO-A64B64SX SET-UYF1
CSMP0097I 16.10.37 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1042I TF status for Local CU 000196701170
SnapVX Group: A64B64SX Set: UYF1 Base operation: Activate

MDBF SYMB Snapshot TGT Tracks Opr
SSN MOD SDA SRC DEV# TGT DEV# ID Act Lin Def NR To Cpy Pct RC
A64 0110 4440 000008BD 00000A5D ADAD0001 Y N N X 0 0 0000
A64 0111 4441 000008BE 00000A5E ADAD0001 Y N N X 0 0 0000
A64 0112 4442 000008BF 00000A5F ADAD0001 Y N N X 0 0 0000
A64 0113 4443 000008CG 00000A60 ADAD0001 Y N N X 0 0 0000
A64 012D 445D 000008DA 00000A7A ADAD0001 Y N N X 0 0 0000
A64 012E 445E 000008DB 00000A7B ADAD0001 Y N N X 0 0 0000
A64 012F 445F 000008DC 00000A7C ADAD0001 Y N N X 0 0 0000

End of Display
ZUTIM CTLRCD

Use this command to back up and restore TimeFinder control records to and from TimeFinder backup control records. This functional command refreshes the TimeFinder control records by discovering all configured Sets in all groups.

Requirements and restrictions

- The CTLRCD BACKUP command may only be issued for configured TimeFinder control records, and only when no TimeFinder operation is active or in the process of being issued.
- The CTLRCD RESTORE command may be issued following a ZUTIM INI CLEAR or for configured TimeFinder control records. No TimeFinder operation may be active or in the process of being issued.

Format

ZUTIM CTLRCD BACKUP|RESTORE|REFRESH

Parameters

- BACKUP: Backup EMC TimeFinder control records.
- RESTORE: Restore EMC TimeFinder control records.
- REFRESH: Refresh EMC TimeFinder control records.

Additional information

- You should integrate the CTLRCD BACKUP|RESTORE commands into any TimeFinder configuration or migration scripts. Backup the control records before the first CONFIG OPEN command to carry the control record backup timestamp over to the new configuration.

Note: “Migration from an earlier release of TimeFinder” on page 36 provides additional information.

- The CTLRCD REFRESH command updates the SDA, Symbolic module, and DBI for any host-attached devices in the TimeFinder configuration, and validates the operations device for any groups for which no TimeFinder command has been issued.
Examples

Example 1

**Action**  
Backup TimeFinder control records.

**User**  
ZUTIM CTLRCD BACKUP

**System**

CSMP0097I 20.20.52 CPU-A SS-BSS SSU-SSU0 IS-01  
UTIM0099I TimeFinder control record backup started  
CSMP0097I 20.20.52 CPU-A SS-BSS SSU-SSU0 IS-01  
UTIM0101I TimeFinder control record backup complete

Example 2

**Action**  
Restore TimeFinder control records.

**User**  
ZUTIM CTLRCD RESTORE

**System**

CSMP0097I 20.20.52 CPU-A SS-BSS SSU-SSU0 IS-01  
UTIM0098I TimeFinder control record restore started  
CSMP0097I 20.20.52 CPU-A SS-BSS SSU-SSU0 IS-01  
UTIM0100I TimeFinder control record restore complete

Example 3

**Action**  
Backup TimeFinder control records. TimeFinder backup control record allocation is not the same as the TimeFinder control record allocation.

**User**  
ZUTIM CTLRCD BACKUP

**System**

CSMP0097I 20.25.52 CPU-A SS-BSS SSU-SSU0 IS-01  
UTIM0098I TimeFinder control record restore started  
CSMP0097I 20.25.52 CPU-A SS-BSS SSU-SSU0 IS-01  
UTIM0080E Backup Control Record FACS error

Example 4

**Action**  
Refresh TimeFinder control records following initial configuration and prior to issuing an operation to any TimeFinder group.

**User**  
ZUTIM CTLRCD REFRESH

**System**

CSMP0097I 12.36.23 CPU-A SS-BSS SSU-SSU0 IS-01  
UTIM0019I TimeFinder control record refresh started  
CSMP0097I 12.38.42 CPU-A SS-BSS SSU-SSU0 IS-01  
UTIM1043I Local CU 000195700086 discovered for Clone Group TBA64B64 Set UIFA64  
UTIM1043I Local CU 000196700257 discovered for Clone Group TBA64B64 Set UYBB64  
UTIM1043I Local CU 000192604124 discovered for Clone Group TBA64B64 Set UTLA64  
UTIM1043I Local CU 000194901159 discovered for Clone Group TBA64B64 Set UHCB64  
UTIM1043I Local CU 000195700086 discovered for Clone Group MYFAVCUS Set 12061226  
UTIM1043I Local CU 000194901159 discovered for Clone Group R2TGTS Set UHC1  
UTIM0024I TimeFinder control record refresh completed
ZUTIM DEFine PROp-GKD|NOG

Use this command to define a z/TPF gatekeeper for the specified TimeFinder Set and TimeFinder group.

Requirements and restrictions

Configure the TimeFinder control records before you define a z/TPF gatekeeper for a TimeFinder Set. You cannot define a z/TPF gatekeeper if another TimeFinder operation is in progress.

Note: “ZUTIM CONfig ADD|REMove” on page 71 provides additional information.

Format

ZUTIM DEFine GROup-cccccccc SET-cccccccc PROp-GKD|NOG [SDA-ccud]

Parameters

GROup-cccccccc One to eight alphanumeric character group name.
SET-cccccccccc One to eight alphanumeric character set name.
PROp-GKD Define traditional gatekeeper.
PROp-NOG No z/TPF gatekeeper is defined.
SDA-ccud Is the SDA of the z/TPF gatekeeper device for the storage system designated by the specified Set.

Additional information

The z/TPF gatekeeper device defined for a TimeFinder Set is the locally attached device through which all TimeFinder operations are issued for the local or remote storage system of the specified TimeFinder Set and TimeFinder group.

Example

Action Define a gatekeeper SDA 3380 for device group BKUP0129 TimeFinder Set UVASTEST.
User ZUTIM DEF GRO-BKUP0129 SET-UVASTEST PRO-GKD SDA-3380
System

CSMP0097I 01.31.37 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0027I Define complete
ZUTIM DEFINE PROp-INT|DEL

Use this command to define the TimeFinder Monitor interval timer and device pair processing delay for the specified group.

The TimeFinder Monitor displays ongoing activity on the z/TPF Prime CRAS console at the interval you specify. The TimeFinder processor issues TimeFinder operations to subsequent device pairs using the user-specified processing delay.

Requirements and restrictions

The TimeFinder control records must be configured prior to defining the interval or delay timers.

Format

ZUTIM DEFINE GROup-cccccccc PROp-INT|DEL TIME-dddddd

Parameters

GROup-cccccccc One to eight alphanumeric character group name.
PROp-INT The interval in minutes between TimeFinder Monitor status displays. The default value is 3.
PROp-DEL Delay in seconds for the next TimeFinder device pair in a set. The default value is 3.
TIME-dddddd The interval or delay in minutes and seconds respectively.

Additional information

- TimeFinder control record configuration sets the monitor interval and processing delay to a value of 3 minutes and 3 seconds, respectively, when configuring a new group.
- You can change the TimeFinder monitor interval or processing delay while a TimeFinder operation is in progress. When the TimeFinder Monitor interval is changed, and the TimeFinder monitor is active, the monitor is immediately initiated with the new interval timer value.
Examples

Example 1

**Action**
Set the TimeFinder operation delay to 5 seconds for TimeFinder group TBA64B64.

**User**
ZUTIM DEF GRO-TBA64B64 PRO-DEL TIM-5

**System**
CSMP0097I 12.46.47 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0027P TimeFinder Group TBA64B64 Set
UTIM0027I Define complete
CSMP0097I 12.46.47 CPU-A SS-BSS SSU-SSU0 IS-01
E1TG0000I TimeFinder General Properties Display
Local Clone Group - TBA64B64
Processing Delay Timer: 5 Scheduler Timeout: 1 Persistent Monitor: OFF
Monitor Interval Timer: 1 CTRLCD Refresh: ON Ops Verification: ON
SRDF/A: OFF QOS: 3 is set
End of Display

Example 2

**Action**
Set the TimeFinder monitor interval to 3 minutes for TimeFinder group TBA64B64.

**User**
ZUTIM DEF GRO-TBA64B64 PRO-INT TIM-3

**System**
CSMP0097I 12.45.47 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0027P TimeFinder Group TBA64B64
UTIM0027I Define complete
CSMP0097I 12.45.47 CPU-A SS-BSS SSU-SSU0 IS-01
E1TG0000I TimeFinder General Properties Display
Local Clone Group - TBA64B64
Processing Delay Timer: 5 Scheduler Timeout: 1 Persistent Monitor: OFF
Monitor Interval Timer: 3 CTRLCD Refresh: ON Ops Verification: ON
SRDF/A: OFF QOS: 3 is set
End of Display
ZUTIM DEFINE PROp-EST|REE|SPL|RES|INC|CLI

Use this command to define the operational properties for the specified group. You can use this command to change options and permissions associated with the specified operation and group. You can also use this command to set default options for the TimeFinder commands Establish, Reestablish, Split, Restore, Increstore, and Clip, for the specified group.

Requirements and restrictions

- To enter a TimeFinder command option in the functional entry, set the property permission (TYP-PER) for the option.
- The following CAUTION must be heeded if the Restore|Increstore option ASResto is set on for a TimeFinder group. This property setting determines whether the specified group will be enabled for restore in any system state, or restricted to 1052 state or lower.

Note: “ZUTIM RESTORE” on page 162 and “ZUTIM INCRESTORE” on page 135 provide additional information.

⚠️ CAUTION

TimeFinder groups that contain source devices that comprise of real time production z/TPF volumes should never be restored above 1052 state. This also applies to operational system database TimeFinder groups (i.e. The system on which the message is entered). Moreover, such TimeFinder groups should never be enabled for AnyStateRestore. It is extremely important that the production system and/or operational system database group always be RESTRICTED to restore in 1052 state or lower. If the properties for these groups are defined to permit AnyStateRestore, VFA delay file will not be enabled in 1052 state. This is very important due to the ramifications of filing the TimeFinder control records during TimeFinder operation to a database that is being restored. Furthermore, the RESTORE and INCRESTORE Requirements and restrictions sections in the TimeFinder Controls for z/TPF Product Guide should always be adhered to when restoring the production system and/or operational database. Otherwise, results will be unpredictable.

Format

ZUTIM DEFINE GROUP-cccccccccc PROp-EST|REE|SPL|RES|INC|CLI TYPE-OPT|PER

property list
Parameters

- **GROUP-cccccccc**: One to eight alphanumeric character TimeFinder group name.
- **PROP-EST**: Establish properties.
- **PROP-REE**: Reestablish properties.
- **PROP-SPL**: Split properties.
- **PROP-RES**: Restore properties.
- **PROP-INC**: Increstore properties.
- **PROP-CLI**: Clip properties.
- **TYPE-OPT**: Options for specified operation.
- **TYPE-PER**: Permissions for specified operation.

**property list**

- EST: [NO]ONLDev
- REE: [NO]SDDF, [NO]ONLDev
- SPL: [NO]FORCE, [NO]URDY, [NO]ACRE
- RES: [NO]ASREsto, [NO]ONLDev
- INC: [NO]ASREsto, [NO]ONLDev
- CLI: [NO]ONLDev

Additional information

- Defining one or more property options (TYP OPT) on or off automatically sets the permission for the property on or off as requested. Defining a property option on for a specific TimeFinder operation and group makes the option the default. Defining a property permission on for a specific TimeFinder operation and group enables entering the option in the functional entry.

Examples

Example 1

<table>
<thead>
<tr>
<th>Action</th>
<th>Enable AnyStateRestore for remote Timefinder group R2TGT.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>ZUTIM DEF GRO-R2TGTS PROP-RES TYP-OPT ASREST</td>
</tr>
<tr>
<td>System</td>
<td></td>
</tr>
</tbody>
</table>

CSMP0097I 14.40.16 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0027P TimeFinder Group R2TGT.S
UTIM0027I Define complete
CSMP0097I 14.40.16 CPU-A SS-BSS SSU-SSU0 IS-01
E1TG0000I TimeFinder Restore Properties Display
Remote Clone Group - R2TGT.S
Options
UNUSED: OFF UNUSED: OFF ASRESTORE: ON ONLDEV: OFF
Permissions
UNUSED: OFF UNUSED: OFF ASRESTORE: ON ONLDEV: OFF
End of Display
Example 2

**Action**
Restrict TimeFinder group TBA64B64 to restore in 1052 state only.

**User**
ZUTIM DEF GRO-TBA64B64 PRO-RES TYP-OPT NOASRE

**System**

CSMP0097I 14.42.27 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0027P TimeFinder Group TBA64B64
UTIM0027I Define complete
CSMP0097I 14.42.27 CPU-A SS-BSS SSU-SSU0 IS-01
E1TG0000I TimeFinder Restore Properties Display
Local Clone Group - TBA64B64
Options
UNUSED: OFF UNUSED: OFF ASRESTORE: OFF ONLDEV: OFF
Permissions
UNUSED: OFF UNUSED: OFF ASRESTORE: OFF ONLDEV: OFF
End of Display

Example 3

**Action**
Enable permission for the URDY option to be entered in the functional entry for the TimeFinder Split operation for TimeFinder group TBA64B64.

**User**
ZUTIM DEF GRO-TBA64B64 PRO-SPL TYP-PER URDY

**System**

CSMP0097I 14.45.42 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0027P TimeFinder Group TBA64B64
UTIM0027I Define complete
CSMP0097I 14.45.42 CPU-A SS-BSS SSU-SSU0 IS-01
E1TG0000I TimeFinder Split Properties Display
Local Clone Group - TBA64B64
Options
FORCE: ON UNUSED: OFF UNUSED: OFF ASRESTORE: OFF
Permissions
FORCE: ON UNUSED: OFF UNUSED: OFF ASRESTORE: OFF
FORCE: ON UNUSED: OFF UNUSED: OFF
FORCE: ON UNLDEV: OFF ACRE: OFF
End of Display
Example 4

**Action**
Turn split After Clone Restore property option on for TimeFinder group TBA64B64.

**User**
ZUTIM DEF GRO-TBA64B64 PRO-SPL TYP-OPT ACRE

**System**

CSMP0097I 14.49.02 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0027P TimeFinder Group TBA64B64
UTIM0027I Define complete
CSMP0097I 14.49.02 CPU-A SS-BSS SSU-SSU0 IS-01
E1TG0000I TimeFinder Split Properties Display
Local Clone Group - TBA64B64
Options
FORCE: ON UNUSED: OFF UNUSED: OFF UNUSED: OFF UNUSED: OFF
UNUSED: OFF URDY: OFF ACRE: ON
Permissions
FORCE: ON UNUSED: OFF UNUSED: OFF UNUSED: OFF
UNUSED: OFF URDY: ON ACRE: ON
End of Display
**ZUTIM DEFine PROp-CLI|NOC**

Use this command to define the volser prefix to be used with the ZUTIM CLIp command.

**Requirements and restrictions**

- The TimeFinder control records must be configured and ACCEPTed prior to defining a volser prefix for a TimeFinder group.
- Issue the ZUTIM DEF PRO-CLI command before you issue the ZUTIM EST|REE command for a TimeFinder Clone group or the ZUTIM CRT command for TimeFinder SnapVX group.
- TimeFinder Controls for z/TPF can maintain z/TPF symbolic module information and MDBF DBI information for host attached devices only. Therefore, a clip prefix can be defined only for *spare* devices in remote TimeFinder groups.
- Ensure the general property CTLRcd is ON for the first TimeFinder operation following CLIp property definitions.

**Format**

ZUTIM DEFine GROup-cccccccc PROp-CLI|NOC [SS-cccc] PREfix-pp

**Parameters**

- **GROup-cccccccc** One to eight alphanumeric character group name.
- **PROp-CLI** The target devices are to be relabeled when a ZUTIM CLIp is issued.
- **PROp-NOC** The target devices are not to be relabeled when a ZUTIM CLIp is issued.
- **SS-cccc** The MDBF subsystem name. Prefix applies to z/TPF spares if omitted.
- **PREfix-pp** The 2 character volser prefix of the MDBF subsystem or offline device.
Examples

Example 1

**Action**
Define a volser prefix of TH to be used with the ZUTIM CLIp command for TPF spares in TimeFinder group GROUP3.

**User**
ZUTIM DEF GRO-GROUP3 PRO-CLI PRE-TH

**System**

```
CSMP0097I 01.52.00 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0027I Define complete
CSMP0097I 01.52.00 CPU-A SS-BSS SSU-SSU0 IS-01
E1TG0000I TimeFinder Clip Properties Display
  Local Clone Group - GROUP3
    MDBF Volser
    SSN Clip Prefix
    N/A Yes TH
    BSS No
    A64 No

Options
  UNUSED: OFF UNUSED: OFF UNUSED: OFF ONLDEV: OFF

Permissions
  UNUSED: OFF UNUSED: OFF UNUSED: OFF ONLDEV: OFF

End of Display
```

Example 2

**Action**
Define a volser prefix of SH to be used with the ZUTIM CLIp command for target devices paired with MDBF SS A64 STD volumes in TimeFinder group GROUP3.

**User**
ZUTIM DEF GRO-GROUP3 PRO-CLI SS-A64 PRE-SH

**System**

```
CSMP0097I 01.55.43 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0027I Define complete
CSMP0097I 01.55.43 CPU-A SS-BSS SSU-SSU0 IS-01
E1TG0000I TimeFinder Clip Properties Display
  Local Clone Group - GROUP3
    MDBF VOLSER
    SSN Clip Prefix
    N/A Yes TH
    BSS No
    A64 Yes SH

Options
  UNUSED: OFF UNUSED: OFF UNUSED: OFF ONLDEV: OFF

Permissions
  UNUSED: OFF UNUSED: OFF UNUSED: OFF ONLDEV: OFF

End of Display
```
Example 3

**Action**
Indicate to TimeFinder that the targets for MDBF subsystem BSS of TimeFinder group GROUP2 should not be relabeled with the ZUTIM CLIp command.

**User**
ZUTIM DEF GRO-GROUP2 PRO-NOC SS-BSS

**System**

CSMP0097I 02.04.00 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0027I Define complete
CSMP0097I 02.04.00 CPU-A SS-BSS SSU-SSU0 IS-01
E1TG0000I TimeFinder Clip Properties Display
Local Clone Group - GROUP2

MDBF   VOLSER
SSN    Clip Prefix
N/A    No
BSS    No
A64    No

Options
UNUSED: OFF  UNUSED: OFF  UNUSED: OFF  ONLDEV: OFF

Permissions
UNUSED: OFF  UNUSED: OFF  UNUSED: OFF  ONLDEV: OFF

End of Display
**ZUTIM DEFine PROp-GEN**

Use this command to define general, operational properties for the TimeFinder group. You can use this command to:

- Define the TimeFinder Quality of Service level for the specified group
- Define the ASYNC property for groups that contain SRDF/A R2 TimeFinder source volumes
- Enable/bypass CTLRCD refresh for all relevant TimeFinder commands
- Define Scheduler Timeout
- Enable/disable TimeFinder Persistent Monitor
- Enable/bypass Operation Verification for all relevant TimeFinder commands

**Requirements and restrictions**

- You can define only one general group property at a time.
- QoS supports storage systems running Enginuity 5773 and 5876, the defined QoS value is set only if:
  - ResourcePak for z/TPF is loaded
  - You have activated the QoS Controls for z/TPF user exit for TimeFinder
- You should define the general property ASYNC for groups that contain SRDF/A R2 TimeFinder source volumes. Associating the ASYNC property with such a group ensures that the TimeFinder Split occurs only if:
  - SRDF/A is active
  - The secondary storage system is consistent
  - The restore of the Apply session is complete on the secondary storage system

TimeFinder software can only ensure a consistent Split of a TimeFinder group describing SRDF/A R2 TimeFinder source volumes when you define the general property ASYNC.

In addition, you must configure the group through the primary storage system of the SRDF/A storage pair by specifying the SRDF/A RDFGroup as the last RDF Group in the multi-hop list on the ZUTIM CONfig ADD command.

When a TimeFinder Group is initially configured or if the TimeFinder Group configuration is changed, the value of the CTLRcd general property is over-ridden to force CTLRCD Refresh on the first operation on the TimeFinder Group after the configuration change has been accepted.

CTLRCD Refresh must be enabled following any Enginuity, HYPERMAX OS, or hardware upgrade in order that the TimeFinder control records are refreshed with any changed information.

---

1. Enginuity 5876 and lower.
When Offline Module Access is installed, CTLRCD Refresh must be enabled whenever online modules are copied to a different address. Offline Module Access requires the TimeFinder control records accurately reflect the Module File Status Table information.

**Format**

ZUTIM DEFINE GROUP-cccccccc PROP-GEN [QOS-dd] | [STO-dd] | [NOASYNC] | [NOCTLRcd] | [NPمونitor] | [NOOPSV]

**Parameters**

- **GROUP-cccccccc**: One to eight alphanumeric character group name.
- **PROP-GEN**: General group properties.
- **QOS-dd**: The TimeFinder Quality of Service level to use for all pairs in the TimeFinder group.
- **ASYNC**: Specify that the group contains SRDF/A R2 TimeFinder source volumes.
- **NOASYNC**: Specify that the group does not contain SRDF/A R2 TimeFinder source volumes.
- **CTLRcd**: Enable CTLRCD Refresh
- **NCTLRcd**: Bypass CTLRCD Refresh
- **STO-dd**: Scheduler timeout. Values are 1-99, in hours.
- **PMON**: Enable TimeFinder Persistent Monitor. The persistent monitor is only initiated for the ESTablish and REEstablish commands.
- **NOPMON**: Disable TimeFinder Persistent Monitor.
- **OPSV**: Enable Operation Verification.
- **NOOPSV**: Bypass Operation Verification.

**Additional information**

- You can define QoS while a TimeFinder operation is being monitored. If a group is in the process of being synchronized and the Monitor is active at the time you define the QoS value for that group, the Monitor initiates QoS Controls for z/TPF. The QoS Controls then set the QoS value for all TimeFinder device pairs in the group.
- If the TimeFinder Monitor is not active, the Scheduler initiates QoS Controls for z/TPF to set the QoS value for all TimeFinder device pairs in the group the next time a TimeFinder operation is started.
- You can turn off the general property ASYNC to split a TimeFinder group describing SRDF/A R2 TimeFinder source, which either:
  - TimeFinder Controls cannot verify to be consistent.
  - You can verify to be consistent. (That means that you may want to split a TimeFinder group for which SRDF/A was recently dropped or pend dropped.)
Examples

Example 1

**Action**  Define a QoS value of 3 (three) for all device pairs in TimeFinder group TBA64B64. TimeFinder group TBA64B64 is not in the process of being synchronized and the TimeFinder monitor is not active.

**User**  ZUTIM DEF GRO-TBA64B64 PRO-GEN QOS-3

**System**

CSMP0097I 17.04.50 CPU-A SS-BSS SSU-SSU0 IS-01  
UTIM0027P TimeFinder Group TBA64B64  
UTIM0027I Define complete  
CSMP0097I 17.04.50 CPU-A SS-BSS SSU-SSU0 IS-01  
E1TG0000I TimeFinder General Properties Display  
Local Clone Group - TBA64B64  
  Processing Delay Timer: 3  Scheduler Timeout: 1  Persistent Monitor: OFF  
  Monitor Interval Timer: 3  CTRLCD Refresh: ON  Ops Verification: ON  
  SRDF/A: OFF  QOS: 3 to be set  
End of Display

Example 2

**Action**  Try to define the SRDF/ASYNC property for a TimeFinder group that describes SRDF/A R2 source with SRDF/A currently inactive.

**User**  ZUTIM DEF GRO-TBA64B64 PRO-GEN ASYNC

**System**

CSMP0097I 17.23.05 CPU-B SS-BSS SSU-SSU0 IS-01  
UTIM0113I Clone Group not configured through SRDF/A primary Symmetrix

Example 3

**Action**  Define the SRDF/ASYNC property for a TimeFinder group that describes SRDF/A R2 source and has been configured through the SRDF/A primary storage system.

**User**  ZUTIM DEF GRO-TBA64B64 PRO-GEN ASYNC

**System**

CSMP0097I 17.54.50 CPU-A SS-BSS SSU-SSU0 IS-01  
UTIM0027P TimeFinder Group TBA64B64  
UTIM0027I Define complete  
CSMP0097I 17.54.50 CPU-A SS-BSS SSU-SSU0 IS-01  
E1TG0000I TimeFinder General Properties Display  
Local Clone Group - TBA64B64  
  Processing Delay Timer: 3  Scheduler Timeout: 1  Persistent Monitor: OFF  
  Monitor Interval Timer: 3  CTRLCD Refresh: ON  Ops Verification: ON  
  SRDF/A: ON  QOS: 3 to be set  
End of Display
Example 4

**Action**

Turn the SRDF/ASYNC property OFF for a TimeFinder group that describes SRDF/A R2 source and has been configured through the SRDF/A primary storage system.

**User**

ZUTIM DEF GRO-TBA64B64 PRO-GEN NOASYNC

**System**

CSMP0097I 18.12.50 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0027P TimeFinder Group TBA64B64
UTIM0027I Define complete
CSMP0097I 18.12.50 CPU-A SS-BSS SSU-SSU0 IS-01
E1TG0000I TimeFinder General Properties Display
  Local Clone Group - TBA64B64
  Processing Delay Timer:  3 Scheduler Timeout:  1 Persistent Monitor: OFF
  Monitor Interval Timer:  3 CTRLCD Refresh: ON    Ops Verification: ON
  SRDF/A: OFF                QOS:  3 to be set
End of Display

Example 5

**Action**

Disable Operations Verification for TimeFinder group TBA64B64.

**User**

ZUTIM DEF GRO-TBA64B64 PRO-GEN NOOPSV

**System**

CSMP0097I 18.12.50 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0027P TimeFinder Group TBA64B64
UTIM0027I Define complete
CSMP0097I 18.12.50 CPU-A SS-BSS SSU-SSU0 IS-01
E1TG0000I TimeFinder General Properties Display
  Local Clone Group - TBA64B64
  Processing Delay Timer:  3 Scheduler Timeout:  1 Persistent Monitor: OFF
  Monitor Interval Timer:  3 CTRLCD Refresh: ON    Ops Verification: OFF
  SRDF/A: OFF                QOS:  3 to be set
End of Display
ZUTIM DISPLAY

Use this command to display TimeFinder device pair information and storage configuration information for the specified TimeFinder group and set. Information for online targets, offline source devices, TimeFinder device or clone pairs with non-zero rc status, TimeFinder device pairs showing invalid tracks, as well as storage configuration information may be displayed.

Requirements and restrictions

- You must configure TimeFinder control records to ensure the display is accurate.
- You can display Quality of Service values only if QoS Controls for z/TPF is installed.
- You can display Clone and snapshot session ID information by TimeFinder source and/or target device only if Session Controls for z/TPF is installed.

Note: “z/TPF source customization” on page 33 and “TimeFinder Controls for z/TPF installation” on page 34 provide additional information.

Format

ZUTIM DISPLAY GROUP-cccccccc SET-cccccccc [SDN-hhhh] [CNT-dddd] [TYPE-STA|ITR|OFF|CON|OPR|ONL|QOS|SES|SRC|TGT|STR|TSD|SRP|DGP|SGP|SLO]

Parameters

- GROUP-cccccccc: One to eight alphanumeric character group name.
- SET: One to eight alphanumeric character set name.
- SDN-hhhhhhhh: Start hexadecimal storage device number of range to be displayed.
- CNT-dddd: Count of devices in range to be displayed.
- TYPE-STA: Display only pair(s) with non-zero rc status.
- TYPE-ITR: Display only pair(s) with non-zero invalid tracks.
- TYPE-OFF: Display only pair(s) whose source device is offline.
- TYPE-CON: Display control unit director configuration.
- TYPE-OPR: Display last operation issued to the pair.
- TYPE-ONL: Display device #s, director and path, and path group ID for online target devices.
- TYPE-QOS: Quality of Service values.
- TYPE-SES: TimeFinder device pair session information.
- TYPE-SRC: TimeFinder sessions on the source device of the device pair.
- TYPE-TGT: TimeFinder sessions on the target device of the device pair.
- TYPE-TSD: Display defined target SDAs. (For use with Offline Module Access for z/TPF, reference the EMC ResourcePak for z/TPF User Guide for more information.)
Example information

Example 1 displays the following information:

- **Type**: Controller emulation type.
- **Model**: Storage system model number.
- **Memory**: Cache size in megabytes.
- **Enginuity Level**: Currently installed Enginuity level of the storage system.
- **Build Date**: Enginuity level compiled date.
- **DARE Enabled**: Data At Rest Encryption (ON|OFF)
- **MAID Enabled**: Disk Power Saving (ON|OFF)
- **D01 - 128**: Storage system Director types.

The mainframe host director types are:
- CA - Parallel channel host adapter
- EA - ESCON channel host adapter
- EF - FICON channel host adapter

The open systems host director types are:
- SA - SCSI host adapter
- FA - Fibre SA host adapter
- FE - Fiber Channel over Ethernet adapter
- F2 - Four-port fibre SA host adapter
- SE - GigE SA host adapter

The disk director types are:
- DA - Disk director
- DF - Disk fibre director
- DX - External disk director

The RDF director types are:
- RE - GigE RDF director
- RF - Fibre RDF director

**Subsystem IDs**: Storage system logical partitions, SSIDs, defined in the physical control unit.

Examples

Example 1

**Action**
Display storage configuration summary for TimeFinder Set 4E40 in TimeFinder group A64B64BU.

**User**
ZUTIM DIS GRO-A64B64BU SET-4E40 TYP-CON

**System**

CSMP0097I 18.57.54 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0000I CU 000195700079 Configuration Display
Clone Group: A64B64BU  Set Name : 4E40
Multi-Hop List: N/A  Multi-Hop Count: 00
Type: 3990  Model: VMAX40K  Mem: 73728 MB
Microcode Level: 5876v58  Build Date: 02/13/2012
DARE Enabled: NO  MAID Enabled : NO
Director Configuration
D01:  D02:   D03:   D04:   D05: DF D06: DF D07: DF D08: DF
TimeFinder Commands

Example 2

Action          Display online TimeFinder Clone target information for TimeFinder Clone group UED1 Set 96PAIRS.

User            ZUTIM DIS GRO-UED1 SET-96PAIRS TYP-ONL

System

CSMP0097I 11.48.52 CPU-A SS-BSS SSU-SSU0 IS-01
E1AX0001I 11.48.51 TimeFinder Online Clone Report
Clone Group: UED1 Set: 96PAIRS

<table>
<thead>
<tr>
<th>Target</th>
<th>TGT Dir/</th>
<th>Device #</th>
<th>NR</th>
<th>Path Group ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>00000640</td>
<td>2200</td>
<td>880007354E2096C86C901A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00000641</td>
<td>2200</td>
<td>880007354E2096C86C901A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00000642</td>
<td>2200</td>
<td>880007354E2096C86C901A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00000643</td>
<td>2200</td>
<td>880007354E2096C86C901A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0000064C</td>
<td>2200</td>
<td>880007354E2096C86C901A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0000064D</td>
<td>2200</td>
<td>880007354E2096C86C901A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0000064E</td>
<td>2200</td>
<td>880007354E2096C86C901A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0000064F</td>
<td>2200</td>
<td>880007354E2096C86C901A</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

End of Display

Example 3

This example displays the information for a TimeFinder group as follows:

MDBF SSN      The MDBF subsystem name to which the TPF module belongs.
SYMB MOD      The symbolic model number of the device.
SDA           The symbolic address of the device.
SRC DEV #     The storage device number of the clone source device.
TGT DEV#      The storage device number of the clone target device.
TGT State     Clone target device state indicator. Valid values are:
ATTAC         Target is attached to this source device.
SYNCD         Target is synchronized with this source device.

End of Display
### TimeFinder Controls for z/TPF Version 8.0 Product Guide

**TimeFinder Commands**

<table>
<thead>
<tr>
<th>N/A</th>
<th>Never attached.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TGT NR</td>
<td>Target not ready indicator.</td>
</tr>
<tr>
<td>SRC State</td>
<td>Clone source device state indicator. Valid values are:</td>
</tr>
<tr>
<td>AVAIL</td>
<td>Source device is available for an establish.</td>
</tr>
<tr>
<td>ATTAC</td>
<td>Source device is attached to this target.</td>
</tr>
<tr>
<td>Pair State</td>
<td>Clone pair state indicator. Valid values are:</td>
</tr>
<tr>
<td>AVAIL</td>
<td>Target is available.</td>
</tr>
<tr>
<td>INUSE</td>
<td>Target is attached to a standard device.</td>
</tr>
<tr>
<td>INUSX</td>
<td>Target is attached and synchronization is in progress.</td>
</tr>
<tr>
<td>Invalid Tracks</td>
<td>The number of tracks remaining to be synchronized.</td>
</tr>
<tr>
<td>PCT</td>
<td>The percentage of tracks synchronized.</td>
</tr>
<tr>
<td>Opr RC</td>
<td>The z/TPF and storage system return codes for the current TimeFinder operation.</td>
</tr>
</tbody>
</table>

#### Example 4

This example displays the Clone session information for a TimeFinder/Clone Group as follows:

<table>
<thead>
<tr>
<th>Action</th>
<th>Display information for device pairs for set UIFA64 in TimeFinder group TBA64B64.</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>ZUTIM DIS GRO-TBA64B64 SET-UIFA64</td>
</tr>
<tr>
<td>System</td>
<td>CSMP0097I 15.04.19 CPU-A SS-BSS SSU-SSU0 IS-01</td>
</tr>
<tr>
<td>UTIM1042I TF status for Local CU 000195700086</td>
<td></td>
</tr>
<tr>
<td>Clone Group: TBA64B64 Set: UIFA64 Base operation: Split</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MDBF</th>
<th>SYMB</th>
<th>SRC</th>
<th>TGT</th>
<th>TGT</th>
<th>TGT</th>
<th>SRC</th>
<th>Pair</th>
<th>Invalid Tracks</th>
<th>Opr</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSN</td>
<td>MOD</td>
<td>SDA</td>
<td>DEV#</td>
<td>DEV#</td>
<td>State</td>
<td>NR</td>
<td>State</td>
<td>State</td>
<td>Tracks</td>
</tr>
<tr>
<td>A64</td>
<td>0100</td>
<td>35C0</td>
<td>0000121C</td>
<td>000011FC</td>
<td>SYNCD</td>
<td>X</td>
<td>AVAIL</td>
<td>AVAIL</td>
<td>0</td>
</tr>
<tr>
<td>A64</td>
<td>0101</td>
<td>35C1</td>
<td>0000121D</td>
<td>000011FD</td>
<td>SYNCD</td>
<td>X</td>
<td>AVAIL</td>
<td>AVAIL</td>
<td>0</td>
</tr>
<tr>
<td>A64</td>
<td>0102</td>
<td>35C2</td>
<td>0000121E</td>
<td>000011FE</td>
<td>SYNCD</td>
<td>X</td>
<td>AVAIL</td>
<td>AVAIL</td>
<td>0</td>
</tr>
<tr>
<td>A64</td>
<td>0103</td>
<td>35C3</td>
<td>0000121F</td>
<td>000011FF</td>
<td>SYNCD</td>
<td>X</td>
<td>AVAIL</td>
<td>AVAIL</td>
<td>0</td>
</tr>
<tr>
<td>A64</td>
<td>0104</td>
<td>35C4</td>
<td>00001220</td>
<td>00001200</td>
<td>SYNCD</td>
<td>X</td>
<td>AVAIL</td>
<td>AVAIL</td>
<td>0</td>
</tr>
<tr>
<td>A64</td>
<td>0105</td>
<td>35C5</td>
<td>00001221</td>
<td>00001201</td>
<td>SYNCD</td>
<td>X</td>
<td>AVAIL</td>
<td>AVAIL</td>
<td>0</td>
</tr>
<tr>
<td>A64</td>
<td>0106</td>
<td>35C6</td>
<td>00001222</td>
<td>00001202</td>
<td>SYNCD</td>
<td>X</td>
<td>AVAIL</td>
<td>AVAIL</td>
<td>0</td>
</tr>
<tr>
<td>A64</td>
<td>0107</td>
<td>35C7</td>
<td>00001223</td>
<td>00001203</td>
<td>SYNCD</td>
<td>X</td>
<td>AVAIL</td>
<td>AVAIL</td>
<td>0</td>
</tr>
<tr>
<td>A64</td>
<td>0108</td>
<td>35C8</td>
<td>00001224</td>
<td>00001204</td>
<td>SYNCD</td>
<td>X</td>
<td>AVAIL</td>
<td>AVAIL</td>
<td>0</td>
</tr>
<tr>
<td>A64</td>
<td>0109</td>
<td>35C9</td>
<td>00001225</td>
<td>00001205</td>
<td>SYNCD</td>
<td>X</td>
<td>AVAIL</td>
<td>AVAIL</td>
<td>0</td>
</tr>
<tr>
<td>A64</td>
<td>010A</td>
<td>35CA</td>
<td>00001226</td>
<td>00001206</td>
<td>SYNCD</td>
<td>X</td>
<td>AVAIL</td>
<td>AVAIL</td>
<td>0</td>
</tr>
<tr>
<td>A64</td>
<td>010B</td>
<td>35CB</td>
<td>00001227</td>
<td>00001207</td>
<td>SYNCD</td>
<td>X</td>
<td>AVAIL</td>
<td>AVAIL</td>
<td>0</td>
</tr>
<tr>
<td>A64</td>
<td>010C</td>
<td>35CC</td>
<td>00001228</td>
<td>00001208</td>
<td>SYNCD</td>
<td>X</td>
<td>AVAIL</td>
<td>AVAIL</td>
<td>0</td>
</tr>
<tr>
<td>A64</td>
<td>010D</td>
<td>35CD</td>
<td>00001229</td>
<td>00001209</td>
<td>SYNCD</td>
<td>X</td>
<td>AVAIL</td>
<td>AVAIL</td>
<td>0</td>
</tr>
<tr>
<td>A64</td>
<td>010E</td>
<td>35CE</td>
<td>0000122A</td>
<td>0000120A</td>
<td>SYNCD</td>
<td>X</td>
<td>AVAIL</td>
<td>AVAIL</td>
<td>0</td>
</tr>
<tr>
<td>A64</td>
<td>010F</td>
<td>35CF</td>
<td>0000122B</td>
<td>0000120B</td>
<td>SYNCD</td>
<td>X</td>
<td>AVAIL</td>
<td>AVAIL</td>
<td>0</td>
</tr>
</tbody>
</table>

End of Display

---

**Example 4**

This example displays the Clone session information for a TimeFinder/Clone Group as follows:

| MDBF SSN | The MDBF subsystem name to which the TPF module belongs. |
| SYMB MOD | The symbolic model number of the device. |
| SDA | The symbolic address of the device. |
| SRC DEV # | The storage device number of the clone source device. |
| TGT DEV# | The storage device number of the clone target device. |
Example 5

This example displays the Snapshot ID for a TimeFinder group for a storage system running HYPERMAX OS 5977 or higher. Information is displayed as in example 4 with the Session ID and source and target session tags replaced with the following:

Snapshot ID The snapshot ID associated with the device pair.
**Example 6**

Examples 6 and 7 display the TimeFinder session information for the source or target device of the device pairs in the TimeFinder Group for storage systems running Enginuity 5773-5876 as follows:

- **MDBF SSN**: The MDBF subsystem name to which the TPF module belongs.
- **SYMB MOD**: The symbolic model number of the device.
- **SDA**: The symbolic device address.
- **SRC DEV#**: The source device number of the TimeFinder device pair.
- **TGT DEV#**: The target device number of the TimeFinder device pair.
- **This DEV#**: The storage device number of the source|target device in the TimeFinder session.
- **Partner DEV#**: The storage device number of the source|target device in the TimeFinder session. A value of OxFFFF indicates this is the base session for this DEV#.
- **Sess ID**: The clone session ID associated with the device pair.
- **This Sess Tag**: The clone session tag associated with this DEV#.
- **Partner Sess Tag**: The clone session tag associated with partner DEV#.
- **This SDDF Tag**: The TimeFinder SDDF session tag associated with this DEV# (Enginuity 5773 only).
- **Partner SDDF Tag**: The TimeFinder SDDF session tag associated with partner DEV# (Enginuity 5773 only).
**Example 7**

**Action**  
Display TimeFinder Clone session information for the source device of the clone pairs in TimeFinder group TBA64B64 set UIFA64. Each source device has 2 clone sessions to represent the TimeFinder device pair.

**User**  
ZUTIM DIS GRO-TBA64B64 SET-UIFA64 TYP-SRC

**System**

More data available, enter ZPAGE to continue

End of Display
Example 8

Example 8 and 9 display the TimeFinder Snapshot session information for the source or target device of the device pairs in the TimeFinder group for storage systems running HYPERMAX OS 5977 or later. Information is displayed as in examples 6 and 7 with the Session ID and source and target session tags replaced with the following:

Snapshot ID The snapshot ID associated with the device pair.

Action Display snapshot information for the source devices in the TimeFinder group TBA64B64 set UYBB64.

User ZUTIM DIS GRO-TBA64B64 SET-UYBB64 TYP-SRC

System
**Example 9**

**Action**  Display snapshot information for the target devices in the TimeFinder group TBA64B64 set UYBB64.

**User**  ZUTIM DIS GRO-TBA64B64 SET-UYBB64 TYP-TGT

**System**

<table>
<thead>
<tr>
<th>CSMP0097I 18.30.43 CPU-A SS-BSS SSU-SSU0 IS-01</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1S90001I 18.30.43 Session Controls Target Device Display</td>
</tr>
<tr>
<td>Local Group TBA64B64 Set UYBB64 in CU 000196700257</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MDBF</th>
<th>SYMB</th>
<th>SRC</th>
<th>TGT</th>
<th>This</th>
<th>Partner</th>
<th>Snapshot</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>0000</td>
<td>0000</td>
<td>0000</td>
<td>0000</td>
<td>00000440</td>
<td>00000400</td>
</tr>
</tbody>
</table>

End of Display
Example 10

This example displays the following Storage Pool Resource (SRP) information for the storage system (at HYPERMAX OS level 5977 and later only) SRP on which the specified set resides.

<table>
<thead>
<tr>
<th>SRP Name</th>
<th>The name of the storage system SRP on which the thin devices in the specified set reside.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>The description of the specified SRP.</td>
</tr>
<tr>
<td>ID</td>
<td>The ID of the specified SRP.</td>
</tr>
<tr>
<td>CKD/FBA Default</td>
<td>Specifies whether the pool is the default SRP for CKD or FBA devices.</td>
</tr>
<tr>
<td>Resv Cap</td>
<td>The maximum percentage limit of Capacity permitted to be allocated as Snap tracks.</td>
</tr>
<tr>
<td>DSE Max Cap</td>
<td>The maximum percentage limit of Capacity permitted to be allocated as DSE tracks.</td>
</tr>
<tr>
<td>Capacity</td>
<td>The CKD and FBA raw data device capacity within the DGP specified in tracks.</td>
</tr>
<tr>
<td>Free</td>
<td>The unallocated raw capacity within the SRP specified in tracks and the percentage of capacity. These tracks have not yet been formatted.</td>
</tr>
<tr>
<td>Allocated</td>
<td>The allocated raw capacity within the SRP specified in tracks and the percentage of capacity. These are tracks that have been formatted.</td>
</tr>
<tr>
<td>Snap</td>
<td>The number of updated SnapVX session tracks and the percentage of capacity.</td>
</tr>
<tr>
<td>DSE</td>
<td>The number of SRDF spillover tracks and the percentage of capacity.</td>
</tr>
<tr>
<td>Subscribed</td>
<td>The number of thin device tracks and the percentage of capacity.</td>
</tr>
</tbody>
</table>

**Action** Display Storage Pool Resource (SRP) information for the SRP associated with TimeFinder Group YFYH Set 1.

**User** ZUTIM DIS GRO-YFYH SET-1 TYP-SRP

**System**

CSMP0097I 11.23.39 CPU-A SS-BSS SSU-SSU0 IS-01
USRP0012I SRP ID Display for Local CU 000196701170

SRP Name: SRP_1
Description: (None)
ID: 0001 CKD Default: Y FBA Default: Y Resv Cap: 11 pct
DSE Max Cap: 0 (GB)

<table>
<thead>
<tr>
<th>CKD</th>
<th>PCT</th>
<th>FBA</th>
<th>PCT</th>
</tr>
</thead>
<tbody>
<tr>
<td>136 669 680</td>
<td>13 295 520</td>
<td></td>
<td></td>
</tr>
<tr>
<td>104 638 441</td>
<td>76</td>
<td>9 875 087</td>
<td>74</td>
</tr>
<tr>
<td>32 031 239</td>
<td>23</td>
<td>3 420 433</td>
<td>25</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>90 309 240</td>
<td>66</td>
<td>4 570 095</td>
<td>34</td>
</tr>
</tbody>
</table>

End of Display
Example 11

This example displays the following Storage Pool Resource (SRP) information for the storage system (at HYPERMAX OS level 5977 and later only) SRP on which the specified set resides.

<table>
<thead>
<tr>
<th>Disk Group</th>
<th>The name of the storage system DGP on which the thin devices in the specified set reside.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRP</td>
<td>The name of the storage system SRP on associated with the Disk Group.</td>
</tr>
<tr>
<td>ID</td>
<td>The ID of the specified DGP.</td>
</tr>
<tr>
<td>Class</td>
<td>Specifies the device type of the DGP: Flash, Fibre, SAS.</td>
</tr>
<tr>
<td>Speed</td>
<td>Specifies the device speed of the DGP: 15K, 10K, 7200.</td>
</tr>
<tr>
<td>Prot</td>
<td>Raid protection of the specified DGP: 1, 5, 6, 7.</td>
</tr>
<tr>
<td>Unformatted Capacity</td>
<td>Total for the DGP in GB.</td>
</tr>
<tr>
<td>Capacity</td>
<td>The unallocated raw capacity within the DGP specified in tracks and the percentage of capacity. These tracks have not yet been formatted.</td>
</tr>
<tr>
<td>Free</td>
<td>The unallocated raw capacity within the DGP specified in tracks and the percentage of capacity. These tracks have not yet been formatted.</td>
</tr>
<tr>
<td>Allocated</td>
<td>The allocated raw capacity within the DGP specified in tracks and the percentage of capacity. These are tracks that have been formatted.</td>
</tr>
<tr>
<td>Snap</td>
<td>The number of updated SnapVX session tracks and the percentage of capacity.</td>
</tr>
<tr>
<td>DSE</td>
<td>The number of SRDF spillover tracks and the percentage of capacity.</td>
</tr>
</tbody>
</table>

**Action** Display Storage Pool Resource (SRP) information for the SRP associated with TimeFinder Group YFYH Set 1.

**User** ZUTIM DIS GRO-YFYH SET-1 TYP-DGP

**System**

CSMP0097I 12.39.02 CPU-A SS-BSS SSU-SSU0 IS-01
USR0020I DG ALL Display for Local CU 000196701305

Disk Group: GRP_3_400_EFD_R1
SRP: SRP_1
ID: 0003 Class: FLASH Speed: FLASH Prot: RAID-1
Unformatted Capacity: 400(GB)

<table>
<thead>
<tr>
<th>CKD</th>
<th>PCT</th>
<th>FBA</th>
<th>PCT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity</td>
<td>9 424 800</td>
<td>750 960</td>
<td></td>
</tr>
<tr>
<td>Free</td>
<td>453 538</td>
<td>4</td>
<td>750 960</td>
</tr>
<tr>
<td>Allocated</td>
<td>8 971 262</td>
<td>95</td>
<td>0</td>
</tr>
<tr>
<td>Snap</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>DSE</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

End of Display
Example 12

This example displays the following Storage Group (SGP) information for the storage system (at HYPERMAX OS level 5977 and later only) SGP on which the specified set resides.

**SGP**
The name of the storage system SGP on which the thin devices in the specified set reside.

**ID**
The ID of the specified SGP.

**Device Count**
The number of thin devices assigned to the SGP.

**SRP**
The name of the storage system SRP on associated with the Storage Group.

**FAST**
Specifies whether the SGP is FAST managed.

**RDFC**
SRDF coordination state enabled for FAST.

**SLO**
Service Level Objective level assigned to the SGP:
- **Diamond** = Emulates EFD performance
- **Platinum** = Emulates performance between 15K drive and EFD
- **Gold** = Emulates 15K drive performance
- **Silver** = Emulates 15K drive performance
- **Bronze** = Emulates 15K drive performance
- **Optimized** = The system achieves optimal performance with available resources

**SLO ID**
The ID of the specified SLO.

**Devs**
Starting and ending device numbers of all ranges of thin devices assigned to the SGP.

**Action**
Display Storage Group (SGP) information for the SRP associated with TimeFinder Group YFYH Set 1.

**User**
ZUTIM DIS GRO-YFYH SET-1 TYP-SGP

**System**

| CSMP0097I 14.44.14 CPU-A SS-BSS SSU-SSU0 IS-01 |
| USRP0030I SGP ALL Display for Local CU 000196701305 |

<table>
<thead>
<tr>
<th>SGP: GUEST_INTERNAL_SG</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID : 0001</td>
</tr>
<tr>
<td>SRP: SRP_1</td>
</tr>
<tr>
<td>SLO: Optimized</td>
</tr>
<tr>
<td>SLO ID: 0001</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Devs</th>
<th>START</th>
<th>END</th>
<th>START</th>
<th>END</th>
<th>START</th>
<th>END</th>
</tr>
</thead>
<tbody>
<tr>
<td>00000002 00000012</td>
<td>00000002 00000012</td>
<td>00000202 00000212</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00000302 00000312</td>
<td>00000402 00000412</td>
<td>00000002 00000412</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00000402 00000412</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

End of Display
Example 13

This example displays the following Service Level Objectives (SLO) information for the storage system (at HYPERMAX OS level 5977 and later only) on which the specified set resides.

**SLO**
- Optimized: The system achieves optimal performance with available resources
- Diamond: Emulates EFD performance
- Platinum: Emulates performance between 15K drive and EFD
- Gold: Emulates 15K drive performance
- Silver: Emulates 15K drive performance
- Bronze: Emulates 15K drive performance
- Optimized: The system achieves optimal performance with available resources

**Workload**
- OLTP

**ID**
- The ID of the specified SLO.

**Approx Average Response Time**
- The average response time in microseconds is a weighted average of the I/O time for all devices in the SGP.

**Description**
- Freeform description assigned to the SLO.

**Action**
- Display all Service Level Objectives (SLO) information for the storage system associated with TimeFinder Group YFYH Set 1.

**User**
- **ZUTIM DIS GRO-YFYH SET-1 TYP-SLO**

---

```
CSMP0097I 15.38.14 CPU-A SS-BSS SSU-SSU0 IS-01
USR0040I SLO ALL Display for Local CU 000196701305

SLO: Optimized WORKLOAD: (None) Approx Average Response Time (usec): 65535
Description: System w

SLO: Diamond WORKLOAD: OLTP Approx Average Response Time (usec): 850
Description: Emulatin

SLO: Platinum WORKLOAD: OLTP Approx Average Response Time (usec): 3000
Description: Emulatin

SLO: Gold WORKLOAD: OLTP Approx Average Response Time (usec): 5050
Description: Emulatin

SLO: Silver WORKLOAD: OLTP Approx Average Response Time (usec): 8050
Description: Emulatin

SLO: Bronze WORKLOAD: OLTP Approx Average Response Time (usec): 14050
Description: Emulatin

End of Display
```
Example 14

This example displays the number of updated source tracks since the last Split.

MDBF SSN: The MDBF subsystem name to which the TPF module belongs.
SYMB MOD: The symbolic model number of the device.
SDA: The symbolic address of the device.
SRC DEV #: The storage device number of the clone source device.
TGT DEV #: The storage device number of the clone target device.
TGT State: Clone target device state indicator. Valid values are:
  ATTAC - Target is attached to this source device
  SYNCD - Target is synchronized with this source device
  N/A - Never attached
TGT NR: Target not ready indicator.
SRC State: Clone source device state indicator. Valid values are:
  AVAIL - Source device is available for an establish
  ATTAC - Source device is attached to this target
Pair State: Clone pair state indicator. Valid values are:
  AVAIL - Target is available
  INUSE - Target is attached to a standard device
  INUSX - Target is attached and synchronization is in progress
Invalid Tracks: The number of tracks to be synchronized at the next Reestablish.
PCT: The percentage of tracks synchronized.
Opr RC: The z/TPF and storage system return codes for the current TimeFinder operation.

Action: Display information for device pairs for set UIFA64 in TimeFinder group YF.

User: ZUTIM DIS GRO-YF SET-1 TYP-STR

System:

ZUTIM DIS GRO-YF SET-1 TYP-STR
CSMP0097I 16.25.44 CPU-A SS-SS  SSU-SSU0 IS-01
UTIM1042I TF status for Local CU 000196701170
Clone Group: YF Set: 1 Base operation: Split

<table>
<thead>
<tr>
<th>MDBF</th>
<th>SYMB</th>
<th>SDA</th>
<th>SRC DEV #</th>
<th>TGT DEV #</th>
<th>TGT State</th>
<th>TGT NR</th>
<th>SRC State</th>
<th>Pair State</th>
<th>Invalid Tracks</th>
<th>PCT</th>
<th>Opr RC</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSN</td>
<td>MOD</td>
<td>DEV#</td>
<td>State NR</td>
<td>State</td>
<td>Tracks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0120</td>
<td>46C0</td>
<td>00000009FD 000000AAB</td>
<td>SYNCD X</td>
<td>AVAIL AVAIL</td>
<td>463</td>
<td>1 0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0121</td>
<td>46C1</td>
<td>00000009FE 000000AAE</td>
<td>SYNCD X</td>
<td>AVAIL AVAIL</td>
<td>459</td>
<td>1 0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0122</td>
<td>46C2</td>
<td>00000009FF 000000AAB</td>
<td>SYNCD X</td>
<td>AVAIL AVAIL</td>
<td>469</td>
<td>1 0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0123</td>
<td>46C3</td>
<td>000000A00 000000AB0</td>
<td>SYNCD X</td>
<td>AVAIL AVAIL</td>
<td>504</td>
<td>1 0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0124</td>
<td>46C4</td>
<td>000000A01 000000AB1</td>
<td>SYNCD X</td>
<td>AVAIL AVAIL</td>
<td>451</td>
<td>1 0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0125</td>
<td>46C5</td>
<td>000000A02 000000AB2</td>
<td>SYNCD X</td>
<td>AVAIL AVAIL</td>
<td>474</td>
<td>1 0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0126</td>
<td>46C6</td>
<td>000000A03 000000AB3</td>
<td>SYNCD X</td>
<td>AVAIL AVAIL</td>
<td>445</td>
<td>1 0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0127</td>
<td>46C7</td>
<td>000000A04 000000AB4</td>
<td>SYNCD X</td>
<td>AVAIL AVAIL</td>
<td>487</td>
<td>1 0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0128</td>
<td>46C8</td>
<td>000000A05 000000AB5</td>
<td>SYNCD X</td>
<td>AVAIL AVAIL</td>
<td>508</td>
<td>1 0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0129</td>
<td>46C9</td>
<td>000000A06 000000AB6</td>
<td>SYNCD X</td>
<td>AVAIL AVAIL</td>
<td>491</td>
<td>1 0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>012A</td>
<td>46CA</td>
<td>000000A07 000000AB7</td>
<td>SYNCD X</td>
<td>AVAIL AVAIL</td>
<td>498</td>
<td>1 0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>012B</td>
<td>46CB</td>
<td>000000A08 000000AB8</td>
<td>SYNCD X</td>
<td>AVAIL AVAIL</td>
<td>535</td>
<td>1 0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>012C</td>
<td>46CC</td>
<td>000000A09 000000AB9</td>
<td>SYNCD X</td>
<td>AVAIL AVAIL</td>
<td>453</td>
<td>1 0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>012D</td>
<td>46CD</td>
<td>000000A0A 000000ABB</td>
<td>SYNCD X</td>
<td>AVAIL AVAIL</td>
<td>493</td>
<td>1 0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>012E</td>
<td>46CE</td>
<td>000000A0B 000000ABB</td>
<td>SYNCD X</td>
<td>AVAIL AVAIL</td>
<td>509</td>
<td>1 0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>012F</td>
<td>46CF</td>
<td>000000A0C 000000ABC</td>
<td>SYNCD X</td>
<td>AVAIL AVAIL</td>
<td>508</td>
<td>1 0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

End of Display
ZUTIM DISplay CTLRCD

Use this command to display summary information for the TimeFinder Master control record, and the TimeFinder Control Unit control record.

Requirements and restrictions

You must configure TimeFinder control records to ensure that the display is accurate.

Format

ZUTIM DISplay [REMote|LOCal] CTLRCD-MA|CU

Parameters

- **REMote**
  - Display remote control record summary information.

- **LOCal**
  - Display local control record summary information.

- **CTLRCD-MA**
  - Display TimeFinder Master control record summary.

- **CTLRCD-CU**
  - Display TimeFinder Control Unit control record summary for all TimeFinder Sets in all TimeFinder groups.

Examples

Example Information

Examples 1 and 2 display the following information:

- **Group**: The Local, Remote, or Super TimeFinder group for which status is displayed.
- **Set Name**: The TimeFinder Set name.
- **MHL**: The RDFGroup path to the remote storage system in which the set resides.
- **Serial #**: The Control Unit serial number.
- **Model**: The storage system model type.
- **Ucod**: The Enginuity operating environment level loaded to the control unit.
- **SDA**: The SDA to which all SymmAPI I/O operations will be issued. If a GKD is defined, all SymmAPI I/O operations will be issued to the gatekeeper.
- **MOD**: The TPF symbolic module of the SDA. If a GKD is defined, this is the symbolic module of the GKD.
- **SSN**: The MDBF subsystem name of the SDA. If a GKD is defined, this is the MDBF subsystem name of the GKD.
- **GKD**: Gatekeeper SDA if defined, or NO if a gatekeeper is not defined for the TimeFinder Set.
Example 1

**Action**

Display CU control record summary.

**User**

ZUTIM DIS CTLRCD-CU

**System**

CSMP0097I 10.19.43 CPU-A SS-BSS SSU-SSU0 IS-01
E1TQ0000I CU Control Record Summary
Local Clone Group - TUIF1BSS
Set Name - BSSGRH MHL-N/A
Serial # Model Ucod SDA MOD SSN GKD
000195700086 VMAX40K 5876 35E0 0100 BSS No
Local Clone Group - TBA64B64
Set Name - UIFA64 MHL-N/A
Serial # Model Ucod SDA MOD SSN GKD
000195700086 VMAX40K 5876 35E0 0100 BSS No
Set Name - UTLA64 MHL-N/A
Serial # Model Ucod SDA MOD SSN GKD
000192604124 VMAX1 5875 4C20 0112 BSS No
Set Name - UHCB64 MHL-N/A
Serial # Model Ucod SDA MOD SSN GKD
000194901159 VMAX1 5875 3840 0113 BSS No
Set Name - UYBB64 MHL-N/A
Serial # Model Ucod SDA MOD SSN GKD
000196700257 VMAX20M 5977 1A00 0100 B64 No
Remote Clone Group - R2TGT6
MORE DATA AVAILABLE, ENTER ZPAGE TO CONTINUE
09:19:44> zpage
ZPAGE
CSMP0097I 10.19.45 CPU-A SS-BSS SSU-SSU0 IS-01
E1TQ0000I CU Control Record Summary
Remote Clone Group - TUYB1BSS
Set Name - UHC1 MHL- 51
Serial # Model Ucod SDA MOD SSN GKD
000194901159 VMAX1 5875 4C00 0110 A64 No
Local Clone Group - TUSG1B64
Set Name - UYB1 MHL-N/A
Serial # Model Ucod SDA MOD SSN GKD
000196700257 VMAX20M 5977 1A3E 0102 BSS 1A7E
Remote Clone Group - TUSG1B64
Set Name - 3250 MHL- 20
Serial # Model Ucod SDA MOD SSN GKD
000190300346 DMX36 5773 3848 0130 B64 No
Set Name - 3240 MHL- 20
Serial # Model Ucod SDA MOD SSN GKD
000190300346 DMX36 5773 3848 0130 B64 No
End of Display

Example 2

**Action**

Display CU control record summary for remote TimeFinder groups only.

**User**

ZUTIM DIS REM CTLRCD-CU

**System**

CSMP0097I 10.21.06 CPU-A SS-BSS SSU-SSU0 IS-01
E1TQ0000I CU Control Record Summary
Remote Clone Group - R2TGT6
Set Name - UHC1 MHL- 51
Serial # Model Ucod SDA MOD SSN GKD
000194901159 VMAX1 5875 4C00 0110 A64 No
Remote Clone Group - TUSG1B64
Set Name - 3250 MHL- 20
Serial # Model Ucod SDA MOD SSN GKD
000190300346 DMX36 5773 3848 0130 B64 No
Set Name - 3240 MHL- 20
Serial # Model Ucod SDA MOD SSN GKD
000190300346 DMX36 5773 3848 0130 B64 No
TimeFinder Commands

Example 3

Examples 3 and 4 display the following information:

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TimeFinder Version</td>
<td>The TimeFinder software version.</td>
</tr>
<tr>
<td>Modification</td>
<td>The TimeFinder software modification number.</td>
</tr>
<tr>
<td>Revision</td>
<td>The TimeFinder software revision number.</td>
</tr>
<tr>
<td>Ctlrcd Backup/Restore</td>
<td>The time and date the TimeFinder control records were last backed up or restored.</td>
</tr>
<tr>
<td>Config Accept</td>
<td>The time and date the TimeFinder control records were last modified and accepted.</td>
</tr>
<tr>
<td>Super Groups</td>
<td>The number of TimeFinder Super groups.</td>
</tr>
<tr>
<td>Local Groups</td>
<td>The number of local TimeFinder groups configured.</td>
</tr>
<tr>
<td>Remote Groups</td>
<td>The number of remote TimeFinder groups configured.</td>
</tr>
</tbody>
</table>

**System**

CSMP0097I 10.48.57 CPU-A SS-BSS SSU-SSU0 IS-01
E1TQ0000I Master Control Record Summary
TimeFinder Version: 0008 Modification: 0000 Revision: 0000
Ctlrcd restore time : 20.48.49 Date : 11/29/13
Config accept time : 20.19.38 Date : 11/29/13
Super Groups:   0   Local Groups:   3   Remote Groups:   2
End of Display

Example 4

**System**

CSMP0097I 10.49.52 CPU-A SS-BSS SSU-SSU0 IS-01
E1TQ0000I Master Control Record Summary
TimeFinder Version: 0008 Modification: 0000 Revision: 0000
Super Groups:   0   Local Groups:   3   Remote Groups:   2
End of Display

User  ZUTIM DIS CTLRCD-MA

ZUTIM DISplay CTLRCD 125
ZUTIM DISplay PROp

Use this command to display the property characteristics of the specified TimeFinder group.

Requirements and restrictions

None.

Format

```
ZUTIM DISplay GROUP-cccccccc
  PROp-GEN|EST|REE|SPL|RES|INC|CLI|CRT|ACT|LIN|UNL|REN|UPD|TER
```

Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GROUP-cccccccc</td>
<td>One to eight alphanumeric character group name.</td>
</tr>
<tr>
<td>PROp-GEN</td>
<td>Display General properties.</td>
</tr>
<tr>
<td>PROp-EST</td>
<td>Display Establish properties.</td>
</tr>
<tr>
<td>PROp-REE</td>
<td>Display Reestablish properties.</td>
</tr>
<tr>
<td>PROp-SPL</td>
<td>Display Split properties.</td>
</tr>
<tr>
<td>PROp-RES</td>
<td>Display Restore properties.</td>
</tr>
<tr>
<td>PROp-INC</td>
<td>Display Increstore properties.</td>
</tr>
<tr>
<td>PROp-CLI</td>
<td>Display Clip properties.</td>
</tr>
<tr>
<td>PROp-CRT</td>
<td>Display Create Properties.</td>
</tr>
<tr>
<td>PROp-ACT</td>
<td>Display Activate properties.</td>
</tr>
<tr>
<td>PROp-LIN</td>
<td>Display Link properties</td>
</tr>
<tr>
<td>PROp-UNL</td>
<td>Display Unlink properties</td>
</tr>
<tr>
<td>PROp-REN</td>
<td>Display Rename properties</td>
</tr>
<tr>
<td>PROp-UPD</td>
<td>Display Update properties</td>
</tr>
<tr>
<td>PROp-TER</td>
<td>Display Terminate properties</td>
</tr>
</tbody>
</table>

Examples

Example 1

<table>
<thead>
<tr>
<th>Action</th>
<th>Display Restore properties for TimeFinder group TBA64B64.</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>ZUTIM DIS GRO-TBA64B64 PRO-RES</td>
</tr>
<tr>
<td>System</td>
<td></td>
</tr>
</tbody>
</table>

CSMP0097I 10.57.47 CPU-A SS-BSS SSU-SSU0 IS-01
E1TQ0000I TimeFinder Restore Properties Display
Local Clone Group - TBA64B64
Options
  UNUSED: OFF UNLDEV: OFF
  ASRESTORE: OFF
Permissions
  Unused: OFF UNLDEV: OFF
End of Display
Example 2

Action Display General properties for TimeFinder group TBA64B64.
User ZUTIM DIS GRO-TBA64B64 PRO-GEN

System

CSMP0097I 10.59.31 CPU-A SS-BSS SSU-SSU0 IS-01
E1TG0000I TimeFinder General Properties Display
Local Clone Group - TBA64B64
Processing Delay Timer: 3 Scheduler Timeout: 1 Persistent Monitor: OFF
Monitor Interval Timer: 3 CTRLCD Refresh: ON Ops Verification: ON
SRDF/A: OFF QOS: 3 is set
End of Display

Example 3

Action Display Establish properties for TimeFinder group TBA64B64.
User ZUTIM DIS GRO-TBA64B64 PRO-EST
System

CSMP0097I 11.00.58 CPU-A SS-BSS SSU-SSU0 IS-01
E1TG0000I TimeFinder Establish Properties Display
Local Clone Group - TBA64B64
Options
UNUSED: OFF UNUSED: OFF UNUSED: OFF ONLDEV: ON
Permissions
UNUSED: OFF UNUSED: OFF UNUSED: OFF ONLDEV: ON
End of Display
**ZUTIM DISplay STAtus**

Use this command to display the operational status of a TimeFinder group.

**Requirements and restrictions**

None.

**Format**

```
ZUTIM DISplay GROup-cccccccc STAtus-ALL|RAN|GST|CTL|VER
```

**Parameters**

- **GROup-cccccccc** One to eight alphanumeric character TimeFinder group name.
- **STAtus-ALL** Status of the last operation issued for all sets in the TimeFinder group.
- **STAtus-RAN** Status of last range operation issued for a single set in the TimeFinder group.
- **STAtus-GST** Group Status Item summary.
- **STAtus-CTL** CU control record summary.
- **STAtus-VER** Display SnapVX Group snapshot version summary.

**Examples**

**Example 1**

The following information is displayed in this and subsequent examples:

- **CU Serial #** The logical control unit serial number.
- **Opr SDA** The TimeFinder operation symbolic device address.
- **Complete** The number of device pairs for which the TimeFinder operation is complete.
- **In Progress** The number of device pairs for which the TimeFinder operation is active.
- **Not Started** The number of device pairs for which the TimeFinder operation was not initiated.
- **Opr RC Summary** The return code summary for all TimeFinder operations for this set.
- **Itrks** The number of invalid tracks left to copy for this set.
- **Pct** The percentage of track copies that are complete for this set.

**Action** Display operation status for TimeFinder group TUSG1B64.
TimeFinder Establish is in progress.

**User** ZUTIM DIS GRO-TUSG1B64 STA-ALL

**System**

CSMP0097I 11.20.27 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1031I Remote TimeFinder Status Display
Clone Group: TUSG1B64 Base Operation: Establish
Status: Monitor Active
Start Time :   21.16.03 Date :  11/29/13
Example 2

**Action**  
Display operation status for TimeFinder group TUSG1B64.  
TimeFinder Establish is complete.

**User**  
ZUTIM DIS GRO-TUSG1B64 STA-ALL

**System**

CSMP0097I 11.43.43 CPU-A SS-BSS SSU-SSU0 IS-01  
UTIM1031I Remote TimeFinder Status Display  
Clone Group: TUSG1B64 Base Operation: Establish  
Status: Successfully Completed  
Start Time: 21.16.03 Date: 11/29/13  
End Time: 21.43.37 Date: 11/29/13

End of Display

Example 3

**Action**  
Display status for the last operation by range for TimeFinder group TBA64B64.

**User**  
ZUTIM DIS GRO-TBA64B64 STA-RAN

**System**

CSMP0097I 11.53.01 CPU-A SS-BSS SSU-SSU0 IS-01  
UTIM1009I TimeFinder Status Display  
Clone Group: TBA64B64 Set: UYBB64 Range Operation: Reestablish  
Status: Monitor Active  
Start Time: 21.51.52 Date: 11/29/13

End of Display
TimeFinder Commands

Example 4

The following information is displayed in this example:

Group       The TimeFinder group name.
Base Operation      The last TimeFinder operation issued for the TimeFinder group.
GST Item at    The core address of the GST Item for the TimeFinder group.
Operation     The status of the TimeFinder operation.
Start Time    The time the TimeFinder operation was started.
End Time      The time the TimeFinder operation was completed.
Ops Event Name The event name used to control the TimeFinder operation.

Action Display the Group Status Item Summary for TimeFinder group TUSG1B64.
User ZUTIM DIS GRO-TUSG1B64 STA-GST
System

CSMP0097I 12.07.13 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1031I Remote TimeFinder Status Display
Clone Group: TUSG1B64 Base Operation: Establish

GST Item at 16C2F500 Grp ctl rcd ord 00000014
Operation Successfully Completed Ops Event Name CC5636F9A467478A
Start Time : 21.16.03 Date : 11/29/13
End Time   : 21.43.37 Date : 11/29/13
End of Display

Example 5

The following information is displayed in this example:

Group       The Local, Remote, or Super TimeFinder group for which status is displayed.
Set Name    The set in which the storage system is configured.
MHL         The RDFGroup path to the remote storage system of the set.
Serial#     The storage system serial number.
Model       The storage system model.
Ucode       The storage system Enginuity and HYPERMAX OS level.
SDA         The symbolic device address of the device through which all SymmAPI commands are issued.
MOD         The symbolic module number of the SDA.
SSN         The MDBF subsystem name of the SDA.
GKD         SDA defined as a TPF gatekeeper or No.

Action Display the CU Control Record Summary for TimeFinder group TBA64B64.
User ZUTIM DIS GRO-TBA64B64 STA-CTL
System
CSMP0097I 11.51.18 CPU-A SS-BSS SSU-SSU0 IS-01
E1TQ0000I CU Control Record Summary
Local Clone Group - TBA64B64

<table>
<thead>
<tr>
<th>Set Name</th>
<th>MHL-N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Local Clone Group - TBA64B64</td>
<td></td>
</tr>
<tr>
<td>Set Name - UIPA64</td>
<td>MHL-N/A</td>
</tr>
<tr>
<td>Serial #</td>
<td>Model</td>
</tr>
<tr>
<td>000195700086</td>
<td>VMAX40K</td>
</tr>
<tr>
<td>Set Name - UTLA64</td>
<td>MHL-N/A</td>
</tr>
<tr>
<td>Serial #</td>
<td>Model</td>
</tr>
<tr>
<td>000192604124</td>
<td>VMAX1</td>
</tr>
<tr>
<td>Set Name - UHCB64</td>
<td>MHL-N/A</td>
</tr>
<tr>
<td>Serial #</td>
<td>Model</td>
</tr>
<tr>
<td>000194901159</td>
<td>VMAX1</td>
</tr>
<tr>
<td>Set Name - UYBB64</td>
<td>MHL-N/A</td>
</tr>
<tr>
<td>Serial #</td>
<td>Model</td>
</tr>
<tr>
<td>000196700257</td>
<td>VMAX20M</td>
</tr>
</tbody>
</table>

End of Display
**ZUTIM ESTablish**

Use this command to create one or more clone pairs, and copy the entire contents of the source devices to their respective target clones. The clone target is unavailable to the host while the pair is synchronizing.

You can issue the ESTablish command for:

- The entire TimeFinder group
- An entire Set in the TimeFinder group
- One device or a range of devices in one or all Sets in the TimeFinder group

**Requirements and restrictions**

- When general property CTLRCD is ON, a control record refresh occurs prior to issuing the ESTablish command. Any symbolic module number and DBI associated with the source devices in the TimeFinder group being operated on are refreshed.

- To simplify TimeFinder operations, avoid running z/TPF copy utilities, ZAMOD or ZMCPY, while an Establish is in progress. Module movement is not reflected in the TimeFinder control records since these control records are only refreshed when the Establish functional entry is issued. Procedures to manage concurrent z/TPF copy utility and TimeFinder operations should be prepared by a z/TPF Systems Programmer familiar with TimeFinder operations. Contact an EMC z/TPF Customer Support Specialist to review all operations procedures.

- The TimeFinder target is put into a not ready state when it is established to a TimeFinder source volume, so no host can access the TimeFinder target while it is established.

- All previous tracking of the changed data for the relative TimeFinder device pair is discarded when the pair is established.

- Define property options for the Establish command and TimeFinder Group as necessary.

**Note:** “ZUTIM DEFINE PROp-EST|REE|SPL|RES|INC|CLI” on page 98 provides additional information.

- The Establish operation does not begin if any specified TimeFinder target is online to a host. The ONLDEV option/permission is provided to allow you to bypass this restriction. This option must be defined for the Establish operation and TimeFinder group using “ZUTIM DEFINE PROp-EST|REE|SPL|RES|INC|CLI” on page 98.

**Format**

```
ZUTIM ESTablish GROUP-cccccccc [SET-cccccccc] [SDN- hhhhhhhh CNT- dddd]
```
Parameters

GROup-cccccccc One to eight alphanumeric character TimeFinder group name.
SET-cccccccc One to eight alphanumeric character TimeFinder Set name identifying a storage system containing TimeFinder device pairs.
SDN-hhhhhhhhh One to eight hexadecimal digit starting storage device number.
CNT-dddd One to four decimal digit count of devices.

Additional information

TimeFinder operation verification for the ESTablish command determines whether:

- Any TimeFinder targets are attached or online
- Any TimeFinder source devices are already attached to one TimeFinder target
- A background split is in progress

If any of these conditions exists, TimeFinder operation verification halts the operation or prompts the operator whether to halt or proceed with the operation, depending on the option and permission properties defined for the Establish operation and the TimeFinder group.

If no operations device is available for one or more TimeFinder Sets in a TimeFinder group, operation verification notifies the operator and prompts the operator to halt or proceed with the operation.

Examples

Example Information

The examples in this section display the following information:

<table>
<thead>
<tr>
<th>Set Name</th>
<th>The TimeFinder Set name.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CU Serial #</td>
<td>The control unit serial number.</td>
</tr>
<tr>
<td>Opr SDA</td>
<td>The TimeFinder operation symbolic device address.</td>
</tr>
<tr>
<td>Complete</td>
<td>The number of TimeFinder pairs for which the TimeFinder operation is complete.</td>
</tr>
<tr>
<td>In Progress</td>
<td>The number of TimeFinder pairs for which the TimeFinder operation is active.</td>
</tr>
<tr>
<td>Not Started</td>
<td>The number of TimeFinder pairs for which the TimeFinder operation was not initiated.</td>
</tr>
<tr>
<td>Opr RC Summary</td>
<td>The return code summary for all TimeFinder operations for this TimeFinder Set.</td>
</tr>
</tbody>
</table>
Example 1

Action Establish TimeFinder/Clone group A64TOB64.

User ZUTIM EST GRO-A64TOB64

System

CSMP0097I 15.09.25 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0019P TimeFinder Group A64TOB64
UTIM0019I TimeFinder control record refresh started
CSMP0097I 15.09.26 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1043I Local CU 00192604124 discovered for Clone Group A64TOB64 Set BED2C4D
UTIM0024P TimeFinder Group A64TOB64
UTIM0024I TimeFinder control record refresh completed
CSMP0097I 15.09.26 CPU-A SS-BSS SSU-SSU0 IS-01
E1T70000I TimeFinder Operation Verification Started
E1T70001I TimeFinder Group Properties Verification Started
Options Permissions
None
E1T70003I TimeFinder Device State Verification Started
CSMP0097I 15.09.32 CPU-A SS-BSS SSU-SSU0 IS-01
E1T70004I TimeFinder Operation Verification Completed
CSMP0097I 15.09.32 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0213P TimeFinder Group A64TOB64
UTIM0213I QOS Controls started
CSMP0097I 15.09.32 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0214P TimeFinder Group A64TOB64
UTIM0214I QOS Controls completed
CSMP0097I 15.09.32 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1000I Clone Group A64TOB64 Set BED2C4D started issuing Establish
CSMP0097I 15.09.35 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1001I Clone Group A64TOB64 Set BED2C4D completed issuing Establish
CSMP0097I 15.09.40 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1031I Local TimeFinder Status Display
Clone Group: A64TOB64 Base Operation: Establish
Status: Monitor Active
Start Time : 01.09.25 Date : 01/19/16

<table>
<thead>
<tr>
<th>Set Name</th>
<th>CU Serial #</th>
<th>SDA</th>
<th>Complete</th>
<th>Progress</th>
<th>Started</th>
<th>Summary</th>
<th>Itrks</th>
<th>Pct</th>
</tr>
</thead>
<tbody>
<tr>
<td>BED2C4D</td>
<td>00192604124</td>
<td>4C20</td>
<td>0</td>
<td>32</td>
<td>0</td>
<td>00000</td>
<td>1556942</td>
<td>1</td>
</tr>
</tbody>
</table>

End of Display
ZUTIM INCRESTORE

Use this command to recreate a previously established clone pair. Any data written to the clone targets while split from the clone source devices is written to the clone source devices. Any updates made to the clone source devices while the clone pairs were split are discarded and replaced by data from the clone target.

The INCRESTORE command synchronizes previously Split TimeFinder device pair(s). The TimeFinder target becomes not ready to the host.

You can issue the INCRESTORE command for the entire TimeFinder group, for an entire Set in the TimeFinder group, or for one device or a range of devices in one or all Sets in the TimeFinder group.

Requirements and restrictions

- EMC provides a user exit that enables VFA delay file in 1052 state. You must modify this user exit for any non-IBM standard VFA delay file implementation. To ensure z/TPF TimeFinder control records are not overlaid by the Incremental Restore process, modify their RIAT definition as follows:

  ```zrtdm modify recid-A386, VFAF-DELAY, LOCKF-PROC```

  Ensure any time initiated functions or utilities are stopped. Increment the interval values for CODR POLICE to 999 as follows:

  ```zoldr alter police 999 detect 999```

- Ensure that the z/TPF TimeFinder control records reflect the z/TPF configuration at the time the clone group, from which you are about to restore, was split.

- A control record refresh is initiated internally prior to issuing the Increstore operation. Any symbolic module number and DBI associated with the source devices in the updated clone group being operated on are refreshed.

  **Note:** If the INCRESTORE command is issued for a single device or range of devices in a single TimeFinder Set, only the control records for the TimeFinder Set are refreshed. TimeFinder Increstore by range or single device in a single TimeFinder Set is normally only used to assist in managing the traditional complex-wide operation.

- To simplify TimeFinder operations, avoid running z/TPF copy utilities, ZAMOD or ZMCPY, while an Establish is in progress. Procedures to manage concurrent z/TPF copy utility and TimeFinder operations should be prepared by a z/TPF Systems Programmer familiar with TimeFinder operations. Contact an EMC z/TPF Customer Support specialist to review all operations procedures.

- Define any desired Increstore property options and permissions for proper operation of the ZUTIM INCRESTORE command. To enter one or more of the RESTORE options in the functional entry the permission property for the option must be defined.

  **Note:** “ZUTIM DEFine PROp-EST|REE|SPL|RES|INC|CLI” on page 98 provides additional information.
Default Increstore property settings indicate that the INCRESTORE command can only be issued while the resource owner processor is in 1052 state or in Restart, and all other processors in the complex are deactivated. User exits, which determine processor state and verify resource owner, are provided. These user exits must be modified for any non IBM vanilla implementations.

The INCRESTORE command can be issued in any system state by enabling the Any State Restore (ASRESTO) property option and permission.

- The Increstore operation does not begin if any specified clone target is online to a host. The ONLDEV option/permission is provided to allow you to bypass this restriction. This option must be defined for the Increstore operation and clone group using “ZUTIM DEFine PROp-EST|REE|SPL|RES|INC|CLI” on page 98.

**CAUTION**

TimeFinder groups that contain source devices that comprise of real time production z/TPF volumes should never be restored above 1052 state. This also applies to operational system database TimeFinder groups (that is, the system on which the message is entered). Moreover, such TimeFinder groups should never be enabled for AnyStateRestore. It is extremely important that the production system and/or operational system database group always be RESTRICTED to restore in 1052 state or lower. If the properties for these groups are defined to permit AnyStateRestore, VFA delay file is not enabled in 1052 state. This is very important due to the ramifications of filing the TimeFinder control records during TimeFinder operation to a database that is being restored. Furthermore, the RESTORE and INCRESTORE Requirements and restrictions sections in the TimeFinder Controls for z/TPF Product Guide should always be adhered to when restoring the production system and/or operational database. Otherwise, results will be unpredictable.

- Restoring non-operational groups (that is, databases other than that which underlies the system on which the message is entered) can be restored from any system state if so desired. However, proper operational consideration should be given based on the goals sought.

For example, if a test system group is being restored, it is advisable to deactivate that system before starting the restore. Otherwise, results are unpredictable. TimeFinder cannot verify the status of such a system prior to restore.

- The data flow is from the clone target to the clone source device. Only the data changed on the target is copied to the clone source device.

**Note:** Any changed data on the source device is overwritten by data from the target device.

- The clone target is put into a not ready state when it is restored to a clone source volume, so that no host can access the clone target while it is restoring.

- The Incremental Restore process may take a period of time to complete if there was a large amount of update activity on the clone source device and/or clone target.

**Format**

ZUTIM INCRESTORE GROup-cccccccc [SET-cccccccc] [SDN-hhhhhhhh CNT-dddd]
Parameters

GROupcccccccc  One to eight alphanumeric character TimeFinder group name.
SET              One to eight alphanumeric character TimeFinder Set name identifying a storage system containing clone pairs.
SDN–hhhhhhhh    One to eight hexadecimal digit starting storage device number.
CNT–dddd        One to four decimal digit count of devices.

Additional information

TimeFinder operation verification for the INCRESTORE command determines if:

- Any clone targets are attached or online
- Any clone source devices are already attached to one clone target
- Any clone source already attached to two clone target devices
- A background split is in progress
- The clone pair was not previously established

If any of these conditions exists, TimeFinder operation verification halts the operation or prompts the operator to halt or proceed with the operation, dependent on the option and permission properties defined for the Increstore operation and TimeFinder group.

If no operations device is available for one or more TimeFinder Sets in a clone group, operation verification notifies the operator and prompts the operator to halt or proceed with the operation.

Example

Example information

The examples in this section display the following information:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set Name</td>
<td>The TimeFinder Set name.</td>
</tr>
<tr>
<td>CU Serial #</td>
<td>The control unit serial number.</td>
</tr>
<tr>
<td>Opr SDA</td>
<td>The TimeFinder operation symbolic device address.</td>
</tr>
<tr>
<td>Complete</td>
<td>The number of TimeFinder device pairs for which the TimeFinder operation is complete.</td>
</tr>
<tr>
<td>In Progress</td>
<td>The number of TimeFinder device pairs for which the TimeFinder operation is active.</td>
</tr>
<tr>
<td>Not Started</td>
<td>The number of TimeFinder device pairs for which the TimeFinder operation was not initiated.</td>
</tr>
<tr>
<td>Opr RC Summary</td>
<td>The return code summary for all TimeFinder operations for this TimeFinder Set.</td>
</tr>
</tbody>
</table>
Example

**Action**

Incrementally restore TimeFinder/Clone group A64TOB64.

**User**

ZUTIM INC GRO-A64TOB64

**System**

| CSMP0097I | 18.12.15 CPU-A SS-BSS SSU-SSU0 IS-01 |
| UTIM0019P | TimeFinder Group A64TOB64 |
| UTIM0019I | TimeFinder control record refresh started |
| CSMP0097I | 18.12.16 CPU-A SS-BSS SSU-SSU0 IS-01 |
| UTIM0031I | Local CU 00192604124 discovered for Clone Group A64TOB64 Set BED2C4D |
| UTIM0024P | TimeFinder Group A64TOB64 |
| UTIM0024I | TimeFinder control record refresh completed |
| CSMP0097I | 18.12.16 CPU-A SS-BSS SSU-SSU0 IS-01 |
| E1T70001I | TimeFinder Operation Verification Started |
| CSMP0097I | 18.12.22 CPU-A SS-BSS SSU-SSU0 IS-01 |
| Options | Permissions |
| None |
| CSMP0097I | 18.12.22 CPU-A SS-BSS SSU-SSU0 IS-01 |
| E1T70003I | TimeFinder Device State Verification Started |
| CSMP0097I | 18.12.22 CPU-A SS-BSS SSU-SSU0 IS-01 |
| E1T70004I | TimeFinder Operation Verification Completed |
| CSMP0097I | 18.12.22 CPU-A SS-BSS SSU-SSU0 IS-01 |
| UTIM0213P | TimeFinder Group A64TOB64 |
| UTIM0213I | QOS Controls started |
| CSMP0097I | 18.12.22 CPU-A SS-BSS SSU-SSU0 IS-01 |
| UTIM0214P | TimeFinder Group A64TOB64 |
| UTIM0214I | QOS Controls completed |
| CSMP0097I | 18.12.22 CPU-A SS-BSS SSU-SSU0 IS-01 |
| UTIM1000I | Clone Group A64TOB64 Set BED2C4D started issuing Inc. Restore |
| CSMP0097I | 18.12.25 CPU-A SS-BSS SSU-SSU0 IS-01 |
| UTIM1001I | Clone Group A64TOB64 Set BED2C4D completed issuing Inc. Restore |
| CSMP0097I | 18.12.30 CPU-A SS-BSS SSU-SSU0 IS-01 |
| UTIM1031I | Local TimeFinder Status Display |

**Status:**

Clone Group: A64TOB64 Base Operation: Establish

**Start Time:** 04.12.15

**Date:** 01/19/16

<table>
<thead>
<tr>
<th>____Operation Status ____</th>
<th>Opr</th>
<th>In</th>
<th>Not</th>
<th>Opr RC</th>
<th>Itrks Pct</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Set Name</strong></td>
<td><strong>CU Serial #</strong></td>
<td><strong>SDA</strong></td>
<td><strong>Complete</strong></td>
<td><strong>Progress</strong></td>
<td><strong>Started</strong></td>
</tr>
<tr>
<td>BED2C4D</td>
<td>00192604124</td>
<td>4C20</td>
<td>0</td>
<td>32</td>
<td>0</td>
</tr>
</tbody>
</table>

End of Display
ZUTIM INITialize CLEar|CONtinue|CANcel

Use this command to initialize the TimeFinder control records with hexadecimal zeros and return the GST to the system heap.

Requirements and restrictions

You must have previously configured TimeFinder control records.

After entering ZUTIM INI CLEar, enter ZUTIM INI CONtinue within two minutes to complete initialization of the TimeFinder control records. Otherwise initialization times out.

Format

ZUTIM INITialize CLEar|CONtinue|CANcel

Parameters

CLEar Causes TimeFinder to prepare for initialization of the TimeFinder control records.

CONtinue Initializes the TimeFinder control records with hexadecimal zeros and returns the GST to the system heap.

CANcel Cancels initialization of the TimeFinder control records.

Additional information

- Specify ZUTIM INI CLEar|CONtinue only if you want to replace the previous TimeFinder control record configuration. EMC recommends that the TimeFinder control records are backed up before issuing ZUTIM INI CLEar.

  **Note:** “ZUTIM CReaTe” on page 89 provides more information.

- Ensure all BCV or clone groups are split and all SDDF or clone sessions for all groups have been terminated before initializing TimeFinder control records.

Example

<table>
<thead>
<tr>
<th>Action</th>
<th>Prepare to initialize the TimeFinder control records.</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>ZUTIM INI CLEAR</td>
</tr>
<tr>
<td>System</td>
<td>CSMP0097I 00.14.06 CPU-C SS-BSS SSU-SSU0 IS-01</td>
</tr>
</tbody>
</table>

E1TH0001W TimeFinder control record Initialization Requested.

*------------------------------------------------------------*
| * Ensure all TimeFinder activity is complete and control    |
| * records have been backed up, or group and device pair     |
| * information recorded, in case re-configuration is required.*|
*------------------------------------------------------------*
To continue, enter: ZUTIM INI CONTINUE
To cancel, enter: ZUTIM INI CANCEL

**Action**  
Continue initialization of the TimeFinder control records.

**User**  
ZUTIM INI CONTINUE

**System**  

CSMP0097I 00.15.40 CPU-C SS-BSS SSU-SSU0 IS-01
UTIM0225I INITIALize CLEar CONTinuing

CSMP0097I 00.16.02 CPU-C SS-BSS SSU-SSU0 IS-01
UTIM0038I Timefinder INITIALize CLEar complete

**Action**  
Cancel initialization of the TimeFinder control records.

**User**  
ZUTIM INI CANCEL

**System**  

CSMP0097I 00.21.13 CPU-C SS-BSS SSU-SSU0 IS-01
UTIM0224I INITIALize CLEar timeout or CANcelled
ZUTIM LINk

Use this command to relate an activated Snapshot to a device.

You can issue the LINk command for:

- The entire TimeFinder group
- An entire Set in the TimeFinder group
- One device or a range of devices in one or all Sets in the TimeFinder group

Requirements and restrictions

- When general property CTLRCD is ON, a control record refresh occurs before issuing the LINk command. The symbolic module number and DBI associated with the source devices in the TimeFinder group being operated on are not rediscovered.

- The target device for the LINk command may be the original source device (which logically would simulate a restore, and requires the RESTORE parameter) or any other compatible device with the same or more number of cylinders. Any previous tracks assigned to the target device are returned to the pool.

- If a Snapshot is linked more than once to the same target device, only the differences will be applied. Each source device may have up to 1024 linked targets.

- The UNLInk after copy parameter causes the target device to be UNLinked after the Snapshot has been fully copied to the target. If snapshots have been created from the target device before the copy has been completed, and the UNLInk parameter is specified, the storage system waits until the last Snapshot has been deleted from the target device before it UNLInks the target device. The UNLInk parameter must be accompanied by the COPY parameter.

- To avoid duplicate VOLSERs the LINk command makes all targets “user not ready” prior to executing the LINk. After the LINk has completed, the user should issue the CLIp command to modify the VOLSER prefix and make the LINked targets ready to the host.

- Once the CLIp command completes, the device may be accessed from the host. The URDY parameter may be used to leave the targets ready after the LINk command. LINk with RESTORE leaves the linked source URDY by default.

- All parameters must have permission defined in order to be used on the command line.

Format

```
ZUTIM LINk GROup-cccccccc [SET-cccccccc] [SDN-hhhhhhhh] [CNT-dddd] [VER-dddd] [COPY] [UNLInk] [RESTORE] [URDY]
```
TimeFinder Commands

Parameters

GROup-cccccccc  One to eight alphanumeric character TimeFinder group name.
SET-cccccccc  One to eight alphanumeric character TimeFinder Set name identifying a storage system containing BCV pairs.
SDN-hhhhhhhh  One to eight hexadecimal digit starting source storage device number.
CNT-dddd  One to four decimal digit count of source devices.
VER-dddd  One to 4 decimal digit Snapshot version number. Maximum is 256.
COPY  Copy mode. Permission must be defined for the LINk operation for the Group.
UNLINK  UnLink After Copy. Permission must be defined for the LINk operation for the Group.
RESTORE  Link Snapshot back to source device. Permission must be defined for the LINk operation for the Group.
URDY  Leave the linked device user ready.

Additional information

TimeFinder operation verification for the LINk command verifies that:

- The SnapVX feature is licensed.
- The snapshot name matches an existing snapshot name.
- The SRP allocated capacity will not be exceeded.
- The target device is not linked to other source.
- If the RESTORE parameter is present, verify the source device is not linked.

If any of these conditions is not met, TimeFinder operation verification halts the operation or prompts the operator to halt or proceed with the operation, depending on the option and permission properties defined for the LINk operation and the TimeFinder group.

If no operations device or pre-defined gatekeeper device is available for one or more TimeFinder Sets in a TimeFinder group, operation verification notifies the operator and prompts the operator to halt or proceed with the operation.
Examples

Example 1

Action  Link SnapVX group A64B64SX version 1. Display a set in the group after the link completes.

User  ZUTIM LIN GRO-A64B64SX VER-1

System

UTIM0019P TimeFinder Group A64B64SX
UTIM0019I TimeFinder control record refresh started
UTIM1043I Local CU 000196701170 discovered for SnapVX Group A64B64SX Set UYF1
UTIM1043I Local CU 000196801233 discovered for SnapVX Group A64B64SX Set UZC1
UTIM0024P TimeFinder Group A64B64SX
UTIM0024I TimeFinder control record refresh completed
E1T70000I TimeFinder Operation Verification Started
E1T70001I TimeFinder Group Properties Verification Started
Options        Permissions
None
E1T70003I TimeFinder Device State Verification Started
E1T70004I TimeFinder Operation Verification Completed
UTIM1000I SnapVX Group A64B64SX Set UYF1 started issuing Link
UTIM1000I SnapVX Group A64B64SX Set UZC1 started issuing Link
UTIM1001I SnapVX Group A64B64SX Set UYF1 completed issuing Link
UTIM1001I SnapVX Group A64B64SX Set UZC1 completed issuing Link
UTIM1031I Local TimeFinder Status Display
SnapVX Group: A64B64SX Base Operation: Link
Status: Monitor Active
Start Time : 01.34.03 Date : 11/27/15
____Operation Status ____
Opr In Not Opr RC
Set Name CU Serial # SDA  Complete Progress Started Summary Itrks Pct
UYF1 000196701170 4460 32 0 0 00000 0 100
UZC1 000196801233 4300 32 0 0 00000 0 100
End of Display
UTIM1033I Local SnapVX Group A64B64SX Link complete

User  ZUTIM DIS GRO-A64B64SX SET-UYF1 VER-1

System

CSMP0097I 15.34.39 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1042I TF status for Local CU 000196701170
SnapVX Group: A64B64SX Set: UYF1 Base operation: Link
MDFB SYMB Snapshot TGT Tracks Opr
SSN MOD SDA SRD DEV# TGT DEV# ID Act Lin Def SR To Cpy Pct RC
A64 0110 4440 000008BD 00000A5D ADA00002 Y TGT N X 50084 0 0000
A64 0111 4441 000008BE 00000A5E ADA00002 Y TGT N X 50084 0 0000
A64 0112 4442 000008BF 00000A5F ADA00002 Y TGT N X 50084 0 0000
A64 0113 4443 000008C9 00000A60 ADA00002 Y TGT N X 50084 0 0000
********************************************************************************
A64 012D 445D 000008DA 00000A7A ADA00002 Y TGT N X 50084 0 0000
A64 012E 445E 000008DB 00000A7B ADA00002 Y TGT N X 50084 0 0000
A64 012F 445F 000008DC 00000A7C ADA00002 Y TGT N X 50084 0 0000
End of Display
Example 2

**Action**

Link remote TimeFinder group TUYH1MH back to the source in copy mode (restore). Display a set in the group after the link completes.

**User**

`ZUTIM LIN GRO-TUYH1MH RESTORE COPY`

**System**

CSMP0097I 15.26.33 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0019P TimeFinder Group TUYH1MH
UTIM0019I TimeFinder control record refresh started
UTIM1043I Remote CU 000196701170 discovered for SnapVX Group TUYH1MH Set UYF1
UTIM1043I Remote CU 000196701175 discovered for SnapVX Group TUYH1MH Set UYG1
UTIM0024P TimeFinder Group TUYH1MH
UTIM0024I TimeFinder control record refresh completed
CSMP0097I 15.26.38 CPU-A SS-BSS SSU-SSU0 IS-01
E1T70000I TimeFinder Operation Verification Started
E1T70001I TimeFinder Group Properties Verification Started
Options
Permissions
COPY ON
URDY ON
RESTORE ON
E1T70003I TimeFinder Device State Verification Started
CSMP0097I 15.26.53 CPU-A SS-BSS SSU-SSU0 IS-01
E1T70004I TimeFinder Operation Verification Completed
CSMP0097I 15.26.53 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1000I SnapVX Group TUYH1MH Set UYF1 started issuing Link
CSMP0097I 15.26.53 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1000I SnapVX Group TUYH1MH Set UYG1 started issuing Link
CSMP0097I 15.26.55 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1001I SnapVX Group TUYH1MH Set UYF1 completed issuing Link
CSMP0097I 15.26.55 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1001I SnapVX Group TUYH1MH Set UYG1 completed issuing Link
CSMP0097I 15.27.00 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1031I Remote TimeFinder Status Display
SnapVX Group: TUYH1MH Base Operation: Link
Status: Monitor Active
Start Time : 01.26.33 Date : 01/22/16

<table>
<thead>
<tr>
<th>Set Name</th>
<th>CU Serial #</th>
<th>SDA</th>
<th>Complete</th>
<th>Progress</th>
<th>Started</th>
<th>Summary</th>
<th>Itrks Pct</th>
</tr>
</thead>
<tbody>
<tr>
<td>UYF1</td>
<td>000196701170 5080</td>
<td>0</td>
<td>16</td>
<td>0</td>
<td>00000</td>
<td>773824</td>
<td>1</td>
</tr>
<tr>
<td>UYG1</td>
<td>000196701175 5080</td>
<td>0</td>
<td>16</td>
<td>0</td>
<td>00000</td>
<td>801360</td>
<td>1</td>
</tr>
</tbody>
</table>

End of Display
User  ZUTIM DIS GRO-TUYH1MH SET-UYF1  VER-0

System

CSMP0097I 15.27.12 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1042I TF status for Remote CU 000196701170
SnapVX Group: TUYH1MH Set: UYF1 Base operation: Link

<table>
<thead>
<tr>
<th>MDBF</th>
<th>SYMB</th>
<th>Snapshot</th>
<th>TGT Tracks</th>
<th>Opr</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSN</td>
<td>MOD</td>
<td>SDA</td>
<td>SRC DEV#</td>
<td>TGT DEV#</td>
</tr>
<tr>
<td>N/A</td>
<td>0000</td>
<td>0000</td>
<td>000008BD</td>
<td>00000000</td>
</tr>
<tr>
<td>N/A</td>
<td>0000</td>
<td>0000</td>
<td>000008BE</td>
<td>00000000</td>
</tr>
<tr>
<td>N/A</td>
<td>0000</td>
<td>0000</td>
<td>000008BF</td>
<td>00000000</td>
</tr>
</tbody>
</table>

*******************************************************************

| N/A  | 0000 | 0000     | 000008CA   | 00000000 | ADAD0001 | Y   | SRC | N   | 47110 | 6     | 0000 |
| N/A  | 0000 | 0000     | 000008CB   | 00000000 | ADAD0001 | Y   | SRC | N   | 50085 | 0     | 0000 |
| N/A  | 0000 | 0000     | 000008CC   | 00000000 | ADAD0001 | Y   | SRC | N   | 25874 | 49    | 0000 |

End of Display
ZUTIM MIGRATE

Use this command to migrate TimeFinder control records from a version 7.1.0 format to a version 8.0 format.

Requirements and restrictions

Issue the MIGRATE command following the software program load of TimeFinder Controls for z/TPF version 8.0, and prior to issuing any other TimeFinder Controls for z/TPF commands.

Format

ZUTIM MIGRATE

Parameters

None.

Additional information

- TimeFinder Controls for z/TPF version 8.0 rejects active commands issued prior to TimeFinder control record migration.
- TimeFinder control record migration converts TimeFinder Controls for z/TPF version 7.1 control records into a format compatible with TimeFinder Controls for z/TPF version 8.0.
- Migrated control records are reformatted into the configuration control records.
- Migration is achieved by entering the ZUTIM CON ACCEPT ALL command subsequent to the ZUTIM MIGRATE command.
- No other configuration changes may be made between the MIGRATE and the CON ACCEPT commands.

Example

<table>
<thead>
<tr>
<th>Action</th>
<th>Migrate TimeFinder control records from a version 7.1.0 format to a version 8.0 format.</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>ZUTIM MIGRATE</td>
</tr>
<tr>
<td>System</td>
<td></td>
</tr>
</tbody>
</table>

CSMP0097I 18.51.54 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0116I TimeFinder ctl rcd migration started
CSMP0097I 18.51.54 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0117I TimeFinder ctl rcd migration completed
Action

Accept the migrated configuration and file down to the TimeFinder control records.

User

ZUTIM CON ACCEPT ALL

System

CSMP0097I 18.58.32 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0089I TimeFinder configuration verifying sessions not open
CSMP0097I 18.58.32 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0093I TimeFinder configuration verifying BCV pairs unique
CSMP0097I 18.58.32 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0092I TimeFinder configuration finalizing BCV pairs
CSMP0097I 18.58.36 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0090I TimeFinder configuration finalizing BCV groups
CSMP0097I 18.58.36 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0121I TimeFinder BCV Group counts calculated
CSMP0097I 18.58.37 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0094I TimeFinder control records updated
CSMP0097I 18.58.37 CPU-C SS-BSS SSU-SSU0 IS-01
UTIM0221I GST Refresh Started
CSMP0097I 18.58.37 CPU-C SS-BSS SSU-SSU0 IS-01
UTIM0222I GST Refresh Complete
CSMP0097I 18.58.37 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1006I TimeFinder configuration Accept complete
TimeFinder Commands

**ZUTIM PROceed|HALt**

Use this command to proceed with or halt the previous TimeFinder command issued to the TimeFinder group. It is issued in response to a warning or informational message from TimeFinder operation verification. TimeFinder operation verification is activated for each TimeFinder command to determine if the command can be successfully completed as entered.

**Requirements and restrictions**

The operator must respond to the TimeFinder operation verification prompt within five minutes.

**Format**

```
ZUTIM PROceed|HALt GROup-ccccccccc[SET-cccccccc]
```

**Parameters**

- **GROup-cccccccc**  
  One to eight alphanumeric character TimeFinder group name.

- **SET-cccccccc**  
  One to eight alphanumeric character TimeFinder Set name that identifies a storage system containing TimeFinder device pairs.

**Example**

```
Action         Start zDP for TimeFinder SnapVX Group TSVXZDP. The snapshot version already exists.
User           ZUTIM CRT GRO-TSVXZDP PAR-CDP
System
CSMP0097I 13.56.44 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0019P TimeFinder Group TSVXZDP
UTIM0019I TimeFinder control record refresh started
CSMP0097I 13.56.45 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1043I Local CU 000196801233 discovered for SnapVX Group TSVXZDP Set UZC1
UTIM1043I Local CU 000196701305 discovered for SnapVX Group TSVXZDP Set UYH1
UTIM0024P TimeFinder Group TSVXZDP
UTIM0024I TimeFinder control record refresh completed
CSMP0097I 13.56.45 CPU-A SS-BSS SSU-SSU0 IS-01
E1T70000I TimeFinder Operation Verification Started
E1T70001I TimeFinder Group Properties Verification Started
Options        Permissions
ACTIVATE       ON
E1T70003I TimeFinder Device State Verification Started
CSMP0097I 13.56.50 CPU-A SS-BSS SSU-SSU0 IS-01
TF SnapVX Group TSVXZDP Set UYH1: Snapshot on source = 32
CSMP0097I 13.56.50 CPU-A SS-BSS SSU-SSU0 IS-01
TF SnapVX Group TSVXZDP Set UZC1: Snapshot on source = 32
CSMP0097I 13.56.52 CPU-A SS-BSS SSU-SSU0 IS-01
E1U90001I Review TimeFinder exceptions above for Group TSVXZDP Create:
To proceed, enter: ZUTIM PROceed GROup-TSVXZDP
To halt, enter: ZUTIM HALt GROup-TSVXZDP
```
ZUTIM PRO GRO-TSVXZDP

CSMP0097I 13.57.04 CPU-A SS-BSS SSU-SSU0 IS-01
E1T70004I TimeFinder Operation Verification Completed
CSMP0097I 13.57.07 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1000I SnapVX Group TSVXZDP Set UZC1 started issuing Create
CSMP0097I 13.57.08 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1000I SnapVX Group TSVXZDP Set UYH1 started issuing Create
CSMP0097I 13.57.08 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1001I SnapVX Group TSVXZDP Set UYH1 completed issuing Create
CSMP0097I 13.57.08 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1001I SnapVX Group TSVXZDP Set UZC1 completed issuing Create
CSMP0097I 13.57.13 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1059I TimeFinder iCDP Group TSVXZDP Cycle Controls Started
CSMP0097I 13.57.13 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1031I Local TimeFinder Status Display
SnapVX Group: TSVXZDP Base Operation: Create
Status: Monitor Active
Start Time: 23.56.44 Date: 01/18/16

<table>
<thead>
<tr>
<th>Set</th>
<th>Opr</th>
<th>In</th>
<th>Not</th>
<th>Opr</th>
<th>RC</th>
<th>Itrks</th>
<th>Pct</th>
</tr>
</thead>
<tbody>
<tr>
<td>UYH1</td>
<td>000196701305</td>
<td>5080</td>
<td>32</td>
<td>0</td>
<td>0</td>
<td>00000</td>
<td>0   100</td>
</tr>
<tr>
<td>UZC1</td>
<td>000196801233</td>
<td>4320</td>
<td>32</td>
<td>0</td>
<td>0</td>
<td>00000</td>
<td>0   100</td>
</tr>
</tbody>
</table>

End of Display
ZUTIM REEstablish

Use this command to recreate a previously established clone pair. Any data written to the clone source devices while they were split from the clone targets is written to the clone target. Any updates made to the clone target while the clone pair was split are discarded. The REEstablish command synchronizes previously Split clone pairs. The clone targets becomes not ready to the host.

You can issue the REEstablish command for the entire clone group, for an entire Set in the clone group, or for one device or a range of devices in one or all Sets in the clone group.

Requirements and restrictions

- A control record refresh occurs before issuing the Reestablish operation. Any symbolic module number and DBI associated with the clone source devices in the clone group being operated on are refreshed.

  **Note:** If you issue the REEstablish command for a single device or range of devices in a single TimeFinder Set, only the control records for the TimeFinder Set are refreshed. You should normally issue TimeFinder Reestablish by range or single device in a single TimeFinder Set only to assist in managing the traditional complex-wide operation.

- To simplify TimeFinder operations, avoid running z/TPF copy utilities, ZAMOD or ZMCPY, while an Establish is in progress. Procedures to manage concurrent z/TPF copy utility and TimeFinder operations should be prepared by a z/TPF Systems Programmer familiar with TimeFinder operations. Contact an EMC z/TPF Customer Support Specialist to review all operations procedures.

- The data flow is from the clone source to the clone target. Only the data changed on the source device is copied to the clone target. Any changed data on the clone target device is lost.

- The clone target is put into a not ready state when it is established to a clone source volume, so no host can access the clone target while it is established.

- The Reestablish process may take a period of time to complete if there was a large amount of update activity on the clone source device and/or the clone target.

- Any desired Reestablish property options and permissions must be defined for proper operation of the ZUTIM REEstablish command. To enter one or more of the REEstablish options in the functional entry, the permission property for the option must be defined.

  **Note:** “ZUTIM DEFINe PROp-EST|REE|SPL|RES|INC|CLI” on page 98 provides more information.

- The Reestablish operation does not begin if any specified clone target is online to a host. The ONLDEV option/permission enables you to bypass this restriction. This option must be defined for the Reestablish operation and TimeFinder group using “ZUTIM DEFINe PROp-EST|REE|SPL|RES|INC|CLI” on page 98.
Format

```
ZUTIM REEstablish GROup-cccccccc [SET-cccccccc] [SDN-hhhhhhhh] [CNT-dddd] [NOSDdf]
```

Parameters

- `GROup-cccccccc`: One to eight alphanumeric character TimeFinder group name.
- `SET-cccccccc`: One to eight alphanumeric character TimeFinder Set name identifying a storage system containing BCV pairs.
- `SDN-hhhhhhhh`: One to eight hexadecimal digit starting storage device number.
- `CNT-dddd`: One to four decimal digit count of storage devices.
- `NOSDdf`: Default to full establish on pair if no SDDF protection session exists.

Additional information

TimeFinder operation verification for the REEstablish command determines if any clone targets are attached or online, and if a background split is in progress. If any of these conditions exist, TimeFinder operation verification either halts the operation, prompts the operator to halt, or proceed with the operation, depending on the option and permission properties defined for the Reestablish operation and TimeFinder group.

If no operations device is available for one or more TimeFinder Sets in a TimeFinder group, operation verification will notifies the operator and prompt the operator to halt or proceed with the operation.

Examples

Example Information

The examples in this section display the following information:

- **Set Name**: The TimeFinder Set name.
- **CU Serial #**: The control unit serial number.
- **Opr SDA**: The TimeFinder operation symbolic device address.
- **Complete**: The number of clone pairs for which the TimeFinder operation is complete.
- **In Progress**: The number of clone pairs for which the TimeFinder operation is active.
- **Not Started**: The number of clone pairs for which the TimeFinder operation was not initiated.
- **Opr RC Summary**: The return code summary for all TimeFinder operations for this TimeFinder Set.
Example 1

**Action**  REEstablish TimeFinder/Clone group A64TOB64.

**User**  ZUTIM REE GRO-A64TOB64

**System**

CSMP0097I 17.44.13 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0019P TimeFinder Group A64TOB64
UTIM0019I TimeFinder control record refresh started
CSMP0097I 17.44.15 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1043I Local CU 000192604124 discovered for Clone Group A64TOB64 Set BED2C4D
UTIM0024P TimeFinder Group A64TOB64
UTIM0024I TimeFinder control record refresh completed
CSMP0097I 17.44.15 CPU-A SS-BSS SSU-SSU0 IS-01
E1T70000I TimeFinder Operation Verification Started
E1T70001I TimeFinder Group Properties Verification Started
Options  Permissions
None
E1T70003I TimeFinder Device State Verification Started
CSMP0097I 17.44.26 CPU-A SS-BSS SSU-SSU0 IS-01
E1T70004I TimeFinder Operation Verification Completed
CSMP0097I 17.44.26 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0213P TimeFinder Group A64TOB64
UTIM0213I QOS Controls started
CSMP0097I 17.44.26 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0214P TimeFinder Group A64TOB64
UTIM0214I QOS Controls completed
CSMP0097I 17.44.26 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1000I Clone Group A64TOB64 Set BED2C4D started issuing Reestablish
CSMP0097I 17.44.26 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1001I Clone Group A64TOB64 Set BED2C4D completed issuing Reestablish
CSMP0097I 17.44.31 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1031I Local TimeFinder Status Display
Clone Group: A64TOB64 Base Operation: Reestablish
Status: Monitor Active
Start Time : 03.44.13 Date : 01/19/16

<table>
<thead>
<tr>
<th>Set Name</th>
<th>CU Serial #</th>
<th>SDA</th>
<th>Complete</th>
<th>Progress</th>
<th>Started</th>
<th>Summary</th>
<th>Itrks</th>
<th>Pct</th>
</tr>
</thead>
<tbody>
<tr>
<td>BED2C4D</td>
<td>000192604124</td>
<td>4C20</td>
<td>3</td>
<td>29</td>
<td>0</td>
<td>00000</td>
<td>19838</td>
<td>61</td>
</tr>
</tbody>
</table>

End of Display
Example 2

**Action**
REEstablish TimeFinder/Clone group A64TOB64. Six device pairs have not been previously established.

**User**
ZUTIM REE GRO-A64TOB64

**System**

CSMP0097I 01.12.29 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0019I TimeFinder control record refresh started
CSMP0097I 01.12.29 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1043I Remote CU 000184505047 discovered for BCV Group GROUP1MH Set 1B05047
CSMP0097I 01.12.34 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0024I TimeFinder control record refresh completed
CSMP0097I 01.12.34 CPU-A SS-BSS SSU-SSU0 IS-01
E1T70000I TimeFinder Operation Verification Started
E1T70001I TimeFinder Group Properties Verification Started
Options Permissions
None
E1T70003I TimeFinder Device State Verification Started
CSMP0097I 01.12.35 CPU-A SS-BSS SSU-SSU0 IS-01
TimeFinder exceptions - Group GROUP1MH Set 1B05047: Full ESTablishes required =6
CSMP0097I 01.12.35 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0104T Operation Verification Failed - Operation not started

Example 3

**Action**
Set SDDF property option ON for TimeFinder group A64TOB64. REEstablish TimeFinder/Clone group A64TOB64. Six device pairs have not been previously established. Proceed with the Reestablish.

**User**
ZUTIM SET REE GRO-A64TOB64 TYP-OPT SDDF

**System**

CSMP0097I 17.53.20 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0027P TimeFinder Group A64TOB64
UTIM0027I Define complete
CSMP0097I 17.53.20 CPU-A SS-BSS SSU-SSU0 IS-01
E1TG0000I TimeFinder Reestablish Properties Display
Local Clone Group - A64TOB64
-------------------------------------------------------------------------
Options
UNUSED: OFF SDDF: ON UNUSED: OFF ONLDEV: OFF
Permissions
UNUSED: OFF SDDF: ON UNUSED: OFF ONLDEV: OFF
-------------------------------------------------------------------------
End of Display

**User**
ZUTIM REE GRO-A64TOB64

**System**

CSMP0097I 17.53.35 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0019P TimeFinder Group A64TOB64
UTIM0019I TimeFinder control record refresh started
CSMP0098I 17.53.36 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1043I Local CU 000192604124 discovered for Clone Group A64TOB64 Set BED2C4D
UTIM0024P TimeFinder Group A64TOB64
UTIM0024I TimeFinder control record refresh completed
CSMP0097I 17.53.36 CPU-A SS-BSS SSU-SSU0 IS-01
E1T70000I TimeFinder Operation Verification Started
E1T70001I TimeFinder Group Properties Verification Started
Options Permissions
NOSDDF ON
E1T70003I TimeFinder Device State Verification Started
CSMP0097I 17.53.42 CPU-A SS-BSS SSU-SSU0 IS-01
TF Clone Group A64TOB64 Set BED2C4D: Pairs not previously Established = 6
CSMP0097I 17.53.44 CPU-A SS-BSS SSU-SSU0 IS-01
E1U90001I Review TimeFinder exceptions above for Group A64TOB64 Reestablish:
To proceed, enter: ZUTIM PROceed GROup-A64TOB64
To halt, enter: ZUTIM HALt GROup-A64TOB64

User ZUTIM PRO GRO-A64TOB64

System
CSMP0097I 17.54.06 CPU-A SS-BSS SSU-SSU0 IS-01
E1T70004I TimeFinder Operation Verification Completed
CSMP0097I 17.54.06 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0213P TimeFinder Group A64TOB64
UTIM0213I QOS Controls started
CSMP0097I 17.54.06 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0214P TimeFinder Group A64TOB64
UTIM0214I QOS Controls completed
CSMP0097I 17.54.06 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1000I Clone Group A64TOB64 Set BED2C4D started issuing Reestablish
CSMP0097I 17.54.06 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1001I Clone Group A64TOB64 Set BED2C4D completed issuing Reestablish
CSMP0097I 17.54.11 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1031I Local TimeFinder Status Display
Clone Group: A64TOB64 Base Operation: Reestablish
Status: Monitor Active
Start Time : 03.53.35 Date : 01/19/16

<table>
<thead>
<tr>
<th>Set Name</th>
<th>CU</th>
<th>Serial #</th>
<th>SDA</th>
<th>Complete</th>
<th>Progress</th>
<th>Started</th>
<th>Summary</th>
<th>Itrks</th>
<th>Pct</th>
</tr>
</thead>
<tbody>
<tr>
<td>BED2C4D</td>
<td>000192604124</td>
<td>4C20</td>
<td>25</td>
<td>7</td>
<td>0</td>
<td>00000</td>
<td>280485</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

End of Display
ZUTIM REName

Use this command to change the name of a created or an active snapshot. All Snapshot names associated with a TimeFinder/SnapVX group are modified.

You can issue the REName command for the entire TimeFinder group.

Requirements and restrictions

◆ When general property CTLRCD is ON, a control record refresh occurs before issuing the REName command. The symbolic module number and DBI associated with the source devices in the TimeFinder group being operated are not rediscovered.

◆ All Snapshots associated with a TimeFinder/SnapVX group must be created or activated.

◆ No Snapshots associated with a TimeFinder/SnapVX group can be linked.

Format

ZUTIM REName TGROUP-cccccccc NAME-cccccccc

Parameters

TGROUP-cccccccc One to eight alphanumeric character TimeFinder group name.

NAME-cccccccc New one to eight alphanumeric character TimeFinder group name.

Additional information

TimeFinder operation verification for the REName command verifies that:

◆ The SnapVX feature is licensed.

◆ The TimeFinder Group is a SnapVX Group.

◆ The Snapshot name matches an existing snapshot name.

◆ zDP is not active for the TimeFinder SnapVX Group.

◆ Verify Snapshots in the TimeFinder SnapVX Group are not linked.

If any of these conditions are not met, TimeFinder operation verification halts the operation or prompts the operator to halt or proceed with the operation, depending on the option and permission properties defined for the REName operation and the TimeFinder group.

If no operations device or pre-defined gatekeeper device is available for one or more TimeFinder Sets in a TimeFinder group, operation verification notifies the operator and prompts the operator to halt or proceed with the operation.
Examples

Example 1

Action Display SnapVX Group U9A21SNP versions.
User ZUTIM DIS GRO-U9A21SNP STA-VER
System

CSMP0097I 15.29.24 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0131I Local TimeFinder Status Display
SnapVX Group: U9A21SNP Base Operation: Create

Snapshot Name: U9A21SNP Ver: 0 ID: ADAD0001 Pre: N Act: Y Linked: N
Image Creation Time : 01.28.08 Date : 09/02/15
Snapshot Name: U9A21SNP Ver: 1 ID: ADAD0002 Pre: N Act: Y Linked: N
Image Creation Time : 01.29.08 Date : 09/02/15
Snapshot Name: U9A21SNP Ver: 2 ID: ADAD0003 Pre: N Act: Y Linked: N
Image Creation Time : 01.25.05 Date : 09/02/15
Snapshot Name: U9A21SNP Ver: 3 ID: ADAD0004 Pre: N Act: Y Linked: N
Image Creation Time : 01.26.05 Date : 09/02/15
Snapshot Name: U9A21SNP Ver: 4 ID: ADAD0005 Pre: N Act: Y Linked: N
Image Creation Time : 01.27.04 Date : 09/02/15
End of Display

Action Rename SnapVX Group U9A21SNP to U9A21SVX.
User ZUTIM DIS GRO-U9A21SNP STA-VER
System

CSMP0097I 15.32.13 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0019P TimeFinder Group U9A21SNP
UTIM0019I TimeFinder control record refresh started
CSMP0097I 15.32.14 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0143I Local CU 00197100061 discovered for SnapVX Group U9A21SNP Set TGTLESS
UTIM0024P TimeFinder Group U9A21SNP
UTIM0024I TimeFinder control record refresh completed
CSMP0097I 15.32.14 CPU-A SS-BSS SSU-SSU0 IS-01
E1T70000I TimeFinder Operation Verification Started
E1T70001I TimeFinder Group Properties Verification Started
Options Permissions
None
CSMP0097I 15.32.18 CPU-A SS-BSS SSU-SSU0 IS-01
E1T70004I TimeFinder Operation Verification Completed
CSMP0097I 15.32.18 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1000I SnapVX Group U9A21SNP Set TGTLESS started issuing Rename
CSMP0097I 15.32.19 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1001I SnapVX Group U9A21SNP Set TGTLESS completed issuing Rename
CSMP0097I 15.32.24 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1031I Local TimeFinder Status Display
SnapVX Group: U9A21SNP Base Operation: Rename
Status: Monitor Active
Start Time : 01.32.13 Date : 09/02/15

<table>
<thead>
<tr>
<th>Opr</th>
<th>In</th>
<th>Not</th>
<th>Opr RC</th>
<th>Itrks</th>
<th>Pct</th>
</tr>
</thead>
<tbody>
<tr>
<td>TGTLESS</td>
<td>00197100061</td>
<td>4700</td>
<td>8</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

End of Display
UTIM1033I Local SnapVX Group U9A21SNP Rename complete
Action: Display SnapVX Group U9A21SNP versions. The snapshot name has changed so no versions exist.

User: ZUTIM DIS GRO-U9A21SNP STA-VER

System:

CSMP0097I 15.35.30 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1031I Local TimeFinder Status Display
SnapVX Group: U9A21SNP Base Operation: Rename
End of Display

Action: Open a configuration session for SnapVX Group U9A21SNP.

User: ZUTIM CON OPEN GRO-U9A21SNP

System:

CSMP0097I 15.36.26 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0086I TimeFinder configuration ctl rcd refresh initiated
CSMP0097I 15.36.32 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1049T TimeFinder Group U9A21SNP is Open
UTIM1006I TimeFinder configuration Open complete

Action: Rename Group U9A21SNP to U9A21SVX.

User: ZUTIM CON REN GRO-U9A21SNP NAM-U9A21SVX

System:

CSMP0097I 15.36.44 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1006I TimeFinder configuration Rename complete

Action: Close the configuration session for SnapVX Group U9A21SVX.

User: ZUTIM CON CLOSE GRO-U9A21SVX

System:

UTIM1049T TimeFinder Group U9A21SVX is Closed
UTIM1006I TimeFinder configuration Close complete

Action: Accept the configuration change for SnapVX Group U9A21SVX.

User: ZUTIM CON ACCEPT ALL

System:

CSMP0097I 15.37.02 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0089I TimeFinder configuration verifying sessions not open
CSMP0097I 15.37.02 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0093I TimeFinder configuration verifying device pairs unique
CSMP0097I 15.37.03 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0092I TimeFinder configuration device pairs finalized
CSMP0097I 15.37.03 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0090I TimeFinder configuration groups finalized
CSMP0097I 15.37.03 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0121I TimeFinder Group counts calculated
CSMP0097I 15.37.03 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0094I TimeFinder control records updated
CSMP0097I 15.37.03 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0222I GST Refresh Started
CSMP0097I 15.37.04 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0222I GST Refresh Complete
CSMP0097I 15.37.04 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1006I TimeFinder configuration Accept complete
TimeFinder Commands

**Example 2**

**Action**
Display SnapVX Group U9A21SVX versions.

**User**
ZUTIM DIS GRO-U9A21SVX STA-VER

**System**

CSMP0097I 15.37.10 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1031I Local TimeFinder Status Display
SnapVX Group: U9A21SVX Base Operation: Rename

---

Snapshot Name: U9A21SVX Ver: 0 ID: ADAD0001 Pre: N Act: Y Linked: N
Image Creation Time: 01.28.08 Date: 09/02/15

Snapshot Name: U9A21SVX Ver: 1 ID: ADAD0002 Pre: N Act: Y Linked: N
Image Creation Time: 01.29.08 Date: 09/02/15

Snapshot Name: U9A21SVX Ver: 2 ID: ADAD0003 Pre: N Act: Y Linked: N
Image Creation Time: 01.30.08 Date: 09/02/15

Snapshot Name: U9A21SVX Ver: 3 ID: ADAD0004 Pre: N Act: Y Linked: N
Image Creation Time: 01.31.08 Date: 09/02/15

Snapshot Name: U9A21SVX Ver: 4 ID: ADAD0005 Pre: N Act: Y Linked: N
Image Creation Time: 01.27.04 Date: 09/02/15

End of Display

**Example 3**

**Action**
Try to rename Clone Group U9A21.

**User**
ZUTIM REN GRO-U9A21 NAM-U9A21CLN

**System**

CSMP0097I 15.48.28 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0016P TimeFinder Group U9A21
UTIM0016E Invalid operation requested for Clone Group

**Options**
Permissions

**Example 3**

**Action**
Try to rename SnapVX Group U9A21SNP while zDP is active.

**User**
ZUTIM REN GRO-U9A21SNP NAM-U9A21SVX

**System**

ZUTIM REN GRO-U9A21SNP NAM-U9A21SVX
CSMP0097I 13.01.53 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0019P TimeFinder Group U9A21SNP
UTIM0019I TimeFinder control record refresh started
CSMP0097I 13.01.54 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1043I Local CU 000197100061 discovered for SnapVX Group U9A21SNP Set TGTLESS
UTIM0024P TimeFinder Group U9A21SNP
UTIM0024I TimeFinder control record refresh completed
CSMP0097I 13.01.54 CPU-A SS-BSS SSU-SSU0 IS-01
E1T70000I TimeFinder Operation Verification Started
E1T70001I TimeFinder Group Properties Verification Started
Options
Permissions
E1T70005I TimeFinder exception - Group U9A21SNP: iCDP Cycle is active
UTIM0104P TimeFinder Group U9A21SNP
UTIM0104T Operation Verification Failed - Operation not started
Example 4

**Action**  
Try to rename SnapVX Group U9A21SNP while a version is linked.

**User**  
ZUTIM REN GRO-U9A21SNP NAM-U9A21SVX

**System**

- CSMP0097I 13.25.57 CPU-A SS-BSS SSU-SSU0 IS-01
- UTIM0019P TimeFinder Group U9A21SNP
- UTIM0019I TimeFinder control record refresh started
- CSMP0097I 13.25.58 CPU-A SS-BSS SSU-SSU0 IS-01
- UTIM1043I Local CU 000197100061 discovered for SnapVX Group U9A21SNP Set TGTLESS
- UTIM0024P TimeFinder Group U9A21SNP
- UTIM0024I TimeFinder control record refresh completed
- CSMP0097I 13.25.58 CPU-A SS-BSS SSU-SSU0 IS-01
- E1T7000I TimeFinder Operation Verification Started
- E1T7000I TimeFinder Group Properties Verification Started
  - Options
  - Permissions
  - None
- E1T7000I TimeFinder Device State Verification Started
- CSMP0097I 13.26.02 CPU-A SS-BSS SSU-SSU0 IS-01
- TF SnapVX Group U9A21SNP Set TGTLESS: Snapshot on src with linked tgt = 8
- CSMP0097I 13.26.02 CPU-A SS-BSS SSU-SSU0 IS-01
- UTIM0104P TimeFinder Group U9A21SNP
- UTIM0104T Operation Verification Failed - Operation not started

Example 5

**Action**  
Try to rename SnapVX Group U9A21SNP when no snapshots exist.

**User**  
ZUTIM REN GRO-U9A21SNP NAM-U9A21SVX

**System**

- CSMP0097I 13.28.05 CPU-A SS-BSS SSU-SSU0 IS-01
- UTIM0019P TimeFinder Group U9A21SNP
- UTIM0019I TimeFinder control record refresh started
- CSMP0097I 13.28.06 CPU-A SS-BSS SSU-SSU0 IS-01
- UTIM1043I Local CU 000197100061 discovered for SnapVX Group U9A21SNP Set TGTLESS
- UTIM0024P TimeFinder Group U9A21SNP
- UTIM0024I TimeFinder control record refresh completed
- CSMP0097I 13.28.06 CPU-A SS-BSS SSU-SSU0 IS-01
- E1T7000I TimeFinder Operation Verification Started
- E1T7000I TimeFinder Group Properties Verification Started
  - Options
  - Permissions
  - None
- E1T7000I TimeFinder Device State Verification Started
- CSMP0097I 13.28.10 CPU-A SS-BSS SSU-SSU0 IS-01
- TF SnapVX Group U9A21SNP Set TGTLESS: Snapshot not found for device = 8
- CSMP0097I 13.28.10 CPU-A SS-BSS SSU-SSU0 IS-01
- UTIM0104P TimeFinder Group U9A21SNP
- UTIM0104T Operation Verification Failed - Operation not started
ZUTIM RESTART

Use this command to restart the last interrupted TimeFinder operation.

Requirements and restrictions

TimeFinder RESTORE and INCRESTORE commands cannot be restarted unless the previous command has completed being issued and the first initiation of the TimeFinder monitor is complete. This restriction exists because the TimeFinder control records VFAF-Delay and LOCKF-PROC attributes precludes filing of the TimeFinder control records to disk until after the first initiation of the TimeFinder monitor is complete.

If a TimeFinder RESTORE or INCRESTORE command is interrupted before completion of the aforementioned steps, reissue the complete TimeFinder RESTORE or INCRESTORE command to restart the operation.

Format

ZUTIM RESTART GROup-cccccccc[SET-cccccccc]

Parameters

GROup-cccccccc One to eight alphanumeric character TimeFinder group name.

SET-cccccccc One to eight alphanumeric character TimeFinder SET name identifying a storage system containing the TimeFinder device pairs.

Additional information

- The RESTART command refreshes the TimeFinder control records if it is determined that some operations may not have started. The RESTART command issues the previously initiated TimeFinder operation to those devices on which the operation was not started. Once TimeFinder has restarted the operation or verified that the operation has been successfully started, the TimeFinder monitor is started.
- You cannot use the RESTART command to restart a completed TimeFinder operation.
- You should use the “ZUTIM DISplay STAtus” on page 128 to verify the last command recorded for the TimeFinder group.
**Example**

**Action** Display the status of the interrupted TimeFinder operation for TimeFinder group A64TOB64.

**User** ZUTIM DIS GRO-A64TOB64 STA-ALL

**System**

CSMP0097I 18.08.53 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1031I Local TimeFinder Status Display
Clone Group: A64TOB64 Base Operation: Reestablish
Status: Operation Verification
Start Time : 04.07.29 Date : 01/19/16
End of Display

**Action** Restart the interrupted TimeFinder reestablish for TimeFinder group A64TOB64.

**User** ZUTIM RESTART GRO-A64TOB64

**System**

CSMP0097I 18.13.01 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0019P TimeFinder Group A64TOB64
UTIM0019I TimeFinder control record refresh started
CSMP0097I 18.13.01 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1043I Local CU 000192604124 discovered for Clone Group A64TOB64 Set BED2C4D
UTIM0024P TimeFinder Group A64TOB64
UTIM0024I TimeFinder control record refresh completed
CSMP0097I 18.13.01 CPU-A SS-BSS SSU-SSU0 IS-01
E1T70000I TimeFinder Operation Verification Started
E1T70001I TimeFinder Group Properties Verification Started
Options Permissions
NOSDDF ON
E1T70003I TimeFinder Device State Verification Started
CSMP0097I 18.13.07 CPU-A SS-BSS SSU-SSU0 IS-01
E1T70004I TimeFinder Operation Verification Completed
CSMP0097I 18.13.07 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0213P TimeFinder Group A64TOB64
UTIM0213I QOS Controls started
CSMP0097I 18.13.07 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0214P TimeFinder Group A64TOB64
UTIM0214I QOS Controls completed
CSMP0097I 18.13.07 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1000I Clone Group A64TOB64 Set BED2C4D started issuing Reestablish
CSMP0097I 18.13.07 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1001I Clone Group A64TOB64 Set BED2C4D completed issuing Reestablish
CSMP0097I 18.13.12 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1031I Local TimeFinder Status Display
Clone Group: A64TOB64 Base Operation: Reestablish
Status: Monitor Active
Start Time : 04.13.01 Date : 01/19/16

<table>
<thead>
<tr>
<th>Set Name</th>
<th>CU Serial #</th>
<th>SDA</th>
<th>Complete</th>
<th>Progress</th>
<th>Started</th>
<th>Summary</th>
<th>Itrks</th>
<th>Pct</th>
</tr>
</thead>
<tbody>
<tr>
<td>BED2C4D</td>
<td>000192604124</td>
<td>4C20</td>
<td>32</td>
<td>0</td>
<td>0</td>
<td>00000</td>
<td>0</td>
<td>100</td>
</tr>
</tbody>
</table>

End of Display
UTIM1033I Local Clone Group A64TOB64 Reestablish complete
ZUTIM RESTORE

Use this command to recreate a previously established clone pair. Any data written to the clone targets while split from the clone source devices is written to the clone source devices. Any updates made to the clone source devices while the clone pairs were split are discarded and replaced by data from the clone target.

The RESTORE command synchronizes previously Split TimeFinder device pair(s). The TimeFinder target becomes not ready to the host.

You can issue the RESTORE command for the entire TimeFinder group, for an entire Set in the TimeFinder group, or for one device or a range of devices in one or all Sets in the TimeFinder group.

**Note:** If you issue the RESTORE command for a single device or range of devices in a single TimeFinder Set, only the control records for the TimeFinder Set are refreshed. TimeFinder Restore by range or single device in a single TimeFinder Set should normally only be issued to assist in managing the traditional complex-wide operation.

**Requirements and restrictions**

- EMC provides a user exit that enables VFA delay file in 1052 state. You must modify this user exit for any non-standard or clone IBM VFA delay file implementation. To ensure z/TPFz TimeFinder control records are not overlaid by the Restore process, modify the RIAT definition as follows:
  
  ```
  ZRTDM MODIFY RECID-A386, VFAF-DELAY, LOCKF-PROC
  ```

- Stop all time initiated functions or utilities. Increment the interval values for CODR POLICE to 999 as follows:

  ```
  ZOLDR ALTER POLICE 999 DETECT 999
  ```

- Ensure that the z/TPF TimeFinder control records reflect the z/TPF configuration at the time the TimeFinder group, from which you are about to restore, was split.

- A control record refresh occurs before issuing the Restore operation. Any symbolic module number and DBI associated with the clone source devices in the TimeFinder group being operated on are refreshed.

- To simplify TimeFinder operations, avoid running z/TPF copy utilities, ZAMOD or ZMCPY, while a Restore is in progress. Procedures to manage concurrent z/TPF copy utility and TimeFinder operations should be prepared by a z/TPF Systems Programmer familiar with TimeFinder operations. Contact an EMC z/TPF Customer Support Specialist to review all operations procedures.

- Any desired Restore property options and permissions must be defined for proper operation of the ZUTIM RESTORE command. To enter one or more of the RESTORE options in the functional entry the permission property for the option must be defined. For more information, refer to "ZUTIM DEFine PROp-EST|REE|SPL|RES|INC|CLI” on page 98.
Default Restore property settings indicate that the RESTORE command can only be issued while the resource owner processor is in 1052 state or in Restart, and all other processors in the complex are deactivated. User exits, which determine processor state and verify the resource owner, are provided. These user exits must be modified for any non-IBM *vanilla* implementations.

The RESTORE command can be issued in any system state by enabling the Any State Restore (ASRESTO) property option and permission. For more information, refer to “ZUTIM DEFine PROp-EST|REE|SPL|RES|INC|CLI” on page 98.

The Restore operation does not begin if any specified target is online to a host. The ONLDEV option/permission is provided to allow you to bypass this restriction. This option must be defined for the Restore operation and TimeFinder group using “ZUTIM DEFine PROp-EST|REE|SPL|RES|INC|CLI” on page 98.

**CAUTION**

TimeFinder groups that contain source devices that comprise of real time production z/TPF volumes should never be restored above 1052 state. This also applies to operational system database TimeFinder groups (that is, the system on which the message is entered). Moreover, such TimeFinder groups should never be enabled for AnyStateRestore. It is extremely important that the production system and/or operational system database group always be RESTRICTED to restore in 1052 state or lower. If the properties for these groups are defined to permit AnyStateRestore, VFA delay file is not enabled in 1052 state. This is very important due to the ramifications of filing the TimeFinder control records during TimeFinder operation to a database that is being restored. Furthermore, the RESTORE and INCRESTORE Requirements and restrictions sections in the *TimeFinder Controls for z/TPF Product Guide* should always be adhered to when restoring the production system and/or operational database. Otherwise, results are unpredictable.

**CAUTION**

Restoring non-operational groups (that is, databases other than that which underlies the system on which the message is entered) can be restored from any system state. However, proper operational consideration should be given based on the goals sought. For example, if a test system group is being restored, it is advisable to deactivate that system before initiating the restore. Otherwise, results are unpredictable. TimeFinder cannot verify the status of such a system prior to restore.

- The clone target is put into a not ready state when it is attached to a clone source volume, so no host can access the clone target while it is attached.
- The data flow is from the clone target to the clone source. All data on the clone source devices is overwritten by data from the clone target.

**Format**

```
ZUTIM RESTORE GROup-cccccccc [SET-cccccccc]
[SDN-hhhhhhhh CNT-dddd]
```
TimeFinder Commands

Parameters

**GROup-cccccccc**  One to eight alphanumeric character BCV or clone group name.

**SET-cccccccc**  One to eight alphanumeric character TimeFinder Set name identifying a storage system containing BCV or clone pairs.

**SDN-hhhhhhhh**  One to eight hexadecimal digit starting storage device number.

**CNT-dddd**  One to four decimal digit count of devices.

Additional information

TimeFinder/Clone operation verification for the RESTORE command determines whether any clone targets were not previously paired with the relative clone source devices, any target clones are online, and a background split is in progress.

If any of these conditions exist, TimeFinder operation verification either halts the operation, prompts the operator to halt or continue with the operation, depending on the option and permission properties defined for the Restore operation and TimeFinder group.

If no operations device is available for one or more TimeFinder Sets in a TimeFinder group, operation verification notifies the operator and prompt the operator to halt or proceed with the operation.

Example

Example Information

The examples in this section display the following information:

- **Set Name**  The TimeFinder Set name.
- **CU Serial #**  The control unit serial number.
- **Opr SDA**  The TimeFinder operation symbolic device address.
- **Complete**  The number of clone pairs for which the TimeFinder operation is complete.
- **In Progress**  The number of clone pairs for which the TimeFinder operation is active.
- **Not Started**  The number of clone pairs for which the TimeFinder operation was not initiated.
- **Opr RC Summary**  The return code summary for all TimeFinder operations for this TimeFinder Set.
Example

Action  Restore TimeFinder group A64TOB64.
User     ZUTIM  RESTORE  GRO-A64TOB64
System

CSMP0097I 20.14.25 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0019P TimeFinder Group A64TOB64
UTIM0019I TimeFinder control record refresh started
CSMP0097I 20.14.26 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1043I Local CU 000192604124 discovered for Clone Group A64TOB64 Set BED2C4D
UTIM0024P TimeFinder Group A64TOB64
UTIM0024I TimeFinder control record refresh completed
CSMP0097I 20.14.26 CPU-A SS-BSS SSU-SSU0 IS-01
E1T70000I TimeFinder Operation Verification Started
E1T70001I TimeFinder Group Properties Verification Started
Options Permissions
None
E1T70003I TimeFinder Device State Verification Started
CSMP0097I 20.14.32 CPU-A SS-BSS SSU-SSU0 IS-01
E1T70004I TimeFinder Operation Verification Completed
CSMP0097I 20.14.32 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0213P TimeFinder Group A64TOB64
UTIM0213I QOS Controls started
CSMP0097I 20.14.32 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0214P TimeFinder Group A64TOB64
UTIM0214I QOS Controls completed
CSMP0097I 20.14.32 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1000I Clone Group A64TOB64 Set BED2C4D started issuing Restore
CSMP0097I 20.14.35 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1001I Clone Group A64TOB64 Set BED2C4D completed issuing Restore
CSMP0097I 20.14.40 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1031I Local TimeFinder Status Display
Clone Group: A64TOB64 Base Operation: Restore
Status: Monitor Active
Start Time: 06.14.25 Date: 01/19/16

<table>
<thead>
<tr>
<th>Set Name</th>
<th>CU Serial #</th>
<th>SDA</th>
<th>Complete</th>
<th>Progress</th>
<th>Started</th>
<th>Summary</th>
<th>Itrks</th>
<th>Pct</th>
</tr>
</thead>
<tbody>
<tr>
<td>BED2C4D</td>
<td>000192604124</td>
<td>4C20</td>
<td>0</td>
<td>32</td>
<td>0</td>
<td>00000</td>
<td>1435276</td>
<td>1</td>
</tr>
</tbody>
</table>

End of Display
ZUTIM SETpro EST|REE|SPL|RES|INC|CLI|TER|CRT|LIN|UNL|UPD

Use this command to define the operational properties for the specified group. You can change options and permissions associated with the specified operation and group. You can also set default options for the TimeFinder group and the Establish, Reestablish, Split, Restore, Increstore, Clip, Terminate, Create, Link, Unlink, and Update.

Requirements and restrictions

- To enter a TimeFinder command option in the functional entry, set the property permission (TYP-PER) for the option.
- The following CAUTION must be heeded if the Restore|Increstore option ASREsto is set ON for a TimeFinder group. This property setting determines whether the specified group is enabled for restore in any system state, or restricted to 1052 state or lower.

**Note:** “ZUTIM RESTORE” on page 162 and “ZUTIM INCRESTORE” on page 135 provide additional information.

**CAUTION**

TimeFinder groups that contain source devices that comprise of real time production z/TPF volumes should never be restored above 1052 state. This also applies to operational system database TimeFinder groups (i.e. The system on which the message is entered). More over, such TimeFinder groups should never be enabled for AnyStateRestore. It is extremely important that the production system and/or operational system database group always be RESTRICTED to restore in 1052 state or lower. If the properties for these groups are defined to permit AnyStateRestore, VFA delay file is not enabled in 1052 state. This is very important due to the ramifications of filing the TimeFinder control records during TimeFinder operation to a database that is being restored. Furthermore, the RESTORE and INCRESTORE Requirements and restrictions sections in the TimeFinder Controls for z/TPF Product Guide should always be adhered to when restoring the production system and/or operational database. Otherwise, results are unpredictable.

Format

ZUTIM SETpro EST|REE|SPL|RES|INC|CLI|TER|CRT|LIN|UNL|UPD
GROup-cccccccc TYPe-OPT|PER property list
Parameters

GROup-cccccccc  One to eight alphanumeric character TimeFinder group name.
EST  Establish properties.
REE  Reestablish properties.
SPL  Split properties.
RES  Restore properties.
INC  Ilncrestore properties.
CLI  Clip properties.
TER  Terminate properties.
CRT  Create properties.
LIN  Link properties.
UNL  Unlink properties.
UPD  Update properties
TYPe-OPT  Options for specified operation.
TYPe-PER  Permissions for specified operation.
property list  Property list identifying operation options and/or permissions.

EST: [NO]ONLDev
REE: [NO]SDDF, [NO]ONLDev
SPL: [NO]FORCE, [NO]URDY, [NO]ACRE
RES: [NO]ASREsto, [NO]ONLDev
INC: [NO]ASREsto(NO)ONLDev
CLI:  [NO]ONLDev
TER: [NO]UNLInk
CRT:  [NO]PREServe[NO]ACTIvate
LIN:  [NO]COPY [NO]RESTore [NO]ASREsto [NO]ONLDev [NO]UNLInk
     [NO]URDY
UNL:[NO]RESTore[NO]ASREsto
UPD:[NO]COPY[[NO]PREServe

Additional information

Defining one or more property options (TYP OPT) on or off automatically sets the permission for the property on or off as requested. Defining a property option on for a specific TimeFinder operation and group makes the option the default. Defining a property permission on for a specific TimeFinder operation and group enables entering the option in the functional entry.
Examples

Example 1

Action  Enable AnyStateRestore for remote Timefinder group R2TGTS.
User    ZUTIM SET RES GRO-R2TGTS TYP-OPT ASREST
System
CSMP0097I 14.40.16 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0027P TimeFinder Group R2TGTS
UTIM0027I Define complete
CSMP0097I 14.40.16 CPU-A SS-BSS SSU-SSU0 IS-01
E1TG0000I TimeFinder Restore Properties Display
Remote Clone Group - R2TGTS
Options
UNUSED: OFF UNUSED: OFF ASRESTORE: ON ONLDEV: OFF
Permissions
UNUSED: OFF UNUSED: OFF ASRESTORE: ON ONLDEV: OFF
End of Display

Example 2

Action  Restrict TimeFinder group TBA64B64 to restore in 1052 state only.
User    ZUTIM SET RES GRO-TBA64B64 TYP-OPT NOASRE
System
CSMP0097I 14.42.27 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0027P TimeFinder Group TBA64B64
UTIM0027I Define complete
CSMP0097I 14.42.27 CPU-A SS-BSS SSU-SSU0 IS-01
E1TG0000I TimeFinder Restore Properties Display
Local Clone Group - TBA64B64
Options
UNUSED: OFF UNUSED: OFF ASRESTORE: OFF ONLDEV: OFF
Permissions
UNUSED: OFF UNUSED: OFF ASRESTORE: OFF ONLDEV: OFF
End of Display

Example 3

Action  Enable permission for the URDY option to be entered in the functional entry for
the TimeFinder Split operation for TimeFinder group TBA64B64.
User    ZUTIM SET SPL GRO-TBA64B64 TYP-PER URDY
System
CSMP0097I 14.45.42 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0027P TimeFinder Group TBA64B64
UTIM0027I Define complete
CSMP0097I 14.45.42 CPU-A SS-BSS SSU-SSU0 IS-01
E1TG0000I TimeFinder Split Properties Display
Local Clone Group - TBA64B64
Options
FORCE: ON UNUSED: OFF UNUSED: OFF UNUSED: OFF
UNUSED: OFF URDY: OFF ACRE: OFF
Permissions
FORCE: ON UNUSED: OFF UNUSED: OFF UNUSED: OFF
UNUSED: OFF URDY: ON ACRE: OFF
End of Display
Example 4

Action  
Turn split After Clone Restore property option on for TimeFinder group TBA64B64.

User  
ZUTIM SET SPL GRO-TBA64B64 TYP-OPT ACRE

System  
CSMP0097I 14.49.02 CPU-A SS-BSS SSU-SSU0 IS-01  
UTIM0027P TimeFinder Group TBA64B64  
UTIM0027I Define complete  
CSMP0097I 14.49.02 CPU-A SS-BSS SSU-SSU0 IS-01  
E1TG0000I TimeFinder Split Properties Display  
Local Clone Group - TBA64B64  
Options  
FORCE: ON UNUSED: OFF UNUSED: OFF UNUSED: OFF  
UNUSED: OFF URDY: OFF ACRE: ON  
Permissions  
FORCE: ON UNUSED: OFF UNUSED: OFF UNUSED: OFF  
UNUSED: OFF URDY: ON ACRE: ON  
End of Display

Example 5

Action  
Turn instant activate property permission on for CRT command for TimeFinder group U9A21SVX.

User  
ZUTIM SET CRT GRO-U9A21SVX TYP-PER ACTI

System  
ACSM0097I 15.35.03 CPU-A SS-BSS SSU-SSU0 IS-01  
UTIM0027P TimeFinder Group U9A21SVX  
UTIM0027I Define complete  
CSMP0097I 15.35.03 CPU-A SS-BSS SSU-SSU0 IS-01  
E1TG0000I TimeFinder Create Properties Display  
Local SnapVX Group - U9A21SVX

-------------------------------------------------------------------
------  
Options  
PRESERVED: OFF ACTIVATE OFF  
Permissions  
PRESERVED: OFF ACTIVATE ON  
-------------------------------------------------------------------
------  
End of Display
ZUTIM SETpro GEN

Use this command to define general, operational properties for the specified group. You can:

- Define the TimeFinder Quality of Service level for the specified group
- Define the ASYNC property for groups that contain SRDF/A R2 TimeFinder source volumes
- Enable/disable CTLRCD refresh for all relevant TimeFinder commands
- Define Scheduler Timeout
- Enable/disable TimeFinder Persistent Monitor
- Enable/disable Operation Verification for all relevant TimeFinder commands
- Enable/disable Offline Module Access
- Enable/disable zDP
- Enable/disable zDP High Availability
- Set zDP cycle time
- Set SRP Reserved Capacity Warning Limit
- Set SRP Reserved Capacity Termination Limit
- Set SRP Reserved Capacity Limit
- Set preserved Snapshot limit
- Set maximum Snapshots
- Set Snapshot save policy
- Set Snapshot save time
- Set Snapshot termination policy
- Set Snapshot expiry time
- Set SRP Capacity Monitor Interval
- Set SRP Capacity Monitor Heartbeat

Requirements and restrictions

You can define only one general group property at a time.

The defined QoS value is set only if:

- Storage system is running Enginuity 5773 to 5876.
- ResourcePak for z/TPF is loaded.
- You have activated the QoS Controls for z/TPF user exit for TimeFinder.

Define the general property ASYNC for groups that contain SRDF/A R2 TimeFinder source volumes. Associating the ASYNC property with such a group ensures that the TimeFinder Split or Activate occurs only if:
• SRDF/A is active.
• The secondary storage system is consistent.
• The restore of the Apply session is complete on the secondary storage system.

TimeFinder software can only ensure a consistent Split of a TimeFinder group describing SRDF/A R2 TimeFinder source volumes when you define the general property ASYNC. In addition, configure the group through the primary storage system of the SRDF/A storage system pair by specifying the SRDF/A RDFGroup as the last RDFGroup in the multi-hop list on the ZUTIM CONfig ADD command.

When a TimeFinder Group is initially configured or if the TimeFinder Group configuration is changed, the value of the CTLRcd general property is over-ridden to force CTLRCD Refresh on the first operation on the TimeFinder Group after the configuration change has been accepted. CTLRCD Refresh must be enabled following any Enginuity, HYPERMAX OS, or hardware upgrade in order that the TimeFinder control records are refreshed with any changed information.

zDP cycle time (CYC), SRP Capacity Monitor Interval (SMI), and Snapshot Save Time (SST) cannot be modified when zDP is active for the TimeFinder Group.

Format

ZUTIM SETpro GEN Group-cccccccc [NO]ASYNC | [NO]CTRLRcd | [NO]PMONitor | [NO]OPSV | [NO]OMARef | [NO]ICDP | [NO]ICHA | [CYC-dddd] | [QOS-dd] | [STO-dd] | [INT-dd] | [DEL-dd] | [SRP-ddd] | [SRW-ddd] | [SRT-ddd] | [STP-STO|OLD|LEA] | [MAX-dddd] | [PSL-dddd] | [EXP-ddd] | [SSP-dd.dd] | [SMI-ddd] | [SMH-ddd] | [SST-hh.mm]

Parameters

Group-cccccccc One to eight alphanumeric character group name.
GEN General group properties.
[NO]ASYNC Specify that the group does not contain SRDF/A R2 TimeFinder source volumes.
[NO]CTRLRcd Enable or disable CTLRCD Refresh.
[NO]PMONitor Enable or disable TimeFinder Persistent Monitor. The persistent monitor is only initiated for the ESTablish and REEstablish commands.
[NO]OPSV Enable or disable Operation Verification.
[NO]OMARef Enable or disable Offline Module Access.
[NO]ICDP Enable or disable Continuous Data Protection.
[NO]ICHA Enable or disable zDP High Availability.
[CYC-dddd] Set the zDP cycle time. The default is 60 minutes.
QOS-dd Set the TimeFinder Quality of Service level to use for all pairs in the TimeFinder group.
STO-dd Set the scheduler timeout. Values are 1-99, in hours.
INT-dd Set the monitor interval. Values are 1-99, in hours.
You can define QoS while a TimeFinder operation is being monitored. If a group is in the process of being synchronized and the Monitor is active at the time you define the QoS value for that group, the Monitor initiates QoS Controls for z/TPF. The QoS Controls then set the QoS value for all TimeFinder device pairs in the group. If the TimeFinder Monitor is not active, the Scheduler initiates QoS Controls for z/TPF to set the QoS value for all TimeFinder device pairs in the group the next time a TimeFinder operation is started.

You can turn off the general property ASYNC to split a TimeFinder group describing SRDF/A R2 TimeFinder source, which either:

- TimeFinder Controls cannot verify to be consistent.
- You can verify to be consistent. (That means that you may want to split or activate a TimeFinder group for which SRDF/A was recently dropped or pend dropped.)
- Enabling the zDP general property sets all zDP related general property defaults.

Enabling the ICHA general property enables the zDP general property and sets all zDP related general property defaults.

When the SRP Reserved Capacity Limit is set for a TimeFinder Group, the SRP reserved capacity limit applies to all TimeFinder Groups in the Storage Resource Pool.

The maximum snapshots allowed per TimeFinder Group is 256. Therefore the sum of the maximum snapshots (MAX), preserved snapshot limit (PSL), and saved snapshots (SSP) cannot exceed 256.
Examples

Example 1

Action  Enable zDP High Availability for Timefinder SnapVX Group U9A21SVX.
User     ZUTIM SET GEN GRO-U9A21SVX ICHA
System
CSMP0097I 14.44.45 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0027P TimeFinder Group U9A21SVX
UTIM0027I Define complete
CSMP0097I 14.44.45 CPU-A SS-BSS SSU-SSU0 IS-01
E1TG0000I TimeFinder General Properties Display
Local SnapVX Group - U9A21SVX
-------------------------------------------------------------------------
Processing Delay Timer: 3 Scheduler Timeout: 1 Persistent Monitor: OFF
Monitor Interval Timer: 1 CTLRCD Refresh: ON Ops Verification: ON
SRDF/A: OFF QOS: 0 is set OMA Refresh: OFF
iCDP Mode: ON
-------------------------------------------------------------------------
iCDP HA: ON Max Snapshots: 256 Max Preserved: 256
Termination Policy: Stop Cycle Time: 1440 Expiry: 1 days
Save Policy Frequency: 1 Save Policy Copies To Keep: 4
SRP Reserved Capacity Limit: 20
SRP Reserved Capacity Warning Limit: 80
SRP Reserved Capacity Termination Limit: 90
-------------------------------------------------------------------------
End of Display

Example 2

Action  Disable zDP High Availability for Timefinder SnapVX Group U9A21SVX.
User     ZUTIM SET GEN GRO-U9A21SVX NOICHA
System
CSMP0097I 14.46.17 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0027P TimeFinder Group U9A21SVX
UTIM0027I Define complete
CSMP0097I 14.46.17 CPU-A SS-BSS SSU-SSU0 IS-01
E1TG0000I TimeFinder General Properties Display
Local SnapVX Group - U9A21SVX
-------------------------------------------------------------------------
Processing Delay Timer: 3 Scheduler Timeout: 1 Persistent Monitor: OFF
Monitor Interval Timer: 1 CTLRCD Refresh: ON Ops Verification: ON
SRDF/A: OFF QOS: 0 is set OMA Refresh: OFF
iCDP Mode: ON
-------------------------------------------------------------------------
iCDP HA: OFF Max Snapshots: 256 Max Preserved: 256
Termination Policy: Stop Cycle Time: 1440 Expiry: 1 days
Save Policy Frequency: 1 Save Policy Copies To Keep: 4
SRP Reserved Capacity Limit: 20
SRP Reserved Capacity Warning Limit: 80
SRP Reserved Capacity Termination Limit: 90
-------------------------------------------------------------------------
End of Display
Example 3

**Action**  
Disable zDP for Timefinder SnapVX Group U9A21SVX.

**User**  
ZUTIM SET GEN GRO-U9A21SVX NOICDP

**System**

```
CSMP0097I 14.48.12 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0027P TimeFinder Group U9A21SVX
UTIM0027I Define complete
CSMP0097I 14.48.12 CPU-A SS-BSS SSU-SSU0 IS-01
E1TG0000I TimeFinder General Properties Display
    Local SnapVX Group - U9A21SVX
    -----------------------------
    Processing Delay Timer:  3 Scheduler Timeout:  1 Persistent Monitor: OFF
    Monitor Interval Timer:  1 CTRLCD Refresh: ON    Ops Verification: ON
    SRDF/A: OFF              QOS:  0 is set        OMA Refresh: OFF
    iCDP Mode: OFF
    -----------------------------

End of Display
```
ZUTIM SPLit

Use this command to split the clone target from the clone source.

The SPLit command stops the clone process for the clone pair. After the device pair is split, the changed tracks for both devices are logged. The clone target is left in a user not ready state to the host.

You can issue the SPLit command for the entire TimeFinder group, for an entire Set in the TimeFinder group, or for one device or a range of devices in one or all Sets in the TimeFinder group.

**Note:** If the SPLit is issued on a single SDA or range of SDAs, the relevant items in the TimeFinder group are validated for the logical CU designated by the operation SDA. TimeFinder Split by range or single device would normally only be issued to assist in managing the traditional complex-wide operation.

Requirements and restrictions

- Before issuing the SPLit command to the complete complex, any symbolic module number and DBI associated with the source devices in the TimeFinder group being operated on are refreshed.
- The clone pairs must be fully synchronized before issuing the SPLit command. To Split a partially synchronized clone pair, the Split functional entry with the Force option may be issued. The Force permission property must be set on to issue the Force option in the functional entry.
- EMC provides a user exit that disallows a split while module copy is active. You must modify this user exit for any non-standard IBM module copy. To Split while a module copy is active, issue the Split with the Force option.

**CAUTION**

If both the MCPY TO and FROM module are not in the TimeFinder Group, issuing a Split to all devices in a TimeFinder group while module copy is active may compromise the database integrity of the TimeFinder group.

- Any desired Split property options and permissions must be defined for proper operation of the ZUTIM SPLit command. To enter one or more of the SPLit options in the functional entry, the permission property for the option must be defined.

**Note:** “ZUTIM DEFine PROp-EST|REE|SPL|RES|INC|CLI” on page 98 provides more information.

- The general property ASYNC should be defined for TimeFinder groups describing SRDF/A R2 TimeFinder source volumes to ensure that the TimeFinder split only occurs when the following three conditions are met:
  - SRDF/A is active
  - The secondary storage system is consistent
  - The restore of the Apply session is complete on the secondary storage system
TimeFinder software can only ensure a consistent Split of a TimeFinder group describing SRDF/A R2 TimeFinder source volumes when the general property ASYNC is defined.

- The split leaves the TimeFinder target in “user-not-ready” state. Following the split, the target is not immediately accessible by the host. To make the TimeFinder target ready for the host, take one of the following steps:
  - Define the URDY option/permission for the SPLit command of the TimeFinder group
  - Issue the CLIp command

Note: “ZUTIM ACTivate” on page 60 provides additional information.

Format

ZUTIM SPLit GROup-cccccccc [SET-cccccccc] [SDN-hhhhhhhh] [CNT-dddd] [FORCe] [URDY]

Parameters

- **GROup-cccccccc**: One to eight alphanumeric character TimeFinder group name.
- **SET-cccccccc**: One to eight alphanumeric character TimeFinder Set name identifying a storage system containing TimeFinder device pairs.
- **SDN-hhhhhhhh**: One to eight hexadecimal digit starting storage device number.
- **CNT-dddd**: One to four decimal digit count of devices.
- **FORCe**: Allows a Split of partially synchronized clone pair(s) and bypasses checking for active module copy. For TF/Clone the Force option sets the point in time but allows synchronization to complete. This allows the user the ability to Clip the TF/Clone group to make all data available to the host prior to synchronization being complete. Host accesses to data not yet copied is indirect and causes the data to be copied to the clone target. Use of the Force option precludes effect of the URDY option.
- **URDY**: Leave TimeFinder target user ready on completion of split. The URDY option is ignored if the Force option is also specified.

Additional information

- Splitting one or more clone pairs with the Force option leaves the target in a user not ready state even if the URDY option is also specified. This enforces the procedure to emphasize to the user that host I/O to tracks not yet copied to the clone target are indirect. This ensures that you have the opportunity to clip the clone target with a new volser prefix.
TimeFinder operation verification for the SPLit command determines if synchronization is still in progress. If this condition exists, TimeFinder operation verification either halts the operation, prompts the operator to halt or proceed with the operation, depending on the Force option and permission properties defined for the Establish operation and the TimeFinder group.

If no operations device is available for one or more TimeFinder Sets in a TimeFinder group, operation verification notifies the operator and prompts the operator to halt or proceed with the operation.

Example Information

The examples in this section display the following information:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set Name</td>
<td>The TimeFinder Set name.</td>
</tr>
<tr>
<td>CU Serial #</td>
<td>The control unit serial number.</td>
</tr>
<tr>
<td>Opr SDA</td>
<td>The TimeFinder operation symbolic device address.</td>
</tr>
<tr>
<td>Complete</td>
<td>The number of clone pairs for which the TimeFinder operation is complete.</td>
</tr>
<tr>
<td>In Progress</td>
<td>The number of clone pairs for which the TimeFinder operation is active.</td>
</tr>
<tr>
<td>Not Started</td>
<td>The number of clone pairs for which the TimeFinder operation was not initiated.</td>
</tr>
<tr>
<td>Opr RC Summary</td>
<td>The return code summary for all TimeFinder operations for this TimeFinder Set.</td>
</tr>
</tbody>
</table>

Examples

Example 1

**Action**

Split all clone pairs in local TimeFinder group GROUP2.

**User**

ZUTIM SPL GRO-ZTPFCOPY

**System**

CSMP0097I 16.59.40 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0019P TimeFinder Group ZTPFCOPY
UTIM0019I TimeFinder control record refresh started
CSMP0097I 16.59.41 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1043I Local CU 000195700080 discovered for Clone Group ZTPFCOPY Set 3B003C40
UTIM1043I Local CU 000195700080 discovered for Clone Group ZTPFCOPY Set 3B603C60
UTIM0024P TimeFinder Group ZTPFCOPY
UTIM0024I TimeFinder control record refresh completed
CSMP0097I 16.59.41 CPU-A SS-BSS SSU-SSU0 IS-01
E1T70000I TimeFinder Operation Verification Started
E1T70001I TimeFinder Properties Verification Started
Options Permissions
None
E1T70003I TimeFinder Device State Verification Started
CSMP0097I 16.59.46 CPU-A SS-BSS SSU-SSU0 IS-01
E1T70004I TimeFinder Operation Verification Completed
CSMP0097I 16.59.47 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1000I Clone Group ZTPFCOPY Set 3B603C60 started issuing Split
CSMP0097I 16.59.48 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1000I Clone Group ZTPFCOPY Set 3B003C40 started issuing Split
CSMP0097I 16.59.48 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1000I Clone Group ZTPFCOPY Set 3B003C40 completed issuing Split
CSMP0097I 16.59.48 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1000I Clone Group ZTPFCOPY Set 3B603C60 completed issuing Split
Example 2

**Action**
Split 4 Clone pairs in TimeFinder Set 1000212 of local TimeFinder group GROUP3 beginning with storage device number x'C'. The URDY permission property is not on for the Split operation and TimeFinder group GROUP3.

**User**
ZUTIM SPL GRO-GROUP3 SET-1000212 SDN-C CNT-4 URDY

**System**
ZUTIM SPL GRO-GROUP3 SET-1000212 SDN-C CNT-4 URDY
CSMP0097I 23.48.25 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0019I TimeFinder control record refresh started
CSMP0097I 23.48.25 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1043I Local CU 000185400212 discovered for Clone Group GROUP3 Set 1000212
CSMP0097I 23.48.28 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0024I TimeFinder control record refresh completed
CSMP0097I 23.48.28 CPU-A SS-BSS SSU-SSU0 IS-01
E1T70000I TimeFinder Operation Verification Started
E1T70001I TimeFinder Group Properties Verification Started
Options Permissions
URDY OFF
UTIM0104T Operation Verification Failed - Operation not started

Example 3

**Action**
Split all Clone pairs in local TimeFinder group GROUP2. 19 Clone pairs in TimeFinder Set 4005047 are in process of synchronizing.

**User**
ZUTIM SPL GRO-GROUP3

**System**
ZUTIM SPL GRO-GROUP2
CSMP0097I 00.13.10 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0019I TimeFinder control record refresh started
CSMP0097I 00.13.10 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1043I Local CU 000185400212 discovered for Clone Group GROUP2 Set 1000212
CSMP0097I 00.13.10 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1043I Local CU 0001854005047 discovered for Clone Group GROUP2 Set 4005047
CSMP0097I 00.13.14 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0024I TimeFinder control record refresh completed
CSMP0097I 00.13.14 CPU-A SS-BSS SSU-SSU0 IS-01
E1T70000I TimeFinder Operation Verification Started
E1T70001I TimeFinder Group Properties Verification Started
Options Permissions
None
E1T70003I TimeFinder Device State Verification Started
CSMP0097I 00.13.14 CPU-A SS-BSS SSU-SSU0 IS-01
TimeFinder exceptions - Group GROUP2 Set 4005047: Pairs synchronizing = 19
CSMP0097I 00.13.14 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0104T Operation Verification Failed - Operation not started
Example 4

**Action**  
Split all Clone pairs in TimeFinder group SRDFA. TimeFinder group SRDFA describes SRDF/A R2 Source, and the general property ASYNC has been defined. Using SRDF Controls for TPF, a partial synchronization was started to the R2s. SRDF/A is not active.

**User**  
ZUTIM SPL GRO-SRDFA

**System**

CSMP0097I 01.33.44 CPU-B SS-BSS SSU-SSU0 IS-01  
UTIM0019I TimeFinder control record refresh started  
CSMP0097I 01.33.44 CPU-B SS-BSS SSU-SSU0 IS-01  
UTIM1043I Remote CU 000000006207 discovered for Clone Group SRDFA Set 3AE0  
CSMP0097I 01.33.46 CPU-B SS-BSS SSU-SSU0 IS-01  
UTIM0024I TimeFinder control record refresh completed  
CSMP0097I 01.33.46 CPU-B SS-BSS SSU-SSU0 IS-01  
E1T70000I TimeFinder Operation Verification Started  
E1T70001I TimeFinder Group Properties Verification Started  
<table>
<thead>
<tr>
<th>Options</th>
<th>Permissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRDF/A</td>
<td>ON</td>
</tr>
</tbody>
</table>
| E1T700003I TimeFinder Device State Verification Started  
CSMP0097I 01.33.46 CPU-B SS-BSS SSU-SSU0 IS-01  
TimeFinder exceptions - Group SRDFA Set 3AE0: SRDF/A is not active  
CSMP0097I 01.33.46 CPU-B SS-BSS SSU-SSU0 IS-01  
UTIM1043T Operation Verification Failed - Operation not started

Example 5

**Action**  
Split all Clone pairs in TimeFinder group SRDFA. TimeFinder group SRDFA describes SRDF/A R2 STDs, and the general property ASYNC has been defined. Using SRDF Controls for z/TPF, a partial synchronization was started to the R2s, and SRDF/A has been activated. The R2s are not yet fully synchronized, and the SRDF/A secondary is inconsistent.

**User**  
ZUTIM SPL GRO-SRDFA

**System**

CSMP0097I 01.34.22 CPU-B SS-BSS SSU-SSU0 IS-01  
UTIM0019I TimeFinder control record refresh started  
CSMP0097I 01.34.22 CPU-B SS-BSS SSU-SSU0 IS-01  
UTIM1043I Remote CU 000000006207 discovered for BCV Group SRDFA Set 3AE0  
CSMP0097I 01.34.24 CPU-B SS-BSS SSU-SSU0 IS-01  
UTIM0024I TimeFinder control record refresh completed  
CSMP0097I 01.34.24 CPU-B SS-BSS SSU-SSU0 IS-01  
E1T700001I TimeFinder Operation Verification Started  
E1T700001I TimeFinder Group Properties Verification Started  
<table>
<thead>
<tr>
<th>Options</th>
<th>Permissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRDF/A</td>
<td>ON</td>
</tr>
</tbody>
</table>
| E1T700003I TimeFinder Device State Verification Started  
CSMP0097I 01.34.24 CPU-B SS-BSS SSU-SSU0 IS-01  
TimeFinder exceptions - Group SRDFA Set 3AE0: SRDF/A Sec. inconsistent  
CSMP0097I 01.34.24 CPU-B SS-BSS SSU-SSU0 IS-01  
UTIM1043T Operation Verification Failed - Operation not started
ZUTIM TERminate

Use this command to terminate the clone session associated with clone pair, or discard a created or activated Snapshot.

You can issue the TERminate command for the entire TimeFinder group, for an entire Set in the TimeFinder group, or for one device or a range of devices in one or all Sets in the TimeFinder group.

Requirements and restrictions

- The TERminate command removes the ability to reestablish clone pair. If you terminate a clone session for a clone pair, the next synchronization operation must be a full establish.

- Terminating the session for a clone pair precludes the ability to restore the source from the clone target. A clone session must exist in order to do a restore or incremental restore from a clone target to the source. If no clone sessions exist for the pairs in a clone group, you can configure a new clone group with source and target pairs reversed to enable an establish of the pairs.

- You can terminate Clone session information by TimeFinder Source and/or Target device by specifying the relevant TimeFinder Clone Session ID if Session Controls for z/TPF is installed. To terminate a Snapshot, target devices cannot be linked to the Snapshot unless the user specifies the UNLInk parameter. Specifying the UNLInk parameter results in targets of the Snapshot being unlinked and the Snapshot terminated.

**IMPORTANT**

When using Session Controls for z/TPF to terminate TimeFinder Clone sessions for device pairs not configured in the TimeFinder Clone group you are operating on, you should understand the state of the TimeFinder group and device pairs being impacted by the termination.

Operations verification is always done relative to the device pairs in the TimeFinder Clone group within which you are performing the operation. Since the terminate command using Session Controls for z/TPF can impact other TimeFinder Clone groups, it is important that you understand how the terminate impacts the state of other TimeFinder Clone groups and device pairs.

Format

```
ZUTIM TERminate GROup-cccccccc [SET-cccccccc] [SDN-hhhhhhhh]
[CNT-dddd] [SES=hhhh|TAG=hhhhhhhh] [VER-dddd] [UNLInk]
```
Parameters

GROup-cccccccc  One to eight alphanumeric character TimeFinder group name.

SET-cccccccc  One to eight alphanumeric character TimeFinder Set name identifying a storage system containing clone pairs.

SDN-hhhhhhhh  One to eight hexadecimal digit starting storage device number.

CNT-dddd  One to four decimal digit count of devices.

SES=hhhh  TimeFinder Clone session ID on the TimeFinder source or target device that is intended to be terminated.

SID=hhhh  TimeFinder snapshot session ID tag on the TimeFinder source or target device that is intended to be terminated.

VER-dddd  One to 4 decimal digit Snapshot version number.

UNLInk  Unlink Snapshot from target devices before terminate. Permission must be defined for the terminate operation for the Group.

Additional Information

TimeFinder operation verification for the TERminate command verifies that:

- The SnapVX or Clone feature is licensed.
- The snapshot name matches an existing snapshot name.
- The target device is not linked to the Snapshot.
- If UNLInk, verify the target or source device is LINKed to the Snapshot.

If any of these conditions are not met, the TimeFinder operation verification halts the operation. Depending on the option and permission properties defined for the UNLInk operation and the TimeFinder group, the operator is prompted to halt or proceed with the operation.

If no operations device or pre-defined gatekeeper device is available for one or more TimeFinder Sets in a TimeFinder group, operation verification notifies the operator and prompts to halt or proceed with the operation.

Examples

The examples in this section display the following information:

Set Name  The TimeFinder Set name.
CU Serial #  The control unit serial number.
Opr SDA  The TimeFinder operation symbolic device address.
Complete  The number of TimeFinder pairs for which the TimeFinder operation is complete.
In Progress  The number of TimeFinder pairs for which the TimeFinder operation is active.
Not Started  The number of TimeFinder pairs for which the TimeFinder operation was not initiated.
Opr RC Summary  The return code summary for all TimeFinder operations for this TimeFinder Set.
Example 1

**Action**
Terminate linked SnapVX group A64B64SX version 1. The snapshot is linked to the target. Permission to unlink before terminate must be set for the TER command for SnapVX group A64B64SX before issuing the UPD command. Display all created version of SnapVX group A64B64SX. Display a set in the group after the update completes.

**User**
ZUTIM SET TER GRO-A64B64SX TYP-PER UNLI

**System**
UTIM0027P TimeFinder Group A64B64SX
UTIM0027I Define complete
E1TG0000I TimeFinder Terminate Properties Display
  Local SnapVX Group - A64B64SX
-------------------------------------------------------------------------
Options
UNUSED: OFF  UNUSED: OFF  UNUSED: OFF  UNUSED: OFF
UNLINK: OFF
Permissions
UNUSED: OFF  UNUSED: OFF  UNUSED: OFF  UNUSED: OFF
UNLINK: ON
-------------------------------------------------------------------------
End of Display

**User**
ZUTIM TER GRO-A64B64SX UNLI VER-1

**System**
UTIM0019P TimeFinder Group A64B64SX
UTIM0019I TimeFinder control record refresh started
UTIM1043I Local CU 000196701170 discovered for SnapVX Group A64B64SX Set UYF1
UTIM1043I Local CU 000196801233 discovered for SnapVX Group A64B64SX Set UZC1
UTIM0024P TimeFinder Group A64B64SX
UTIM0024I TimeFinder control record refresh completed
E1T70000I TimeFinder Operation Verification Started
E1T70001I TimeFinder Group Properties Verification Started
Options
  Permissions
    UNLINK
    ON
E1T70003I TimeFinder Device State Verification Started
TF SnapVX Group A64B64SX Set UYF1: Snapshot on src with linked tgt = 32
TF SnapVX Group A64B64SX Set UZC1: Snapshot on src with linked tgt = 32
E1U90001I Review TimeFinder exceptions above for Group A64B64SX Terminate:
  To proceed, enter: ZUTIM PROceed GROup-A64B64SX
  To halt, enter: ZUTIM HALt GROup-A64B64SX

**User**
ZUTIM PRO GRO-A64B64SX

**System**
E1T70004I TimeFinder Operation Verification Completed
UTIM1000I SnapVX Group A64B64SX Set UYF1 started issuing Terminate
UTIM1000I SnapVX Group A64B64SX Set UZC1 started issuing Terminate
UTIM1001I SnapVX Group A64B64SX Set UYF1 completed issuing Terminate
UTIM1001I SnapVX Group A64B64SX Set UZC1 completed issuing Terminate
UTIM1031I Local TimeFinder Status Display
SnapVX Group: A64B64SX Base Operation: Terminate
Status: Monitor Active
Start Time : 02.52.30 Date : 11/27/15

<table>
<thead>
<tr>
<th>Operation Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opr</td>
</tr>
<tr>
<td>------</td>
</tr>
<tr>
<td>Set Name</td>
</tr>
<tr>
<td>UYF1</td>
</tr>
<tr>
<td>UZC1</td>
</tr>
</tbody>
</table>
End of Display
UTIM1033I Local SnapVX Group A64B64SX Terminate complete

User  ZUTIM DIS GRO-A64B64SX STA-VER
System
CSMP0097I 16.53.19 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1031I Local TimeFinder Status Display
SnapVX Group: A64B64SX Base Operation: Terminate

----------------------------------------------------------------------------
Snapshot Name: A64B64SX Ver: 0 ID: ADAD0001 Pre: N Act: Y Linked: N
Image Creation Time: 02.10.08 Date: 11/27/15
Image Expiration Time: 02.10.07 Date: 11/28/15
End of Display

User  ZUTIM DIS GRO-A64B64SX SET-UZC1 VER-1
System
CSMP0097I 16.53.10 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1042I TF status for Local CU 000196801233
SnapVX Group: A64B64SX Set: UZC1 Base operation: Terminate

MDBF SYMB Snapshot TGT Tracks Opr
SSN MOD SDA SRC DEV# TGT MOD# ID Act Lin Def NR To Cpy Pct RC
B64 0110 4300 0000193 000029B 00000000 N N N 0 0 0000
B64 0111 4301 0000194 000029C 00000000 N N N 0 0 0000
B64 0112 4302 0000195 000029D 00000000 N N N 0 0 0000
B64 0113 4303 0000196 000029E 00000000 N N N 0 0 0000

********************************************************************************
B64 012D 431D 00000000N X E AVAIL AVAIL 00000000N N N N 0 0 0000
B64 012E 431E 00000000N X E AVAIL AVAIL 00000000N N N N 0 0 0000
B64 012F 431F 00000000N X E AVAIL AVAIL 00000000N N N N 0 0 0000
End of Display

Example 2

Action Display clone session information for device pairs in TimeFinder group A64TOB64 set BED2C4D.
User  ZUTIM DIS GRO-A64TOB64 SET-BED2C4D TYP-SES
System
CSMP0097I 10.57.43 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1042I TF status for Local CU 00019260124
Clone Group: A64TOB64 Set: BED2C4D Base operation: Split

MDBF SYMB SRC TGT TGT SRC Pair Sess Source Target
SSN MOD SDA DEV# DEV# State NR State State ID Sess Tag Sess Tag
A64 0100 4C00 00000BED 00000C4D SYNCD X AVAIL AVAIL 25FD F20104FC F30104FC
A64 0101 4C01 00000BEE 00000C4E SYNCD X AVAIL AVAIL 25FD F20104FC F30104FC
A64 0102 4C02 00000BEP 00000C4F SYNCD X AVAIL AVAIL 25FD F20104FC F30104FC

********************************************************************************
A64 013D 4C1D 000000CA0 000000C6A SYNCD X AVAIL AVAIL 25FD F20104FC F30104FC
A64 013E 4C1E 000000CB0 000000C6B SYNCD X AVAIL AVAIL 25FD F20104FC F30104FC
A64 013F 4C1F 000000C00 000000C6C SYNCD X AVAIL AVAIL 25FD F20104FC F30104FC
End of Display
**TimeFinder Commands**

**Action**
Terminate clone sessions for TimeFinder group A64TOB64.

**User**
ZUTIM T ER GRO-A64TOB64

**System**

CSMP0097I 11.12.14 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0019P TimeFinder Group A64TOB64
UTIM0019I TimeFinder control record refresh started
CSMP0097I 11.12.15 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1043I Local CU 000192604124 discovered for Clone Group A64TOB64 Set BED2C4D
UTIM0024P TimeFinder Group A64TOB64
UTIM0024I TimeFinder control record refresh completed
CSMP0097I 11.12.15 CPU-A SS-BSS SSU-SSU0 IS-01
E1T70000I TimeFinder Operation Verification Started
E1T70000I TimeFinder Operation Verification Completed
Options
Permissions
None
E1T70003I TimeFinder Device State Verification Started
CSMP0097I 11.12.20 CPU-A SS-BSS SSU-SSU0 IS-01
E1T70004I TimeFinder Operation Verification Completed
CSMP0097I 11.12.20 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1000I Clone Group A64TOB64 Set BED2C4D started issuing Terminate
CSMP0097I 11.12.20 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1001I Clone Group A64TOB64 Set BED2C4D completed issuing Terminate
CSMP0097I 11.12.25 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1031I Local TimeFinder Status Display
Clone Group: A64TOB64 Base Operation: Terminate
Status: Monitor Active
Start Time: 21.12.14 Date: 01/19/16

---

**Action**
Display clone session information for device pairs in TimeFinder group A64TOB64 set BED2C4D.

**User**
ZUTIM DIS GRO-A64TOB64 SET-BED2C4D TYP-SES

**System**

CSMP0097I 10.57.43 CPU-A SS-BSS SSU-SSU0 IS-01
CSMP0097I 11.13.32 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1042I TF status for Local CU 000192604124
Clone Group: A64TOB64 Set: BED2C4D Base operation: Terminate
MDBF SYMB SRC TGT TGT TGT SRC Pair Sess Source Target
SSN MOD SDA DEV# DEV# State NR State State ID Sess Tag Sess Tag
A64 0100 4C00 00000BED 00000C4D N/A X AVAIL AVAIL 0000 00000000 00000000
A64 0101 4C01 00000BEE 00000C4E N/A X AVAIL AVAIL 0000 00000000 00000000
A64 0102 4C02 00000BFF 00000C4F N/A X AVAIL AVAIL 0000 00000000 00000000

---

A64 013D 4C1D 00000C0A 00000C6A N/A X AVAIL AVAIL 0000 00000000 00000000
A64 013E 4C1E 00000C0B 00000C6B N/A X AVAIL AVAIL 0000 00000000 00000000
A64 013F 4C1F 00000C0C 00000C6C N/A X AVAIL AVAIL 0000 00000000 00000000

End of Display
ZUTIM UPDate

Use this command to modify the snapshot expiration time for an active Snapshot or to change the copy mode for a linked snapshot.

You can issue the UPDate command for:

- The entire TimeFinder group
- An entire Set in the TimeFinder group
- One device or a range of devices in one or all Sets in the TimeFinder group

Requirements and restrictions

- When general property CTLRCD is ON, a control record refresh is initiated internally prior to issuing the UPDate command. The symbolic module number and DBI associated with the source devices in the TimeFinder group being operated are not rediscovered.
- The expiration time specified in the EXP-ddd parameter is applied relative to the time the functional entry is issued.
- Only one of the parameters EXP-ddd, [NO]COPY, or [NO]PREServe may be specified in the functional entry.

Format

ZUTIM UPDate GROup-cccccccc [SET-cccccccc] [SDN-hhhhhhhh] [CNT-dddd] [VER-dddd] [EXP-ddd] [[NO]COPY] [[NO]PREServe]

Parameters

- **GROup-cccccccc**: One to eight alphanumeric character TimeFinder group name.
- **SET-cccccccc**: One to eight alphanumeric character TimeFinder Set name.
- **SDN-hhhhhhhh**: One to eight hexadecimal digit starting source storage device number.
- **CNT-dddd**: One to four decimal digit count of source devices.
- **VER-dddd**: One to 4 decimal digit Snapshot version number.
- **EXPIration-ddd**: One to three decimal digit number of days until the Snapshot expires and is automatically terminated.
- **[NO]COPY**: Copy mode. Permission must be defined for the UPDate operation for the Group.
- **[NO]PREServe**: Preserve/Don't preserve snapshot. Permission must be defined for the UPDate operation for the group.
Additional information

TimeFinder operation verification for the UPDate command verifies that:
- The SnapVX feature is licensed.
- The Snapshot name matches an existing snapshot name.
- If COPY, validate Snapshot is linked (to target). Validate SRP allocated capacity will not be exceeded.
- If EXP-ddd, validate Snapshot is active

If any of these conditions is not met, TimeFinder operation verification halts the operation or prompts the operator to halt or proceed with the operation, depending on the option and permission properties defined for the UPDate operation and the TimeFinder group.

If no operations device or pre-defined gatekeeper device is available for one or more TimeFinder Sets in a TimeFinder group, operation verification notifies the operator and prompts the operator to halt or proceed with the operation.

Example

Action Update linked SnapVX group A64B64SX version 1 to copy mode. Copy permission must be set for the UPD command for SnapVX group A64B64SX before issuing the UPD command. Display a set in the group after the update completes.

User ZUTIM UPD GRO-A64B64SX COPY VER-1

System

UTIM0019P TimeFinder Group A64B64SX
UTIM0019I TimeFinder control record refresh started
UTIM1043I Local CU 000196701170 discovered for SnapVX Group A64B64SX Set UYF1
UTIM1043I Local CU 000196801233 discovered for SnapVX Group A64B64SX Set UZC1
UTIM0024P TimeFinder Group A64B64SX
UTIM0024I TimeFinder control record refresh completed
E1T7000I TimeFinder Operation Verification Started
E1T70001I TimeFinder Group Properties Verification Started
Options Permissions
COPY ON
E1T70003I TimeFinder Device State Verification Started
E1T70004I TimeFinder Operation Verification Completed
UTIM1000I SnapVX Group A64B64SX Set UYF1 started issuing Update
UTIM1000I SnapVX Group A64B64SX Set UZC1 started issuing Update
UTIM1001I SnapVX Group A64B64SX Set UYF1 completed issuing Update
UTIM1001I SnapVX Group A64B64SX Set UZC1 completed issuing Update
UTIM1031I Local TimeFinder Status Display
SnapVX Group: A64B64SX Base Operation: Update
Status: Monitor Active
Start Time: 01.58.34 Date: 11/27/15

<table>
<thead>
<tr>
<th>Set Name</th>
<th>CU Serial #</th>
<th>SDA</th>
<th>Complete</th>
<th>Progress</th>
<th>Started</th>
<th>Summary</th>
<th>Itrks</th>
<th>Pct</th>
</tr>
</thead>
<tbody>
<tr>
<td>UYF1</td>
<td>000196701170</td>
<td>4460</td>
<td></td>
<td>32</td>
<td>0</td>
<td>00000</td>
<td>788926</td>
<td>1</td>
</tr>
<tr>
<td>UZC1</td>
<td>000196801233</td>
<td>4300</td>
<td></td>
<td>32</td>
<td>0</td>
<td>00000</td>
<td>801344</td>
<td>1</td>
</tr>
</tbody>
</table>
End of Display
User ZUTIM DIS GRO-A64B64SX SET-UYF1 VER-1

System
CSMP0097I 15.59.00 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1042I TF status for Local CU 000196701170
SnapVX Group: A64B64SX Set: UYF1 Base operation: Update

<table>
<thead>
<tr>
<th>MDBF</th>
<th>SYMB</th>
<th>Snapshot</th>
<th>TGT</th>
<th>Tracks</th>
<th>Opr</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSN</td>
<td>MOD</td>
<td>SDA</td>
<td>SRC</td>
<td>DEV#</td>
<td>TGT</td>
</tr>
<tr>
<td>A64</td>
<td>0110</td>
<td>4440</td>
<td>000008BD</td>
<td>00000A5D</td>
<td>ADAD0002</td>
</tr>
<tr>
<td>A64</td>
<td>0111</td>
<td>4441</td>
<td>000008BE</td>
<td>00000A5E</td>
<td>ADAD0002</td>
</tr>
<tr>
<td>A64</td>
<td>0112</td>
<td>4442</td>
<td>000008BF</td>
<td>00000A5F</td>
<td>ADAD0002</td>
</tr>
<tr>
<td>A64</td>
<td>0113</td>
<td>4443</td>
<td>000008C0</td>
<td>00000A60</td>
<td>ADAD0002</td>
</tr>
<tr>
<td>A64</td>
<td>012D</td>
<td>445D</td>
<td>000008DA</td>
<td>00000A7A</td>
<td>ADAD0002</td>
</tr>
<tr>
<td>A64</td>
<td>012E</td>
<td>445E</td>
<td>000008DB</td>
<td>00000A7B</td>
<td>ADAD0002</td>
</tr>
<tr>
<td>A64</td>
<td>012F</td>
<td>445F</td>
<td>000008DC</td>
<td>00000A7C</td>
<td>ADAD0002</td>
</tr>
</tbody>
</table>

End of Display
TimeFinder Commands

ZUTIM UNLInk

Use this command to break the relationship between Snapshot and a LINked device.

You can issue the UNLInk command for:
- The entire TimeFinder group
- An entire Set in the TimeFinder group
- One device or a range of devices in one or all Sets in the TimeFinder group

Requirements and restrictions

- When general property CTLRCD is ON, a control record refresh occurs before issuing the UNLInk command. The symbolic module number and DBI associated with the source devices in the TimeFinder group being operated on are not rediscovered.
- After an UNLink, any copied tracks remain on the device. Depending on the copy mode, and the timing of the UNLink command, the target device may be in one of the following states:
  - If LINk with COPY was specified, and the copy completed, the data is “whole”.
  - If LINk with COPY was specified, and the copy was not completed, the state of the device is unpredictable.
  - If LINk without COPY was specified, the state of the device is indeterminate.
- If the target device for the LINk command was the original source device (which logically would simulate a restore, and requires the RESTORE parameter) then the UNLink command also requires the RESTORE parameter.

Format

```
ZUTIM UNLInk GROup-cccccccc [SET-cccccccc] [SDN-hhhhhhhh] [CNT-dddd] [VER-dddd] [RESTORE]
```

Parameters

- **GROup-cccccccc**: One to eight alphanumeric character TimeFinder group name.
- **SET-cccccccc**: One to eight alphanumeric character TimeFinder Set name.
- **SDN-hhhhhhhh**: One to eight hexadecimal digit starting source storage device number.
- **CNT-dddd**: One to four decimal digit count of source devices.
- **VER-dddd**: One to 4 decimal digit Snapshot version number. Maximum is 256.
- **RESTORE**: UNLInk Snapshot from the source device. Permission must be defined for the UNLInk operation for the Group.
Additional information

TimeFinder operation verification for the UNLLink command verifies that:

- The SnapVX feature is licensed.
- The snapshot name matches an existing snapshot name.
- The target device is linked to the Snapshot.
- If RESTORE, verify the source device is linked to the Snapshot.

If any of these conditions is not met, TimeFinder operation verification halts the operation or prompts the operator to halt or proceed with the operation, depending on the option and permission properties defined for the UNLLink operation and the TimeFinder group.

If no operations device or pre-defined gatekeeper device is available for one or more TimeFinder Sets in a TimeFinder group, operation verification notifies the operator and prompts the operator to halt or proceed with the operation.

Examples

Example 1

<table>
<thead>
<tr>
<th>Action</th>
<th>Unlink TimeFinder group TSVXZDP.</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>ZUTIM UNL GRO-TUYH1MH RESTORE</td>
</tr>
<tr>
<td>System</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ZUTIM UNL GRO-TSVXZDP VER-0</td>
</tr>
<tr>
<td></td>
<td>CSMP0097I 10.07.49 CPU-A SS-BSS  SSU-SSU0 IS-01</td>
</tr>
<tr>
<td></td>
<td>UTIM0019P TimeFinder Group TSVXZDP</td>
</tr>
<tr>
<td></td>
<td>UTIM0019I TimeFinder control record refresh started</td>
</tr>
<tr>
<td></td>
<td>CSMP0097I 10.07.55 CPU-A SS-BSS  SSU-SSU0 IS-01</td>
</tr>
<tr>
<td></td>
<td>UTIM1043I Local CU 000196801233 discovered for SnapVX Group TSVXZDP Set UZC1</td>
</tr>
<tr>
<td></td>
<td>UTIM1043I Local CU 000196701305 discovered for SnapVX Group TSVXZDP Set UYH1</td>
</tr>
<tr>
<td></td>
<td>UTIM0024P TimeFinder Group TSVXZDP</td>
</tr>
<tr>
<td></td>
<td>UTIM0024I TimeFinder control record refresh completed</td>
</tr>
<tr>
<td></td>
<td>CSMP0097I 10.07.55 CPU-A SS-BSS  SSU-SSU0 IS-01</td>
</tr>
<tr>
<td></td>
<td>E1T700000I TimeFinder Operation Verification Started</td>
</tr>
<tr>
<td></td>
<td>E1T70001I TimeFinder Group Properties Verification Started</td>
</tr>
<tr>
<td></td>
<td>Options Permissions</td>
</tr>
<tr>
<td></td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>E1T70003I TimeFinder Device State Verification Started</td>
</tr>
<tr>
<td></td>
<td>CSMP0097I 10.08.03 CPU-A SS-BSS  SSU-SSU0 IS-01</td>
</tr>
<tr>
<td></td>
<td>E1T70004I TimeFinder Operation Verification Completed</td>
</tr>
<tr>
<td></td>
<td>CSMP0097I 10.08.03 CPU-A SS-BSS  SSU-SSU0 IS-01</td>
</tr>
<tr>
<td></td>
<td>UTIM1000I SnapVX Group TSVXZDP Set UYH1 started issuing Unlink</td>
</tr>
<tr>
<td></td>
<td>CSMP0097I 10.08.03 CPU-A SS-BSS  SSU-SSU0 IS-01</td>
</tr>
<tr>
<td></td>
<td>UTIM1000I SnapVX Group TSVXZDP Set UZC1 started issuing Unlink</td>
</tr>
<tr>
<td></td>
<td>CSMP0097I 10.08.04 CPU-A SS-BSS  SSU-SSU0 IS-01</td>
</tr>
<tr>
<td></td>
<td>UTIM1001I SnapVX Group TSVXZDP Set UYH1 completed issuing Unlink</td>
</tr>
<tr>
<td></td>
<td>CSMP0097I 10.08.04 CPU-A SS-BSS  SSU-SSU0 IS-01</td>
</tr>
<tr>
<td></td>
<td>UTIM1001I SnapVX Group TSVXZDP Set UZC1 completed issuing Unlink</td>
</tr>
<tr>
<td></td>
<td>CSMP0097I 10.08.05 CPU-A SS-A64  SSU-SSU1 IS-01</td>
</tr>
<tr>
<td></td>
<td>CSMP0097I 10.08.09 CPU-A SS-BSS  SSU-SSU0 IS-01</td>
</tr>
<tr>
<td></td>
<td>UTIM1031I Local TimeFinder Status Display</td>
</tr>
<tr>
<td></td>
<td>SnapVX Group: TSVXZDP Base Operation: Unlink</td>
</tr>
<tr>
<td>Status:</td>
<td>Monitor Active</td>
</tr>
<tr>
<td>Start Time :</td>
<td>20.07.49 Date : 01/21/16</td>
</tr>
</tbody>
</table>

Operation Status

<table>
<thead>
<tr>
<th>Opr</th>
<th>In</th>
<th>Not</th>
<th>Opr RC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ZUTIM UNLLink 189
TimeFinder Commands

Example 2

**Action**  Unlink remote TimeFinder group TUYH1MH after link back to source (restore). Display a set in the group after the unlink completes.

**User**  ZUTIM UNL GRO-TUYH1MH RESTORE

**System**

CSMP0097I 15.10.17 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0019P TimeFinder Group TUYH1MH
UTIM0019I TimeFinder control record refresh started
CSMP0097I 15.10.23 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM01043I Remote CU 000196701170 discovered for SnapVX Group TUYH1MH Set UYF1
UTIM01043I Remote CU 000196701175 discovered for SnapVX Group TUYH1MH Set UYG1
UTIM0024P TimeFinder Group TUYH1MH
UTIM0024I TimeFinder control record refresh completed
CSMP0097I 15.10.23 CPU-A SS-BSS SSU-SSU0 IS-01
E1T70000I TimeFinder Operation Verification Started
E1T70001I TimeFinder Group Properties Verification Started
Options  Permissions
RESTORE ON
E1T70003I TimeFinder Device State Verification Started
CSMP0097I 15.10.33 CPU-A SS-BSS SSU-SSU0 IS-01
E1T70004I TimeFinder Operation Verification Completed
CSMP0097I 15.10.33 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM01000I SnapVX Group TUYH1MH Set UYF1 started issuing Unlink
CSMP0097I 15.10.33 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM01000I SnapVX Group TUYH1MH Set UYG1 started issuing Unlink
CSMP0097I 15.10.34 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM01001I SnapVX Group TUYH1MH Set UYF1 completed issuing Unlink
CSMP0097I 15.10.34 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM01001I SnapVX Group TUYH1MH Set UYG1 completed issuing Unlink
CSMP0097I 15.10.39 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0103I Remote TimeFinder Status Display
SnapVX Group: TUYH1MH Base Operation: Unlink
Status:  Monitor Active
Start Time : 01.10.17 Date : 01/22/16

**User**  ZUTIM DIS GRO-TUYH1MH SET-UYF1 VER-0

**System**

CSMP0097I 15.11.05 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM01042I TF status for Remote CU 000196701170
SnapVX Group: TUYH1MH Set: UYF1 Base operation: Unlink

---

**User**  ZUTIM UNL GRO-TUYH1MH RESTORE

**System**

CSMP0097I 15.10.17 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0019P TimeFinder Group TUYH1MH
UTIM0019I TimeFinder control record refresh started
CSMP0097I 15.10.23 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM01043I Remote CU 000196701170 discovered for SnapVX Group TUYH1MH Set UYF1
UTIM01043I Remote CU 000196701175 discovered for SnapVX Group TUYH1MH Set UYG1
UTIM0024P TimeFinder Group TUYH1MH
UTIM0024I TimeFinder control record refresh completed
CSMP0097I 15.10.23 CPU-A SS-BSS SSU-SSU0 IS-01
E1T70000I TimeFinder Operation Verification Started
E1T70001I TimeFinder Group Properties Verification Started
Options  Permissions
RESTORE ON
E1T70003I TimeFinder Device State Verification Started
CSMP0097I 15.10.33 CPU-A SS-BSS SSU-SSU0 IS-01
E1T70004I TimeFinder Operation Verification Completed
CSMP0097I 15.10.33 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM01000I SnapVX Group TUYH1MH Set UYF1 started issuing Unlink
CSMP0097I 15.10.33 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM01000I SnapVX Group TUYH1MH Set UYG1 started issuing Unlink
CSMP0097I 15.10.34 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM01001I SnapVX Group TUYH1MH Set UYF1 completed issuing Unlink
CSMP0097I 15.10.34 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM01001I SnapVX Group TUYH1MH Set UYG1 completed issuing Unlink
CSMP0097I 15.10.39 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0103I Remote TimeFinder Status Display
SnapVX Group: TUYH1MH Base Operation: Unlink
Status:  Monitor Active
Start Time : 01.10.17 Date : 01/22/16

**User**  ZUTIM DIS GRO-TUYH1MH SET-UYF1 VER-0

**System**

CSMP0097I 15.11.05 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM01042I TF status for Remote CU 000196701170
SnapVX Group: TUYH1MH Set: UYF1 Base operation: Unlink
N/A 0000 0000 000008C4 00000000 ADAD0001 Y N N 0 100 0000
N/A 0000 0000 000008C5 00000000 ADAD0001 Y N N 0 100 0000
N/A 0000 0000 000008C6 00000000 ADAD0001 Y N N 0 100 0000
N/A 0000 0000 000008C7 00000000 ADAD0001 Y N N 0 100 0000
N/A 0000 0000 000008C8 00000000 ADAD0001 Y N N 0 100 0000
N/A 0000 0000 000008C9 00000000 ADAD0001 Y N N 0 100 0000
N/A 0000 0000 000008CA 00000000 ADAD0001 Y N N 0 100 0000
N/A 0000 0000 000008CB 00000000 ADAD0001 Y N N 0 100 0000
N/A 0000 0000 000008CC 00000000 ADAD0001 Y N N 0 100 0000
End of Display
ZUTIM XCP

Use this command to start and stop z/TPF Exception Recording.

Requirements and restrictions

EMC provides user exits that enable an interface with IBM vanilla exception recording and keypoint capture. These user exits are based on standard IBM code and a z/TPF/MDBF single subsystem. As such, the shipped source should be modified accordingly for any non IBM standard or multiple MDBF subsystem implementations.

⚠️ CAUTION

Do not run TPF Real-time Capture and TimeFinder operations concurrently. Issue a ZFCAP CLEAR command for each MDBF system and active CPU before starting TimeFinder Exception Recording.

Format

ZUTIM XCP STArt|STOp

Parameters

STArt
Begin Exception Recording.

STOp
Terminate Exception Recording and initiate KPT capture.

Additional information

You can use IBM standard functional entries ZFCAP EXCEP and ZFCAP SEXPT as an alternative to the EMC provided functional entries.

Examples

Example 1

System
CSMP0097I 00.13.25 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0000I XCP logging already active

System
CSMP0097I 00.13.25 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0000I Capture keypoint not initialized.
Issue ZFCAP CLEAR
Example 2

User  ZUTIM XCP STA

System
CSMP0097I 00.13.25 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0000I XCP logging started
CSMP0097I 00.13.25 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0000I Mount exception recording tapes.

Example 3

User  ZUTIM XCP STO

System
CSMP0097I 00.13.25 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0000I XCP logging stopped - RTA switch initiated
TimeFinder Commands
CHAPTER 5
TimeFinder Procedures

This chapter outlines the steps involved in performing EMC TimeFinder operations. The topics include:

- TimeFinder control record initialization and configuration ........................................... 196
- VM gatekeeper definition ............................................................................................... 203
- TimeFinder Group Properties ...................................................................................... 206
- Configuring a TimeFinder/SnapVX zDP Group .......................................................... 208
TimeFinder control record initialization and configuration

This section provides an example procedure for a new user initialization and configuration of TimeFinder Controls for z/TPF control records.

z/TPF database requirements

TimeFinder Controls for z/TPF requires that an adequate and equal number of #EMCTF and #EMCTM records be allocated. To use the TimeFinder Control Record Backup utility, an equal number of #EMCTB records also need to be allocated. Refer to Table 10:

<table>
<thead>
<tr>
<th>Record type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#EMCTF</td>
<td>TimeFinder Controls for z/TPF Control Records</td>
</tr>
<tr>
<td>#EMCTM</td>
<td>TimeFinder Controls for z/TPF Configuration Control Records</td>
</tr>
<tr>
<td>#EMCTB</td>
<td>TimeFinder Controls for z/TPF Backup Control Records</td>
</tr>
</tbody>
</table>

Control Record Initialization

Initialize TimeFinder Controls for z/TPF Records with record ID x'A386':

```zifil
ZIFIL EMCTF/A386/00/0/999/NNN/N
IFIL0004I 19.57.56 RECORD INITIALIZATION STARTED FOR .EMCTF
IFIL0005I 19.57.59 RECORD INITIALIZATION COMPLETED FOR .EMCTF
ZIFIL EMCTM/A386/00/0/999/NNN/N
IFIL0004I 19.59.57 RECORD INITIALIZATION STARTED FOR .EMCTM
IFIL0005I 20.00.00 RECORD INITIALIZATION COMPLETED FOR .EMCTM
ZIFIL EMCTB/A386/00/0/999/NNN/N
IFIL0004I 20.01.36 RECORD INITIALIZATION STARTED FOR .EMCTB
IFIL0005I 20.01.39 RECORD INITIALIZATION COMPLETED FOR .EMCTB
```

TimeFinder Group Configuration

To configure a TimeFinder group, open the configuration, add sets to the TimeFinder group, add the source and target ranges to the sets, and close the configuration. After all configurations are added and closed, accept the configurations.

1. Open the configuration for the TimeFinder/SnapVX group:

```zutim
ZUTIM CON OPEN GROUP-TSVXZDP TYP-SVX
CSMP0097I 19.27.24 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0086I TimeFinder configuration ctl rcd refresh initiated
CSMP0097I 19.27.53 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1049T TimeFinder Group TSVXZDP is Open
UTIM1006I TimeFinder configuration Open complete
```

2. Add a set to the TimeFinder group:

```zutim
ZUTIM CON ADD GROUP-TSVXZDP SET-UYH1 SDA-5080
CSMP0097I 19.28.07 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1043I Local CU 00196701305 discovered for SnapVX Group TSVXZDP Set UYH1
UTIM1006I TimeFinder configuration Add complete
```
3. Add the source and target range to the set for the TimeFinder group:

```
ZUTIM CON CHANGE GROUP-TSVXZDP SET-UYH1 SRC-4AC TGT-50C CNT-32
CSMP0097I 19.28.08 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1051I TimeFinder Group TSVXZDP Set UYH1 Change request processed
UTIM1006I TimeFinder configuration Change complete
```

4. Add a set to the TimeFinder group:

```
ZUTIM CON ADD GROUP-TSVXZDP SET-UZC1 SDA-4300
CSMP0097I 19.28.10 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1043I Local CU 000196801233 discovered for SnapVX Group TSVXZDP Set UZC1
UTIM1006I TimeFinder configuration Add complete
```

5. Add the source and target range to the set for the TimeFinder group:

```
ZUTIM CON CHANGE GROUP-TSVXZDP SET-UZC1 SRC-193 TGT-29B CNT-32
CSMP0097I 19.28.12 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1051I TimeFinder Group TSVXZDP Set UZC1 Change request processed
UTIM1006I TimeFinder configuration Change complete
```

6. Close the configuration for the TimeFinder group:

```
ZUTIM CON CLOSE GROUP-TSVXZDP
CSMP0097I 19.28.15 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1049T TimeFinder Group TSVXZDP is Closed
UTIM1006I TimeFinder configuration Close complete
```

7. Display the configuration summary:

```
ZUTIM CON DIS CTLRCD-CU
CSMP0097I 19.28.22 CPU-A SS-BSS SSU-SSU0 IS-01
EIUA0000I Configuration CU Control Record Summary
Local SnapVX Group - TSVXZDP Config Status - Closed
Set Name-UYH1 MHL-N/A
Serial #     Model     Ucod SDA  MOD  SSN  GKD  Status
000196701305 VMAX200K  5977 5080 0110 A64  No   Added
Set Name-UZC1 MHL-N/A
Serial #     Model     Ucod SDA  MOD  SSN  GKD  Status
000196801233 VMAX100K  5977 4300 0110 B64  No   Added
End of Display
```

8. Open the configuration for the TimeFinder /Clone group:

```
ZUTIM CON OPEN GRO-TA64B64B TYP-CLN
CSMP0097I 19.29.05 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1049T TimeFinder Group TA64B64B is Open
UTIM1006I TimeFinder configuration Open complete
```

9. Add a set to the TimeFinder group:

```
ZUTIM CON ADD GRO-TA64B64B SET-UTL1 SDA-4C20
CSMP0097I 19.29.23 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1043I Local CU 000192604124 discovered for Clone Group TA64B64B Set UTL1
UTIM1006I TimeFinder configuration Add complete
```

10. Add the source and target range to the set for the TimeFinder group:

```
ZUTIM CON CHA GRO-TA64B64B SET-UTL1 SRC-BED TGT-C4D CNT-32
CSMP0097I 19.29.26 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1051I TimeFinder Group TA64B64B Set UTL1 Change request processed
UTIM1006I TimeFinder configuration Change complete
11. Add a set to the TimeFinder group:

ZUTIM CON ADD GRO-TA64B64B SET-USG1 SDA-3200
CSMP0097I 19.29.28 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1043I Local CU 000190300346 discovered for Clone Group TA64B64B Set USG1
UTIM1006I TimeFinder configuration Add complete

12. Add the source and target range to the set for the TimeFinder group:

ZUTIM CON CHA GRO-TA64B64B SET-USG1 SRC-370 TGT-548 CNT-16
CSMP0097I 19.29.30 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1051I TimeFinder Group TA64B64B Set USG1 Change request processed
UTIM1006I TimeFinder configuration Change complete

13. Add a set to the TimeFinder group:

ZUTIM CON ADD GRO-TA64B64B SET-UIF1 SDA-3510
CSMP0097I 19.29.32 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1043I Local CU 000195700086 discovered for Clone Group TA64B64B Set UIF1
UTIM1006I TimeFinder configuration Add complete

14. Add the source and target range to the set for the TimeFinder group:

ZUTIM CON CHA GRO-TA64B64B SET-UIF1 SRC-11EC TGT-11FC CNT-16
CSMP0097I 19.29.36 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1051I TimeFinder Group TA64B64B Set UIF1 Change request processed
UTIM1006I TimeFinder configuration Change complete

15. Close the configuration for the TimeFinder group:

ZUTIM CON CLO GRO-TA64B64B
CSMP0097I 19.29.40 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1049T TimeFinder Group TA64B64B is Closed
UTIM1006I TimeFinder configuration Close complete

16. Open the configuration for the TimeFinder/SnapVX group:

ZUTIM CON OPEN GRO-TUYH1MH TYP-SVX
CSMP0097I 19.29.41 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1049T TimeFinder Group TUYH1MH is Open
UTIM1006I TimeFinder configuration Open complete

17. Add a set to the TimeFinder group:

ZUTIM CON ADD GRO-TUYH1MH SET-UYF1 SDA-5080 MHL1-12
CSMP0097I 19.29.44 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1043I Remote CU 000196701170 discovered for SnapVX Group TUYH1MH Set UYF1
UTIM1006I TimeFinder configuration Add complete

18. Add the source and target range to the set for the TimeFinder group:

ZUTIM CON CHA GRO-TUYH1MH SET-UYF1 SRC-8BD CNT-16
CSMP0097I 19.29.47 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1051I TimeFinder Group TUYH1MH Set UYF1 Change request processed
UTIM1006I TimeFinder configuration Change complete

19. Add a set to the TimeFinder group:

ZUTIM CON ADD GRO-TUYH1MH SET-UYH1 SDA-5080 MHL1-13
CSMP0097I 19.29.48 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1043I Remote CU 000196701175 discovered for SnapVX Group TUYH1MH Set UYH1
UTIM1006I TimeFinder configuration Add complete
20. Add the source and target range to the set for the TimeFinder group:

ZUTIM CON CHA GRO- TUYH1MH SET- UYH1 SRC- 75D CNT- 16
CSMP0097I 19.29.52 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1051I TimeFinder Group TUYH1MH Set UYH1 Change request processed
UTIM1006I TimeFinder configuration Change complete

21. Close the configuration for the TimeFinder group:

ZUTIM CON CLO GRO- TUYH1MH
CSMP0097I 19.29.55 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1049T TimeFinder Group TUYH1MH is Closed
UTIM1006I TimeFinder configuration Close complete

22. Display the configuration summary:

ZUTIM CON DIS CTLRCD- CU
CSMP0097I 19.29.57 CPU-A SS-BSS SSU-SSU0 IS-01
E1UA0000I Configuration CU Control Record Summary
Local SnapVX Group - TSVXZDP Config Status - Closed
Set Name- UYH1     MHL-N/A
Serial # Model  Ucod  SDA  MOD  SSN  GKD  Status
000196701305 VMAX200K  5977 5080 0110 A64  No Added
Set Name- UZC1     MHL-N/A
Serial # Model  Ucod  SDA  MOD  SSN  GKD  Status
000196801233 VMAX100K  5977 4300 0110 B64  No Added
Local Clone Group - TA64B64B Config Status - Closed
Set Name- UTL1     MHL-N/A
Serial # Model  Ucod  SDA  MOD  SSN  GKD  Status
000192604124 VMAX 1    5876 4C20 0100 BSS  No Added
Set Name- USG1     MHL-N/A
Serial # Model  Ucod  SDA  MOD  SSN  GKD  Status
000190300346 DMX3 6    5773 3200 0100 B64  No Added
Set Name- UIF1     MHL-N/A
Serial # Model  Ucod  SDA  MOD  SSN  GKD  Status
000195700086 VMAX40K  5876 3510 0130 B64  No Added
Remote SnapVX Group - TUYH1MH Config Status - Closed
Set Name- UYF1     MHL-12
Serial # Model  Ucod  SDA  MOD  SSN  GKD  Status
000196701170 VMAX200K  5977 5080 0110 A64  No Added
End of Display

23. Accept the configuration changes:

ZUTIM CON ACCEPT ALL
CSMP0097I 19.30.02 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0089I TimeFinder configuration verifying sessions not open
CSMP0097I 19.30.02 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0093I TimeFinder configuration verifying device pairs unique
CSMP0097I 19.30.10 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0092I TimeFinder configuration device pairs finalized
CSMP0097I 19.30.11 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0090I TimeFinder configuration groups finalized
CSMP0097I 19.30.11 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0121I TimeFinder Group counts calculated
CSMP0097I 19.30.11 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0094I TimeFinder control records updated
CSMP0097I 19.30.12 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0221I GST Refresh Started
CSMP0097I 19.30.14 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0222I GST Refresh Complete
CSMP0097I 19.30.14 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1006I TimeFinder configuration Accept complete
24. Display the configuration summary:

ZUTIM DIS CTRLCD-CU
CSMP0097I 19.30.17 CPU-A SS-BSS SSU-SSU0 IS-01
EITQ00001 CU Control Record Summary
Local SnapVX Group - TSVXZDP
Set Name - UYH1  MHL-N/A
  Serial #  Model  Ucod  SDA  MOD  SSN  GKD
  00196701305 VMAX200K  5977  5080  0110  A64  No
Set Name - UZC1  MHL-N/A
  Serial #  Model  Ucod  SDA  MOD  SSN  GKD
  00196801233 VMAX100K  5977  4300  0110  B64  No
Local Clone Group - TA64B64B
Set Name - UTL1  MHL-N/A
  Serial #  Model  Ucod  SDA  MOD  SSN  GKD
  00192604124 VMAX 1  5876  4C20  0100  BSS  No
Set Name - USG1  MHL-N/A
  Serial #  Model  Ucod  SDA  MOD  SSN  GKD
  001910300346 DMX3 6  5773  3200  0100  B64  No
Set Name - UIF1  MHL-N/A
  Serial #  Model  Ucod  SDA  MOD  SSN  GKD
  00195700086 VMAX40K  5876  3510  0130  B64  No
Remote SnapVX Group - TUYH1MH
Set Name - UYF1  MHL- 12
  Serial #  Model  Ucod  SDA  MOD  SSN  GKD
  00196701170 VMAX200K  5977  5080  0110  A64  No
Set Name - UYH1  MHL- 13
  Serial #  Model  Ucod  SDA  MOD  SSN  GKD
  00196701175 VMAX200K  5977  5080  0110  A64  No
End of Display

Configuring a TimeFinder group describing SRDF/A R2 devices as a TimeFinder Source

A TimeFinder group describing SRDF/A R2 devices is configured through the primary storage system of an SRDF/A pair by specifying the SRDF/A RDFGroup as the last RDFGroup in the multi-hop list.

This ensures that the general property ASYNC is set for a TimeFinder group, and that the TimeFinder Split occurs only if SRDF/A is active, the secondary storage system is consistent, and the restore of the Apply session is complete on the secondary storage system. TimeFinder software can only ensure a consistent Split of a TimeFinder group describing SRDF/A R2 devices when the general property ASYNC is defined.

The general property ASYNC may be turned off to split a TimeFinder group describing SRDF/A R2 devices, which can not be verified to be consistent by TimeFinder Controls, but which can be verified to be consistent by the user. For example, you may want to split a TimeFinder group for which SRDF/A was recently dropped or pend-dropped.

In addition to the software-enforced configuration rules, also follow this guideline when configuring a TimeFinder group which describes SRDF/A R2 devices:

- All SRDF/A devices configured in a TimeFinder Set must be in the same RDFGroup. Contact your EMC representative to determine the RDFGroup in which the SRDF/A R2 devices are configured.
To configure a TimeFinder group describing a set of SRDF/A R2 devices as a TimeFinder source:

1. Open a configuration session for TimeFinder group SRDFA:

   ZUTIM CON OPEN GROUP-SRDFA
   CSMP0097I 00.56.34 CPU-B SS-BSS SSU-SSU0 IS-01
   UTIM0086I TimeFinder configuration ctl rcd refresh initiated
   CSMP0097I 00.56.34 CPU-B SS-BSS SSU-SSU0 IS-01
   UTIM1049I Clone Group SRDFA is Open
   UTIM1006I TimeFinder configuration Open complete

2. Add a remote TimeFinder Set configured through the SRDF/A primary storage system to TimeFinder group SRDFA. Specify the RDFGroup of the SRDF/A R2 volumes as the last RDFGroup in the multi-hop list:

   ZUTIM CON ADD GROUP-SRDFA SET-3AE0 SDA-3AE0 MHL1-62
   CSMP0097I 00.56.34 CPU-B SS-BSS SSU-SSU0 IS-01
   UTIM1043I Remote CU 000000006207 discovered for Clone Group SRDFA Set 3AE0
   CSMP0097I 00.56.34 CPU-B SS-BSS SSU-SSU0 IS-01
   UTIM1006I TimeFinder configuration Add complete

3. Display the general properties configured for TimeFinder group SRDFA:

   ZUTIM CON DIS GRO-SRDFA PRO-GEN
   CSMP0097I 17.16.20 CPU-A SS-BSS SSU-SSU0 IS-01
   E1TG0000I TimeFinder General Properties Display
   Remote Clone Group - SRDFA
   -------------------------------------------------------------------------
   Processing Delay Timer:  3 Scheduler Timeout:  1 Persistent Monitor: OFF
   Monitor Interval Timer:  3 CTLRCD Refresh: ON  Ops Verification: ON
   SRDF/A: OFF               QOS:  0 is set        OMA Refresh: OFF
   -------------------------------------------------------------------------
   End of Display

4. Add clone source and target to TimeFinder Set 3AE0:

   ZUTIM CON CHANGE GROUP-SRDFA SET-3AE0 SRC-1AA TGT-14A CNT-32
   CSMP0097I 00.56.34 CPU-B SS-BSS SSU-SSU0 IS-01
   UTIM1051I Clone Group SRDFA Set 3AE0 Change request processed
   UTIM1006I TimeFinder configuration Change complete

5. Display the general properties configured for TimeFinder group SRDFA:

   ZUTIM CON DIS GRO-SRDFA PRO-GEN
   CSMP0097I 17.16.20 CPU-A SS-BSS SSU-SSU0 IS-01
   E1TG0000I TimeFinder General Properties Display
   Remote Clone Group - SRDFA
   -------------------------------------------------------------------------
   Processing Delay Timer:  3 Scheduler Timeout:  1 Persistent Monitor: OFF
   Monitor Interval Timer:  3 CTLRCD Refresh: ON  Ops Verification: ON
   SRDF/A: ON                QOS:  0 is set        OMA Refresh: OFF
   -------------------------------------------------------------------------
   End of Display

6. Close the configuration session for TimeFinder group SRDFA:

   ZUTIM CON CLOSE GROUP-SRDFA
   CSMP0097I 00.56.34 CPU-B SS-BSS SSU-SSU0 IS-01
   UTIM1049I Clone Group SRDFA is Closed
   UTIM1006I TimeFinder configuration Close complete

7. Accept the TimeFinder Configuration:

   ZUTIM CON ACCEPT ALL
   CSMP0097I 00.56.34 CPU-B SS-BSS SSU-SSU0 IS-01
8. Display the general properties for TimeFinder group SRDF/A:

```
ZUTIM DIS GRO-SRDFA PRO-GEN
CSMP0097I 17.16.20 CPU-A SS-BSS  SSU-SSU0 IS-01
E1TG0000I TimeFinder General Properties Display
Remote Clone  Group - SRDFA

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processing Delay Timer</td>
<td>3</td>
</tr>
<tr>
<td>Scheduler Timeout</td>
<td>1</td>
</tr>
<tr>
<td>Persistent Monitor</td>
<td>OFF</td>
</tr>
<tr>
<td>Monitor Interval Timer</td>
<td>3</td>
</tr>
<tr>
<td>CTLRCD Refresh</td>
<td>ON</td>
</tr>
<tr>
<td>Ops Verification</td>
<td>ON</td>
</tr>
<tr>
<td>SRDF/A</td>
<td>ON</td>
</tr>
<tr>
<td>QOS</td>
<td>0 is set</td>
</tr>
<tr>
<td>OMA Refresh</td>
<td>OFF</td>
</tr>
</tbody>
</table>

End of Display
```
VM gatekeeper definition

In the following example, a spare device, mounted as a general file, is used as the TimeFinder gatekeeper for TimeFinder Set U6CS in TimeFinder group DEVLAB. The gatekeeper is defined as unsupported to VM and must be in the same storage system as the SDA used on the CONFIG ADD command, or the current operations SDA.

1. Define SDA 39C1 as unsupported to VM:

   **VARY OFF 39C1**
   39C1 varied offline
   1 device(s) specified; 1 device(s) successfully varied offline

   **SET RDEV 39C1 CLEAR**
   HCPZRP6722I Characteristics of device 39C1 were set as requested.
   1 RDEV(s) specified; 1 RDEV(s) changed; 0 RDEV(s) created

   **SET RDEV 39C1 ty unsup devcl dasd dps no reserve_rel yes**
   HCPZRP6722I Characteristics of device 39C1 were set as requested.
   1 RDEV(s) specified; 1 RDEV(s) changed; 0 RDEV(s) created

   **VARY ON 39C1**
   3363 varied online
   1 device(s) specified; 1 device(s) successfully varied online

   **Q 39C1**
   DEV 39C1 FREE

2. Attach SDA 39C1 to the TPF test system:

   **ATT 39C1 ***
   DEV 39C1 ATTACHED TO TPF4 39C1

3. Mount SDA 39C1 as a general file:

   **ZFMNT 02 39C1 BP**
   CSMP0097I 01.48.05 CPU-A SS-BSS SSU-SSU0 IS-01
   FMNT0001I 01.48.05 GENERAL FILE DATA SET 2 MOUNTED ON 39C1
   CSMP0097I 01.48.05 CPU-A SS-BSS SSU-SSU0 IS-01
   FMNT0001I 01.48.05 DATA SET 2 MAY/MAYNOT BE CONTAINED ON GENERAL FILE MOUNTED ON 39C1

   **ZDMFS ONL**
   CSMP0097I 01.48.31 CPU-A SS-BSS SSU-SSU0 IS-01
   DMFS0005I 01.48.31
   MOD TYPE SDA USE DUP STAT VSN LOCK COR UNC PREFIX
   0F4 3390CONN 39C0 GEN N/A ON FF0100 CFLF 00000 00000 YES
   0F6 3390RCS 39C1 GEN N/A ON FF0101 CFLF 00000 00000 YES
   100 3390CONN 3600 RLT 102 ON FF0102 CFLF 00000 00000 YES
   101 3390RCS 3601 RLT 103 ON FF0101 CFLF 00000 00000 YES
   102 3390CONN 33C0 RLT 100 ON FF0102 CFLF 00000 00000 YES
   103 3390RCS 33C1 RLT 101 ON FF0103 CFLF 00000 00000 YES
   112 3390ECKD 4018 GDS N/A ON FF1818 CFLF 00000 00000 NO
   DISPLAY COMPLETE

4. Display the TimeFinder CU control record summary:

   **ZUTIM DIS GRO-DEVLAB STA-CTL**
   CSMP0097I 01.19.42 CPU-A SS-BSS SSU-SSU0 IS-01
   E1UA0000I CU Control Record Summary
   Local Clone Group - DEVLAB
   Set Name- U6CS MHL-N/A
   Serial # Model Ucod SDA MOD SSN GKD
   0000000006207 DMX2000P 5669 39C0 0107 BSS No
   Set Name- UVAS MHL-N/A
5. Define the gatekeeper device for TimeFinder Set U6CS in TimeFinder group DEVLAB. The gatekeeper SDA 39C1 is in the same SSID as the current operations SDA 39C0:

```
ZUTIM DEF GRO-DEVLAB SET-U6CS PRO-GFL SDA-39C1
CSMP0097I 01.52.23 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0027I Define complete
```

```
ZUTIM DIS GRO-DEVLAB STA-CTL
CSMP0097I 01.19.42 CPU-A SS-BSS SSU-SSU0 IS-01
E1UA0000I CU Control Record Summary
Local Clone Group - DEVLAB
Set Name- U6CS MHL-N/A
Serial # Model Ucod SDA MOD SSN GKD
000000006207 DMX2000P 5669 39C0 0107 BSS 39C1
Set Name- UVAS MHL-N/A
Serial # Model Ucod SDA MOD SSN GKD
000184505047 8430 5568 3600 0100 BSS No
Set Name- UDCS MHL-N/A
Serial # Model Ucod SDA MOD SSN GKD
000185400212 8230 5568 3600 0100 BSS No
End of Display
```

6. Proceed with TimeFinder Operations. Split all TimeFinder Sets in TimeFinder group DEVLAB:

```
ZUTIM SPL GRO-DEVLAB
CSMP0097I 01.55.44 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1043I TimeFinder control record refresh started
CSMP0097I 01.55.44 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1043I Local CU 000185400212 discovered for BCV Group DEVLAB Set UDCS
CSMP0097I 01.55.44 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1043I Local CU 000184505047 discovered for BCV Group DEVLAB Set UVAS
CSMP0097I 01.55.44 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1043I Local CU 000000006207 discovered for BCV Group DEVLAB Set U6CS
CSMP0097I 01.55.44 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0024I TimeFinder control record refresh completed
CSMP0097I 01.55.44 CPU-A SS-BSS SSU-SSU0 IS-01
E1T70000I TimeFinder Operation Verification Started
E1T70001I TimeFinder Group Properties Verification Started
Options Permissions
None
E1T70003I TimeFinder Device State Verification Started
CSMP0097I 01.55.44 CPU-A SS-BSS SSU-SSU0 IS-01
E1T70004I TimeFinder Operation Verification Completed
CSMP0097I 01.55.44 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1000I BCV Group DEVLAB Set U6CS started issuing Split
CSMP0097I 01.55.44 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1000I BCV Group DEVLAB Set UVAS started issuing Split
CSMP0097I 01.55.44 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1000I BCV Group DEVLAB Set UDCC started issuing Split
CSMP0097I 01.55.44 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1000I BCV Group DEVLAB Set UVAS completed issuing Split
CSMP0097I 01.55.44 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1000I BCV Group DEVLAB Set UDCC completed issuing Split
CSMP0097I 01.55.44 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1034I Local BCV Group DEVLAB multi-instant split complete
Background split continuing
```
CSMP0097I 01.55.47 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1031I Local TimeFinder Status Display
BCV Group: DEVLAB Base Operation: Split
Start Time : 01.55.44 Date : 02/19/07

<table>
<thead>
<tr>
<th>Set Name</th>
<th>CU Serial #</th>
<th>SDA</th>
<th>Complete</th>
<th>In Progress</th>
<th>Not Started</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>U6CS</td>
<td>000000006207</td>
<td>39C0</td>
<td>18</td>
<td>0</td>
<td>0</td>
<td>0000</td>
</tr>
<tr>
<td>UVAS</td>
<td>000184505047</td>
<td>33C0</td>
<td>0</td>
<td>36</td>
<td>0</td>
<td>0000</td>
</tr>
<tr>
<td>UDCS</td>
<td>000185400212</td>
<td>3600</td>
<td>0</td>
<td>36</td>
<td>0</td>
<td>0000</td>
</tr>
</tbody>
</table>

End of Display
TimeFinder Group Properties

TimeFinder group property options and permissions can be defined for each configured TimeFinder group and TimeFinder operation. In addition, you can define general properties, which apply to more than one TimeFinder operation.

1. Define the Any State Restore property option for remote TimeFinder group MHOP1 and the TimeFinder RESTORE operation. Defining this property option allows the user to initiate a TimeFinder Restore with the operational z/TPF system in any state:

```
ZUTIM DEF GRO-MHOP1 PRO-RES TYP-OPT ASREST
```

```
CSMP0097I 02.06.48 CPU-A SS-BSS SSU-SSU0 IS-01
E1TG0001 TimeFinder Restore Properties Display
  Remote Clone Group - MHOP1
```

```
Options
UNUSED: OFF  UNUSED: OFF  ASRESTORE: ON   ONLDEV: OFF
Permissions
UNUSED: OFF  UNUSED: OFF  ASRESTORE: ON   ONLDEV: OFF
```

```
End of Display
```

2. Define the Any State Restore property option for remote TimeFinder group MHOP1 and the TimeFinder INCRESTORE operation. Defining this property option allows the user to initiate a TimeFinder Restore with the operational z/TPF system in any state:

```
ZUTIM DEF GRO-MHOP1 PRO-INC TYP-OPT ASREST
```

```
CSMP0097I 02.25.21 CPU-A SS-BSS SSU-SSU0 IS-01
E1TG0001 TimeFinder Increstore Properties Display
  Remote Clone Group - MHOP1
```

```
Options
UNUSED: OFF  UNUSED: OFF  ASRESTORE: OFF  ONLDEV: OFF
Permissions
UNUSED: OFF  UNUSED: OFF  ASRESTORE: OFF  ONLDEV: OFF
```

```
End of Display
```

3. Define the URDY property options for remote TimeFinder group MHOP1 and the TimeFinder Split operation. Defining these property options indicates these are to be default options for any TimeFinder Split operation on TimeFinder group MHOP1. The user need not specify the option with the functional entry:

```
ZUTIM DEF GRO-MHOP1 PRO-SPL TYP-OPT URDY
```

```
CSMP0097I 02.18.19 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0027I Define complete
CSMP0097I 02.18.19 CPU-A SS-BSS SSU-SSU0 IS-01
E1TG0001 TimeFinder Split Properties Display
  Remote Clone Group - MHOP1
```

```
Options
FORCE: OFF  UNUSED: OFF  UNUSED: OFF  UNUSED: OFF
UNUSED: OFF  URDY: ON   ACRE: OFF
Permissions
FORCE: OFF  UNUSED: OFF  UNUSED: OFF  UNUSED: OFF
UNUSED: OFF  URDY: ON   ACRE: OFF
```

```
End of Display
```
4. Define the NOSDDF property permission for remote TimeFinder group MHOP1 and the TimeFinder REEstablish operation. Defining this property permission allows the user to enter NOSDDF option in the functional entry. If the permission is not defined for a particular functional entry option, the functional entry issued with the option will be rejected:

\[
\text{ZUTIM \ DEF \ GRO-MHOP1 \ PRO-REE \ TYP-PER \ NOSDDF}
\]

\[
\begin{align*}
\text{CSMP0097I} & \quad 02.22.35 \quad \text{CPU-A SS-BSS} \quad \text{SSU-SSU0 IS-01} \\
\text{UTIM0027I} & \quad \text{Define complete}
\end{align*}
\]

E1TG0000I TimeFinder Reestablish Properties Display
Local Clone Group - MHOP1

Options
UNUSED: OFF  SDDF: OFF  UNUSED: OFF  ONLDEV: ON
Permissions
UNUSED: OFF  SDDF: ON  UNUSED: OFF  ONLDEV: ON

End of Display

5. Define the ONLDEV property option for remote TimeFinder group MHOP1 and the TimeFinder CLIp operation. Defining this property option allows the user to initiate a TimeFinder Clip to TGTss which are online to some host:

\[
\text{ZUTIM \ DEF \ GRO-MHOP1 \ PRO-CLI \ TYP-OPT \ ONLDEV}
\]

\[
\begin{align*}
\text{CSMP0097I} & \quad 02.28.16 \quad \text{CPU-A SS-BSS} \quad \text{SSU-SSU0 IS-01} \\
\text{UTIM0027I} & \quad \text{Define complete}
\end{align*}
\]

E1TG0000I TimeFinder Clip Properties Display
Remote Clone Group - MHOP1

OPTIONS
MDBF  Volser
SSN  Clip Prefix
N/A  No

Options
UNUSED: OFF  UNUSED: OFF  UNUSED: OFF  ONLDEV: ON
Permissions
UNUSED: OFF  UNUSED: OFF  UNUSED: OFF  ONLDEV: ON

End of Display

6. Define the monitor interval for all TimeFinder operations to remote TimeFinder group MHOP1 to 5 minutes. Following the first initiation of the TimeFinder monitor for some TimeFinder operation, the TimeFinder monitor reinitiates every 5 minutes until the monitor detects completion of the TimeFinder operation:

\[
\text{ZUTIM \ DEF \ GRO-MHOP1 \ PRO-INT \ TIME-5}
\]

\[
\begin{align*}
\text{CSMP0097I} & \quad 02.33.03 \quad \text{CPU-A SS-BSS} \quad \text{SSU-SSU0 IS-01} \\
\text{UTIM0027I} & \quad \text{Define complete}
\end{align*}
\]

E1TG0000I TimeFinder General Properties Display
Remote Clone Group - MHOP1

Processing Delay Timer: 3 Scheduler Timeout: 1 Persistent Monitor: OFF
Monitor Interval Timer: 5 CTRLCD Refresh: ON  Ops Verification: ON
SRDF/A: OFF  QOS: 0 is set  OMA Refresh: OFF

End of Display
7. Define the processor delay for all TimeFinder operations to remote TimeFinder group MHOP1 to 1 second. A zero to one second event delay is issued between each EMC SymmAPI call issued to each TimeFinder device pair in all TimeFinder Sets in TimeFinder group MHOP1:

```
ZUTIM DEF GRO-MHOP1 PRO-DEL TIME-1
UTIM0027I Define complete
E1TG0000I TimeFinder General Properties Display
Remote Clone Group - MHOP1
----------------------------------------------------------
  Processing Delay Timer:    1  Scheduler Timeout:  1  Persistent Monitor: OFF
  Monitor Interval Timer:   5  CTRLCD Refresh: ON  Ops Verification: ON
  SRDF/A: OFF          QOS:  0 is set    OMA Refresh: OFF
----------------------------------------------------------
End of Display
```

Configuring a TimeFinder/SnapVX zDP Group

1. Open TimeFinder Group TSVXZDP for configuration:

```
ZUTIM CON OPEN GROUP-TSVXZDP TYP-SVX
UTIM0086I TimeFinder configuration ctrl rcd refresh initiated
UTIM1006I TimeFinder configuration Open complete
```

2. Add Set UYH1:

```
ZUTIM CON ADD GROUP-TSVXZDP SET-UYH1 SDA-5080
UTIM1043I Local CU 000196701305 discovered for SnapVX Group TSVXZDP Set UYH1
UTIM1006I TimeFinder configuration Add complete
```

3. Add source and linked target pairs for Set UYH1:

```
ZUTIM CON CHANGE GROUP-TSVXZDP SET-UYH1 SRC-4AC TGT-50C CNT-32
UTIM1051I TimeFinder Group TSVXZDP Set UYH1 Change request processed
UTIM1006I TimeFinder configuration Change complete
```

4. Add Set UZC1:

```
ZUTIM CON ADD GROUP-TSVXZDP SET-UZC1 SDA-4300
UTIM1043I Local CU 000196801233 discovered for SnapVX Group TSVXZDP Set UZC1
UTIM1006I TimeFinder configuration Add complete
```

5. Add source and linked target pairs for Set UZC1:

```
ZUTIM CON CHANGE GROUP-TSVXZDP SET-UZC1 SRC-193 TGT-29B CNT-32
UTIM1051I TimeFinder Group TSVXZDP Set UZC1 Change request processed
UTIM1006I TimeFinder configuration Change complete
```
6. Close the configuration session for TimeFinder Group TSVXZDP:

```
ZUTIM CON CLOSE GROUP-TSVXZDP
CSMP0097I 13.48.51 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1049T TimeFinder Group TSVXZDP is Closed
UTIM1006I TimeFinder configuration Close complete
```

7. Accept the TimeFinder configuration changes for TimeFinder Group TSVXZDP:

```
ZUTIM CON ACCEPT ALL
CSMP0097I 13.48.52 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0093I TimeFinder configuration verifying device pairs unique
UTIM0092I TimeFinder configuration device pairs finalized
CSMP0097I 13.48.57 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0090I TimeFinder configuration groups finalized
CSMP0097I 13.48.57 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0121I TimeFinder Group counts calculated
CSMP0097I 13.48.57 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0094I TimeFinder control records updated
CSMP0097I 13.48.58 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0221I GST Refresh Started
CSMP0097I 13.48.58 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0222I GST Refresh Complete
UTIM1006I TimeFinder configuration Accept complete
```

8. Configure general property ICDP for TimeFinder Group TSVXZDP:

```
ZUTIM SET GEN GRO-TSVXZDP ICDP
CSMP0097I 13.49.40 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0027P TimeFinder Group TSVXZDP
UTIM0027I Define complete
E1TG0000I TimeFinder General Properties Display
Local SnapVX Group - TSVXZDP
 ---------------------------------------------------------------------
| Processing Delay Timer: 3 | Scheduler Timeout: 1 | Persistent Monitor: OFF |
| Monitor Interval Timer: 3 | CTRLCD Refresh: ON | Ops Verification: ON |
| SRDF/A: OFF | QOS: 0 is set | OMA Refresh: OFF |
| Preserved Snapshots: 0 | Max Snapshots: 256 | Snapshot Expiry: 0 |
| ICDP Mode: ON |
 ---------------------------------------------------------------------
| ICDP Cycle Time: 60 | ICDP HA: OFF |
| Snapshot Save Frequency: 0 | Saved Snapshots: 0 |
| Save Time: 20:00 | Termination Policy: Stop |
| SRP Monitor Interval: 5 | SRP Monitor Heartbeat: 15 |
| SRP Reserved Capacity Limit: 10 |
| SRP Reserved Capacity Warning Limit: 80 |
| SRP Reserved Capacity Termination Limit: 90 |
End of Display
```

9. Configure the SRP monitor interval to use with TimeFinder Group TSVXZDP:

```
ZUTIM SET GEN GRO-TSVXZDP SMI-1
CSMP0097I 13.50.05 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0027P TimeFinder Group TSVXZDP
UTIM0027I Define complete
CSMP0097I 13.50.05 CPU-A SS-BSS SSU-SSU0 IS-01
E1TG0000I TimeFinder General Properties Display
Local SnapVX Group - TSVXZDP
Processing Delay Timer: 3 | Scheduler Timeout: 1 | Persistent Monitor: OFF
```

Confuring a TimeFinder/SnapVX zDP Group
10. Configure the maximum snapshots to create for TimeFinder Group TSVXZDP:

```
ZUTIM SET GEN GRO-TSVXZDP MAX-96
CSMP0097I 13.50.09 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0027P TimeFinder Group TSVXZDP
UTIM0027I Define complete
CSMP0097I 13.50.09 CPU-A SS-BSS SSU-SSU0 IS-01
E1TG0000I TimeFinder General Properties Display
Local SnapVX Group - TSVXZDP

Processing Delay Timer:   3 Scheduler Timeout:  1 Persistent Monitor: OFF
Monitor Interval Timer:   3 CTLRCD Refresh: ON    Ops Verification: ON
SRDF/A: OFF                 QOS:  0 is set        OMA Refresh: OFF
Preserved Snapshots:  156   Max Snapshots:   96   Snapshot Expiry:   0
ICDP Mode: ON

ICDP Cycle Time:   15       ICDP HA: OFF
Snapshot Save Frequency:  0 Saved Snapshots:  0
Save Time: 20:00            Termination Policy: Stop
SRP Monitor Interval:    1  SRP Monitor Heartbeat:  15
SRP Reserved Capacity Limit:  10
SRP Reserved Capacity Warning Limit:  80
SRP Reserved Capacity Termination Limit:  90
End of Display
```

11. Configure the maximum preserved snapshots allowed for TimeFinder Group TSVXZDP:

```
ZUTIM SET GEN GRO-TSVXZDP PSL-156
CSMP0097I 13.50.12 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0027P TimeFinder Group TSVXZDP
UTIM0027I Define complete
CSMP0097I 13.50.12 CPU-A SS-BSS SSU-SSU0 IS-01
E1TG0000I TimeFinder General Properties Display
Local SnapVX Group - TSVXZDP

Processing Delay Timer:   3 Scheduler Timeout:  1 Persistent Monitor: OFF
Monitor Interval Timer:   3 CTLRCD Refresh: ON    Ops Verification: ON
SRDF/A: OFF                 QOS:  0 is set        OMA Refresh: OFF
Preserved Snapshots:  156   Max Snapshots:   96   Snapshot Expiry:   0
ICDP Mode: ON

ICDP Cycle Time:   15       ICDP HA: OFF
Snapshot Save Frequency:  0 Saved Snapshots:  0
Save Time: 20:00            Termination Policy: Stop
SRP Monitor Interval:    1  SRP Monitor Heartbeat:  15
SRP Reserved Capacity Limit:  10
SRP Reserved Capacity Warning Limit:  80
SRP Reserved Capacity Termination Limit:  90
End of Display
```
12. Configure saved snapshot properties for TimeFinder Group TSVXZDP. Save a snapshot once per day and maintain four copies:

```
ZUTIM SET GEN GRO-TSVXZDP SSP-1.4
CSMP0097I 13.50.17 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0027P TimeFinder Group TSVXZDP
UTIM0027I Define complete
CSMP0097I 13.50.17 CPU-A SS-BSS SSU-SSU0 IS-01
E1TG0000I TimeFinder General Properties Display
Local SnapVX Group - TSVXZDP
-------------------------------------------------------------------------
Processing Delay Timer:   3 Scheduler Timeout:  1 Persistent Monitor: OFF
Monitor Interval Timer:   3 CTRLCD Refresh: ON Ops Verification: ON
SRDF/A: OFF               QOS: 0 is set OMA Refresh: OFF
Preserved Snapshots:  156  Max Snapshots:  96 Snapshot Expiry:  0
ICDP Mode: ON
-------------------------------------------------------------------------
ICDP Cycle Time:   15      ICDP HA: OFF
Snapshot Save Frequency:  1 Saved Snapshots:  4
Save Time: 20:00         Termination Policy: Stop
SRP Monitor Interval:   1 SRP Monitor Heartbeat:  15
SRP Reserved Capacity Limit:  10
SRP Reserved Capacity Warning Limit:  80
SRP Reserved Capacity Termination Limit:  90
-------------------------------------------------------------------------
End of Display
```

13. Configure time of day to save a snapshot of TimeFinder Group TSVXZDP. Save a snapshot at 01:00 AM:

```
ZUTIM SET GEN GRO-TSVXZDP SST-01.00
CSMP0097I 13.50.30 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0027P TimeFinder Group TSVXZDP
UTIM0027I Define complete
CSMP0097I 13.50.30 CPU-A SS-BSS SSU-SSU0 IS-01
E1TG0000I TimeFinder General Properties Display
Local SnapVX Group - TSVXZDP
-------------------------------------------------------------------------
Processing Delay Timer:   3 Scheduler Timeout:  1 Persistent Monitor: OFF
Monitor Interval Timer:   3 CTRLCD Refresh: ON Ops Verification: ON
SRDF/A: OFF               QOS: 0 is set OMA Refresh: OFF
Preserved Snapshots:  156  Max Snapshots:  96 Snapshot Expiry:  0
ICDP Mode: ON
-------------------------------------------------------------------------
ICDP Cycle Time:   15      ICDP HA: OFF
Snapshot Save Frequency:  1 Saved Snapshots:  4
Save Time: 01:00         Termination Policy: Stop
SRP Monitor Interval:   1 SRP Monitor Heartbeat:  15
SRP Reserved Capacity Limit:  10
SRP Reserved Capacity Warning Limit:  80
SRP Reserved Capacity Termination Limit:  90
-------------------------------------------------------------------------
End of Display
```

14. Set the SRP monitor heartbeat interval for TimeFinder Group TSVXZDP:

```
ZUTIM SET GEN GRO-TSVXZDP SMH-10
CSMP0097I 13.50.38 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0027P TimeFinder Group TSVXZDP
UTIM0027I Define complete
CSMP0097I 13.50.38 CPU-A SS-BSS SSU-SSU0 IS-01
E1TG0000I TimeFinder General Properties Display
Local SnapVX Group - TSVXZDP
-------------------------------------------------------------------------
```
15. Set snapshot termination policy for TimeFinder Group TSVXZDP. Terminate the snapshot with the least number of used tracks when the SRP reserved capacity limit is reached:

```zuitim set gen gro-TSVXZDP stp-lea```

```
ZUTIM SET GEN GRO-TSVXZDP STP-LEA
CSMP0097I 13.50.44 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0027P TimeFinder Group TSVXZDP
UTIM0027I Define complete
CSMP0097I 13.50.44 CPU-A SS-BSS SSU-SSU0 IS-01
E1TG0000I TimeFinder General Properties Display
Local SnapVX Group - TSVXZDP
```

```
Processing Delay Timer:  3  Scheduler Timeout:  1  Persistent Monitor: OFF
Monitor Interval Timer:  3  CTRLCD Refresh: ON  Ops Verification: ON
SRDF/A: OFF  QOS:  0 is set  OMA Refresh: OFF
Preserved Snapshots:  156  Max Snapshots:  96  Snapshot Expiry:  0
ICDP Mode: ON
ICDP Cycle Time:  15  ICDP HA: OFF
Snapshot Save Frequency:  1  Saved Snapshots:  4
Save Time: 20:00  Termination Policy: Least
SRP Monitor Interval:  1  SRP Monitor Heartbeat:  10
SRP Reserved Capacity Limit:  10
SRP Reserved Capacity Warning Limit:  80
SRP Reserved Capacity Termination Limit:  90
```

End of Display

16. Set instant activate on create for TimeFinder Group TSVXZDP:

```zuitim set crt gro-TSVXZDP typ-per acti```

```
ZUTIM SET CRT GRO-TSVXZDP TYP-PER ACTI
CSMP0097I 13.56.31 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0027P TimeFinder Group TSVXZDP
UTIM0027I Define complete
CSMP0097I 13.56.31 CPU-A SS-BSS SSU-SSU0 IS-01
E1TG0000I TimeFinder Create Properties Display
Local SnapVX Group - TSVXZDP
```

```
Options
PRESERVED: OFF ACTIVATE OFF
Permissions
PRESERVED: OFF ACTIVATE ON
```

End of Display
17. Start zDP for TimeFinder Group TSVXZDP:

```plaintext
ZUTIM CRT GRO-TSVXZDP PAR-CDP
CSMP0097I 13.56.44 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM0019P TimeFinder Group TSVXZDP
UTIM0019I TimeFinder control record refresh started
CSMP0097I 13.56.45 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1043I Local CU 00196801233 discovered for SnapVX Group TSVXZDP Set UZC1
UTIM1043I Local CU 00196701305 discovered for SnapVX Group TSVXZDP Set UYH1
UTIM0024P TimeFinder Group TSVXZDP
UTIM0024I TimeFinder control record refresh completed
CSMP0097I 13.56.45 CPU-A SS-BSS SSU-SSU0 IS-01
E1T70000I TimeFinder Operation Verification Started
E1T70001I TimeFinder Group Properties Verification Started
   Options   Permissions
   ACTIVATE  ON
E1T70000I TimeFinder Device State Verification Started
CSMP0097I 13.57.04 CPU-A SS-BSS SSU-SSU0 IS-01
E1T70004I TimeFinder Operation Verification Completed
CSMP0097I 13.57.07 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1000I SnapVX Group TSVXZDP Set UZC1 started issuing Create
CSMP0097I 13.57.08 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1000I SnapVX Group TSVXZDP Set UYH1 started issuing Create
CSMP0097I 13.57.08 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1001I SnapVX Group TSVXZDP Set UYH1 completed issuing Create
CSMP0097I 13.57.08 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1001I SnapVX Group TSVXZDP Set UZC1 completed issuing Create
CSMP0097I 13.57.08 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1059I TimeFinder iCDP Group TSVXZDP Cycle Controls Started
CSMP0097I 13.57.13 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1031I Local TimeFinder Status Display
   SnapVX Group: TSVXZDP Base Operation: Create
   Status: Monitor Active
   Start Time : 23.56.44 Date : 01/18/16
   ---Operation Status ---
   Opr  In  Not  Opr RC  Itrks  Pct
   Set Name  CU Serial #  SDA  Complete  Progress  Started  Summary     
   UYH1  00196701305 5080       32        0       0   00000             0 100
   UZC1  00196801233 4320       32        0       0   00000             0 100
End of Display
UTIM1033I Local SnapVX Group TSVXZDP Create complete
```

18. Display status for TimeFinder Group TSVXZDP:

```plaintext
ZUTIM DIS GRO-TSVXZDP STA-GST
CSMP0097I 13.58.48 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1031I Local TimeFinder Status Display
   SnapVX Group: TSVXZDP Base Operation: Create
   START Time at 1805P600                     Grp ctl rcd ord 00000015
   Operation Successfully Completed       Ops Event Name D02B09A5CE230008
   Start Time : 23.56.44 Date : 01/18/16
   End Time   : 23.57.13 Date : 01/18/16
   -------------------------------------------
   iCDP Cycle Active                      iCDP Event Name D02B09AE0F7F1905
   Last Snapshot Version          0
   Image Creation               Time : 23.57.09 Date : 01/18/16
   -------------------------------------------
End of Display
```
19. Display TimeFinder Sets for TimeFinder Group TSVXZDP:

### ZUTIM DIS GRO-TSVXZDP SET-UYH1 VER-0

CSMP0097I 13.59.15 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1042I TF status for Local CU 000196701305

SnapVX Group: TSVXZDP Set: UYH1 Base operation: Create

<table>
<thead>
<tr>
<th>SSD</th>
<th>MOD</th>
<th>SDA</th>
<th>SRC DEV#</th>
<th>TGT DEV#</th>
<th>ID</th>
<th>Act Lin Def</th>
<th>NR</th>
<th>To Cpy</th>
<th>Pct</th>
<th>RC</th>
</tr>
</thead>
<tbody>
<tr>
<td>A64</td>
<td>0110</td>
<td>5080</td>
<td>000004AC</td>
<td>0000050C</td>
<td>ADAD0001</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>A64</td>
<td>0111</td>
<td>5081</td>
<td>000004AD</td>
<td>0000050D</td>
<td>ADAD0055</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>A64</td>
<td>0112</td>
<td>5082</td>
<td>000004AE</td>
<td>0000050E</td>
<td>ADAD0055</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>End of Display</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### ZUTIM DIS GRO-TSVXZDP SET-UZC1 VER-0

CSMP0097I 13.59.18 CPU-A SS-BSS SSU-SSU0 IS-01
UTIM1042I TF status for Local CU 000196801233

SnapVX Group: TSVXZDP Set: UZC1 Base operation: Create

<table>
<thead>
<tr>
<th>SSD</th>
<th>MOD</th>
<th>SDA</th>
<th>SRC DEV#</th>
<th>TGT DEV#</th>
<th>ID</th>
<th>Act Lin Def</th>
<th>NR</th>
<th>To Cpy</th>
<th>Pct</th>
<th>RC</th>
</tr>
</thead>
<tbody>
<tr>
<td>B64</td>
<td>0110</td>
<td>4300</td>
<td>00000193</td>
<td>0000029B</td>
<td>ADAD0063</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>B64</td>
<td>0111</td>
<td>4301</td>
<td>00000194</td>
<td>0000029C</td>
<td>ADAD0063</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>B64</td>
<td>0112</td>
<td>4302</td>
<td>00000195</td>
<td>0000029D</td>
<td>ADAD0063</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>End of Display</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX A
Messages

This appendix describes and lists the messages reported by EMC TimeFinder Controls for TPF, the reason for the message, and the recommended user action. The topics include:

- Message format .......................................................................................................................... 216
- Messages ..................................................................................................................................... 216
Message format

Messages are in the standard TPF message format and have the following format:

`ppppnnnx hh.mm.ss text`

Where:

- `pppp` Represents the first 4 characters of the segment name or the secondary action code of the associated input message.
- `nnnn` Represents a unique message number.
- `x` Represents one of the following severity codes:
  - `I` Information only, which indicates the message is a normal response.
  - `A` Action required, which indicates that additional operator action is required.
  - `W` Attention, which indicates an error that could require additional user action.
  - `E` Error, which indicates an error without program shutdown.
  - `T` Termination, which indicates an error with program shutdown.
  - `P` Prefix, which includes Group/Set information for a subsequent message with the same message number.
- `hh.mm.ss` Time stamp represents the time when the message was built.
- `text` The text of the message.

Messages

UTIM0000I

TimeFinder control record restore complete

Explanation: The TimeFinder control records have been restored from the TimeFinder control backup records.

System Action: None.

User Response: None.

UTIM0001T

Invalid TimeFinder Group

Explanation: The TimeFinder group is invalid.

System Action: None.

System Action: Reissue the TimeFinder operation for a valid group.
UTIM0003E

See TimeFinder Controls for TPF product guide

Explanation: A TPF SymmAPI macro call did not successfully complete.
System Action: None.
User Response: See previous console message for the SymmAPI return code. Correct the source of the problem and reissue the command.

UTIM0004E

TimeFinder control records not configured

Explanation: The TimeFinder operation cannot be processed until the TimeFinder control records have been configured.
System Action: None.
User Response: Configure TimeFinder control records. See configuration commands in Chapter 4.

UTIM0005E

FDCTC error during EMC SymmAPI call
Check operations or gatekeeper SDA

Explanation: An error occurred on an FDCTC macro call during an EMC SymmAPI call.
System Action: None.
User Response: Determine the cause of the FDCTC error, resolve it, and reissue the TimeFinder command.

UTIM0006E

TF/Clone requires minimum Enginuity level 5773 or later

Explanation: An attempt was made to configure a TF/Clone group for a control unit on an unsupported Enginuity/HYPERMAX OS release.
System Action: None.
User Response: Refer to “Reviewing the hardware and software requirements” on page 30.

UTIM0007E

EMC HW/SW incompatible with TPF API

Explanation: One or more EMC control units in the complex do not meet the minimum HW/SW requirements for TimeFinder.
System Action: None.
User Response: Contact the EMC Customer Support Center.
Messages

UTIM0008I
TimeFinder SnapVX requires HYPERMAX OS level 5977 or later
Explanation: An attempt was made to configure a TF/SnapVX group for a control unit on an unsupported Enginuity/HYPERMAX OS release.
System Action: None.
User Response: Refer to “Reviewing the hardware and software requirements” on page 30.

UTIM009E
Invalid time value specified.
Max value is 255.
Explanation: Time value specified is not in the valid range 1-255.
System Action: None.
User Response: Re-enter command using a valid time value.

UTIM010E
TimeFinder operation currently active
Explanation: A TimeFinder operation is already active on the system.
System Action: None.
User Response: Determine the status of EMC TimeFinder Controls for TPF operations.

UTIM011E
TimeFinder master control record FILNC error
TimeFinder action aborted
Explanation: A FILNC error has occurred when filing the TimeFinder master control record.
System Action: None.
User Response: Ensure that TimeFinder control records have been initialized with the correct record ID and that the master control record header is not corrupt.

UTIM012E
TPF event not active for TimeFinder operation
Explanation: A POSTC macro was issued for a non existent TPF TimeFinder event name. The TimeFinder operation scheduler may have timed out.
System Action: None.
User Response: Determine the status of EMC TimeFinder Controls for TPF operations.
UTIM0013E

MDBF SS inactive - unable to issue TimeFinder operation

Explanation: TimeFinder control record refresh has found that an MDBF subsystem to which a TimeFinder operation is to be issued has become inactive.

System Action: None.

User Response: Ensure all MDBF subsystems for which TimeFinder operations will be used are active. Reissue the TimeFinder operation.

UTIM0014E

Invalid operation requested for SnapVX Group

System Action: An attempt was made to issue a TF/Clone operation for TF/SnapVX group.

System Action: None.

User Response: Issue a valid SnapVX operation for the SnapVX Group.

UTIM0015E

Invalid Group property definition requested

Explanation: The user attempted to define a TimeFinder group property option or permission for a TimeFinder group and/or operation, but the property option or permission specified is not allowed.

System Action: None.

User Response: Define only valid TimeFinder group property options and permissions.

UTIM0016E

Invalid operation requested for Clone Group

Explanation: An attempt was made to issue a TF/SnapVX operation for TF/Clone group.

System Action: None.

User Response: Issue a valid Clone operation for the Clone Group.

UTIM0017E

Control record refresh unable to determine the Symmetrix device numbers of all online modules.

Explanation: Control record refresh was unable to determine the device number of one or more online TPF modules.

System Action: None.

User Response: Review the job documentation for errors. Search the EMC Knowledgebase for applicable solutions relating to this message ID. If you cannot determine and correct the problem, contact the EMC Customer Support Center for technical assistance. Make sure you have all relevant job documentation available.
**UTIM0018E**

CU Control Record FINDC error

**Explanation:** A FINDC error has occurred during TimeFinder CU control record retrieval.

**System Action:** None.

**User Response:** Ensure that TimeFinder control records have been initialized with the correct record ID and that the CU control record header is not corrupt. Contact the EMC Customer Support Center.

**UTIM0019I**

TimeFinder control record refresh started

**Explanation:** TimeFinder control record refresh has started.

**System Action:** None.

**User Response:** None.

**UTIM0020E**

Invalid MDBF SS name specified

**Explanation:** The MDBF SS name specified in the ZUTIM DEFine PROp-CLI/NOC entry is invalid.

**System Action:** None.

**User Response:** Specify a valid MDBF subsystem name for the ZUTIM DEFine PROp-CLI/NOC functional entry.

**UTIM0021E**

A TPF event is already active for this TimeFinder operation

**Explanation:** The same TimeFinder operation has been issued before all TPF events associated with the previous TimeFinder operation have completed.

**System Action:** None.

**User Response:** Allow enough time for all TimeFinder events to complete before issuing the next TimeFinder operation.

**UTIM0022E**

Invalid TimeFinder operation specified

**Explanation:** The TimeFinder operation can not be issued at this time.

**System Action:** None.

**User Response:** Allow any active TimeFinder operation to complete before issuing the next operation.
UTIM0023E

SDA out of range

Explanation: The Symbolic Device Address specified in the input message or the operations SDA in the CU control record is not in the range of online SDAs for the z/TPF system.

System Action: None.

User Response: Verify the correct SDA range for your system and reenter the request using a valid SDA.

Determine if the operations SDA for one or more Sets has come offline while the TimeFinder operation was being issued.

UTIM0024I

TimeFinder control record refresh completed

Explanation: TimeFinder control record refresh has completed and the TimeFinder operation will continue processing.

System Action: None.

User Response: None.

UTIM0025E

Invalid CU serial number specified

Explanation: The Control Unit serial number specified in the ZUTIM CONfig VERify functional entry is not valid.

System Action: None.

User Response: Reenter the request specifying a valid EMC CU serial number.

UTIM0026E

TimeFinder Group Control Record FINDC error

Explanation: A FINDC error occurred during TimeFinder group control record retrieval.

System Action: None.

User Response: Ensure that TimeFinder control records have been initialized and that the TimeFinder group control record header is not corrupt. Contact the EMC Customer Support Center.

UTIM0027I

Define complete

Explanation: The TimeFinder DEFine entry has completed successfully. See subsequent console output message for further information.

System Action: None.

User Response: None.
Messages

UTIM0028I
XCP logging started
Explanation: Exception Recording is now active.
System Action: None.
User Response: None.

UTIM0029I
XCP logging stopped - RTA switch initiated
Explanation: Exception Recording has been stopped. The system switches the RTA tape.
System Action: None.
User Response: Make sure there is a standby RTA or ALT tape mounted on the system.

UTIM0030E
Initial XCP tape error
Explanation: The first write attempt to the XCP tape resulted in a write error.
System Action: None.
User Response: None.

UTIM031E
Sequence error
Explanation: The TimeFinder XCP STArt/STOp command has been issued out of normal sequence.
System Action: None.
User Response: Issue the commands in the proper sequence.

UTIM0032E
Capture Keypoint not initialized
Issue ZFCAP CLEAR
Explanation: The Capture Keypoint must be initialized prior to starting exception recording.
System Action: None.
User Response: Enter ZFCAP CLEAR to initialize the capture keypoint record.

UTIM0033I
XCP logging already active
Explanation: Exception recording is already active on the system.
System Action: None.
User Response: None.
UTIM0034E

Capture Keypoint read error - action aborted

Explanation: TimeFinder was unable to read the capture keypoint.

System Action: None.

User Response: Reinitialize the capture keypoint with the ZFCAP CLEAR command and then reenter your original request.

UTIM0035I

Mount exception recording tapes
Reenter XCP START

Explanation: The system requires an active RTX tape to be mounted before starting exception recording.

System Action: None.

User Response: Mount active and standby RTX tapes on the system and reenter the TimeFinder XCP STArt command.

UTIM0036E

TimeFinder property value out of range

Explanation: The value specified for the property is not in the range of valid values.

System Action: None.

User Response: Specify a valid value.

UTIM0037I

TimeFinder control record backup complete

Explanation: The TimeFinder control records have been copied to the TimeFinder control backup records.

System Action: None.

User Response: None.

UTIM0038I

TimeFinder INITialize CLEar complete

Explanation: TimeFinder control records have been cleared to allow for a new TimeFinder Controls for TPF configuration.

System Action: None.

User Response: Proceed with TimeFinder control record configuration.

Messages 223
UTIM0039I

TimeFinder master indicator reset
Monitor stopping

Explanation: TimeFinder has reset the master indicator and flagged the monitor for termination.

System Action: TimeFinder monitor is invoked. Following this initiation the TimeFinder monitor is stopped.

User Response: None.

UTIM0040E

No online SDAs this CU

Explanation: TimeFinder has not found any online SDAs, to which to issue a TimeFinder operation.

System Action: None.

User Response: Review the job documentation for errors. Search the EMC Knowledgebase for applicable solutions relating to this message ID. If you cannot determine and correct the problem, contact the EMC Customer Support Center for technical assistance. Make sure you have all relevant job documentation available.

UTIM0041E

Command disallowed for non-zDP Groups

Explanation: The command issued is only valid for TF/SnapVX zDP Groups.

System Action: None.

User Response: None.

UTIM0042E

Invalid Symmetrix device number specified
TimeFinder action aborted

Explanation: An invalid device number was specified in the ZUTIM DISPLAY or ZUTIM CONFIG DISPLAY functional entry.

System Action: None.

User Response: Specify a valid start device number and re-enter the display command.

UTIM0043E

CU Control Record FACS Error

Explanation: A FACS error has occurred during TimeFinder CU control record retrieval.

System Action: None.

User Response: Ensure that the TimeFinder control records are allocated.
UTIM0044E
Device Control Record FACS Error
Explanation: A FACS error has occurred during TimeFinder control record retrieval.
System Action: None.
User Response: Ensure that the TimeFinder control records are allocated.

UTIM0045E
CU Control Record FIWHC Error
Explanation: A FIWHC error has occurred during TimeFinder CU control record retrieval.
System Action: None.
User Response: Ensure that TimeFinder control records have been initialized with the correct record ID and that the control record header is not corrupt. Contact the EMC Customer Support Center.

UTIM0046E
Master Control Record FIWHC Error
Explanation: A FIWHC error has occurred during TimeFinder master control record retrieval.
System Action: None.
User Response: Ensure that TimeFinder control records have been initialized with the correct record ID and that the control record header is not corrupt. Contact the EMC Customer Support Center.

UTIM0047E
Processor Resource Owner Table FINWC error
Explanation: A FINWC error occurred during PROT record retrieval.
System Action: None.
User Response: Contact Coverage.

UTIM0048E
Processor Resource Owner Table FACS error
Explanation: A FACS error occurred during PROT record retrieval.
System Action: None.
User Response: Contact Coverage.
Messages

**UTIM0049E**

This processor is not the SYMM owner

**Explanation:** TimeFinder operations can only be initiated on the processor that owns the SYMM resource.

**System Action:** None.

**User Response:** Reenter the command on the processor that owns the SYMM resource.

**UTIM0050E**

Device control record FINDC error

**Explanation:** A FINDC error occurred during TimeFinder control record retrieval.

**System Action:** None.

**User Response:** Ensure that TimeFinder control records have been initialized with the correct record ID and that the control record header is not corrupt. Contact the EMC Customer Support Center.

**UTIM0051E**

Master Control Record FINDC Error

**Explanation:** A FINDC error occurred during TimeFinder master control record retrieval.

**System Action:** None.

**User Response:** Ensure that TimeFinder control records have been initialized and that the TimeFinder master control record header is not corrupt. Contact the EMC Customer Support Center.

**UTIM0052E**

TimeFinder CU control record FILNC error

**Explanation:** A FILNC error has occurred during TimeFinder CU control record filing.

**System Action:** None.

**User Response:** Ensure that TimeFinder control records have been initialized with the correct record ID and that the CU control record header is not corrupt. Contact the EMC Customer Support Center.

**UTIM0053E**

Device control record EOF encountered

**Explanation:** The device pair item count in the CU control record does not match the number of device pair items in the device control record.

**System Action:** None.

**User Response:** Determine if the TimeFinder Control Records are corrupt. Contact the EMC Customer Support Center.
UTIM0054E

Group control record FILNC error

Explanation: A FILNC error has occurred during TimeFinder Group control record filing by the TimeFinder scheduler.

System Action: None.

User Response: Ensure that TimeFinder control records have been initialized with the correct record ID and that the Group control record header is not corrupt. Contact the EMC Customer Support Center.

UTIM0055I

TimeFinder operation not issued since control record configuration

Explanation: ZUTIM DISplay GRO- STA-ALL|RAN has been issued after the TimeFinder control records have been configured, but before an operation of the type specified by the STA parameter has been issued for the TimeFinder group.

System Action: None.

User Response: Reenter the Status command while a TimeFinder operation is active, or after at least one TimeFinder operation of the type specified by the STA parameter has completed for the TimeFinder group.

UTIM0056E

Heap Storage not available. Try again later.

Explanation: An EMC SymmAPI macro call could not acquire the heap storage necessary to issue the I/O command.

System Action: None.

User Response: Try the TimeFinder operation when the system is less busy. Contact the EMC Customer Support Center.

UTIM0057E

TimeFinder operation timeout

Explanation: The TimeFinder operation scheduler did not receive completion notification from all TimeFinder processor ECBs.

System Action: None.

User Response: Determine the status of TimeFinder processor ECBs. Reissue the TimeFinder operation after all outstanding TimeFinder operation ECBs have exited the system.
Messages

UTIM0059E

TimeFinder operation already being issued

Explanation: A TimeFinder operation is in the process of being issued.

System Action: None.

User Response: Reenter the command after TimeFinder has completed issuing the operation and the TimeFinder monitor has terminated indicating that the TimeFinder operation is complete.

UTIM0060E

Group Control Record FACS error

Explanation: A FACS error has occurred during TimeFinder group control record retrieval.

System Action: None.

User Response: Ensure that the TimeFinder control records are allocated. TimeFinder Configuration may be required. Contact the EMC Customer Support Center.

UTIM0061E

Group Control Record FIWHC error

Explanation: A FIWHC error has occurred during TimeFinder Group Control record retrieval.

System Action: None.

User Response: Ensure that the TimeFinder control records have been initialized and that the TimeFinder Group Control record header is not corrupt. Contact the EMC Customer Support Center.

UTIM0062E

Group Control Record FINDC error

Explanation: A FINDC error has occurred during TimeFinder Group Control record retrieval.

System Action: None.

User Response: Ensure that the TimeFinder control records have been initialized and that the TimeFinder Group Control record header is not corrupt. Contact the EMC Customer Support Center.

UTIM0063E

Unable to mount specified SDA

Explanation: A ZUTIM CONFIG ADD/REMOVE command was issued specifying an SDA, which could not be mounted to the TPF system.

System Action: None.

User Response: Reissue the command specifying a valid SDA.
UTIM0064I

**TimeFinder master indicator reset**

**Monitor not active**

**Explanation:** TimeFinder monitor reset successfully completed and the monitor was not active and did not need to be terminated.

**System Action:** None.

**User Response:** None.

UTIM0065E

**TimeFinder operation device is offline**

**Explanation:** The TimeFinder operation device is determined to be offline during an EMC SymmAPI macro call I/O for a TimeFinder Display or Configuration command.

**System Action:** None.

**User Response:** Determine the status of operation device specified in the CU control record for the TimeFinder Set for which the Display or Configuration command was issued. The TimeFinder operation device is assigned for a CU during TimeFinder control record refresh.

UTIM0066I

**Previous TimeFinder range operation is active**

**Explanation:** TimeFinder control record refresh or the TimeFinder scheduler has determined that a previously entered TimeFinder range command is in progress.

**System Action:** The command is rejected.

**User Response:** Allow the TimeFinder range command to complete as indicated by the TimeFinder monitor, or abort the running TimeFinder range command. See “ZUTIM ABORT” on page 57.

UTIM0067E

**Invalid SDA specified for use as gatekeeper**

**Explanation:** A ZUTIM DEFINE PROp-GKD|NOG command was issued but the SDA specified is invalid. For local groups, this means that the SDA is not in the same storage system as the SDA specified on the original ZUTIM CONFIG ADD command. For multi-hop storage systems, this means that the SDA specified together with the multi-hop list specified on the original ZUTIM CONFIG ADD command does not access this multi-hop storage system.

**System Action:** The command is rejected.

**User Response:** Ensure that the SDA specified in the ZUTIM DEFINE PROp-GKD|NOG command is in the same storage system as the SDA specified in the ZUTIM CONFIG ADD command.
Messages

UTIM0068E
Invalid TimeFinder Set specified

Explanation: A TimeFinder command was issued specifying an invalid TimeFinder Set.

System Action: None.

User Response: Reissue the TimeFinder command with a valid TimeFinder Set.

UTIM0069E
Configuration control record FACS error

Explanation: The TimeFinder Configuration control record type #EMCTM or ordinal is not allocated.

System Action: The TimeFinder Configuration command is aborted.

User Response: Make Allocate an adequate number of TimeFinder Configuration control records #EMCTM.

UTIM0070E
Configuration Master Control Record FACS error

Explanation: The TimeFinder Configuration master control record #EMCTM ordinal 0 or 1 is not allocated.

System Action: The TimeFinder Configuration command is aborted.

User Response: Ensure that an adequate number of TimeFinder Configuration control records #EMCTM are allocated.

UTIM0071E
Configuration Master Control Record FIWHC error

Explanation: An error occurred on the FIWHC of the TimeFinder Configuration master control record #EMCTM ordinal 0.

System Action: The TimeFinder Configuration command is aborted.

User Response: Determine the cause of the I/O error. Ensure that TimeFinder Configuration control records have been initialized and that the TimeFinder Configuration master control record header is not corrupt.

UTIM0072E
Configuration Master Control Record FINDC error

Explanation: An error occurred on the FINDC of the TimeFinder Configuration master control record #EMCTM ordinal 0.

System Action: The TimeFinder Configuration command is aborted.

User Response: Determine the cause of the I/O error. Ensure that TimeFinder Configuration control records have been initialized and that the TimeFinder Configuration master control record header is not corrupt.
UTIM0073E

Configuration CU Control Record FACS error

**Explanation:** The TimeFinder Configuration cu control records #EMCTM are not allocated

**System Action:** The TimeFinder Configuration command is aborted.

**User Response:** Ensure that an adequate number of TimeFinder Configuration control records #EMCTM are allocated.

UTIM0074E

Configuration CU Control Record FIWHC error

**Explanation:** An error occurred on the FIWHC of a TimeFinder Configuration cu control record #EMCTM.

**System Action:** The TimeFinder Configuration command is aborted.

**User Response:** Determine the cause of the I/O error. Ensure that TimeFinder Configuration control records have been initialized and that the TimeFinder Configuration cu control record header is not corrupt.

UTIM0075E

Configuration CU Control Record FINDC error

**Explanation:** An error occurred on the FINDC of a TimeFinder Configuration cu control record #EMCTM.

**System Action:** The TimeFinder Configuration command is aborted.

**User Response:** Determine the cause of the I/O error. Ensure that TimeFinder Configuration control records have been initialized and that the TimeFinder Configuration cu control record header is not corrupt.

UTIM0076E

Configuration Device Control Record FACS error

**Explanation:** The TimeFinder Configuration BCV control records #EMCTM are not allocated

**System Action:** The TimeFinder Configuration command is aborted.

**User Response:** Ensure that an adequate number of TimeFinder Configuration control records #EMCTM are allocated.

UTIM0077E

Configuration Device Control Record FIWHC error

**Explanation:** An error occurred on the FIWHC of a TimeFinder Configuration BCV control record #EMCTM.

**System Action:** The TimeFinder Configuration command is aborted.

**User Response:** Determine the cause of the I/O error. Ensure that TimeFinder Configuration control records have been initialized and that the TimeFinder Configuration BCV control record header is not corrupt.
UTIM0078E
Configuration Device Control Record FINDC error

Explanation: An error occurred on the FINDC of a TimeFinder Configuration control record #EMCTM.

System Action: The TimeFinder Configuration command is aborted.

User Response: Determine the cause of the I/O error. Ensure that TimeFinder Configuration control records have been initialized and that the TimeFinder Configuration control record header is not corrupt.

UTIM0079E
Not enough configuration control records

Explanation: New hardware was discovered during a ZUTIM CONFIG ADD/REMOVED command, but there were not enough TimeFinder Configuration control records #EMCTM allocated to build the control records.

System Action: The TimeFinder command is aborted.

User Response: Allocate an adequate number of TimeFinder Configuration control records #EMCTM to accommodate the addition of new hardware.

UTIM0080E
Ctlrcd Backup and Restore FACS error

Explanation: A FACS error occurred during CTLRCD BACKUP or RESTORE. Target record allocations must be greater than or equal to the source record allocation.

System Action: The TimeFinder CTLRCD command is aborted.

User Response: Allocate an adequate number of TimeFinder Backup Control Records #EMCTB.

UTIM0081E
Control record FINDC error

Explanation: An error occurred on the FINDC of a TimeFinder control record #EMCTF during TimeFinder Configuration control record refresh.

System Action: The TimeFinder Configuration Open command is aborted.

User Response: Determine the cause of the I/O error. Ensure that TimeFinder control records have been initialized and that the TimeFinder control record header is not corrupt.

UTIM0082E
Configuration control record FILNC error

Explanation: An error occurred on the FILNC of a TimeFinder configuration control record #EMCTM during TimeFinder Configuration control record refresh.

System Action: The TimeFinder Configuration command is aborted.

User Response: Determine the cause of the I/O error. Ensure that TimeFinder Configuration control records have been initialized and that the TimeFinder Configuration control record header is not corrupt.
UTIM0083E

TimeFinder master indicator could not be reset
Manual reset may be necessary

Explanation: TimeFinder was unable to reset all indicators at end of operation.
System Action: None.
User Response: None.

UTIM0084I

TimeFinder configuration ctl rcds not refreshed

Explanation: A TimeFinder Configuration Close command was issued before the TimeFinder Configuration control records had been refreshed with a TimeFinder Configuration Open command.
System Action: The TimeFinder Configuration Close command is aborted.
User Response: Ensure that a Configuration session is open for a TimeFinder group of a logical subsystem before entering the Configuration Close command for that TimeFinder group of the logical subsystem.

UTIM0085E

Ctlrcd Backup and Restore source FINDC error

Explanation: An error occurred on the FINDC of the source record during a CTLRCD BACKUP|RESTORE command.
System Action: The TimeFinder CTLRCD command is aborted.
User Response: Determine the cause of the I/O error. Ensure that TimeFinder control records and backup control records have been initialized and that the record header is not corrupt.

UTIM0086I

TimeFinder configuration ctl rcd refresh initiated

Explanation: The first TimeFinder Configuration Open command in a configuration session has been issued and the TimeFinder Configuration control records are being refreshed from the TimeFinder control records.
System Action: None.
User Response: None.
Messages

UTIM0087I

TimeFinder configuration command disallowed

Explanation: The TimeFinder configuration command is disallowed because another TimeFinder operation was in progress or the TimeFinder control records are not initialized.

System Action: The TimeFinder Configuration command is aborted.

User Response: Retry the configuration command after the current TimeFinder operation is complete. If necessary, initialize TimeFinder control records using the ZUTIM INI command.

UTIM0088E

Specified device count must be greater than zero

Explanation: The user specified a count of zero on the TimeFinder Configuration Change|Delete command.

System Action: The TimeFinder Configuration Change|Delete command is aborted.

User Response: Specify a count greater than zero on the TimeFinder Configuration Change|Delete command.

UTIM0089I

TimeFinder configuration verifying sessions not open

Explanation: The TimeFinder Configuration Accept command has been issued and the application is verifying that no Configuration sessions are open for TimeFinder groups of any logical subsystem.

System Action: None.

User Response: None.

UTIM0090I

TimeFinder configuration groups finalized

Explanation: The TimeFinder Configuration Accept command has been issued and the application is updating TimeFinder group status in the Configuration control records.

System Action: None.

User Response: None.

UTIM0091I

TimeFinder configuration SDDF sessions deleted

Explanation: The TimeFinder Configuration Accept command has been issued and the application is deleting any SDDF sessions for device pairs removed from the TimeFinder configuration by the TimeFinder Configuration Change|Delete command.

System Action: None.

User Response: None.
UTIM0092I

TimeFinder configuration device pairs finalized

Explanation: The TimeFinder Configuration Accept command has been issued and the application is updating device pair status in the Configuration control records.

System Action: None.
User Response: None.

UTIM0093I

TimeFinder configuration verifying device pairs unique

Explanation: The TimeFinder Configuration Accept command has been issued and the application is updating device pair status in the Configuration control records.

System Action: None.
User Response: None.

UTIM0094I

TimeFinder control records updated

Explanation: The TimeFinder Configuration Accept command has been issued and the application is updating the TimeFinder control records with the new configuration from the TimeFinder Configuration control records.

System Action: None.
User Response: None.

UTIM0095E

TimeFinder Version: dddd Modification: dddd Revision: dddd
Control record migration required

Explanation: A TimeFinder command has been issued and the TimeFinder control record version does not match the TimeFinder software version.

System Action: The TimeFinder command is aborted.
User Response: Migrate the TimeFinder control records using the conversion procedure in “Migration from an earlier release of TimeFinder” on page 36.

UTIM0096I

Ctlrcd Backup and Restore target FILNC error

Explanation: An error occurred on the FILNC of the target record during a CTLRCD BACKUP|RESTORE command.

System Action: The TimeFinder CTLRCD command is aborted.
User Response: Determine the cause of the I/O error. Ensure that TimeFinder control records and backup control records have been initialized and that the record header is not corrupt.
Messages

UTIM0097E

TimeFinder Split not allowed while MCPY active
Use FORCE option to abort synchronization

Explanation: TimeFinder Split attempted while module copy is active or paused in one or
more MDBF subsystems.

System Action: TimeFinder Split is not allowed while module copy is active.

User Response: Wait for the module copy to complete, ensure the copied modules are
synchronized, and reissue the TimeFinder Split.

UTIM0098I

TimeFinder control record restore started

Explanation: The TimeFinder control records restore has started.

System Action: None.

User Response: None.

UTIM0099I

TimeFinder control record backup started

Explanation: The TimeFinder control records backup has started.

System Action: None.

User Response: None.

UTIM0100E

Invalid MDBF SS encountered while checking for active MCPY

Explanation: An invalid SS was encountered while checking for an active module copy.

System Action: TimeFinder Split is disallowed.

User Response: Ensure all SS are active and reissue the TimeFinder Split.

UTIM0101E

TimeFinder Restore not allowed
Processor x not in 1052 or restart

Explanation: TimeFinder Restore attempted while Processor x is not in 1052

System Action: TimeFinder Restore is disallowed.

User Response: Ensure processor x is in 1052 state or restart prior to issuing the
TimeFinder Restore.
UTIM0102E

TimeFinder Restore not allowed
Processor x not inactive

Explanation: TimeFinder Restore attempted while Processor x is active.
System Action: TimeFinder Restore is disallowed.
User Response: Ensure all processors other than the TimeFinder utility owner are inactive prior to issuing the TimeFinder Restore.

UTIM0103I

OMA refresh initiated for all processors

Explanation: TimeFinder is refreshing offline module access control records.
System Action: None.
User Response: None.

UTIM0104T

Operation Verification Failed - Operation not started

Explanation: Prior to starting the requested operation, TimeFinder determined the status of the system was inconsistent with requirements.
System Action: The requested operation was not started.
User Response: See preceding messages for detailed information. Correct the error, and retry.

UTIM0106E

Config Group Control Record FACS error

Explanation: A FACS error has occurred during TimeFinder configuration group control record retrieval.
System Action: None.
User Response: Ensure that the TimeFinder configuration control records are allocated. TimeFinder Configuration may be required. Contact the EMC Customer Support Center.

UTIM0107E

Config Group Control Record FIWHC error

Explanation: A FIWHC error has occurred during TimeFinder configuration group control record retrieval.
System Action: None.
User Response: Ensure that the TimeFinder configuration control records have been initialized and that the TimeFinder configuration group control record header is not corrupt. Contact the EMC Customer Support Center.
UTIM0108E

Config Group Control Record FINDC error

**Explanation:** A FINDC error occurred during TimeFinder configuration group control record retrieval.

**System Action:** None.

**User Response:** Ensure that TimeFinder configuration control records have been initialized and that the TimeFinder configuration group control record header is not corrupt. Contact the EMC Customer Support Center.

UTIM0110I

Duplicate targets defined within the same group for CU Serial Number(s)

**Explanation:** TimeFinder configuration verify discovered one or more devices in the specified control unit are configured more than once in the TimeFinder group.

**System Action:** None.

**User Response:** Remove any incidents of illegally duplicated devices from the TimeFinder configuration.

UTIM0111I

Enter ZUTIM CONfig VERify CU-ssssssssssss to generate report(s)

**Explanation:** An attempt was made to ACCEPT the TimeFinder configuration, but it was determined that one or more devices in the specified control units are configured more than once in the TimeFinder group.

**System Action:** Configuration ACCEPT is aborted.

**User Response:** Enter ZUTIM CONfig VERify for the specified control units. Remove any incidents of illegally duplicated devices from the TimeFinder configuration and retry the configuration ACCEPT command.

UTIM0113I

TimeFinder Group not configured through (active) SRDF/A primary Symmetrix

**Explanation:** An attempt was made to define a TimeFinder group for SRDF/A operations, but the TimeFinder Set is not configured through the primary storage system. SRDF/A is not active for this TimeFinder group.

**System Action:** The TimeFinder command is aborted.

**User Response:** All TimeFinder Sets in a TimeFinder group must be configured through the primary storage system to define the SRDF/A general property for a TimeFinder group. SRDF/A must be active for this TimeFinder group.
UTIM0114I

TimeFinder migration command disallowed

Explanation: ZUTIM MIGRATE was entered but another TimeFinder operation is active.
System Action: TimeFinder control record migration is disallowed.
User Response: Wait until the active TimeFinder operation has completed.

UTIM0115I

TimeFinder migration command disallowed while configuration session active

Explanation: ZUTIM MIGRATE was entered but a configuration session is currently active.
System Action: TimeFinder control record migration is disallowed.
User Response: Close any TimeFinder groups open for configuration changes. Discard or accept the configuration. Retry the ZUTIM MIGRATE command.

UTIM0116I

TimeFinder ctl rcd migration started

Explanation: ZUTIM MIGRATE was entered and control record migration has started.
System Action: None.
User Response: None.

UTIM0117I

TimeFinder ctl rcd migration completed

Explanation: ZUTIM MIGRATE was entered and control record migration has completed.
System Action: None.
User Response: None.

UTIM0118E

TimeFinder Scheduler timeout waiting for Control Record Refresh

Explanation: The TimeFinder scheduler initiated TimeFinder control record refresh, but did not receive any indication that the refresh completed in the time defined by the Scheduler Timeout (STO) general property.
System Action: The TimeFinder command is aborted.
User Response: Determine why the control record refresh did not complete. If control record refresh completed after receiving this message, increase the scheduler timeout value to a number greater than the time elapsed since the operation started. Review the job documentation for errors. Search the EMC Knowledgebase for applicable solutions relating to this message ID. If you cannot determine and correct the problem, contact the EMC Customer Support Center for technical assistance. Make sure you have all relevant job documentation available.
Messages

UTIM0119I

TimeFinder configuration inactive groups removed

Explanation: ZUTIM CONfig ACCEPT|DISCARD was entered. If any TimeFinder groups were encountered that contained only empty TimeFinder Sets, the TimeFinder groups are removed.

System Action: None.
User Response: None.

UTIM0120I

TimeFinder configuration inactive sets removed

Explanation: ZUTIM CONfig ACCEPT|DISCARD was entered. If any empty TimeFinder Sets were encountered, the TimeFinder Sets are removed.

System Action: None.
User Response: None.

UTIM0121I

TimeFinder Group counts calculated

Explanation: ZUTIM CONfig ACCEPT|DISCARD was entered. The local and remote TimeFinder group counts are recalculated.

System Action: None.
User Response: None.

UTIM0123E

TimeFinder Operator Verification not pending for specified group name

Explanation: ZUTIM PROceed|HALt was entered but operation verification is not expecting an operator response for the specified TimeFinder group.

System Action: None.
User Response: Ensure the correct TimeFinder group is specified on input.

UTIM0124E

TimeFinder Operator Verification pending

Explanation: A TimeFinder command was issued for some TimeFinder group, but TimeFinder operation verification is currently waiting on an operator response for that or another TimeFinder group.

System Action: None.
User Response: Proceed or Halt the current TimeFinder operation before issuing a new TimeFinder operation.
**UTIM0125E**

SRDF R2 SRC not configured in TimeFinder Group

**Explanation:** An attempt was made to define a TimeFinder group for SRDF/A operations, but the TimeFinder group does not contain any source devices that are SRDF target R2s.

**System Action:** The TimeFinder command is aborted.

**User Response:** All TimeFinder Sets in a TimeFinder group must contain source devices that are SRDF target R2s and be configured through the primary storage system to define the SRDF/A general property for a TimeFinder group. SRDF/A must be active for this TimeFinder group.

**TIM0126E**

Command disallowed with zDP Cycle active

**Explanation:** The command issued is not possible while zDP cycle is active.

**System Action:** None.

**User Response:** None.

**TIM0127E**

Monitor Interval must be less than zDP cycle time

**Explanation:** The user tried to set the SRP monitor interval to a value greater than the zDP cycle time.

**System Action:** None.

**User Response:** Re-issue the command using an SRP monitor interval value less than the zDP cycle time.

**UTIM0199E**

QOS Feature use is blocked for SDA ....

**Explanation:** QoS Controls determined QoS Pacing feature is currently unavailable on the control unit.

**System Action:** QoS controls is exited for this control unit. Operation processing continues.

**User Response:** Review QoS Controls messages and contact EMC Support if condition persists.

**UTIM0208E**

Invalid device control record ordinal encountered

**Explanation:** QoS Controls Scheduler has found that the ordinal pointer to the TimeFinder control records is invalid.

**System Action:** QoS Controls exits and the operation is terminated.

**User Response:** Determine why the TimeFinder control record pointer is invalid. Review the job documentation for errors. Search the EMC Knowledgebase for applicable solutions relating to this message ID.
If you cannot determine and correct the problem, contact the EMC Customer Support Center for technical assistance. Make sure you have all relevant job documentation available.

**UTIM0209E**

Duplicate QOS Controls Event
Previous QOS Controls Event still active

**Explanation:** The event name used to schedule and wait on QoS Controls processing is a duplicate of an existing event.

**System Action:** QoS Controls exits and the operation is terminated.

**User Response:** Wait for the existing event to terminate and try again.

**UTIM0210E**

TPF event not active for QOS Controls

**Explanation:** The QoS scheduler event has terminated while the scheduler is active.

**System Action:** QoS Controls exits and the operation is terminated.

**User Response:** Determine why the event name terminated and try again.

**UTIM0211E**

Invalid Group name specified

**Explanation:** The TimeFinder group name passed to QoS Controls is not configured for TimeFinder.

**System Action:** QoS Controls exits and the operation is terminated.

**User Response:** Ensure a valid TimeFinder group name is used in the functional entry.

**UTIM0212I**

Review QOS Controls Messages - Operation continues

**Explanation:** Prior to starting the requested operation, TimeFinder QoS controls was initiated but was unable to set the desired QoS value for all relevant devices.

**System Action:** The requested operation continues.

**User Response:** Review any preceding messages for detailed information. Correct the error, and redefine QoS values for next QoS Controls initiation, if necessary. Otherwise, contact the EMC Customer Support Center.

**UTIM0213I**

QOS Controls started

**Explanation:** QoS Controls that controls user exit has been started.

**System Action:** None.

**User Response:** None.
UTIM0214I

QOS Controls completed
Explanation: QoS Controls user exit was has been completed.
System Action: None.
User Response: None.

UTIM0215E

QOS value out of valid range: 0-10
Explanation: An invalid value was specified for the QoS parameter in the ZUTIM DEF PRO-GEN entry.
System Action: None.
User Response: Ensure that the QoS value specified is between 0 and 10.

UTIM0217T

QOS Controls Failed - Operation not started
Explanation: Prior to starting the requested operation, TimeFinder QoS controls was initiated but was unable to set the desired QoS value for all relevant devices due to an error condition which may prevent successful completion of the operation.
System Action: The requested operation continues.
User Response: Review any preceding messages for detailed information. Correct the error, redefine QoS values for next QoS Controls initiation, if necessary, and retry the command. Otherwise, contact the EMC Customer Support Center.

UTIM0218I

QOS Controls for TPF not enabled
Explanation: QoS Controls for TPF is not enabled.
System Action: None
User Response: QoS Controls for TPF is a component of ResourcePak for TPF. Contact your EMC representative for more information about this product.

UTIM0219T

Unable to allocate system heap for Group Status Control data refresh.
Explanation: GST Refresh was unable to allocate system heap.
System Action: The TimeFinder operation terminates.
User Response: Determine why system heap is not available for the GST Refresh.
Messages

**UTIM0220T**

Unable to return system heap for Group Status Control data refresh.

**Explanation:** GST Refresh was unable to return system heap.

**System Action:** The TimeFinder operation terminates.

**User Response:** Determine why system heap cannot be returned.

**UTIM0221I**

GST Refresh Started

**Explanation:** Group Status Control area refresh has started.

**System Action:** Group Status Control refresh continues.

**User Response:** None.

**UTIM0222I**

GST Refresh Complete

**Explanation:** Group Status Control area refresh has completed.

**System Action:** None.

**User Response:** None.

**UTIM0223I**

Group Status Control not installed

**Explanation:** Group Status Control support is not installed for TPF.

**System Action:** None.

**User Response:** Contact your EMC representative for more information about this feature of the product.

**UTIM0224I**

INIitialize CLEar timeout or CANcelled

**Explanation:** The user issued a ZUTIM INI CLEAR entry and either allowed the entry to timeout by not making a subsequent entry, or entered ZUTIM INI CANCEL to cancel initialization of TimeFinder control records.

**System Action:** None.

**User Response:** None.
**UTIM0225I**

INITialize CLEar CONtinuing

**Explanation:** The user issued a ZUTIM INI CONTINUE entry subsequent to entering ZUTIM INI CLEAR. TimeFinder control records are initialized.

**System Action:** None.

**User Response:** None.

**UTIM0226I**

TimeFinder Session Controls for TPF not enabled

**Explanation:** TimeFinder Session Controls has not been enabled.

**System Action:** None.

**User Response:** TimeFinder Session Controls for TPF is a component of ResourcePak for TPF. Contact your EMC representative for more information about this product.

**UTIM0255W**

Message Indexing error. Contact EMC support.

**Explanation:** TimeFinder Controls encountered a message indexing error.

**System Action:** None

**User Response:** Contact the EMC Customer Support Center.

**UTIM0999I**

Valid TimeFinder operations are:

<table>
<thead>
<tr>
<th>ABORT</th>
<th>CReaTe</th>
<th>ESTablish</th>
<th>LINK</th>
<th>RENAME</th>
<th>SPLit</th>
<th>XCP</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTivate</td>
<td>CTRLCD</td>
<td>HALt</td>
<td>MIGRATE</td>
<td>RESTART</td>
<td>TERminate</td>
<td></td>
</tr>
<tr>
<td>CLIp</td>
<td>DEFine</td>
<td>INCRESTORE</td>
<td>PROceed</td>
<td>RESTORE</td>
<td>UNLink</td>
<td></td>
</tr>
<tr>
<td>CONfig</td>
<td>DISplay</td>
<td>INITialize</td>
<td>REEestablish</td>
<td>SETpro</td>
<td>UPDATE</td>
<td></td>
</tr>
</tbody>
</table>

For details enter: ZUTIM Help OPERATION

For version enter: ZUTIM Help VERSion

**Explanation:** This is the normal response to the ZUTIM Help functional message

**System Action:** None.

**User Response:** None.

**UTIM1000I**

Clone|SnapVX Group gggggggg Set sssssss started issuing cccccc

**Explanation:** TimeFinder has started issuing operation cccccccccccc for TimeFinder Set sssssss in Clone or SnapVX group gggggggg.

**System Action:** None.

**User Response:** None.
Messages

UTIM1001I

Clone|SnapVX Group gggggggg Set sssssss completed issuing cccccccccc

Explanation: TimeFinder has completed issuing operation cccccccccc for TimeFinder Set sssssss in Clone or SnapVX group gggggggg.

System Action: None.

User Response: None.

UTIM1002I

Clone|SnapVX gggggggg operation cccccccccc not active

Explanation: The TimeFinder Restart entry has determined that there is no operation to restart for this Clone or SnapVX group.

System Action: None.

User Response: Ensure you are restarting the correct Clone or SnapVX group.

UTIM1003I

Clone|SnapVX Group gggggggg Set sssssss operation cccccccccc not active

Explanation: The TimeFinder Restart entry has determined that there is no operation to restart for this Clone or SnapVX group and Set.

System Action: None.

User Response: Ensure you are restarting the correct Clone or SnapVX group and Set.

UTIM1004W

Clone|SnapVX Group gggggggg Set sssssss unable to complete issuing cccccccccc

Explanation: TimeFinder has been unable to issue operation cccccccccc to one or more devices in the CU with serial number hhhhhhhhhhhh.

System Action: None.

User Response: Determine the reason for failure by displaying the status of the devices in the storage system.

UTIM1005I

Clone|SnapVX Group gggggggg Set sssssss unable to issue cccccccccc

Explanation: TimeFinder has not issued operation cccccccccc for TimeFinder Set sssssss in Clone or SnapVX group gggggggg because there are no online devices in the designated storage system. The operator was prompted to halt or proceed by operations verification and chose to proceed with the operation.

System Action: None.

User Response: None.
UTIM1006I

TimeFinder Configuration ccccccccc complete

Explanation: The TimeFinder Configuration command ccccccccc has completed.
System Action: None.
User Response: None.

UTIM1007I

TimeFinder Configuration ccccccccc aborted

Explanation: The TimeFinder Configuration command ccccccccc has been aborted. The error encountered will have been specified in the preceding message.
System Action: The TimeFinder Configuration command is aborted.
User Response: Refer to the explanation for the preceding message.

UTIM1008T

Clone|SnapVX Group gggggggg Set sssssss ccccccccccccccc aborted

Explanation: The TimeFinder operation ccccccccccccc for Clone or SnapVX group gggggggg Set sssssss has aborted.
System Action: The TimeFinder operation terminates.
User Response: None.

UTIM1009I

TimeFinder Status Display

Clone|SnapVX Group: gggggggg Set: sssssss Range Operation: ccccccccccccc

Explanation: Status display header for the TimeFinder range operation ccccccccccccc for Clone or SnapVX group gggggggg Set sssssss.
System Action: None.
User Response: None.

UTIM1010I

Clone|SnapVX Group gggggggg Set sssssss ccccccccccccc in progress

Explanation: The user tried to enter a conflicting TimeFinder entry while TimeFinder operation ccccccccccccc is in progress for Clone or SnapVX group gggggggg Set sssssss.
System Action: None.
User Response: Wait for the active operation to complete and try again.
Messages

UTIM1011E

Local CU ccccccccccccc SRC hhhh invalid state

Explanation: The TimeFinder Configuration Change|Delete command tried to alter a SRC device that is not in a valid state.

System Action: The TimeFinder Configuration Change|Delete command is aborted.

User Response: Review TimeFinder status. TimeFinder configuration changes should only be done when TGT, SRC, and device pair states are SYNC, AVAIL, AVAIL respectively.

UTIM1012E

Local CU ccccccccccccc TGT hhhh invalid state

Explanation: The TimeFinder Configuration Change|Delete command tried to alter a TGT device that is not in a valid state.

System Action: The TimeFinder Configuration Change|Delete command is aborted.

User Response: Review TimeFinder status. TimeFinder configuration changes should only be done when TGT, SRC, and device pair states are SYNC, AVAIL, AVAIL respectively.

UTIM1013E

Remote CU ccccccccccccc TGT hhhhhhhhh is user not ready

Explanation: The TimeFinder Configuration Change|Delete command tried to alter a BCV that is currently user not ready state in the local/remote CU ccccccccccccc.

System Action: The TimeFinder CONFIGURATION CHANGE|DELETE command is aborted.

User Response: Review TimeFinder status. Make TimeFinder configuration changes when SRC, TGT, and device states are SYNC, AVAIL, AVAIL respectively. The target must also be in a ready state.

UTIM1014I

TimeFinder verification for Local CU ccccccccccccc

Explanation: TimeFinder configuration verification has been started for all TimeFinder Sets contained in physical Control unit ccccccccccccc.

System Action: The display following this header will list all TGTs with which multiple SRC devices have been paired/configured.

User Response: Correct all listed illegally configured device pair definitions and reissue the ZUTIM CONfig VERify command. If no TGTs are listed indicating an invalid configuration, the configuration is acceptable.
UTIM1025I

Local CU cccccccecccc SRC hhhhhhhhh exceeds total volume count

Explanation: The TimeFinder Configuration Change|Delete command specified a range of source devices that goes beyond the physical volume count in local/remote control unit cccccccecccc.

System Action: The TimeFinder Configuration Change|Delete command is aborted.

User Response: Specify a valid range of SRC volumes on the TimeFinder Configuration command.

UTIM1026I

Remote CU cccccccecccc TGT hhhhhhhhh exceeds total volume count

Explanation: The TimeFinder Configuration Change|Delete command specified a range of target devices that goes beyond the physical volume count in local/remote control unit cccccccecccc.

System Action: The TimeFinder Configuration Change|Delete command is aborted.

User Response: Specify a valid range of TGT devices on the TimeFinder Configuration command.

UTIM1027I

Local CU cccccccecccc TGT hhhh not paired with input STD

Explanation: The TimeFinder Configuration Delete command specified a SRC/TGT pair that does not match the current TimeFinder configuration.

System Action: The TimeFinder Configuration Delete command is aborted.

User Response: Specify valid pairs on the TimeFinder Configuration Delete command.

UTIM1028I

Remote CU cccccccecccc end of file encountered

Explanation: The ZUTIM CONFIG CHANGE command attempted to process beyond the end of the device control record end of file.

System Action: The TimeFinder Configuration Change|Delete command is aborted.

User Response: Ensure the validity of the device pairs specified. TimeFinder configuration control records may have become corrupted.

UTIM1029E

Local CU cccccccecccc Symmetrix device hhhhhhhhh is not a valid SRC

Explanation: One or more devices in the SRC range specified on the ZUTIM CONFIG CHANGE command is not a valid TimeFinder source device.

System Action: The TimeFinder Configuration Change|Delete command is aborted.

User Response: Ensure all devices in the SRC range specified on the TimeFinder CONFIGURATION CHANGE|DELETE command are valid TimeFinder source devices.
UTIM1030E
Remote CU cccccc Symmetrix device hhhhhhh is not a valid TGT

Explanation: One or more devices in the TGT range specified on the ZUTIM CONfig ChAnge|DELeTe command is not a valid TimeFinder target device.

System Action: The TimeFinder Configuration Change|Delete command is aborted.

User Response: Ensure all devices in the TGT range specified on the TimeFinder Configuration Change|Delete command are valid TimeFinder target devices.

UTIM1031I
TimeFinder Status Display
Clone|SnapVX Group: gggggggggg Base Operation: cccccc

Explanation: Status display header for the TimeFinder operation cccccc for Clone or SnapVX group gggggggggg.

System Action: None.

User Response: None.

UTIM1033I
Local Clone|SnapVX Group gggggggg cccccc completed

Explanation: The TimeFinder operation cccccc has completed for all TimeFinder Sets operated on in Clone or SnapVX group gggggggg.

System Action: None.

User Response: None.

UTIM1034I
Local|Remote Clone|SnapVX Group gggggggg multi-instant split complete

Explanation: TimeFinder multi-instant split has completed for all logical subsystems specified on the input SPLit command. the background split process continues.

System Action: TimeFinder has completed the Split. All device pairs have been marked as Split. The post split user exit is entered and then the TimeFinder monitor continues to monitor the background Split process completes.

User Response: None.

UTIM1035T
Clone|SnapVX Group gggggggg cccccc aborted

Explanation: The TimeFinder operation cccccc for Clone or SnapVX group gggggggg has aborted.

System Action: The TimeFinder operation terminates.

User Response: None.
UTIM1036I

Clone|SnapVX Group gggggggg ccccccdddd in progress

Explanation: The user tried to enter a conflicting TimeFinder entry while TimeFinder operation ccccccdddd is in progress for Clone or SnapVX group ssssssss.

System Action: None.

User Response: Wait for the active operation to complete and try again.

UTIM1041I

TF configuration display for Local|Remote CU ccccccdddddd
Clone|SnapVX Group: gggggggg Configuration Status: ssssssss

Explanation: TimeFinder configuration display header.

System Action: None.

User Response: None

UTIM1042I

TF configuration display for Local|Remote CU ccccccdddddd
Clone|SnapVX Group: gggggggg Set: ssssssss Base operation: ccccccdddddd

Explanation: TimeFinder configuration display header.

System Action: None.

User Response: None

UTIM1043I

Local|Remote CU ccccccdddddd discovered for Clone|SnapVX Group gggggggg Set ssssssss

Explanation: TimeFinder control record refresh or TimeFinder Configuration Add command is discovering the control unit and device characteristics of CU ccccccdddddd for Clone or SnapVX group gggggggg TimeFinder Set ssssssss.

System Action: None.

User Response: None

UTIM1049I

TimeFinder Group gggggggg is ssssssss

Explanation: The status of TimeFinder group gggggggg is as specified (ssssssss).

System Action: None.

User Response: None.
Messages

UTIM1050I

TimeFinder Group gggggggg does not contain Set sssssssss

Explanation: An attempt was made to change the configuration of TimeFinder Set sssssssss in TimeFinder group gggggggg. TimeFinder Set sssssssss does not exist.

System Action: None.

User Response: Issue the configuration command for an existing TimeFinder Set and TimeFinder group.

UTIM1051I

TimeFinder Group gggggggg Set sssssssss Change|Delete request processed

Explanation: The TimeFinder Configuration Change|Delete command for the specified TimeFinder group of the local logical subsystem has been processed.

System Action: None.

User Response: None.

UTIM1052I

TimeFinder Group gggggggg does not exist

Explanation: The TimeFinder Configuration command was issued for a non-existent TimeFinder group.

System Action: None.

User Response: Issue the command for a valid TimeFinder group.

UTIM1053I

TimeFinder Group gggggggg already contains Set sssssssss

Explanation: ZUTIM CONfig RENAME was issued and tried to rename a TimeFinder Set to one already in existence in TimeFinder group gggggggg.

System Action: None.

User Response: Choose a unique new TimeFinder Set name and reissue the command.

UTIM1054I

TimeFinder Group gggggggg Set sssssssss cccccc

Explanation: The TimeFinder Set sssssssss in TimeFinder group gggggggg is as specified (ssssssss).

System Action: None.

User Response: Determine if the TimeFinder configuration command was successful as displayed in the subsequent console message. Take appropriate action.
**UTIM1056I**

TimeFinder Group *gggggggg* already exists

**Explanation:** ZUTIM CONfig REName was issued, but the new TimeFinder group name *gggggggg* already exists.

**System Action:** None.

**User Response:** Issue the command specifying a unique TimeFinder group name.

**UTIM1057I**

TimeFinder Group *cccccccc* Cycle Controls Halted

**Explanation:** TimeFinder zDP cycle controls has stopped for zDP Group *cccccccc*.

**System Action:** None.

**User Response:** None.

**UTIM1058I**

TimeFinder Group *cccccccc* Cycle Controls Active

**Explanation:** TimeFinder zDP cycle controls indicates a snapshot has been taken for zDP Group *cccccccc*.

**System Action:** None.

**User Response:** None.

**UTIM1059I**

TimeFinder Group *cccccccc* Cycle Controls Started

**Explanation:** TimeFinder zDP cycle controls was started by the user and is active for zDP Group *cccccccc*.

**System Action:** None.

**User Response:** None.

**UTIM1060I**

TimeFinder Group *cccccccc* Cycle Controls Inactive

**Explanation:** The user attempted to restart zDP cycle controls for zDP Group *cccccccc*, but zDP controls was not previously active and abnormally halted.

**System Action:** None.

**User Response:** None.
Messages

**UTIM1061I**
TimeFinder Group cccccccc Cycle Controls Inactive on this CPU

**Explanation:** The zDP High Availability cycle monitor detected that zDP cycle controls is inactive on this CPU.

**System Action:** None.

**User Response:** None.

**UTIM1063I**
TimeFinder zDP cycle timeout for TimeFinder Group cccccccc Set ssssssss

**Explanation:** There has been a timeout in zDP cycle processing for TimeFinder Group cccccccc Set ssssssss.

**System Action:** None.

**User Response:** None.

**UTIM1064I**
TimeFinder zDP Group cccccccc Cycle Controls Scheduled to exit

**Explanation:** The user has stopped zDP cycle controls for zDP Group cccccccc, and it has been scheduled to exit.

**System Action:** None.

**User Response:** None.

**UTIM1070I**
TimeFinder zDP Group cccccccc Cycle Controls Inactive on CPU x

**Explanation:** The zDP High Availability cycle monitor detected that zDP cycle controls is inactive on CPU x.

**System Action:** None.

**User Response:** None.

**UTIM1071I**
TimeFinder zDP Group cccccccc Cycle Controls Active on CPU x

**Explanation:** The zDP High Availability cycle monitor detected that zDP cycle controls is active on CPU x.

**System Action:** None.

**User Response:** None.
UTIM1072I

TimeFinder zDP Group cccccccc SRP Monitor Active

Explanation: The SRP Monitor heartbeat indicates that the SRP Monitor is active.
System Action: None.
User Response: None.

UTIM1255W

Message Indexing error. Contact EMC support.

Explanation: TimeFinder Controls encountered a message indexing error.
System Action: None.
User Response: Contact the EMC Customer Support Center.

UTIM1256I

ccccccccccccccccccccccccccccc in progress

Explanation: The user tried to enter a conflicting TimeFinder entry while another
TimeFinder entry ccccccccccccccccccccccccc is in progress.
System Action: None.
User Response: Wait for the active entry to complete and try again.

E1UI0001I

SS cccc not initialized

Explanation: The specified MDBF subsystem became inactive during TimeFinder
validation.
System Action: None.
User Response: Ensure the TPF complex is in its preferred configuration. It may be
acceptable to run with offline devices.

E1UI0002W

... nnnn SDAs are offline

Explanation: The specified number of devices was offline during the validation process.
System Action: None.
User Response: Ensure the TPF complex is in its preferred configuration. It may be
acceptable to run with offline devices.
Messages

E1UI0003W

System call error count was nnnn

Explanation: There were nnnn error return codes from EMCSA calls during TimeFinder initialization.

System Action: None.

User Response: Determine if the errors were a result of incorrect TimeFinder operation. Determine the cause of the errors and reissue the operation.

E1U90001I

Review TimeFinder exceptions above for Group gggggggg ooooooo:
To proceed, enter: ZUTIM PROceed GROup-gggggggg
To halt, enter: ZUTIM HALt GROup-gggggggg

Explanation: Operations Verification for the operation ooooooo for TimeFinder Group gggggggg has identified some exceptions. The exceptions are issued prior to message E1U90001I.

System Action: TimeFinder Controls waits for the operator to proceed or halt the operation using the entries specified.

User Response: Review the exceptions issued prior to message E1U90001I for the TimeFinder Group to determine whether to proceed or halt the operation.

E1U90002I

Review TimeFinder exceptions above for Group gggggggg Set sssssss ooooooo:
To proceed, enter: ZUTIM PROceed GROup-gggggggg Set-ssssssss
To halt, enter: ZUTIM HALt GROup-gggggggg Set-ssssssss

Explanation: Operations Verification for the range operation ooooooo for TimeFinder Group gggggggg Set sssssss has identified some exceptions. The exceptions are issued prior to message E1U90002I.

System Action: TimeFinder Controls waits for the operator to proceed or halt the operation using the entries specified.

User Response: Review the exceptions issued prior to message E1U90002I for the TimeFinder Group and Set to determine whether to proceed or halt the operation.
E1xx0001E

Error on SymmAPI call - hhhhyyyy

Explanation: The SymmAPI call identified by the hexadecimal code hhhh returned a non-zero return code yyyy.

System Action: None.

User Response: This message can be issued by segments E1TH, E1TO, E1TR, E1TW, E1UB, E1UC, E1UE, E1UF. See the return code yyyy description in Appendix C to identify the resolution. If the resolution cannot be identified, search the EMC Knowledgebase for applicable solutions relating to this message ID. If you cannot determine and correct the problem, contact the EMC Customer Support Center for technical assistance. Make sure you have all relevant job documentation available.
This appendix contains information about indicators used by TimeFinder. The topics include:

- TimeFinder operation return codes

260
TimeFinder operation return codes

The operation return codes are the two bytes found in the OPR RC column in the following TimeFinder display:

```
CSMP0097I 11.11.02 CPU-2 SS-BSS SSU-SSU0 IS-01
UTIM1042I TF status for Remote CU 000197100061
Clone Group: U9ACLNR1 Set: A64 Base operation: Split
MDBF SYMB          SRC      TGT  TGT   TGT SRC   Pair  Invalid     Opr
SSN  MOD  SDA      DEV#     DEV# State NR  State State Tracks  PCT  RC
N/A  0000 0000 00000013 00000053 SYNCD X   AVAIL AVAIL       0   0 0000
N/A  0000 0000 00000014 00000054 SYNCD X   AVAIL AVAIL       0   0 0000
N/A  0000 0000 00000015 00000055 SYNCD X   AVAIL AVAIL       0   0 0000
N/A  0000 0000 00000016 00000056 SYNCD X   AVAIL AVAIL       0   0 0000
N/A  0000 0000 00000017 00000057 SYNCD X   AVAIL AVAIL       0   0 0000
N/A  0000 0000 00000018 00000058 SYNCD X   AVAIL AVAIL       0   0 0000
N/A  0000 0000 00000019 00000059 SYNCD X   AVAIL AVAIL       0   0 0000
N/A  0000 0000 0000001A 0000005A SYNCD X   AVAIL AVAIL       0   0 0000
End of Display
```

Byte 0 - TPF return codes

Table 11  Byte 0 - TPF return codes

<table>
<thead>
<tr>
<th>RC</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x01</td>
<td>TimeFinder/Clone session terminate timeout during Establish, TERminate.</td>
</tr>
<tr>
<td>0x02</td>
<td>TimeFinder/Clone session register timeout during Establish, Reestablish (NOSDDF), Restore, Increstore.</td>
</tr>
<tr>
<td>0x03</td>
<td>TimeFinder/Clone session create timeout during Restore, Increstore.</td>
</tr>
<tr>
<td>0xE0</td>
<td>FDCTC error - Check operations or gatekeeper SDA.</td>
</tr>
<tr>
<td>0xE1</td>
<td>Not an EMC CU.</td>
</tr>
<tr>
<td>0xE2</td>
<td>HW/SW incompatible with API.</td>
</tr>
<tr>
<td>0xE3</td>
<td>Zero SPT field (SPT base/DBI/MOD/SDA).</td>
</tr>
<tr>
<td>0xE4</td>
<td>MALOC error.</td>
</tr>
<tr>
<td>0xE5</td>
<td>SDA offline.</td>
</tr>
<tr>
<td>0xE6</td>
<td>SDA invalid.</td>
</tr>
<tr>
<td>0xE8</td>
<td>SDN not found in device control records.</td>
</tr>
<tr>
<td>0xE9</td>
<td>Clone pair not split on Clip operation.</td>
</tr>
<tr>
<td>0xEA</td>
<td>Targets not found on Query operation.</td>
</tr>
</tbody>
</table>
Byte 1 - Storage system return codes

TimeFinder/Clone return codes

TimeFinder/Clone Operations include Establish, Reestablish, Split, Increstore, Restore, and Terminate.

Table 12: TimeFinder/Clone return codes

<table>
<thead>
<tr>
<th>RC</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x06</td>
<td>Session removed for non established.</td>
</tr>
<tr>
<td>0x07</td>
<td>SDDF sessions mismatch.</td>
</tr>
<tr>
<td>0x0B</td>
<td>LREP sync task creation exception.</td>
</tr>
<tr>
<td>0x09</td>
<td>Syscall 8137 no indirects.</td>
</tr>
<tr>
<td>0x10</td>
<td>Poll for ending status.</td>
</tr>
<tr>
<td>0x0F</td>
<td>Poll for establish session.</td>
</tr>
<tr>
<td>0x11</td>
<td>File SMMF session not established.</td>
</tr>
<tr>
<td>0x12</td>
<td>File SMMF session type error.</td>
</tr>
<tr>
<td>0x13</td>
<td>File SMMF session not removed.</td>
</tr>
<tr>
<td>0x14</td>
<td>Device owns copy offload session.</td>
</tr>
<tr>
<td>0x15</td>
<td>Clone illegal TGT inhibit out copy.</td>
</tr>
<tr>
<td>0x16</td>
<td>SRC device not ready.</td>
</tr>
<tr>
<td>0x17</td>
<td>OOB must be Fast Snap.</td>
</tr>
<tr>
<td>0x18</td>
<td>Flash copy Snap violation.</td>
</tr>
<tr>
<td>0x19</td>
<td>Source device owns aborted tracks.</td>
</tr>
<tr>
<td>0x1A</td>
<td>Cannot send to Appant queue.</td>
</tr>
<tr>
<td>0x1B</td>
<td>Session already exists.</td>
</tr>
<tr>
<td>0x1C</td>
<td>Max number of records exceeded.</td>
</tr>
<tr>
<td>0x1D</td>
<td>System time overrun.</td>
</tr>
<tr>
<td>0x1E</td>
<td>Multi device busy wait and retry.</td>
</tr>
<tr>
<td>0x1F</td>
<td>Mix of IXSnap and basic Snap.</td>
</tr>
<tr>
<td>0x20</td>
<td>Target is destination of another App.</td>
</tr>
<tr>
<td>0x21</td>
<td>Wrong CCBH.</td>
</tr>
<tr>
<td>0x22</td>
<td>Destination device is VLUN migration DV.</td>
</tr>
<tr>
<td>0x23</td>
<td>Extents track not perma cache slot.</td>
</tr>
<tr>
<td>0x24</td>
<td>Extents track not in cache.</td>
</tr>
<tr>
<td>0x25</td>
<td>Wrong SYMM number.</td>
</tr>
<tr>
<td>0x26</td>
<td>Extents track has no record 1.</td>
</tr>
</tbody>
</table>
## Table 12 TimeFinder/Clone return codes

<table>
<thead>
<tr>
<th>RC</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x26</td>
<td>Mix of VP Snap and Virtual Snap.</td>
</tr>
<tr>
<td>0x27</td>
<td>Destination device is R2 disabled.</td>
</tr>
<tr>
<td>0x28</td>
<td>Source device owns Snap session.</td>
</tr>
<tr>
<td>0x29</td>
<td>Destination device is WR disabled.</td>
</tr>
<tr>
<td>0x2A</td>
<td>XTNT TRK still active.</td>
</tr>
<tr>
<td>0x2B</td>
<td>SDDF REG fail or invalid found.</td>
</tr>
<tr>
<td>0x2C</td>
<td>Session in change for source device.</td>
</tr>
<tr>
<td>0x2D</td>
<td>All mirrors have invalids.</td>
</tr>
<tr>
<td>0x2E</td>
<td>Unbounded thin device.</td>
</tr>
<tr>
<td>0x2F</td>
<td>Device owns XRC sessions.</td>
</tr>
<tr>
<td>0x30</td>
<td>Active thin task.</td>
</tr>
<tr>
<td>0x31</td>
<td>Upgrade in progress.</td>
</tr>
<tr>
<td>0x32</td>
<td>Extent tract not perma cache.</td>
</tr>
<tr>
<td>0x33</td>
<td>Can't lock source device.</td>
</tr>
<tr>
<td>0x34</td>
<td>Session never established.</td>
</tr>
<tr>
<td>0x35</td>
<td>Invalid extent track slot.</td>
</tr>
<tr>
<td>0x36</td>
<td>Start extent error.</td>
</tr>
<tr>
<td>0x37</td>
<td>Last extent error.</td>
</tr>
<tr>
<td>0x38</td>
<td>Extent count exceeded.</td>
</tr>
<tr>
<td>0x39</td>
<td>Invalid extent.</td>
</tr>
<tr>
<td>0x3A</td>
<td>IVTOC tracks exist on device.</td>
</tr>
<tr>
<td>0x3B</td>
<td>More than single destination device.</td>
</tr>
<tr>
<td>0x3C</td>
<td>Can't lock destination device.</td>
</tr>
<tr>
<td>0x3D</td>
<td>Destination device Not Ready.</td>
</tr>
<tr>
<td>0x3E</td>
<td>Source and Destination devices not the same type.</td>
</tr>
<tr>
<td>0x3F</td>
<td>VSE target owns persistent group.</td>
</tr>
<tr>
<td>0x40</td>
<td>Background split in progress.</td>
</tr>
<tr>
<td>0x41</td>
<td>Activate while session in change,</td>
</tr>
<tr>
<td>0x42</td>
<td>Device already set or released.</td>
</tr>
<tr>
<td>0x43</td>
<td>FC extent already removed.</td>
</tr>
<tr>
<td>0x44</td>
<td>Device is active file SMMF device.</td>
</tr>
<tr>
<td>0x45</td>
<td>SYSC 812C illegal modifier.</td>
</tr>
<tr>
<td>0x46</td>
<td>Device has copy sessions established.</td>
</tr>
<tr>
<td>RC</td>
<td>Description</td>
</tr>
<tr>
<td>------</td>
<td>-------------------------------------------------------</td>
</tr>
<tr>
<td>0x47</td>
<td>Illegal target SYMM number.</td>
</tr>
<tr>
<td>0x48</td>
<td>Wrong session type.</td>
</tr>
<tr>
<td>0x49</td>
<td>Full DV diff size.</td>
</tr>
<tr>
<td>0x4a</td>
<td>Full DV establish to itself.</td>
</tr>
<tr>
<td>0x4b</td>
<td>Full DV DIFF META MEM COUNT.</td>
</tr>
<tr>
<td>0x4c</td>
<td>Full DV DIFF META STATUS.</td>
</tr>
<tr>
<td>0x4d</td>
<td>Full DV DIFF META SIZE.</td>
</tr>
<tr>
<td>0x4e</td>
<td>Full DV TGT ALREADY Destination.</td>
</tr>
<tr>
<td>0x4f</td>
<td>Device is SFS device.</td>
</tr>
<tr>
<td>0x50</td>
<td>Protected Vault cannot be Snap target.</td>
</tr>
<tr>
<td>0x51</td>
<td>Clone device owns shared tracks.</td>
</tr>
<tr>
<td>0x52</td>
<td>Illegal extent.</td>
</tr>
<tr>
<td>0x53</td>
<td>RESNAP with no source SDDF session.</td>
</tr>
<tr>
<td>0x54</td>
<td>RESNAP before Snap is done.</td>
</tr>
<tr>
<td>0x55</td>
<td>Exceeds cascading clone hop limit.</td>
</tr>
<tr>
<td>0x56</td>
<td>Session offset does not correlate.</td>
</tr>
<tr>
<td>0x57</td>
<td>Cannot open SDDF RESNAP session on SRC.</td>
</tr>
<tr>
<td>0x58</td>
<td>Cannot RESNAP this pair.</td>
</tr>
<tr>
<td>0x59</td>
<td>This pair should be RESNAPPED.</td>
</tr>
<tr>
<td>0x5A</td>
<td>SDDF resources are out.</td>
</tr>
<tr>
<td>0x5B</td>
<td>Source device has indirect tracks.</td>
</tr>
<tr>
<td>0x5C</td>
<td>Destination device has indirect tracks.</td>
</tr>
<tr>
<td>0x5D</td>
<td>Source device is target of inactive session.</td>
</tr>
<tr>
<td>0x5E</td>
<td>Target device is target of inactive session.</td>
</tr>
<tr>
<td>0x5F</td>
<td>FRR not allowed TGT has other sessions.</td>
</tr>
<tr>
<td>0x60</td>
<td>Wrong syscall flags.</td>
</tr>
<tr>
<td>0x61</td>
<td>Number of sessions exceeded.</td>
</tr>
<tr>
<td>0x62</td>
<td>Session already established.</td>
</tr>
<tr>
<td>0x63</td>
<td>Device is migration device.</td>
</tr>
<tr>
<td>0x64</td>
<td>Illegal source SYMM number.</td>
</tr>
<tr>
<td>0x65</td>
<td>Session registered for diff app.</td>
</tr>
<tr>
<td>0x66</td>
<td>Session not of supported type.</td>
</tr>
<tr>
<td>0x67</td>
<td>No Snap operations during MEM REPL.</td>
</tr>
</tbody>
</table>
### Table 12 TimeFinder/Clone return codes

<table>
<thead>
<tr>
<th>RC</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x68</td>
<td>Registration failed.</td>
</tr>
<tr>
<td>0x69</td>
<td>Source log DV or Virtual DV.</td>
</tr>
<tr>
<td>0x6a</td>
<td>Nocopy clone restore exists.</td>
</tr>
<tr>
<td>0x6b</td>
<td>Illegal modifier.</td>
</tr>
<tr>
<td>0x6c</td>
<td>Mix of persistent VSnap and Snap.</td>
</tr>
<tr>
<td>0x6D</td>
<td>IXSnap TGT XTNT overlap.</td>
</tr>
<tr>
<td>0x6e</td>
<td>Illegal TF clone restore wrong SDDF.</td>
</tr>
<tr>
<td>0x6f</td>
<td>Illegal TF clone restore cannot switch SDDF.</td>
</tr>
<tr>
<td>0x70</td>
<td>VSE targets belong to different pools.</td>
</tr>
<tr>
<td>0x71</td>
<td>Wrong session ID.</td>
</tr>
<tr>
<td>0x72</td>
<td>Parallel clone RDF check ERR.</td>
</tr>
<tr>
<td>0x73</td>
<td>Target device is virtual.</td>
</tr>
<tr>
<td>0x74</td>
<td>Source of full device is target.</td>
</tr>
<tr>
<td>0x75</td>
<td>Target of full device is source.</td>
</tr>
<tr>
<td>0x76</td>
<td>Source device is virtual device.</td>
</tr>
<tr>
<td>0x77</td>
<td>Session not parallel clone.</td>
</tr>
<tr>
<td>0x78</td>
<td>Extent target in RESNAP mode.</td>
</tr>
<tr>
<td>0x79</td>
<td>Insufficient space on target.</td>
</tr>
<tr>
<td>0x7a</td>
<td>PC invalid PC flag.</td>
</tr>
<tr>
<td>0x7b</td>
<td>Destination device owns sessions.</td>
</tr>
<tr>
<td>0x7c</td>
<td>Parallel clone cannot lock.</td>
</tr>
<tr>
<td>0x7d</td>
<td>RESNAP session not precopy sync.</td>
</tr>
<tr>
<td>0x7E</td>
<td>Protection slots not allocated.</td>
</tr>
<tr>
<td>0x7F</td>
<td>VP Snap target owns RDF mirror.</td>
</tr>
<tr>
<td>0x99</td>
<td>Cannot lock extents track.</td>
</tr>
<tr>
<td>0x9a</td>
<td>Create BG task failed.</td>
</tr>
<tr>
<td>0xff</td>
<td>DA unit check.</td>
</tr>
</tbody>
</table>
### TimeFinder SnapVX Return Codes

TimeFinder SnapVX operations include Create, Activate, Link, Unlink, Update, Rename, and Terminate.

<table>
<thead>
<tr>
<th>RC</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x00000</td>
<td>SnapVX completed OK.</td>
</tr>
<tr>
<td>0x80000</td>
<td>SnapVX first error.</td>
</tr>
<tr>
<td>0x80001</td>
<td>SnapVX not supported.</td>
</tr>
<tr>
<td>0x80002</td>
<td>SnapVX memory allocation failed.</td>
</tr>
<tr>
<td>0x80003</td>
<td>SnapVX memory read failed.</td>
</tr>
<tr>
<td>0x80004</td>
<td>SnapVX memory write failed.</td>
</tr>
<tr>
<td>0x80005</td>
<td>SnapVX memory free failed.</td>
</tr>
<tr>
<td>0x80006</td>
<td>SnapVX invalid sanapshot ID.</td>
</tr>
<tr>
<td>0x80007</td>
<td>SnapVX snapshot table is full.</td>
</tr>
<tr>
<td>0x80008</td>
<td>SnapVX unallocated slot.</td>
</tr>
<tr>
<td>0x80009</td>
<td>SnapVX invalid parameter.</td>
</tr>
<tr>
<td>0x8000A</td>
<td>SnapVX max records exceeded.</td>
</tr>
<tr>
<td>0x8000B</td>
<td>SnapVX invalid state.</td>
</tr>
<tr>
<td>0x8000C</td>
<td>SnapVX invalid options.</td>
</tr>
<tr>
<td>0x8000D</td>
<td>SnapVX invalid command.</td>
</tr>
<tr>
<td>0x8000E</td>
<td>SnapVX invalid flags.</td>
</tr>
<tr>
<td>0x8000F</td>
<td>SnapVX poll later.</td>
</tr>
<tr>
<td>0x80010</td>
<td>SnapVX invalid snapshot name.</td>
</tr>
<tr>
<td>0x80011</td>
<td>SnapVX invalid emulation type.</td>
</tr>
<tr>
<td>0x80012</td>
<td>SnapVX failed to find TGT session.</td>
</tr>
<tr>
<td>0x80013</td>
<td>SnapVX DPD error.</td>
</tr>
<tr>
<td>0x80014</td>
<td>SnapVX DPD update timeout.</td>
</tr>
<tr>
<td>0x80015</td>
<td>SnapVX TGT state bit not found.</td>
</tr>
<tr>
<td>0x80016</td>
<td>SnapVX TGT update linked bit failed.</td>
</tr>
<tr>
<td>0x80017</td>
<td>SnapVX snapshot exists.</td>
</tr>
<tr>
<td>0x80018</td>
<td>SnapVX failed to update ready state.</td>
</tr>
<tr>
<td>0x80019</td>
<td>SnapVX TGT mismatch to SRC</td>
</tr>
<tr>
<td>0x8001A</td>
<td>SnapVX define error.</td>
</tr>
</tbody>
</table>
### TimeFinder SnapVX Return Codes (2 of 6)

<table>
<thead>
<tr>
<th>RC</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x8001B</td>
<td>SnapVX failed to find snapshot.</td>
</tr>
<tr>
<td>0x8001C</td>
<td>SnapVX beyond last sequence.</td>
</tr>
<tr>
<td>0x8001D</td>
<td>SnapVX already TGT.</td>
</tr>
<tr>
<td>0x8001E</td>
<td>SnapVX hard link exists.</td>
</tr>
<tr>
<td>0x8001F</td>
<td>SnapVX reached TGT link limit.</td>
</tr>
<tr>
<td>0x80020</td>
<td>SnapVX TGT list error.</td>
</tr>
<tr>
<td>0x80021</td>
<td>SnapVX track is rotating ToCopy.</td>
</tr>
<tr>
<td>0x80022</td>
<td>SnapVX not TGT of restore.</td>
</tr>
<tr>
<td>0x80023</td>
<td>SnapVX not TGT.</td>
</tr>
<tr>
<td>0x80024</td>
<td>SnapVX already in state.</td>
</tr>
<tr>
<td>0x80025</td>
<td>SnapVX pool is full.</td>
</tr>
<tr>
<td>0x80026</td>
<td>SnapVX no active link.</td>
</tr>
<tr>
<td>0x80027</td>
<td>SnapVX get session in change failed.</td>
</tr>
<tr>
<td>0x80028</td>
<td>SnapVX target already source.</td>
</tr>
<tr>
<td>0x80029</td>
<td>SnapVX locate error.</td>
</tr>
<tr>
<td>0x8002A</td>
<td>SnapVX invalid TGT Symm number.</td>
</tr>
<tr>
<td>0x8002B</td>
<td>SnapVX unused TGT link TBL.</td>
</tr>
<tr>
<td>0x8002C</td>
<td>SnapVX bitlock error.</td>
</tr>
<tr>
<td>0x8002D</td>
<td>SnapVX invalid operation.</td>
</tr>
<tr>
<td>0x8002E</td>
<td>SnapVX auto recovery invoked.</td>
</tr>
<tr>
<td>0x8002F</td>
<td>SnapVX bitmap error.SNAPVX BITMAP ERROR</td>
</tr>
<tr>
<td>0x80030</td>
<td>SnapVX lock management error.</td>
</tr>
<tr>
<td>0x80031</td>
<td>SnapVX parallel clone RDF check error.</td>
</tr>
<tr>
<td>0x80032</td>
<td>SnapVX lock snapshot table failed.</td>
</tr>
<tr>
<td>0x80033</td>
<td>SnapVX unlock snapshot table failed.</td>
</tr>
<tr>
<td>0x80034</td>
<td>SnapVX lock TGT link table failed.</td>
</tr>
<tr>
<td>0x80035</td>
<td>SnapVX unlock TGT link table failed.</td>
</tr>
<tr>
<td>0x80036</td>
<td>SnapVX snapshot SRC already TGT.</td>
</tr>
<tr>
<td>0x80037</td>
<td>SnapVX already legacy TGT.</td>
</tr>
<tr>
<td>0x80038</td>
<td>SnapVX CRC error.</td>
</tr>
<tr>
<td>RC</td>
<td>Description</td>
</tr>
<tr>
<td>------</td>
<td>-----------------------------------------------------</td>
</tr>
<tr>
<td>0x80039</td>
<td>SnapVX rewrite count access failed.</td>
</tr>
<tr>
<td>0x8003A</td>
<td>SnapVX invalid rewrite count.</td>
</tr>
<tr>
<td>0x8003B</td>
<td>SnapVX SRC meta data update in progress.</td>
</tr>
<tr>
<td>0x8003C</td>
<td>SnapVX consistency error.</td>
</tr>
<tr>
<td>0x8003D</td>
<td>SnapVX linkage error.</td>
</tr>
<tr>
<td>0x8003E</td>
<td>SnapVX error 3E.</td>
</tr>
<tr>
<td>0x8003F</td>
<td>SnapVX legacy session error.</td>
</tr>
<tr>
<td>0x80040</td>
<td>SnapVX legacy extent error.</td>
</tr>
<tr>
<td>0x80041</td>
<td>SnapVX legacy protection error.</td>
</tr>
<tr>
<td>0x80042</td>
<td>SnapVX access overflow.</td>
</tr>
<tr>
<td>0x80043</td>
<td>SnapVX invalid SRC symm number.</td>
</tr>
<tr>
<td>0x80044</td>
<td>SnapVX TGT link count error.</td>
</tr>
<tr>
<td>0x80045</td>
<td>SnapVX mix soft and hard error.</td>
</tr>
<tr>
<td>0x80046</td>
<td>SnapVX restore FWD LEG is missing.</td>
</tr>
<tr>
<td>0x80047</td>
<td>SnapVX unlink restore FWD LEG error.</td>
</tr>
<tr>
<td>0x80048</td>
<td>SnapVX snapshot in status failed.</td>
</tr>
<tr>
<td>0x80049</td>
<td>SnapVX TGT link in status failed.</td>
</tr>
<tr>
<td>0x8004A</td>
<td>SnapVX TGT link is inactive.</td>
</tr>
<tr>
<td>0x8004B</td>
<td>SnapVX TGT copy in progress.</td>
</tr>
<tr>
<td>0x8004C</td>
<td>SnapVX sessions limit.</td>
</tr>
<tr>
<td>0x8004D</td>
<td>SnapVX BGTASK retry immediately.</td>
</tr>
<tr>
<td>0x8004E</td>
<td>SnapVX BGTASK retry later.</td>
</tr>
<tr>
<td>0x8004F</td>
<td>SnapVX bitlock share lock timeout.</td>
</tr>
<tr>
<td>0x80050</td>
<td>SnapVX overflow.</td>
</tr>
<tr>
<td>0x80051</td>
<td>SnapVX version handling disabled.</td>
</tr>
<tr>
<td>0x80052</td>
<td>SnapVX VP operation failed.</td>
</tr>
<tr>
<td>0x80053</td>
<td>SnapVX invalid sequence range.</td>
</tr>
<tr>
<td>0x80054</td>
<td>SnapVX state info update error.</td>
</tr>
<tr>
<td>0x80055</td>
<td>SnapVX rotating scan error.</td>
</tr>
<tr>
<td>0x80056</td>
<td>SnapVX rotating retry later.</td>
</tr>
</tbody>
</table>
### TimeFinder Indicators

**Table 13** TimeFinder SnapVX Return Codes (4 of 6)

<table>
<thead>
<tr>
<th>RC</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x80057</td>
<td>SnapVX unexpected undefined tracks.</td>
</tr>
<tr>
<td>0x80058</td>
<td>SnapVX unexpected rotating tracks.</td>
</tr>
<tr>
<td>0x80059</td>
<td>SnapVX restore exists on target.</td>
</tr>
<tr>
<td>0x8005A</td>
<td>SnapVX unused snapshot ID.</td>
</tr>
<tr>
<td>0x8005B</td>
<td>SnapVX precopy with NO BG COPY.</td>
</tr>
<tr>
<td>0x8005C</td>
<td>SnapVX terminate after with NO BG COPY.</td>
</tr>
<tr>
<td>0x8005D</td>
<td>SnapVX TGT has ORS copy in progress.</td>
</tr>
<tr>
<td>0x8005E</td>
<td>SnapVX SRC has ORS copy in progress.</td>
</tr>
<tr>
<td>0x8005F</td>
<td>SnapVX undefine error.</td>
</tr>
<tr>
<td>0x80060</td>
<td>SnapVX undefine retry.</td>
</tr>
<tr>
<td>0x80061</td>
<td>SnapVX TGT size mismatch to SRC.</td>
</tr>
<tr>
<td>0x80062</td>
<td>SnapVX rotating scan rotating already clear.</td>
</tr>
<tr>
<td>0x80063</td>
<td>SnapVX dependent snapshots exists.</td>
</tr>
<tr>
<td>0x80064</td>
<td>SnapVX linked target exists.</td>
</tr>
<tr>
<td>0x80065</td>
<td>SnapVX control CMD failed.</td>
</tr>
<tr>
<td>0x80066</td>
<td>SnapVX device corruption.</td>
</tr>
<tr>
<td>0x80067</td>
<td>SnapVX centaur link failed.</td>
</tr>
<tr>
<td>0x80068</td>
<td>SnapVX send MSG failed.</td>
</tr>
<tr>
<td>0x80069</td>
<td>SnapVX SRC mismatch to snapshot.</td>
</tr>
<tr>
<td>0x8006A</td>
<td>SnapVX unknown reason.</td>
</tr>
<tr>
<td>0x8006B</td>
<td>SnapVX SRP threshold reached.</td>
</tr>
<tr>
<td>0x8006C</td>
<td>SnapVX error 6C.</td>
</tr>
<tr>
<td>0x8006D</td>
<td>SnapVX error 6D.</td>
</tr>
<tr>
<td>0x8006E</td>
<td>SnapVX error 6E.</td>
</tr>
<tr>
<td>0x8006F</td>
<td>SnapVX error 6F.</td>
</tr>
<tr>
<td>0x80070</td>
<td>SnapVX snapshot not in used list.</td>
</tr>
<tr>
<td>0x80071</td>
<td>SnapVX recreate on active link.</td>
</tr>
<tr>
<td>0x80072</td>
<td>SnapVX SRC activated is CPY PROG TGT.</td>
</tr>
<tr>
<td>0x80073</td>
<td>SnapVX SRC activated is INACTIVE TGT.</td>
</tr>
<tr>
<td>0x80074</td>
<td>SnapVX locate error TRK is VWP.</td>
</tr>
</tbody>
</table>
### Table 13  TimeFinder SnapVX Return Codes (5 of 6)

<table>
<thead>
<tr>
<th>RC</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x80075</td>
<td>SnapVX device is being deleted.</td>
</tr>
<tr>
<td>0x80076</td>
<td>SnapVX locate not needed.</td>
</tr>
<tr>
<td>0x80077</td>
<td>SnapVX exists TGT is COPY IN PROGRESS.</td>
</tr>
<tr>
<td>0x80078</td>
<td>SnapVX exists TGT emulation mismatch.</td>
</tr>
<tr>
<td>0x80079</td>
<td>SnapVX SRC is COPY IN PROGRESS TGT.</td>
</tr>
<tr>
<td>0x8007A</td>
<td>SnapVX SRC is inactive TGT.</td>
</tr>
<tr>
<td>0x8007B</td>
<td>SnapVX failed to invalidate R2 TGT.</td>
</tr>
<tr>
<td>0x8007C</td>
<td>SnapVX already legacy SRC.</td>
</tr>
<tr>
<td>0x8007D</td>
<td>SnapVX SRC encapsulated is SHRD CPY IN PRGRS.</td>
</tr>
<tr>
<td>0x8007E</td>
<td>SnapVX DPD bit unchanged.</td>
</tr>
<tr>
<td>0x8007F</td>
<td>SnapVX illegal GCM change.</td>
</tr>
<tr>
<td>0x80080</td>
<td>SnapVX SRC is encapsulated mapped.</td>
</tr>
<tr>
<td>0x80081</td>
<td>SnapVX TGT is encapsulated mapped.</td>
</tr>
<tr>
<td>0x80082</td>
<td>SnapVX SRC is encapsulated.</td>
</tr>
<tr>
<td>0x80083</td>
<td>SnapVX TGT is encapsulated.</td>
</tr>
<tr>
<td>0x80084</td>
<td>SnapVX SRC is encapsulated TGT.</td>
</tr>
<tr>
<td>0x80085</td>
<td>SnapVX TGT is encapsulated SRC.</td>
</tr>
<tr>
<td>0x80086</td>
<td>SnapVX SRC encapsulated linked to online TGT.</td>
</tr>
<tr>
<td>0x80087</td>
<td>SnapVX TGT is NOCOPY encapsulated.</td>
</tr>
<tr>
<td>0x80088</td>
<td>SnapVX SRC is NOCOPY encapsulated.</td>
</tr>
<tr>
<td>0x80089</td>
<td>SnapVX SRC encapsulated has time to leave.</td>
</tr>
<tr>
<td>0x8008A</td>
<td>SnapVX TGT is larger encapsulated.</td>
</tr>
<tr>
<td>0x8008B</td>
<td>SnapVX object does not exists.</td>
</tr>
<tr>
<td>0x8008C</td>
<td>SnapVX error 8C.</td>
</tr>
<tr>
<td>0x8008D</td>
<td>SnapVX error 8D.</td>
</tr>
<tr>
<td>0x8008E</td>
<td>SnapVX error 8E.</td>
</tr>
<tr>
<td>0x8008F</td>
<td>SnapVX TGT state table update fail.</td>
</tr>
<tr>
<td>0x80090</td>
<td>SnapVX locate error RDP TRK not found.</td>
</tr>
<tr>
<td>0x80091</td>
<td>SnapVX locate error TRK is WP.</td>
</tr>
<tr>
<td>0x80092</td>
<td>SnapVX SRC is NONDD encapsulated.</td>
</tr>
</tbody>
</table>
### TimeFinder SnapVX Return Codes (6 of 6)

<table>
<thead>
<tr>
<th>RC</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x80093</td>
<td>SnapVX TGT is NONDD encapsulated.</td>
</tr>
<tr>
<td>0x80094</td>
<td>SnapVX DPD search timeout.</td>
</tr>
<tr>
<td>0x80095</td>
<td>SnapVX timeout.</td>
</tr>
<tr>
<td>0x80096</td>
<td>SnapVX BGTASK retry chunk.</td>
</tr>
<tr>
<td>0x80097</td>
<td>SnapVX invalid device.</td>
</tr>
<tr>
<td>0x80098</td>
<td>SnapVX CMD lock contention.</td>
</tr>
<tr>
<td>0x80099</td>
<td>SnapVX out of DPD slots.</td>
</tr>
<tr>
<td>0x8009A</td>
<td>SnapVX locate error retry.</td>
</tr>
<tr>
<td>0x8009B</td>
<td>SnapVX intercept multi track IO.</td>
</tr>
<tr>
<td>0x8009C</td>
<td>SnapVX memory allocation retry.</td>
</tr>
<tr>
<td>0x8009D</td>
<td>SnapVX invalid DPD TGT type.</td>
</tr>
<tr>
<td>0x8009E</td>
<td>SnapVX invalid DPD entry.</td>
</tr>
<tr>
<td>0x8009F</td>
<td>SnapVX error 9F.</td>
</tr>
<tr>
<td>0x800A0</td>
<td>SnapVX device in lockdown.</td>
</tr>
<tr>
<td>0x800A1</td>
<td>SnapVX session in change is set.</td>
</tr>
<tr>
<td>0x800A2</td>
<td>SnapVX no matching indirect tag.</td>
</tr>
</tbody>
</table>
### General return codes

**Table 14** General return codes (1 of 2)

<table>
<thead>
<tr>
<th>RC</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x00</td>
<td>System call succeeded.</td>
</tr>
<tr>
<td>0x80</td>
<td>System call is not defined.</td>
</tr>
<tr>
<td>0x81</td>
<td>Executing director type does not support the system call.</td>
</tr>
<tr>
<td>0x82</td>
<td>Wrong system call parameters.</td>
</tr>
<tr>
<td>0x83</td>
<td>Data called not found.</td>
</tr>
<tr>
<td>0x84</td>
<td>Data exceeds buffer size.</td>
</tr>
<tr>
<td>0x85</td>
<td>(SA_ADAPTER - ili).</td>
</tr>
<tr>
<td>0x86</td>
<td>Remote request initiated by non-RDF R1 device.</td>
</tr>
<tr>
<td>0x87</td>
<td>Remote request with no link available.</td>
</tr>
<tr>
<td>0x88</td>
<td>Illegal RSC - can not use socket device.</td>
</tr>
<tr>
<td>0x89</td>
<td>Requested length is not on 8 bytes bound.</td>
</tr>
<tr>
<td>0x8A</td>
<td>Passive system call extended parameters cause parameter buffer overflow.</td>
</tr>
<tr>
<td>0x8B</td>
<td>RSC on R1 when R2 is not ready.</td>
</tr>
<tr>
<td>0x8C</td>
<td>RSC failed.</td>
</tr>
<tr>
<td>0x8D</td>
<td>Inline system call not supported from host.</td>
</tr>
<tr>
<td>0x8E</td>
<td>Inline system call data timeout.</td>
</tr>
<tr>
<td>0x8F</td>
<td>Inline system call request from incorrect utility.</td>
</tr>
<tr>
<td>0x90</td>
<td>Attempt to write data beyond buffer end (internal logic error).</td>
</tr>
<tr>
<td>0x91</td>
<td>Sent parameter flag byte error.</td>
</tr>
<tr>
<td>0x92</td>
<td>DA error (for disconnected system calls).</td>
</tr>
<tr>
<td>0x93</td>
<td>System Internal error (Data consistency problem encountered).</td>
</tr>
<tr>
<td>0x94</td>
<td>Multi-hop request with error on a remote link. Link in question may be offline.</td>
</tr>
<tr>
<td>0x95</td>
<td>System call temporarily unavailable. Please retry.</td>
</tr>
<tr>
<td>0x96</td>
<td>System call requires the use of a socket.</td>
</tr>
<tr>
<td>0x97</td>
<td>System call not allow on dir/port by field in IMPL.</td>
</tr>
<tr>
<td>0x98</td>
<td>Error sending system call to a remote director (same storage system).</td>
</tr>
<tr>
<td>0x99</td>
<td>Error executing system call on a remote director (same storage system)).</td>
</tr>
<tr>
<td>0x9A</td>
<td>Requested system call format does not support more than 32 directors.</td>
</tr>
<tr>
<td>0x9B</td>
<td>System call not supported for detected configuration (upgrade application).</td>
</tr>
<tr>
<td>0x9C</td>
<td>Multi-hop system call timed out somewhere along the line.</td>
</tr>
</tbody>
</table>
Table 14  General return codes (2 of 2)

<table>
<thead>
<tr>
<th>RC</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x9D</td>
<td>Multi-hop system call was sent, and it ran into an existing multi-hop system call.</td>
</tr>
<tr>
<td>0x9E</td>
<td>Requested count is not enough for extended parameters.</td>
</tr>
<tr>
<td>0x9F</td>
<td>System call result remained uninitialized.</td>
</tr>
<tr>
<td>0xA0</td>
<td>POLL.</td>
</tr>
<tr>
<td>0xA1</td>
<td>Requested system call format does not support Open RDF.</td>
</tr>
<tr>
<td>0xA2</td>
<td>Requested system call format does not support RDF Multicast.</td>
</tr>
<tr>
<td>0xA3</td>
<td>Requested system call format does not support Dynamic RDF.</td>
</tr>
<tr>
<td>0xA4</td>
<td>System call cannot be run to this device.</td>
</tr>
<tr>
<td>0xA5</td>
<td>System call is disconnecting, user should not get this.</td>
</tr>
<tr>
<td>0xA6</td>
<td>Format 6 input CRC does not match parameters.</td>
</tr>
<tr>
<td>0xA7</td>
<td>System call timed out during execution.</td>
</tr>
<tr>
<td>0xA8</td>
<td>Could not get access ID/tag from parameters.</td>
</tr>
<tr>
<td>0xA9</td>
<td>The system call format is not supported.</td>
</tr>
<tr>
<td>0xAA</td>
<td>The sub command is not valid.</td>
</tr>
<tr>
<td>0xAB</td>
<td>The sub format is not valid.</td>
</tr>
<tr>
<td>0xAC</td>
<td>Reserved parameters are not zero.</td>
</tr>
<tr>
<td>0xAD</td>
<td>Operation is not allowed on a meta member.</td>
</tr>
<tr>
<td>0xAE</td>
<td>The Quick Config parameters indicate a status has changed.</td>
</tr>
<tr>
<td>0xAF</td>
<td>User requested abort on polling syscall.</td>
</tr>
<tr>
<td>0xB0</td>
<td>Director is in the middle of IML, please retry in 10 seconds.</td>
</tr>
<tr>
<td>0xB1</td>
<td>SymmWin is in the middle of a NDU, please abort this IO.</td>
</tr>
<tr>
<td>0xB2</td>
<td>Endian swap did not work.</td>
</tr>
</tbody>
</table>