hp StorageWorks
performance advisor

Command-Line User Interface

Table of Contents

1.   Command Line User Interface Introduction

This document describes the Command Line User Interface (CLUI) for the Performance
Advisor product from HP. The CLUI is used for accessing performance data, setting alarms,
modifying data collection intervals, and configuring host information. Shell scripts are available
for most of the commands in the CLUI, and these scripts are the recommended method for
accessing the CLUI commands. The actual CLUI is divided in to two parts, a report CLUI,
and a configuration CLUI. The usage for each of these is found in the Appendix..

2.   CLUI Installation and Un-installation

2.1   Before Installation

There are a few steps you will need to complete before installing the Performance
Advisor CLUI.
**Make sure you have completed these steps before installing the Performance Advisor
CLUI.**

1.   You will need to know where your java environment is installed.

- On a UNIX environment, if the PA host agent is installed, use /opt/xppa/jre as the path.
  If the host agent is not installed, then this information can be obtained by typing
  'find /usr /sbin /home /bin /opt –name java' 'find /usr /sbin /home /bin /opt –name jre'
  at a command prompt. The path will look something like /usr/local/jdk1.3.1_01/bin/java.
  The exact location will differ between systems, depending on the administrators
  preference. We will be using everything from this path prior to the bin directory.
- On a Windows environment, use the find utility to determine the location of java.exe, or jre.exe.
  Put this location in an environment variable Called JAVA_HOME (**Windows ONLY**).
  In most instances of the java runtime environment, the jre.exe or java.exe commands will be
  found in a path that looks something like this: c:\Program Files\JavaSoft\JRE\1.3.1_01\bin\java.exe.
  When entering this path in the JAVA_HOME variable, type everything but the \bin\java.exe
  portion. If the command is found in a path that does not have a bin directory, enter everything
  but the \java.exe. For Windows NT and 2000, you can create/update this environment variable
  in the system control panel.

2. Choose the location you want to install the software to. The default locations are as follows:
   c:\Program Files\Hewlett-Packard\Performance Advisor\ (for Windows) and /opt/xppa
   (for AIX, HP-UX, LINUX, and SUN). At the top of the install script is a variable that holds
   this location. Edit this line if you want to install to a different directory.
3. You will need to know the user name and password for the reporting and configuration sections
   of Performance Advisor. See the Performance Advisor documentation on the product CD for
   the default values.
4. You will need to know if the management station you will be connecting to has a web server
   with SSL installed and configured.
5. If you are installing the CLUI on a UNIX type system, and plan on using telnet to access
   this system, note that **only xterm, hpterm, and ansi terminals are supported.**

2.2   During Installation

The CLUI is packaged as a UNIX tar file, which can also be manipulated by WinZip. **Follow the
instructions below closely** to extract this file and install the CLUI.

1. Navigate to <cd_drive>\Tools\CmdLineUserInterface.
2. Unpack the appropriate .tar file for your platform found there to a temporary directory. For
    Windows, use the WinZip program to access this file and extract the files
    from it. Extract ALL the files from this archive.
3. Open a command prompt (DOS prompt in Windows) and run the
    appropriate install script
    (**install.bat for Windows, install.sh for UNIX variants**). There are some
    slight differences in how the
     installation process proceeds between UNIX variants and Windows.

    For UNIX variants, run the install.sh file provided. It may be necessary to
    set the install.sh file to be executable.
    This is be done by typing: chmod 755 install.sh In Unix, it is necessary to
    be the root user to run this file.

1. The script tells you what is about to be done, and asks if you want to
    continue. Press **Y**
    for yes, or **N** for no.
2. You will then be prompted for the location of the Java environment. Enter
    this information,
    minus the bin directory and everything after it.
3. If the java or jre commands were not found, the script will exit; otherwise,
    you will be
    prompted to enter the management station name. **Note**: In previous
    versions of the CLUI,
    you were asked to enter the protocol before the management stations name.
    **PA 1.05.00
    and subsequent versions will not require the use to enter the protocol
    with the
    management station name.**
4. The install script then asks if SSL is installed and configured on the
    management station's
    web server. Enter **Y** for yes, or **N** for no, **N** is the default, anything other
    than a **y o**r **Y** here
    will result in the default value being used
5. The script then prompts for the username and password pair for the
    reporting section
    of the Performance Advisor management station. This is entered using the
    form

username:password.
6. The script then prompts for the username and password pair for the configuration section
of the Performance Advisor management station. This is entered using the form
username:password.
7. The CLUI is now installed, proceed to the *After Installation* section.

For Windows, run the install.bat You must have the **JAVA_HOME** variable set

1. The script tells you what is about to be done, and asks if you want to continue.
Press **Ctrl** and **C** if you want to quit.
2. The script then checks the location indicated by the JAVA_HOME environment variable
to see if the java.exe or jre.exe programs exist.
3. If the java or jre commands were not found, the script will exit; otherwise, you will be
prompted to enter the management station name. **Note**: In previous versions of the CLUI,
you were asked to enter the protocol before the management stations name.
PA 1.05.00
and subsequent versions will not require the use to enter the protocol with the
management station name.
4. The install script then asks if SSL is installed and configured on the management station's web
server. Enter **Y** for yes, or **N** for no. **N** is the default and anything other than a **y** or **Y**
here will result in the default value being used
5. The script then prompts for the username and password pair for the reporting section
of the Performance Advisor management station. This is entered using the form
username:password.
6. The script then prompts for the username and password pair for the configuration section
of the Performance Advisor management station. This is entered using the form
username:password.
7. The CLUI is now installed. Proceed to the *After Installation* section.

2.3 After Installation

To use the shell scripts, either change the directory to the location of the shell scripts

(usually in a CLUI directory under the install directory), or add that location to your path and
type the name of the script. Calling the script with a -? prints a usage statement.
See Section 3 of this document for shell script usage.

Note: For Unix system users, it may be necessary to put quotation marks ("") around the
question mark (?), because in some shells, the question mark (?) is used as a wild card.
Also, in Unix, when specifying Windows device files, it is necessary to put the # in
quotes to avoid commenting out the rest of the line.

To uninstall the CLUI, change to the installation directory and invoke the uninstall script
there (**uninstallclui.sh for HP-UX and Solaris; uninstall.bat for Windows**).

3.   Report and Configuration CLUI Shell Scripts

The CLUI installation installs a group of shell scripts, which make it easier to use it.
There is a script for running each of the CLUI commands except for the version and
encrypt commands.

3.1 Disk Controller Snapshot Script (dkcs)

3.1.1 DKCS Usage

The report CLUI application will provide a command to display Disk Controller
Snapshot data.
The –dkc switch is a required element. Optionally, you may specify a management
station using
–ms <URL> and a username password pair using –auth <user:passwd>. The
commands general format is as follows:

>   dkcs [-d<delim>] [-L] [-hr] [-ms <URL>] [-auth <user:passwd>] –dkc <serial #> [-?]
>   where:
>>   -d<delim> is an optional parameter used to specify delimited output data.
>>   If <delim> is not specified, a comma character is used as the default to separate the output fields.
>>   There is no space between –d and the delimiter character.
>>
>>   -L is an optional parameter used to specify labeled and delimited output data.
>>   Alternatively, -hr is an optional parameter used to request the data in a human

readable format.

-ms <URL> is the address of a management station of the form
http://path.to.managementstation/

-auth <user:passwd> is a username and password pair of the form
username:password

<serial #> specifies the array serial number.

-? - Prints the usage statement.

3.1.2 DKCS Sample Output

Following are examples of output data for the CLUI shell script described in the previous section.
NOTE: Labels in labeled outputs (specified by –hr or -L in the command line) are in **BOLD**.

dkcs –hr –dkc 30143

Collecting requested information...
Array Type : XP512
Serial # : 30143
Record Time : 13:55:00
Record Date : 07/18/2001
Micro Code : 01.12.16
Raid Manager Lib : 01.03.02

```
Chip Data:                        ACP Data:
P = 100% 97%    94%    91%    L = 0%     3%     6%     9%
Q = 88%    85%    82%    79%    K = 12%    15%    18%    21
R = 76%    73%    70%    67%    J = 24%    27%    30%    33%
S = 64%    61%    58%    55%    H = 36%    39%    42%    45%
V = 52%    49%    46%    43%    E = 48%    51%    54%    57%
W = 40%    37%    34%    31%    D = 60%    63%    66%    69%
X = 28%    25%    22%    19%    C = 72%    75%    78%    81%
Y = 16%    13%    10%    7%     B = 84%    87%    90%    93%
```

Data Bus = 27%   **Cache Usage** = 300MB
Control Bus = 37%   **Cache Size** = 4096MB
                            Cache Pending = 50MB
                            Cache Side File = 200MB

dkcs –L –dkc 30143

Array   Type, Serial No., Record Time, Record Date, Micro Code, RMLib

Version,Chip P MP 0,Chip P MP 1,Chip P MP 2,Chip P MP 3,Chip Q MP 0,Chip Q MP 1,Chip Q MP 2,Chip Q MP 3,Chip R MP 0,Chip R MP 1,Chip R MP 2,Chip R MP 3,Chip S MP 0,Chip S MP 1,Chip S MP 2,Chip S MP 3,Chip V MP 0,Chip V MP 1,Chip V MP 2,Chip V MP 3,Chip W MP 0,Chip W MP 1,Chip W MP 2,Chip W MP 3,Chip X MP 0,Chip X MP 1,Chip X MP 2,Chip MP 3,Chip Y MP 0,Chip Y MP 1,Chip Y MP 2,Chip Y MP 3,Acp B MP 0,Acp B MP 1,Acp B MP 2,Acp B MP 3,Acp C MP 0,Acp C MP 1,Acp C MP 2,Acp C MP 3,Acp D MP 0,Acp D MP 1,Acp D MP 2,Acp D MP 3,Acp E MP 0,Acp E MP 1,Acp E MP 2,Acp E MP 3,Acp H MP 0,Acp H MP 1,Acp H MP 2,Acp H MP 3,Acp J MP 0,Acp J MP 1,Acp J MP 2,Acp J MP 3,Acp K MP 0,Acp K MP 1,Acp K MP 2,Acp K MP 3,Acp L MP 0,Acp L MP 1,Acp L MP 2,AcpL MP 3,SM Bus,CM Bus, Cache Usage (MB),Cache Size (MB),Cache Pending (MB),Cache Side File (MB)
XP512,30143:00,01/31/2002,01-13-18/00,01.04.01,100,97,94,91,88,85,82,79,76,73,70,67,64,61,58,55, 52,49,46,43,40,37,34,31,28,25,22,19,16,13,10,7,0,3,6,9,12,15,18,21,24, 27,30,33,36,39,42,45,48,51,54, 57,60,63,66,69,72,75,78,81,84,87,90,93,27,37,300,4096,50,200

dkcs –dkc 30143

XP512,30143,14:18:00,01/31/2002,01-13-18/00,01.04.01,100,97,94,91,88,85,82,79,76,73,70,67,64,61,58,55, 52,49,46,43,40,37,34,31,28,25,22,19,16,13,10,7,0,3,6,9,12,15,18,21,2 4,27,30,33,36,39,42,45,48,51,54, 57,60,63,66,69,72,75,78,81,84,87,90,93,27,37,300,4096,50,200

3.2   Disk Controller History Script (dkch)

3.2.1 DKCH Usage

The report CLUI application will provide a command to display Disk Controller History data. The –dkc
switch is a required element. Optionally, you may specify a management station using –ms <URL> and a
username password pair using –auth <user:passwd>. The commands general format is as follows:

> dkch [-d<delim>] [-L] [-hr] [-ms <URL>] [-auth <user:passwd>] –dkc <serial #>
> [-st <start time> -et <end time>] [-?]
> where:
> > -d<delim> is an optional parameter used to specify delimited output data. If <delim> is
> > not specified, a comma character is used as the default to separate the output fields.
> > There is no space between –d and the delimiter character.

-L is an optional parameter used to specify labeled and delimited output data.

Alternatively, -hr is an optional parameter used to request the data in a human
readable format.

<serial #> specifies the array serial number.

-ms <URL> is the address of a management station of the form
http://path.to.managementstation/

-auth <user:passwd> is a username and password pair of the form
username:password

<start time> specifies the start time in the format mm.dd.yyyy hh:mm:ss

<end time> specifies the end time in the format mm.dd.yyyy hh:mm:ss

-? - Prints the usage statement.

If no start and end time are specified, only the latest 10 records will be retrieved from the
management station.

3.2.2 DKCH Sample Output

Following are examples of output data for the CLUI shell script described in the
previous section.
NOTE: Labels in labeled outputs (specified by –hr or -L in the command line) are in
BOLD.

dkch –hr –dkc 30143

```
Array Type: XP512
Serial #: 30143
Record Time : 14:04:00
Record Date: 11/28/2001
Micro Code: 01-13-18/00
Raid Manager Lib:  01.04.01


Chip Data:                          ACP Data:
P = 100.0%97.0% 94.0% 91.0%    B = 84.0% 87.0% 90.0%
```

93.0%
Q = 88.0% 85.0% 82.0% 79.0%   **C =** 72.0% 75.0% 78.0%
81.0%
R = 76.0% 73.0% 70.0% 67.0%   **D =** 60.0% 63.0% 66.0%
69.0%
S = 64.0% 61.0% 58.0% 55.0%   **E =** 48.0% 51.0% 54.0%
57.0%
V = 52.0% 49.0% 46.0% 43.0%   **H =** 36.0% 39.0% 42.0%
45.0%
W = 40.0% 37.0% 34.0% 31.0%   **J =** 24.0% 27.0% 30.0%
33.0%
X = 28.0% 25.0% 22.0% 19.0%   **K =** 12.0% 15.0% 18.0%
21.0%
Y = 16.0% 13.0% 10.0% 7.0%   **L =** 0.0%   3.0%   6.0%   9.0%

Control Bus: **Data Bus:**
High: 40.0   **Low:** 35.0   **High:** 30.0   **Low:** 25.0
Cache Usage: 300.0 MB   **Cache Size:**   4096.0 MB
Cache Pending: 50.0 MB   **Cache Side File:** 200.0 MB
ACP Pair BH: 64.5%   **ACP Pair CJ:** 52.5%
ACP Pair DK: 40.5%   **ACP Pair EL:** 28.5%

++

Array Type: XP512
Serial #: 30143
Record Time: 14:04:10
Record Date: 11/28/2001
Micro Code: 01-13-18/00
Raid Manager Lib: 01.04.01

Chip Data: **ACP Data:**
P = 100.0%97.0% 94.0% 91.0%   **B =** 84.0% 87.0% 90.0% 93.0%
Q = 88.0% 85.0% 82.0% 79.0%   **C =** 72.0% 75.0% 78.0% 81.0%
R = 76.0% 73.0% 70.0% 67.0%   **D =** 60.0% 63.0% 66.0% 69.0%
S = 64.0% 61.0% 58.0% 55.0%   **E =** 48.0% 51.0% 54.0% 57.0%
V = 52.0% 49.0% 46.0% 43.0%   **H =** 36.0% 39.0% 42.0% 45.0%
W = 40.0% 37.0% 34.0% 31.0%   **J =** 24.0% 27.0% 30.0% 33.0%
X = 28.0% 25.0% 22.0% 19.0%   **K =** 12.0% 15.0% 18.0% 21.0%
Y = 16.0% 13.0% 10.0% 7.0%   **L =** 0.0%   3.0%   6.0%   9.0%

Control Bus: **Data Bus:**
High: 40.0   **Low:** 35.0   **High:** 30.0   **Low:** 25.0
Cache Usage: 300.0 MB   **Cache Size:**   4096.0 MB
Cache Pending: 50.0 MB   **Cache Side File:**   200.0 MB
ACP Pair BH: 64.5%   **ACP Pair CJ:**   52.5%
ACP Pair DK: 40.5%   **ACP Pair EL:**   28.5%

+++

2 records displayed

dkch –L –dkc 30143

Start Time,End Time
0,0,
Time,Date,Serial No.,Type, Chip P MP1,Chip P MP 2,Chip P MP 3,Chip P MP 4,Chip Q MP 1,Chip Q MP 2,Chip Q MP 3,Chip Q MP 4,Chip R MP 1,Chip R MP 2,Chip R MP 3,Chip R MP 4,Chip S MP 1,Chip S MP 2,Chip S MP 3,Chip S MP 4, Chip V MP 1,Chip V MP 2,Chip V MP 3,Chip V MP 4,Chip W MP 1,Chip W MP 2,Chip W MP 3,Chip W MP 4,Chip X MP 1,Chip X MP 2,Chip X MP 3,Chip X MP 4,Chip Y MP 1,Chip Y MP 2,Chip Y MP 3,Chip Y MP 4,ACP L MP 1,ACP L MP 2,ACP L MP 3,ACP L MP 4,ACP K MP 1,ACP K MP 2,ACP K MP 3,ACP K MP 4, ACP J MP 1,ACP J MP 2,ACP J MP 3,ACP J MP 4,ACP H MP 1,ACP H MP 2,ACP H MP 3,ACP H MP 4,ACP E MP 1,ACP E MP 2,ACP E MP 3,ACP E MP 4,ACP D MP 1,ACP D MP 2,ACP D MP 3,ACP D MP 4,ACP C MP 1,ACP C MP 2,ACP C MP 3,ACP C MP 4,ACP B MP 1,ACP B MP 2,ACP B MP 3,ACP B MP 4,Control Bus Lo,Control Bus Hi,Data Bus Lo,Data Bus Hi,CacheUsage,CacheSize, WritePending,FileUsage,AcpPair BH, `AcpPair  CJ,AcpPair  DK,AcpPair EL`
160500,07172001,30143,1,100.0,97.0,94.0,91.0,88.0,85.0,82.0,79.0,76.0,73.0,70.0,67.0,64.0,61.0,58.0,55.0,52.0,49.0,46.0,43.0,40.0,37.0,34.0,
31.0,28.0,25.0,22.0,19.0,16.0,13.0,10.0,7.0,0.0,3.0,0.0,3.0,12.0,15.0,12.0,15.0,24.0,27.0,24.0,27.0,36.0,39.0,36.0,39.0,48.0,51.0,48.0,51.0,60.0,63.0,60.0,63.0,72.0,75.0,72.0,75.0,84.0,87.0,84.0,87.0,40,35,30,25,300.0,4096,50.0,200.0,3.0,27.0,51.0,75.0
161000,07172001,30143,1,100.0,97.0,94.0,91.0,88.0,85.0,82.0,79.0,76.0,73.0,70.0,67.0,64.0,61.0,58.0,55.0,52.0,49.0,46.0,43.0,40.0,37.0,34.0,
31.0,28.0,25.0,22.0,19.0,16.0,13.0,10.0,7.0,0.0,3.0,0.0,3.0,12.0,15.0,12.0,15.0,24.0,27.0,24.0,27.0,36.0,39.0,36.0,39.0,48.0,51.0,48.0,51.0,60.0,63.0,60.0,63.0,72.0,75.0,72.0,75.0,84.0,87.0,84.0,87.0,40,35,30,25,300.0,4096,50.0,200.0,99.0,123.0,147.0,171.0
161500,07172001,30143,1,100.0,97.0,94.0,91.0,88.0,85.0,82.0,79.0,76.0,73.0,70.0,67.0,64.0,61.0,58.0,55.0,52.0,49.0,46.0,43.0,40.0,37.0,34.0,

31.0,28.0,25.0,22.0,19.0,16.0,13.0,10.0,7.0,0.0,3.0,0.0,3.0,12.0,15.0,1
2.0,15.0,24.0,27.0,24.0,27.0,36.0,39.0,36.0,39.0,48.0,51.0,48.0,51.0,60.0,
63.0,60.0,63.0,72.0,75.0,72.0,75.0,84.0,87.0,84.0,87.0,40,35,30,25,300.
0,4096,50.0,200.0,3.0,27.0,51.0,75.0

dkch –dkc 30143

0,0,
160500,07172001,30143,1,100.0,97.0,94.0,91.0,88.0,85.0,82.0,79.0,76.0,7
3.0,70.0,67.0,64.0,61.0,58.0,55.0,52.0,49.0,46.0,43.0,40.0,37.0,34.0,
31.0,28.0,25.0,22.0,19.0,16.0,13.0,10.0,7.0,0.0,3.0,0.0,3.0,12.0,15.0,1
2.0,15.0,24.0,27.0,24.0,27.0,36.0,39.0,36.0,39.0,48.0,51.0,48.0,51.0,60.0,
63.0,60.0,63.0,72.0,75.0,72.0,75.0,84.0,87.0,84.0,87.0,40,35,30,25,300.
0,4096,50.0,200.0,3.0,27.0,51.0,75.0
161000,07172001,30143,1,100.0,97.0,94.0,91.0,88.0,85.0,82.0,79.0,76.0,7
3.0,70.0,67.0,64.0,61.0,58.0,55.0,52.0,49.0,46.0,43.0,40.0,37.0,34.0,
31.0,28.0,25.0,22.0,19.0,16.0,13.0,10.0,7.0,0.0,3.0,0.0,3.0,12.0,15.0,1
2.0,15.0,24.0,27.0,24.0,27.0,36.0,39.0,36.0,39.0,48.0,51.0,48.0,51.0,60.0,
63.0,60.0,63.0,72.0,75.0,72.0,75.0,84.0,87.0,84.0,87.0,40,35,30,25,300.
0,4096,50.0,200.0,99.0,123.0,147.0,171.0
161500,07172001,30143,1,100.0,97.0,94.0,91.0,88.0,85.0,82.0,79.0,76.0,7
3.0,70.0,67.0,64.0,61.0,58.0,55.0,52.0,49.0,46.0,43.0,40.0,37.0,34.0,
31.0,28.0,25.0,22.0,19.0,16.0,13.0,10.0,7.0,0.0,3.0,0.0,3.0,12.0,15.0,1
2.0,15.0,24.0,27.0,24.0,27.0,36.0,39.0,36.0,39.0,48.0,51.0,48.0,51.0,60.0,
63.0,60.0,63.0,72.0,75.0,72.0,75.0,84.0,87.0,84.0,87.0,40,35,30,25,300.
0,4096,50.0,200.0,3.0,27.0,51.0,75.0

3.3 Logical Unit Host Snapshot Script (lunh)

3.3.1 LUNH Usage

The report CLUI application will provide a command to display Logical Unit Host
Snapshot data. The
output for this command is ordered byDKC ID. The required element for this
command is –ha.
Optionally, you may specify a management station using –ms <URL> and a username
password
pair using –auth <user:passwd>. The commands general format is as follows:

    lunh [-d<delim>] [-L] [-hr] [-ms <URL>] [-auth <user:passwd>] –ha <host ID>
    [-mr
    <maxRecords>] [-rg <raidGroup>] [-chp <chpPort>] [-acp <acpPair>] [-dkc
    <serial #>]
    [-dver <xxxxxx>] [-?] [-luse] [-ugrp]

where:

-d<delim> is an optional parameter used to specify delimited output data. If <delim> is
not specified, a comma character is used as the default to separate the output fields.
There is no space between –d and the delimiter.

-L is an optional parameter used to specify labeled and delimited output data.

Alternatively, -hr is an optional parameter used to request the data in a human
readable format.

<host ID> specifies a host ID for which to report LUN information. The word "all"
may be used here to indicate all hosts.

<serial #> specifies the array serial number. The word "all" may be used here to
indicate all DKC's.

-ms <URL> is the address of a management station of the form
http://path.to.managementstation/

-auth <user:passwd> is a username and password pair of the form
username:password

-dver <xxxxxx> indicates how the data should be displayed.
XXXXXX is a version number.
Currently supported values are 010500 and 010600. The default value
is 010500.

<maxRecords> the maximum number of records to return. You may not specify a number
of records larger than 16000.

<raidGroup> constrain the output to a specific raid group. The word "all" may be used
here to indicate all hosts. Not adding this switch has the same effect.

<chpPort> constrain the output to a specific CHP Port. The word "all" may be used
here to indicate all hosts. Not adding this switch has the same effect.

<acpPair> constrain the output to a specific ACP Pair. The word "all"

may be used here
to indicate all hosts. Not adding this switch has the same effect.

-? - Prints the usage statement.

-luse <ldev ID> Constrain by LUSE master ID.

-ugrp <user group> Constrain by User Group ID. Can be used
interchangeably
with –dkc or –ha.

3.3.2 LUNH Sample Output

Following are examples of output data for the CLUI shell script described in the
previous section.
NOTE: Labels in labeled outputs (specified by –hr or -L in the command line) are in
BOLD.

lunh –ha xpslk.user.server.com -hr

Collecting requested information...
Retrieving records 0 - 1999
Array ID: 30143　**Lun ID:** 5　　**Volume-Grp.:** --
Dev. File: /dev/rdsk/c5t3d5　**LDEV ID:** 0:0　**LDEV
IO/Sec:** 0
Emulation: OPEN-3-CM　**SS ID:** 0004　**Raid Grp.:** 1-1
CHP Port ID: CL1B　　**CHP Port Util:** 0
ACP Pair ID: 1　　　**ACP Pair Util:** 1

Array ID: 30143　**Lun ID:** 6　　**Volume-Grp.:** --
Dev. File: /dev/rdsk/c5t3d6　**LDEV ID:** 0:2　**LDEV
IO/Sec:** 0
Emulation: OPEN-3　　**SS ID:** 0004　**Raid Grp.:** 1-1
CHP Port ID: CL1B　　**CHP Port Util:** 0
ACP Pair ID: 1　　　**ACP Pair Util:** 1

Array ID: 30143　**Lun ID:** 7　　**Volume-Grp.:** --
Dev. File: /dev/rdsk/c5t3d7　**LDEV ID:** 0:3　**LDEV
IO/Sec:** 0
Emulation: OPEN-3　　**SS ID:** 0004　**Raid Grp.:** 1-1
CHP Port ID: CL1B　　**CHP Port Util:** 0
ACP Pair ID: 1　　　**ACP Pair Util:** 1

Array ID: 30143　**Lun ID:** 0　　**Volume-Grp.:** --
Dev. File: /dev/rdsk/c5t4d0　**LDEV ID:** 0:4　**LDEV

```
IO/Sec: 0
Emulation: OPEN-3     SS ID: 0004   Raid Grp.: 1-1
CHP Port ID: CL1B       CHP Port Util: 0
ACP Pair ID: 1          ACP Pair Util: 1
```

lunh -ha xpslk.user.server.com–L

Array ID,Lun ID,Volume Grp.,Dev. File,LDEV ID,LDEV IO/Sec,Emulation,SS ID,Raid Grp.,CHP Port ID,CHP Port Util,ACP Pair ID,ACP Pair Util
30143,5, ,/dev/rdsk/c5t3d5,0:0,0,OPEN-3-CM,0004,'1-1,CL1B,0,1,1
30143,6, ,/dev/rdsk/c5t3d6,0:2,0,OPEN-3,0004,'1-1,CL1B,0,1,1
30143,7, ,/dev/rdsk/c5t3d7,0:3,0,OPEN-3,0004,'1-1,CL1B,0,1,1
30143,0, ,/dev/rdsk/c5t4d0,0:4,0,OPEN-3,0004,'1-1,CL1B,0,1,1
30143,1, ,/dev/rdsk/c5t4d1,0:5,0,OPEN-3,0004,'1-1,CL1B,0,1,1
30143,2, ,/dev/rdsk/c5t4d2,0:6,0,OPEN-3,0004,'1-1,CL1B,0,1,1
30143,3, ,/dev/rdsk/c5t4d3,0:7,0,OPEN-3,0004,'1-1,CL1B,0,1,1
30143,4, ,/dev/rdsk/c5t4d4,0:8,0,OPEN-3,0004,'1-1,CL1B,0,1,1
30143,5, ,/dev/rdsk/c5t4d5,0:9,0,OPEN-3,0004,'1-1,CL1B,0,1,1
30143,6, ,/dev/rdsk/c5t4d6,0:A,0,OPEN-3,0004,'1-1,CL1B,0,1,1

lunh –ha xpslc360.user.server.com

30143,0, ,/dev/rdsk/c3t0d0,0:0,0,OPEN-3-CM,0004,1-1,CL1A,57,1,0
30143,0, ,/dev/rdsk/c5t0d0,1:EA,0,OPEN-3,0005,1-7,CL1A,57,1,0
30143,0, ,/dev/rdsk/c5t7d0,2:22,0,OPEN-3,0006,1-8,CL1A,57,1,0
30143,0, ,/dev/rdsk/c3t14d0,1:DA,0,OPEN-3,0005,1-7,CL1A,57,1,0
30143,0, ,/dev/rdsk/c5t15d0,2:62,0,OPEN-3,0006,1-9,CL1A,57,1,0
30143,0, ,/dev/rdsk/c3t11d0,1:C2,0,OPEN-3,0005,1-7,CL1A,57,1,0

lunh –ha hpbs1428.user.server.com–hr –dver 010600

```
Array ID: 30143   Array Type: XP512
Lun ID:1 Volume-Grp.:-/dev/vg00 Dev. File:
/dev/rdsk/c0t0d1
LDEV ID: 0:01   LDEV IO/Sec: 1437    LDEV MB/Sec: 3
Emulation: OPEN-3     SS ID: 0004   Raid Grp.: 1-2
CHP Port ID: CL1A       CHP Port Util: 100
ACP Pair ID: BH         ACP Pair Util: 29
Cont. Access Volume: SMPL     Business Copy Volume 0:
SMPL
Business Copy Volume 1:  SMPL  Business Copy Volume 2:
SMPL
Cache Fast Writes: 0        DASD Fast Writes: 0
Load Inhibit Count: 0        Bypass Count: 0
Backend Transfer Count: 75
```

+++

Array ID: 30143 **Array Type:** XP512
Lun ID: 2 **Volume-Grp.:** -/dev/vg00 **Dev. File:** /dev/rdsk/c0t0d2
LDEV ID: 0:02 **LDEV IO/Sec:** 1437 **LDEV MB/Sec:** 3
Emulation: OPEN-3 **SS ID:** 0004 **Raid Grp.:** 1-3
CHP Port ID: CL1A **CHP Port Util:** 100
ACP Pair ID: BH **ACP Pair Util:** 29
Cont. Access Volume: SMPL **Business Copy Volume 0:** SMPL
Business Copy Volume 1: SMPL **Business Copy Volume 2:** SMPL
Cache Fast Writes: 0 **DASD Fast Writes:** 0
Load Inhibit Count: 0 **Bypass Count:** 0
Backend Transfer Count: 75

+++

2 records displayed.

lunh –ha hpbs1428.user.server.com–L –dver 010600

Array ID,Lun ID,Volume Grp.,Dev. File,LDEV ID,LDEV IO/Sec,Emulation,SS ID,Raid Grp.,CHP Port ID,CHPPort Util,ACP Pair ID,ACP Pair Util,Ldev MB/s,Continuous Access,Business Copy Vol 0,Business Copy Vol 1,Business Copy Vol 2,Cache Fast Writes,DASD Fast Writes,Load Inhibit Count,Bypass Count,Backend Transfer,Array Type
30143,0,/dev/vg00,/dev/rdsk/c0t0d0 ,0:00,1437,OPEN-3-CM,0004,1-1,CL1A,100,BH,29,3,SMPL,SMPL,SMPL,SMPL,0,
0,0,0,75,XP512
30143,1,/dev/vg00,/dev/rdsk/c0t0d1,0:01,1437,OPEN-3,0004,1-2,CL1A,100,BH,29,3,SMPL,SMPL,SMPL,SMPL,0,0,
0,0,75,XP512
30143,2,/dev/vg00,/dev/rdsk/c0t0d2,0:02,1437,OPEN-3,0004,1-3,CL1A,100,BH,29,3,SMPL,SMPL,SMPL,SMPL,0,0,
0,0,75,XP512

lunh –ha hpbs1428.user.server.com–dver 010600

30143,0,/dev/vg00, /dev/rdsk/c0t0d0,0:00,1437,OPEN-3-CM,0004,1-1,CL1A,100,BH,29,3,SMPL,SMPL,SMPL,SMPL,0,
0,0,0,75,XP512
30143,1,/dev/vg00,/dev/rdsk/c0t0d1,0:01,1437,OPEN-3,0004,1-2,CL1A,100,BH,29,3,SMPL,SMPL,SMPL,SMPL,0,0,
0,0,75,XP512

30143,2,/dev/vg00,/dev/rdsk/c0t0d2,0:02,1437,OPEN-3,0004,1-
3,CL1A,100,BH,29,3,SMPL,SMPL,SMPL,SMPL,0,0,
0,0,75,XP512

lunh –ha hpbs1428.user.server.com–hr –dver 015100

Array ID: 30143   **Array Type:** XP512
Lun ID: 0   **Volume-Grp.:**-/dev/vg00   **Dev. File:**
/dev/rdsk/c0t0d0
LDEV ID: 0:00   **LDEV IO/Sec:** 1401   **LDEV MB/Sec:** 3
Emulation: OPEN-3   **SS ID:** 0004 **Raid Grp.:** 1-1
Host Group: UNKNOWN
CHP Port ID: CL1A   **CHP Port Util:** 97
ACP Pair ID: BL   **ACP Pair Util:** 29
Cont. Access Volume: SMPL   **Business Copy Volume 0:**
SMPL
Business Copy Volume 1: SMPL **Business Copy Volume 2:**
SMPL
Cache Fast Writes: 0   **DASD Fast Writes:** 0
Load Inhibit Count: 0   **Bypass Count:** 0
Backend Transfer Count: 74

++

Array ID: 30143   **Array Type:** XP512
Lun ID: 1   **Volume-Grp.:**-/dev/vg00   **Dev. File:**
/dev/rdsk/c0t0d1
LDEV ID: 0:01   **LDEV IO/Sec:** 1340   **LDEV MB/Sec:** 3
Emulation: OPEN-3   **SS ID:** 0004   **Raid Grp.:** 1-2
Host Group: UNKNOWN
CHP Port ID: CL1A   **CHP Port Util:** 97
ACP Pair ID: BL   **ACP Pair Util:** 29
Cont. Access Volume: SMPL   **Business Copy Volume 0:**
SMPL
Business Copy Volume 1: SMPL **Business Copy Volume 2:**
SMPL
Cache Fast Writes: 0   **DASD Fast Writes:** 0
Load Inhibit Count: 0   **Bypass Count:** 0
Backend Transfer Count: 71

+++

Total IO: 2741.0   **Total MB:** 5.57   **Total Tracks:** 145.0

2 records displayed

lunh –ha hpbs1428.user.server.com–L –dver 015100

Array ID,Lun ID,Volume Grp.,Dev. File,LDEV ID,LDEV IO/Sec,Emulation,SS ID,Raid Grp.,CHP Port ID,CHP Port Util,ACP Pair ID,ACP Pair Util,Ldev MB/s,Continuous Access,Business Copy Vol 0,Business Copy Vol 1,Business Copy Vol 2,Cache Fast Writes,DASD Fast Writes,Load Inhibit Count,Bypass Count,Backend Transfer,Array Type,Host Group
30143,0,/dev/vg00,/dev/rdsk/c0t0d0,0:00,1401,OPEN-3,0004,1-
1,CL1A,97,BL,29,3,SMPL,SMPL,SMPL,SMPL,0,0,0,
0,74,XP512,UNKNOWN
30143,1,/dev/vg00,/dev/rdsk/c0t0d1,0:01,1340,OPEN-3,0004,1-
2,CL1A,97,BL,29,3,SMPL,SMPL,SMPL,SMPL,0,0,0,
0,71,XP512,UNKNOWN
30143,2,/dev/vg00,/dev/rdsk/c0t0d2,0:02,1338,OPEN-3,0004,1-
3,CL1A,97,BL,29,3,SMPL,SMPL,SMPL,SMPL,0,0,0,
0,71,XP512,UNKNOWN

lunh –ha hpbs1428.user.server.com–dver 015100

30143,0,/dev/vg00,/dev/rdsk/c0t0d0,0:00,1401,OPEN-3,0004,1-
1,CL1A,97,BL,29,3,SMPL,SMPL,SMPL,SMPL,0,0,0,
0,74,XP512,UNKNOWN
30143,1,/dev/vg00,/dev/rdsk/c0t0d1,0:01,1340,OPEN-3,0004,1-
2,CL1A,97,BL,29,3,SMPL,SMPL,SMPL,SMPL,0,0,0,
0,71,XP512,UNKNOWN
30143,2,/dev/vg00,/dev/rdsk/c0t0d2,0:02,1338,OPEN-3,0004,1-
3,CL1A,97,BL,29,3,SMPL,SMPL,SMPL,SMPL,0,0,0,
0,71,XP512,UNKNOWN

3.4 Logical Unit Disk Controller Snapshot Script (lund)

3.4.1 LUND Usage

The report CLUI application will provide a command to display Logical Unit Disk Controller Snapshot
data. Output for this command is ordered by Host ID. The required element for this command is –dkc.
Optionally, you may specify a management station using –ms <URL> and a username password pair
using –auth <user:passwd>. The commands general format is as follows:

lund [-d<delim>] [-L] [-hr] [-ms <URL>] [-auth <user:passwd>] -dkc <serial #> [-mr
<maxRecords>] [-rg <raidGroup>] [-chp <chpPort>] [-acp <acpPair>] [–ha <host ID>] [-
dver<xxxxxx>] [-?] –ugrp <user group>

where:

-d<delim> is an optional parameter used to specify delimited output data. If <delim>
is not specified, a comma character is used as the default to separate the output fields.
There is no space between –d and the delimiter.

-L is an optional parameter used to specify labeled and delimited output data.

Alternatively, -hr is an optional parameter used to request the data in a human
readable format.

<host ID> specifies a host ID for which to report LUN information. The word "all"
may be used here to indicate all hosts.

<serial #> specifies the array serial number. The word "all" may be used here to indicate
 all DKC's.

-ms <URL> is the address of a management station of the form
http://path.to.managementstation/

-auth <user:passwd> is a username and password pair of the form
username:password

-dver <xxxxxx> indicates how the data should be displayed. XXXXXX is a
version number. Currently supported values are 010500 and 010600. The
default value is 010500.

<maxRecords> the maximum number of records to return. You may not specify
a number of records larger than 16000.

<raidGroup> constrain the output to a specific raid group. The word "all" may
be used here to indicate all hosts. Not adding this switch has the same effect.

<chpPort> constrain the output to a specific CHP Port. The word "all" may

be used here to indicate all hosts. Not adding this switch has the same effect.

<acpPair> constrain the output to a specificACP Pair. The word "all" may
be used here to indicate all hosts. Not adding this switch has the same effect.

-? - Prints the usage statement.

-ugrp <user group> Constrain by User Group ID. Can be used interchangeably with –dkc or –ha

3.4.2 LUND Sample Output.

Following are examples of output data for theCLUI shell script described in the previous section.
NOTE: Labels in labeled outputs (specified by–hr or -L in the command line) are in **BOLD**.
Also, the amount of data has been reduced for this manual.
lund -hr –dkc 30143

Retrieving records 0 - 1999
Host ID: hpbs2167.user.server.comLun ID: 0   Volume-Grp.:--
Dev. File: /dev/rdsk/c17t0d0 LDEV ID: 0:0 LDEV IO/Sec: 0
Emulation: OPEN-3-CM SS ID: 0004 Raid Grp.: 1-1
CHP Port ID: CL2D   CHP Port Util: 0
ACP Pair ID: 1   ACP Pair Util: 1

Host ID: hpbs2196.user.server.comLun ID: 0   Volume-Grp.:--
Dev. File: /dev/rdsk/c17t0d0 LDEV ID: 0:0 LDEV IO/Sec: 0
Emulation: OPEN-3-CM SS ID: 0004 Raid Grp.: 1-1
CHP Port ID: CL2D   CHP Port Util: 0
ACP Pair ID: 1   ACP Pair Util: 1

Host ID: xpslc360.user.server.comLun ID: 0   Volume-Grp.:--
Dev. File: /dev/rdsk/c3t0d0   LDEV ID: 0:0 LDEV IO/Sec: 0
Emulation: OPEN-3-CM SS ID: 0004 Raid Grp.: 1-1
CHP Port ID: CL1A   CHP Port Util: 0
ACP Pair ID: 1   ACP Pair Util: 1

Host ID: xpslk.user.server.comLun ID: 5   Volume-Grp.:--
Dev. File: /dev/rdsk/c5t3d5   LDEV ID: 0:0   LDEV IO/Sec: 0
Emulation: OPEN-3-CM SS ID: 0004 Raid Grp.: 1-1

CHP Port ID: CL1B　　CHP Port Util: 0
ACP Pair ID: 1　　ACP Pair Util: 1

Host ID: hpbs2167.user.server.comLun ID: 1　Volume-Grp.:--
Dev. File: /dev/rdsk/c13t0d1 LDEV ID: 0:1　LDEV IO/Sec: 1
Emulation: OPEN-3-CM　SS ID: 0004　Raid Grp.: 1-1
CHP Port ID: CL2B　　CHP Port Util: 0
ACP Pair ID: 1　　ACP Pair Util: 1

Host ID: hpbs2196.user.server.comLun ID: 1　Volume-Grp.:--
Dev. File: /dev/rdsk/c13t0d1 LDEV ID: 0:1　LDEV IO/Sec: 1
Emulation: OPEN-3-CM　SS ID: 0004　Raid Grp.: 1-1
CHP Port ID: CL2B　　CHP Port Util: 0
ACP Pair ID: 1　　ACP Pair Util: 1

lund -dkc 30143 -L

Host ID,Lun ID,Volume Grp.,Dev. File,LDEV ID,LDEV IO/Sec,Emulation,SS ID,Raid Grp.,CHP Port ID,CHP Port Util,ACP Pair ID,ACP Pair Util
hpbs2167.user.server.com,0,
,/dev/rdsk/c17t0d0,0:0,0,OPEN-3-CM,0004,'1-1,CL2D,0,1,1
hpbs2196.user.server.com,0,
,/dev/rdsk/c17t0d0,0:0,0,OPEN-3-CM,0004,'1-1,CL2D,0,1,1
xpslc360.user.server.com,0,
,/dev/rdsk/c3t0d0,0:0,0,OPEN-3-CM,0004,'1-1,CL1A,0,1,1
xpslk.user.server.com,5, ,/dev/rdsk/c5t3d5,0:0,0,OPEN-3-CM,0004,'1-1,CL1B,0,1,1
hpbs2167.user.server.com,1,
,/dev/rdsk/c13t0d1,0:1,1,OPEN-3-CM,0004,'1-1,CL2B,0,1,1
hpbs2196.user.server.com,1,
,/dev/rdsk/c13t0d1,0:1,1,OPEN-3-CM,0004,'1-1,CL2B,0,1,1
hpbs2167.user.server.com,2, ,/dev/rdsk/c17t0d2,0:2,0,OPEN-3,0004,'1-1,CL2D,0,1,1
hpbs2196.user.server.com,2, ,/dev/rdsk/c17t0d2,0:2,0,OPEN-3,0004,'1-1,CL2D,0,1,1
xpslc360.user.server.com,2, ,/dev/rdsk/c3t0d2,0:2,0,OPEN-3,0004,'1-1,CL1A,0,1,1
xpslk.user.server.com,6, ,/dev/rdsk/c5t3d6,0:2,0,OPEN-3,0004,'1-1,CL1B,0,1,1

lund –dkc 30143

hpbs2167.user.server.com,0,
,/dev/rdsk/c17t0d0,0:0,0,OPEN-3-CM,0004,'1-1,CL2D,0,1,1
hpbs2196.user.server.com,0,
,/dev/rdsk/c17t0d0,0:0,0,OPEN-3-CM,0004,'1-1,CL2D,0,1,1
xpslc360.user.server.com,0,
,/dev/rdsk/c3t0d0,0:0,0,OPEN-3-CM,0004,'1-1,CL1A,0,1,1
xpslk.user.server.com,5, ,/dev/rdsk/c5t3d5,0:0,0,OPEN-3-CM,0004,'1-1,CL1B,0,1,1
hpbs2167.user.server.com,1,
,/dev/rdsk/c13t0d1,0:1,1,OPEN-3-CM,0004,'1-1,CL2B,0,1,1

hpbs2196.user.server.com,1,
,/dev/rdsk/c13t0d1,0:1,1,OPEN-3-CM,0004,'1-1,CL2B,0,1,1
hpbs2167.user.server.com,2, ,/dev/rdsk/c17t0d2,0:2,0,OPEN-3,0004,'1-1,CL2D,0,1,1
hpbs2196.user.server.com,2, ,/dev/rdsk/c17t0d2,0:2,0,OPEN-3,0004,'1-1,CL2D,0,1,1
xpslc360.user.server.com,2, ,/dev/rdsk/c3t0d2,0:2,0,OPEN-3,0004,'1-1,CL1A,0,1,1
xpslk.user.server.com,6, ,/dev/rdsk/c5t3d6,0:2,0,OPEN-3,0004,'1-1,CL1B,0,1,1

lund -hr –dkc 30143 –dver 010600

Host ID: hpbs1428.user.server.com
Lun ID:1 **Volume-Grp.:**-/dev/vg00 **Dev. File:** /dev/rdsk/c0t0d1
LDEV ID: 0:01 **LDEV IO/Sec:** 1437 **LDEV MB/Sec:** 3
Emulation: OPEN-3 **SS ID:** 0004 **Raid Grp.:** 1-2
CHP Port ID: CL1A **CHP Port Util:** 100
ACP Pair ID: BH **ACP Pair Util:** 29
Cont. Access Volume: SMPL **Business Copy Volume 0:** SMPL
Business Copy Volume 1: SMPL Business Copy Volume 2: SMPL
Cache Fast Writes: 0 **DASD Fast Writes:** 0
Load Inhibit Count: 0 **Bypass Count:** 0
Backend Transfer Count: 75

+++

Host ID: hpbs1428.user.server.com
Lun ID: 2 **Volume-Grp.:**-/dev/vg00 **Dev. File:** /dev/rdsk/c0t0d2
LDEV ID: 0:02 **LDEV IO/Sec:** 1437 **LDEV MB/Sec:** 3
Emulation: OPEN-3 **SS ID:** 0004 **Raid Grp.:** 1-3
CHP Port ID: CL1A **CHP Port Util:** 100
ACP Pair ID: BH **ACP Pair Util:** 29
Cont. Access Volume: SMPL **Business Copy Volume 0:** SMPL
Business Copy Volume 1: SMPL **Business Copy Volume 2:** SMPL
Cache Fast Writes: 0 **DASD Fast Writes:** 0
Load Inhibit Count: 0 **Bypass Count:** 0
Backend Transfer Count: 75

++

2 records displayed

lund –dkc 30143–L –dver 010600

Host ID,Lun ID,Volume Grp.,Dev. File,LDEV ID,LDEV IO/Sec,Emulation,SS ID,Raid Grp.,CHP Port ID,CHPPort Util,ACP Pair ID,ACP Pair Util,Ldev MB/s,
Continuous Access,Business Copy Vol 0,Business Copy Vol 1,Business Copy Vol 2,Cache Fast Writes,DASD Fast Writes,Load Inhibit Count,Bypass Count, Backend Transfer,Array Type
hpbs1428.user.server.com,0,/dev/vg00,emulated 0
cero,0:00,1437,OPEN-3-CM,0004,1-1,CL1A,100,BH,29,3,SMPL,SMPL,SMPL,SMPL,
0,0,0,75,XP512
hpbs1428.user.server.com,1,/dev/vg00,/dev/rdsk/c0t0d1,0:01,1437,OPEN-3,0004,1-
2,CL1A,100,BH,29,3,SMPL,SMPL,SMPL,SMPL,0,0,
0,0,75,XP512
hpbs1428.user.server.com,2,/dev/vg00,/dev/rdsk/c0t0d2,0:02,1437,OPEN-3,0004,1-
3,CL1A,100,BH,29,3,SMPL,SMPL,SMPL,SMPL,0,0,
0,0,75,XP512

lund –dkc 30143 –L –dver 010600

hpbs1428.user.server.com,0,/dev/vg00,emulated 0
cero,0:00,1437,OPEN-3-CM,0004,1-1,CL1A,100,BH,29,3,SMPL,SMPL,SMPL,SMPL,
0,0,0,75,XP512
hpbs1428.user.server.com,1,/dev/vg00,/dev/rdsk/c0t0d1,0:01,1437,OPEN-3,0004,1-
2,CL1A,100,BH,29,3,SMPL,SMPL,SMPL,SMPL,0,0,
0,0,75,XP512
hpbs1428.user.server.com,2,/dev/vg00,/dev/rdsk/c0t0d2,0:02,1437,OPEN-3,0004,1-
3,CL1A,100,BH,29,3,SMPL,SMPL,SMPL,SMPL,0,0,
0,0,75,XP512

lund –dkc 30143 –hr –dver 015100

Host ID: hpbs1428.user.server.com
Lun ID: 0 **Volume-Grp.:**-/dev/vg00 **Dev. File:**
/dev/rdsk/c0t0d1
LDEV ID: 0:00 **LDEV IO/Sec:** 1440 **LDEV MB/Sec:** 3
Emulation: OPEN-3-CM **SS ID:** 0004 **Raid Grp.:** 1-1
Host Group: UNKNOWN
CHP Port ID: CL1A **CHP Port Util:** 96
ACP Pair ID: BH **ACP Pair Util:** 29
Cont. Access Volume: SMPL **Business Copy Volume 0:**
SMPL
Business Copy Volume 1: SMPL **Business Copy Volume 2:**
SMPL
Cache Fast Writes: 0 **DASD Fast Writes:** 0
Load Inhibit Count: 0 **Bypass Count:** 0
Backend Transfer Count: 75

++

Host ID: hpbs1428.user.server.com
Lun ID: 1 **Volume-Grp.:**-/dev/vg00 **Dev. File:**
/dev/rdsk/c0t0d2
LDEV ID: 0:01 **LDEV IO/Sec:** 1440 **LDEV MB/Sec:** 3
Emulation: OPEN-3 **SS ID:** 0004 **Raid Grp.:** 1-2
Host Group: UNKNOWN
CHP Port ID: CL1A **CHP Port Util:** 96
ACP Pair ID: BH **ACP Pair Util:** 29
Cont. Access Volume: SMPL **Business Copy Volume 0:**
SMPL
Business Copy Volume 1: SMPL **Business Copy Volume 2:**
SMPL
Cache Fast Writes: 0 **DASD Fast Writes:** 0
Load Inhibit Count: 0 **Bypass Count:** 0
Backend Transfer Count: 75

++

Total IO: 2880.0 **Total MB:** 5.85 **Total Tracks:** 150.0

2 records displayed

lund –dkc 30143 –L –dver 015100

**Host ID,Lun ID,Volume Grp.,Dev. File,LDEV ID,LDEV IO/S,Emulation,SS
ID,Raid Grp.,CHP Port ID,CHP Port Util,ACP Pair ID,ACP Pair Util,Ldev
MB/s,Continuous Access,Business Copy Vol 0,Business Copy Vol 1,Business
Copy Vol 2,Cache Fast Writes,DASD Fast Writes,Load Inhibit Count,Bypass
Count,Backend Transfer,Array Type,Host Group**
hpbs1428.user.server.com,0,/dev/vg00,
/dev/rdsk/c0t0d1,0:00,1440,OPEN-3-CM,0004,1-
1,CL1A,96,BH,29,3,SMPL,SM
PL,SMPL,SMPL,0,0,0,0,75,XP512,UNKNOWN
hpbs1428.user.server.com,1,/dev/vg00,/dev/rdsk/c0t0d2,0:01,1440,OPEN-3,0004,1-
2,CL1A,96,BH,29,3,SMPL,SMPL
,SMPL,SMPL,0,0,0,0,75,XP512,UNKNOWN
hpbs1428.user.server.com,2,/dev/vg00,/dev/rdsk/c0t0d3,0:02,1440,OPEN-3,0004,1-
3,CL1A,96,BH,29,3,SMPL,SMPL
,SMPL,SMPL,0,0,0,0,75,XP512,UNKNOWN

lund –dkc 30143 –dver 015100

hpbs1428.user.server.com,0,/dev/vg00,
/dev/rdsk/c0t0d1,0:00,1440,OPEN-3-CM,0004,1-

1,CL1A,96,BH,29,3,SMPL,SM
PL,SMPL,SMPL,0,0,0,0,75,XP512,UNKNOWN
hpbs1428.user.server.com,1,/dev/vg00,/dev/rdsk/c0t0d2,0:01,1440,OPEN-3,0004,1-
2,CL1A,96,BH,29,3,SMPL,SMPL
,SMPL,SMPL,0,0,0,0,75,XP512,UNKNOWN
hpbs1428.user.server.com,2,/dev/vg00,/dev/rdsk/c0t0d3,0:02,1440,OPEN-3,0004,1-
3,CL1A,96,BH,29,3,SMPL,SMPL
,SMPL,SMPL,0,0,0,0,75,XP512,UNKNOWN

3.5 Logical Device History Script (ldev)

3.5.1 LDEV Usage

The report CLUI application will provide a command to display Logical Device
History data.
The required elements for this command are –dkc, and –ldev. Optionally, you may
specify a
management station using –ms <URL> and a username password pair using –auth
<user:passwd>.
The commands general format is as follows:

        ldev [-d<delim>] [-L] [-hr] [-ms <URL>] [-auth <user:passwd>] –dkc
        <serial #> -ldev <logical device #> [-st <start time> -et <end time>]
        [-dver <xxxxxx>] [-?]

        where:
                -d<delim> is an optional parameter used to specify delimited output
                data. If <delim>
                is not specified, a comma character is used as the default to separate the
                output fields.
                There is no space between –d and the delimiter.

                -L is an optional parameter used to specify labeled and delimited output
        data.

                Alternatively, -hr is an optional parameter used to request the data in a
                human readable format.

                <serial #> specifies the array serial number.

                -ms <URL> is the address of a management station of the form
                http://path.to.managementstation/

                -auth <user:passwd> is a username and password pair of the form
                username:password

-dver <xxxxxx> indicates how the data should be displayed.
XXXXXX
is a version number. Currently supported values are 010500 and
010600.
The default value is 010500.

<logical device #> specifies the logical device number in the format
<cu>:<ldev>.

where:

<cu> specifies the control unit number (0...f).

<ldev> specifies the logical device number (0...ff).

<start time> specifies the start time in the format mm.dd.yyyy hh:mm:ss

<end time> specifies the end time in the format mm.dd.yyyy hh:mm:ss

-? - Prints the usage statement.

If no start time and end time are specified, this command returns the latest 10 records from
the management station.

3.5.2 LDEV Sample Output

Following are examples of output data for the CLUI shell script described in the
previous section.
NOTE: Labels in labeled outputs (specified by –hr or -L in the command line) are in
BOLD.

```
ldev -hr –dkc 30143 –ldev 1:6C –st 01.03.2001 12:49:00
-et
01.03.2001 14:20:00
```

Collecting requested information...
Start Time: 01/03/2001,12:49:00 **End Time:**
01/03/2001,14:20:00

Time	**Date**	**Rand: Reads**	**RHits**	**Writes**	**WHits**	**Seq: Reads**	**RHits**	**Writes**	**WHits**
160500	07172001	270	240	210	180	150	120	90	60
161000	07172001	270	240	210	180	150	120	90	60
161500	07172001	270	240	210	180	150	120	90	60

```
162000  07172001    270 240 210  180      150 120 90   60
162500  07172001    270 240 210  180      150 120 90   60
163000  07172001    270 240 210  180      150 120 90   60
163500  07172001    270 240 210  180      150 120 90   60
164000  07172001    270 240 210  180      150 120 90   60
164500  07172001    270 240 210  180      150 120 90   60
135500  07182001    270 240 210  180      150 120 90   60
```

ldev –dkc 30143 –ldev 1:6C –st 01.03.2001 12:49:00 –et 01.03.2001 14:20:00


```
01/03/2001,12:49:00,01/03/2001,14:20:00
124904,01032001,28,11,6,0,440,437,360,0
125904,01032001,26,10,6,0,434,430,356,0
130904,01032001,27,10,6,0,437,433,363,0
131904,01032001,27,10,6,0,437,434,364,0
132904,01032001,26,10,6,0,447,443,358,0
133903,01032001,27,10,6,0,437,433,375,0
134903,01032001,27,10,6,0,449,445,362,0
135904,01032001,28,10,6,0,450,446,378,0
140904,01032001,27,10,6,0,447,443,367,0
141904,01032001,26,10,6,0,433,429,365,0
```


ldev –dkc 30143 –ldev 1:74 -L

Start time,End Time
0,0
Time,Date,Random Reads,Random Read Hits,Random Writes,Random Write Hits,
Sequential Reads,Sequential Read Hits,Sequential Writes,Sequential Write Hits
```
114455,05012001,10,10,48,0,0,0,0,0
115455,05012001,10,10,48,0,0,0,0,0
120455,05012001,10,10,48,0,0,0,0,0
121455,05012001,10,10,48,0,0,0,0,0
122455,05012001,10,10,48,0,0,0,0,0
123455,05012001,10,10,48,0,0,0,0,0
124455,05012001,10,10,48,0,0,0,0,0
125455,05012001,10,10,48,0,0,0,0,0
130544,05012001,10,10,48,0,0,0,0,0
131544,05012001,10,10,48,0,0,0,0,0
```


ldev -dkc 30143 -ldev 0:00 -hr -dver 010600 –st
11.08.2001 16:29:00 –et 11.08.2001 16:33:00
Start Time: 11082001 162900   **End Time:** 11082001 163300

+++

Ldev ID: 0:00 **Date:** 11082001 **Time:** 163000 **Array ID:** 30143

Rand: Reads: 270   **Read Cache Hits:** 240   **Read Cache Misses:** 30

Rand: Writes: 210   **Write Cache Hits:** 180   **Write Cache Misses:** 30

Rand: Reads MB/s: 0   **Writes MB/s:** 0

Seq: Reads: 150   **Read Cache Hits:** 120   **Read Cache Misses:** 30

Seq: Writes: 90   **Write Cache Hits:** 60   **Write Cache Misses:** 30

Seq: Reads MB/s: 0   **Writes MB/s:** 0

Total IO: 720

Backend Transfer Sequential Reads : 15

Backend Transfer Non-Sequential Reads: 25

Backend Transfer Writes: 35

CFW Reads: 0   **CFW Read Cache Hits:** 0

CFW Writes: 0   **CFW Write Cache Hits :** 0

DFW Count: 0   **DFW Normal Cache Mode Count:** 0

DFW Sequential Cache Mode Count: 0

Inhibit Cache Mode Count: 0   **Bypass Cache Mode Count:** 0

++

Ldev ID: 0:00 **Date:** 11082001 **Time:** 163200 **Array ID:** 30143

Rand: Reads: 270   **Read Cache Hits:** 240   **Read Cache Misses:** 30

Rand: Writes: 210   **Write Cache Hits:** 180   **Write Cache Misses:** 30

Rand: Reads MB/s: 0   **Writes MB/s:** 0

Seq: Reads: 150   **Read Cache Hits:** 120   **Read Cache Misses:** 30

Seq: Writes: 90   **Write Cache Hits:** 60   **Write Cache Misses:** 30

Seq: Reads MB/s: 0   **Writes MB/s:** 0

Total IO: 720

Backend Transfer Sequential Reads: 15

Backend Transfer Non-Sequential Reads: 25

Backend Transfer Writes: 35

CFW Reads: 0   **CFW Read Cache Hits:** 0

CFW Writes: 0   **CFW Write Cache Hits:** 0

DFW Count: 0   **DFW Normal Cache Mode Count:** 0
DFW Sequential Cache Mode Count: 0
Inhibit Cache Mode Count: 0   **Bypass Cache Mode Count:** 0

+++

ldev -dkc 30143 -ldev 0:00 -L -dver 010600 -st 11.08.2001 16:29:00 -et
11.08.2001 16:33:00

NOTE: For this command, the Start Time and End time are reported in milliseconds
since Jan. 1, 1970 for programmatic reasons.

Start time,End Time
1005262140000,1005262380000

Time,Date,Random Reads,Random Read Hits,Random Writes,Random Write
Hits,Sequential Reads,Sequential Read Hits,Sequential Writes,Sequential
Write Hits,Ldev ID,Array ID,Rand. Read Cache Misses,Rand. Write Cache
Misses,Seq. Read Cache Misses,Seq. Write Cache Misses,Total IO,Random
MB/s Reads,Random MB/s Writes,Sequential MB/s Reads,Sequential MB/s
Writes,Backend Transfer Sequential Reads,Backend Transfer Non-Sequential
Reads,Backend Transfer Writes,CFW Reads,CFW Read Cache Hits,CFW
Writes,CFW Write Cache Hits,DFW Count,DFW Normal Mode,DFW
Sequential Mode,Inhibit Cache Mode,Bypass Cache Mode
043000,11082001,270,240,210,180,150,120,90,60,30143,0:00,30,30,30,30,72
0,0,0,0,0,15,25,35,0,0,0,0,0,0,
0,0,0
043200,11082001,270,240,210,180,150,120,90,60,30143,0:00,30,30,30,30,72
0,0,0,0,0,15,25,35,0,0,0,0,0,0,
0,0,0
ldev -dkc 30143 -ldev 0:00 -L -dver 010600 -st 11.08.2001 16:29:00 -et 11.08.2001
16:33:00

NOTE: For this command, the Start Time and End time are reported in milliseconds
since Jan. 1, 1970 for programmatic reasons.

043000,11082001,270,240,210,180,150,120,90,60,30143,0:00,30,30,30,30,72
0,0,0,0,0,15,25,35,0,0,0,0,0,0,
0,0,0
043200,11082001,270,240,210,180,150,120,90,60,30143,0:00,30,30,30,30,72
0,0,0,0,0,15,25,35,0,0,0,0,0,0,
0,0,0

3.6 Alarm History Script (almh)

3.6.1 ALMH Usage

This command is now deprecated, and does nothing if called. Please use the alarmhist command instead.

3.7   Alarm History Script (alarmhist)

3.7.1 ALARMHIST Usage

The CLUI provides a command to display Alarm History data. Alarm History objects are created when
array usage exceeds a certain user defined threshold, in one of a number of categories. There are no
required arguments for this command. The commands general format is as follows:

alarmhist [-d <delim>] [-L] [-hr] [-ms <URL>] [-auth <user:passwd>] [–dkc <serial #>] [-metric
<Category>] [-mval <Item Value>] [-st <mm.dd.yyyy hh:mm:ss>] [-et <mm.dd.yyyy hh:mm:ss>] [-tclass
<Time Class>] [-pf <password file>]

Optional Arguments:
    -ms <management station> URL of the management station
    -auth <user:passwd>   the username and password
    -dkc <Serial Number>   Constrain by array serial number
    -metric <Category>   Constrain by Metric Category

Valid values are as follows:
        IO_TOTAL – LDEV IO Total
        IO_RAND_TOTAL – LDEV IO Random Total
        IO_RAND_READ – LDEV IO Random Read
        IO_RAND_READ_CACHE – LDEV IO Random Read Cache Hits
        IO_RAND_WRITE – LDEV IO Random Write
        IO_RAND_WRITE_CACHE – LDEV IO Random Write Cache Hits
        IO_SEQ_TOTAL – LDEV IO Sequential Total
        IO_SEQ_READ – LDEV IO Sequential Read
        IO_SEQ_READ_CACHE – LDEV IO Sequential Read Cache Hits
        IO_SEQ_WRITE – LDEV IO Sequential Write
        IO_SEQ_WRITE_CACHE – LDEV IO Sequential Write Cache Hits
        MB_TOTAL – LDEV MB Total
        MB_RAND_TOTAL – LDEV MB Random Total
        MB_RAND_READ – LDEV MB Random Read

MB_RAND_WRITE – LDEV MB Random Write
MB_SEQ_TOTAL – LDEV MB Sequential Total
MB_SEQ_READ – LDEV MB Sequential Read
MB_SEQ_WRITE – LDEV MB Sequential Write
CFW_TOTAL – LDEV IO type
CFW_READ – LDEV IO type
CFW_READ_CACHE – LDEV IO type
CFW_WRITE – LDEV IO type
CFW_WRITE_CACHE – LDEV IO type
DFW_COUNT – LDEV IO type
DFW_NRML_COUNT – LDEV IO type
DFW_SEQ_ACCESS – LDEV IO type
DFW_WRITE_HITS – LDEV IO type
DFW_SA_WRITE_HITS – LDEV IO type
CACHEMODE_INHIBIT – LDEV IO type
CACHEMODE_BYPASS – LDEV IO type
PORT_IO_MAX – Port Maximum IO/s
PORT_IO_MIN – Port Minimum IO/s
PORT_IO_AVE – Port Average IO/s
PORT_MB_MAX – Port Maximum MB/s
PORT_MB_MIN – Port Minimum MB/s
PORT_MB_AVE – Port Average MB/s
FBUS_HI – DKC Bus Utilization
FBUS_LO – DKC Bus Utilization
MBUS_HI – DKC Bus Utilization
MBUS_LO – DKC Bus Utilization
BACKEND_SEQ_READ – LDEV Backend
BACKEND_NONSEQ_READ – LDEV Backend
BACKEND_WRITE – LDEV Backend

-mval <Item Value>   Constrain by Item Value, for example anLdev or Port ID.
-st <mm.dd.yyyy hh:mm:ss> Constrain by a certain start time.
-et <mm.dd.yyyy hh:mm:ss> Constrain by a certain end time.
-tclass <Time Class>   Set class for time constraints. Valid arguments are:
                     posted   Time should be constrained by the posted time.
                     updated   Time should be constrained by the updated time.
                     dispatched Time should be constrained by the updated time.
-pf <password file>   may be used in place of -auth.
-d<delim>   set the delimiter for delimited display.Used with -list and
-details
-hr   display human readable output. Used with -list and -details
-?   prints this usage statement.

3.7.2 ALARMHIST Sample Output

alarmhist –hr

```
Alarm ID: 2           Array ID: 30143          Metric Value: 1:F4
Metric Category: Total IO
Alarm State: Level_1                Threshold: 9
Time Posted: 2002-03-01 11:40:00.0     Time Updated: 2002-03-07
16:50:00.0
Time Dispatched: 1969-12-31 17:00:00.0
```

++

```
Alarm ID: 1           Array ID: 30143          Metric Value: 1:F6
Metric Category: Total IO
Alarm State: Level_0                Threshold: 999999
Time Posted: 2002-03-01 11:21:11.0     Time Updated: 2002-03-07
16:50:00.0
Time Dispatched: 1969-12-31 17:00:00.0
```

++

alarmhist –L

Alarm ID,Array ID,Metric,Metric Value,Level,Value,Threshold,Time
Posted,Time Updated,Time Dispatched
2,30143,Total IO,1:F4,Level_1,9,2002-03-01 11:40:00.0,2002-03-08
10:08:00.0,1969-12-31 17:00:00.0
1, 30143,Total IO,1:F6,Level_0,999999,2002-03-01 11:21:11.0,2002-03-08
10:08:00.0,1969-12-31 17:00:00.0

alarmhist

2,30143,Total IO,1:F4,Level_1,9,2002-03-01 11:40:00.0,2002-03-08
10:08:00.0,1969-12-31 17:00:00.0
1, 30143,Total IO,1:F6,Level_0,999999,2002-03-01 11:21:11.0,2002-03-08
10:08:00.0,1969-12-31 17:00:00.0

3.8   Port Performance Data Script (port)

3.8.1 PORT Usage

The CLUI provides a command to display Port Performance data. The required
elements for this command
are –dkc, and –port. Optionally, you may specify a management station using –ms
<URL> and a username
password pair using –auth <user:passwd>. The commands general format is as
follows:

    ldev [-d<delim>] [-L] [-hr] [-ms <URL>] [-auth <user:passwd>] –dkc <serial #>
    -port <port ID> [-?]
    where:

-d<delim> is an optional parameter used to specify delimited output
data. If <delim>
 is not specified, a comma character is used as the default to separate the
output fields.
There is no space between –d and the delimiter.

-L is an optional parameter used to specify labeled and delimited output
data.

Alternatively, -hr is an optional parameter used to request the data in a
human
readable format.

<serial #> specifies the array serial number.

-ms <URL> is the address of a management station in the form
 http://path.to.managementstation/

-auth <user:passwd> is a username and password pair of the form
username:password

<port ID> specifies the port number. This will be of the formCLxc,
where *x*
is the cluster number and*c* is the port letter within the cluster.

-? - Prints the usage statement.

3.8.2 PORT Sample Output

port -dkc 30143 -port cl1a –hr
Serial #: 30143
Port ID: CL1A

Time	Date	Max IO/s	Min IO/s	AvgIO/s	Max MB/s	Min MB/s	Avg MB/s
023000	11022001	900	700	800	8	6	7
023200	11022001	900	700	800	8	6	7
023400	11022001	900	700	800	8	6	7
023600	11022001	900	700	800	8	6	7
023800	11022001	900	700	800	8	6	7
024000	11022001	900	700	800	8	6	7
024200	11022001	900	700	800	8	6	7
024400	11022001	900	700	800	8	6	7
024600	11022001	900	700	800	8	6	7
024800	11022001	900	700	800	8	6	7
025000	11022001	900	700	800	8	6	7
025200	11022001	900	700	800	8	6	7
025400	11022001	900	700	800	8	6	7

```
025600 11022001 900     700     800     8       6       7
025800 11022001 900     700     800     8       6       7
```

port -dkc 30143 -port cl1a –L

Serial #,Time,Date,Port,Max IO/s,Min IO/s,Avg IO/s,Max MB/s,Min MB/s,Avg MB/s

30143,023000,11022001,CL1A,900,700,800,8,6,7
30143,023200,11022001,CL1A,900,700,800,8,6,7
30143,023400,11022001,CL1A,900,700,800,8,6,7
30143,023600,11022001,CL1A,900,700,800,8,6,7
30143,023800,11022001,CL1A,900,700,800,8,6,7
30143,024000,11022001,CL1A,900,700,800,8,6,7
30143,024200,11022001,CL1A,900,700,800,8,6,7
30143,024400,11022001,CL1A,900,700,800,8,6,7
30143,024600,11022001,CL1A,900,700,800,8,6,7
30143,024800,11022001,CL1A,900,700,800,8,6,7
30143,025000,11022001,CL1A,900,700,800,8,6,7
30143,025200,11022001,CL1A,900,700,800,8,6,7
30143,025400,11022001,CL1A,900,700,800,8,6,7
30143,025600,11022001,CL1A,900,700,800,8,6,7

port -dkc 30143 -port cl1a

30143,023000,11022001,CL1A,900,700,800,8,6,7
30143,023200,11022001,CL1A,900,700,800,8,6,7
30143,023400,11022001,CL1A,900,700,800,8,6,7
30143,023600,11022001,CL1A,900,700,800,8,6,7
30143,023800,11022001,CL1A,900,700,800,8,6,7
30143,024000,11022001,CL1A,900,700,800,8,6,7
30143,024200,11022001,CL1A,900,700,800,8,6,7
30143,024400,11022001,CL1A,900,700,800,8,6,7
30143,024600,11022001,CL1A,900,700,800,8,6,7
30143,024800,11022001,CL1A,900,700,800,8,6,7
30143,025000,11022001,CL1A,900,700,800,8,6,7
30143,025200,11022001,CL1A,900,700,800,8,6,7
30143,025400,11022001,CL1A,900,700,800,8,6,7
30143,025600,11022001,CL1A,900,700,800,8,6,7

3.9   Alarm Configuration Script (alrmcfg)

3.9.1   ALRMCFG Usage

This command is now deprecated and does nothing if called. Please use the
configalarm command instead.

3.10   Alarm Configuration Script(configalarm)

3.10.1 CONFIGALARM Usage

The arguments for this command are as follows:
Required Arguments:
    -dkc <serial num> serial number of the array. Not required if -list is used
    -mval <Item List> the items to create alarms on. This is a csv list. Not required if
-list is used
    -metric <Metric Category> The alarm Metric to watch. Not required if -list is used
                Valid values are:
                        IO_TOTAL – LDEV IO Total
                        IO_RAND_TOTAL – LDEV IO Random Total
                        IO_RAND_READ – LDEV IO Random Read
                        IO_RAND_READ_CACHE – LDEV IO Random Read Cache
                        Hits
                        IO_RAND_WRITE – LDEV IO Random Write
                        IO_RAND_WRITE_CACHE – LDEV IO Random Write
                        Cache Hits
                        IO_SEQ_TOTAL – LDEV IO Sequential Total
                        IO_SEQ_READ – LDEV IO Sequential Read
                        IO_SEQ_READ_CACHE – LDEV IO Sequential Read Cache
                        Hits
                        IO_SEQ_WRITE – LDEV IO Sequential Write
                        IO_SEQ_WRITE_CACHE – LDEV IO Sequential Write
                        Cache Hits
                        MB_TOTAL – LDEV MB Total
                        MB_RAND_TOTAL – LDEV MB Random Total
                        MB_RAND_READ – LDEV MB Random Read
                        MB_RAND_WRITE – LDEV MB Random Write
                        MB_SEQ_TOTAL – LDEV MB Sequential Total
                        MB_SEQ_READ – LDEV MB Sequential Read
                        MB_SEQ_WRITE – LDEV MB Sequential Write
                        CFW_TOTAL – LDEV IO type
                        CFW_READ – LDEV IO type
                        CFW_READ_CACHE – LDEV IO type
                        CFW_WRITE – LDEV IO type
                        CFW_WRITE_CACHE – LDEV IO type
                        DFW_COUNT – LDEV IO type
                        DFW_NRML_COUNT – LDEV IO type
                        DFW_SEQ_ACCESS – LDEV IO type
                        DFW_WRITE_HITS – LDEV IO type

DFW_SA_WRITE_HITS – LDEV IO type
CACHEMODE_INHIBIT – LDEV IO type
CACHEMODE_BYPASS – LDEV IO type
PORT_IO_MAX – Port Maximum IO/s
PORT_IO_MIN – Port Minimum IO/s
PORT_IO_AVE – Port Average IO/s
PORT_MB_MAX – Port Maximum MB/s
PORT_MB_MIN – Port Minimum MB/s
PORT_MB_AVE – Port Average MB/s
FBUS_HI – DKC Bus Utilization
FBUS_LO – DKC Bus Utilization
MBUS_HI – DKC Bus Utilization
MBUS_LO – DKC Bus Utilization
BACKEND_SEQ_READ – LDEV Backend
BACKEND_NONSEQ_READ – LDEV Backend
BACKEND_WRITE – LDEV Backend

-list   indicates that the command should only list configured alarms

Optional Arguments:

-ms <management station> URL of the management station.

-auth <user:passwd>   the username and password.

-pf <password file>   may be used in place of -auth.

-th1 <threshold>   the first threshold of these alarms.
-th2 <threshold>   the second threshold of these alarms.
-th3 <threshold>   the third threshold of these alarms.

-email <Email List>   a csv list of email destinations.

-snmp <SNMP List>   a csv list of snmp destinations.
-vpo   Indicates whether or not the alarm should be posted to aVPO location.
-e   Indicates whether or not the alarm is enabled.
-d<delim>   set the delimiter for delimited display.Used with -list and -details
-hr   display human readable output. Used with -list and -details
-?   Prints this usage statement.

3.10.2   CONFIGALARM Sample Output

configalarm -list –hr

Array ID: 30143   **Item:** 1:F6   **Dispatch Level:** 3

```
Threshold 1: 999999      Threshold 2: 999999      Threshold 3: 999999
```
Email Destinations:
SNMP Destinations:
```
Send to VPO: NO     Alarm Enabled: YES
```
`++++++++++++++++++++++++++++++++++++++++++`
```
Array ID: 30143    Item: 0:22        Dispatch Level: 2
Threshold 1: 99          Threshold 2: 999          Threshold 3: 9999
```
Email Destinations:
SNMP Destinations:
```
Send to VPO: NO     Alarm Enabled: NO
```
`++++++++++++++++++++++++++++++++++++++++++`

configalarm-list -L

Active,Array,Item,Metric Category,Threshold 1,Threshold 2,Threshold 3,Dispatch
Level,Email Destinations,SNMP Destinations,VPO Destination
Y,30143,1:F6,Total IO,999999,999999,999999,3,,,NO
N,30143,0:22,Total Random IO,99,999,9999,2,,,NO
N,30143,0:24,Total Random IO,99,999,9999,2,,,NO
Y,30143,1:F4,Total IO,9,99999,999999,1,,,NO
N,30143,0:00,Total IO,99999,99999,99999,1,,,NO
N,30143,1:FB,Total IO,999999,999999,999999,3,,,NO
N,30143,2:04,Total IO,999999,999999,999999,3,,,NO

configalarm-list

Y,30143,1:F6,Total IO,999999,999999,999999,3,,,NO
N,30143,0:22,Total Random IO,99,999,9999,2,,,NO
N,30143,0:24,Total Random IO,99,999,9999,2,,,NO
Y,30143,1:F4,Total IO,9,99999,999999,1,,,NO
N,30143,0:00,Total IO,99999,99999,99999,1,,,NO
N,30143,1:FB,Total IO,999999,999999,999999,3,,,NO
N,30143,2:04,Total IO,999999,999999,999999,3,,,NO

3.11   Host Configuration Script (hostcfg)

3.11.1 HOSTCFG Usage

Allows the user to request array information from a Host Agent, remove an unwanted host, or
un-request array information. It is used as follows:

        hostcfg –op <op_string> -ha <HostAgent> [-auth <user:passwd>] [-ms
<URL>] [-os <operating
system>] [-L] [-d<char>] [-hr] [-?]

The arguments for this command are:
Required arguments:

-op -- The operation to be performed. Not necessary if –list is used.
Must be followed by
one of the following:
xpinfo_req   - Indicates that the Host Agent needs to send the Management
Station its XPINFO data
xpinfo_unreq - Indicates that the Management Station no longer needs
XPINFO data
ha_rem   - Tells the management station to remove this Host
Agent from its database

-ha -- the location of the Host Agent. This can either be a host name or
an IP address.
Not necessary if –list is used.

Optional arguments:

-list – List the host configuration data stored on the management
station.

-L – Output from the –list switch should be labled, but delimited.

-d – Delimited output should use the following character as the
delimiter.

-hr – Output from the –list switch should be in human readable form.

-auth – Authentication. Must be followed by a username password pair
of the form user:passwd

-ms – Management station. Must be followed by the URL of the
management station

-os -- the operating system of the Host Agent system. (HP-UX, WinNT,
SUN, AIX, etc…)

-? - Prints the usage statement.

3.11.2   HOSTCFG Sample Output

hostcfg –list –hr

Host Name	OS	Status	Last Update

hpbs1428.user.server.com   hp-ux   RECIEVED   14:04:41 01.31.2002

hostcfg –list –L

Host Name,OS,Status,Last Update
hpbs1428.user.server.com,hp-ux,RECIEVED,140441 01312002

hostcfg –list

hpbs1428.user.server.com,hp-ux,RECIEVED,140441 01312002

3.12   USERHOSTCFG Script (userhostconfig)

Command Options: [-filein in_name | -streamin | -database
colon:separated:no_spaces] -fileout out_name -streamout -header -send -
ms management_station_name[-auth user:password | -pf password_file] -?

Command Option Descriptions:

-filein <in_name>, when repeated, only uses the last in_name

-streamin is the default input value

-database <colon:separated:no_spaces> a list of host names
 * Using "all" by itself, without the quotation marks, is used to send
each host's information.

-fileout <out_name>, when repeated, only uses the last
out_name
 * This parameter is only effective if all of the input records are
parsed without error.

-streamout is to the console unless redirected elsewhere
 * This parameter is only effective if all of the input records are
parsed without error.

-header only applies when an output is selected
 * The software ignores an incoming header line in an input file or
stream in.

-send means to send the configuration records to the management
station
 * This parameter is only effective if all of the input records are
parsed without error.

-ms <management_station_name> in the form of
http://servername or https://servername
  *The https usage is possible when the management station is set up
for SSL.

-auth <user:password>
  * The user name and password are the same as for the

Configuration applet tab.

 -pf <password_file> may be used in place of -auth.

 -? display the usage message, and no parsing or sending is
performed

Notes:
 * Only one input source is accepted in one invocation.
 * Output rows to file or screen have fields separated by commas.
 * Either -auth or -pf is accepted but not both.
 * There is no output to file or to the screen unless requested.
 * The commands are not case-sensitive.
 * The order of command options does not matter.
 * When no command options are given, then streamed in input will be
checked.
 * For validity with no output presented or sent to the management
station.

3.13   Data Collection Configuration Script (dcolcfg)

3.13.1 DCOLCFG Usage

This command sets the Data Collection Controls. With it you can set the data collection
interval, and
whether or not data is to be collected from a particular host.The device file, dkc serial
number, and
the Host Agent name are required fields because they are used to identify the host. Using the –list
switch, you may also view the Data Collection Controls as they are currently
configured on the
management station. The command is used as follows:
        dcolcfg –dev <device file> -dkc <serial #> -ha <Host Agent> [-auth
<user:passwd>] [-ms
<URL>] [-freq <interval>] [-c] [-L] [-d<char>] [-hr] [-?]

The arguments for this command are:
        Required arguments:

-dev   -- The device file on the Host Agent. Not necessary if –list is used.

-dkc   -- The DKC Serial Number of the array. This is used for identification purposes.
   Not necessary if –list is used.

-ha   -- the host name of the Host Agent. Not necessary if –list is used.

Optional arguments:

-list – List all the data collection configurations stored on the management station.

-L – The output should be labled and delimited.

-d – The delimiter for delimited output should be the following character.

-hr – The output should be in a human readable form.

-auth – Authentication. Must be followed by a username password pair of the form
user:passwd

-ms – Management station. Must be followed by the URL of the management station

-freq   -- The interval between data collections in minutes.It has a maximum of 60
 minutes. The default is 60.

-c   -- Indicates that this host should collect data.Leaving out this argument disables
 collection for this host, on this device file mapped to this dkc unit.

-? - Prints the usage statement.

3.13.2   DCOLCFG Sample Output

dcolcfg –list –hr

Host Name: hpbs1428.user.server.com   **Array ID:** 30143
Cmd. Dev.: /dev/rdsk/c0t0d0
Last Updated: 2002-01-31 14:04:41
Collect Freq: 10   **Collection Flag:** true

+++

Host Name: hpbs1428.user.server.com   **Array ID:** 512
Cmd. Dev.: /dev/rdsk/c0t1d0
Last Updated: 2002-01-31 14:04:41
Collect Freq: 60   **Collection Flag:** false

dcolcfg –list –L

Host Name,Array ID,Cmd Device,Last Updeate,Collection Frequency,Collection Flag
hpbs1428.user.server.com,48,/dev/rdsk/c0t0d0,2002-01-31 14:04:41.076,10,true
hpbs1428.user.server.com,48,/dev/rdsk/c0t1d0,2002-01-31 14:04:41.076,60,false

dcolcfg –list

hpbs1428.user.server.com,48,/dev/rdsk/c0t0d0,2002-01-31 14:04:41.076,10,true
hpbs1428.user.server.com,48,/dev/rdsk/c0t1d0,2002-01-31 14:04:41.076,60,false

3.14   Raid Group Data Script (raidgrp)

Performance Advisor also maintains some information on the RAID groups of the array,
such as the raid level, theACP Pair, Control Unit, and some of the mechanics of the disks.

3.14.1   RAIDGRP Usage

Usage: raidgrp –dkc <serial #> -rg <raid group> [-auth <user:passwd>] [-ms <URL>]
[-L] [-d<char>]
[-hr] [-?] [-pf <password file>]

Required options:
        -dkc – Serial number of the array
        -rg – Raid group that is being queried for.
Other options:
        -ms - URL of the management station.
        -auth - the username and password.
        -pf - may be used in place of -auth.
        -d - set the delimiter for delimited display.
        -hr - display human readable output.
        -? - Prints the usage statement.

3.14.2   RAIDGRP Sample Output

raidgrp -dkc 30143 -rg 1-1 –hr

```
Array: 30143
Raid Group: 1-1
Raid Level: 5
ACP Pair: BH
Control Unit: 0
Disk Mech 1: R100
```

Disk Mech 2: R110
Disk Mech 3: R120
Disk Mech 4: R130

raidgrp -dkc 127 -rg 1-1 –L

Array,Raid Group,Raid Level,ACP Pair,Control Unit,Disk Mech 1,
Disk Mech 2,Disk Mech 3,Disk Mech 4
127,1-1,5,BH,0,R100,R110,R120,R130

raidgrp -dkc 127 -rg 1-1

127,1-1,5,BH,0,R100,R110,R120,R130

3.15   Event Log Data Script (evntlog)

Beginning with Performance Advisor version 1.50.00 event logging was introduced.
The event log
keeps track of certain events like data purge or collection configuration. With this
command you can use the
CLUI to access event log data.

3.15.1   EVNTLOG Usage

Usage: evntlog [-auth <user:passwd>] [-ms <URL>] [-L] [-d<char>] [-hr] [-?] [-type
<type ID>]
[-sev <severity>] [-st <mm.dd.yyyy hh:mm:ss>] [-et <mm.dd.yyyy hh:mm:ss>]
Options:
      -type - the type of the event.
      -sev - the severity of the alarm, range 1 - 10.
      -st - time and date of first alarm to display.
      -et - time and date of last alarm to display.
      -ms - URL of the management station.
      -auth - the username and password.
      -pf - may be used in place of -auth.
      -d - set the delimiter for delimited display.
      -hr - display human readable output.
      -? - Prints this usage statement.

3.15.2   EVNTLOG Sample Output

evntlog –hr

Time: 16:20:37   **Date:** 02.14.2002
Type: 10   **Severity:** 5

Description:
Purged all performance data for array 30143.

++

Time: 16:20:35   **Date:** 02.14.2002
Type: 10   **Severity:** 5
Description:
All records purged for array 30143

++

2 Records displayed

evntlog –L

Time,Date,Type,Severity,Description
16:20:37,02.14.2002,10,5,Purged all performance data for array 30143.
16:20:35,02.14.2002,10,5,All records purged for array 30143.

evntlog

16:20:37,02.14.2002,10,5,Purged all performance data for array 30143.
16:20:35,02.14.2002,10,5,All records purged for array 30143.

3.16   User-Defined Group Script (usergrp)

A script is provided for creating, listing, and removing user-defined groups.

3.16.1   USERGRP Usage

Usage: usergrp [-auth <user:passwd>] [-ms <URL>] [-L] [-d<char>] [-hr] [-?] -items
 <item list> | -list | -details |-rem [-name <group name>] [-gid <group id>]
Required options:
   -items – indicates that a new user defined group is to be created. –name is required
with this option.
It is followed by a csv list of items to add to this group. Each item is of the form
dkc+host::ldevlist
dkc+host is a dkc and host combination. ldevlist consists of "+" separated ldevs, or
ldev ranges
(2 ldevs separated by a "-". Cannot be used with –list, -details, or -rem
    -list - list all groups. Cannot be used with -name, -details, or -items
    -details - show the details for one group. Either -name or –gid is required.

-rem - remove a particular user defined group. Either –name or –gid is required.

Other options:
   -name - the name of the group to define or list details.
   -gid - the ID number for this group.
   -ms - URL of the management station.
   -auth - the username and password.
   -pf - may be used in place of -auth.
   -d - set the delimiter for delimited display.
   -L - show column headers with delimiter
   -hr - display human readable output.
   -? - prints this usage statement.

3.16.2   USERGRP Sample Output

usergrp –list –hr

Group ID , Group Name
1   demo1

usergrp –list –L

Group ID, Group Name
1,demo1

usergrp -list
1,demo1

usergrp –details –hr –gid 1

Array ID: 20112 **Array Type:** XP48
Lun ID: 6   **Volume-Grp.:**-/dev/vg00   **Dev. File:** /dev/rdsk/c3t15d6
LDEV ID: 1:FE **Emulation:** OPEN-3   **SS ID:** 0004 **Raid Grp.:** 1-7
Host Group:
LUSE: N **LUSE Master:** NA
CHP Port ID: CL1F   **ACP Pair ID:** BL
Cont. Access Volume: SMPL   **Business Copy Volume 0:** SMPL
Business Copy Volume 1: SMPL **Business Copy Volume 2:** SMPL
Business Copy Volume 2: SMPL

+++

Array ID: 20112 **Array Type:** XP48
Lun ID: 7   **Volume-Grp.:**-/dev/vg00   **Dev. File:** /dev/rdsk/c3t15d7
LDEV ID: 1:FF **Emulation:** OPEN-3   **SS ID:** 0004 **Raid Grp.:** 1-8
Host Group:

```
LUSE: N   LUSE Master: NA
CHP Port ID: CL1F        ACP Pair ID: BL
Cont. Access Volume: SMPL      Business Copy Volume 0:  SMPL
Business Copy Volume 1:  SMPL   Business Copy Volume 2:  SMPL
Business Copy Volume 2:  SMPL
```

++

usergrp –details –L –gid 1

**Host ID,Array ID,Array Type,Lun ID,Volume Grp.,Dev. File,LDEV ID,
Emulation,SS ID,Raid Grp.,CHP Port ID,ACP Pair ID,Continuous Access,
Business Copy Vol 0,Business Copy Vol 1,Business Copy Vol 2,Host Group,
LUSE,LUSE Master**
hpbs1428.user.server.com,20112,XP48,7,/dev/vg00,/dev/rdsk/c3t14d7,1:F7,OPEN-
3,0004,1-8,CL1F,BL,SMPL,SMPL,SMPL,SMPL,,N,NA
hpbs1428.user.server.com,20112,XP48,0,/dev/vg00,/dev/rdsk/c3t15d0,1:F8,OPEN-
3,0004,1-1,CL1F,BL,SMPL,SMPL,SMPL,SMPL,,N,NA

usergrp –details –gid 1

hpbs1428.user.server.com,20112,XP48,7,/dev/vg00,/dev/rdsk/c3t14d7,1:F7,OPEN-
3,0004,1-8,CL1F,BL,SMPL,SMPL,SMPL,SMPL,,N,NA
hpbs1428.user.server.com,20112,XP48,0,/dev/vg00,/dev/rdsk/c3t15d0,1:F8,OPEN-
3,0004,1-1,CL1F,BL,SMPL,SMPL,SMPL,SMPL,,N,NA

3.17 Data Base Configuration Script (dbconfig)

This script provides some data base configuration capabilities. The user may modify data retention times,
purge data based on Array or on a particular date, or modify the log level stored in the database.

3.17.1 DBCONFIG Usage

Usage: dbconfig [-auth <user:passwd>] [-ms <URL>] [-L] [-d<char>] [-hr] [-?] -purge
| -list | -
loglvl <severity> [-days <days>] [-dkc <serial number>] [-et <mm.dd.yyyy hh:mm:ss>]
Required options (One and ONLY one of the following is required):
    -purge - purge data from the management station.
    -loglvl - set the level of log messages to store. Is followed by a number between 1
and 10.
    -list - retrieve a list of current database settings.
Options:
    -days - if used with -purge, indicates the day previous to the current day at which to

begin purge.
May not be used with -loglvl or -list.
   -dkc - serial number of the array for which data is to be purged. May not be used with
-loglvl or -list.
   -et - time and date of last stored data collection. May not be used with -loglvl or -list.
   -ms - URL of the management station.
   -auth - the username and password.
   -pf - may be used in place of -auth.
   -d - set the delimiter for delimited display.
   -L - show column headers with delimiter
   -hr - display human readable output.
   -? - prints this usage statement.

3.17.2   DBCONFIG Sample Output

dbconfig -list -hr

Possible days retention at current collection rate: 1425
Current Log Level: 5

dbconfig -list -L

Days Possible,Log Level
1425,5

dbconfig -list
1425,5

3.18   Aggregate Script (aggregate)

3.18.1   AGGREGATE Usage

The aggregate command allows the user to request performance data added together to get some total
performance metric, displayed based on time.

aggregate –items <itemlist> [-st <mm.dd.yyyy hh:mm:ss] [-et <mm.dd.yyyy hh:mm:ss]
[-ms <URL>] [-auth <user:pass>] [-L] [-d<char>] [-hr] [-?]
         Where:
                    -items – a CSV List of dkc's, metrics, and items on the dkc to aggregate data on. Uses
the form Metric:dkc serial:itemlist or Metric:User Defined Group. Itemlist is a list of
ldevs, ports, ACP Pairs,

Raid Groups, or ranges of each (except for Raid Groups) separated by a'+'. Ranges are in the form
lowitem-highitem Items must be entered in their string form.

Metrics that are available are:

               LDEV_IO_TOTAL – Total Ldev IO's/sec
               LDEV_IO_RAND_TOTAL - Total Random Ldev IO's/sec
               LDEV_IO_RAND_READ – Ldev Random IO reads/sec
               LDEV_IO_RAND_READCACHE – Ldev Random IO
Reads/sec from cache
               LDEV_IO_RAND_WRITE – Ldev Random IO writes/sec
               LDEV_IO_SEQ_TOTAL - Ldev Total Sequential Ldev
IO's/sec
               LDEV_IO_SEQ_READ – Ldev Sequential IO reads/sec
               LDEV_IO_SEQ_READCACHE – Ldev Sequential IO
reads/sec from cache
               LDEV_IO_SEQ_WRITE - Ldev Sequential IO writes/sec
               LDEV_IO_CFW_TOTAL - Ldev CFW total IO's/sec
               LDEV_IO_CFW_READ - Ldev CFW read IO's/sec
               LDEV_IO_CFW_READCACHE - Ldev CFW read IO's/sec
from cache
               LDEV_IO_CFW_WRITE - Ldev CFW write IO's/sec
               LDEV_IO_CFW_WRITECACHE - Ldev CFW write IO's/sec
from cache
               LDEV_IO_DFW_COUNT - Ldev DFW total IO's
               LDEV_IO_DFW_NRML_COUNT - Ldev DFW normalized
IO's
               LDEV_IO_DFW_SEQ_ACCESS - Ldev DFW sequential
access
               LDEV_IO_DFW_WRITE_HITS - Ldev DFW writes found in
cache
               LDEV_IO_DFW_SA_WRITE_HITS - Ldef CFW sequential
access writes
               found in cache
               LDEV_IO_CACHEMODE_INHIBIT - Ldev cachemode
inhibit IO's
               LDEV_IO_CACHEMODE_BYPASS - Ldev cachemode
bypass IO's
               LDEV_MB_TOTAL - Ldev total MB/sec
               LDEV_MB_RAND_TOTAL - Ldev total random MB/sec
               LDEV_MB_RAND_READ - Ldev random read MB/sec
               LDEV_MB_RAND_WRITE - Ldev random write MB/sec
               LDEV_MB_SEQ_TOTAL - Ldev sequential total MB/sec
               LDEV_MB_SEQ_READ - Ldev sequential read MB/sec
               LDEV_MB_SEQ_WRIT - Ldev sequential write MB/sec
               LDEV_BACKEND_SEQ_READ - Ldev backend sequential
reads (tracks)

LDEV_BACKEND_NONSEQ_READ - Ldev backend non-sequential reads (tracks)

LDEV_BACKEND_WRITE - Ldev backend writes (tracks)

PORT_IO_MAX - Port maximum IO's/sec

PORT_IO_MIN - Port minimum IO's/sec

PORT_IO_AVE - Port average IO's/sec

PORT_MB_MAX - Port maximum MB/sec

PORT_MB_MIN - Port minimum MB/sec

PORT_MB_AVE - Port average MB/sec

ACP_PAIR_IO_TOTAL - ACP pair total IO's/sec

ACP_PAIR_IO_RTOTAL - ACP pair total random IO's/sec

ACP_PAIR_IO_RREAD - ACP pair random read IO's/sec

ACP_PAIR_IO_RREAD_HITS - ACP pair random read IO's/sec in cache

ACP_PAIR_IO_RWRITE - ACP pair random write IO's/sec

ACP_PAIR_IO_STOTAL - ACP pair total sequential IO's/sec

ACP_PAIR_IO_SREAD - ACP pair sequential read IO's/sec

ACP_PAIR_IO_SREAD_HITS - ACP pair sequential read IO's/sec in cache

ACP_PAIR_IO_SWRITE - ACP pair sequentail write IO's/sec

ACP_PAIR_MB_TOTAL - ACP pair total MB/sec

ACP_PAIR_MB_RTOTAL - ACP pair total random MB/sec

ACP_PAIR_MB_RREAD - ACP pair random read MB/sec

ACP_PAIR_MB_RWRITE - ACP pair random write MB/sec

ACP_PAIR_MB_STOTAL - ACP pair total sequential MB/sec

ACP_PAIR_MB_SREAD - ACP pair sequential read MB/sec

ACP_PAIR_MB_SWRITE - ACP pair sequential write MB/sec

ACP_PAIR_UTIL_TOTAL - ACP pair utilization total

ACP_PAIR_UTIL_MP0 - ACP pair MP 0 utilization

ACP_PAIR_UTIL_MP1 - ACP pair MP 1 utilization

ACP_PAIR_UTIL_MP2 - ACP pair MP 2 utilization

ACP_PAIR_UTIL_MP3 - ACP pair MP 3 utilization

ACP_PAIR_UTIL_LEFT_MP0 - ACP pair MP 0 utilization left side

ACP_PAIR_UTIL_LEFT_MP1 - ACP pair MP 1 utilization left side

ACP_PAIR_UTIL_LEFT_MP2 - ACP pair MP 2 utilization left side

ACP_PAIR_UTIL_LEFT_MP3 - ACP pair MP 3 utilization left side

ACP_PAIR_UTIL_RIGHT_MP0 - ACP pair MP 0 utilization right side

ACP_PAIR_UTIL_RIGHT_MP1 - ACP pair MP 1 utilization right side

ACP_PAIR_UTIL_RIGHT_MP2 - ACP pair MP 2 utilization right side

ACP_PAIR_UTIL_RIGHT_MP3 - ACP pair MP 3 utilization

right side

     ACP_PAIR_BE_STRACKS - ACP pair backend sequential tracks

     ACP_PAIR_BE_NON_STRACKS - ACP pair backend non-sequential tracks

     ACP_PAIR_BE_WTRACKS - ACP pair backend tracks written

     RAIDGRP_IO_TOTAL - Raid group total IO's/sec

     RAIDGRP_IO_RTOTAL - Raid group total random IO's/sec

     RAIDGRP_IO_RREADS - Raid group random read IO's/sec

     RAIDGRP_IO_RREAD_HITS - Raid group random read IO's/sec in cache

     RAIDGRP_IO_RWRITES - Raid group random write IO's/sec

     RAIDGRP_IO_STOTAL - Raid group sequential total IO's/sec

     RAIDGRP_IO_SREADS - Raid group sequential read IO's/sec

     RAIDGRP_IO_SREAD_HITS - Raid group sequential read IO's/sec in cache

     RAIDGRP_IO_SWRITES - Raid group sequential write IO's/sec

     RAIDGRP_MB_TOTAL - Raid group total MB/sec

     RAIDGRP_MB_RTOTAL - Raid group total random MB/sec

     RAIDGRP_MB_RREADS - Raid group random read MB/sec

     RAIDGRP_MB_RWRITES - Raid group random write MB/sec

     RAIDGRP_MB_STOTAL - Raid group sequential total MB/sec

     RAIDGRP_MB_SREADS - Raid group sequential read MB/sec

     RAIDGRP_MB_SWRITES - Raid group sequential write MB/sec

     RAIDGRP_BE_SREADS - Raid group backend sequential reads (tracks)

     RAIDGRP_BE_NON_SREADS - Raid group backend non-sequential reads

     (tracks)

     RAIDGRP_BE_WRITES - Raid group backend writes (tracks)

     SM_CHIP_FBUS_HI_UTIL - Front end bus utilization

     SM_ACP_FBUS_LO_UTIL - Front end bus utilization

     CM_CHIP_MBUS_HI_UTIL - Back end bus utilization

     CM_ACP_MBUS_LO_UTIL - Back end bus utilization

-st - Sets lower bound on time of records to display.

-et - upper bound on time of records to display.

-ms - management station URL.

-auth - username/password pair.

-L - labeled comma separated value output.

-hr - labeled human readable output.

-d - character used to separate fields.

-? - prints this usage statement.

3.18.2   AGGREGATE Sample Output

Using user-defined group Fred

aggregate -items ldev_io_total:Fred
4320.0,4320.0,4320.0,4320.0,4320.0,4320.0,4320.0,4320.0,4320.0,4396.0

aggregate -items ldev_io_total:Fred -L
2002-06-12 11:08:00.0,2002-06-12 11:09:00.0,2002-06-12 11:10:00.0,2002-06-12 11:11:00.0,2002-06-12 11:12:00.0,2002-06-12 11:13:00.0,2002-06-12 11:14:00.0,2002-06-12 11:15:00.0,2002-06-12 1:16:00.0,2002-06-12 11:16:33.0
4320.0,4320.0,4320.0,4320.0,4320.0,4320.0,4320.0,4320.0,4320.0,4396.0

aggregate -items ldev_io_total:Fred -hr
2002-06-12 11:08:00.0: 4320.0   2002-06-12 11:09:00.0: 4320.0
2002-06-12 11:10:00.0: 4320.0   2002-06-12 11:11:00.0: 4320.0
2002-06-12 11:12:00.0: 4320.0   2002-06-12 11:13:00.0: 4320.0
2002-06-12 11:14:00.0: 4320.0   2002-06-12 11:15:00.0: 4320.0
2002-06-12 11:16:00.0: 4320.0   2002-06-12 11:16:33.0: 4396.0

Using normal item list
aggregate -items ldev_io_total:20031:1:f4-1:f9+1:fc
5040.0,5040.0,5040.0,5040.0,5040.0,5040.0,5040.0,5040.0,5040.0,5114.0

aggregate -items ldev_io_total:20031:1:f4-1:f9+1:fc -L
2002-06-12 11:08:00.0,2002-06-12 11:09:00.0,2002-06-12 11:10:00.0,2002-06-12 11:11:00.0,2002-06-12 11:12:00.0,2002-06-12 11:13:00.0,2002-06-12 11:14:00.0,2002-06-12 11:15:00.0,2002-06-12 11:16:00.0,2002-06-12 11:16:33.0
5040.0,5040.0,5040.0,5040.0,5040.0,5040.0,5040.0,5040.0,5040.0,5114.0

aggregate -items ldev_io_total:20031:1:f4-1:f9+1:fc -hr
2002-06-12 11:08:00.0: 5040.0   2002-06-12 11:09:00.0: 5040.0
2002-06-12 11:10:00.0: 5040.0   2002-06-12 11:11:00.0: 5040.0
2002-06-12 11:12:00.0: 5040.0   2002-06-12 11:13:00.0: 5040.0
2002-06-12 11:14:00.0: 5040.0   2002-06-12 11:15:00.0: 5040.0
2002-06-12 11:16:00.0: 5040.0   2002-06-12 11:16:33.0: 5114.0

3.19   Properties Utility Script (proputility)

3.19.1   PROPUTILITY Usage

Also installed with the CLUI is a script called proputility that assists in manipulating the property file. The
usage of the proputility is as follows:

proputility [-i] [-ms <management station>] [-rauth <report username:password>] [-cauth
<config username:password>]

       Where:
           -i   Stands for interactive mode. The user will be prompted for the management station
           ID, the report username/password pair, and the config username/password pair.
           For any of these you may just press**Enter** to keep the current value.

           -rauth   The report username/password pair. The default value for this entry is
           paxp:xparray

           -ms   The management station ID or IP address. The default value for this entry is
           localhost

           -cauth   The configuration username/password pair. The default value for this entry is
           confmonxp:redstar

In interactive mode, pressing the"Enter" for each entry keeps the current or default values.

4. Database Administration Commands

Database Administration functions are available as part of the CLUI as wellA separate document (ExportingPerfData.pdf) relating
to the use of these commands is available under the Tools directory on the HP StorageWorks Performance Advisor CD.

5   CLUI for Partially Supported Hosts

For some hosts (such as Linux), our software can retrieve performance data, but is unable to obtain
configuration information directly from the host.To allow some level of support, a set of CLUI

commands has been provided for administrators to manually enter configuration information, so that
these hosts can still be used to monitor performanceA separate document (UserHostConfig.pdf) relating
to the use of these commands is available under the Tools directory on the HP StorageWorks Performance Advisor CD.

A   Troubleshooting

This section addresses a number of questions and problems that customers have experienced while using the Performance Advisor CLUI. Following are some commonly seen error messages, and their causes.

A.1 Classpath Error

Problem:
Unable to initialize threads: cannot find class java/lang/Thread Could not create Java VM

Solution:
Earlier versions of the Performance Advisor CLUI required the user to set some environment variables.
This error message indicates that the classpath was not set correctly (should not be an issue with new install
scripts). Report this directly to your HP contact.

A.2 Install Script Exits With An Error

Problem:
Install script exits with the message:
JRE was not found in path <jre_location>.
Check the location and try again.

Solution:
The location the user entered for the java environment was not valid.In UNIX variants, execute
install.sh and enter the correct path to the java environment.In Windows, edit the JAVA_HOME
environment variable and run the install.bat script again.

Problem:
Install script exits with the message:
install.sh: this script must be run as root....exiting.

Solution:

You are not logged in as the root user. Please log in as root, and run install.sh again.

A.3 Common Command Errors

Problem:

Command outputs this message:

Error reading console output.

Solution:

If you are connecting to a *nix system remotely using telnet, your terminal emulation is not supported.
You can try running the command using a different terminal emulation, such as xterm, or ansi; otherwise,
contact your HP representative.

Problem:

Command outputs this message:

ERROR: No data returned for command.

Solution:

One of your parameters has been mistyped or the management station does not have a data collector
running for the requested data set.

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Warranty and Trademark Statement

constituting an additional warranty.

Part Number b9369-96052