IBM Tivoli Storage Productivity Center
Version 5.2

Command-Line Interface Reference

SC27-4089-01

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Note:
Before using this information and the product it supports, read the information in "Notices" on page 347.

This edition applies to version 5, release 2, modification 0 of IBM Tivoli Storage Productivity Center (product numbers 5725-F92, 5725-F93 and 5725-G33) and to all subsequent releases and modifications until otherwise indicated in new editions. This edition replaces SC27-4089-00.

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Preface

By using the command-line interface (CLI), you can interact with Tivoli® Storage Productivity Center and Tivoli Storage Productivity Center for Replication by entering CLI commands. This guide provides the CLI commands that you can enter, with their definitions, syntax, and examples.

Who should read this guide

This publication is intended for administrators or users who use the IBM® command-line interface (CLI). It contains reference information for the commands that are associated with Tivoli Storage Productivity Center and Tivoli Storage Productivity Center for Replication.

Users of this guide must be familiar with the following topics:

- General procedures for installing software on Microsoft Windows, IBM AIX®, Linux, HP-UX, and Oracle Solaris
- Storage Area Network (SAN) concepts
- Tivoli Storage Productivity Center concepts
- Tivoli Storage Productivity Center for Replication concepts
- IBM DB2® Database for Linux, UNIX, and Windows
- Simple Network Management Protocol (SNMP) concepts
- IBM Tivoli Enterprise Console

Publications

You are provided with a list of publications in the Tivoli Storage Productivity Center and Tivoli Storage Productivity Center for Replication libraries and other related publications. The following section also describes how to access publications online, how to order publications, and how to submit comments about publications.

The publications are available from the IBM Publications Center at http://www.ibm.com/e-business/linkweb/publications/servlet/pbi.wss.

Accessing publications online

Publications for this product and other related products are available online.

Information about installing, configuring, upgrading, and uninstalling Tivoli Storage Productivity Center and related products is available online. Use Table 1 on page viii to view and download these publications. Translated documents are available for some products.

IBM Tivoli Documentation Central also provides links to the information centers for all Tivoli products. For information about referenced Tivoli products, such as Tivoli Storage Manager and Tivoli Enterprise Console®, go to the home page for Tivoli Documentation Central.

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Table 1. Locations of publications for Tivoli Storage Productivity Center and related products

Product	Online location
IBM Tivoli Storage Productivity Center and IBM Tivoli Storage Productivity Center for Replication	Tivoli Storage Productivity Center Information Center. In the navigation pane, click **IBM Tivoli Storage Productivity Center**. To obtain PDF documents, click **IBM Tivoli Storage Productivity Center** > **Printable documentation**. To view previous versions of the IBM Tivoli Storage Productivity Center Information Center, go to the Tivoli Storage Productivity Center page in Tivoli Documentation Central.
IBM Tivoli Storage Productivity Center for Replication for System z®	Tivoli Storage Productivity Center Information Center. In the navigation pane, click **IBM Tivoli Storage Productivity Center for Replication for System z**. To obtain PDF documents, click **IBM Tivoli Storage Productivity Center for Replication for System z** > **Printable documentation**. To view previous versions of the IBM Tivoli Storage Productivity Center for Replication Information Center, go to the Tivoli Storage Productivity Center page in Tivoli Documentation Central.
IBM WebSphere® Application Server	http://publib.boulder.ibm.com/infocenter/wasinfo/v8r0/index.jsp
Jazz™ for Service Management	http://pic.dhe.ibm.com/infocenter/tivihelp/v3r1/topic/com.ibm.psc.doc_1.1.0/psc_ic-homepage.html
IBM System Storage® DS3000, IBM System Storage DS4000®, or IBM System Storage DS5000	http://www.ibm.com/support/entry/portal/
IBM System Storage DS6000™	http://publib.boulder.ibm.com/infocenter/dsichelp/ds6000ic/index.jsp
IBM System Storage DS8000®	http://publib.boulder.ibm.com/infocenter/dsichelp/ds8000ic/index.jsp
IBM System Storage DS® Open Application Programming Interface publications	http://www.ibm.com/support/entry/portal/Troubleshooting/Hardware/System_Storage/Storage_software/Other_software_products/CIM_Agent_for_DS_Open_(API)/ Use these publications for information about how to install, configure, and use the CIM agent.
IBM System Storage SAN Volume Controller	http://pic.dhe.ibm.com/infocenter/svc/ic/index.jsp
IBM Storwize® V3500	http://pic.dhe.ibm.com/infocenter/storwize/v3500_ic/index.jsp
IBM Storwize V3700	http://pic.dhe.ibm.com/infocenter/storwize/v3700_ic/index.jsp
IBM Storwize V7000	http://pic.dhe.ibm.com/infocenter/storwize/ic/index.jsp
IBM Storwize V7000 Unified	http://pic.dhe.ibm.com/infocenter/storwize/unified_ic/index.jsp

Table 1. Locations of publications for Tivoli Storage Productivity Center and related products (continued)

Product	Online location
IBM Scale Out Network Attached Storage (IBM SONAS)	http://pic.dhe.ibm.com/infocenter/sonasic/sonas1ic/index.jsp
IBM XIV® Storage System	http://publib.boulder.ibm.com/infocenter/ibmxiv/r2/index.jsp
IBM DB2 Database for Linux, AIX, and Windows	http://publib.boulder.ibm.com/infocenter/db2luw/v10r1/index.jsp
IBM System Storage N series	http://www.ibm.com/systems/storage/network/redbooks.html For more information about IBM System Storage N series, see http://www.ibm.com/systems/storage/network/software/.
IBM Systems Director	http://www.ibm.com/systems/software/director/index.html
VMware vSphere	http://www.vmware.com/support/pubs/vsphere-esxi-vcenter-server-pubs.html

IBM Redbooks

The IBM Redbooks® are publications about specialized topics.

You can order publications through your IBM representative or the IBM branch office serving your locality. You can also search for and order books of interest to you by visiting the IBM Redbooks home page at http://www.redbooks.ibm.com.

Translation

Translated publications are available from the information center which is available in certain translated languages. It is displayed in the language that is appropriate for the browser locale setting.

When a locale does not have a translated version, the information center is displayed in English, which is the default language. Translations of the PDFs are available when the information center is translated.

Contact your service representative for more information about the translated publications and whether translations are available in your language.

Downloading publications

IBM publications are available in electronic format to be viewed or downloaded free of charge.

You can download IBM publications from http://www.ibm.com/e-business/linkweb/publications/servlet/pbi.wss.

Providing feedback about publications

Your feedback is important to help IBM provide the highest quality information. You can provide comments or suggestions about the documentation from the IBM Tivoli Storage Productivity Center Information Center.

Go to the information center at http://publib.boulder.ibm.com/infocenter/tivihelp/v59r1/index.jsp and click **Feedback** on the information center Welcome page or at the bottom of the individual topic pages.

Tivoli Storage Productivity Center Service Management Connect community

Connect, learn, and share with Service Management professionals: product support technical experts who provide their perspectives and expertise.

Access Service Management Connect at https://www.ibm.com/developerworks/servicemanagement/. Use Service Management Connect in the following ways:

- Become involved with transparent development, an ongoing, open engagement between other users and IBM developers of Tivoli products. You can access early designs, sprint demonstrations, product roadmaps, and prerelease code.
- Connect one-on-one with the experts to collaborate and network about Tivoli and the Storage Management community.
- Read blogs to benefit from the expertise and experience of others.
- Use wikis and forums to collaborate with the broader user community.

Contacting IBM Software Support

You can contact IBM Software Support by phone, and you can register for support notifications at the technical support website.

- Go to the IBM Tivoli Storage Productivity Center technical support website at http://www.ibm.com/support/entry/portal/Overview/Software/Tivoli/Tivoli_Storage_Productivity_Center.

  To receive future support notifications, sign in under **Notifications**. You are required to enter your IBM ID and password. After you are authenticated, you can configure your subscription for Tivoli Storage Productivity Center technical support website updates.
- Customers in the United States can call 1-800-IBM-SERV (1-800-426-7378).
- For international customers, go to the Tivoli Storage Productivity Center technical support website to find support by country. Expand **Contact support** and click **Directory of worldwide contacts**.

You can also review the *IBM Software Support Handbook*, which is available at http://www14.software.ibm.com/webapp/set2/sas/f/handbook/home.html.

The support website offers extensive information, including a guide to support services; frequently asked questions (FAQs); and documentation for all IBM Software products, including Redbooks and white papers. Translated documents are also available for some products.

When you contact IBM Software Support, be prepared to provide identification information for your company so that support personnel can readily assist you. Company identification information might also be needed to access various online services available on the website. See “Reporting a problem.”

Reporting a problem

Provide the IBM Support Center with information about the problems that you report.

Have the following information ready when you report a problem:

- The IBM Tivoli Storage Productivity Center version, release, modification, and service level number.
- The communication protocol (for example, TCP/IP), version, and release number that you are using.
- The activity that you were doing when the problem occurred, listing the steps that you followed before the problem occurred.
- The exact text of any error messages.

Command-line interface

The following sections describe the IBM Tivoli Storage Productivity Center command-line interface (CLI).

The following topics are included.

- CLI requirements
- Command modes
- Syntax diagram conventions that are used in this guide
- Tpctool commands
- Command aliases
- Parameter aliases

CLI requirements

Verify the requirements for running the command-line interpreter and for using the command-line interface.

- Verify that the installer checks for and installs the correct version of Oracle Java™, and configures the CLI to use the installed Java.
- Verify that Tivoli Storage Productivity Center is installed and running, and that storage devices are discovered.
- Verify that the CLI is connected to a Tivoli Storage Productivity Center Device server before you use all commands. The **encrypt** command is the only exception that does not require the connection.
- Verify that you have a valid user ID, password, and URL before you use all commands, except for the **encrypt** command.

Command modes

You can use the CLI to run one command or a series of commands, either interactively or from a script.

Single-shot mode

To run a single command, specify the CLI program and that command at the shell prompt, for example:

```
shell> tpctool lsdev -user me -password mypass -url myhost:myport -l -subsys
```

Interactive mode

To run in interactive mode, enter the **tpctool** command with no command-line options. In the following example, the string "shell>" represents the shell prompt and “tpctool>” represents the prompt from the CLI while in interactive mode. At the CLI prompt, any valid CLI command can be entered.

```
shell> tpctool
tpctool> lsdev -user me -password mypass -url myhost:myport -l -subsys
```

Script mode

To run a set of commands that you defined in a file, start the CLI program and specify a file that contains the commands, for example:

```
shell> tpctool –script ~/bin/containersetup
shell>
```

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Conventions used in this guide

Information is given about the conventions that are used in this publication.

This publication uses several conventions for special terms and actions, and for operating system-dependent commands and paths.

The following typeface conventions are used in this publication:

Bold

- Flags that display with text
- Graphical user interface (GUI) elements (except for titles of windows and dialogs)
- Names of keys

Italic

- Variables
- Values that you must provide
- New terms
- Words and phrases that are emphasized
- Titles of documents

monospace

- Commands and command options
- Flags that display on a separate line
- Code examples and output
- Message text
- Names of files and directories
- Text strings that you must type, when they display within text
- Names of Oracle Java methods and classes
- HTML and XML tags that display `like this`, in monospace type

For syntax notations, remember the following details.

- In AIX, the prompt for the root user is #.
- In AIX and Linux, the commands are case-sensitive, so you must type commands exactly as they are shown.

Syntax diagram conventions

A syntax diagram uses symbols to represent the elements of a command and to specify the rules for using these elements.

Syntax diagrams use position to indicate required, optional, and default values for keywords, variables, and operands.

A keyword represents the name of a command, flag, parameter, or argument. Required keywords indicate the parameters or arguments that must be specified for the command.

To read syntax diagrams, follow the path of the line. Read the diagrams from left-to-right, top-to-bottom, following the main path line.

Main path line

The main path line begins on the left with double arrowheads (>>) and ends on the right with two arrowheads facing each other (><). If a diagram is longer than one line, each line to be continued ends with a single arrowhead (>) and the next line begins with a single arrowhead. The -->< symbol indicates the end of the syntax diagram.

Required keywords

Required keywords appear on the main path line. Mutually exclusive required keywords are stacked vertically. In the following example, you must choose A, B, and C.

Optional keywords

Optional keywords indicate parameters or arguments that you might choose to specify for the command. Optional keywords appear below the main path line. Mutually exclusive optional keywords are stacked vertically. In the following example, you must choose A, B, or C.

When an optional item appears above the main line, the item above the line is the default value when no optional item is specified in the command. In the following example, the user has the same choices as above (A, B, C, or nothing at all), but if nothing is selected, the default value will be A.

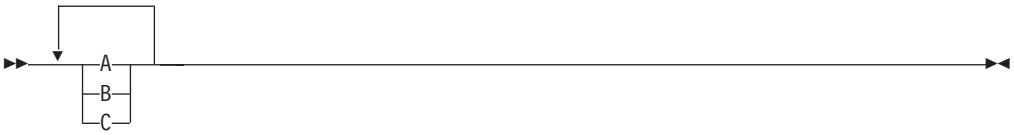
Repeatable items

A stack of items followed by an arrow returning to the left means that you can select more than one item or, in some cases, repeat a single item. For example:

An arrow returning to the left means you can repeat the item.

If one or more characters appear in the arrow's line, those characters are required as a delimiter to separate repeated items.

If you can choose from two or more items, they are displayed vertically in a stack. A stack of items followed by an arrow returning to the left means that you can select more than one item or, in some cases, repeat a single item. In the following example, you can choose any combination of A, B, or C.



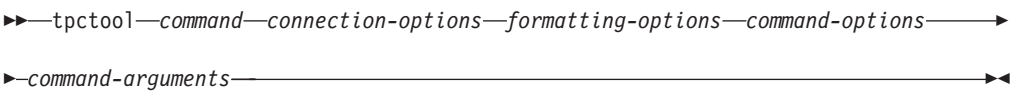
Variables

Italicized, lowercase elements denote variables. In the following example, you must specify a variable value when you enter the keyword command:

tpctool command

The **tpctool** command is the Tivoli Storage Productivity Center command-line interpreter (CLI) program. The command can be used either on its own, using the associated options and arguments, or interactively by starting the **tpctool** command with no options or arguments to start an interactive session.

Syntax



Parameters

command
Either one of the commands (generic, disk, fabric, or reporting) or a command alias.

connection-options
Options that are used to connect to Tivoli Storage Productivity Center. These options are included.

- `-user`
- `-pwd`
- `-url`

These options are described with details in the **tpctool** arguments and options list.

formatting-options
Options that are used to format output for some of the commands.

command-options
Options that are associated with commands that define command behavior.

command-arguments
Generally, values used to define command options. They can be defined as lists of string values that are separated by commas or spaces.

The following arguments and options are valid for **tpctool**:

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-help | -h | -?
Lists help information for the command.

-ver
Displays the version of the installed Tivoli Storage Productivity Center.

Command aliasing

Tivoli Storage Productivity Center provides the capability for command aliasing by using the command configuration file. The default configuration file is `c:\program files\ibm\tpc\cli\libs\tpccli.conf`. With aliasing, you define a name for the alias followed by a value that is the name of a command and any options that are associated with command. The aliased command string is replaced by the defined value and the entire line is parsed again. Passwords that are used in aliased commands must first be encrypted by using the **encrypt** command.

For example, to shorten a frequently used command that you can define the following alias:

```
tpctool>lsperf = lsdev -user dsadmin -pwd dsadmpw1 -url 9.44.33.126:8990 -fabric -perf
```

After the alias is defined, you can run the **lsperf** command to run the aliased **lsdev** command.

You can provide a short form command that targets different device servers, as follows:

```
tpctool>lsperfd1 = lsdev -user dsadmin -pwd dsadmpw1 -url hostOne:9161 -perf

tpctool>lsperfd2 = lsdev -user dsadmin -pwd dsadmpw1 -url hostTwo:9161 -perf
```

You can specify more options and arguments for an aliased command.

```
tpctool>lsperfd2 -fabric -ctype port
```

Which expands to:

```
tpctool>lsdev -user dsadmin -pwd dsadmpw1 -url hostTwo:9161 -perf -fabric -ctype port
```

You can also nest aliases:

```
tpctool>lsperf = lsdev -user dsadmin -pwd dsadmpw1 -url hostTwo:9161 -perf -fabric

tpctool>lsperfd1 = lsdev -user dsadmin -pwd dsadmpw1 -url hostOne:9161

tpctool>lsperfd2 = lsdev -user dsadmin -pwd dsadmpw1 -url hostTwo:9161
```

To unset an alias, type the name of the command alias followed by the equals (=) sign.

```
lsperf =
```

When you use an alias with a key and value pair in the `tpccli.conf` file, you must specify four back slashes for each back slash.

For example, this value:

```
ABCDE1 = CLARiiON\+ABC01234567890+0
```

Is specified as:

```
ABCDE1 = CLARiiON\\\\+ABC01234567890+0
```

Examples

To start an interactive session for Tivoli Storage Productivity Center:

The following command starts an interactive session. After the session starts, you can use other CLI commands in the session:

```
tpctool
```

To start an interactive session with credentials:

The following command starts an interactive session and specifies the user ID, password, and destination:

```
tpctool -user adminpass
-pwd adminpw1
-url 9.43.124.255:8080
```

Return codes

The following table contains the codes that are returned by the **tpctool** command.

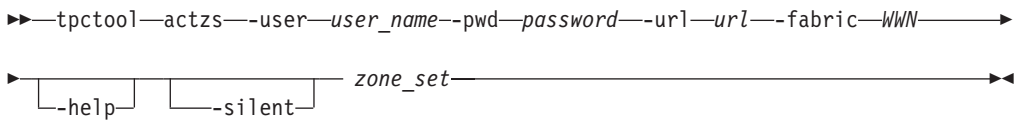
Code	Description
0	The command completed successfully.
1	The command was unknown to **tpctool** and was not resolved as an alias.
2	A required option was not provided.
3	An option was unknown to **tpctool** or was not applicable to the command.
4	An option was missing a required parameter.
5	The format of a parameter for the option was not valid.
6	The format of an argument was not valid.
7	An extraneous argument or argument list was provided.
8	The **tpctool** client could not connect with the Device server.

Code	Description
9	The **tpctool** client could not log in to the Device server using the specified credentials.
10	The specified credentials are not authorized to perform the requested action.
11	A required component (such as Disk Manager or Fabric Manager) is not installed and enabled.
12	The command might have started, but the connection with the Device server was lost. The command might not be completed successfully.
13	Some operations were partially completed before the Device server returned a failure.
14	The command failed.

actzs

Use the **actzs** command to activate changes to the zone set in the fabric. This command must be run within a transaction. You must have Administrator authority to use this command.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-fabric *WWN*
Specifies the fabric. The *WWN* variable is the worldwide name (WWN).

-help | -h | -?
Lists help information for the command.

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

zone_set
The *zone_set* variable is the name of the zone_set.

Example: Activating changes to the zone set

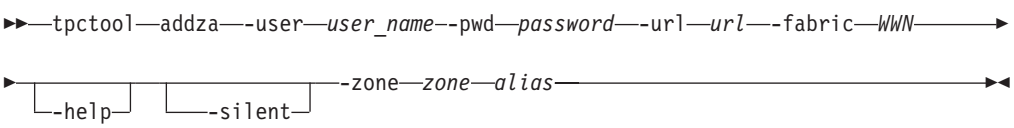
The following commands activate the PARIS zone set:

```
tpctool> -user me -pwd mypass -url myhost:myport
tpctool> start -fabric 100000051E34F6A8
tpctool> actzs -fabric 100000051E34F6A8 PARIS
tpctool> commit -fabric 100000051E34F6A8
```

addza

Use the **addza** command to add a zone alias to a zone. You must have Administrator authority to use this command.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-fabric *WWN*
Specifies the fabric. The *WWN* variable is the worldwide name (WWN).

-help | -h | -?
Lists help information for the command.

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

-zone *zone*
Specifies the name of the zone where you want to add a zone alias.

alias
Specifies the name of the zone alias to be added to the zone.

Example: Adding a zone alias

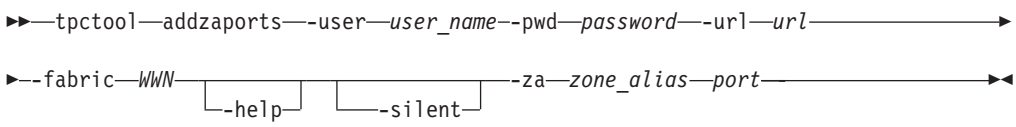
The following commands add the PARIS zone alias to the EUROPE zone:

```
tpctool -user me -pwd mypass -url myhost:myport
tpctool> start -fabric 100000051E34F6A8
tpctool> addza -fabric 100000051E34F6A8 -zone EUROPE PARIS
tpctool> commit -fabric 100000051E34F6A8
```

addzaports

Use the **addzaports** command to add ports to a zone alias. You must have Administrator authority to use this command.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-fabric *WWN*
Specifies the fabric. The *WWN* variable is the worldwide name (WWN).

-help | -h | -?
Lists help information for the command.

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

-za *zone_alias*
Specifies the name of the zone alias where the port is to be added.

port
Specifies the name of the port to be added to the zone alias.

Example: Adding a port to a zone alias

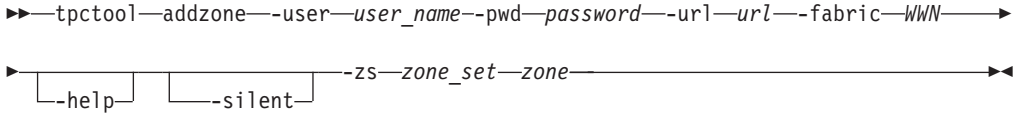
The following commands add a port to the PARIS zone alias:

```
tpctool -user me -pwd mypass -url myhost:myport
tpctool> start -fabric 100000051E34F6A8
tpctool> addzaports -fabric 100000051E34F6A8 -za PARIS 210000E08B0B4C2G
tpctool> commit -fabric 100000051E34F6A8
```

addzone

Use the **addzone** command to add a zone to a zone set. This command must be run as a transaction. For more information, see the **start** command. You must have Administrator authority to use this command.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-fabric *WWN*
Specifies the fabric. The *WWN* variable is the worldwide name (WWN).

-help | -h | -?
Lists help information for the command.

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

-zs *zone_set*
Specifies the zone set. The *zone_set* variable is the name of the zone set.

zone
Specifies the zone.

Example: Add a zone to a zone set

The following commands add the WINDOWSNT zone to the PARIS zone set.

```
tpctool> start -user me -pwd mypass -url myhost:myport -fabric 100000051E34F6A8
tpctool> addzone -fabric 100000051E34F6A8 -zs PARIS WINDOWSNT
tpctool> commit -fabric 100000051E34F6A8
```

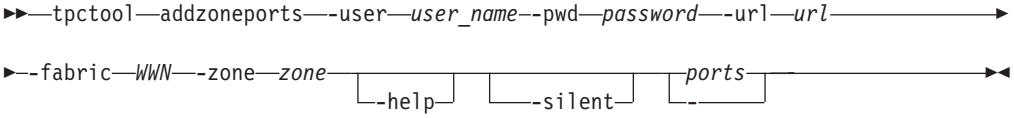
Related reference:

"start" on page 171
Use the **start** command to start a transaction. You must have Administrator authority to use this command.

addzoneports

Use the **addzoneports** command to add switch ports to a zone. This command must be run as a transaction. You must have Administrator authority to use this command.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-fabric *WWN*
Specifies the fabric. The *WWN* variable is the worldwide name (WWN).

-zone *zone*
Specifies the zone. The *zone* variable is the name of the zone.

-help | -h | -?
Lists help information for the command.

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

ports **|** **-**
Specifies the switch ports. The *ports* variable is a list of worldwide port names (WWPNs). If you specify a single dash (-), the WWPNs are read from standard input.

Example: Adding a switch port to a zone set

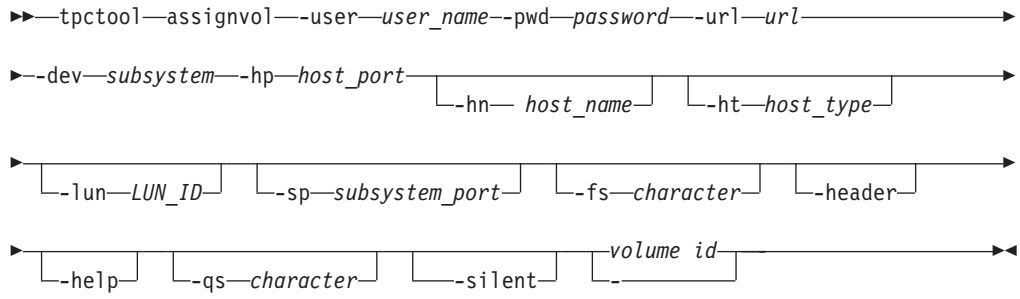
The following commands add several switch ports to the WINDOWSNT zone. The list of WWPNs is read from standard input.

```
tpctool> start -user me -pwd mypass -url myhost:myport -fabric 100000051E34F6A8
tpctool> addzoneports -fabric 100000051E34F6A8 -zone WINDOWSNT -
tpctool> commit -fabric 100000051E34F6A8
```

assignvol

Use the **assignvol** command to assign host ports to volumes. You must have Administrator authority to use this command.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where

system represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-dev *subsystem*
Specifies the globally unique identifier (GUID) of a storage subsystem such as that obtained by running the **lsdev -subsys** command.

-hp *host_port*
Specifies the host ports. The *host_port* variable is a comma-separated list of worldwide port numbers (WWPNs), such as the port numbers obtained by running the **lsport** command.

-hn *host_name*
Specifies the names of the host systems for the ports. The *host_name* variable is a comma-separated list of host system names. There must be one name for each port in the list of host ports.

-ht *host_type*
Specifies the type of host system on which the fiber channel port is located. The *host_type* variable is a comma-separated list of host system types, such as the types obtained by running the **lshtype** command.

-lun *LUN_ID*
Specifies the logical unit number (LUN ID) that the hosts map to the volumes. The *LUN_ID* variable is a comma-separated list of LUN IDs. There must be one LUN ID for each volume in the argument list.

-sp *subsystem_ port*
Specifies the worldwide port numbers (WWPNs) that the hosts use to access the volume. The *subsystem_port* variable is a comma-separated list of WWPNs, such as that obtained by running the **lsdevp** command. If you omit this parameter, the default ports are used.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

volume id | -
Specifies the volumes. The *volume_ID* variable is a comma-separated list of volume IDs, such as that obtained by running the **lsvol** command. If a single dash (-) is issued, the volume IDs are read from standard input.

Example: Assign a host port to a volume

The following command assigns a host port to a volume:

```
tpctool assignvol -user me -pwd mypass -url myhost:myport -dev 2105.22232+0
-hp 5005076300C79470 -lun a3
```

Related reference:

"lsdev" on page 58
Use the **lsdev** command to list information about storage subsystems, fabrics, and switches. This information includes the globally unique identifier (GUID) or worldwide name (WWN) for the fabric, the user-defined name, the device type, the status, and the time that the status was updated.

"lsport" on page 84
Use the **lsport** command to list the ports that are on a Fibre Channel host bus adapter (HBA).

"lshtype" on page 72
Use the **lshtype** command to list host types. You must have Administrator authority to use this command.

"lsdevp" on page 60
Use the **lsdevp** command to list worldwide port names (WWPNs) for a subsystem.

autosetarray

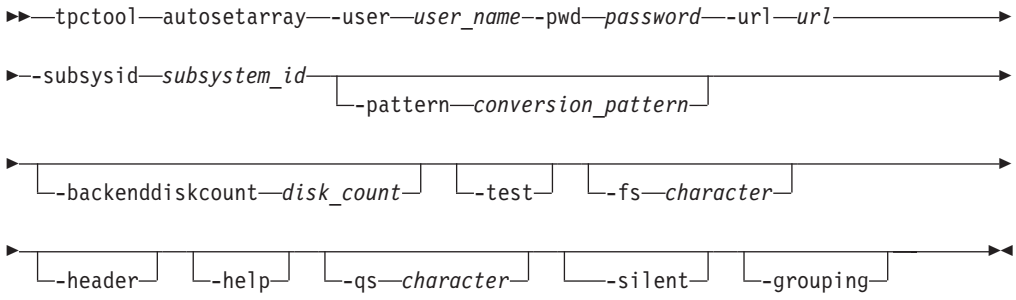
Use the **autosetarray** command to extract and save information about storage pools.

You can save information about a storage pool such as the type of back-end storage system, type of RAID, and type of disk. To do this action, use a default pattern or create a pattern that matches the names of pools in a subsystem. If the match is successful, the information about the pool is extracted and saved. This command is available for the following storage systems.

- Storwize V7000
- Storwize V7000 Unified
- SAN Volume Controller

You must have Administrator authority to use this command.

Syntax



Storage pool names and pattern matching

The names of storage pools must contain the following information:

- A character that represents a valid type of back-end storage system
- A number or character that represents a valid type of back-end RAID
- A series of characters that represent a valid type of back-end disk

Tip: To obtain a list of valid types of back-end storage system, types of disk, and types of RAID, run the following commands: **lsbackendtypes**, **lsbackenddisktypes**, and **lsbackendraidtypes**. If the types of back-end storage system, types of disk, and types of RAID that are used in the pool names are not listed, you can add them to the list. See the descriptions of the following commands: **setbackendtype**, **setbackenddisktype**, and **setbackendraidtype**.

The default pattern is structured as shown in the following table.

Position in pattern	Pattern
1	B
2	x
3	x
4	x
5	x
6	x
7	x
8	D
9	R
10	D
11	D
12	x*

You can use the default pattern or create patterns to match the names of pools in a storage subsystem. A list of the characters that are used to create patterns is provided in the following table.

Character	Represents
B	The character that is used to represent the type of back-end storage system. The matching character must meet the following criteria. • Must be in the position that is specified by the pattern • Must be of the same length • Must be a valid type of storage system In the default pattern, one character is used to represent the type of back-end storage system.
x	The character that is used to represent insignificant characters. In the default pattern, the second, third, fourth, fifth, sixth, and seventh characters in a matching pool name are ignored.
D	The characters that are used to represent the type of back-end disk. Matching characters must meet the following criteria. • Must be in the position that is specified by the pattern • Must be of the same length • Must be a valid type of disk In the default pattern, three characters are used to represent the type of back-end disk.

Character	Represents
R	The number or character that is used to represent the type of back-end RAID such as 1, or X. The matching character must meet the following criteria. • Must be in the position that is specified by the pattern • Must be of the same length • Must be a valid type of RAID In the default pattern, one character is used to represent the type of back-end RAID.
x*	The character followed by an asterisk that is used to represent zero or any number of insignificant characters that occur at the end of a pool name. In the default pattern, the 12th character and all subsequent characters in a matching pool name are ignored.
C	The characters that are used to represent the number of disks. In the default pattern, the number of disks is not specified. To specify the number of disks, use the **-backenddiskcount** parameter. The default value is 1. You can create a custom pattern to extract the number-of-disks value from the name of the MDisk group. Matching characters must meet the following criteria. • Must be in the position that is specified by the pattern • Must use numeric values such as 0 - 9 • Must be of the same length – *C* represents 0 - 9 – *CC* represents 00 - 99

Sample: Using the default pattern

You issue the **autosetarray** command and the default pattern is used to extract information about the CFG1xGGA1071 storage pool. In the table, each character in the default pattern is matched against the corresponding character in the pool name.

Default pattern	Pool name	Description
B	C	The type of back-end storage system
x	F	The character is ignored
x	G	The character is ignored
x	1	The character is ignored
x	x	The character is ignored
x	G	The character is ignored
x	G	The character is ignored
D	A	The first character of three characters that is used to represent the type of back-end disk
R	1	The type of back-end RAID
D	0	The second character of three characters that is used to represent the type of back-end disk

Default pattern	Pool name	Description
D	7	The third character of three characters that is used to represent the type of back-end disk
x*	1	This character and all subsequent characters are ignored

The information about the pool is extracted and saved.

Information	Extracted values	Description
Type of back-end storage system	C	EMC Clariion
Type of back-end disk	A07	SATA - 7,500 rpm
Type of back-end RAID	1	RAID 1
Number of disks	1	1

Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-subsysid *subsystem_id*
Specifies the ID or the globally unique identifier of the storage subsystem.

-pattern *conversion_pattern*
Specifies the pattern that is used to extract information from pool names. If you do not specify a pattern, the default pattern is used.

-backenddiskcount *disk_count*
Specifies the number of disks. If you use the default pattern or create a pattern that does not extract the number of disks from pool names, you can enter the number of disks. The default number of disks is 1.

-test
Verifies the pattern that is used with a specified storage subsystem. The information is extracted and displayed, but it is not saved.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

-grouping
Enables the grouping of numeric values. For example, in English the value 12000 would display as 12,000. The grouping character is determined by the system locale.

Example: Using patterns to extract and save information about pools

The following command extracts information about pools in the specified storage subsystem that match the default pattern. If a pool name does not match the pattern, an information message is displayed.

```
tpctool> autosetarray -subsysid 00000200A0C0005C+0
```

The following information messages and output are displayed:

```
[AAJ002013E] The pool name mdiskgroup0 is too short to be matched
against the pattern BxxxxxxxDRDDx*.
[AAJ002013E] The pool name Cognos is too short to be matched
against the pattern BxxxxxxxDRDDx*.
[AAJ002013E] The pool name mdiskgrp1 is too short to be matched
against the pattern BxxxxxxxDRDDx*.
[AAJ002013E] The pool name mdiskgrp2 is too short to be matched
against the pattern BxxxxxxxDRDDx*.

Name of Array Back-end Type Back-end RAID Type Back-end Disk Type
================================================================
mdiskgroup0   -             -                  -
Cognos        -             -                  -
mdiskgrp1     -             -                  -
mdiskgrp2     -             -                  -
Cpool3GA60713 C             6                  A07
Cpool2GA607   C             6                  A07
Dpool1GA607F  D             6                  A07

Back-end Disk Count Status
==============================
-                   No Match
-                   No Match
-                   No Match
-                   No Match
1                   Successful
1                   Successful
1                   Successful
```

"lsbackendtypes" on page 51
Use the **lsbackendtypes** command to list the types of back-end storage systems.

"setbackendtype" on page 162
Use the **setbackendtype** command to set or update the type of back-end storage system.

"lsbackenddisktypes" on page 48
Use the **lsbackenddisktypes** command to list the types of back-end disks and their average input/output.

"setbackenddisktype" on page 159
Use the **setbackenddisktype** command to set or update the type of back-end disk.

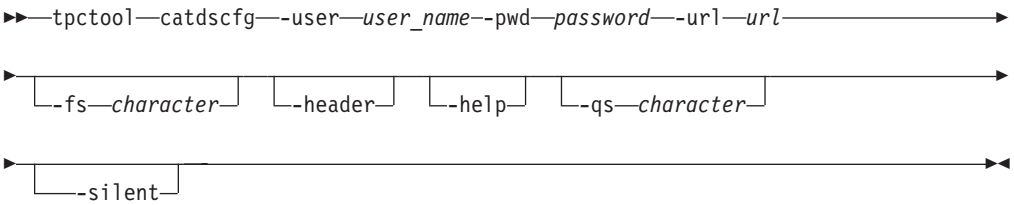
"setbackendraidtype" on page 161
Use the **setbackendraidtype** command to set the types of back-end RAID arrays for managed disk groups.

"lsbackendraidtypes" on page 50
Use the **lsbackendraidtypes** command to list the types of back-end RAID arrays that are available for managed disk groups.

catdscfg

Use the **catdscfg** command to list the contents of the property files for the Device server and to check the status of the Device server. You must have Administrator authority to use this command.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Listing the contents of the property file

The following command lists the contents of the property file:

```
tpctool> catdscfg -url localhost:9550 -user ***** -pwd *****
```

The following output is returned:

```
Property                                    Context          Value
=========================================================================
AgentManager.Registration                   AM                YES
Fabric.Manager.Password                     AM                *****
Fabric.Manager.Username                     AM                manager
Registration.Server.Host                    AM                tivoli12
Registration.Server.Port                    AM                9511
Registration.Server.PW                      AM                *****
TPCData.Password                            AM                *****
TPCData.UserName                            AM                manager
default.authorization.enabled               CIM               true
default.credential                          CIM               default
default.principal                           CIM               default
FabricCIMTransactionTimeout                 CIM               600
FabricCIMZoneDBChecksumUsage                CIM               true
FabricCIMZSetActivationRetryInterval        CIM               20000
FabricCIMZSetActivationRetryMaxCount        CIM               9
```

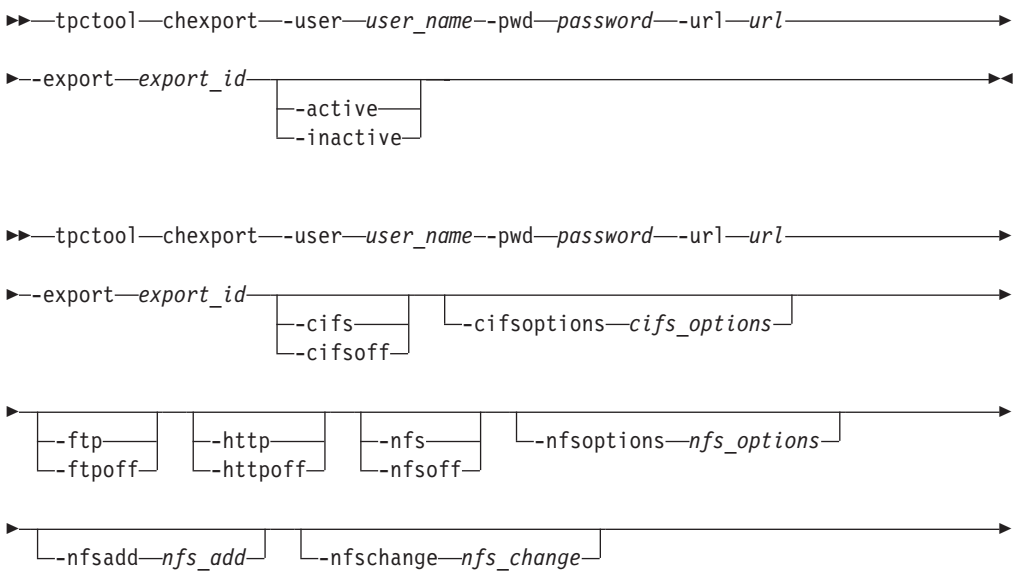
Note: This is a partial sample of the actual output.

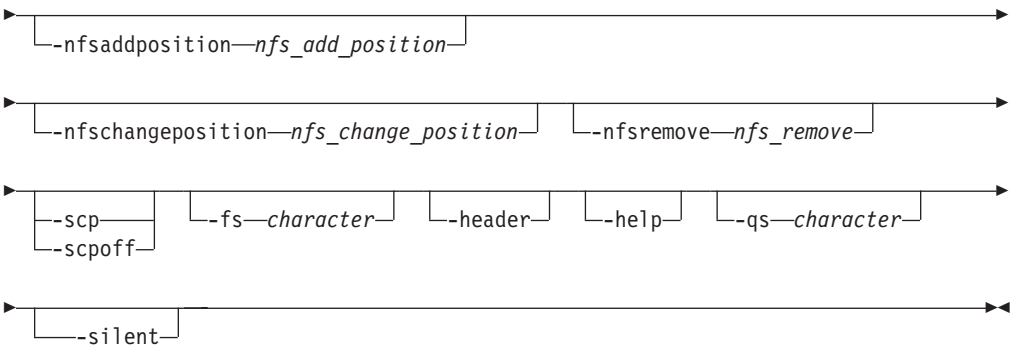
chexport

Use the **chexport** command to change the protocol configuration for an export.

An *export* is a shared disk space that is accessible through the protocols that you specify when you run the **mkexport** command. You can create exports and enable them for HTTP, FTP, Secure Copy Protocol (SCP), Network File System (NFS), and Common Internet File System (CIFS) protocols. You must have Administrator authority to use this command.

Syntax





Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-export *export_id*
Specifies the name of the export. This name is the export key that is listed in the ID column of the **lsexport** command output.

-active | -inactive
Marks the export as temporarily active or inactive. You can access the data only in an active export.

-cifs | -cifsoff
Adds or removes the CIFS protocol for the export.

-cifsoptions *cifs_options*
Defines the CIFS protocol options for the export. If the `cifsoptions` value contains spaces, the entire option must be enclosed in matching single quotation marks and the quotation marks must be preceded by an escape character.

-ftp | -ftpoff
Adds or removes FTP for the export.

-http | -httpoff
Adds or removes HTTP for the export.

-nfs | -nfsoff
Adds or removes the NFS protocol for the export.

-nfsoptions *nfs_options*
Defines the NFS clients and their options for the export.

-nfsadd *nfs_add*
Adds the NFS clients and their options to the export.

-nfschange *nfs_change*
Modifies the NFS clients and their options for the export.

-nfsaddposition *nfs_add_position*
Specifies the position of a new NFS entry that was specified by the **nfsadd** parameter.

-nfschangeposition *nfs_change_position*
Specifies the position of a modified NFS entry that was specified by the **nfschange** parameter.

-nfsremove *nfs_remove*
Removes one or more NFS clients from the export.

-scp | -scpoff
Adds or removes SCP for the export.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Changing the FTP and HTTP options for an export

The following command adds FTP and removes HTTP from the export.

```
tpctool> chexport
-export cindyexport+tpcsonas1.storage.tucson.ibm.com+tpcsonas1.storage.tucson.
 ibm.com+0 -user admin -pwd password -url localhost:9550 -ftp -httpoff
```

The following output is returned:

```
ExportId
================================================================================
cindyexport+tpcsonas1.storage.tucson.ibm.com+tpcsonas1.storage.tucson.ibm.
 com+0

Status
================================================================================
SUCCESS
```

Example: Defining the CIFS options for an export

The following command defines the CIFS protocol options for the export.

```
chexport -export eexp10+kq98n5d.ibm+00000200A22045DC+0 -cifs
-cifsoptions "browseable=no,\''comment=comment for eexp10\',leases=no,
sharemodes=no,syncio=yes,hideunreadable=yes,cifsacl=no,oplocks=no,
locking=no,\'read only\',synconclose=no,\'access control=Everyone:ALLOWED:FULL;
Administrator:ALLOWED:FULL\'"-user db2admin -pwd g0vmware -url localhost:9550
```

The following output is returned:

```
ExportId                                Status
================================================================================
eexp10+kq98n5d.ibm+00000200A22045DC+0 SUCCESS
```

Example: Changing the NFS options for an export

The following command adds, modifies, and removes NFS entries for the export.

```
tpctool> unlinkfset -fileset eefset01+eefs+kq458mv.ibm+00000200A2A0153C+0
-user admin -pwd password -url localhost:9550
```

The following output is returned:

```
ExportId
================================================================================
eexp600+kq98n5d.ibm+00000200A22045DC+0

Status
================================================================================
SUCCESS
```

Example: Changing the NFS options and their positions for an export

The following command adds and modifies NFS entries and their positions for the export.

```
tpctool> chexport -export eexp700+kq98n5d.ibm+00000200A22045DC+0
-nfsadd "host4(ro)" -nfsaddposition host2 -nfschange "host2(ro)"
-nfschangeposition 3 -active -user db2admin -pwd g0vmware
-url localhost:9550
```

The following output is returned:

```
ExportId
================================================================================
eexp700+kq98n5d.ibm+00000200A22045DC+0

Status
================================================================================
SUCCESS
```

Related information:

http://publib.boulder.ibm.com/infocenter/sonasic/sonas1ic/index.jsp
More information about command parameters is available at the IBM SONAS Information Center.

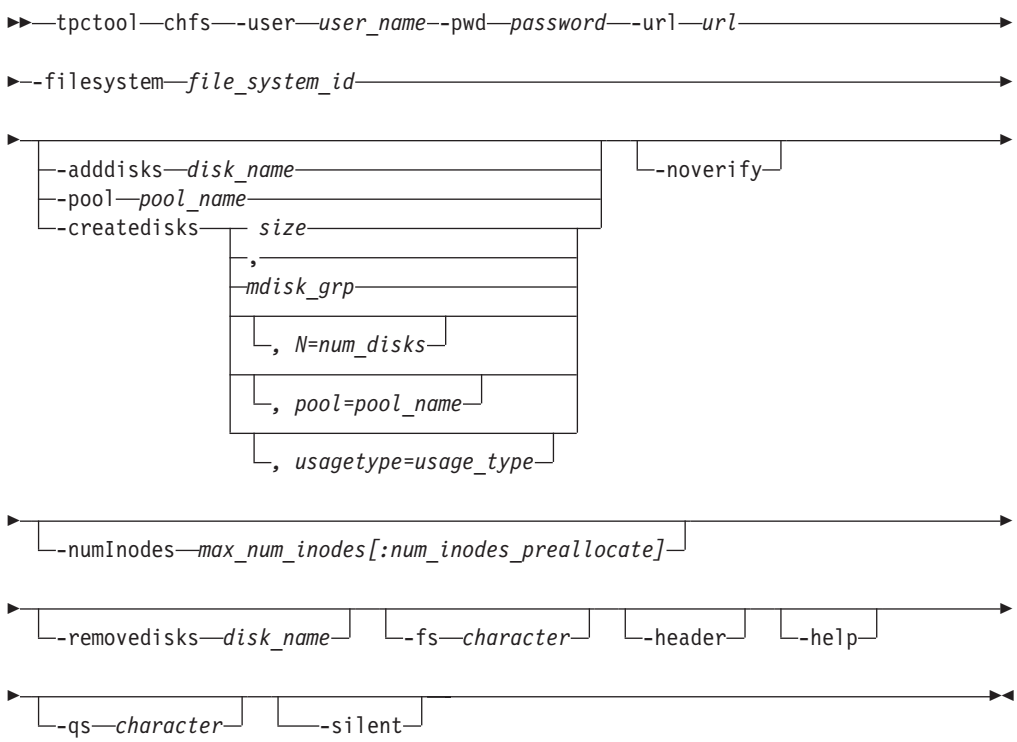
http://publib.boulder.ibm.com/infocenter/storwize/unified_ic/index.jsp
More information about command parameters is available at the Storwize V7000 Unified Information Center.

chfs

Use the **chfs** command to change the properties of a file system, and to add or remove disks to or from a file system.

If you use this command to both add and remove disks, disks are added first and then disks are removed. Other settings are applied after disks are added or removed. You must have Administrator authority to use this command.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-filesystem *file_system_id*
Specifies the ID of file system to be changed.

-adddisks *disk_name*
Specifies the disks to add to the file system. The *disk_name* variable contains a comma-separated list of disk names.

Tip:
You can verify the availability of a disk by running the **lsnsd** command.

-pool *pool_name*
Adds to the file system a set of free disks that have the file system pool name that is set as a storage pool. On IBM Storwize V7000 Unified, all disks in the file system pool must be tagged for this file system to be used.

Tip:
You can list all of the disks in a storage pool by running the **lsnsd** command.

-createdisks *size* | *mdisk_grp* | *N=num_disks* | *pool=pool_name* | *usagetype=usage_type*

Creates disks implicitly, and then adds them to the file system. This option is applicable only for Storwize V7000 Unified.

size Specifies the size of the new disks. Size is specified as an integer with capacity up to a petabyte without a space between the size and the unit; for example 17G. Disk sizes must be specified either without suffix (byte) or with `K` (kilobyte), `M` (megabyte), `G` (gigabyte), `T` (terabyte), or `P` (petabyte). Values less than 512 MB are not supported. This parameter is mandatory.

mdisk_grp

Specifies the storage system managed disk (MDisk) group in which the underlying NAS volumes are created. This parameter is mandatory.

Tip:
You can see a list of available MDisk groups by using the **svcinfo lsmdiskgrp** command.

num_disks

Specifies the number of storage system NAS volumes that is created in each MDisk group. This parameter is optional. The default number of disks is 1.

pool Specifies a pool for the disks. This parameter is optional. The default value is **system**.

usage_type

Specifies the usage type for the disks. This parameter is optional. Specify one of the valid usage types.

- dataAndMetadata
- dataOnly
- metadataOnly

The default usage type is `dataAndMetadata`. The only valid usage type for a non-system pool is `dataOnly`.

-noverify

Specifies that disks must not be verified as belonging to an existing file system. If this option is used, either the **-adddisks** parameter or the **-pool** parameter must also be specified.

-numInodes *max_num_inodes[:num_inodes_preallocate]*

Specifies the maximum number of files for this file system. The *num_inodes_preallocate* variable specifies the number of inodes that the system immediately preallocates. You can specify values in thousands (k) or in millions (M). To specify values of 100 million for the *max_num_inodes* variable and 1 million for the *num_inodes_preallocate* variable, enter `-numInodes 100M:1M`.

-removedisks *disk_name*

Specifies the disks to remove from the file system. On IBM Storwize V7000 Unified, this option completely removes the specified disks and the data on them by deleting the volumes on the storage system.

Tip:
You can verify the availability of a disk by running the **lsnsd** command.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Change a file system

The following command changes a file system by removing a disk.

```
tpctool> chfs -filesystem eefs+kq458mv.ibm+00000200A2A0153C+0
-user admin -pwd password -url localhost:9550 -removedisks IFS1319490696615
```

The following output is returned:

```
FilesystemId                          Status
============================================
eefs+kq458mv.ibm+00000200A2A0153C+0 SUCCESS
```

Related information:

http://publib.boulder.ibm.com/infocenter/sonasic/sonas1ic/index.jsp
More information about command parameters is available at the IBM SONAS Information Center.

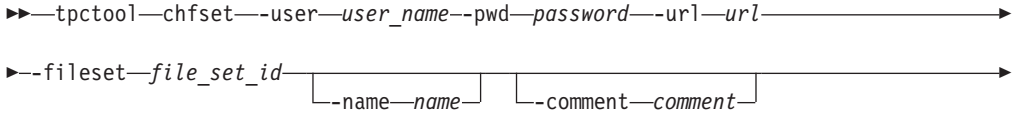
http://publib.boulder.ibm.com/infocenter/storwize/unified_ic/index.jsp
More information about command parameters is available at the Storwize V7000 Unified Information Center.

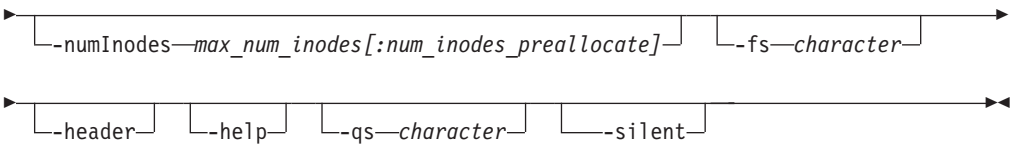
chfset

Use the **chfset** command to change the attributes of a file set.

You can change the name of, or comment that is associated with, an existing file set. You can also change the maximum number of inodes and the number of inodes to allocate for an independent file set. You must have Administrator authority to use this command.

Syntax





Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-fileset *file_set_id*
Specifies the Tivoli Storage Productivity Center key of the file set to be changed. The file set key is listed in the ID column of the **lsfset** command output.

-name *name*
Specifies the new name for this file set.

-comment *comment*
Specifies a new comment that displays in the output of the **lsfset** command. The length of this comment can be a maximum of 255 characters. You must enclose comments in double quotation marks.

-numInodes *max_num_inodes[:num_inodes_preallocate]*
Specifies the maximum number of files for this file set. The *num_inodes_preallocate* variable specifies the number of inodes that the system immediately preallocates. You can specify values in thousands (k) or in millions (M). To specify values of 100 million for the *max_num_inodes* variable and one million for the *num_inodes_preallocate* variable, enter `-numInodes 100M:1M`. IBM General Parallel File System (GPFS™) defines a minimum number of inodes, which might be greater than the maximum specified. The default values for the file set are one million (1M) for the *max_num_inodes* variable and 50,000 (50 K) for the *num_inodes_preallocate* variable.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Changing the attributes of a file set

The following command changes the name of a file set.

```
tpctool> chfset -fileset eefset+eefs+kq458mv.ibm+00000200A2A0153C+0
-name eefset01 -user admin -pwd password -url localhost:9550
```

The following output is returned:

```
FilesetId                                          Status
==================================================
eefset01+eefs+kq458mv.ibm+00000200A2A0153C+0 SUCCESS
```

Related information:

http://publib.boulder.ibm.com/infocenter/sonasic/sonas1ic/index.jsp
More information about command parameters is available at the IBM SONAS Information Center.

http://publib.boulder.ibm.com/infocenter/storwize/unified_ic/index.jsp
More information about command parameters is available at the Storwize V7000 Unified Information Center.

chkquota

Use the **chkquota** command to check quota limits for users, user groups, and file sets on a file system and to write the information to the GPFS database.

Because quota information in the database is not updated in real time, you must run the **chkquota** command before the **lsquota** command. This sequence refreshes the quota information in the GPFS database. You must have Administrator authority to use this command.

By specifying a file system, you can use the **chkquota** command to check the quotas for users, user groups, and file sets. This process can be lengthy because these devices can have large numbers of files. When the command completes, the collected data is updated in the GPFS database and is then available to the **lsquota** command for retrieval. The **chkquota** command output displays a completion status of success or error. It does not display the quota information. The **lsquota** displays the data that is collected by the **chkquota** command.

Syntax

```
►►—tpctool—chkquota—-user—user_name—-pwd—password—-url—url———————————►
►—-filesystem—file_system_id———————————————————————————————————►◄
```

Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-filesystem *file_system_id*
Specifies the ID for the file system that is associated with the quota. You can use the **lsfs** command to return information, including the IDs, for all file systems that are discovered. The ID is listed in the ID column of the **lsfs** command output.

Example: Check a quota for a file system

The following command checks the status of a quota for a file system:

```
tpctool> chkquota -filesystem gpfs1+kq98n5d.ibm+00000200A16045DC+0
-user admin -pwd password -url localhost:9550
```

The following output is returned:

```
FilesystemId                          Status
============================================
gpfs1+kq98n5d.ibm+00000200A16045DC+0 SUCCESS
```

Related information:

http://publib.boulder.ibm.com/infocenter/sonasic/sonas1ic/index.jsp
More information about command parameters is available at the IBM SONAS Information Center.

http://publib.boulder.ibm.com/infocenter/storwize/unified_ic/index.jsp
More information about command parameters is available at the Storwize V7000 Unified Information Center.

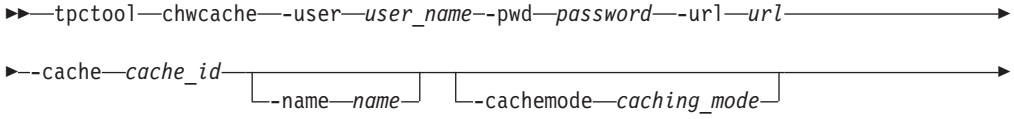
chwcache

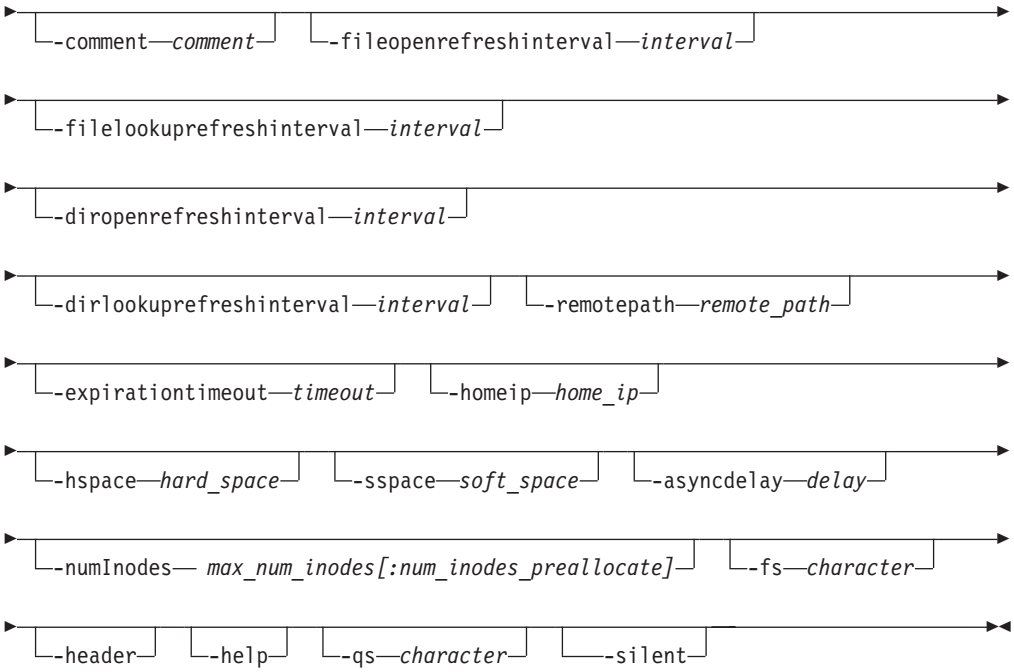
Use the **chwcache** command to modify the attributes of a cache file set on a wide area network (WAN) cluster.

Data on an IBM SONAS home system is cached to this file set. Use the **lswcache** command to view the attributes of the cache file set. You must have Data Administrator authority to use this command.

Important: In IBM SONAS Version 1.4.0.0 - 1.4.0.1, or earlier, the **-homeip** parameter that is used with the **chwcache** command generates an error message that the value `null` specified for **homeip** is invalid. The Tivoli Storage Productivity Center command-line interface generates the same error message. You must delete the cache by using the **rmwcache** command and create the cache again with the IP address that you want to change.

Syntax





Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-cache *cache_id*
Specifies the ID of the cache file set to be changed.

You can use the **lswcache** command to retrieve the cache file set ID.

-name *name*
Specifies the new name for the cache file set.

-cachemode *read-only* | *local-updates* | *single-writer*
Specifies the operating mode for the cache system. The default mode is *read-only*.

-comment *comment*
Specifies a comment for the cache.

-fileopenrefreshinterval *interval*
The maximum interval, in seconds, between when a file is opened on the cache system and when it was last validated with the home system. The default value is 30.

-filelookuprefreshinterval *interval*
The maximum interval, in seconds, between when a file is accessed on the cache system and when it was last validated with the home system. The default value is 30.

-directoryopenrefreshinterval *interval*
The maximum interval, in seconds, between when a directory is opened on the cache system and when it was last validated with the home system. The default value is 60.

-directorylookuprefreshinterval *interval*
The maximum interval, in seconds, between when a directory is accessed on the cache system and when it was last validated with the home system. The default value is 60.

-remotepath *remote_path*
Acts as a reference while WAN caching runs. Specify the IP address of the home system, followed by the path of the file set on the home system that was created by using the **mkwcachesource** command. For example, `-remotepath 127.0.0.1:/ibm/gpfs0/wcacheSource`.

Alternatively, you can specify the path of the cache source, and the IP address is determined automatically. For example, `-remotepath /ibm/gpfs0/wcacheSource`.

Restriction: You cannot use fully qualified domain names (FQDNs).

-expirationtimeout *timeout*
Specifies the time interval in seconds after which files or directories in the cache system expire when it is disconnected from the home system. This parameter applies to file sets, which are in read-only mode. The default value is Disabled.

-homeip *home_ip*
Specifies the IP address of the management node of the home system.

Restriction: You cannot use FQDNs.

-hspace *hard_space*
Specifies the hard limit or maximum of disk space usage by the file set created for the WAN cache. The default value is 0, which implies there is no limit.

-sspace *soft_space*
Specifies the soft limit or minimum of disk space usage by the file set created for the WAN cache. The default value is 0, which implies there is no limit.

-asyncdelay *delay*
The time interval, in seconds, between a write operation on the cache file set and the corresponding update on the home file set. The default value is 15.

-numInodes *max_num_inodes[:num_inodes_preallocate]*
Defines the inode limits for the file set created for the WAN cache. The *max_num_inodes* variable specifies the maximum number of inodes that can be allocated to the file set. The *num_inodes_preallocate* variable specifies the number of inodes that the system immediately preallocates. You can specify values in thousands (K) or in millions (M). To specify values of 100 million for the *max_num_inodes* variable and 1 million for the *num_inodes_preallocate* variable, enter `-numInodes 100M:1M`. If not provided the default values are 100K:100K.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Changing a cache file set

The following command changes the attributes of a cache file set.

```
tpctool> chwcache -cache ctest+ee+tpcsonas1.storage.tucson.ibm.com
+127.0.0.1+0 -asyncdelay 30
```

The following output is returned:

```
CacheId                                                    Status
============================================================
ctest+ee+tpcsonas1.storage.tucson.ibm.com+127.0.0.1+0   SUCCESS
```

Related information:

http://publib.boulder.ibm.com/infocenter/sonasic/sonas1ic/index.jsp
More information about command parameters is available at the IBM SONAS Information Center.

chwcachesource

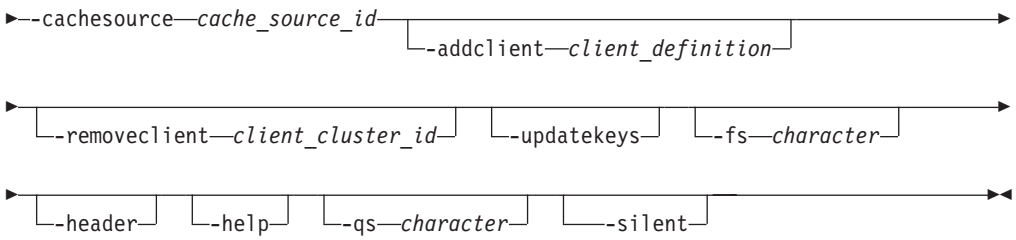
Use the **chwcachesource** command to change the properties of a home system on an IBM SONAS system file set. The home system is the source of the data in a wide area network (WAN) cache configuration. You can use WAN caching to distribute data transparently among data centers and multiple remote locations without disruption to applications. You must have Data Administrator authority to use this command.

You can modify the properties of the home system by adding or removing cache systems. You can also update the public keys on all the cache systems for the specified home system.

Important: In IBM SONAS Version 1.4.0.0 - 1.4.0.1, or earlier, the **chwcachesource** command generates an error message if you add a client that was removed. The Tivoli Storage Productivity Center command-line interface fails and generates an error message that a client with that name exists, even if it was removed. You can add a different client by using the **chwcachesource** command.

Syntax

```
►►—tpctool—chwcachesource—-user—user_name—-pwd—password—-url—url————————►
```



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-cachesource *cache_source_id*
Specifies the ID of the home system that is created by the **mkwcachesource** command. Use the **lswcachesource** command to retrieve the cache source ID.

-addclient *client_definition*
Adds a cache system to the existing list of clients for a specified home system. The *client_definition* variable contains a comma-separated list of the IP address and access mode of the management nodes for the cache systems. Access mode can be either `ro` (read-only) or `rw` (read/write). Only one of the cache clients can have read/write permission at any time. You must enclose this parameter in single quotation marks.

Restriction: You cannot add a cache client with read/write access if there is an export with read/write access for the same path. For example, an export is enabled on protocol types like NFS, CIFS, or FTP.

-removeclient *client_cluster_id*
Removes a cache system from the existing list of clients for a specified home system. The *client_cluster_id* variable is the cluster ID of the cache system. Use the **lswcachesource** command with the `-l` option to find the cluster ID of a specified cache system.

Restriction: You cannot remove the last cache system for a specified cache home system.

-updatekeys
Updates the public keys of all the cache systems for the specified home systems.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Adding a cache system to a home system that is enabled for WAN caching

The following command adds a cache system to a home system on the home cluster.

```
tpctool> chwcachesource -cachesource eesrc10+tpcsonas1.storage.tucson.
ibm.com+127.0.0.1+0 -addclient '127.0.0.2(ro)'
```

The following output is returned:

```
CachesourceId                                              Status
============================================================
eesrc10+tpcsonas1.storage.tucson.ibm.com+127.0.0.1+0 SUCCESS
```

Example: Removing a cache system from a home system that is enabled for WAN caching

The following command removes a cache system from a home system on the home cluster.

```
tpctool> chwcachesource -cachesource eesrc10+tpcsonas1.storage.tucson.
ibm.com+127.0.0.1+0 -removeclient 792217928950257960
```

The following output is returned:

```
CachesourceId                                              Status
============================================================
eesrc10+tpcsonas1.storage.tucson.ibm.com+127.0.0.1+0 SUCCESS
```

Related reference:

"lswcachesource" on page 104
Use the **lswcachesource** command to list information about home systems that are configured on an IBM SONAS system. The home system is the source of the data in a wide area network (WAN) cache configuration. You can use WAN caching to distribute data transparently among data centers and multiple remote locations without disruption to applications. You must have Monitor authority to use this command.

"mkwcachesource" on page 127
Use the **mkwcachesource** command to create a home system on an IBM SONAS system file set. The home system is the source of the data in a wide area network (WAN) cache configuration.

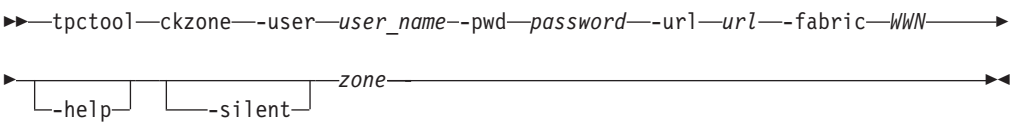
Related information:

http://publib.boulder.ibm.com/infocenter/sonasic/sonas1ic/index.jsp
More information about command parameters is available at the IBM SONAS Information Center.

ckzone

Use the **ckzone** command to verify that a fabric contains a zone.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-fabric *WWN*
Specifies the fabric. The *WWN* variable is the worldwide name (WWN).

-help | -h | -?
Lists help information for the command.

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

zone
Specifies the zone.

Example: Verifying that a fabric contains a zone

The following command checks whether the fabric contains the *SUNSOLARIS* zone.

```
tpctool> ckzone -user me -pwd mypass -url myhost:myport
-fabric 100000051E34F6A8 SUNSOLARIS
```

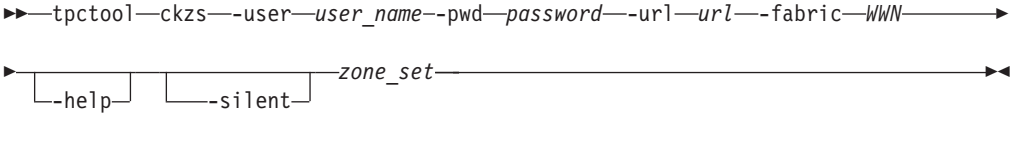
If the fabric contains the zone, the following text is returned:

```
Zone SUNSOLARIS found in fabric 100000051E34F6A8
```

ckzs

Use the **ckzs** command to verify that a fabric contains a zone set.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-fabric *WWN*
Specifies the fabric. The *WWN* variable is the worldwide name (WWN).

-help | -h | -?
Lists help information for the command.

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

zone_set
Specifies the zone set. The *zone_set* variable is the name of the zone set.

Example: Verifying that a fabric contains a zone set

The following command determines whether the fabric contains the PARIS zone set.

```
tpctool> ckzs -user me -pwd mypass -url myhost:myport -fabric 100000051E34F6A8 PARIS
```

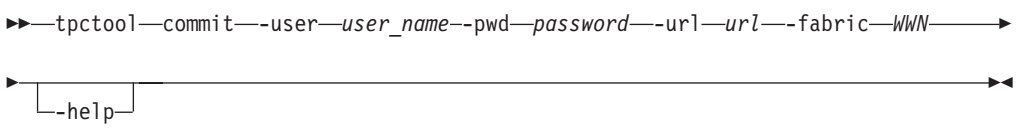
If the fabric contains the zone set, the following text is returned:

```
Zoneset PARIS found in fabric 100000051E34F6A8
```

commit

Use the **commit** command to commit a transaction. When you commit a transaction, all the commands issued after you started the transaction are enacted. You must have Administrator authority to use this command.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-fabric *WWN*
Specifies the fabric. The *WWN* variable is the worldwide name (WWN).

-help | -h | -?
Lists help information for the command.

Example: Committing a transaction

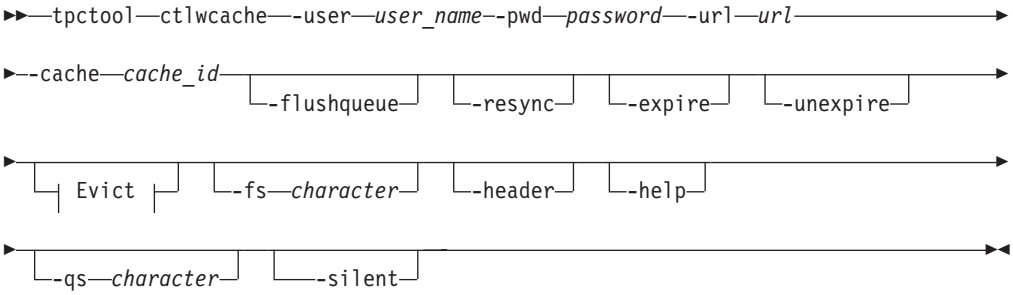
The following command commits a transaction. The user has previously specified connection options, started a transaction, and issued a fabric-control command:

```
tpctool> commit -fabric 100000051E34F6A8
```

ctlwcache

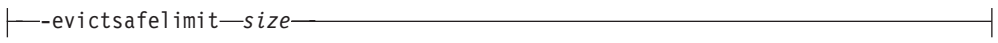
Use the **ctlwcache** command to run maintenance operations on a cache file set on a wide area network (WAN) cluster. Data on an IBM SONAS source cluster is cached to this file set. You can resynchronize cache data to the source file set, flush the cache to the source file set, remove cached data, and expire or unexpire the data in a file set. Use the **lswcache** command to view the attributes of the cache file set. You must have Data Administrator authority to use this command.

Syntax



Evict

Safe limit

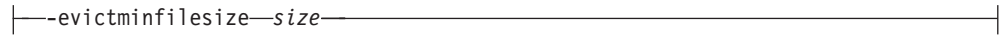


Evict order

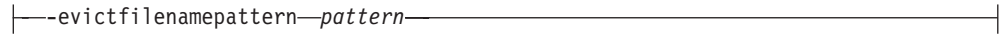
Log

Max size

Min size



Pattern



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-cache *cache_id*
Specifies the ID of the cache file set to be changed. You can use the **lswcache** command to retrieve the cache file set ID.

-name *name*
Specifies the new name for the cache file set.

-flushqueue
Flushes the queue at the cache gateway node to the source file set. The command completes when the queue is empty.

-resync
Synchronizes the cache source and the contents of the cache file set. Various events can cause inconsistencies between the source and cache versions of data. Use this parameter to ensure that the source version is consistent with the cache version.

Restriction: You can use this option only when the cache state is active.

-expire
Marks all the cache file set contents as expired.

You must ensure that the `expirationtimeout` setting for the cache file set is enabled. To view the `expirationtimeout` value, use the **lswcache** command with the `-v` parameter. You can change the `expirationtimeout` value by using the **chwcache** command.

-unexpire
Removes the expired status from all of the cache file set contents that are marked as expired.

You must ensure that the expirationtimeout setting for the cache file set is enabled. To view the expirationtimeout value, use the **lswcache** command with the -v parameter. You can also change the expirationtimeout value by using the **chwcache** command.

-evict
Removes cache data if the soft limit is set for the disk usage by the file set. You can remove cache data either when the cache file set is created by using the **mkwcache** command, or later by using the **setquota** command. You can use the **lsquota** command to view quota values. If you specify the -evict parameter, you must specify the -evictsafelimit parameter.

-evictsafelimit *size*
Specifies the safe limit for eviction. This safe limit overrides the soft limit value during the manual eviction operation. You must specify a value that is less than the value for the soft limit. Specify the size as an integer either without suffix (byte) or with K (kilobyte), M (megabyte), G (gigabyte), T (terabyte), or P (petabyte). These suffixes are not case-sensitive.

-evictorder *LRU* | *SIZE*
Evicts the contents of a specified cache file set based on the order of the queue. Specify LRU to evict least recently used files first. Specify SIZE to evict larger-sized files first.

-log *log*
Specifies the location of the eviction log file. The log file location must be within an active export. By default, the logged information is appended to the system event log, mmfs.log.

-evictmaxfilesize *size*
Specifies the maximum file size for eviction. Specify the size as an integer (byte) or with the suffix K (kilobyte), M (megabyte), G (gigabyte), T (terabyte), or P (petabyte). These suffixes are not case-sensitive.

-evictminfilesize *size*
Specifies the minimum file size for eviction. Specify the size as an integer (byte) or with the suffix K (kilobyte), M (megabyte), G (gigabyte), T (terabyte), or P (petabyte). These suffixes are not case-sensitive.

-evictfilenamepattern *pattern*
Specifies the file name pattern for eviction. You can use the percent sign (%) as the wildcard character.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Synchronizing a cache source and the contents of the cache file set

The following command synchronizes a cache source and the contents of the cache file set.

```
tpctool> ctlwcache -cache cache3+ad+tpcsonas3.storage.tucson.
ibm.com+127.0.0.1+0 -resync
```

The following output is returned:

```
CacheId                                                    Status
============================================================
cache3+ad+tpcsonas3.storage.tucson.ibm.com+127.0.0.1+0 SUCCESS
```

Example: Removing a cache file set

The following command removes the contents of a specified cache file set based on size order, by using an eviction safe limit of 10,000 bytes.

```
tpctool> ctlwcache -cache cache3+ad+tpcsonas3.storage.tucson.
ibm.com+127.0.0.1+0 -evict -evictsafelimit 10000 -evictorder SIZE
```

The following output is returned:

```
CacheId                                                    Status
============================================================
cache3+ad+tpcsonas3.storage.tucson.ibm.com+127.0.0.1+0 SUCCESS
```

Related reference:

"chwcache" on page 28
Use the **chwcache** command to modify the attributes of a cache file set on a wide area network (WAN) cluster.

"lsquota" on page 87
Use the **lsquota** command to list all quotas or specified quotas that are on a Storwize V7000 Unified or IBM SONAS storage system. You can also list quotas by file system.

"lswcache" on page 102
Use the **lswcache** command to list the wide area network (WAN) caching file sets in the cache system on an IBM SONAS storage system. You must have Monitor authority to use this command.

"mkwcache" on page 122
Use the **mkwcache** command to create a file set on a wide area network (WAN) cluster on an IBM SONAS system. The **mkwcache** command enables this file set as a cache. Data on a home system is cached to this file set. You must have Data Administrator authority to use this command.

"setquota" on page 167
Use the **setquota** command to set the amount of disk space and number of inodes that are assigned on a file system for a specified user name, group, or file set.

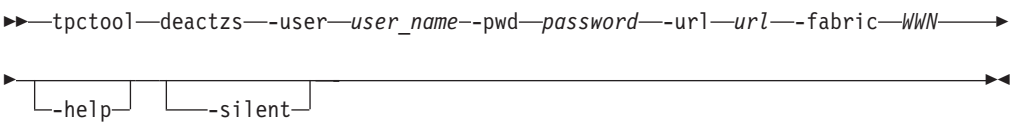
Related information:

http://publib.boulder.ibm.com/infocenter/sonasic/sonas1ic/index.jsp
More information about command parameters is available at the IBM SONAS Information Center.

deactzs

Use the **deactzs** command to deactivate the active zone set. This command must be run as a transaction. You must have Administrator authority to use this command.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-fabric *WWN*
Specifies the fabric. The *WWN* variable is the worldwide name (WWN).

-help | -h | -?
Lists help information for the command.

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Deactivating the active zone set

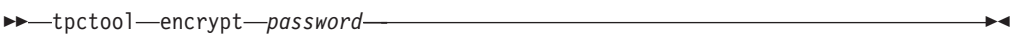
The following commands deactivate the active zone set:

```
tpctool> start -user me -pwd mypass -url myhost:myport -fabric 100000051E34F6A8
tpctool> deactzs -fabric 100000051E34F6A8
tpctool> commit -fabric 100000051E34F6A8
```

encrypt

Use the **encrypt** command to generate an encrypted password for use in the configuration file. This command takes text from standard input and generates 7-bit ASCII-equivalent characters (uuencode).

Syntax



password
Specifies the password to be encrypted.

Example: Encrypting a password

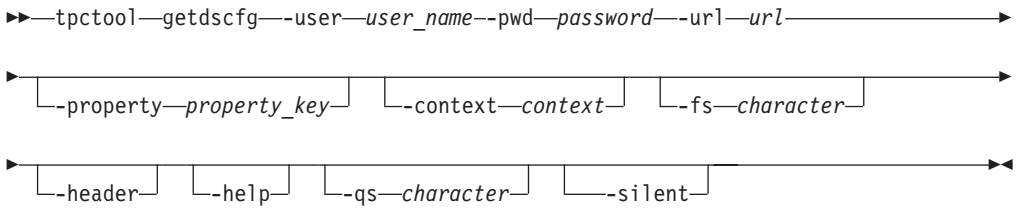
The following command encrypts the specified password:

```
tpctool encrypt myverylongpassword
```

getdscfg

Use the **getdscfg** command to list the current value of a property from the property file for the Device server. You must have Administrator authority to use this command.

Syntax



-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-property *property_key*
Specifies the property key. The *property_key* variable is the property key.

-context *context*
Specifies a classification or category for a configuration property. The *context* variable is the context properties. For example, The following parameter applies to the Tivoli Storage Productivity Center device server only.

```
-context DeviceServer
```

The following parameter applies to the Tivoli Storage Productivity Center performance manager only.

```
-context PerformanceManager
```

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Listing a property value

The following command lists the value of the SnmpRetryCount property:

```
tpctool> getdscfg -url localhost:9550 -user ***** -pwd ***** -property
SnmpRetryCount -context DeviceServer
```

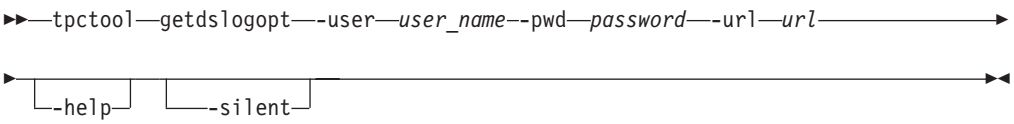
The following output is returned:

```
Property       Context      Value
================================
SnmpRetryCount DeviceServer 3
```

getdslogopt

Use the **getdslogopt** command to list the properties for the log file that is associated with the Device server. You must have Administrator authority to use this command.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-help | -h | -?
Lists help information for the command.

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Listing log file properties

The following command lists the properties of the log file that is used by the Device server.

```
tpctool> getdslogopt -user me -pwd mypass -url myhost:myport
```

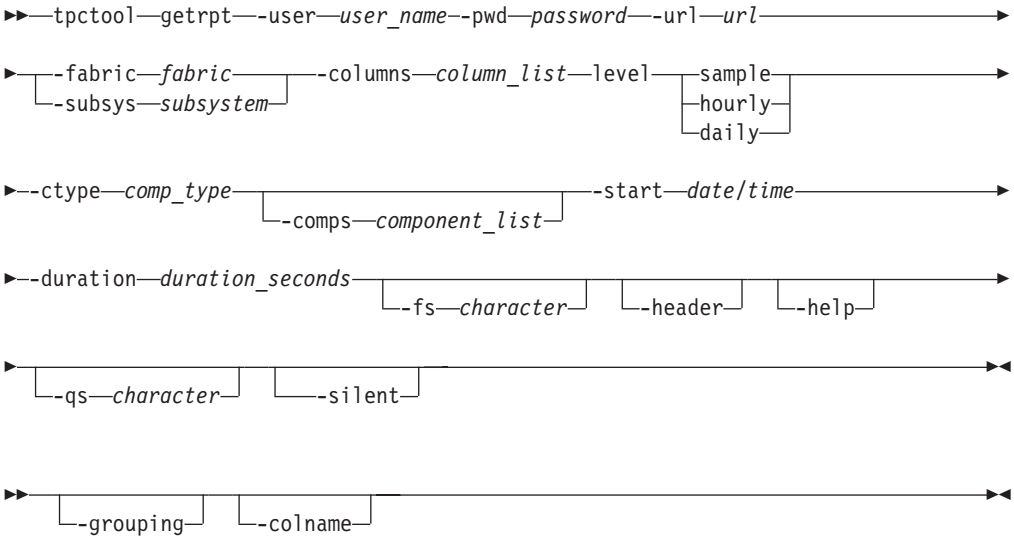
The following output is returned:

```
Filterkey Maxfiles Maxfilesize Locale Format
=============================================
INFO      10       20000 KB    en_US plain_text
```

getrpt

Use the **getrpt** command to list a performance report for a specified storage subsystem.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-fabric *fabric*
Specifies the name of a switch, such as one that is returned by the **lsdev** command.

-subsys *subsystem*
Specifies the name of a storage subsystem, such as one that is returned by **lsdev**. The name of the storage subsystem is the globally unique identifier (GUID) of that storage subsystem.

-columns *column_list*
Specifies what columns displays in the report. The columns are obtained from the **lscounters** and **lsmetrics** commands.

-level sample | hourly | daily
Specifies the level for which the performance metrics that are summarized. You can specify a sample summary, an hourly summary, or a daily summary.

-ctype *comp_type*
Specifies that the output includes only components of the specified type. For more information about the *comp_type* variable, see the **lstype** command.

-comps *component_list*
Specifies the component list. The *component_list* variable specifies the components, such as one that is returned by **lscomp**.

-start *date/time*
Specifies the date and time to start the sampling period. The date and time are formatted as:

```
yyyy.MM dd:HH:mm:ss
```

All time zones are relative to the Device server. For more information, see the **lstime** command.

-duration *duration_seconds*
Specifies the duration of the sampling period, in seconds. The *duration_seconds* variable is an integer.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

-grouping
Enables the grouping of numeric values. For example, in English the value 12000 would display as 12,000. The grouping character is determined by the system locale.

-colname
Displays the name of the counter or metric in the column header. By default, an integer that indicates the column or metric type is displayed in the column header.

Example: Listing performance metrics

The following command lists a report of performance metrics:

```
tpctool> getrpt -user me -pwd mypass -url myhost:myport
-fabric 100005668 -subsys 2105.22232+0 -level daily
```

Note: If you have multiple volumes in your subsystems, use the `-fs` *character* option with a comma as a field separator.

```
tpctool> getrpt -subsys 2107.1302541+0 -columns 1,2,4,5,10,11,13,14,22,23,28,29,31,
32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55,56,57,58,5,
9,828,829,830,831,832,833,801,802,803,804,805,806,807,808,809,810,811,812,813,814,
815,816,817,818,819,820,821,822,823 -ctype vol -level sample -start 2007.06.27:19:
01:40 -duration 3600 -fs
```

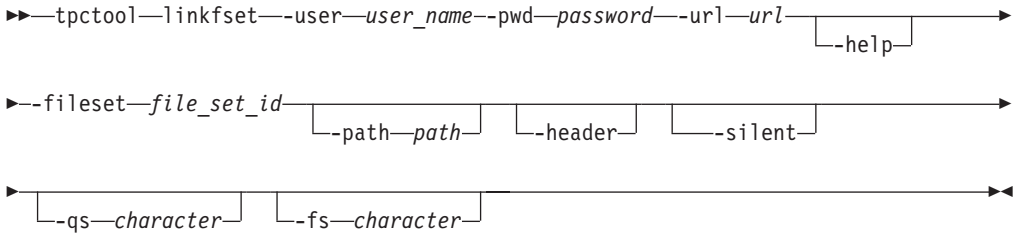
linkfset

Use the **linkfset** command to create a junction to connect a name in a directory of a parent file set to the root directory of a child file set. You must have Administrator authority to use this command.

As a prerequisite, the file system must be mounted and the junction path must be under the mount point of the file system. A dependent file set that is contained within an owner file set can be linked only inside its owner path or in a directory tree of the owner path. A file set without an owner can be linked anywhere in the file system.

Although a junction is displayed as a directory, you cannot issue IBM SONAS directory commands to remove a junction. Use the **unlinkfset** command instead.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-help | -h | -?
Lists help information for the command.

-fileset *file_set_id*
Specifies the Tivoli Storage Productivity Center key of the file set to be linked. The file set key is listed in the ID column of the **lsfset** command output.

-path *path*
Specifies the name of the junction. The name must not refer to an existing file system object.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

Example: Linking a file set

The following command links the file set that is named eefset01+eefs+kq458mv.ibm+00000200A2A0153C+0 to the path /ibm/eefs/eefsetdir01.

```
tpctool> linkfset -fileset eefset01+eefs+kq458mv.ibm+00000200A2A0153C+0
-path /ibm/eefs/eefsetdir01 -user admin -pwd password -url localhost:9550
```

The following output is returned:

```
FilesetId                                        Status
================================================
eefset01+eefs+kq458mv.ibm+00000200A2A0153C+0 SUCCESS
```

Related information:

http://publib.boulder.ibm.com/infocenter/sonasic/sonas1ic/index.jsp
More information about command parameters is available at the IBM SONAS Information Center.

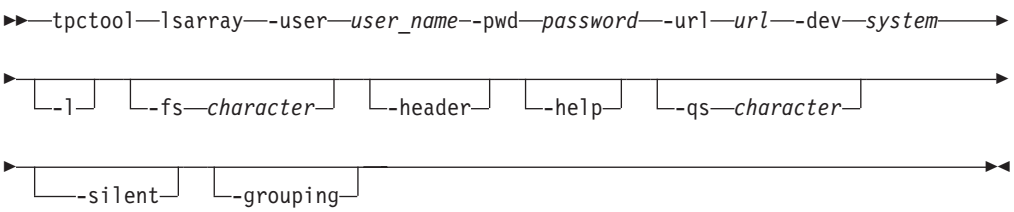
http://publib.boulder.ibm.com/infocenter/storwize/unified_ic/index.jsp
More information about command parameters is available at the Storwize V7000 Unified Information Center.

lsarray

Use the **lsarray** command to display information about arrays and back-end storage subsystems.

You use the **setarray** command or **autosetarray** command to provide information about back-end storage subsystems. You can also enter information about back-end storage subsystems on the MDisk Group Details page in the Tivoli Storage Productivity Center GUI.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-dev *system*
Specifies the globally unique identifier (GUID) of the storage system. You can

use the **lsdev** command to return information, including the GUID, for all storage systems that are discovered by Tivoli Storage Productivity Center.

-l Specifies that the detailed version of information about arrays is provided. If you issue the **lsarray** command and do not specify the **-l** parameter, only the array ID is displayed.

Column label	Details
Array	The ID of the array.
Label	The name of the managed disk (MDisk) group.
Total Size (GB)	The total amount of storage space.
Free Size (GB)	The total amount of available storage space.
Status	The operational status of the MDisk group that hosts the array.
Types of Disk	The types of disk that host the arrays. • `Solid State` for solid-state disks • `Non-Solid State` for hard disks • `Mixed` for solid-state disks and hard disks
Encrypted	Shows whether arrays are hosted on encrypted disks.
Read I/O Capability	Shows the read I/O capability in seconds of storage arrays. The calculation of read I/O capability is based on the following characteristics. • The type of storage system • The type of RAID • The type of disk • The number of disks
Back-end Type	The type of back-end storage system that manages disk group storage.
Back-end RAID Type	The type of Redundant Array of Independent Disk (RAID) that the back-end storage system uses.
Back-end Disk Type	The type of disk that the back-end storage system uses.
Back-end Disk Count	The total number of disks.

Tip: To find out how to set values for back-end storage subsystems, see the description of the **setarray** command.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

-grouping
Enables the grouping of numeric values. For example, in English the value 12000 would display as 12,000. The grouping character is determined by the system locale.

Example: Listing array information

The following command lists IDs for the arrays on the specified system:

```
tpctool> lsarray -user me -pwd mypass -url myhost:9550 -dev 2107.75DG000+0
```

The following output is returned:

```
Array
========================================
IBMTSDS:IBM.2107-75DG000-P17+2107.75DG000+0
IBMTSDS:IBM.2107-75DG000-P16+2107.75DG000+0
IBMTSDS:IBM.2107-75DG000-P15+2107.75DG000+0
IBMTSDS:IBM.2107-75DG000-P14+2107.75DG000+0
IBMTSDS:IBM.2107-75DG000-P1+2107.75DG000+0
IBMTSDS:IBM.2107-75DG000-P0+2107.75DG000+0
```

Example: Listing detailed information about an array

The following command provides detailed information about the array on the specified system:

```
tpctool> lsarray -dev 0000020064405BA0+0 -l
```

The following output is returned:

```
Array                               Label      Total Size (GB) Free Size (GB)
=============================================================================
0000020064405BA0:0+0000020064405BA0+0 mdisk_grp  407.38          310.25

Status  Types of Disk     Encrypted Read I/O Capability Back-end Type
=============================================================================
NORMAL  Non-Solid State   No        0                   D

Back-end RAID Type Back-end Disk Type Back-end Disk Count
==========================================================
5                  F10                160
```

lsbackenddisktypes

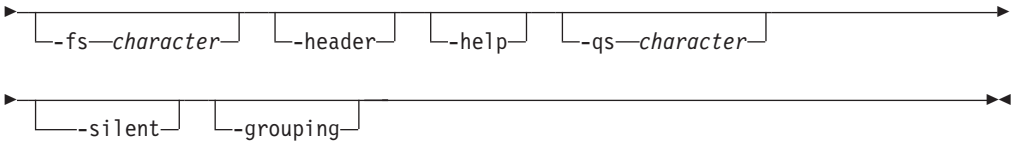
Use the **lsbackenddisktypes** command to list the types of back-end disks and their average input/output.

This command is available for the following storage systems:

- Storwize V7000
- SAN Volume Controller

Syntax

```
►►—tpctool—lsbackenddisktypes—-user—user_name—-pwd—password—-url—url————►
```



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

-grouping
Enables the grouping of numeric values. For example, in English the value 12000 would display as 12,000. The grouping character is determined by the system locale.

Example: Listing back-end disk types

The following command lists the types of back-end disks:

```
tpctool> lsbackenddisktypes
```

If the command is successful, a list of the types of back-end disks is displayed.

```
Back-end Disk Type   Description                              IOPS
=====================================================================
A07                 "Sata - 7 500 rpm"                       40
F10                 "Fiber - 10 000 rpm"                     120
F15                 "Fiber - 15 000 rpm"                     150
DEFAULT             "DEFAULT TYPE FOR UNCONFIGURED DEVICES" 0
```

When you issue the **lsbackenddisktypes** command, the following information is displayed.

Backend Disk Type
The type of back-end disk. For example: A07

Description
A description of the type of back-end disk. For example: “Sata - 7500 rpm”

IOPS Input/Output (I/O) per second. The average number of input/output operations per second for the disk.

Tip: Use the **setbackenddisktype** command to set or update the type of a back-end disk.

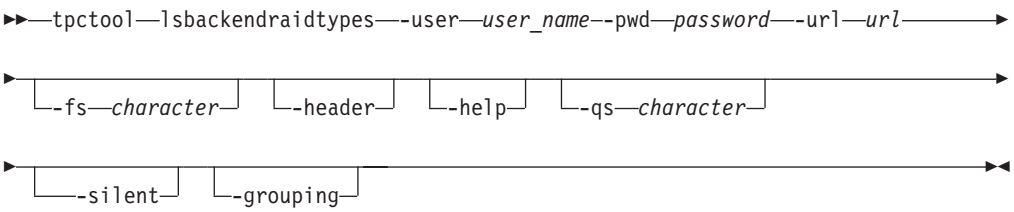
lsbackendraidtypes

Use the **lsbackendraidtypes** command to list the types of back-end RAID arrays that are available for managed disk groups.

This command is available for the following storage systems:

- Storwize V7000
- SAN Volume Controller

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

-grouping
Enables the grouping of numeric values. For example, in English the value 12000 would display as 12,000. The grouping character is determined by the system locale.

Example: Listing back-end RAID types

The following command lists the available types of back-end RAIDs.

```
tpctool> lsbackendraidtypes
```

If the command is successful, a list of the available types of back-end RAIDs is displayed.

```
Back-end RAID Type Weighted IO
=====================================================================
X                  1
6                  6
5                  4
1                  2
DEFAULT            1
```

When you issue the **lsbackendraidtypes** command, the following information is displayed.

Backend RAID Type
The type of back-end RAID array. Possible values are DEFAULT, 1, 5, 6, X, or an array type that is set with the **setbackendraidtype** command.

Weighted IO
The weighted input/output of the RAID type.

Tip: Use the **setbackendraidtype** command to set or update the type of a back-end RAID array.

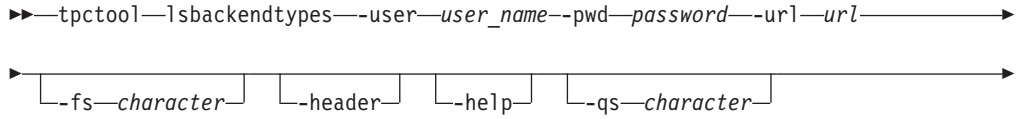
lsbackendtypes

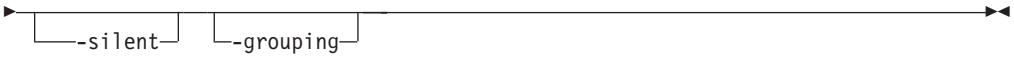
Use the **lsbackendtypes** command to list the types of back-end storage systems.

More information, such as the name, description, and cache hit ratio of the back-end type of the storage system is also provided. This command is available for the following storage systems:

- Storwize V7000
- Storwize V7000 Unified
- SAN Volume Controller

Syntax





Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

-grouping
Enables the grouping of numeric values. For example, in English the value 12000 would display as 12,000. The grouping character is determined by the system locale.

Example: Displaying a list of types of back-end storage systems

The following command provides a list of the types of back-end storage systems:

```
tpctool> lsbackendtypes
```

A list of the types of back-end storage subsystem is displayed.

```
Back-end Type Name            Cache Hit Ratio
================================================
Fake          F800            100
X             XIV             70
D             DS8000          50
V             DS4000          50
S             "EMC Symmetrix" 50
C             "EMC Clariion"  50
DEFAULT       DEFAULT         0

Description
=======================================
"Theoretical All Cache subsystem"
"IBM XIV"
"DS8K Disk Controller"
```

```
"DS5K Disk Controller"
"DMX BE Cache Hit Ratio"
"CX BE Cache Hit Ratio"
"DEFAULT TYPE FOR UNCONFIGURED DEVICES"
```

When you issue the **lsbackendtypes** command, the following information is displayed:

Back-end Type
The type of back-end storage system such as *D*

Name The name that is associated with the type of back-end storage system. For example, the name *DS8000* is associated with type *D*

Cache Hit Ratio
The estimated cache hit ratio for read operations

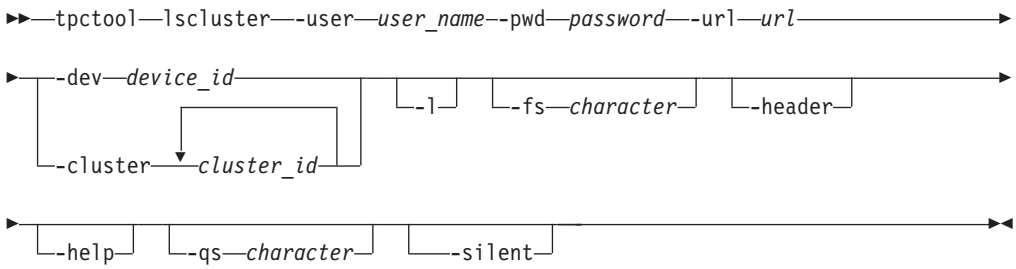
Description
A description of the type of back-end storage system

Tip: Use the **setbackendtype** command to set or update the type of back-end storage system.

lscluster

Use the **lscluster** command to list all clusters or specified clusters that are on a Storwize V7000 Unified or IBM SONAS storage system.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-dev *dev_id* | **-cluster** *cluster_id...*
Specifies that information is displayed for all clusters that are on a storage system. This parameter requires the globally unique identifier (GUID) of the storage system. You can use the **lsdev** command to return information, including the GUID, for all storage systems that were discovered.

The **-cluster** parameter specifies that information is displayed only for specific clusters. You can enter one or multiple cluster IDs. Use a comma to separate multiple IDs.

-l
Specifies that the following information is listed.

ID An ID for the cluster that is composed of the cluster name, storage system name, and storage system format.

Cluster
The name of the cluster.

Cluster ID
The cluster ID as defined by the Storwize V7000 Unified file module or IBM SONAS.

Type One or more of the following types: interface, management, or storage.

If you omit this parameter, only the ID is returned.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Listing all clusters that are on a storage system

The following command generates a list of all clusters that are on a Storwize V7000 Unified storage system.

```
tpctool> lscluster -dev 00000200A0E0005C+0 -l
```

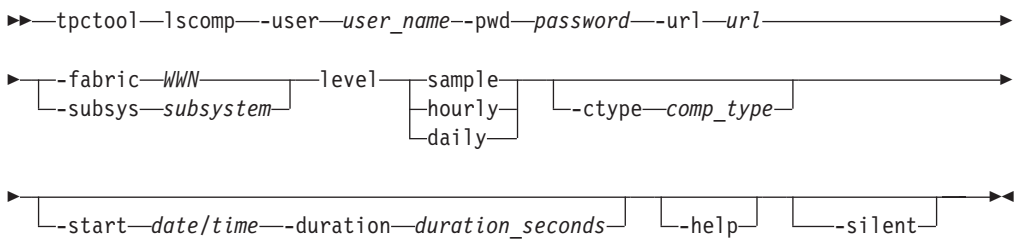
The following output is returned:

```
ID                                                  Cluster
================================================================================
tpcsonas2.storage.tucson.ibm.com+00000200A0E0005C+0 tpcsonas2.storage.tucson.ibm.com
Cluster ID          Type
=====================================
12402779238946656959 interface,storage
```

lscomp

Use the **lscomp** command to list the components for which performance data is collected.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-fabric *WWN*
Specifies the fabric. The *WWN* variable is the worldwide name (WWN).

-subsys *subsystem*
Specifies the storage subsystem. The subsystem variable is the GUID of the storage subsystem. You can use the **lsdev** command to return information, including the GUID, for all storage subsystems that are discovered by IBM Tivoli Storage Productivity Center.

-level sample | hourly | daily
Specifies the level for which the performance metrics of the components are to be summarized. You can specify a sample summary, an hourly summary, or a daily summary.

-ctype *comp_type*
Specifies that the output is to include only components of the specified type. For more information about the *comp_type* variable, see the **lstype** command.

-start *date/time*
Specifies the date and time to start the sampling period. The date and time are formatted as:

```
yyyy.MM dd:HH:mm:ss
```

All time zones are relative to the Device server. For more information, see the **lstime** command.

-duration *duration_seconds*
Specifies the duration of the sampling period, in seconds. The *duration_seconds* variable is an integer.

-help | -h | -?
Lists help information for the command.

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Listing components with performance date

The following command generates a list of components on a storage subsystem for which performance data is collected.

```
tpctool> lscomp -user me -pwd mypass -url myhost:myport
-subsys 2105.22232+0 -ctype vol -level sample -start
2005.09.19:00:00:00 -duration 86400
```

The following output is returned:

```
Component
=============================================
00000000000000000000000000001223+6+2105.22232+0
00000000000000000000000000001222+6+2105.22232+0
00000000000000000000000000001202+6+2105.22232+0
00000000000000000000000000001206+6+2105.22232+0
0000000000000000000000000000121D+6+2105.22232+0
00000000000000000000000000001217+6+2105.22232+0
00000000000000000000000000001227+6+2105.22232+0
00000000000000000000000000001216+6+2105.22232+0
0000000000000000000000000000121A+6+2105.22232+0
```

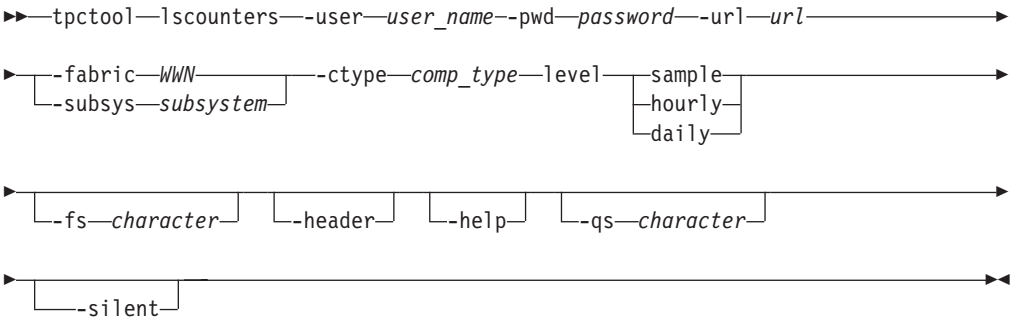
Related reference:

"lstype" on page 97
Use the **lstype** command to list the components that are recognized by Tivoli Storage Productivity Center. No authorization is required to run this command.

lscounters

Use the **lscounters** command to list available performance counters.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-fabric *WWN*
Specifies the fabric. The *WWN* variable is the worldwide name (WWN).

-subsys *subsystem*
Specifies the storage subsystem. The subsystem variable is the GUID of the storage subsystem. You can use the **lsdev** command to return information, including the GUID, for all storage subsystems that are discovered by IBM Tivoli Storage Productivity Center.

-ctype *comp_type*
Specifies that the output is to include only components of the specified type. For more information about the *comp_type* variable, see the **lstype** command.

-level sample | hourly | daily
Specifies the level for which the performance counters are to be summarized. You can specify a sample summary, an hourly summary, or a daily summary.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Listing performance counters

The following command generates a list of performance counters for volumes on the specified storage subsystem:

```
tpctool> lscounters -user me -pwd mypass -url myhost:myport
-subsys 2105.22232+0 -ctype vol -level sample
```

The following output is returned.

```
Counter                                  Value
=========================================
Read I/O Count (normal)                  1
Read I/O Count (sequential)              2
Write I/O Count (normal)                 4
Write I/O Count (sequential)             5
Read Cache Hit Count (normal)            10
Read Cache Hit Count (sequential)        11
Write Cache Hit Count (normal)           13
Write Cache Hit Count (sequential)       14
Read Data Count                          22
Write Data Count                         23
Read Service Periods                     28
Write Service Periods                    29
Disk to Cache Transfers (normal)         31
Disk to Cache Transfers (sequential)     32
Cache to Disk Transfers                  33
NVS Allocation Count                     34
DFW I/O Count (normal)                   35
DFW I/O Count (sequential)               36
NVS Delayed I/O Count                    37
```

```
Cache Delayed I/O Count                38
Record-Mode-Read I/O Count             39
Record-Mode-Read Cache Hit Count       40
Quick Write Promote Count              41
```

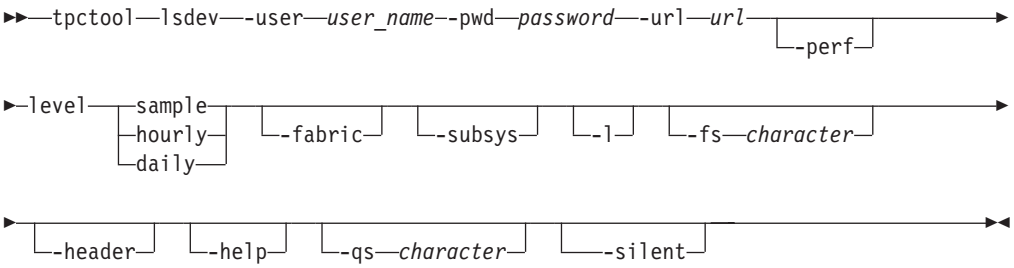
Related reference:

"lstype" on page 97
Use the **lstype** command to list the components that are recognized by Tivoli Storage Productivity Center. No authorization is required to run this command.

lsdev

Use the **lsdev** command to list information about storage subsystems, fabrics, and switches. This information includes the globally unique identifier (GUID) or worldwide name (WWN) for the fabric, the user-defined name, the device type, the status, and the time that the status was updated.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-perf
Specifies that the devices are to be listed for which performance data is collected. You must have the applicable authority to view the devices.

-level sample | hourly | daily
Specifies the level for which the information is summarized. You can specify a sample summary, an hourly summary, or a daily summary.

-fabric
Specifies that only fabric devices is listed. You must have Fabric administrator authority to use this option and Fabric Manager must be enabled.

-subsys
Specifies that only storage subsystems is listed. Disk Manager must be enabled.

-l
Specifies that the long version of the information is listed. The following information is given.

- GUID or WWN

- User-defined name
- Device type
- Status
- Time that the status was updated

If you omit this parameter, only the GUID or WWN is listed.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Command Aliases
You can run the following **lsdev** command aliases that are predefined by IBM.

lsfabric
lsdev -fabric

lsperf lsdev -perf

lssubsys
lsdev -subsys

Example: Listing all devices

The following command lists the GUIDs for all storage subsystems in the Tivoli Storage Productivity Center environment:

```
tpctool> lsdev -user me -pwd mypass -url myhost:myport -subsys
```

The following output is returned:

```
GUID
==============================
9.47.97.159:0000020065400048+0
9.47.97.161:0000020060C0002A+0
1750.13AAW2A+0
1750.13AB1WA+0
2107.1302541+0
2107.1301901+0
2105.22232+0
2105.20870+0
```

Example: Listing the long version of information

The following command lists the long version of information for fabric devices.

```
tpctool> lsdev -user me -pwd mypass -url myhost:myport -fabric -l
```

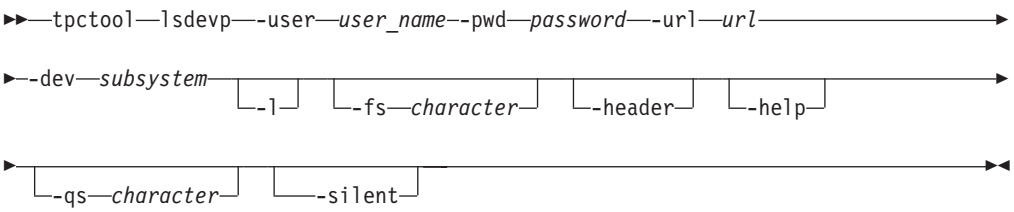
The following output is returned:

```
GUID             Name             Type Status Timestamp
================================================================
100000051E34F6A8 100000051E34F6A8 -    UNKNOWN 2004.12.31:00:00:00
10000060695130FD 1000006069514262 -    UNKNOWN 2004.12.31:00:00:00
1000006069514262 10000060695130FD -    UNKNOWN 2004.12.31:00:00:00
```

lsdevp

Use the **lsdevp** command to list worldwide port names (WWPNs) for a subsystem.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-dev *subsystem*
Specifies the globally unique identifier (GUID) of the storage subsystem. You can use the **lsdev** command to return information, including the GUID, for all storage subsystems that are discovered by Tivoli Storage Productivity Center.

-l Specifies that the long version of the information is to be listed.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Listing worldwide port names

The following command lists the WWPNs for the specified subsystem:

```
tpctool> lsdevp -user me -pwd mypass -url myhost:myport -dev 2105.22232+0
```

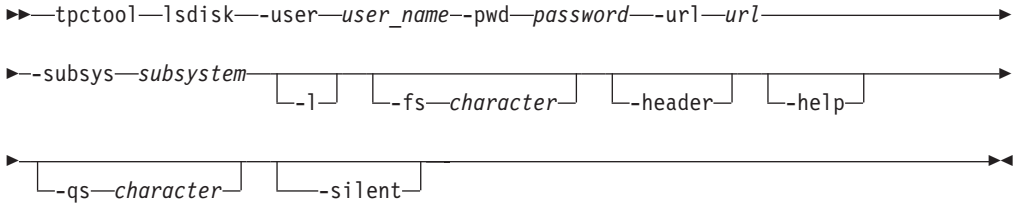
The following output is returned:

```
WWPN
================
5005076300C79470
5005076300D09470
5005076300CB9470
5005076300CC9470
5005076300C29470
5005076300CF9470
5005076300C89470
5005076300C39470
```

lsdisk

Use the **lsdisk** command to list all the physical disks on a specified storage subsystem.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-subsys *subsystem*
Specifies the GUID of the storage subsystem. You can use the **lsdev** command to return information, including the GUID, for all storage subsystems that are discovered.

-l
Specifies that long version of the information is listed. The following information is included.

- Key
- Label
- Vendor
- Model
- Serial Number

- Capacity
- Speed
- Encrypted
- Solid State

If this parameter is not issued, only the host name is returned.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Displaying a list of physical disks on a storage subsystem

The following command generates a list of physical disks on a specified storage subsystem:

```
lsdisk -subsys 2107-1300361+0 -l
```

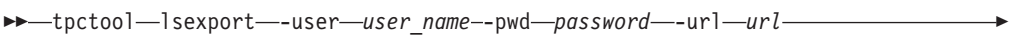
The following output is returned:

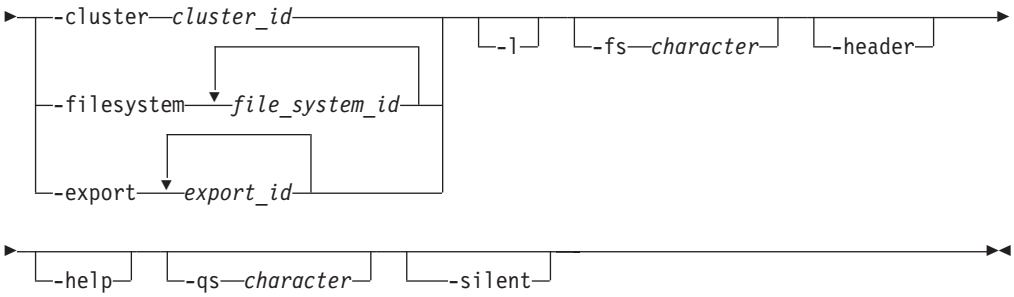
```
Key                              Label                    Vendor  Model
=============================================================================
8000350BFC0D00D+IBM.2107-1300361 U2107.D01.Q000004-P1-D14 Seagate S0AE146

Serial Number    Capacity Speed  Encrypted  Solid State
=====================================================
8000350BFC0D00D  146.0    -      No         No
```

lsexport

Use the **lsexport** command to list all exports or specified exports that are associated with a cluster that is on a Storwize V7000 Unified or IBM SONAS storage system. You can also list exports by file system.

Syntax





Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-cluster *cluster_id* | **-filesystem** *file_system_id...* | **-export** *export_id...*
The **-cluster** parameter specifies that information is displayed for all exports that are associated with a cluster. You can use the **lscluster** command to return information, including the cluster IDs, for all clusters that were discovered.

The **-filesystem** parameter specifies that information is displayed only for exports that are associated with specific file systems. You can enter one or multiple file system IDs. Use a comma to separate multiple IDs. You can use the **lsfs** command to return information, including the file system IDs, for all file systems that were discovered.

The **-export** parameter specifies that information is displayed only for specific exports. You can enter one or multiple export IDs. Use a comma to separate multiple IDs.

-l
Specifies that the following information is listed.

ID An ID for the cluster that is composed of the export name, storage system name, and storage system format.

Export The name of the export.

Path The path on the computer where the export is located.

Protocol
The protocol for the export can be one of following values: HTTP, FTP, SCP, CIFS, or NFS.

Active Indicates whether the export is active or inactive in the cluster. The value can be true or false. If an export is inactive, it is included in the list of exports, but the data that is associated with the export cannot be accessed.

Options
The configuration options that were set for the export. This column contains information only if the protocol is CIFS or NFS.

If you omit this parameter, only the ID is returned.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: List all nodes that are on a cluster

The following command generates a list of all exports that are on a Storwize V7000 Unified cluster.

```
tpctool> lsexport  -cluster tpcsonas2.storage.tucson.ibm.com+00000200A0E0005C+0 -l
```

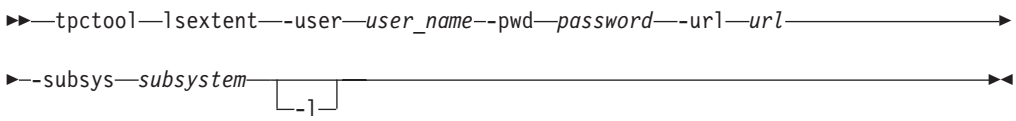
The following output is returned:

```
ID                                                                              Export
================================================================================================
RandomExport1+tpcsonas2.storage.tucson.ibm.com+00000200A0E0005C+0   RandomExport1
RandomExport1+tpcsonas2.storage.tucson.ibm.com+00000200A0E0005C+0   RandomExport1
RandomExport1+tpcsonas2.storage.tucson.ibm.com+00000200A0E0005C+0   RandomExport1
testadd+tpcsonas2.storage.tucson.ibm.com+00000200A0E0005C+0         testadd
testadd+tpcsonas2.storage.tucson.ibm.com+00000200A0E0005C+0         testadd
smcho2+tpcsonas2.storage.tucson.ibm.com+00000200A0E0005C+0          smcho2
smcho2+tpcsonas2.storage.tucson.ibm.com+00000200A0E0005C+0          smcho2
smcho2+tpcsonas2.storage.tucson.ibm.com+00000200A0E0005C+0          smcho2
smcho2+tpcsonas2.storage.tucson.ibm.com+00000200A0E0005C+0          smcho2
Path                     Active Protocol Options
=============================================================================
/ibm/gpfs0/randomexport1 false  NFS      tbl435 (rw,no_wdelay)
/ibm/gpfs0/randomexport1 false  CIFS     access control=Everyone:ALLOWED:FULL
/ibm/gpfs0/randomexport1 false  HTTP
/ibm/testadd             true   NFS      tbl435 (rw,no_wdelay)
/ibm/testadd             true   CIFS     read only;access control=Everyone:
                                           ALLOWED:FULL
/ibm/gpfs0/smcho         true   CIFS     access control=Everyone:ALLOWED:FULL
/ibm/gpfs0/smcho         true   HTTP
/ibm/gpfs0/smcho         true   FTP
/ibm/gpfs0/smcho         true   SCP
```

lsextent

Use the **lsextent** command to display a list of all the storage extents on a specified storage subsystem. An example of a storage extent is an MDisk on a SAN Volume Controller.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-subsys *subsystem*
Specifies the GUID of the storage subsystem. You can use the **lsdev** command to return information, including the GUID, for all storage subsystems that are discovered.

-l
Specifies that long version of the information is listed. The following information is included.

- Key
- Label
- Total Capacity
- Free Space
- Virtual

If this parameter is not issued, only the host name is returned.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Displaying a list of storage extents on a storage subsystem

The following command generates a list of storage extents on a specified storage subsystem:

```
tpctool> lsextent -subsys 2107-1300361+0 -l
```

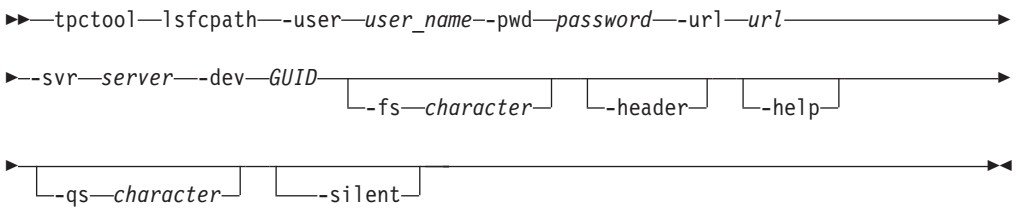
The following output is returned:

```
Key                                 Label                 Total Capacity
=====================================================================
IBM.2107-1300361-R8+2107-1300361+0 IBM.2107-1300361-R8   581.0
IBM.2107-1300361-R7+2107-1300361+0 IBM.2107-1300361-R7   1688.0
IBM.2107-1300361-R6+2107-1300361+0 IBM.2107-1300361-R6   519.0

Free Space Virtual
==================
0.0        No
0.0        No
0.0        No
```

lsfcpath

Use the **lsfcpath** command to list the paths for data transmission between a system with a fibre-channel host bus adapter (HBA) and a storage subsystem.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-svr *server*
Specifies a system with a fibre-channel HBA. The *server* variable is the host name of the system.

-dev *GUID*
Specifies the storage subsystem. The *GUID* variable is the globally unique identifier (GUID).

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Listing data paths

The following command lists the paths on which data can be transmitted between MARKETING and the storage subsystem 2105.20870+0:

```
tpctool> lsfcpath -user me -pwd mypass -url myhost:myport -svr
MARKETING -dev 2105.20870+0
```

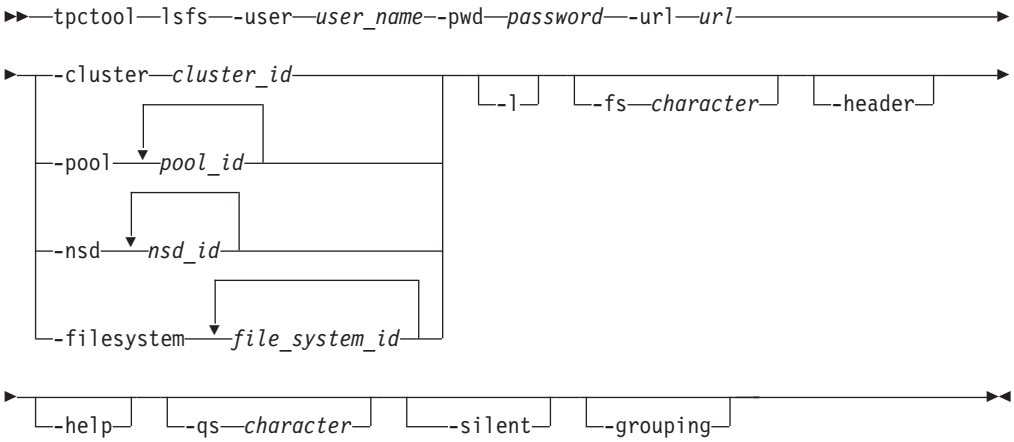
The following output is returned:

```
ServerPort        SubsystemPort
================================
210000E08B1Co9E   710000E08W1Co8F
```

lsfs

Use the **lsfs** command to list all file systems or specified file systems that are associated with a cluster on a Storwize V7000 Unified or IBM SONAS storage system. You can also list file systems by pool or Network Shared Disk (NSD).

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-cluster *cluster_id* | **-pool** *pool_id...* | **-nsd** *nsd_id...* | **-filesystem** *file_system_id...*

The **-cluster** parameter specifies that information is displayed for all file systems that are on a cluster. You can use the **lscluster** command to return information, including the cluster IDs, for all clusters that were discovered.

The **-pool** parameter specifies that information is displayed only for file systems that are associated with specific pools. You can enter one or multiple pool IDs. Use a comma to separate multiple IDs. You can use the **lspool** command to return information, including the pool IDs, for all pools that were discovered.

The **-nsd** parameter specifies that information is displayed only for file systems that are associated with specific NSDs. You can enter one or multiple NSD IDs. Use a comma to separate multiple IDs. You can use the **lsnsd** command to return information, including the NSD IDs, for all NSDs that were discovered.

The **-filesystem** parameter specifies that information is displayed only for specific file systems. You can enter one or multiple file system IDs. Use a comma to separate multiple IDs.

-l

Specifies that the following information is listed.

ID
An ID for the cluster that is composed of the file system name, cluster name, storage system name, and storage system format.

File System
The name of the file system.

Mount Point
The name or mount point (UNIX/Linux) of the file system (for example, c:\, d;\, /opt, or /export/home).

Cluster
The name of the cluster that is associated with the file system.

Capacity (GB)
The capacity of the file system.

Used Space (GB)
The amount of used storage space in the file system.

Available Space (GB)
The amount of unused storage space in the file system.

Maximum File Count
The total number of files in a file system. This value does not include files on file systems that were not scanned.

Used I-Nodes
The number of used inodes in the file system.

Free I-Nodes
The number of unused inodes in the file system.

If you omit this parameter, only the ID is returned.

-fs *character*

Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

-grouping
Enables the grouping of numeric values. For example, in English, the value 12000 displays as 12,000. The grouping character is determined by the system locale.

Example: List all file systems that are on a cluster

The following command generates a list of all file systems that are on a Storwize V7000 Unified cluster.

```
tpctool> lsfs -cluster tpcsonas2.storage.tucson.ibm.com+00000200A0E0005C+0 -l
```

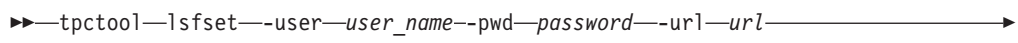
The following output is returned:

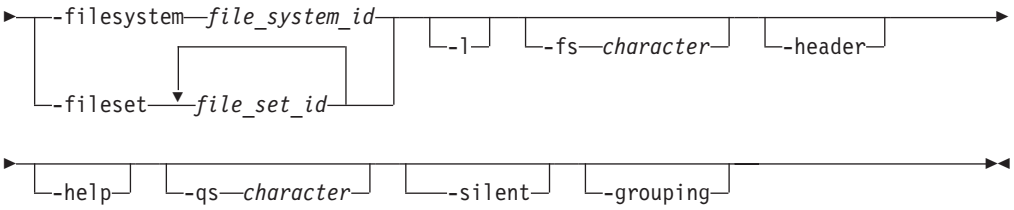
```
ID                                                                    File System
=============================================================================
gpfs0+tpcsonas2.storage.tucson.ibm.com+00000200A0E0005C+0          gpfs0
testadd+tpcsonas2.storage.tucson.ibm.com+00000200A0E0005C+0      testadd
gpfs1+tpcsonas2.storage.tucson.ibm.com+00000200A0E0005C+0          gpfs1
ma_19037+tpcsonas2.storage.tucson.ibm.com+00000200A0E0005C+0    ma_19037

Cluster                         Mount Point   Capacity (GB) Used Space (GB)
=============================================================================
tpcsonas2.storage.tucson.ibm.com /ibm/gpfs0             4280         1135.91
tpcsonas2.storage.tucson.ibm.com /ibm/testadd           8560          151.58
tpcsonas2.storage.tucson.ibm.com /ibm/scantest          4280            1.54
tpcsonas2.storage.tucson.ibm.com /ibm/gpfs0/ma          4280            1.54

Available Space (GB) Maximum File Count Used I-Nodes Free I-Nodes
=================================================================
            3144.09             4382726       537458      3845268
            8408.42             4383232         5107      4378125
            4278.46             4382726         4044      4378682
            4278.46             4382726         4043      4378683
```

lsfset

Use the **lsfset** command to list all file sets or specified files sets that are associated with a file system on a Storwize V7000 Unified or IBM SONAS storage system.

Syntax





Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-filesystem *file_system_id* | **-fileset** *file_set_id...*
Specifies that information is displayed for all file sets that are on a file system.

The **-filesystem** parameter requires the ID for the file system. You can use the **lsfs** command to view information, including the file system IDs, for all file systems that were discovered.

The **-fileset** parameter specifies that information is displayed only for specific file sets. You can enter one or multiple file set IDs. Use a comma to separate multiple IDs.

-l
Specifies that information is listed. The following information is included:

ID An ID for the file set that is composed of the file set name, file system name, cluster name, storage system name, and storage system format.

File Set
The name of the file set.

Path The path for the file set. The path is displayed only if linked is displayed in the Status column.

Status The status of the file set can be one of the following values: linked or unlinked.

Used Space (GB)
The amount of space that is used by the file set.

Used I-Nodes
The number of used inodes in the file set.

Type The type of the file set, such as cache source or cache. No value in this column indicates that the file set is not enabled for caching.

If you omit this parameter, only the ID is returned.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

-grouping
Enables the grouping of numeric values. For example, in English, the value 12000 is displayed as 12,000. The grouping character is determined by the system locale.

Example: List all file sets that are on a specified file system

The following command generates a list of all file sets that are on a file system:

```
tpctool> lsfset -filesystem
gpfs0+tpcsonas3.storage.tucson.ibm.com+127.0.0.1+0
 -l
```

The following output is returned:

```
ID
================================================================
root+gpfs0+tpcsonas3.storage.tucson.ibm.com+127.0.0.1+0
CiprianCet+gpfs0+tpcsonas3.storage.tucson.ibm.com+127.0.0.1+0
p_swfset1+gpfs0+tpcsonas3.storage.tucson.ibm.com+127.0.0.1+0
afs_c_ro3+gpfs0+tpcsonas3.storage.tucson.ibm.com+127.0.0.1+0
afs_c_ro43+gpfs0+tpcsonas3.storage.tucson.ibm.com+127.0.0.1+0
afs_c_ro5+gpfs0+tpcsonas3.storage.tucson.ibm.com+127.0.0.1+0
cachefset1+gpfs0+tpcsonas3.storage.tucson.ibm.com+127.0.0.1+0
Cet1+gpfs0+tpcsonas3.storage.tucson.ibm.com+127.0.0.1+0
testCache+gpfs0+tpcsonas3.storage.tucson.ibm.com+127.0.0.1+0
testCache_rw+gpfs0+tpcsonas3.storage.tucson.ibm.com+127.0.0.1+0
eecache01+gpfs0+tpcsonas3.storage.tucson.ibm.com+127.0.0.1+0
shirley_cache_source_fset+gpfs0+tpcsonas3.storage.tucson.ibm.com+127.0.0.1+0
afs_c+gpfs0+tpcsonas3.storage.tucson.ibm.com+127.0.0.1+0
adriand_ace+gpfs0+tpcsonas3.storage.tucson.ibm.com+127.0.0.1+0
afs_c_ro+gpfs0+tpcsonas3.storage.tucson.ibm.com+127.0.0.1+0
afs_c_lu+gpfs0+tpcsonas3.storage.tucson.ibm.com+127.0.0.1+0
File Set                  Path                                  Status Used Space(GB)
================================================================================
root                      /ibm/gpfs0                            linked     3.8
CiprianCet                /ibm/gpfs0/CiprianCet                 linked       0
p_swfset1                 /ibm/gpfs0/p_swfset1                  linked       -
afs_c_ro3                 /ibm/gpfs0/afs_c_ro3                  linked       -
afs_c_ro43                /ibm/gpfs0/afs_c_ro4                  linked       -
afs_c_ro5                 /ibm/gpfs0/afs_c_ro5                  linked       -
cachefset1                /ibm/gpfs0/cachefset1                 linked       -
Cet1                      /ibm/gpfs0/CiprianCet/Cet1            linked       0
testCache                 /ibm/gpfs0/testCache                  linked       -
testCache_rw              /ibm/gpfs0/testCache_rw               linked       -
eecache01                 /ibm/gpfs0/eecache01                  linked       -
shirley_cache_source_fset /ibm/gpfs0/shirley_cache_source_fset linked       -
afs_c                     /ibm/gpfs0/afs_c                      linked       -
```

```
adriand_ace              /ibm/gpfs0/adrian_acedir            linked       0
afs_c_ro                 /ibm/gpfs0/afs_c_ro                 linked       -
afs_c_lu                 /ibm/gpfs0/afs_c_lu                 linked       -
Used I-Nodes                    Type
========================================
4110                             -
4                          Cache source
4                          Cache
3                          Cache
2                          Cache
7                          Cache
2                          Cache
1                            -
3                          Cache
3                          Cache
2                          Cache
2                          Cache
2                          Cache
1                            -
2                          Cache
2                          Cache
```

Related reference:

"lsfs" on page 67
Use the **lsfs** command to list all file systems or specified file systems that are associated with a cluster on a Storwize V7000 Unified or IBM SONAS storage system. You can also list file systems by pool or Network Shared Disk (NSD).

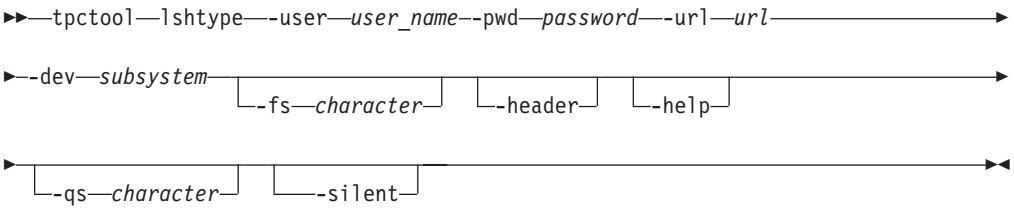
Related information:

http://publib.boulder.ibm.com/infocenter/sonasic/sonas1ic/index.jsp
More information about command parameters is available at the IBM SONAS Information Center.

lshtype

Use the **lshtype** command to list host types. You must have Administrator authority to use this command.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-dev *subsystem*
Specifies the globally unique identifier (GUID) of the storage subsystem. You can use the **lsdev** command to obtain information, including the GUID, for all storage subsystems that are discovered.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Listing host types

The following command lists the host types that are associated with the specified subsystem.

```
tpctool> lshtype -user me -pwd mypass -url myhost:myport -dev 2105.22232+0
```

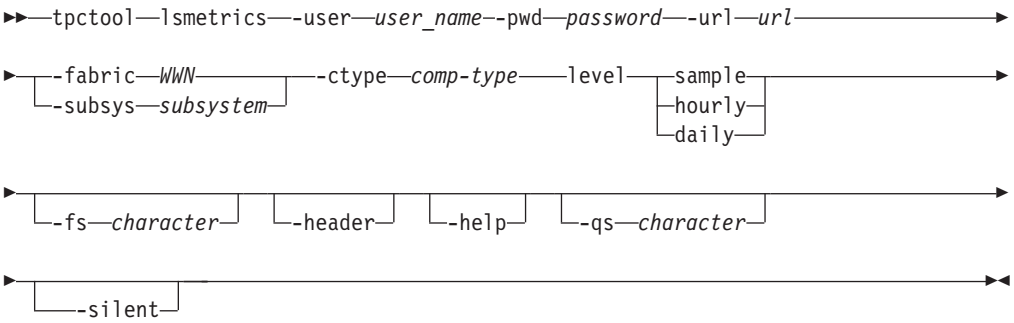
The following output is returned.

```
HostType HostFlag
================================================================================
StorageClientSettingData for IBM pSeries, RS/6000 and RS/6000 SP Servers (AIX)9
StorageClientSettingData for Cisco iSCSI Gateway 13
StorageClientSettingData for DGUX 10
StorageClientSettingData for IBM NUMA-Q Servers (DYNIX/ptx) 11
StorageClientSettingData for HP Servers (HP-UX) 4
StorageClientSettingData for SGI Origin Servers (IRIX) 12
StorageClientSettingData for Intel-based Servers (Linux) 14
StorageClientSettingData for IBM zSeries Servers (Linux) 14
StorageClientSettingData for IBM iSeries/pSeries Servers (Linux) 14
StorageClientSettingData for Intel-based Servers (Microsoft Windows NT4) 15
StorageClientSettingData for Intel-based Servers (Novell NetWare) 7
StorageClientSettingData for HP AlphaServer (OpenVMS) 5
StorageClientSettingData for IBM AS/400 (V3R7 to V5R2) 16
StorageClientSettingData for IBM AS/400 (V5R3 or higher) 16
StorageClientSettingData for IBM SAN File System (AIX MDS) 9
StorageClientSettingData for IBM SAN File System (Linux MDS) 14
StorageClientSettingData for IBM SAN Volume Controller 3277 0
StorageClientSettingData for Solaris 2.51 3
StorageClientSettingData for Sun Servers (Solaris 2.6 or higher) 3
StorageClientSettingData for Sun Clustering using MPxIO 3279 0
StorageClientSettingData for HP AlphaServer (Tru64 UNIX) 6
StorageClientSettingData for VMware ESX 3278 0
tpctool>
```

lsmetrics

Use the **lsmetrics** command to list available performance metrics.You must have Fabric operator or Disk operator authority to use this command.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-fabric *WWN*
Specifies the fabric. The *WWN* variable is the worldwide name (WWN).

-subsys *subsystem*
Specifies the storage subsystem. The subsystem variable is the GUID of the storage subsystem. You can use the **lsdev** command to return information, including the GUID, for all storage subsystems that are discovered by Tivoli Storage Productivity Center.

-ctype *comp_type*
Specifies that the output includes only components of the specified type. For more information about the *comp_type* variable, see the **lstype** command.

-level sample | hourly | daily
Specifies the level for which the performance metrics be summarized. You can specify a sample summary, an hourly summary, or a daily summary.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Listing performance metrics

The following command generates a list of performance metrics for switch ports on the specified fabric:

```
tpctool lsmetrics -user me -pwd mypass -url myhost:myport
-fabric 100000051E34F6A8 -ctype switch_port -level sample
```

The following output is returned:

```
Metric                       Value
================================
Port Send Packet Rate        855
Port Receive Packet Rate     856
Total Port Packet Rate       857
Port Send Data Rate          858
Port Receive Data Rate       859
Total Port Data Rate         860
Port Peak Send Data Rate     861
Port Peak Receive Data Rate  862
Port Send Packet Size        869
Port Receive Packet Size     870
Overall Port Packet Size     871
Error Frame Rate             872
Dumped Frame Rate            873
Link Failure Rate            874
```

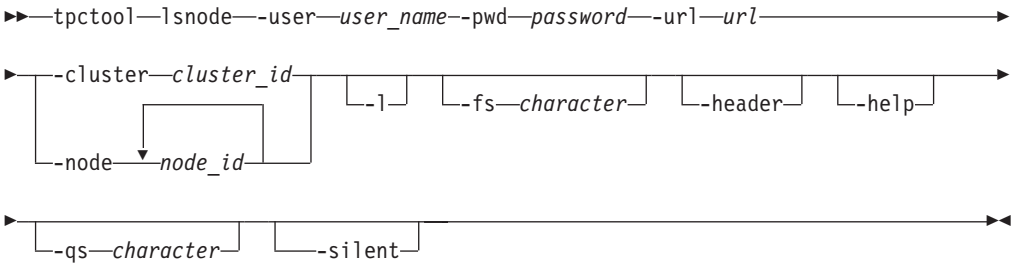
Related reference:

"lstype" on page 97
Use the **lstype** command to list the components that are recognized by Tivoli Storage Productivity Center. No authorization is required to run this command.

lsnode

Use the **lsnode** command to list all nodes or specified nodes that are associated with a cluster that is on a Storwize V7000 Unified or IBM SONAS storage system.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-cluster *cluster_id* | **-node** *node_id...*
Specifies that information is displayed for all nodes that are on a cluster.

For the **-cluster** parameter, specify the ID for the cluster. You can use the **lscluster** command to view information, including the cluster IDs, for all clusters that were discovered.

The **-node** parameter specifies that information is displayed only for specific nodes. You can enter one or multiple node IDs. Use a comma to separate multiple IDs.

-l
Specifies that the following information is listed.

ID An ID for the node that is composed of the node name, cluster name, storage system name, and storage system format.

Node The name of the node.

Description
The description of the node.

IP Address
The IP address for the node.

Role One or more of the following roles: interface, management, or storage.

Cache Gateway Node
Specifies `Yes` or `No` to indicate whether an interface node is enabled to function as a caching gateway node that exchanges data with other systems.

Status One of the following values: NORMAL, CRITICAL, or WARNING.

If you omit this parameter, only the ID is returned.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Listing all nodes that are on a cluster

The following command generates a list of all nodes that are on an IBM SONAS cluster.

```
tpctool> lsnode -cluster tpcsonas3.storage.tucson.ibm.com+127.0.0.1+0 -l
```

The following output is returned:

```
ID
=======================================================
int001st001+tpcsonas3.storage.tucson.ibm.com+127.0.0.1+0
int002st001+tpcsonas3.storage.tucson.ibm.com+127.0.0.1+0
int003st001+tpcsonas3.storage.tucson.ibm.com+127.0.0.1+0
mgmt001st001+tpcsonas3.storage.tucson.ibm.com+127.0.0.1+0
strg001st001+tpcsonas3.storage.tucson.ibm.com+127.0.0.1+0
strg002st001+tpcsonas3.storage.tucson.ibm.com+127.0.0.1+0

Node         Description  IP Address   Role
============================================
int001st001  int001st001  127.0.0.1  interface
int002st001  int002st001  127.0.0.1  interface
int003st001  int003st001  127.0.0.1  interface
mgmt001st001 mgmt001st001 127.0.0.1  interface,management
strg001st001 strg001st001 127.0.0.1 storage
strg002st001 strg002st001 127.0.0.1 storage

Status        Cache Gateway Node
================================
NORMAL            Yes
NORMAL            Yes
NORMAL            No
NORMAL            No
NORMAL            No
NORMAL            No
```

Related reference:

"lscluster" on page 53
Use the **lscluster** command to list all clusters or specified clusters that are on a Storwize V7000 Unified or IBM SONAS storage system.

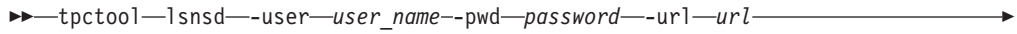
Related information:

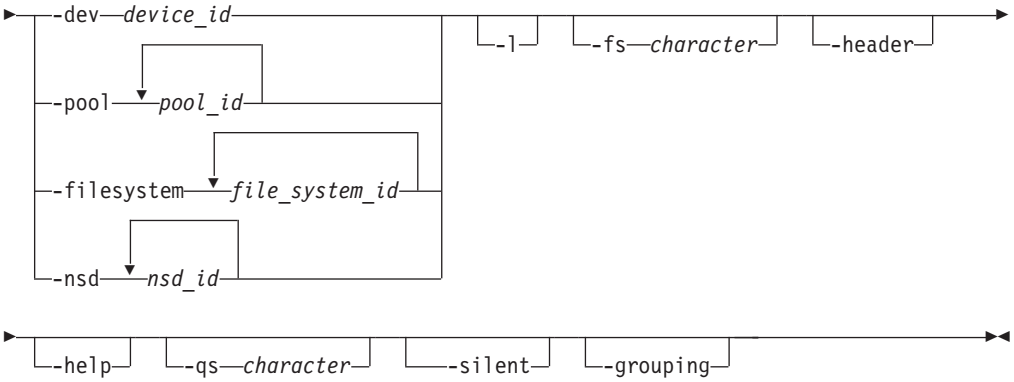
http://publib.boulder.ibm.com/infocenter/sonasic/sonas1ic/index.jsp
More information about command parameters is available at the IBM SONAS Information Center.

lsnsd

Use the **lsnsd** command to list all Network Shared Disks (NSDs) or specified NSDs that are on a Storwize V7000 Unified or IBM SONAS storage system. You can also list NSDs by file system, pool, or both.

Syntax





Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-dev *dev_id* | **-pool** *pool_id...* | **-filesystem** *file_system_id...* | **-nsd** *nsd_id...*
The **-dev** parameter specifies that information is displayed for all NSDs that are associated with a storage system. This parameter requires the globally unique identifier (GUID) of the storage system. You can use the **lsdev** command to return information, including the GUID, for all storage systems that were discovered.

The **-pool** parameter specifies that information is displayed only for NSDs that are associated with specific pools. You can enter one or multiple pool IDs. Use a comma to separate multiple IDs. You can use the **lspool** command to return information, including the pool IDs, for all pools that were discovered.

The **-filesystem** parameter specifies that information is displayed only for NSDs that are associated with specific file systems. You can enter one or multiple file system IDs. Use a comma to separate multiple IDs. You can use the **lsfs** command to return information, including the file system IDs, for all file systems that were discovered.

The **-nsd** parameter specifies that information is displayed only for specific NSDs. You can enter one or multiple NSD IDs. Use a comma to separate multiple IDs.

-l
Specifies that the following information is listed.

ID The ID for the NSD that is composed of the NSD name, storage system name, and storage system format.

NSD NSD: The name of the NSD.

Cluster ID
The ID for the cluster that is associated with the NSD as defined by the Storwize V7000 Unified file module or IBM SONAS.

Failover Group
The failure group that the NSD belongs to.

Type One or more of the following types: dataAndMetadata, dataOnly, metadataOnly.

Pool The pool that the NSD is associated with.

Status One of the following values: NORMAL, CRITICAL, WARNING, or UNREACHABLE.

Disk Space (GB)
The total disk space for the NSD.

Available Space (GB)
The amount of unused disk space for the NSD.

File System
The file system that the NSD is associated with.

If you omit this parameter, only the ID is returned.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

-grouping
Enables the grouping of numeric values. For example, in English, the value 12000 displays as 12,000. The grouping character is determined by the system locale.

Example: List all NSDs that are on a storage system

The following command generates a list of all NSDs that are on a Storwize V7000 Unified storage system.

```
tpctool> lsnsd -dev 00000200A0E0005C+0 -l
```

The following output is returned:

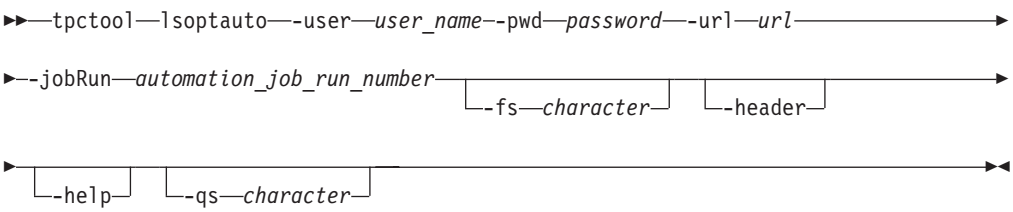
```
ID                                                    NSD
=============================================================================================
array0_sas_60001ff07996c0089b00000+00000200A0E0005C+0 array0_sas_60001ff07996c0089b00000
array0_sas_60001ff07996c0289b20002+00000200A0E0005C+0 array0_sas_60001ff07996c0289b20002
array1_sas_60001ff07996c0389b30003+00000200A0E0005C+0 array1_sas_60001ff07996c0389b30003
array1_sas_60001ff07996c0189b10001+00000200A0E0005C+0 array1_sas_60001ff07996c0189b10001
array0_sas_60001ff07996c0489b40004+00000200A0E0005C+0 array0_sas_60001ff07996c0489b40004
```

```
Cluster ID            Failover Group Type             Pool   Status
=================================================================
12402779238946656959  1               dataAndMetadata system NORMAL
12402779238946656959  1               dataAndMetadata system NORMAL
12402779238946656959  4005            dataAndMetadata system NORMAL
12402779238946656959  1               dataAndMetadata system NORMAL
12402779238946656959  4002            dataAndMetadata system NORMAL

Disk Space (GB) Available Space (GB) File System
================================================
      4280                    3144  gpfs0
      4280                 4278.46  gpfs1
      4280                 4278.46  ma_19037
      4280                  4128.4  testadd
      4280                    4280  testadd
```

lsoptauto

Use the **lsoptauto** command to display the status of the recommendations that were submitted by the **runoptauto** command.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-jobRun *automation_job_run_number*
Specifies the number of the automation job that was generated by the **runoptauto** command.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

Example: Listing the status of the recommendations for an optimization automation job

The following command displays the status of the recommendations for an automation job that is generated by the **runoptauto** command.

```
tpctool> lsoptauto -user admin -pwd password -url localhost:9550 -jobRun 38005
```

The following output is returned:

```
Recommendation Id Status      Volume From Pool To Pool Progress Time to Complete
================================================================================
134002            SUCCESSFUL  vol1   pool1     pool2   100%      -
134003            SUCCESSFUL  vol2   pool2     pool1   100%      -
```

Related reference:

"runoptauto" on page 152
Use the **runoptauto** command to submit an optimization automation job to implement the actions that are recommended by an optimization analysis job. You can view the results of the runoptauto command by using the **lsoptauto** command.

lsoptschedules

Use the **lsoptschedules** command to show a list of the schedules that you created to analyze storage tiering.

In the web GUI, you use the Analyze Tiering wizard to specify criteria for analyzing storage tiering. On the Optimization Analysis page, you can create schedules that are based on the criteria that you specified in the Analyze Tiering wizard.

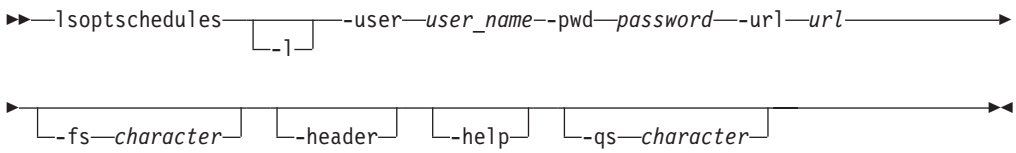
When you issue the **lsoptschedules** command, the following information is shown:

Schedule ID
Specifies the ID of the schedule.

Schedule Name
Specifies the name of the schedule.

Most Recent Job ID
Specifies the current or most recent job ID.

Syntax



Parameters and arguments

-l

Specifies that the following additional information is listed.

Most Recent Start Time
The last time that the schedule was run.

Next Start Time
The next time that the schedule is run.

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

Example: Showing a list of the analyze tiering schedules

Issue the following command to show a list of the schedules that were created to analyze tiering:

```
tpctool> lsoptschedules -l
```

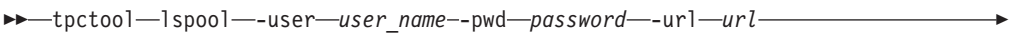
The following output is returned:

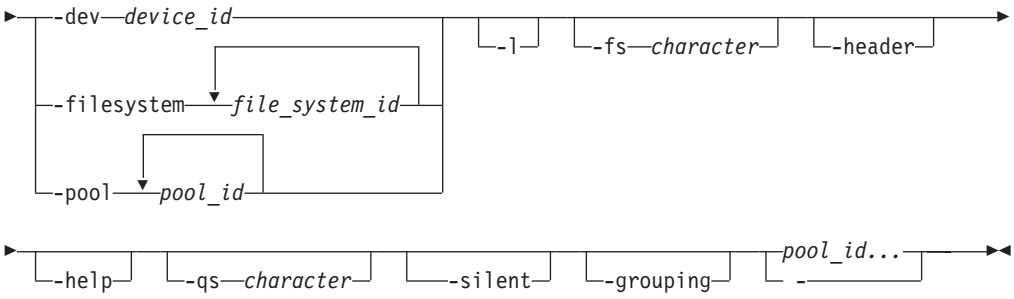
```
Schedule ID Schedule Name    Most Recent Job ID
=============================================
1244        opt1357942625952 10002
459011      op61354          8038

Most Recent Start Time Next Start Time
======================================
2013.01.11:15:11:05    2013.02.11:17:00:30
2013.01.12:07:33:12    NA
```

lspool

Use the **lspool** command to list all file system pools that are on a specified Storwize V7000 Unified or IBM SONAS storage system. You can also list the pools by file system.

Syntax





Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-dev *dev_id* | **-filesystem** *file_system_id...* | **-pool** *pool_id...*
The **-dev** parameter specifies that information is displayed for all pools that are associated with a storage system. This parameter requires the globally unique identifier (GUID) of the storage system. You can use the **lsdev** command to return information, including the GUID, for all storage systems that were discovered.

The **-filesystem** parameter specifies that information is displayed only for pools that are associated with specific file systems. You can enter one or multiple file system IDs. Use a comma to separate multiple IDs. You can use the **lsfs** command to return information, including the file system IDs, for all file systems that were discovered.

The **-pool** parameter specifies that information is displayed only for specific pools. You can enter one or multiple pool IDs. Use a comma to separate multiple IDs.

-l
Specifies that the following information is listed.

ID An ID for the pool that is composed of the pool name, storage system name, and storage system format.

Pool The name of the pool.

Capacity (GB)
The capacity of the pool.

Available Space (GB)
The amount of unused space that is in the pool.

If you omit this parameter, only the ID is returned.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

-grouping
Enables the grouping of numeric values. For example, in English, the value 12000 displays as 12,000. The grouping character is determined by the system locale.

Example: List all file system pools that are on a storage system

The following command generates a list of all file system pools that are on a Storwize V7000 Unified storage system.

```
tpctool> lspool -dev 00000200A0E0005C+0 -l
```

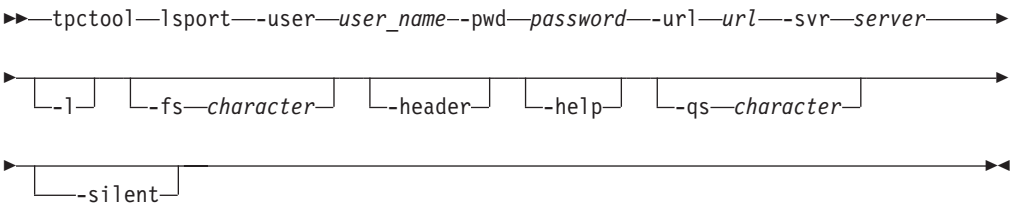
The following output is returned:

```
ID                          Pool   Capacity (GB) Available Space (GB)
=================================================================
system+00000200A0E0005C+0 system        21400              20109.43
```

lsport

Use the **lsport** command to list the ports that are on a Fibre Channel host bus adapter (HBA).

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-svr *server*
Specifies a system with a fibre-channel HBA. The *server* variable is the host name of the system.

-l
Specifies that the long version of the information is listed.

- Worldwide port name (WWPN)
- Name
- Status

If you omit this parameter, only the WWPN is returned.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Listing port information

The following command lists the long version of information about the ports that are associated with the Fibre Channel HBA.

```
tpctool> lsport -user me -pwd mypass -url myhost:myport -svr <server> -l
```

The following output is returned:

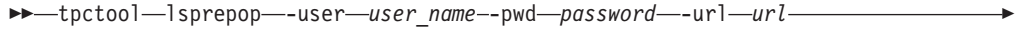
```
WWPN             Name       Status
==================================
210000E08B1Co9E  Marketing  Active
```

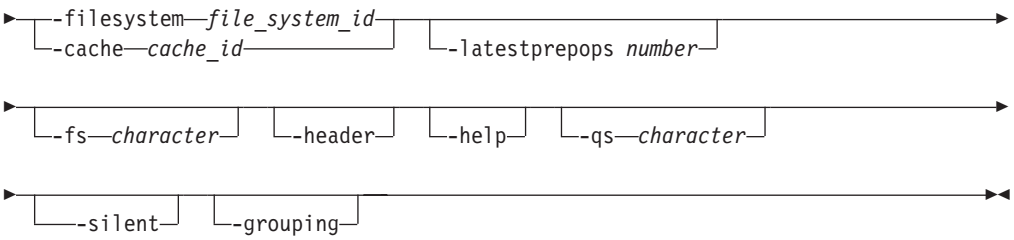
lsprepop

Use the **lsprepop** command to display the status of a prepopulation operation on a wide area network (WAN) cache system on the IBM SONAS storage system. You must have Monitor authority to use this command.

You can use the **runprepop** command to cache files in batch mode so that they are already cached when they are accessed by an application. This action can reduce network delays when the application starts.

Syntax





Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-filesystem *file_system_id* | **-cache** *cache_id*
The **-filesystem** parameter specifies that information is displayed only for a specific file system. This parameter requires the ID for the file system. You can use the **lsfs** command to return information, including the file system IDs, for all file systems that were discovered.

The **-cache** parameter specifies that information is displayed only for a specific cache system.

-latestprepops *number*
Specifies the number of recent prepopulation operations to display. The minimum value is 1.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

-grouping
Enables the grouping of numeric values. For example, in English, the value 12000 displays as 12,000. The grouping character is determined by the system locale.

Example: List the running and completed prepopulation tasks for a cache system

The following command lists the tasks to prepopulate data on the cache system:

```
 tpctool> lsprepop -filesystem TPC_511+tpcsonas1.storage.tucson.ibm.com+
tpcsonas1.storage.tucson.ibm.com+0 -latestprepops 1
```

The following output is returned:

```
Cache ID
=========================================================
adriandwcache3+TPC_511+tpcsonas1.storage.tucson.ibm.com+
tpcsonas1.storage.tucson.ibm.com+0


Status        Last Update            Message
==========================================
FINISHED     "2012-07-25 14.39.47"  FINISHED
```

Related reference:

"runprepop" on page 155
Use the **runprepop** command to cache all the data in a home file set in a wide area network (WAN) to the cache file set. You can use the prepopulation function to cache files in batch mode so that they are already cached when they are accessed by an application. You must have Monitor authority to use this command.

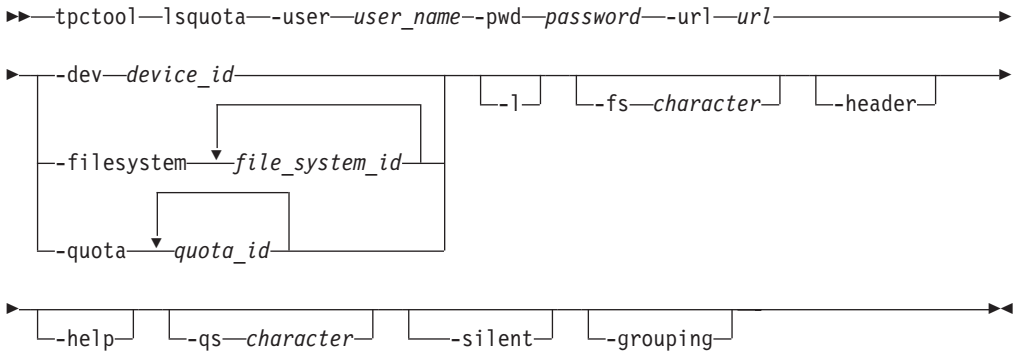
Related information:

http://publib.boulder.ibm.com/infocenter/sonasic/sonas1ic/index.jsp
More information about command parameters is available at the IBM SONAS Information Center.

lsquota

Use the **lsquota** command to list all quotas or specified quotas that are on a Storwize V7000 Unified or IBM SONAS storage system. You can also list quotas by file system.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-dev *dev_id* | **-filesystem** *file_system_id...* | **-quota** *quota_id...*
The **-dev** parameter specifies that information is displayed for all quotas that are associated with a storage system. This parameter requires the globally unique identifier (GUID) of the storage system. You can use the **lsdev** command to return information, including the GUID, for all storage systems that were discovered.

The **-filesystem** parameter specifies that information is displayed only for quotas that are associated with specific file systems. You can enter one or multiple file system IDs. Use a comma to separate multiple IDs. You can use the **lsfs** command to return information, including the file system IDs, for all file systems that were discovered.

The **-quota** parameter specifies that information is displayed only for specific quotas. You can enter one or multiple quota IDs. Use a comma to separate multiple IDs.

-l
Specifies that the following information is listed.

ID The identifier for the quota.

Name The name of the user, group, or file set that the quota is associated with.

File System
The file system that the quota is associated with.

Type The type of quota can be one of the following values: user, file set, or group.

SL Usage (GB)
The soft limit for storage space usage.

HL Usage (GB)
The hard limit for storage space usage.

Used Space (GB)
The amount of used storage space.

SL I-Nodes
The soft limit for inode usage.

HL I-Nodes
The hard limit for inode usage.

Used I-Nodes
The number of used inodes.

Gracetime Usage (sec.)
The time frame in which storage space usage must be brought below the quota.

Gracetime I-Nodes (sec.)
The time frame in which inode usage must be brought below the quota.

In Doubt (KB)
The amount of data for which the quota was not updated.

If you omit this parameter, only the ID is returned.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

-grouping
Enables the grouping of numeric values. For example, in English, the value 12000 displays as 12,000. The grouping character is determined by the system locale.

Example: Displaying a list of all quotas that are on a storage system.

The following command generates a list of all quotas on a Storwize V7000 Unified storage system:

```
tpctool> lsquota -dev  00000200A0E0005C+0 -l
```

The following output is returned:

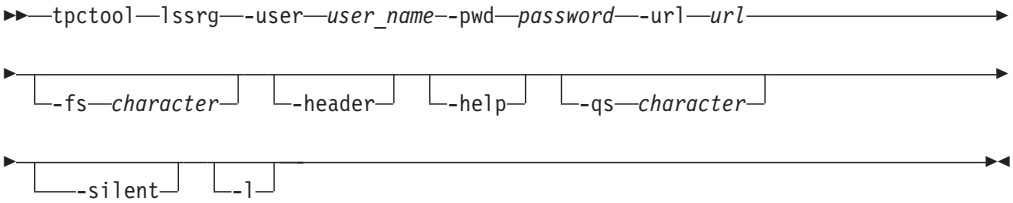
```
ID                                                  Name
============================================================
4572_U_10000000+00000200A0E0005C+0           10000000
4572_F_Adrian+00000200A0E0005C+0             Adrian
4578_U_SRM\administrator+00000200A0E0005C+0  SRM\administrator
4574_U_SRM\administrator+00000200A0E0005C+0  SRM\administrator
4572_U_SRM\administrator+00000200A0E0005C+0  SRM\administrator
File System  Type    SL Usage (GB) HL Usage (GB) Used Space (GB)
================================================================
gpfs0      user               0             0               0
gpfs0      fileset            0             0               0
testadd    user               0             0               0
gpfs1      user               0             0            0.02
gpfs0      user               0             0       579654.05
SL I-Nodes HL I-Nodes Used I-Nodes
==================================
  0          0            1
  0          0            1
512        512            0
  0          0            4
  0          0       533268
Gracetime Usage (sec.) Gracetime I-Nodes (sec.) In Doubt
=========================================================
                     0                         0        0
                     0                         0        0
```

```
0                    0       0
0                    0       0
0                    0       0
```

lssrg

Use the **lssrg** command to display a list of storage resource groups that are known to Tivoli Storage Productivity Center.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

-l
Specifies that the long version of the information is listed, which includes the following information:

- Description
- User Defined Property 1
- User Defined Property 2
- User Defined Property 3

If this parameter is not issued, only the group name is returned.

Example: Displaying a list of storage resource groups

The following command generates a list of storage resource groups that are known to Tivoli Storage Productivity Center.

```
tpctool>lssrg -l
```

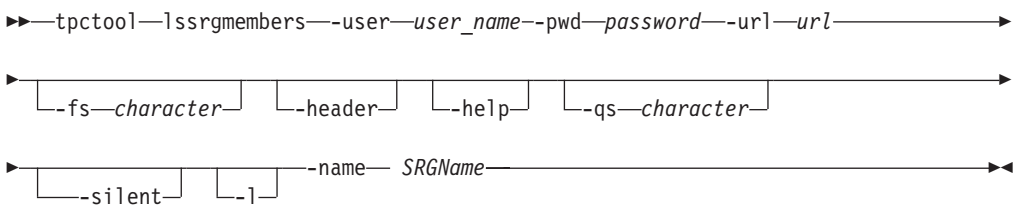
The following output is returned:

```
Name                          Description   UDP1   UDP2   UDP3
================================================================
administrator.my-example-srg
```

lssrgmembers

Use the **lssrgmembers** command to list of members of a specified storage resource group.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

-l
Specifies that long version of the information is listed. This includes the following information.

- User Defined Property 1
- User Defined Property 2
- User Defined Property 3

If this parameter is not issued, only the host name is returned.

-name *SRGname*
The unique name of a storage resource group. The output includes the following information.

- Member Key
- Member Type

Example: Displaying a list of the members of a storage resource group

The following command generates a list of the members of a specified storage resource group.

```
tpctool> lssrgmembers -name administrator.my-example-srg
```

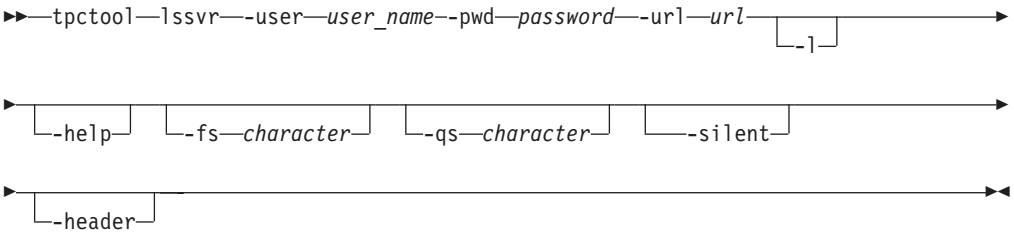
The following output is returned.

```
Member Key            Member Type
======================================
1000080088E32D2D      Switch
100000051E0405C5      Switch
2107-1300361+0        Subsystem
```

lssvr

Use the **lssvr** command to list all systems that are discovered by Fabric Manager. You must have Fabric Administrator authority to use this command.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-l
Specifies that the long version of the information is listed. The following information is included.

- Host name
- Operating system
- IP address
- Status
- Key - a combination of the GUID, the host name, and the IP address

If this parameter is not issued, only the host name is returned.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Listing long version of the information for all systems discovered by Fabric Manager

The following commands list the long version of the information for all systems that are discovered by Fabric Manager.

```
tpctool
tpctool> lssvr -l
```

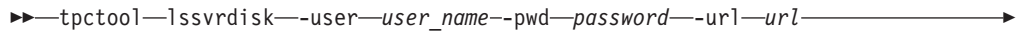
The following output is returned:

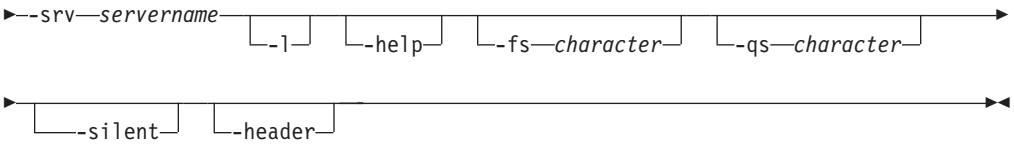
```
Name        OS        IP             Status
=========================================
Marketing   Windows   9.32.245.164   NORMAL

Key
=========================================================
bfcf0e0192a111dc9ac60011258d9a29+tb142-wi+9.47.97.149+++
```

lssvrdisk

Use the **lssvrdisk** command to list all of the physical disks that are known to a specified server.

Syntax





Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-svr *server_name*
Specifies the key of a server that has a Tivoli Storage Productivity Center agent that is deployed to it. Use the **lssvr -l** command to retrieve a list of servers and the associated keys.

-l
Specifies that long version of the information is listed. The following information is included.

- Key - a combination of the GUID, the host name, and the IP address
- Driver
- Vendor
- Model
- Serial Number
- Capacity
- Path

If this parameter is not issued, only the host name is returned.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Listing long information for all physical disks known to a specified server

The following commands list long information for all physical disks that are known to a specified server.

```
tpctool
tpctool> lssvrdisk -svr bfcf0e0192a111dc9ac60011258d9a29+tb142-wi.beaverton.
ibm.com+9.47.97.149+++ -l
```

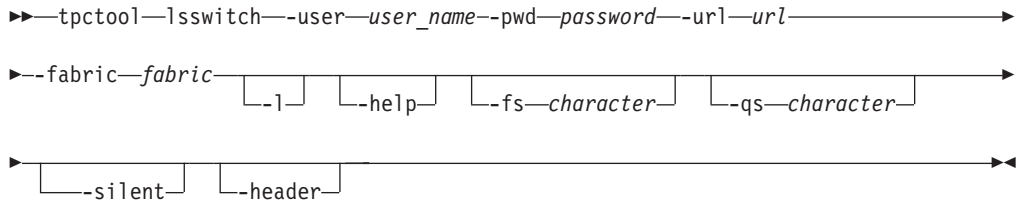
The following output is returned:

```
Key                  Driver                                Vendor   Model
=============================================================================
3HX30J0X000075154506 Adaptec AIC-7902B - Ultra320 SCSI IBM-ESXS ST336753LC FN

Serial Number        Capacity    Path
======================================
3HX30J0X000075154506 36401479680 Disk 0
```

lsswitch

Use the **lsswitch** command to display a list of all switches in a specified fabric.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

-fabric *fabric*
Specifies the WWN of the fabric that is associated with the switches. Use the **lsdev -l** command to see a list of available fabrics.

-l
Specifies that the long version of the information is listed. The following information is included.

- WWN
- Label
- Type
- Vendor
- Model
- Status

If this parameter is not issued, only the host name is returned.

Example: Listing long information for all switches on a specified fabric

The following command lists long information for all switches in the specified fabric:

```
tpctool
tpctool> lsswitch -fabric 10000800880476F0 -l
```

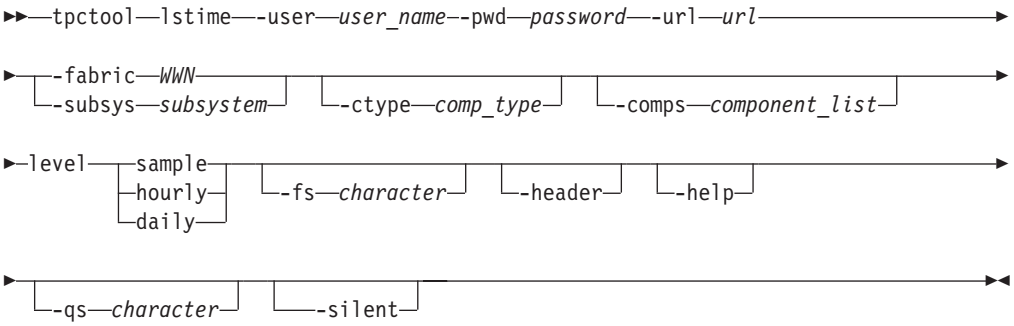
The following output is returned:

```
WWN              Label    Type     Vendor  Model Status
============================================================
100000051E34AEE1 tb500_sw Physical Unknown 26.2  UNREACHABLE
```

lstime

Use the **lstime** command to list the time ranges for which performance data is available.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-fabric *WWN*
Specifies the fabric. The *WWN* variable is the worldwide name (WWN).

-subsys *subsystem*
Specifies the storage subsystem. The subsystem variable is the GUID of the storage subsystem. You can use the **lsdev** command to return information, including the GUID, for all storage subsystems that are discovered by Tivoli Storage Productivity Center.

-level sample | hourly | daily
Specifies the level for which the time ranges for performance data that is available is to be summarized. You can specify a sample summary, an hourly summary, or a daily summary.

-ctype *comp_type*
Specifies that the output include only components of the specified type. For more information about the *comp_type* variable, see the **lstype** command.

-comps *component_list*
Specifies the component list. The *component_list* variable specifies the components, such as those that are returned by **lscomp**.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Displaying a list of time ranges

The following command generates a list of time ranges for performance data.

```
tpctool> lstime -user me -pwd mypass -url myhost:myport
-fabric 100000051E34F6A8 -ctype switch_port -level sample
```

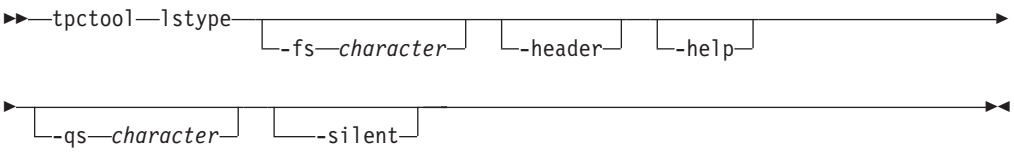
Related reference:

"lstype"
Use the **lstype** command to list the components that are recognized by Tivoli Storage Productivity Center. No authorization is required to run this command.

lstype

Use the **lstype** command to list the components that are recognized by Tivoli Storage Productivity Center. No authorization is required to run this command.

Syntax



Parameters and arguments

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Listing all component types

The following command lists the component types that are recognized by Tivoli Storage Productivity Center:

```
tpctool> lstype
```

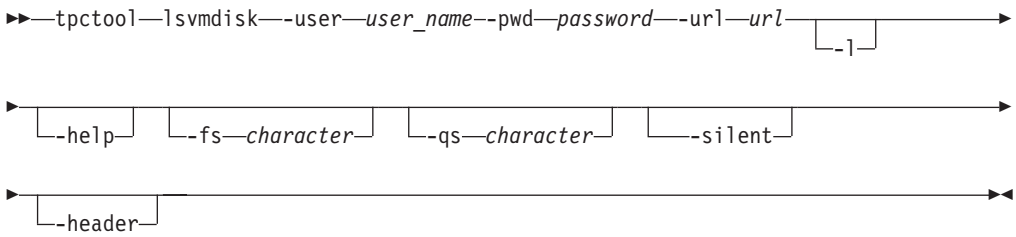
The following output is returned:

```
Name        Type
================
all         -1
unknown     0
subsystem   1
subsys_port 2
controller  3
stor_pool   4
svc_iogrp   5
ds_rio      6
svc_mdgrp   7
da          8
ds_rank     9
array       10
svc_mdisk   11
vol         12
switch      13
switch_port 14
```

lsvmdisk

Use the **lsvmdisk** command to list all the VMWare virtual machine disks that are known to the given virtual machine or hypervisor.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-svr *servername*
Specifies a server key that represents either a virtual machine or hypervisor. Server keys can be obtained by using the **lssvr -l** command.

-l
Specifies that the long version of the information is listed. If this parameter is not issued, only the host name is returned.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

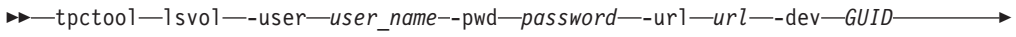
-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

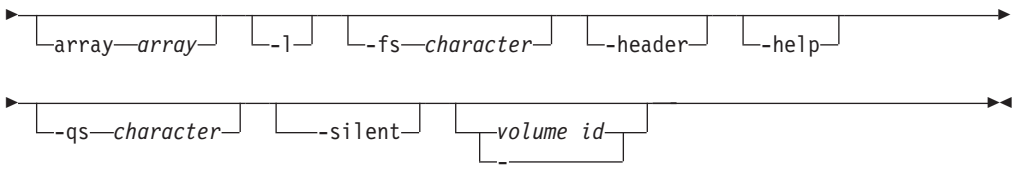
-silent
Suppresses all output for the command. If you omit this parameter, output is included.

lsvol

Use the **lsvol** command to list all volumes on a system, list a specific volume or volumes, or list volumes on a specific array.

Syntax





Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-dev *GUID*
Specifies the storage subsystem. The *GUID* variable is the globally unique identifier (GUID).

array *array*
Specifies the array. The *array* variable is the array ID. You can use the **lsarray** command to return information, including array IDs, about the arrays on a specific storage subsystem.

-l Specifies that long information is listed. In addition to the volume ID, the volume size and FlashCopy® relationship information are also listed.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

volume id | -
Specifies the volumes. The *volume_ID* variable is a comma-separated list of volume IDs, such as that obtained by running the **lsvol** command. If a single dash (-) is issued, the volume IDs are read from standard input.

Example: Listing the volumes on a subsystem

The following commands list all volumes on a specified subsystem. The **-dev** parameter specifies your system. More information for the volumes can be displayed as specified with the **-l** parameter.

```
tpctool> lsvol -user me -pwd mypass -url myhost:9550 -dev 2107.75DG000+0 -l
```

The following output is returned:

```
ID                                    Label
Size  Format FlashCopy RealUsed Encrypted
============================================================
IBM.2107-75DG000-111e+1+2107.75DG000+0 Sample_Vol_111E (ID:111e)
100   FB     NONE         100    No
IBM.2107-75DG000-111d+1+2107.75DG000+0 Sample_Vol_111D (ID:111d)
100   FB     NONE         100    No
IBM.2107-75DG000-111c+1+2107.75DG000+0 Sample_Vol_111C (ID:111c)
100   FB     NONE         100    No
```

FlashCopy

Indicates if the volume is in a FlashCopy relationship and whether it is a FlashCopy source or target. Volumes that are not in a FlashCopy relationship are displayed with a None value whether or not the volume is on a system that supports FlashCopy.

Note:

- This value is available for volumes of the following systems only: IBM TotalStorage Enterprise Storage Server® (ESS), IBM System Storage DS6000, IBM System Storage DS8000, and IBM System Storage SAN Volume Controller.
- TotalStorage Enterprise Storage Server systems must have at least the following microcode levels: ess800mincodelevel = 2.4.3.56, essf20mincodelevel = 2.3.3.89. Tivoli Storage Productivity Center does not report FlashCopy information if the TotalStorage Enterprise Storage Server systems do not meet this requirement.

Real Used

Indicates the amount of space, in gigabytes, that a volume uses. Tivoli Storage Productivity Center allocates the entire space for regular volumes when they are created. For thin-provisioned volumes, it does not. This column displays the space that is being used.

Note:

- If a system is new and there is no data in the volumes, the value is zero. For example, the Size field might show 16 GB but the Real Used is 0.
- For non-thin provisioned volumes, the Real Used value always matches the Size value.
- Thin provisioned volumes always have an asterisk before their name (Label).
- Thin provisioned volumes of other storage systems are not supported by Tivoli Storage Productivity Center. The Real Used value is displayed as N/A.

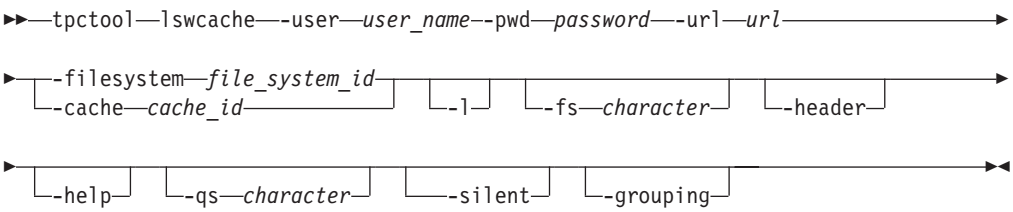
Encrypted

Indicates if the volumes are on encrypted disks (Yes or No).

lswcache

Use the **lswcache** command to list the wide area network (WAN) caching file sets in the cache system on an IBM SONAS storage system. You must have Monitor authority to use this command.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-filesystem *file_system_id* | **-cache** *cache_id*
The **-filesystem** parameter specifies the ID of the file system where the cache file set is defined. This parameter requires the ID for the file system. You can use the **lsfs** command to return information, including the file system IDs, for all file systems that are discovered.

The **-cache** parameter specifies that information is displayed only for specific file sets. You can enter one or multiple file set IDs. Use a comma to separate multiple IDs.

-l
Specifies that information is listed. This parameter includes the following information:

ID An ID for the cache that is composed of the cache name, file system name, cluster name, storage subsystem name, and storage subsystem format.

Name The name of the cache file set.

Path The path of the new cache file set.

Status The status of the file set, which can be either: linked or unlinked.

Creation Time
The time that the new cache file set was created.

Comment
The comment for the new cache.

Remote Path
The IP address of the home system, which is followed by the path of the WAN cache source.

Mode The operating mode for the cache system, such as read-only, local-updates, and single-writer.

Async Delay
The time interval, in seconds, between a write at the cache file set and the corresponding update at the home file set.

File Open Refresh Interval
The time interval in seconds between the file open actions for revalidation with the home system.

File Lookup Refresh Interval
The time interval in seconds between the file query actions for revalidation with the home system.

Dir Open Refresh Interval
The time interval in seconds between the directory open actions for revalidation with the home system.

Dir Lookup Refresh Interval
The time interval in seconds between the directory query actions for revalidation with the home system.

Expiration
The time interval in seconds after which files or directories in the cache system expire when in disconnected mode.

Max I-Nodes
The maximum number of inodes that can be allocated to the file set that were created for the WAN cache. An inode is the internal structure that describes the individual files in the file system metadata. An inode contains the node, type, owner, and location of a file.

Used I-Nodes
The number of used inodes in the cache file set.

If you omit this parameter, only the ID is returned.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

-grouping
Enables the grouping of numeric values. For example, in English, the value 12000 is displayed as 12,000. The grouping character is determined by the system locale.

Example: List the WAN caching file sets in the cache system

The following command lists the WAN caching file sets in the cache cluster on an IBM SONAS storage system:

```
tpctool> lswcache -filesystem
gpfs0+tpcsonas3.storage.tucson.ibm.com+tpcsonas3a.storage.tucson.ibm.com+0 -l
```

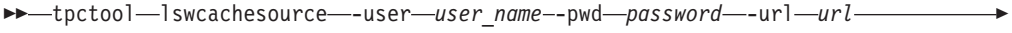
The following output is returned:

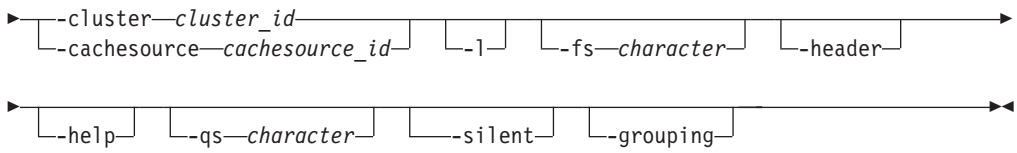
```
ID
================================================================================
afs_c+gpfs0+tpcsonas3.storage.tucson.ibm.com+tpcsonas3a.storage.tucson.ibm.com+0
afs_c_lu+gpfs0+tpcsonas3.storage.tucson.ibm.com+tpcsonas3a.storage.tucson.ibm.com+0
afs_c_ro+gpfs0+tpcsonas3.storage.tucson.ibm.com+tpcsonas3a.storage.tucson.ibm.com+0

Name           Path                        Status
=============================================
afs_c          /ibm/gpfs0/afs_c            linked
afs_c_lu       /ibm/gpfs0/afs_c_lu         linked
afs_c_ro       /ibm/gpfs0/afs_c_ro         linked

Creation Time           Comment
================================
2012-05-25 11:49:43.0     -
2012-05-25 12:00:44.0     -
2012-05-25 11:56:33.0     -

Remote Path                                      Mode
=================================================
127.0.0.1:/ibm/gpfs0/afs_h               single-writer
127.0.0.1:/ibm/gpfs0/afs_h               local-updates
127.0.0.1:/ibm/gpfs0/afs_h               read-only

Async Delay   File Open Refresh Interval   File Lookup Refresh Interval
=========================================================================
15                          30                          30
15                          30                          30
15                          30                          30

Dir Open Refresh Interval     Dir Lookup Refresh Interval       Expiration
=============================================================================
60                                    60                         -1
60                                    60                         -1
60                                    60                         -1

Max I-Nodes     Used I-Nodes
============================
100352               2
100352               2
100352               2
```

lswcachesource

Use the **lswcachesource** command to list information about home systems that are configured on an IBM SONAS system. The home system is the source of the data in a wide area network (WAN) cache configuration. You can use WAN caching to distribute data transparently among data centers and multiple remote locations without disruption to applications. You must have Monitor authority to use this command.

Syntax





Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-cluster *cluster_id* | **-cachesource** *cachesource_id*
Specifies that output is returned for the cluster or the home system.

When you specify the **-cluster** parameter, you must specify the ID of the file system. Use this parameter to view all of the home systems that are defined for the specified cluster. You can use the **lscluster** command to obtain the cluster IDs for all the clusters that are discovered

When you specify the **-cachesource** parameter, you must specify the ID of the home system. Use this parameter to view all of the information for a specific home system.

-l
Specifies that the following information is returne.:

ID An ID for the home system that is composed of the home system name, cluster name, storage subsystem name, and storage subsystem format.

Name The name of the home system.

Path The path of the home system.

Access Mode
The access mode of the cache system on the home system, which can be either `ro` (read-only) or `rw` (read/write).

Is Cached
Data on the home system is cached (`Yes`) on the cache system or not cached (`No`).

Client Name
The remote cache systems that have access to the home system.

Client ID
The cluster ID of the cache system.

If you omit this parameter, only the ID is returned.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Listing the home systems that are configured for WAN caching on a cluster

The following command lists the home systems that are configured for WAN caching on a specified cluster on an IBM SONAS system:

```
tpctool> lswcachesource -cluster
tpcsonas1.storage.tucson.ibm.com+127.0.0.1 -l
```

The following output is returned:

```
ID
=====================================================
adialert+tpcsonas1.storage.tucson.ibm.com+127.0.0.1+0
adialert+tpcsonas1.storage.tucson.ibm.com+127.0.0.1+0
adirerun+tpcsonas1.storage.tucson.ibm.com+127.0.0.1+0
adriand10+tpcsonas1.storage.tucson.ibm.com+127.0.0.1+0
Name             Path                          Access Mode    Is Cached
=========================================================================
adialert         /ibm/TPC_511/adriand15            rw          No
adialert         /ibm/TPC_511/adriand15            ro          No
adirerun         /ibm/TPC_511/adirerun             rw          No
adriand10        /ibm/TPC_511/adriand10            rw          Yes
Client Name                              Client ID
=====================================================
tpcsonas3.storage.tucson.ibm.com    792217924649065549
tpcsonas2.storage.tucson.ibm.com    792217928935825358
tpcsonas3.storage.tucson.ibm.com    792217924649065549
tpcsonas3.storage.tucson.ibm.com    792217924649065549
```

Example: Listing information about a specified home system that is configured for WAN caching on a cluster

The following command lists information about a specified home system that is configured for WAN caching on an IBM SONAS system cluster.

```
tpctool> lswcachesource -cachesource
eesrc300+tpcsonas3.storage.tucson.ibm.com+127.0.0.1 -l
```

The following output is returned:

```
ID
=====================================================
eesrc300+tpcsonas3.storage.tucson.ibm.com+127.0.0.1+0
Name        Path                Access Mode    Is Cached
=====================================================
eesrc300    /ibm/gpfs0/eefset100      ro          Yes
```

```
Client Name                              Client ID
==================================================
tpcsonas1.storage.tucson.ibm.com   792217928950257960
```

Related reference:

"lscluster" on page 53
Use the **lscluster** command to list all clusters or specified clusters that are on a Storwize V7000 Unified or IBM SONAS storage system.

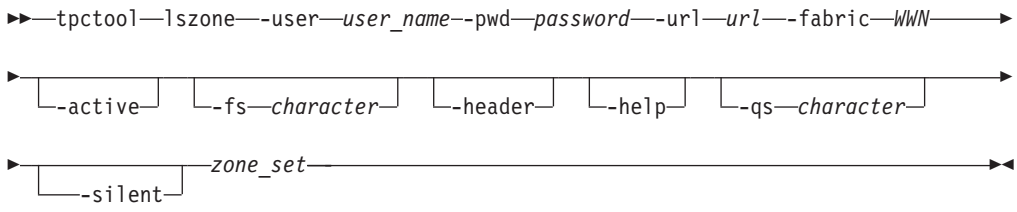
Related information:

http://publib.boulder.ibm.com/infocenter/sonasic/sonas1ic/index.jsp
More information about command parameters is available at the IBM SONAS Information Center.

lszone

Use the **lszone** command to list the zones in a zone set.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-fabric *WWN*
Specifies the fabric. The *WWN* variable is the worldwide name (WWN).

-active
Specifies that only the active zones are listed. If this option is not issued, all zones are listed.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in

the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

zone_set
Specifies the zone set. The *zone_set* variable is the name of the zone set.

Example: Listing all zones

The following command lists the names of all zones in the PARIS zone set:

```
tpctool> lszone -user me -pwd mypass -url myhost:myport
-fabric 100000051E34F6A8 PARIS
```

The following output is returned:

```
Name
==========
WINDOWSNT
SUNSOLARIS
TEST
...
```

Example: Listing only the active zones

The following command lists the active zones:

```
tpctool> lszone -user me -pwd mypass -url myhost:myport
-fabric 100000051E34F6A8 -active PARIS
```

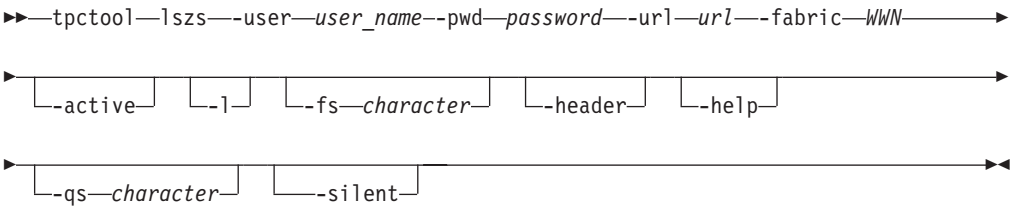
The following output is returned:

```
Name
==========
SUNSOLARIS
```

lszs

Use the **lszs** command to list information about zone sets. This information includes the zone set name and status.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-fabric *WWN*
Specifies the fabric. The *WWN* variable is the worldwide name (WWN).

-active
Specifies that only information about the active zone set is listed. If you omit this option, information about all zone sets is listed.

-l Specifies that the long version of the information is listed:

- Name
- Status: active or inactive

If you omit this option, only the name of the zone is listed.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Listing the long version of information for all zone sets

The following command lists the long version of information for all zone sets:

```
tpctool> lszs -user me -pwd mypass -url myhost:myport
-fabric 100000051E34F6A8 -l
```

The following output is returned:

```
Name     Status
=================
PARIS    ACTIVE
LONDON   INACTIVE
```

Example: Listing the active zone set

The following command lists the name of the active zone set:

```
tpctool> lszs -user me -pwd mypass -url myhost:myport
-fabric 100000051E34F6A8 -active
```

The following output is returned:

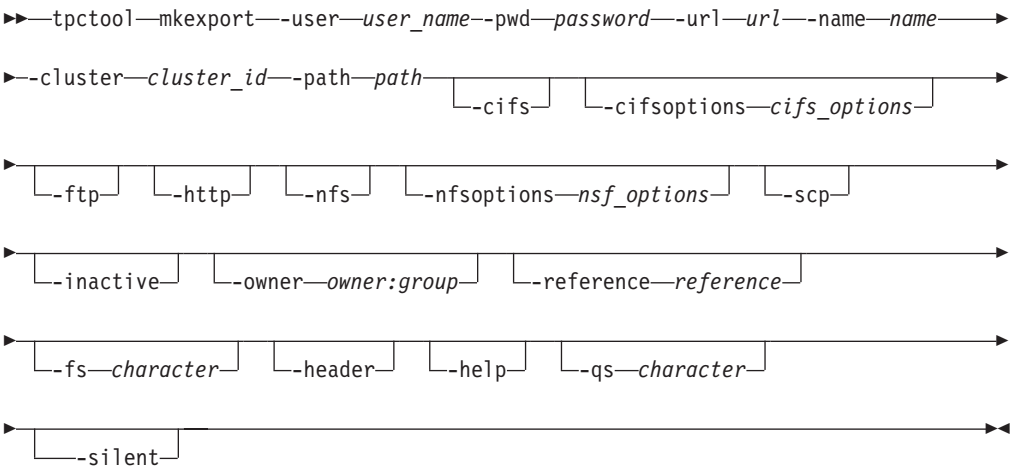
```
Name
=====
PARIS
```

mkexport

Use the **mkexport** command to create an export to access data through a data transfer protocol.

An *export* is a shared disk space that is accessible through the protocols that you specify when you run the **mkexport** command. You can create exports and enable them for HTTP, FTP, Secure Copy Protocol (SCP), Network File System (NFS), and Common Internet File System (CIFS) protocols. You must have Administrator authority to use this command.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-name *name*
Specifies the name of the export.

-cluster *cluster_id*
Specifies the name of the Tivoli Storage Productivity Center cluster key. The cluster key is listed in the ID column of the **lscluster** command output. This value is different from the Cluster ID output from the **lscluster** command.

-path *path*
Specifies the path for the export.

-cifs
Configures the CIFS protocol for the export.

-cifsoptions *cifs_options*
Defines the CIFS protocol options for the export. If the `cifsoptions` name or

value contains spaces, the entire option must be enclosed in matching single quotation marks. The quotation marks must be preceded by an escape character.

-ftp
Configures FTP for the export.

-http
Configures HTTP for the export.

-nfs
Configures the NFS protocol for the export.

-nfsoptions *nfs_options*
Defines the NFS clients and their options for the export.

-scp
Configures SCP for the export.

-inactive
Marks the export as inactive. An inactive export is added to the list of exports, however you cannot access the data. You can use this parameter to modify the access control lists (ACLs) before you later activate the export with the **chexport -active** command.

-owner | -reference
Where **owner** *owner:group* sets the owner or owner group for the directory or **reference** *reference* sets the directory owner to the owner of the reference file. The reference file name must be an existing file or directory.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Creating an export that is enabled for HTTP, SCP, and NFS protocols

The following command creates an export to access data through HTTP, SCP, and the NFS protocol:

```
tpctool> mkexport -name cindyexport
-cluster tpcsonas1.storage.tucson.ibm.com+tpcsonas1.storage.tucson.ibm.com+0
-path /ibm/gpfs0/cindy -user admin -pwd password -url localhost:9550
-http -scp -nfs
```

The following output is returned:

```
ExportId
================================================================================
cindyexport+tpcsonas1.storage.tucson.ibm.com+tpcsonas1.storage.tucson.ibm.com+0

Status
================================================================================
SUCCESS
```

You are not required to enter credentials if you have already run the **tpctool** command with credentials.

Example: Creating an export that is enabled for CIFS protocol

The following command creates an export to access data through the CIFS protocol:

```
tpctool  mkexport -name eexp10 -path /ibm/gpfs0/eexp10
-cluster kq98n5d.ibm+00000200A22045DC+0 -cifs
-cifsoptions "browseable=no,\'comment=comment for eexp10\',leases=no,
sharemodes=no,syncio=yes,hideunreadable=yes,cifsacl=no,oplocks=no,
locking=no,\'read only\',synconclose=no,\'access control=Everyone:ALLOWED:FULL;
Administrator:ALLOWED:FULL\'" -user db2admin -pwd g0vmw are -url localhost:9550
```

The following output is returned:

```
ExportId
================================================================================
eexp10+kq98n5d.ibm+00000200A22045DC+0

Status
================================================================================
SUCCESS
```

Related information:

http://publib.boulder.ibm.com/infocenter/sonasic/sonas1ic/index.jsp
More information about command parameters is available at the IBM SONAS Information Center.

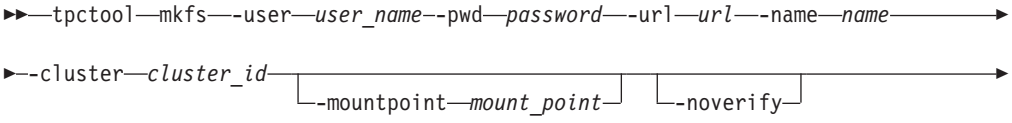
http://publib.boulder.ibm.com/infocenter/storwize/unified_ic/index.jsp
More information about command parameters is available at the Storwize V7000 Unified Information Center.

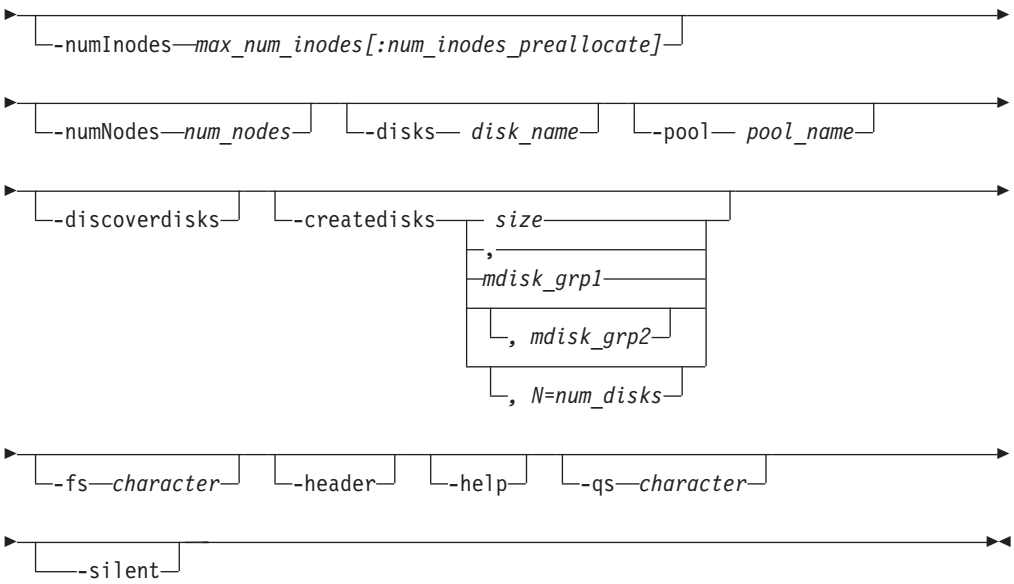
mkfs

Use the **mkfs** command to create a GPFS file system to manage files on a storage device.

You can access the file system content by using file services like Common Internet File System (CIFS) or Network File System (NFS). You must have Administrator authority to use this command.

Syntax





Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-name *name*
Specifies the name of the file system. The name must be unique and can be a maximum of 256 characters.

-cluster *cluster_id*
Specifies the name of the Tivoli Storage Productivity Center cluster key. The cluster key is listed in the ID column of the **lscluster** command output.

Tip: This value is different from the `Cluster ID` output from the **lscluster** command.

-mountpoint *mount_point*
Specifies the mount point directory of the GPFS file system.

-noverify
Specifies that the disk descriptor is not verified so that disks that contain an old descriptor can be reused. Specify the **-noverify** parameter only when you want to reuse disks that are no longer needed for an existing file system. If the command is interrupted for any reason, you must use the `-noverify` parameter when you run the command again.

-numInodes *max_num_inodes[:num_inodes_preallocate]*
Specifies the maximum number of files for this file system. The *num_inodes_preallocate* variable specifies the number of inodes that the system immediately preallocates. You can specify values in thousands (k) or in millions (M). To specify values of 100 million for the *max_num_inodes* variable and 1million for the *num_inodes_preallocate* variable, enter `-numInodes 100M:1M`.

-numNodes *num_nodes*
Specifies the estimated number of nodes that is mounted with the file system.

-disks *disk_name*

Specifies the disks to create the file system on. The *disk_name* variable contains a comma-separated list of disk names.

Tip:
You can verify the availability of a disk by running the **lsnsd** command.

-pool *pool_name*
Specifies the file system pool to create the file system on.

Tip:
You can list all the disks in a pool by running the **lsnsd** command.

-discoverdisks
Specifies that Tivoli Storage Productivity Center detects and uses free GPFS Network Shared Disks (NSDs) automatically, which are tagged for a specified file system but not yet included. This option is applicable only for Storwize V7000 Unified.

Tip:
You can verify the availability of a disk by running the **lsnsd** command.

-createdisks *size* | *mdisk_grp1* | *mdisk_grp2* | *N=num_disks*
Creates disks implicitly, before the file system is created, and then adds them to the file system. This option is applicable only for Storwize V7000 Unified.

size Specifies the size of the new disks. Size is specified as an integer with capacity up to petabyte without a space between the size and the unit; for example 17G. Disk sizes must be specified either without suffix (byte) or with `K` (kilobyte), `M` (megabyte), `G` (gigabyte), `T` (terabyte), or `P` (petabyte). Values less than 512 MB are not supported. This parameter is mandatory.

mdisk_grp1
Specifies the storage system managed disk (MDisk) group in which the underlying NAS volumes are created. This parameter is mandatory.

Tip:
You can see a list of available MDisk groups by using the **svcinfo lsmdiskgrp** command.

mdisk_grp2
Specifies the second storage system MDisk group in which the underlying NAS volumes are created. This parameter is optional.

Tip:
You can see a list of available MDisk groups by using the **svcinfo lsmdiskgrp** command.

num_disks
Specifies the number of storage system NAS volumes that is created in each MDisk group. This parameter is optional. The default number of disks is 3.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Create a file system by using the createdisks parameter

The following command first creates one disk of 20 GB and then creates a file system.

```
tpctool> mkfs -name eefs05 -cluster kq98n5d.ibm+00000200A20045DC+0
-createdisks 20G,0,N=1 -user admin -pwd password -url localhost:9550
```

The following output is returned:

```
FilesystemId                          Status
============================================
eefs05+kq98n5d.ibm+00000200A20045DC+0 SUCCESS
```

Example: Create a file system by using the pool parameter

The following command creates a file system on a specified pool.

```
tpctool> mkfs -name eefs06 -cluster kq98n5d.ibm+00000200A20045DC+0
-pool s1pool -user admin -pwd password -url localhost:9550
```

The following output is returned:

```
FilesystemId                          Status
============================================
eefs06+kq98n5d.ibm+00000200A20045DC+0 SUCCESS
```

Example: Create a file system by using the discoverdisks parameter

The following command discovers all the disks that are tagged to the eefs07file system, creates the eefs07file system, and finally adds the disks to it.

```
tpctool> mkfs -name eefs07 -cluster kq98n5d.ibm+00000200A20045DC+0
-discoverdisks -user admin -pwd password -url localhost:9550
```

The following output is returned:

```
FilesystemId                          Status
============================================
eefs07+kq98n5d.ibm+00000200A20045DC+0 SUCCESS
```

Example: Create a file system by using the disks parameter

The following command creates a file system on the specified disks.

```
tpctool> mkfs -name eefs01 -cluster tpcsonas3.storage.tucson.ibm.com+9.11.92.174+0
-disks array0_sas_60001ff078c3a0789ff0001,array1_sas_60001ff078c3a0689fe0000
-user admin -pwd password -url localhost:9550
```

The following output is returned:

```
FilesystemId                                          Status
=======================================================
eefs01+tpcsonas3.storage.tucson.ibm.com+9.11.92.174+0  SUCCESS
```

Related information:

http://publib.boulder.ibm.com/infocenter/sonasic/sonas1ic/index.jsp
More information about command parameters is available at the IBM SONAS Information Center.

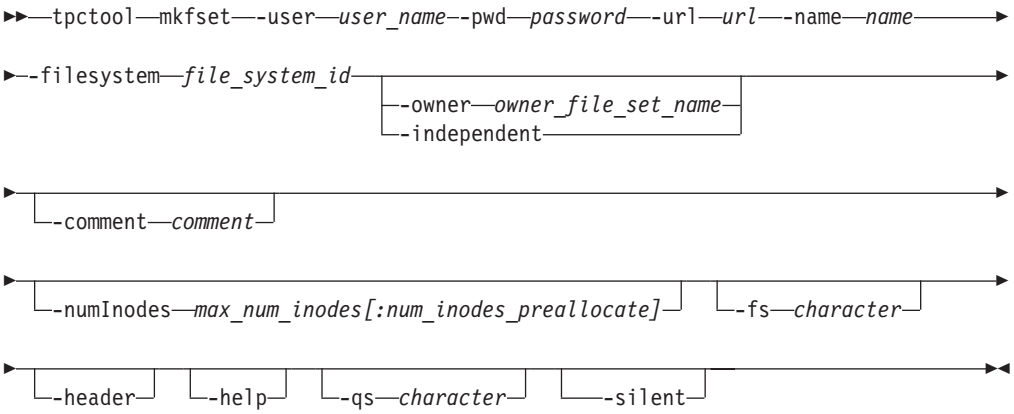
http://publib.boulder.ibm.com/infocenter/storwize/unified_ic/index.jsp
More information about command parameters is available at the Storwize V7000 Unified Information Center.

mkfset

Use the **mkfset** command to create a file set that is associated with a file system on a Storwize V7000 File Module storage system or on an IBM SONAS system. With file sets, you can use functions such as snapshots or quotas within a file system. You must have Administrator authority to use this command.

The new file set is empty except for a root directory, and is not shown in the directory name space until you run the **linkfset** command. When you create a file set, you can establish policies and quotas on the file set before you link the file set to the name space. You can create a maximum of 10,000 file sets for each file system.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where

system represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-name *name*
Specifies the name of the file set.

-filesystem *file_system_id*
Specifies the Tivoli Storage Productivity Center file system key. The file system key is listed in the ID column of the **lsfs** command output.

-owner *owner_file_set_name*
Specifies the name of the independent file set where the new file set is allocated. This parameter is mutually exclusive with the **-independent** parameter. Both file sets must belong to the same file system.

-independent
Specifies whether you want to create an independent file set with its own allocated inodes. Otherwise, the file set is created as a dependent file set, and is allocated on the file system or in an independent file set. This parameter is mutually exclusive with the **-owner** parameter.

-comment *comment*
Specifies a comment that displays in the output of the **lsfset** command. The length of this comment can be a maximum of 255 characters. You must enclose comments in double quotation marks.

-numInodes *max_num_inodes[:num_inodes_preallocate]*
Specifies the maximum number of files for a new, independent file set. This parameter can be used only with the **-independent** parameter. The *num_inodes_preallocate* variable specifies the number of inodes that the system immediately preallocates. You can specify values in thousands (k) or in millions (M). To specify values of 100 million for the *max_num_inodes* variable and 1million for the *num_inodes_preallocate* variable, enter `-numInodes 100M:1M`.

The GPFS file system defines a minimum number of inodes, which might be greater than the maximum specified. The default values for the file set are 1 million (1 M) for the *max_num_inodes* variable and 50,000 (50 K) for the *num_inodes_preallocate* variable.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Create a file system

The following command creates a file set on a specified file system.

```
tpctool> mkfset -name eefset
-filesystem eefs+kq458mv.ibm+00000200A2A0153C+0
-user admin -pwd password -url localhost:9550
```

The following output is returned:

```
FilesetId                                    Status
================================================
eefset+eefs+kq458mv.ibm+00000200A2A0153C+0 SUCCESS
```

Related information:

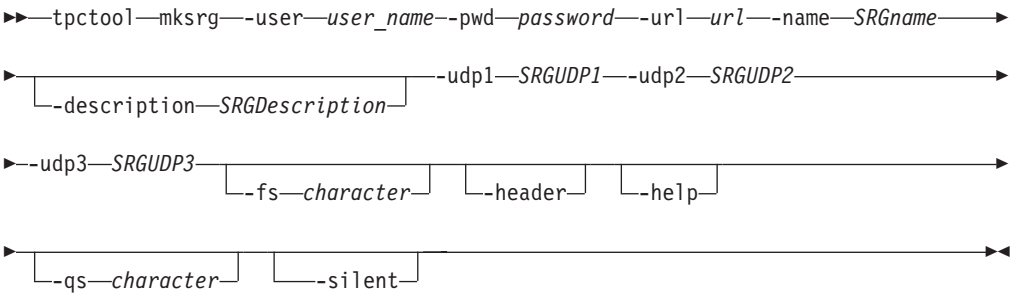
http://publib.boulder.ibm.com/infocenter/sonasic/sonas1ic/index.jsp
More information about command parameters is available at the IBM SONAS Information Center.

http://publib.boulder.ibm.com/infocenter/storwize/ic/index.jsp
More information about command parameters is available at the Storwize V7000 Unified Information Center.

mksrg

Use the **mksrg** command to create a storage resource group with a specific name, type, description, and user-defined properties. You must have Administrator authority to use this command.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-name *SRGname*
A unique name not already in use, fewer than 60 characters long. It cannot contain any of the following characters:

```
\ / : * ? " < > | .
```

The user name of the user who is creating the storage resource group is added to the beginning of the storage resource group name, followed by the name that is specified in the *name* variable.

-description *SRGDescription*
(optional) The description can contain any alphanumeric characters, and must be fewer than 255 characters long.

-udp1 *SRGUDP1*
(optional) A user-defined property that can contain anything of significance to the storage resource group administrator. The user-defined property (UDP) can contain any alphanumeric character, and must be fewer than 255 characters long.

-udp2 *SRGUDP2*
(optional) A user-defined property that can contain anything of significance to the storage resource group administrator. The UDP can contain any alphanumeric character, and must be fewer than 255 characters long.

-udp3 *SRGUDP3*
(optional) A user-defined property that can contain anything of significance to the storage resource group administrator. The UDP can contain any alphanumeric character, and must be fewer than 255 characters long.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Creating a storage resource group

The following command creates a storage resource group with the specified attributes:

```
tpctool> mksrg -name testsrg -description Test-SRG-Description
-udp1 myudp1 -udp2 myudp2 -udp3 myudp3
```

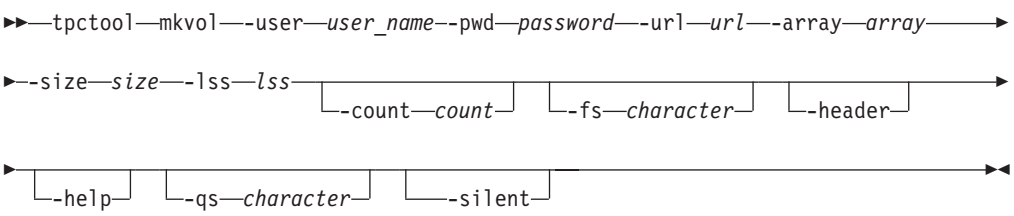
The following output is returned:

```
Name                  Status
============================
Administrator.testsrg SUCCESS
```

mkvol

Use the **mkvol** command to create volumes. You must have Administrator authority to use this command.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-array *array*
Specifies the array. The *array* variable is the array ID. You can use the **lsarray** command to return information, including array IDs, about the arrays on a specific storage subsystem. The array must not be a count, key, or data (CKD) format array.

-size *size*
Specifies the volume size. The *size* variable is the volume size.

-lss *lss*
Specifies the LSS in which to create the volumes. The *lss* variable is the LSS identifier. If the pool specified is not defined within the specified LSS then an error is generated stating that there is not enough space on the specified pool.

-count *count*
Specifies the number of volumes. The *count* variable is an integer.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Creating volumes

The following commands create four volumes:

```
tpctool
tpctool> mkvol -array 2105.22232+2105.22232+0 -size 20 -count 4 -lss 01
```

The following output is returned:

```
Volume                                    PoolID            Status
=================================================================
000000000000000000001223+6+2105.22232+0  P0                SUCCESS
000000000000000000001223+6+2105.22232+1  P1                SUCCESS
000000000000000000001223+6+2105.22232+2  P2                SUCCESS
000000000000000000001223+6+2105.22232+3  P3                SUCCESS
```

mkzone

Use the **mkzone** command to create a zone. This command must be run within a transaction. You must have Administrator authority to use this command.

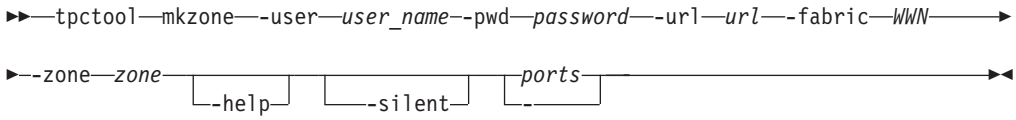
Important:

- An *orphan zone* is one that does not belong to a zone set. If the zone that you are creating is an orphan zone and the switch and data source that you are using support orphan zones, use only the **mkzone** command to create the zone.

  However, if the switch and data source that you are using do not support orphan zones, you must use the **addzone** command within the same transaction to add the zone to a zone set. Specify the **addzone** command AFTER you create the zone by using the **mkzone** command. For details about adding a zone to a zone set, see the **addzone** command.
- To activate your changes to a zone set, use the **actzs** command. For details, see the **actzs** command.

Syntax

```
►►──tpctool──mkzone──-user──user_name─-pwd──password──-url──url──-fabric──WWN──────►

►─-zone──zone──┬──────────┬──┬──────────────┬──┬─ports─┬──────────────────────────────►◄
               └─-help─┘  └──-silent─┘  └─-─────┘
```



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-fabric *WWN*
Specifies the fabric. The *WWN* variable is the worldwide name (WWN).

-zone *zone*
Specifies the zone. The *zone* variable is the name of the zone.

-help | -h | -?
Lists help information for the command.

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

ports | **-**
Specifies the switch ports. The *ports* variable is a list of worldwide port names (WWPNs). If you specify a single dash (-), the WWPNs are read from standard input.

Example: Creating a zone

In the following example, assume that the switch that you are using does not support orphan zones. To create the SUNSOLARIS zone, add the zone to a zone set, and activate the zone set. Specify all zoning changes within one transaction, from start to commit, and then activate the zone setwel by using the **actzs** command. The list of WWPNs is read from standard input.

```
tpctool> start -user me -pwd mypass -url myhost:myport -fabric 100000051E34F6A8
tpctool> mkzone -fabric 100000051E34F6A8 -zone SUNSOLARIS -
tpctool> addzone -fabric 100000051E34F6A8 -zs PARIS SUNSOLARIS
tpctool> commit -fabric 100000051E34F6A8
tpctool> actzs -fabric 100000051E34F6A8 PARIS
```

Related reference:

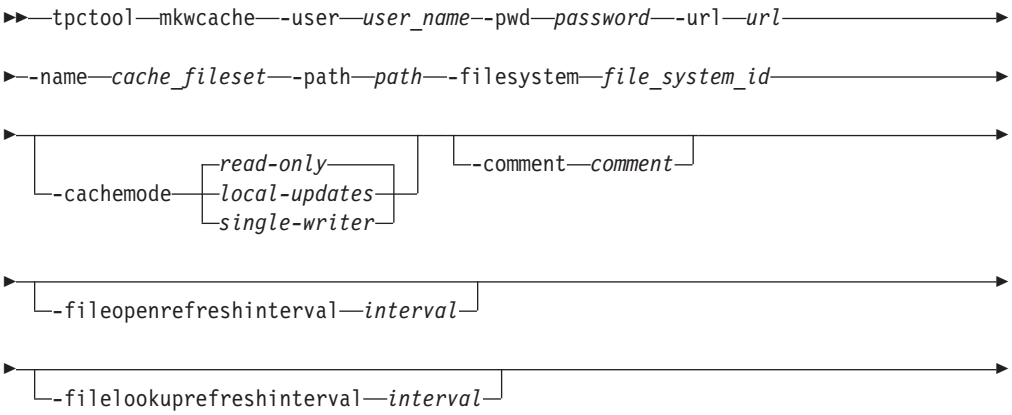
"addzone" on page 9
Use the **addzone** command to add a zone to a zone set. This command must be run as a transaction. For more information, see the **start** command. You must have Administrator authority to use this command.

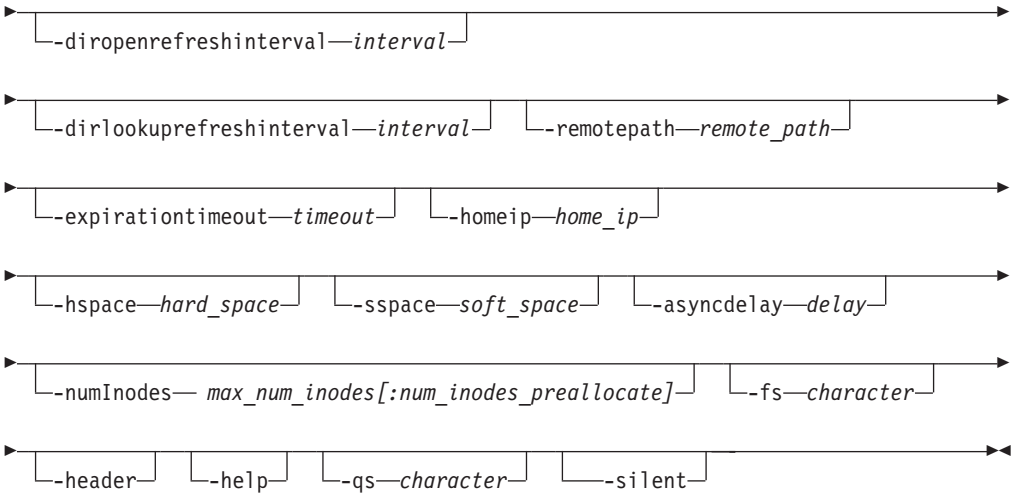
"actzs" on page 7
Use the **actzs** command to activate changes to the zone set in the fabric. This command must be run within a transaction. You must have Administrator authority to use this command.

mkwcache

Use the **mkwcache** command to create a file set on a wide area network (WAN) cluster on an IBM SONAS system. The **mkwcache** command enables this file set as a cache. Data on a home system is cached to this file set. You must have Data Administrator authority to use this command.

Syntax





Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-name *cache_fileset*
Specifies the name of the cache file set.

-path *path*
Specifies the path of the cache file set.

-filesystem *file_system_id*
Specifies the ID of the file system that contains the cache file set.

-cachemode *read-only* | *local-updates* | *single-writer*
Specifies the operating mode for the cache system. The default mode is *read-only*.

-comment *comment*
Specifies a comment for the cache.

-fileopenrefreshinterval *interval*
Specifies the maximum interval, in seconds, between when a file is opened on the cache system and when it was last validated on the home system. The default value is 30.

-filelookuprefreshinterval *interval*
Specifies the maximum interval, in seconds, between when a file is accessed on the cache system and when it was last validated on the home system. The default value is 30.

-directoryopenrefreshinterval *interval*
Specifies the maximum interval, in seconds, between when a directory is opened on the cache system and when it was last validated on the home system. The default value is 60.

-directorylookuprefreshinterval *interval*
Specifies the maximum interval, in seconds, between when a directory is accessed on the cache system and when it was last validated on the home system. The default value is 60.

-remotepath *remote_path*
Acts as a reference while it runs WAN caching. Specify the IP address of the home system, followed by the file set path on the home system that was created by using the **mkwcachesource** command. For example, `-remotepath 127.0.0.1:/ibm/gpfs0/wcacheSource`.

Alternatively, you can specify the path of the cache source, and the IP address is determined automatically. For example, `-remotepath /ibm/gpfs0/wcacheSource`.

Restriction: You cannot use fully qualified domain names (FQDNs).

-expirationtimeout *timeout*
Specifies the time interval in seconds after which files or directories in the cache system expire when it is disconnected from the home system. This parameter applies to file sets that are in read-only mode. The default value is Disabled.

-homeip *home_ip*
Specifies the IP address of the management node of the home system.

Restriction: You cannot use FQDNs.

-hspace *hard_space*
Specifies the hard limit or maximum of disk space usage by the file set created for the WAN cache. The default value is 0, which implies there is no limit.

-sspace *soft_space*
Specifies the soft limit or minimum of disk space usage by the file set created for the WAN cache. The default value is 0, which implies there is no limit.

-asyncdelay *delay*
Specifies the time interval, in seconds, between a write operation on the cache file set and the corresponding update on the source file set. The default value is 15.

-numInodes *max_num_inodes[:num_inodes_preallocate]*
Defines the inode limits for the file set created for the WAN cache. The *max_num_inodes* variable specifies the maximum number of inodes that can be allocated to the file set. The *num_inodes_preallocate* variable specifies the number of inodes that the system immediately preallocates. You can specify values in thousands (k) or in millions (M). To specify values of 100 million for the *max_num_inodes* variable and 1 million for the *num_inodes_preallocate* variable, enter `-numInodes 100M:1M`. If not provided the default values are 100K:100K.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Create a file set that is enabled as a cache

The following command creates a file set that is enabled as a cache on a WAN cluster.

```
tpctool> mkwcache -name ctest -path /ibm/ee/cache_ee31
-filesystem ee+tpcsonas1.storage.tucson.ibm.com+127.0.0.1+0
-homeip 192.0.2.0 -remotepath 192.0.2.1:/ibm/gpfs0/eefset100
```

The following output is returned:

```
CacheId                                                    Status
============================================================
ctest+ee+tpcsonas1.storage.tucson.ibm.com+127.0.0.1+0 SUCCESS
tpctool>
```

Related information:

http://publib.boulder.ibm.com/infocenter/sonasic/sonas1ic/index.jsp
More information about command parameters is available at the IBM SONAS Information Center.

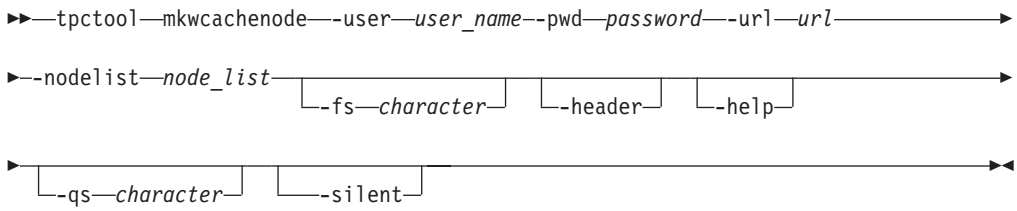
mkwcachenode

Use the **mkwcachenode** command to configure specified interface nodes on an IBM SONAS system to function as the cache gateway nodes that exchange data with other systems. You must have Data Administrator authority to use this command.

An interface node connects an IBM SONAS system to an IP network for file-serving capabilities by using the Network File System (NFS) protocol. You must configure cache gateway nodes to enable wide area network (WAN) caching on an IBM SONAS system. You can use WAN caching to distribute data transparently among data centers and multiple remote locations without disruption to applications.

After the **mkwcachenode** operation is finished, you can run the **lsnode** command to verify that the interface nodes are configured correctly as cache gateway nodes.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-nodelist *node_list*
Specifies the IDs of the interface nodes that you want to configure for WAN caching. The *node_list* variable contains a comma-separated list of the interface node IDs. Use the **lsnode** command to retrieve the node IDs.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Creating a cache gateway node

The following command configures an interface node to function as a cache gateway node on an IBM SONAS system.

```
tpctool> mkwcachenode -nodelist int003st001+tpcsonas1.storage.
tucson.ibm.com+127.0.0.1+0
```

The following output is returned:

```
CachenodeId                                                  Status
============================================================================
int003st001+tpcsonas1.storage.tucson.ibm.com+127.0.0.1+0 SUCCESS
```

Related reference:

"lsnode" on page 75
Use the **lsnode** command to list all nodes or specified nodes that are associated with a cluster that is on a Storwize V7000 Unified or IBM SONAS storage system.

Related information:

http://publib.boulder.ibm.com/infocenter/sonasic/sonas1ic/index.jsp
More information about command parameters is available at the IBM SONAS Information Center.

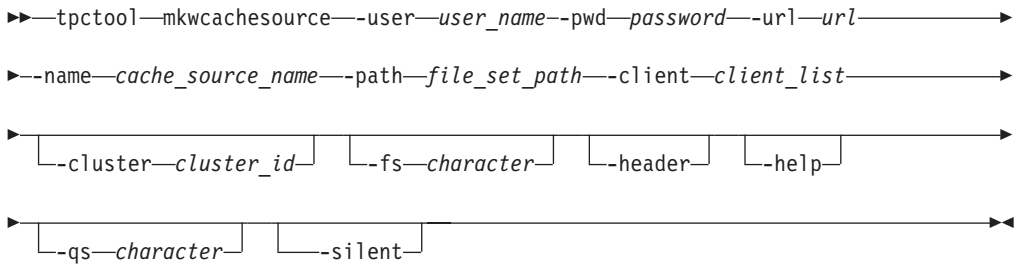
mkwcachesource

Use the **mkwcachesource** command to create a home system on an IBM SONAS system file set. The home system is the source of the data in a wide area network (WAN) cache configuration.

You can use WAN caching to distribute data transparently among data centers and multiple remote locations without disruption to applications. You must have Data Administrator authority to use this command.

With IBM SONAS, you can have the same maximum number of cache file sets for each file system as file sets for each file system.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-name *cache_source_name*
Specifies the name of the home system for the WAN cache configuration.

-path *path_name*
Specifies the path of the existing file set to be used for the home system.

-client *client_list*
Specifies the remote cache systems that are allowed to cache data from the home system. The *client_list* variable contains a comma-separated list of the IP address and access mode of the management nodes for the cache systems. You must specify the IP address and access mode for each of the systems that you want to enable to cache data from the home system. Access mode can be either `ro` (read-only) or `rw` (read/write). Only one of the clients can have read/write permission at one time.

-cluster *cluster_id*
Selects the cluster for the operation.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Creating a home system that is enabled for WAN caching

The following command creates a home system on an IBM SONAS system file set on the specified cluster.

```
tpctool> mkwcachesource -name eesrc10 -path /ibm/ee/eefset10
-client "127.0.0.1(ro)" -cluster tpcsonas1.storage.tucson.
ibm.com+127.0.0.2+0
```

The following output is returned:

```
CachesourceId                                              Status
============================================================
eesrc10+tpcsonas1.storage.tucson.ibm.com+127.0.0.2+0 SUCCESS
```

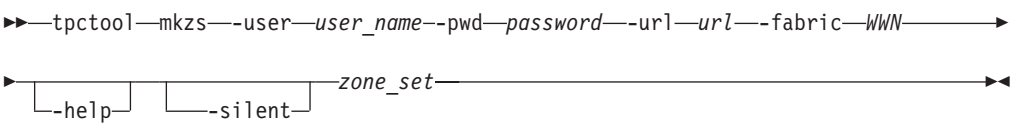
Related information:

http://publib.boulder.ibm.com/infocenter/sonasic/sonas1ic/index.jsp
More information about command parameters is available at the IBM SONAS Information Center.

mkzs

Use the **mkzs** command to create a zone set. This command must be run as a transaction. You must have Administrator authority to use this command.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where

system represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-fabric *WWN*
Specifies the fabric. The *WWN* variable is the worldwide name (WWN).

-help | -h | -?
Lists help information for the command.

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

zone_set
Specifies the zone set. The *zone_set* variable is the name of the zone set.

Tip: To create a zone set, you must include at least one zone.

Example: Creating a zone set

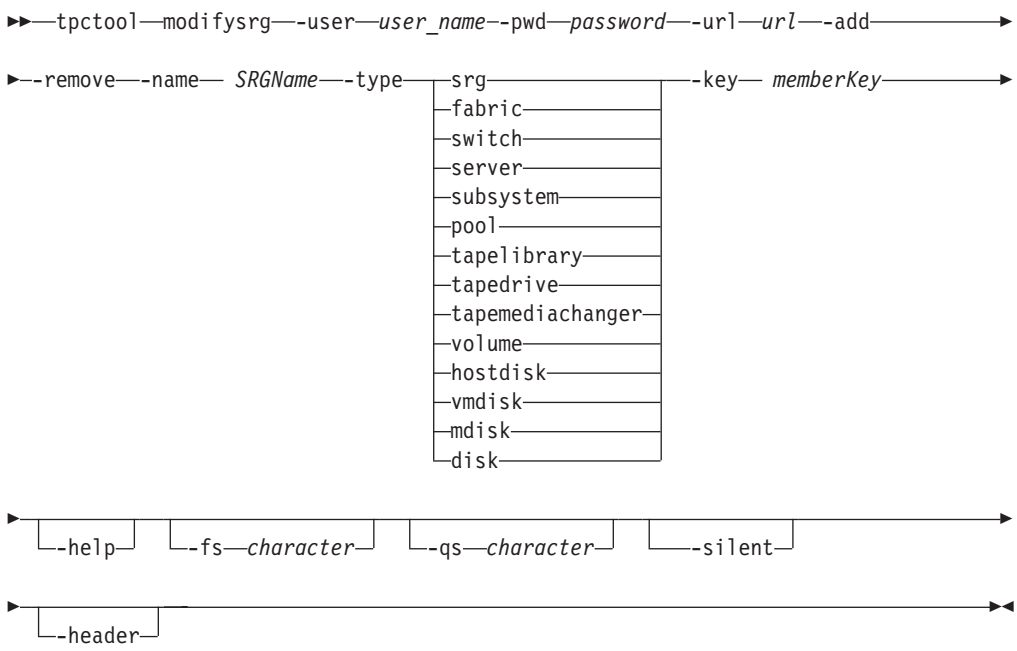
The following commands create the PARIS zone set, which includes the SUNSOLARIS zone:

```
tpctool> start -user me -pwd mypass -url myhost:myport -fabric 100000051E34F6A8
tpctool> mkzone -fabric 100000051E34F6A8 -zone SUNSOLARIS -
tpctool> mkzs -fabric 100000051E34F6A8 PARIS
tpctool> addzone -fabric 100000051E34F6A8 -zs PARIS SUNSOLARIS
tpctool> commit -fabric 100000051E34F6A8
```

modifysrg

Use the **modifysrg** command to modify an existing storage resource group. You can add and remove members by specifying the member type, such as switch or volume, and the key for the member you want to add or remove.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-add
Adds a new member to the specified storage resource group, which is designated by the specified member type and key.

-remove
Removes an existing member from the specified storage resource group, which is designated by the specified member type and key. Use the **lssrgmembers -name** *SRGName* to see a list of members and member keys for a specified storage resource group.

-name *SRGName*
Indicates the unique storage resource group where the member is added or removed. To view a list of the storage resource groups known to Tivoli Storage Productivity Center, see the output of the **lssrg**.

-type
srg | *fabric* | *switch* | *server* | *subsystem* | *pool* | *tapelibrary* | *tapedrive* |
tapemediachanger | *volume* | *hostdisk* | *vmdisk* | *mdisk* | *disk*
Denotes the type of element that corresponds to the unique key in the **key** parameter of this function.

-key *memberKey*
Specifies the unique key that corresponds to the member and member type that is specified in the **type** parameter.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Adding or removing members of a storage resource group

You can add or remove members of a specified storage resource group with the following command:

```
tpctool
tpctool> modifysrg -remove -name test.srg -type srg
    -key IBM.2107-1300361-R8+2107-1300361+0
```

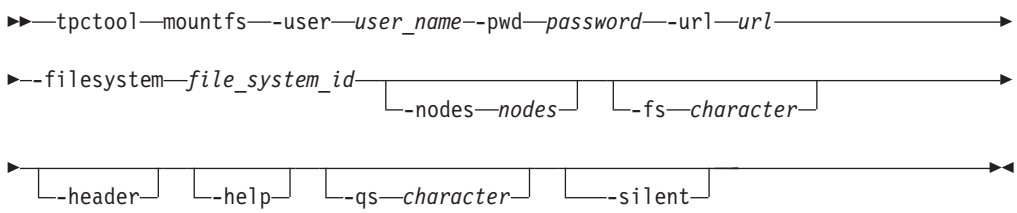
The following output is returned:

```
Name                                Status
=====================================
Administrator.my-new-example-srg SUCCESS
```

mountfs

Use the **mountfs** command to mount a file system on all interface and management nodes or a specified subset. You must have Data Administrator authority to use this command.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-filesystem *file_system_id*
Specifies the ID of file system to be mounted.

-nodes *nodes*
Lists the nodes to mount the file system on in a comma-separated list. Specify only the interface node, management node, or both. If you omit this parameter, the file system is mounted on all interface and management nodes.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Mount a file system

The following command mounts a file system on a management node.

```
tpctool> mountfs -filesystem eefs+kq458mv.ibm+00000200A2A0153C+0
-user admin -pwd password -url localhost:9550 -nodes mgmt001st001
```

The following output is returned:

```
FilesystemId                          Status
============================================
eefs+kq458mv.ibm+00000200A2A0153C+0 SUCCESS
```

Related information:

http://publib.boulder.ibm.com/infocenter/sonasic/sonas1ic/index.jsp
More information about command parameters is available at the IBM SONAS Information Center.

http://publib.boulder.ibm.com/infocenter/storwize/unified_ic/index.jsp
More information about command parameters is available at the Storwize V7000 Unified Information Center.

rmbackenddisktype

Use the **rmbackenddisktype** command to remove a back-end type of disk.

This command is available for the following storage systems:

- Storwize V7000
- Storwize V7000 Unified
- SAN Volume Controller

You must have Administrator authority to use this command.

The following actions occur when you issue the **rmbackenddisktype** command to remove a back-end type of disk.

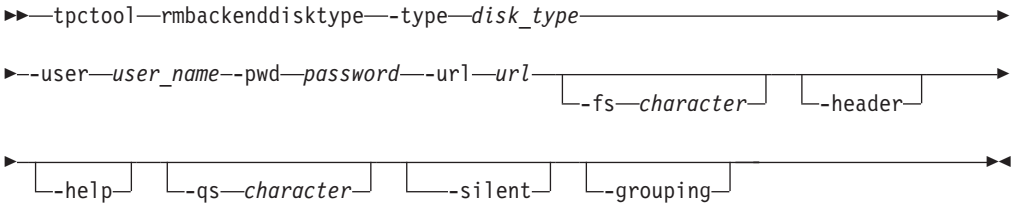
- The type is removed from the set of back-end types of disk.
- The type is reset to *DEFAULT* in back-end storage subsystems that are set to the type of disk that is removed.

Tip: You can use the following commands to set the back-end type of disk:

- **setarray**
- **setbackenddisktype**

You can also set the back-end type of disk for storage systems on the MDisk Group Details page in the Tivoli Storage Productivity Center graphical user interface.

Syntax



Parameters and arguments

-type *disk_type*
Specifies the back-end type of disk. Specify a back-end type of disk or enter one of the following values.

Value	Description
A07	Sata - 7,500 rpm
F10	Fiber - 10,000 rpm
F15	Fiber - 15,000 rpm
DEFAULT	Default value

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

-grouping
Enables the grouping of numeric values. For example, in English the value 12000 would display as 12,000. The grouping character is determined by the system locale.

Example: Removing a back-end type of disk

The following command removes a back-end type of disk:

```
tpctool> rmbackenddisktype -type A07
```

The back-end type of disk that is removed is displayed:

```
Back-end Disk Type Status
============================
A07                Succeeded
```

rmbackendraidtype

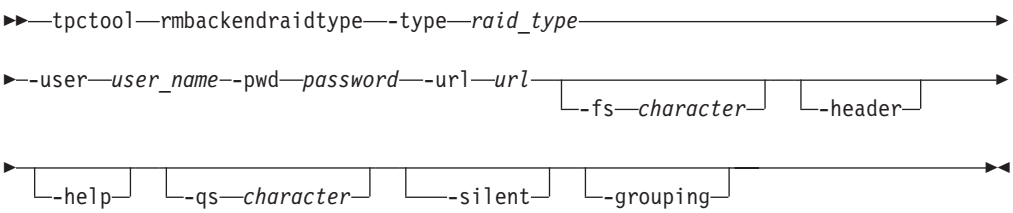
Use the **rmbackendraidtype** command to remove a back-end RAID array type from the set of RAID array types available for managed disk groups.

This command is available for the following storage systems:

- Storwize V7000
- SAN Volume Controller

You must have Administrator authority to use this command.

Syntax



Parameters and arguments

-type *raid_type*
Specifies the type of the back-end RAID array to remove. You can specify a value that you set or one of the following values.

Value	Description
DEFAULT	The default RAID type.
1	RAID 1
5	RAID 5
6	RAID 6
X	The RAID type that is used by IBM XIV Storage System.

Tip: Use the **lsbackendraidtypes** command to list the types of back-end RAIDs.

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where

system represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

-grouping
Enables the grouping of numeric values. For example, in English the value 12000 would display as 12,000. The grouping character is determined by the system locale.

Example: Removing a type of back-end RAID array

The following command removes a type of back-end RAID array:

```
tpctool> rmbackendraidtype -type testing
```

If the command is successful, a list of the types of back-end RAIDs that are removed is displayed:

```
Back-end Type Status
======================
testing      Succeeded
```

rmbackendtype

Use the **rmbackendtype** command to remove a type of back-end storage system.

This command is available for the following storage systems:

- Storwize V7000
- Storwize V7000 Unified
- SAN Volume Controller

You must have Administrator authority to use this command.

When you issue the **rmbackendtype** command to remove a type of back-end storage system, the following actions occur:

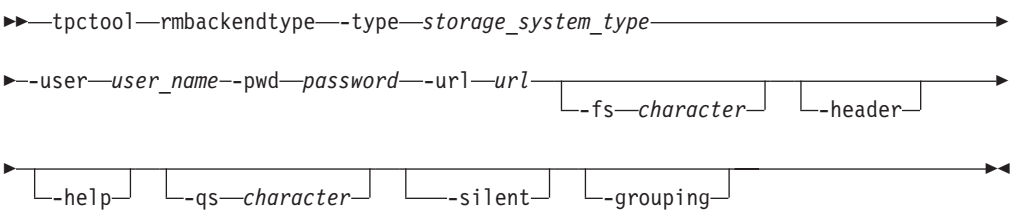
- The type is removed from the set of back-end types.
- The type is reset to *DEFAULT* in back-end storage systems that are set to the back-end type that is removed.

Tip: You can use the following commands to set the type of back-end storage system:

- **setarray**
- **setbackendtype**

You can also set the type of back-end storage system on the MDisk Group Details page in the Tivoli Storage Productivity Center graphical user interface.

Syntax



Parameters and arguments

-type *storage_system_type*
Specifies the type of back-end storage system that manages most of the storage pool resources. Specify a type of back-end storage system or enter one of the following values.

Value	Name
C	EMC Clariion
D	IBM System Storage DS8000
S	EMC Symmetrix
X	IBM XIV Storage System
V	IBM System Storage DS4000
DEFAULT	Default value

Tip: Use the **lsbackendtypes** command to show a list of back-end storage systems.

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

-grouping
Enables the grouping of numeric values. For example, in English the value 12000 would display as 12,000. The grouping character is determined by the system locale.

Example: Removing a type of back-end storage system

The following command removes the specified type of back-end storage system:

```
tpctool> rmbackendtype -type L
```

The type of back-end storage system that is removed is displayed:

```
Back-end Type Status
=======================
L             Succeeded
```

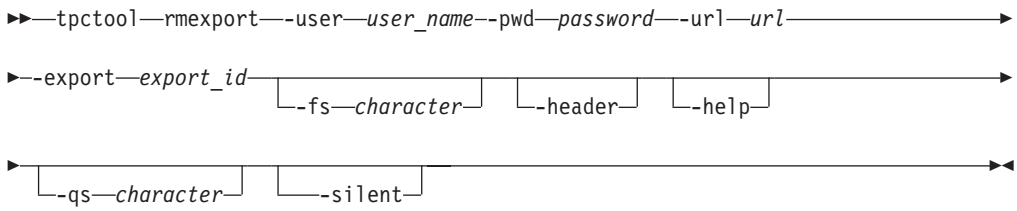
rmexport

Use the **rmexport** command to remove an export.

Removing an export does not remove the data or folder from the file system. You must have Administrator authority to use this command.

When you remove an export, the system behaves differently according to the export protocols. When an NFS export is removed, all connections to that shared space are immediately closed. When a CIFS export is removed, any user who is connected to the shared space can continue to write to that space. However, if the user disconnects, reconnects, and then attempts to write to the space again, the write operation fails.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where

system represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-export *export_id*
Specifies the name of the export. This is the export key that is listed in the ID column of the **lsexport** command output.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Removing an export

The following command deletes the specified export:

```
tpctool> rmexport -export cindyexport+tpcsonas1.storage.tucson.ibm.com+tpcsonas1.
storage.tucson.ibm.com+0 -user admin -pwd password -url localhost:9550
```

The following output is returned:

```
ExportId
================================================================================
cindyexport+tpcsonas1.storage.tucson.ibm.com+tpcsonas1.storage.tucson.ibm.com+0

Status
================================================================================
SUCCESS
```

Related information:

http://publib.boulder.ibm.com/infocenter/sonasic/sonas1ic/index.jsp
More information about command parameters is available at the IBM SONAS Information Center.

http://publib.boulder.ibm.com/infocenter/storwize/unified_ic/index.jsp
More information about command parameters is available at the Storwize V7000 Unified Information Center.

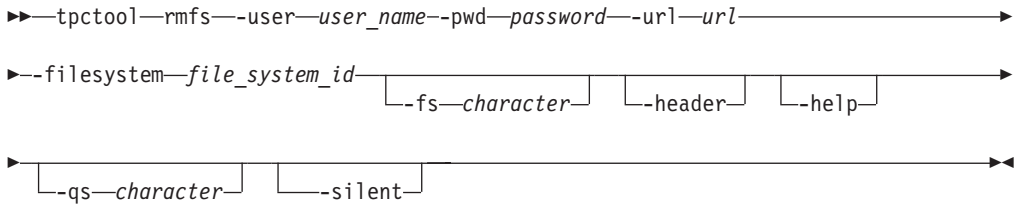
rmfs

Use the **rmfs** command to remove a file system from an active management node. You must have Administrator authority to use this command.

Attention: When you remove a file system, all the data on that file system is deleted.

You must unmount a file system on all nodes before you can delete it. Use the **unmountfs** command to unmount a file system.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-filesystem *file_system_id*
Specifies the ID of the file system to be removed.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Remove a file system

The following command removes a file system.

```
tpctool> rmfs -filesystem eefs+kq458mv.ibm+00000200A2A0153C+0
-user admin -pwd password -url localhost:9550
```

The following output is returned:

```
FilesystemId                          Status
=======================================
eefs+kq458mv.ibm+00000200A2A0153C+0 SUCCESS
```

Related information:

http://publib.boulder.ibm.com/infocenter/sonasic/sonas1ic/index.jsp
More information about command parameters is available at the IBM SONAS Information Center.

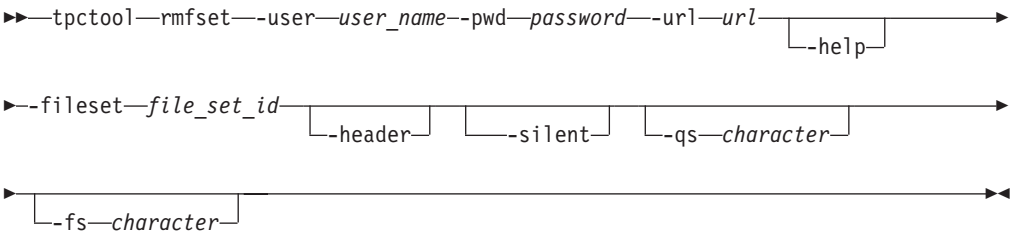
http://publib.boulder.ibm.com/infocenter/storwize/unified_ic/index.jsp
More information about command parameters is available at the Storwize V7000 Unified Information Center.

rmfset

Use the **rmfset** command to remove a file set from a file system. You must have Administrator authority to use this command.

Important: You must use the **unlinkfset** command to unlink a file set from a file system before you can remove it.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-help | -h | -?
Lists help information for the command.

-fileset *file_set_id*
Specifies the Tivoli Storage Productivity Center key of the file set to be removed. The file set key is listed in the **ID** column of the **lsfset** command output.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in

the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

Example: Removing a file set

The following command removes the file set named eefset01+eefs+kq458mv.ibm+00000200A2A0153C+0.

```
tpctool> rmfset -fileset eefset01+eefs+kq458mv.ibm+00000200A2A0153C+0
-user admin -pwd password -url localhost:9550
```

The following output is returned:

```
FilesetId                                          Status
==================================================
eefset01+eefs+kq458mv.ibm+00000200A2A0153C+0 SUCCESS
```

Related information:

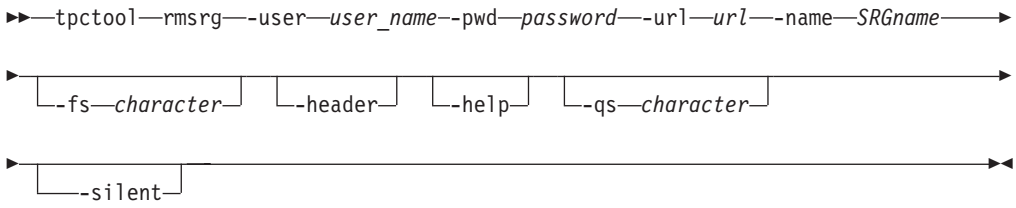
http://publib.boulder.ibm.com/infocenter/sonasic/sonas1ic/index.jsp
More information about command parameters is available at the IBM SONAS Information Center.

http://publib.boulder.ibm.com/infocenter/storwize/unified_ic/index.jsp
More information about command parameters is available at the Storwize V7000 Unified Information Center.

rmsrg

Use the **rmsrg** command to delete the specified Storage Resource Group.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-name *SRGname*
Specifies the name of the Storage Resource Group to be deleted.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Deleting a Storage Resource Group

The following command deletes a specified Storage Resource Group:

```
tpctool
tpctool> rmsrg -name Administrator.testsrg
```

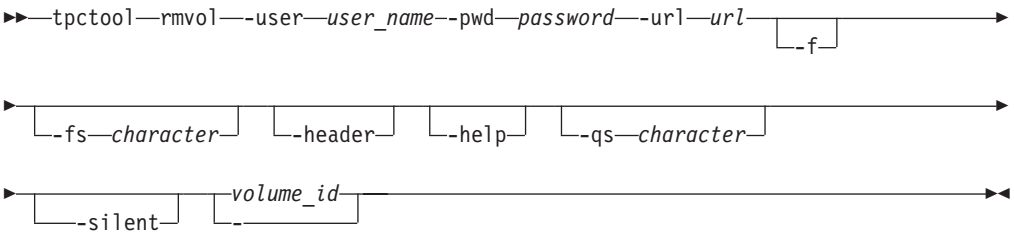
The following output is returned:

```
Name                  Status
============================
Administrator.testsrg SUCCESS
```

rmvol

Use the **rmvol** command to remove volumes. You must have Administrator authority to use this command.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-f Turns off the confirmation message that is displayed before the volumes are removed.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

volume_id | **-**
Specifies the volumes. The *volume_ID* variable is a comma-separated list of volume IDs, such as that obtained by running the **lsvol** command. If a single dash (-) is issued, the volume IDs are read from standard input.

Example: Removing volumes from an array

The following command removes volumes from the specified array. Because the **-f** option is specified, you are not prompted to confirm the removal.

```
tpctool> rmvol -f 000000000001107+6+2107.7597621+0
```

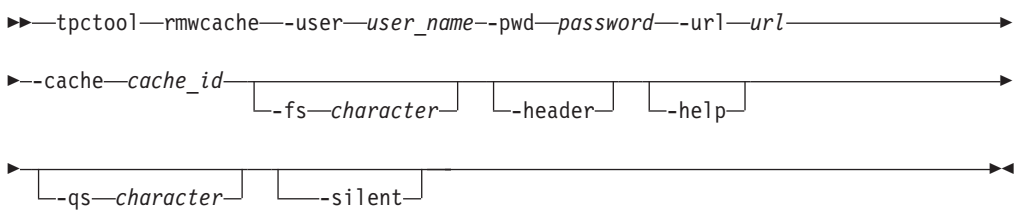
The following output is returned:

```
VolumeId                                  PoolId             Status
=================================================================
0000001107+6+2107.7597621+0 2107.7597621-vs1+2107.7597621+0 SUCCESS
```

rmwcache

Use the **rmwcache** command to remove a cache file set on a wide area network (WAN) cluster. Cache file sets on an IBM SONAS system store data from a home system. You must have Data Administrator authority to use this command.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-cache *cache_id*
Specifies the ID of the cache file set to be removed. You can use the **lswcache** command to view the cache file set ID.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Removing a cache file set

The following command removes a file set on a cache system.

```
tpctool> rmwcache -cache ctest+ee+tpcsonas1.storage.tucson.ibm.com
+127.0.0.1+0
```

The following output is returned:

```
CacheId                                                    Status
============================================================
ctest+ee+tpcsonas1.storage.tucson.ibm.com+127.0.0.1+0   SUCCESS
```

Related information:

http://publib.boulder.ibm.com/infocenter/sonasic/sonas1ic/index.jsp
More information about command parameters is available at the IBM SONAS Information Center.

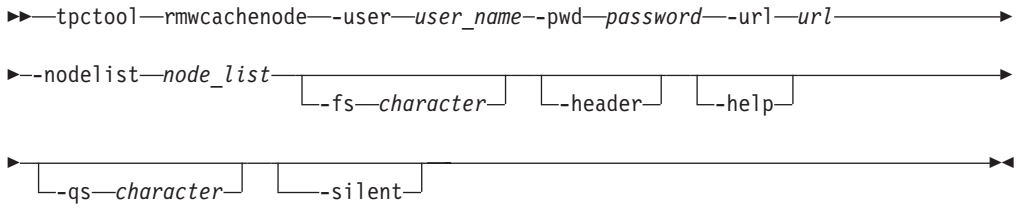
rmwcachenode

Use the **rmwcachenode** command to remove the ability of interface nodes to function as cache gateway nodes. By removing the ability to function as cache gateway nodes, you can disable wide area network (WAN) caching on an IBM SONAS system. You must have Data Administrator authority to use this command.

An interface node connects an IBM SONAS system to an IP network for file-serving capabilities by using the Network File System (NFS) protocol. You must configure cache gateway nodes to enable WAN caching on an IBM SONAS system. You can use WAN caching to distribute data transparently among data centers and multiple remote locations without disruption to applications.

After the **rmwcachenode** operation is finished, you can run the **lsnode** command to verify that the interface nodes are no longer configured as cache gateway nodes.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-nodelist *node_list*
Specifies the IDs of the interface nodes that you want to disable as cache gateway nodes. The *node_list* variable contains a comma-separated list of the interface node IDs. Use the **lsnode** command to retrieve the node IDs.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Removing a cache gateway node

The following command removes a node as the caching gateway node on an IBM SONAS system.

```
tpctool> rmwcachenode -nodelist int003st001+tpcsonas1
.storage.tucson.ibm.com+127.0.0.1+0
```

The following output is returned:

```
CachenodeId                                                    Status
================================================================
int003st001+tpcsonas1.storage.tucson.ibm.com+127.0.0.1+0 SUCCESS
```

Related reference:

"lsnode" on page 75
Use the **lsnode** command to list all nodes or specified nodes that are associated with a cluster that is on a Storwize V7000 Unified or IBM SONAS storage system.

"rmwcachenode" on page 144
Use the **rmwcachenode** command to remove the ability of interface nodes to function as cache gateway nodes. By removing the ability to function as cache gateway nodes, you can disable wide area network (WAN) caching on an IBM SONAS system. You must have Data Administrator authority to use this command.

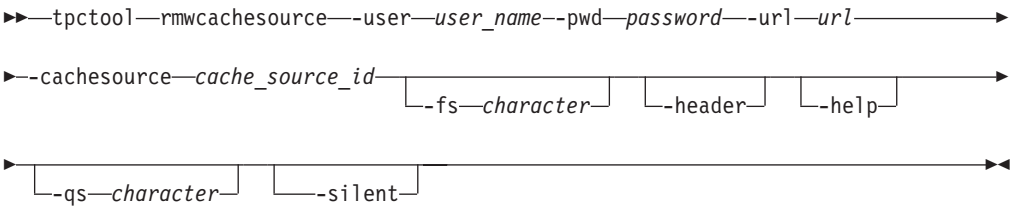
Related information:

http://publib.boulder.ibm.com/infocenter/sonasic/sonas1ic/index.jsp
More information about command parameters is available at the IBM SONAS Information Center.

rmwcachesource

Use the **rmwcachesource** command to remove a home system on an IBM SONAS system file set. The home system is the source of the data in a wide area network (WAN) cache configuration. When you remove a home system, data can no longer be cached to cache systems. You must have Data Administrator authority to use this command.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-cachesource *cache_source_id*
Specifies the ID of the home system to be removed. Use the **lswcachesource** command to retrieve the cache source ID.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Removing a home system in a WAN cache configuration

The following command removes a home system on an IBM SONAS home cluster.

```
tpctool> rmwcachesource -cachesource eesrc10+tpcsonas1.storage.tucson.
ibm.com+127.0.0.1+0
```

The following output is returned:

```
CachesourceId                                              Status
============================================================
eesrc10+tpcsonas1.storage.tucson.ibm.com+127.0.0.1+0 SUCCESS
```

Related reference:

"lswcachesource" on page 104
Use the **lswcachesource** command to list information about home systems that are configured on an IBM SONAS system. The home system is the source of the data in a wide area network (WAN) cache configuration. You can use WAN caching to distribute data transparently among data centers and multiple remote locations without disruption to applications. You must have Monitor authority to use this command.

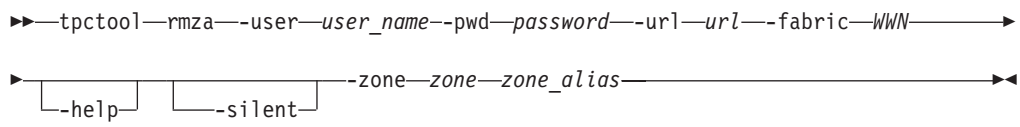
Related information:

http://publib.boulder.ibm.com/infocenter/sonasic/sonas1ic/index.jsp
More information about command parameters is available at the IBM SONAS Information Center.

rmza

Use the **rmza** command to remove a zone alias or aliases from a zone. You must have Administrator authority to use this command.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-fabric *WWN*
Specifies the fabric. The *WWN* variable is the worldwide name (WWN).

-help | -h | -?
Lists help information for the command.

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

-zone *zone*
Specifies the zone. The *zone* variable is the name of the zone.

zone_alias
Specifies the name or names of the zone aliases to be removed from the zone.

Example: Removing zone aliases from a zone

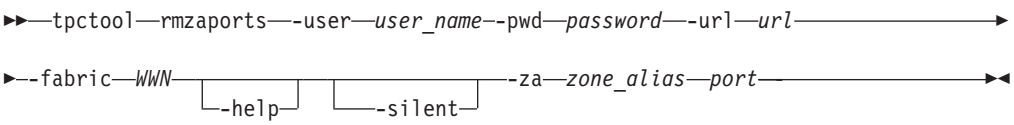
The following commands remove the PARIS zone alias from the EUROPE zone:

```
tpctool -user me -pwd mypass -url myhost:myport
tpctool> start -fabric 100000051E34F6A8
tpctool> rmza -fabric 100000051E34F6A8 -zone EUROPE PARIS
tpctool> commit -fabric 100000051E34F6A8
```

rmzaports

Use the **rmzaports** command to remove a port or ports from a zone alias. You must have Administrator authority to use this command.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-fabric *WWN*
Specifies the fabric. The *WWN* variable is the worldwide name (WWN).

-help | -h | -?
Lists help information for the command.

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

-za *zone_alias*
Specifies the name of the zone alias from which the ports to be removed.

port
Specifies the name or names of the ports to be removed from the zone alias.

Example: Removing a port from a zone alias

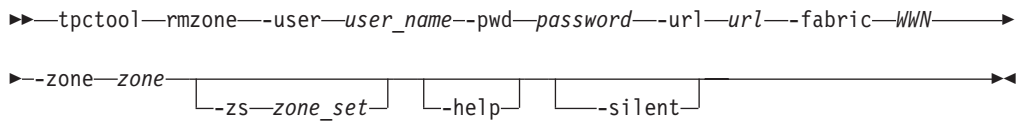
The following commands remove a port from the PARIS zone alias:

```
tpctool> -user me -pwd mypass -url myhost:myport
tpctool> start -fabric 100000051E34F6A8
tpctool> rmzaports -fabric 100000051E34F6A8 -za PARIS 210000E08B0B4C2G
tpctool> commit -fabric 100000051E34F6A8
```

rmzone

Use the **rmzone** command to delete a zone or remove a zone from a zone set. If you remove or delete the last zone in a zone set, the zone set is also deleted. This command must be run as a transaction. You must have Administrator authority to use this command.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-fabric *WWN*
Specifies the fabric. The *WWN* variable is the worldwide name (WWN).

-zone *zone*
Specifies the zone. The *zone* variable is the name of the zone. If the last zone in the zone set is removed or deleted, the zone set also is deleted.

-zs *zone_set*
Specifies that zone is removed from the zone set. The *zone_set* variable is the name of the zone set. If this option is not issued, the zone is deleted.

-help | -h | -?
Lists help information for the command.

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Tip: To delete a zone from a zone set, the zone must be included in another zone set.

Example: Deleting a zone

The following commands delete the WINDOWSNT zone:

```
tpctool> start -user me -pwd mypass -url myhost:myport -fabric 100000051E34F6A8
tpctool> rmzone -fabric 100000051E34F6A8 -zone WINDOWSNT
tpctool> commit -fabric 100000051E34F6A8
```

Example: Removing a zone from a zone set

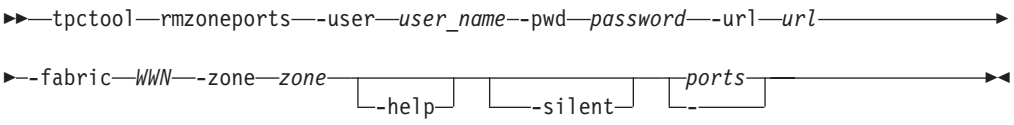
The following commands remove the WINDOWSNT zone from the PARIS zone set:

```
tpctool> start -user me -pwd mypass -url myhost:myport -fabric 100000051E34F6A8
tpctool> rmzone -fabric 100000051E34F6A8 -zone WINDOWSNT -zs PARIS
tpctool> commit -fabric 100000051E34F6A8
```

rmzoneports

Use the **rmzoneports** command to remove switch ports from a zone. This command must be run as a transaction. You must have Administrator authority to use this command.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-fabric *WWN*
Specifies the fabric. The *WWN* variable is the worldwide name (WWN).

-zone *zone*
Specifies the zone. The *zone* variable is the name of the zone.

-help | -h | -?
Lists help information for the command.

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

ports **|** **-**
Specifies the switch ports. The *ports* variable is a list of worldwide port names (WWPNs). If you specify a single dash (-), the WWPNs are read from standard input.

Example: Removing switch ports from a zone set

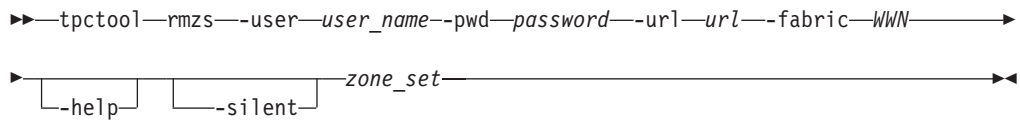
The following commands remove several switch ports from the SUNSOLARIS zone. The list of WWPNs is read from standard input:

```
tpctool> start -user me -pwd mypass -url myhost:myport -fabric 100000051E34F6A8
tpctool> rmzoneports -fabric 100000051E34F6A8 -zone SUNSOLARIS -
tpctool> commit -fabric 100000051E34F6A8
```

rmzs

Use the **rmzs** command to delete a zone set. This command must be run as a transaction. You must have Administrator authority to use this command.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-fabric *WWN*
Specifies the fabric. The *WWN* variable is the worldwide name (WWN).

-help | -h | -?
Lists help information for the command.

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

zone_set
Specifies the zone set. The *zone_set* variable is the name of the zone set.

Tip: To delete a zone set, it must be inactive. If you attempt to delete a zone set that is empty, the zone set is not deleted and no error message is given.

Example: Deleting a zone set

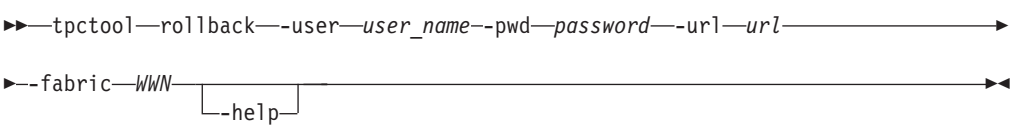
The following commands delete the PARIS zone set:

```
tpctool> start -user me -pwd mypass -url myhost:myport -fabric 100000051E34F6A8
tpctool> rmzs -fabric 100000051E34F6A8 PARIS
tpctool> commit -fabric 100000051E34F6A8
```

rollback

Use the **rollback** command to erase any commands that were issued since you started the transaction. You must have Administrator authority to use this command.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-fabric *WWN*
Specifies the fabric. The *WWN* variable is the worldwide name (WWN).

-help | -h | -?
Lists help information for the command.

Example: Rolling back a transaction

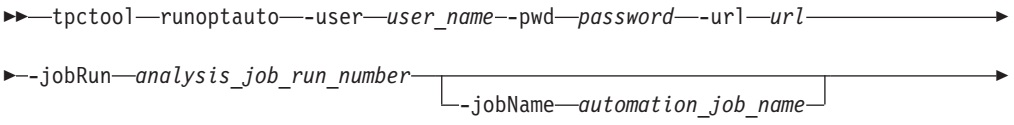
The following command rolls back a transaction. The user has previously issued connection options, started a transaction, and issued a fabric-control command:

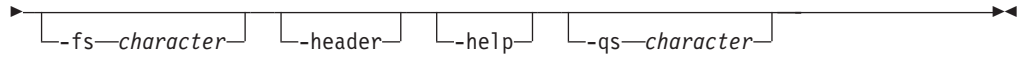
```
tcptool> rollback -fabric 100000051E34F6A8
```

runoptauto

Use the **runoptauto** command to submit an optimization automation job to implement the actions that are recommended by an optimization analysis job. You can view the results of the runoptauto command by using the **lsoptauto** command.

Syntax





Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-jobRun *analysis_job_run_number*
Specifies the number of the analysis job that generated the recommendations to be implemented.

-jobName *automation_job_name*
Specifies the name of the automation job in the job management panel. If you do not specify the automation job name, a name is created with the format: automation_*timestamp*.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

Example: Submitting an optimization automation job

The following command submits an optimization automation job that will implement the recommendations that are generated by an optimization analysis job.

```
tpctool> runoptauto -user admin -pwd password -url localhost:9550
-jobRun 24005 -jobName autoJob
```

The following output is returned:

```
Automation Job Run Number      Status
=======================================
42002                          SUCCESSFUL
```

Related reference:

"lsoptauto" on page 80
Use the **lsoptauto** command to display the status of the recommendations that were submitted by the **runoptauto** command.

runoptschedule

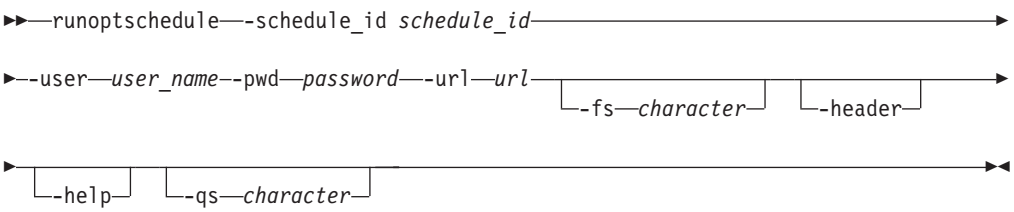
Use the **runoptschedule** command to run a schedule that analyzes storage tiering.

In the web GUI, you can create schedules that are based on the criteria that you entered in the Analyze Tiering wizard. Each time that the schedule is run, a job with a unique ID is created.

When you issue the **runoptschedule** command, the job ID for the schedule is shown.

Tip: Issue the **lsoptschedules** command to show a list of schedules and schedule IDs. After you issue the **runoptschedule** command, you can issue the **showoptresults** command to show the results of the analysis.

Syntax



Parameters and arguments

-schedule_id *schedule_id*
Specifies the ID of the schedule.

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

Example: Running a schedule

Issue the following command to run the schedule:

```
tpctool> runoptschedule -schedule_id 811002
```

The following output is returned:

```
Job ID
======
18006
```

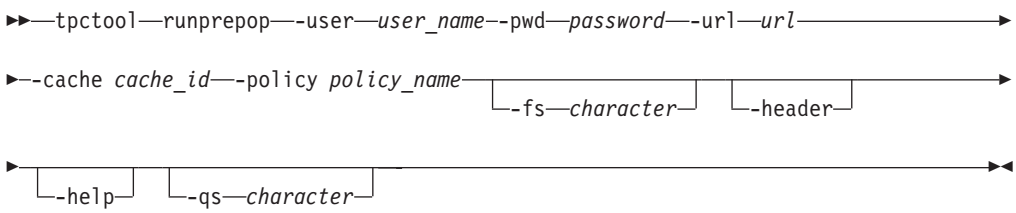
runprepop

Use the **runprepop** command to cache all the data in a home file set in a wide area network (WAN) to the cache file set. You can use the prepopulation function to cache files in batch mode so that they are already cached when they are accessed by an application. You must have Monitor authority to use this command.

Use the prepopulation function when you configure WAN caching in an IBM SONAS system. Network delays can be reduced if files are already cached when the application starts.

To control how data is cached, you must specify a prepopulation policy for the prepopulation command. To create a caching policy, run the IBM SONAS **mkpolicy** command on the IBM SONAS system. To view the details of the caching policies, run the IBM SONAS **lspolicy** command on the IBM SONAS system.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-cache *cache_id*
Specifies the ID of the cache system to prepopulate with data from the home system.

-policy *policy_name*
Specifies the name of the policy to use for prepopulation. Use the **lspolicy** command on your IBM SONAS system to retrieve a list of policy names.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

Example: Running a cache prepopulation task

The following command caches all the data in a home file set to the cache system file set by using the specified policy:

```
tpctool> runprepop -cache remotefset3+gpfs0+tpcsonas3.storage.tucson.ibm.com
+127.0.0.1+0 -policy prefetchpolicy
```

The following output is returned:

```
Cache ID                                                Status
=======================================================
remotefset3+gpfs0+tpcsonas3.storage.tucson.ibm.com SUCCESS
```

Related information:

http://publib.boulder.ibm.com/infocenter/sonasic/sonas1ic/index.jsp
More information about command parameters is available at the IBM SONAS Information Center.

setarray

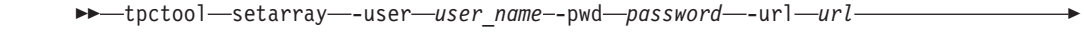
Use the **setarray** command to set the type of back-end storage system, type of Redundant Array of Independent Disks (RAID), type of disk, and number of disks for an array.

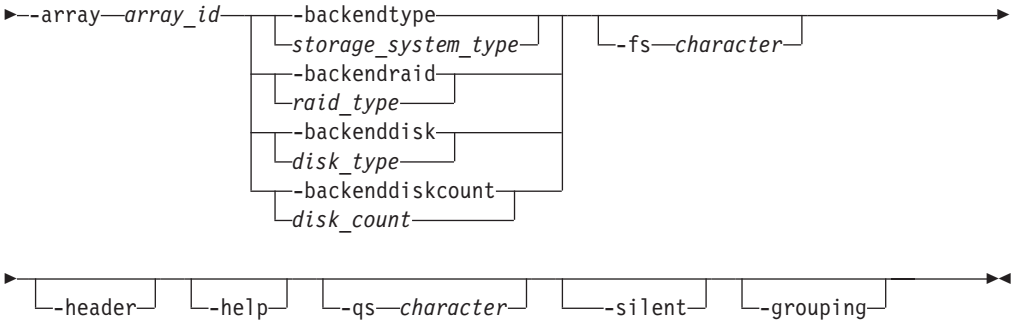
This command is available for the following storage systems:

- Storwize V7000
- Storwize V7000 Unified
- SAN Volume Controller

You must have Administrator authority to use this command.

Syntax





Parameters and arguments

When you issue the **setarray** command, you must enter a value for the **array** parameter and at least one of the following parameters:

- **-backendtype**
- **-backendraid**
- **-backenddisk**
- **-backenddiskcount**

The default value is used for the parameters that you do not set.

Tip: You can set the values for back-end storage systems on the MDisk Group Details page in the Tivoli Storage Productivity Center graphical user interface.

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-array *array_id*
Specifies the ID of the array.

-backendtype *storage_system_type*
Specifies the type of back-end storage system that manages most of the subsystem pool resources. You can enter a type that you added or use one of the following values.

Value	Name
C	EMC Clariion
D	DS8000
S	EMC Symmetrix
X	XIV
V	DS4000
DEFAULT	Default value

Tip: Use the **lsbackendtypes** command to provide a list of existing back-end types of storage systems and use the **setbackendtype** command to add new back-end types of storage systems.

-backendraid *raid_type*
Specifies the type of RAID that is associated with the back-end storage system. You can enter a type that you added or use one of the following values.

Value	Description
1	RAID 1
5	RAID 5
6	RAID 6
X	RAID X
DEFAULT	Default value

Tip: Use the **lsbackendraidtypes** command to provide a list of existing back-end types of RAID and use the **setbackendraidtype** command to add new back-end types of RAID.

-backenddisk *disk_type*
Specifies the type of disk. You can enter a type that you added or use one of the following values.

Value	Description
A07	Sata - 7,500 rpm
F10	Fiber - 10,000 rpm
F15	Fiber - 15,000 rpm
DEFAULT	Default value

Tip: Use the **lsbackenddisktypes** command to provide a list of existing back-end types of disk and use the **setbackenddisktype** command to add new back-end types of disk.

-backenddiskcount *disk_count*
Specifies the number of disks.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

-grouping
Enables the grouping of numeric values. For example, in English the value 12000 would display as 12,000. The grouping character is determined by the system locale.

Example: Setting back-end storage subsystem values

The following command sets the back-end storage system, type of RAID, type of disk, and the number of disks for the specified array:

```
tpctool> setarray -array 0000020064405BA0:0+0000020064405BA0+0 -backendtype D
-backendraidtype 5 -backenddisktype F10 -backenddiskcount 160
```

The array ID and the status of the message is displayed.

```
Array List                              Status
================================================
0000020064405BA0:0+0000020064405BA0+0 Succeeded.
```

setbackenddisktype

Use the **setbackenddisktype** command to set or update the type of back-end disk.

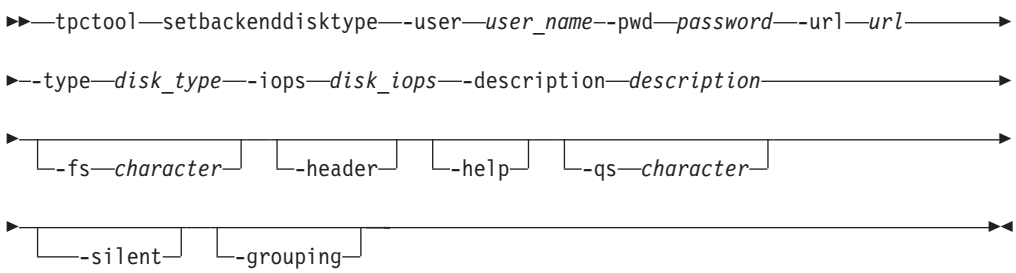
This command is available for the following storage systems:

- Storwize V7000
- SAN Volume Controller

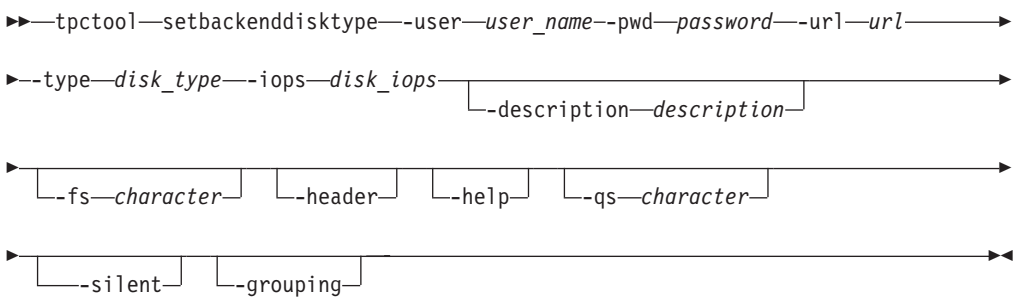
You must have Administrator authority to use this command.

Syntax for setting and updating back-end disk types

Use this syntax to set a new type of back-end disk:



Use this syntax to update the type of a back-end disk:



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-type *disk_type*
Specifies the type of the back-end disk that manages most of the back-end pool resources. The maximum number of characters that you can enter is 10. You can specify a back-end disk type or use one of the following values:

Value	Description
A07	Sata - 7,500 rpm
F10	Fiber - 10,000 rpm
F15	Fiber - 15,000 rpm
DEFAULT	Default type for unconfigured devices

-iops *disk_iops*
The average number of input/output operations per second for the disk. You can specify a value or use one of the following values.

IOPS Value	Back-end Disk Type
40	A07
120	F10
150	F15
0	Default value for unconfigured devices

-description *description*
Provides more information about the type of back-end disk. The maximum number of characters that you can enter is 256.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

-grouping
Enables the grouping of numeric values. For example, in English the value 12000 would display as 12,000. The grouping character is determined by the system locale.

Example: Setting a back-end disk type

The following command sets the type of back-end disk for a back-end disk pool:

```
tpctool> setbackenddisktype -type testing -description testing -iops 99
```

If the command is successful, the following message is displayed:

```
Back-end Disk Type Status
=========================
testing           Succeeded.
```

setbackendraidtype

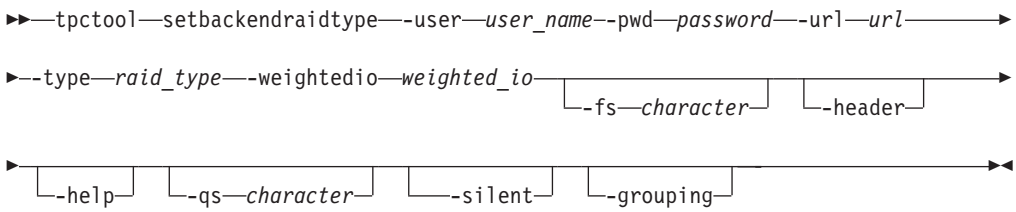
Use the **setbackendraidtype** command to set the types of back-end RAID arrays for managed disk groups.

This command is available for the following storage systems:

- Storwize V7000
- SAN Volume Controller

You must have Administrator authority to use this command.

Syntax



Parameters and arguments

-type *raid_type*
Specifies the type of the back-end RAID array. You can specify a back-end RAID type or use one of the following values:

Value	Description
DEFAULT	The default RAID type.
1	RAID 1
5	RAID 5
6	RAID 6
X	The RAID type that is used by IBM XIV Storage System.

Tip: Use the **lsbackendraidtypes** command to list the available types of back-end RAIDs.

-weightedio *weighted_io*
Specifies the weighted input/output of the RAID type.

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

-grouping
Enables the grouping of numeric values. For example, in English the value 12000 would display as 12,000. The grouping character is determined by the system locale.

Example: Setting back-end RAID types

The following command sets a type of back-end RAID:

```
tpctool> setbackendraidtype -type testing -weightedio 15
```

If the command is successful, the following message displays:

```
Back-end RAID Type Weighted IO
======================
testing           Succeeded.
```

setbackendtype

Use the **setbackendtype** command to set or update the type of back-end storage system.

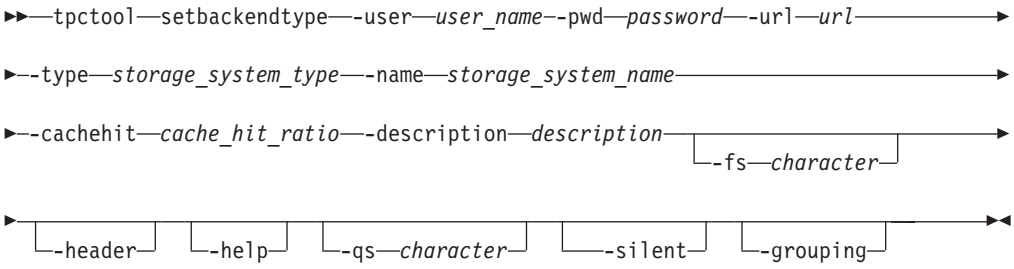
This command is available for the following storage systems:

- Storwize V7000
- Storwize V7000 Unified
- SAN Volume Controller

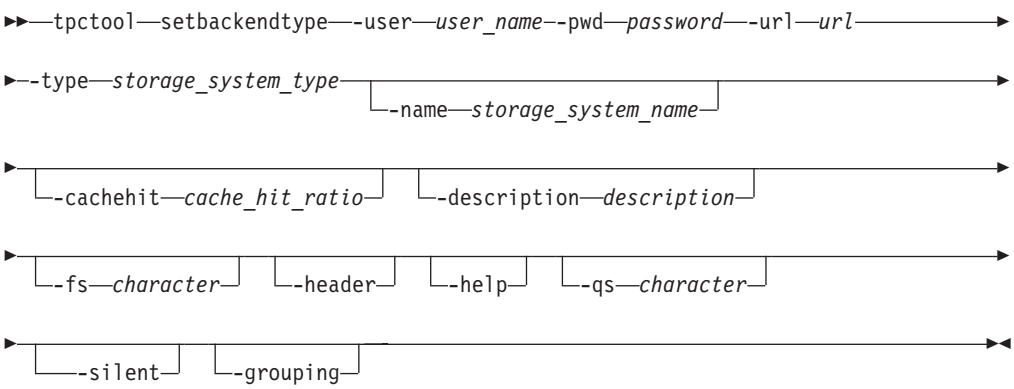
You must have Administrator authority to use this command.

Syntax for setting and updating back-end types of storage systems

Use this syntax to set a new type of back-end storage system:



Use this syntax to update a type of back-end storage system:



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-type *storage_system_type*
Specifies the type of back-end storage system that manages most of the subsystem pool resources. The maximum number of characters that you can enter is 10. You can enter a type or use one of the following values:

Value	Name
C	EMC Clariion
D	DS8000
S	EMC Symmetrix
X	XIV
V	DS4000

Value	Name
DEFAULT	Default value

-name *storage_system_name*
Specifies the name of the back-end type of storage system. The maximum number of characters that you can enter is 256. The name of the type of storage system is displayed on the MDisk Group Details page in the Tivoli Storage Productivity Center graphical user interface. You can enter a name or use one of the following values.

Description value	Associated type value
"EMC Clariion"	C
DS8000	D
"EMC Symmetrix"	S
XIV	X
DS4000	V
DEFAULT	DEFAULT

Tip: If you enter a value for the **-name** or **-description** parameter that contains spaces, you must enclose the value in double quotation marks such as `"My Description"`.

-cachehit *cache_hit_ratio*
Specifies the ratio of cache hits for read operations. The maximum number of characters that you can enter is 4. You can specify a value or use one of the following values:

Value	Back-end storage system
50	EMC Clariion
50	DS8000
70	EMC Symmetrix
50	DS4000
50	XIV
0	Default value

-description *description*
Provides more information about the type of back-end storage system. The maximum number of characters that you can enter is 256. You can enter a description or use one of the following values:

Value	Description
"CX BE Cache Hit Ratio"	EMC Clariion
"DS8K Disk Controller"	DS8000
"DMX BE Cache Hit Ratio"	EMC Symmetrix
"IBM XIV"	XIV
"DS5K Disk Controller"	DS4000
"DEFAULT TYPE FOR UNCONFIGURED DEVICES"	0 (default value)

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

-grouping
Enables the grouping of numeric values. For example, in English the value 12000 would display as 12,000. The grouping character is determined by the system locale.

Example: Setting a new type of back-end storage system

The following command sets a new type of back-end storage system:

```
setbackendtype -type L -name test3 -cachehit 90 -description test_3
```

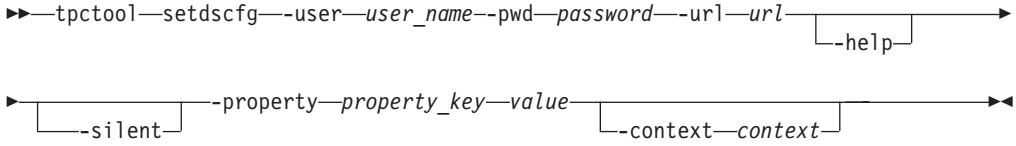
The following message is displayed:

```
Back-end Type Status
=======================
L             Succeeded.
```

setdscfg

Use the **setdscfg** command to set the value of a property in the property file for the Device server. You must have Administrator authority to use this command.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-help | -h | -?
Lists help information for the command.

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

-property *property_key value*
Specifies the value to set for the indicated property key. The *property_key* variable is the property key and the *value* variable is the value.

-context *context*
Specifies a classification or category for a configuration property. The *context* variable is the context properties. For example, `-context DeviceServer` applies to the Tivoli Storage Productivity Center device server only. The parameter, `-context PerformanceManager`, applies to the Tivoli Storage Productivity Center performance manager only.

Example: Setting a property value

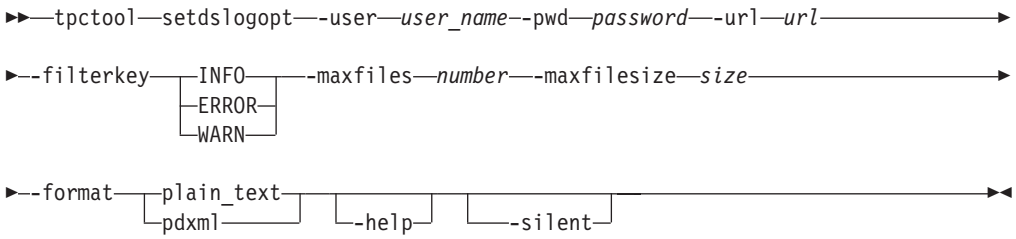
The following command sets the value of the `SnmpRetryCount` property to 3:

```
tpctool setdscfg -url localhost:9550 -user ***** -pwd ***** -property
SnmpRetryCount -context DeviceServer 3
```

setdslogopt

Use the **setdslogopt** command to set options for the log file that is used by the Device server. You must have Administrator authority to use this command.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-filterkey INFO | ERROR | WARN
Specifies the types of messages that are logged in the message log file. Enter one of the following values in uppercase.

- INFO, to log informational, warning, and error messages
- ERROR, to log only error messages
- WARN, to log warning and error messages

-maxfiles *number*
Specifies the maximum number of log files. The *number* variable is an integer.

-maxfilesize *size*
Specifies the maximum size (in MB) of the log file. The *size* variable is an integer.

-format plain_text | pdxml
Specifies the format of the log file.

-help | -h | -?
Lists help information for the command.

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Setting log file options

The following command sets options for the log file that is used by the Device server:

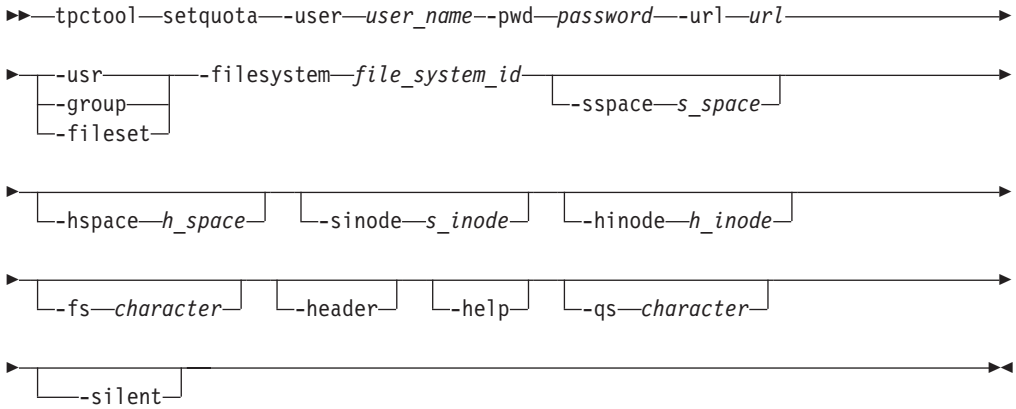
```
tpctool> setdslogopt -user me -pwd mypass -url myhost:myport -filterkey character
-maxfiles 4 -maxfilesizes 10 -format plain_text
```

setquota

Use the **setquota** command to set the amount of disk space and number of inodes that are assigned on a file system for a specified user name, group, or file set.

A file system consists of attributes that include user names, groups, and file sets. You can set the amount of disk space and the number of inodes that are assigned for each attribute. This action limits the attributes from using more than the maximum amount of space or inodes that it was assigned. You must have Administrator authority to use this command.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-usr | -group| -fileset
Specifies the type of quota.

-filesystem *file_system_id*
Specifies the ID for the file system that is associated with the quota. You can use the **lsfs** command to view information, including the IDs, for all file systems that are discovered. The ID is listed in the ID column of the **lsfs** command output.

-sspace *s_space*
Specifies the usage soft limit or level of disk space at a level less than that which the user, group, or file set can safely operate. If you enter a size without a suffix, then the unit of measurement is byte. Otherwise, enter the suffix k (kilobyte), m (megabyte), g (gigabyte), t (terabyte), or p (petabyte).

-hspace *h_space*
Specifies the usage hard limit or maximum disk space which the user, group, or file set can accumulate. If you enter a size without a suffix, then the unit of measurement is byte. Otherwise, enter the suffix k (kilobyte), m (megabyte), g (gigabyte), t (terabyte), or p (petabyte).

-sinode *s_inode*
Specifies the soft limit or the number of inodes spaces at a level less than that which the user, group, or file set can safely operate. You can enter inode limits with only k (kilobyte), or m (megabyte) suffixes. The maximal value that you can specify is 2 GB.

-hinode *h_inode*
Specifies the hard limit or maximum number of inodes which the user, group, or file set can accumulate. You can enter inode limits with only k (kilobyte), or m (megabyte) suffixes. The maximal value that you can specify is 2 GB.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Setting a quota for a user

The following command sets the amount of disk space and number of inodes that are assigned on a file system for the `tpcuser` user:

```
tpctool> setquota -filesystem ee_fs03+kq98n5d.ibm+00000200A20045DC+0
-usr tpcuser -sspace 70M -hspace 100M -user admin -pwd password
-url localhost:9550
```

The following output is returned:

```
QuotaId                            Status
=======================================
4971_U_tpcuser+00000200A20045DC+0 SUCCESS
tpctool>
```

Example: Setting a quota for a group

The following command sets the amount of disk space and number of inodes that are assigned on a file system for the `users` group:

```
tpctool> setquota -filesystem ee_fs03+kq98n5d.ibm+00000200A20045DC+0
-group users -sspace 50M -hspace 100M -user admin  -pwd password
-url localhost:9550
```

The following output is returned:

```
QuotaId                          Status
=======================================
4971_G_users+00000200A20045DC+0 SUCCESS
```

Example: Setting a quota for a file set

The following command sets the amount of disk space and number of inodes that are assigned on a file system for the `testfset` file set:

```
tpctool> setquota -filesystem ee_fs03+kq98n5d.ibm+00000200A20045DC+0
-fileset testfs -sspace 50M -hspace 100M -user admin  -pwd password
-url localhost:9550
```

The following output is returned:

```
QuotaId                           Status
=======================================
4971_F_testfs+00000200A20045DC+0 SUCCESS
```

Related information:

http://publib.boulder.ibm.com/infocenter/sonasic/sonas1ic/index.jsp
More information about command parameters is available at the IBM SONAS Information Center.

http://publib.boulder.ibm.com/infocenter/storwize/unified_ic/index.jsp
More information about command parameters is available at the Storwize V7000 Unified Information Center.

showoptresults

Use the **showoptresults** command to show the recommendations for optimizing the placement of volumes.

In the web GUI, you use the Analyze Tiering wizard to specify criteria for analyzing the tiering of volumes. For example, you specify the following criteria:

- The storage pools that contain the volumes that you want to analyze
- The target storage pools for placing volumes that are underutilized and overutilized.
- The storage tiering policy to place volumes in the storage tier that best meets the performance requirements of the volumes

If the workload activity requirements of the analyzed volumes are not met, recommendations for optimizing the placement of the volumes are provided. In the web GUI, you can create schedules that are based on the criteria that you entered in the Analyze Tiering wizard. Each time the schedule is run, a job with a unique job ID is created.

Tip: To issue the **showoptresults** command, you must enter the job ID that is associated with the schedule. Issue the **lsoptschedules** command to show a list of the schedule IDs and their associated job IDs.

When you issue the **showoptresults** command, the following information is displayed for each volume.

Recommendation ID
Specifies the unique ID for the recommendations.

Volume
Specifies the name of the volume that is selected. For volumes in mirrored volume relationships, it specifies the name of the primary volume.

Source Pool
Specifies the current location of the volume.

Destination Pool
Specifies the storage pool that best meets the workload requirements of the volume.

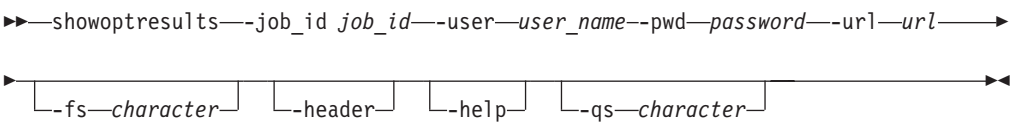
Source Tier
Specifies the tier level of the source storage pool.

Destination Tier
Specifies the tier level of the destination storage pool.

Volume Copy Pool
Specifies the original location of the secondary volume of a volume in a mirrored volume relationship.

Server Specifies the name of the server that the volume is assigned to.

Syntax



Parameters and arguments

-job_id *job_id*
Specifies the ID of the job.

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

Example: Show the analysis results for a job

Issue the following command to show the analysis results for a job:

```
tpctool> showoptresults -job_id 11002
```

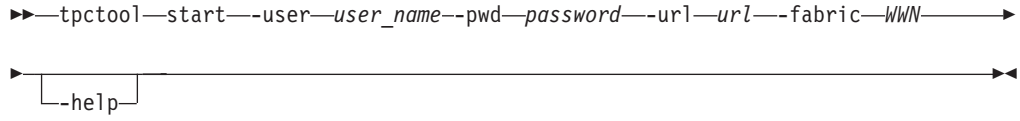
The following output is returned:

```
Recommendation ID   Volume    Source Pool
=========================================
68066               volume_1  pool_a
68067               volume_2  pool_c

Destination Pool  Source Tier  Destination Tier
===============================================
pool_b            2            1
pool_f            1            3

Volume Copy Pool   Server
=========================
-                  -
-                  -
```

start

Use the **start** command to start a transaction. You must have Administrator authority to use this command.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-fabric *WWN*
Specifies the fabric. The *WWN* variable is the worldwide name (WWN).

-help | -h | -?
Lists help information for the command.

Example: Starting a transaction

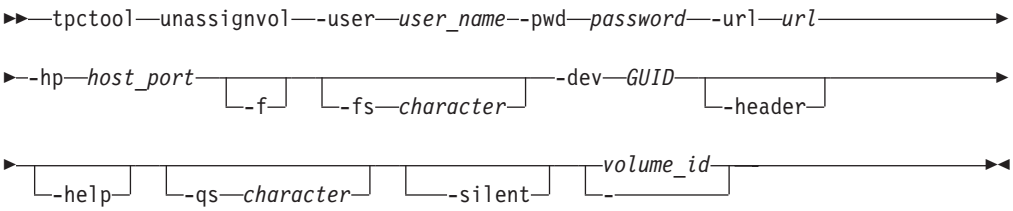
The following command starts a transaction:

```
tpctool> start -user me -pwd mypass -url myhost:myport -fabric 100000051E34F6A8
```

unassignvol

Use the **unassignvol** command to remove the host ports from the assignment list for a volume. You must have Administrator authority to use this command.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-hp *host_port*
Specifies the host ports. The *host_port* variable is a comma-separated list of worldwide port numbers (WWPNs).

-f Turns off the confirmation message that is displayed before the ports are removed from the assignment list.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-dev *GUID*
Specifies the storage subsystem. The *GUID* variable is the globally unique identifier (GUID) of the storage subsystem as returned by the **lsdev -subsys** command.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

volume_id | **-**
Specifies the volumes. The *volume_ID* variable is a comma-separated list of volume IDs, such as that obtained by running the **lsvol** command. If a single dash (-) is issued, the volume IDs are read from standard input.

Example: Removing host ports

The following command removes three host ports from the assignment list for the specified volume:

```
tpctool> unassignvol -user me -pwd mypass -url myhost:myport
-hp 5005076300C79470,5005076300D09470,5005076300CB9470 2105.22232
```

The following output is returned:

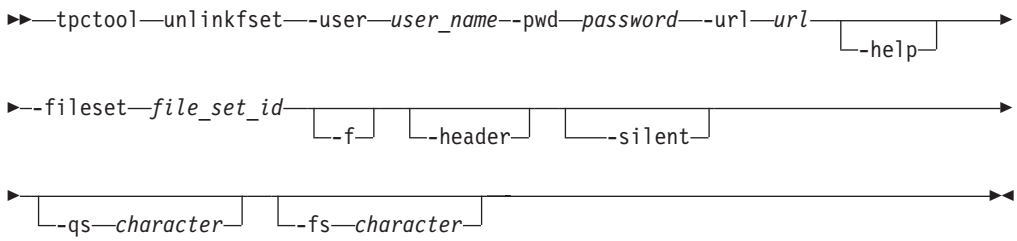
```
Volume ID         PoolID             Status
=========================================
2105.22232        P0                 SUCCESS
2105.22232        P1                 SUCCESS
2105.22232        P2                 SUCCESS
```

unlinkfset

Use the **unlinkfset** command to unlink a file set. You must have Administrator authority to use this command.

Unlinking a file set makes all the files in the file set inaccessible while the file set remains unlinked. The files are not deleted; they are only inaccessible.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-help | -h | -?
Lists help information for the command.

-fileset *file_set_id*
Specifies the Tivoli Storage Productivity Center key of the file set to be unlinked. The file set key is listed in the ID column of the **lsfset** command output.

-f
Forces the files to be unlinked. If you use this option, the command forcibly closes any open files, causing the ESTALE error the next time the file is used.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

Example: Unlinking a file set

The following command unlinks the file set named eefset01+eefs+kq458mv.ibm+00000200A2A0153C+0.

```
tpctool> unlinkfset -fileset eefset01+eefs+kq458mv.ibm+00000200A2A0153C+0
-user admin -pwd password -url localhost:9550
```

The following output is returned:

```
FilesetId                                      Status
================================================
eefset01+eefs+kq458mv.ibm+00000200A2A0153C+0 SUCCESS
```

Related information:

http://publib.boulder.ibm.com/infocenter/sonasic/sonas1ic/index.jsp
More information about command parameters is available at the IBM SONAS Information Center.

http://publib.boulder.ibm.com/infocenter/storwize/unified_ic/index.jsp
More information about command parameters is available at the Storwize V7000 Unified Information Center.

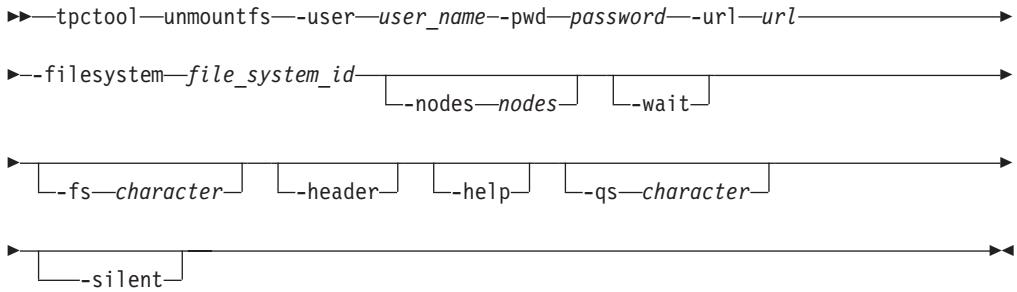
unmountfs

Use the **unmountfs** command to unmount a file system.

The **unmountfs** command unmounts a file system on all interface nodes, management nodes, or a specified subset. You must have Administrator authority to use this command.

Attention: Exports of the file system can block the unmount process. The active exports of the file system must be inactive before the unmount process is done.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-filesystem *file_system_id*
Specifies the ID of file system to be unmounted.

-nodes *nodes*
Lists the nodes to unmount the file system on, in a comma-separated list. Specify only the interface node, management node, or both. If you omit this parameter, the file system is unmounted on all nodes.

-wait
Indicates that the system waits until the file system is unmounted on all the nodes. An error occurs after the system waits 3 minutes.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Unmount a file system

The following command unmounts a file system on a management node.

```
tpctool> unmountfs -filesystem eefs+kq458mv.ibm+00000200A2A0153C+0
-user admin -pwd password -url localhost:9550 -nodes mgmt001st001
```

The following output is returned:

```
FilesystemId                          Status
============================================
eefs+kq458mv.ibm+00000200A2A0153C+0 SUCCESS
```

Related information:

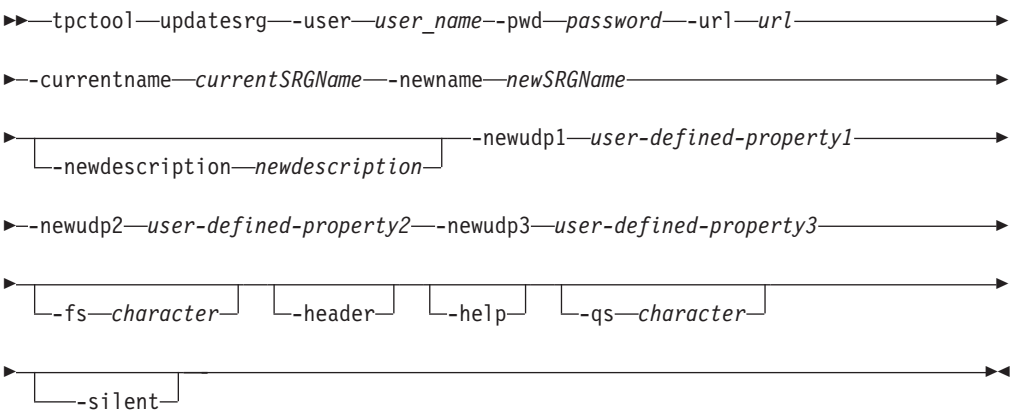
http://publib.boulder.ibm.com/infocenter/sonasic/sonas1ic/index.jsp
More information about command parameters is available at the IBM SONAS Information Center.

http://publib.boulder.ibm.com/infocenter/storwize/unified_ic/index.jsp
More information about command parameters is available at the Storwize V7000 Unified Information Center.

updatesrg

Use the **updatesrg** command to update the attributes of the specified Storage Resource Group with a new name, description, or user-defined properties.

Syntax



Parameters and arguments

-user *user_name*
Specifies a Tivoli Storage Productivity Center user ID.

-pwd *password*
Specifies the password for the Tivoli Storage Productivity Center user ID.

-url *url*
Specifies the Device server. The format of the URL is *system:port_number*, where *system* represents either the host name or IP address, and *port_number* represents the Tivoli Storage Productivity Center Device server port.

-currentname *currentSRGName*
Specifies a unique name already in use, fewer than 60 characters long. It cannot contain any of the following characters:

\ / : * ? " < > | .

The name of the user who creates the Storage Resource Group forms the beginning of the name. Use the `lssrg -l` command to display a list of Storage Resource Groups.

-newname *newSRGName*
A unique name not already in use, fewer than 60 characters long. It cannot contain any of the following characters:
\ / : * ? " < >| .

The name of the user that creates the Storage Resource Group is added to the beginning of the Storage Resource Group name, followed by the name that is specified in the *newSRGName* variable.

-newdescription *newdescription*
The description can contain any alphanumeric characters, and must be fewer than 255 characters long.

-newudp1 *user-defined-property1*
(optional) A user-defined property that might contain anything of significance to the Storage Resource Group administrator. The UDP can contain any alphanumeric character, and must be fewer than 255 characters long.

-newudp2 *user-defined-property2*
(optional) A user-defined property that might contain anything of significance to the Storage Resource Group administrator. The UDP can contain any alphanumeric character, and must be fewer than 255 characters long.

-newudp3 *user-defined-property3*
(optional) A user-defined property that might contain anything of significance to the Storage Resource Group administrator. The UDP can contain any alphanumeric character, and must be fewer than 255 characters long.

-fs *character*
Specifies the 7-bit character that separates the information in the output. If you omit this parameter, the information is separated by blank spaces.

-header
Suppresses the column headings in the output. If you omit this parameter, the column headings are included.

-help | -h | -?
Lists help information for the command.

-qs *character*
Specifies the 7-bit character that surrounds character strings and date stamps in the output. If you omit this parameter, character strings and date stamps are enclosed by double quotation marks (").

-silent
Suppresses all output for the command. If you omit this parameter, output is included.

Example: Updating the attributes of a Storage Resource Group

The following command updates a Storage Resource Group with the specified attributes:

```
tpctool
tpctool> updatesrg -currentname currentSRGName -newname newSRGName
-newdescription newdescription -newudp1 user-defined-property1
-newudp2 user-defined-property2 -newudp3 user-defined-property3
```

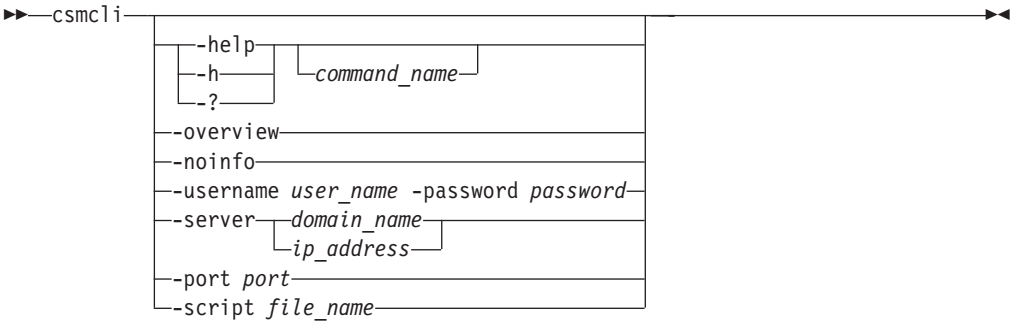
The following output is returned:

```
Name                                Status
=======================================
Administrator.my-new-example-srg SUCCESS
```

csmcli command

The **csmcli** command is the IBM Tivoli Storage Productivity Center for Replication command line interpreter (CLI) program. This command can be used either on its own, using the associated options and arguments, or interactively by starting **csmcli** with no parameters or arguments to start an interactive session.

Syntax



Parameters

-help | -h | -? [*command_name***]**
Displays help for the specified command. If you do not specify a command name, this option displays help for the **csmcli** command. If you specify more parameters and arguments other than a command name, those parameters and arguments are ignored.

-overview
Displays overview information about using the CLI program.

-noinfo
Removes the copyright, version, and build information when you start the **csmcli**.

-username *user_name*
Specifies the Tivoli Storage Productivity Center for Replication user name with which you want to log in.

-password *password*
Specifies the password for the Tivoli Storage Productivity Center for Replication user name with which you want to log in.

Important: When you specify this option, the password is displayed as plain text. Using this form of authentication can cause a security exposure.

If you specify a user name but not a password, and Tivoli Storage Productivity Center for Replication does not find the password in an authentication file, you are prompted for the password. If prompted for the password, the password does not display in plain text.

-server {*domain_name* | *ip_address***}**
Sets the domain name or IP address of the Tivoli Storage Productivity Center for Replication server to which you want to connect.

Remember: The server domain name or IP address is used only during this CLI session.

-port *port*
Sets the port number to be used by the CLI program to connect to the IBM Tivoli Storage Productivity Center for Replication server. The default value is `5110`.

Note: The port number is used only during this CLI session.

-script *file_name*
Runs the set of command strings in the specified file outside of an interactive CLI session. If you specify this parameter, you must specify a file name.

The format options that are specified by using the **setoutput** command apply to all commands in the script.

command_string
Runs the specified command string outside of a CLI session.

Description

You can run **csmcli** commands locally from the management server or remotely by accessing the management server by using a remote-access utility, such as Secure Shell (SSH) or Telnet.

Run the **csmcli** command without any parameters, except the user name and password, to start an interactive CLI session.

Remember:

You can also go to the installation directory and double-click the `csmcli.bat` or `csmcli.sh` file to start a csmcli session in interactive mode. For example, on a Windows system, the `csmcli.bat` file is in `C:\Program Files\IBM\TPC\cli`.

On Linux systems, you must enter the CLI program name (**csmcli**) in lowercase. Command input can be either lowercase, uppercase, or mixed case, unless specific command parameters require case sensitivity.

Each CLI command issues a return value and message. Warning and informational messages are written to the standard output stream (stdout). Error messages are written to the standard error stream (stderr). If a syntax error occurs while one of the commands in the script is running, the script exits at the point of failure and returns to the system prompt.

Example

Start an interactive CLI session

This example illustrates how to start a CLI session if you did not set up an authentication configuration file.

```
shell> cmscli -username admin -password admin
csmcli>
```

Set the server and port for the management server

This example illustrates how to set the server domain name to `localhost` and port number to `5110` for the local management server.

```
shell> cmscli -server localhost -port 5110
```

Run several commands by using a script file

This example illustrates how to run several commands by using a script file name `cli_script.txt`.

```
shell> cmscli -script cli_script.txt
```

Command-line interface conventions

Information is provided about using the CLI program for Tivoli Storage Productivity Center for Replication. It includes information about command conventions and modes, command format requirements, and other usage information.

Syntax diagram conventions

A *syntax diagram* uses symbols to represent the elements of a command and to specify the rules for using these elements. A *keyword* represents the name of a command, flag, parameter, or argument. Required key words indicate the parameters or arguments that must be specified for the command.

To read syntax diagrams, follow the path of the line:

- Required keywords are displayed on the main path line. Mutually exclusive required keywords are stacked vertically. Optional key words indicate the parameters or arguments that you can choose to specify for the command. Optional keywords are shown under the main path line. Mutually exclusive optional keywords are stacked vertically.
- The main path line begins with double arrowheads (>>) and ends with two arrowheads that point to each other (><). If a diagram is longer than one line, each line to be continued ends with a single arrowhead (>) and the next line begins with a single arrowhead. The -->< symbol indicates the end of the syntax diagram.
- A dash (-) indicates that you must supply parameters from the `stdin` file rather than entering parameters.
- An arrow that returns to the start of an item means you can repeat the item. A character or space within the arrow means you must separate repeated items with that character or space.
- A stack of items followed by an arrow that returns to the start of the stack indicates that you can select more than one item. In some cases, you can repeat a single item.
- When a group of parameters is lengthy or a section is used multiple times in a command, it is shown as a separate fragment that follows the main diagram.

Syntax diagrams use position to indicate required, optional, and default values for keywords, variables, and operands:

- If an element is shown on the line, the element is required. If an element is shown under the line, the element is optional. If an element is shown over the line, the element is the default.
- If an operand has a default value, the operand is shown both over and under the main line. A value under the main line indicates that the operand must be specified. You must specify the default value or one of the other valid values that are shown. If an operand is not specified, the default value over the main line is used.
- When one or more items are shown under the main line, all of the items are optional.

Command emphasis

The following typefaces are used to show command emphasis:

boldface
Text in **boldface** represents command names.

italics Text in *italics* is used for variables for which you supply actual values, such as a default directory or the name of a cluster.

monospace
Text in monospace identifies the data or commands that you type, samples of command output, examples of program code or messages from the system, or names of command flags, parameters, arguments, and name-value pairs.

Special characters

The following special characters are used in the command descriptions:

minus sign (-)
Flags are prefixed with a minus sign (-). Flags define the action of a command or modify the operation of a command. You can use multiple flags, followed by parameters, when you issue a command. This character cannot be used as the first character of an object name.

vertical bar (|)
A vertical bar signifies that you choose only one value.

For example, [a | b] indicates that you can choose a, b, or nothing. Similarly, { a | b } indicates that you must choose either a or b.

quotation marks (" ")
Quotation marks around a string indicate that the value can include spaces, for example, "my session name."

brackets ([ ])
Brackets indicate optional options, parameters, and arguments.

braces ({ })
Braces indicate a required choice between two or more options or arguments.

ellipsis (...)
Ellipses indicate repetition or multiple values or arguments.

Command entry

This topic describes how to enter commands in a valid format.

Order of parameters

Parameters can be entered in any order, with the following exceptions:

- The first argument following the command name must be the action that is to be performed.
- If you are performing an action on a specific object, the object ID or name must be the last argument in the line.

Multiple values

For any commands that accept multiple input values of the same type, delimit the values with a comma with no spaces in the input string (for example, `-vol 3,5,8,9`).

For any commands that require multiple value types in one string, delimit the value types with a period. For example, if a volume requires a device number and a volume number, you might specify `-vol FCA86.3,FCA78.5,FCA96.8`. When input values are of different types but specified in the same flag, use a colon. For example, to specify a minimum and maximum value in the same flag, you would type `–size min:max`.

Multiple arguments

Tivoli Storage Productivity Center for Replication supports multiple arguments for the commands **chauth**, **chsess**, **lsdevice**, **lssess**, **lssessactions**, **lsvol**, and **rmsess**. If you invoke a command with multiple arguments, the command is applied for each of the arguments. For example, you might issue the following command to remove `session_a`, `session_b`, and `session_c`.

```
#rmsess session_a session_b session_c
```

When a command runs on more than one argument, the CLI program establishes a single security session to run the command on each of the multiple arguments.

Volumes and locations

The following volume values are valid:

ESS devices

Valid volume values include the device type, component type, device ID, subsystem ID, logical subsystem ID, and volume ID, with each separated by a period or colon. For example:

ESS single volume

```
ESS:2105.65312:VOL:202F (ESS:ELEMENTTYPE.DEVICEID:VOL:LSSVOLNUM)
```

User-defined objects

These are the requirements for valid user-defined object names:

- User-defined object names can be 250 characters or fewer, unless otherwise noted.
- Valid characters are A-Z, a-z, 0 - 9, dash (-), underscore (_), period (.), and colon (:).
- Object names must start with an alphanumeric character.
- Most object names cannot contain any blank spaces. However, you can include blanks in session names and location names.

- Do not translate user-defined objects or otherwise modify them from the user's entry (they should remain case-sensitive).

User-defined descriptions

These are the requirements for valid user-defined descriptions:

- If a description contains spaces, it must be enclosed in matching double quotation marks or single quotation marks.
- If a description that is already enclosed in matching quotation marks includes an asterisk, the asterisk must be preceded by an escape character, for example, `-desc "This is the \* pool"`.
- If a description that is already enclosed in matching quotation marks includes quotation marks or single quotation marks within the actual text string, these characters must be escaped. For example, `-desc "This is Hanna\'s description"` or `–desc "This is the pool I call \"Foo\"."`
- User-defined descriptions can be 250 characters or fewer. They cannot contain any leading blank spaces.
- User-defined descriptions should not be translated or otherwise modified from the user's entry, (that is they should remain case-sensitive).
- The CLI is sensitive to case when interpreting user-defined object names given as input. For example, object `FOO` is different than object `foo`.

Command modes

You can use the command line interface (CLI) to run a single command or a series of commands, either interactively or from a script.

Single-shot mode

If you want to run only a single command, specify the **csmcli** program and the command that you want to run from the shell prompt, for example:

```
shell> csmcli lslocation
Location  Details
=================
1         Boulder
3         Marana
2         Tucson
shell>
```

Interactive mode

If you want to run several commands, start an CLI session using the **csmcli** program with no parameters or arguments, and then enter each command at the `csmcli>` shell prompt, for example:

```
shell> csmcli
csmcli> rmsess exmp_session
Are you sure that you want to remove session exmp_session? [y/n]:y
Session exmp_session removed
csmcli> exit
shell>
```

Script mode

If you want to run a set of commands that you defined in a file, use the **csmcli** program with the -script parameter, for example:

```
shell> tpctool -script ~/bin/containersetup
shell>
```

You can add comments to the script file by placing a pound sign (#) in the first column, for example:

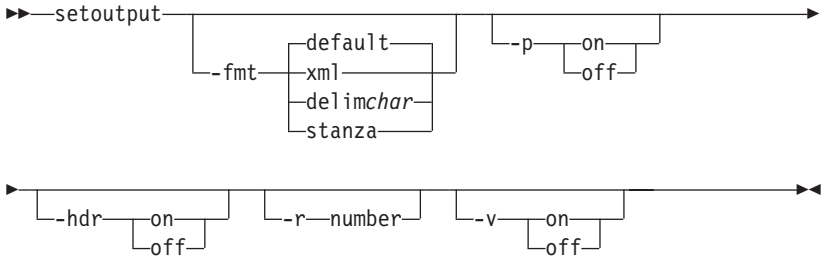
```
# This script file lists the default storage pool.
lspool -l -type default
```

The CLI program recognizes these built-in commands in interactive mode:

setoutput

Specifies various command-output format options. All settings specified with **setoutput** remain in effect for the duration of the interactive command session unless reset either with a command option or with **setoutput**. With no options, **setoutput** displays the current settings in the default output format. Settings from the **setoutput** command do not apply to help pages; help pages are shown in text output only.

Syntax



Parameters and arguments:

-fmt { default | xml | delim | stanza }

Specifies the format of the output. You can specify one of these values:

default

Specifies that the output is displayed in tabular format using spaces as delimiters between columns. This is the default value.

xml Specifies that the output is displayed in XML format.

delim Specifies that output is displayed in a tabular format using commas as delimiters between columns.

To use a character other than a comma as the delimiter, specify `-fmt delim -delim` *char* , where *char* represents the character that you want to use as the delimiter. For example, if you want to use a colon (:) as the delimiter, use the following `-fmt` parameter:

```
-fmt delim -delim :
```

If you use a shell metacharacter as the delimiting character, enclose the character in quotation marks or single quotation marks. A blank space is not a valid character.

stanza Specifies that the output is displayed as one keyword-value pair per line.

-p { on | off }

Specifies whether to display one page of text at a time or all text at once.

on Displays one page of text at a time. Pressing any key displays the next page. This is the default value when the command is run in interactive mode.

off Displays all text at once. This is the default value when the command is run in single-shot mode.

-hdr { on | off }
Specifies whether to display the table header. You can specify one of these values:

on Displays the table header. This is the default value.

off Hides the table header.

-r *number*
Specifies the number of rows per page to display when the **-p** parameter is specified. You can specify a value of 1 - 100. The default value is 22.

-v { on | off }
Specifies whether to enable verbose mode. You can specify one of these values:

on Enable verbose mode.

off Disable verbose mode. This is the default value.

help Displays a list of commands available from the CLI session.

exit Exits from the CLI session.

quit Exits from the CLI session.

User assistance for commands

You can get user assistance for the any **csmcli** command using the **help** command.

Syntax

Parameters

-l Displays a list of all available commands and syntax for each if no other options are specified. If a command name is also specified, this option displays syntax for that command.

-s Displays a list of all available commands and a brief description of each if no other options are specified. If a command name is also specified, this option displays a brief description for that command.

command_name
Displays detailed help for the specified command

Description

If this command is invoked without any parameters, it displays a list of all available commands.

You can use the command-help parameters (**-help**, **-h**, or **-?**) that are supported by each command to display a detailed description of the specified command. For more information about the command-help parameters, see the description for each command.

Output from command processing

The command output can include information such as prompts, messages, and codes. For some commands, you can specify the output format.

Confirmation prompts

When commands might cause an irrecoverable operation, loss of data, memory drain, or a long-running task, or might have an impact on concurrent operations, you receive an interactive confirmation prompt that asks if you are sure that you want to continue with the specific action, such as:

```
Are you sure you want to xxx? Y/N
```

All confirmation prompts accept the following input:

YES, yes, Y, y
Confirm action and continue.

NO, no, N, n
Cancel action.

Messages

Messages are returned in the format of `IWNC`*xxxxy*, `IWNR`*xxxxy*, `IWNH`*xxxxy*, or `IWNE`*xxxxy*, where *xxxx* is the number of the message and *y* indicates that the message type is I (information), W (warning), or E (error).

Each CLI command issues a return value and message. These messages are output as follows:

- Warning and informational messages are written to stdout.
- Error messages are written to stderr.
- Messages include an explanation of the problem, if one exists.

Suppression of confirmation prompts and messages

You can use these flags to modify command input:

- To force destructive action, such as making a volume even if the LUN already has a label, use the **-f** flag. This flag suppresses confirmation and error messages.
- To suppress confirmation prompts and messages, use the **-quiet** flag. This flag answers `yes` to all confirmation prompts.

Exit codes

The following exit codes apply to all commands that you enter using the CLI program.

Table 2. Exit codes for CLI commands

Code	Category	Description
0	Success	The command was successful.
2	Syntax error	The syntax of the command was not correct.
3	Connection error	A connectivity error or protocol error occurred.
4	Server error	An error occurred during a function call to the application server.

Table 2. Exit codes for CLI commands (continued)

Code	Category	Description
5	Authentication error	An error was detected during authentication checking.
6	Application error	An error occurred during processing that is performed by the MetaProvider client application.

Notes:

- In single-shot mode, an exit code is provided after each command.
- In interactive and script mode, an exit code is not provided after each command. Instead, output is echoed to stdout for status information.
- In single-shot and interactive mode, with commands that act on more than one argument if one or more operations fail, the CLI will:
  - Complete execution of all operations that it can continue executing
  - Report on all successful completions
  - Report on any failures
- In script mode, the CLI will operate the same way. However, if one or more operations fail in the file specified, the CLI issues a failure exit code and automatically exits from the script mode after the failed command.

Options for setting the output format of listings

The standard format parameters set the output format of the listing (**ls**) commands in the CLI program. These parameters can be used either in one of the listing commands or in the **setoutput** command. The format settings remain in effect for the duration of the session or until you reset the parameters either by specifying these parameters in a listing command (commands that start with `ls`) or using the **setoutput** command.

- **-p** specifies whether to display one page of text at a time or all text at once.
  - **off** displays all text at one time. This is the default value when the **csmcli** command is run in single-shot mode.
  - **on** displays one page of text at time. Pressing any key displays the next page. This is the default value when the command is run in interactive mode.
- **-r number** specifies the number of rows per page to display when the **-p** parameter is on. The default value is 24. You can specify a value of 1 - 100.
- **-fmt** specifies the format of the output. You can specify one of the following values:
  - **default** specifies that output be displayed in a tabular format using spaces as the delimiter between the columns. This is the default value.
  - **delim character** specifies that output be displayed in a tabular format using the specified character to separate the columns. If you use a shell metacharacter as the delimiting character, enclose the character in quotation marks or single quotation marks. A blank space is not a valid character.
  - **xml** specifies that output using XML format.
  - -**hdr** specifies whether to display the table header. Use the default value of **on** to display the table header. Use **off** to hide the table header.
- **-v** specifies whether to enable verbose mode. Use the default value of **off** to disable verbose mode. This is the default value. Use **on** to enable verbose mode.

These standard listing options modify command output in any CLI mode:

- **ls*object*-s** lists only the objects without other columns of information. For example, `lssess –s` lists only the name header and the session names.
- **ls*object*-l** lists all the objects with all defined columns, including the description.

Examples of using the setoutput command to define output formats

You can set output formats using the **setoutput** command in interactive or script modes or using the corresponding standard command options in single-shot mode.

setoutput with no options

When you issue **setoutput** with no options, the CLI always displays the current output settings in the default format (space-separated plain-text table), regardless of the values of the output settings. For example, enter the following command:

```
csmcli> setoutput
Paging   Rows   Format   Header     Verbose
=========================================
off      -      default  on         off
```

setoutput –fmt delim char

To obtain long output in comma-separated format for the default storage pool only, enter the following commands:

```
csmcli> setoutput –fmt delim ,
csmcli> lssess –l –type default
```

The following output is then returned:

```
Name,Status,State,Copy Type,
Recoverable,Copying,Copy Sets,Error
============================================================
session1,Inactive,Defined,Global Mirror Failover/Failback w/ Practice,
No,No,8,No
session2,Inactive,Defined,Global Mirror Failover/Failback,
No,No,0,No
```

To turn off headers, enter the command as shown in the following example:

```
csmcli> setoutput –fmt delim , -hdr off
csmcli> lssess –l –type default
```

The output would then be returned as follows:

```
session1,Inactive,Defined,Global Mirror Failover/Failback w/ Practice,
No,No,8,No
session2,Inactive,Defined,Global Mirror Failover/Failback,
No,No,0,No
```

setoutput –fmt xml

To obtain the long output in XML format for the default storage pool only, enter the following command:

```
csmcli> setoutput –fmt xml
csmcli> lssess –l –type default
```

The output is then returned in XML format as shown in the following example:

```
<IRETURNVALUE>
<INSTANCE CLASSNAME="STC_StoragePool"><PROPERTY NAME="Name" TYPE="string">
<VALUE>DEFAULT_POOL</VALUE></PROPERTY><PROPERTY NAME="PoolType" TYPE="uint32">
<VALUE>1</VALUE></PROPERTY><PROPERTY NAME="PartitionSize" TYPE="uint64">
<VALUE>16</VALUE></PROPERTY>
<PROPERTY NAME="AlertPercentage" TYPE="uint16"><VALUE>80</VALUE></PROPERTY>
```

```
<PROPERTY NAME="Size" TYPE="uint64"><VALUE>0</VALUE></PROPERTY>
<PROPERTY NAME="SizeAllocated" TYPE="uint64">
<VALUE>0</VALUE></PROPERTY><PROPERTY NAME="SizeAllocatedPercentage" TYPE="uint16">
<VALUE>0</VALUE></PROPERTY>
<PROPERTY NAME="NumberOfVolumes" TYPE="uint32"><VALUE>0</VALUE></PROPERTY>
<PROPERTY NAME="Description" TYPE="string"><VALUE>Default storage pool</VALUE>
</PROPERTY></INSTANCE>
</IRETURNVALUE>
```

setoutput –fmt default

To return the output format to the default (space-separated columns), enter the command as follows:

```
csmcli> setoutput –fmt default
csmcli> lssess –l type default
```

The output is then returned as follows:

```
Name     Type    Size(GB)  Used(GB)  Used(%)  Alert(%)  Volumes
================================================================
DEFAULT  Default 10000     2500      25       80        10

Partition Size(MB)  Description
=======================================
64                  Default Storage Pool
```

setoutput –fmt stanza

When columns are wide, output can be difficult to visually align. However, the stanza format option eliminates this problem. To obtain long output in stanza format for the default storage pool only, enter the command as follows:

```
csmcli> setoutput -fmt stanza
csmcli> lssess –l –type default
```

The output is then returned in the following format:

```
Name                  DEFAULT
Type                  Default
Size (GB)             10000
Used (GB)             2500
Used (%)              25
Alert (%)             80
Volumes               10
Partition Size (MB)   64
Description           Default storage pool

Name                  Personnel
Type                  System
Size (GB)             10000
Used (GB)             2500
Used (%)              25
Alert (%)             80
Volumes               20
Partition Size (MB)   64
Description           Personnel data
```

Customizing the command-line interface

This information describes how to customize the command-line interface.

Configuring the command-line interface

This information describes how to modify the properties files to configure the command-line interface.

There are three properties files that are used to configure the command-line interface:

repcli.properties
Contains the server and port information used to communicate with the IBM Tivoli Storage Productivity Center for Replication server and the command-line interface.

rmserver.properties
Contains configuration information about logging.

tpcrcli-auth.properties
Contains authorization information for signing on to the CLI automatically without entering your user name and password.

Setting up automatic login to the CLI

You can set up the command- line interface to automatically log you in without specifying your user name or password each time you issue a **csmcli** command or enter the **csmcli** shell. Use the `tpcrcli-auth.properties` file to create a persistent copy of the user name and encrypted password that is used for automatic authentication and authorization.

Perform these steps to set up automatic login authentication:

1. Locate the `tpcrcli-auth.properties` template file. The template is in the following directories, depending on the operating system.

Operating system	Default directory
Windows, AIX, and Linux	*TPC_install_directory*\cli\
z/OS®	*path_prefix*/opt/Tivoli/RM/cli/

2. Create a directory named `tpcr-cli` in your home directory (for example, `C:\Documents and Settings\joe\tpcr-cli\` on Windows) and copy the template to this directory.
3. Edit this file to include your user name and password.
4. Issue a **csmcli** command or enter the **csmcli** shell. The password is encrypted in the `tpcrcli-auth.properties` file.

csmcli command descriptions

The following table provides a brief description and authorization role for each command in the command-line interface.

Sessions and copy sets

Command	Description	Roles
"chsess" on page 206	Use the **chsess** command to change the description or options for an existing session. If you want to change the session type, you must delete the session and create another session.	Administrator Operator
"cmdsess" on page 219	Use the **cmdsess** command to run a specific action against a session.	Administrator Operator
"exportcsv" on page 225	Use the **exportcsv** command to export the copy sets in a session to a comma-separated values (CSV) file or to the console. You are prompted to overwrite the CSV file if it exists.	Administrator Operator Monitor
"importcsv" on page 230	Use the **importcsv** command to parse a comma-separated values (CSV) file to create copy sets for a session.	Administrator

Command	Description	Roles
"lscpset" on page 235	Use the **lscpset** command to list the IDs and number of volumes for the copy sets that are in a session.	Administrator Operator Monitor
"lscptypes" on page 237	Use the **lscptypes** command to display the session types and the storage systems that you can use with the session types.	Administrator Operator Monitor
"lspair" on page 255	Use the **lspair** command to list the copy pairs for a specified role pair or to list the copy pairs for a specified copy set.	Administrator Operator Monitor
"lsparameter" on page 260	Use the **lsparameter** command to list Metro Mirror heartbeat setting.	Administrator Operator Monitor
"lsrolepairs" on page 267	Use the **lsrolepairs** command to display role pairs in a session.	Administrator Operator Monitor
"lsrolescpset" on page 270	Use the **lsrolescpset** command to list the volume roles in the specified session.	Administrator Operator Monitor
"lssess" on page 272	Use the **lssess** command to display sessions and their status.	Administrator Operator Monitor
"lssessactions" on page 275	Use the **lssessactions** command to list all the session actions (commands) that can be run for a session.	Administrator Operator Monitor
"lssessdetails" on page 277	Use the **lssessdetails** command to display the details of a session.	Administrator Operator Monitor
"mkcpset" on page 295	Use the **mkcpset** command to create copy sets.	Administrator Operator
"mksess" on page 300	Use the **mksess** command to create a session.	Administrator Operator
"rmcpset" on page 306	Use the **rmcpset** command to remove a copy set.	Administrator Operator
"rmsess" on page 311	Use the **rmsess** command to remove a session.	Administrator Operator
"setparameter" on page 315	Use the **setparameter** command to set the system parameters.	Administrator
"showcpset" on page 317	Use the **showcpset** command to display properties for a copy set.	Administrator Operator Monitor
"showsess" on page 329	Use the **showsess** command to display properties for a selected session, including name, description, group managed, and copy type.	Administrator Operator Monitor

Storage systems and connections

Command	Description	Roles
"adddevice" on page 194	Use the **adddevice** command to add a storage system.	Administrator

Command	Description	Roles
"addmc" on page 198	Use the **addmc** command to add a management console connection and all the storage systems that are managed by that management console.	Administrator
"addstorsys" on page 198	Use the **addstorsys** command to add a specific storage system and its volumes that are attached to the IBM Tivoli Storage Productivity Center for Replication server to the IBM Tivoli Storage Productivity Center for Replication configuration through a z/OS connection.	Administrator
"chdevice" on page 201	Use the **chdevice** command to change user names and passwords for storage systems.	Administrator
"chlocation" on page 204	Use the **chlocation** command to change the location associated with the specified storage systems.	Administrator
"chmc" on page 205	Use the **chmc** command to set or change the hardware credentials for the hardware management console (HMC).	Administrator
"chvol" on page 217	Use the **chvol** command to change the protection setting for a volume. You cannot change the protection setting for a volume that is in a session.	Administrator
"lsavailports" on page 233	Use the **lsavailports** command to display the port configuration types for a specific path.	Administrator Operator Monitor
"lsdevice" on page 241	Use the **lsdevice** command to list storage systems and properties.	Administrator Operator Monitor
"lslocation" on page 250	Use the **lslocation** command to list all defined locations.	Administrator Operator Monitor
"lslss" on page 251	Use the **lslss** command to list the logical subsystems (LSSes) for the specified DS or ESS storage system. You can use this output with the **mkpath** command.	Administrator Operator Monitor
"lsmc" on page 253	Use the **lsmc** command to display a summary of management consoles and settings.	Administrator Operator Monitor
"lspath" on page 262	Use the **lspath** command to display paths between ESS and DS devices. You can then use this information for a remote copy.	Administrator Operator Monitor
"lspool" on page 264	Use the **lspool** command to list pools that are on XIV systems.	Administrator Operator Monitor
"lsstorcandidate" on page 287	Use the **lsstorcandidate** command to list the storage systems that can be discovered through an IBM z/OS connection. This command does not list storage systems that are already added to the IBM Tivoli Storage Productivity Center for Replication configuration.	Administrator Operator Monitor
"lsvol" on page 289	Use the **lsvol** command to display detailed information about volumes.	Administrator Operator Monitor
"mkpath" on page 299	Use the **mkpath** command to create a Fibre Channel path or paths between a source logical subsystem (LSS) and a target LSS.	Administrator Operator

Command	Description	Roles
"rmdevice" on page 307	Use the **rmdevice** command to remove a direct connection to a storage system.	Administrator
"rmmc" on page 309	Use the **rmmc** command to remove a management console.	Administrator
"rmpath" on page 310	Use the **rmpath** command to remove a path or paths between a source logical subsystem (LSS) and a target LSS.	Administrator Operator
"rmstorsys" on page 313	Use the **rmstorsys** command to remove a specific storage system and its volumes that are attached to the IBM Tivoli Storage Productivity Center for Replication server from the IBM Tivoli Storage Productivity Center for Replication configuration through a z/OS connection.	Administrator
"showdevice" on page 318	Use the **showdevice** command to display storage system properties.	Administrator
"showmc" on page 328	Use the **showmc** command to display the properties of a management console.	Administrator

Management servers

Command	Description	Roles
"hareconnect" on page 229	Use the **hareconnect** command to reconnect the active and standby servers for high availability (HA).	Administrator
"hatakeover" on page 229	Use the **hatakeover** command to change the standby server to the active server.	Administrator
"lshaservers" on page 244	Use the **lshaservers** command to show the status of each active and standby management server.	Administrator Operator Monitor
"lssnmp" on page 286	Use the **lssnmp** command to list the SNMP managers to which IBM Tivoli Storage Productivity Center for Replication is configured to send SNMP alerts.	Administrator Operator Monitor
"mkbackup" on page 294	Use the **mkbackup** command to create a backup of Tivoli Storage Productivity Center for Replication configuration data (including storage systems, sessions, and copy sets) in the zero-administration embedded repository.	Administrator
"mklogpkg" on page 298	Use the **mklogpkg** command to create a log package. The log package is written to the file that is specified in the *TPC_install_directory*\wlp\usr\servers\replicationServer\properties\Diagnostics.properties file.	Administrator
"mksnmp" on page 302	Use the **mksnmp** command to add a specified manager to the list of servers to which SNMP traps are sent. SNMP traps are not specific to any particular session. All traps for any session are sent to each server.	Administrator
"rmactive" on page 304	Use the **rmactive** command to remove an active management server.	Administrator

Command	Description	Roles
"rmsnmp" on page 312	You can use the **rmsnmp** command to remove the specified manager from the list of servers to which SNMP traps are sent.	Administrator
"rmstdby" on page 312	Use the **rmstdby** command to remove a standby management server.	Administrator
"setasstdby" on page 314	Use the **setasstdby** command to set a management server to be the standby management server of another active management server.	Administrator
"setstdby" on page 316	Use the **setstdby** command to set the standby management server for an active management server.	Administrator
"showha" on page 324	Use the **showha** command to display the high-availability status.	Administrator Operator Monitor
"ver" on page 332	Use the **ver** command to display the current version of IBM Tivoli Storage Productivity Center for Replication.	Administrator Operator Monitor

Security

Command	Description	Roles
"chauth" on page 200	Use the **chauth** command to change the authorization level of a user.	Administrator
"lsauth" on page 231	Use the **lsauth** command to lists the name, authorization level, and session permission for each user or user group.	Administrator Operator Monitor
"mkauth" on page 292	Use the **mkauth** command to grant monitor, administrator, or operator authorization to a user.	Administrator
"rmauth" on page 305	Use the **rmauth** command to remove monitor, administrator, or operator authorization from a user or user group.	Administrator
"whoami" on page 333	Use the **whoami** command to show the name of the user that is logged on.	Administrator Operator Monitor

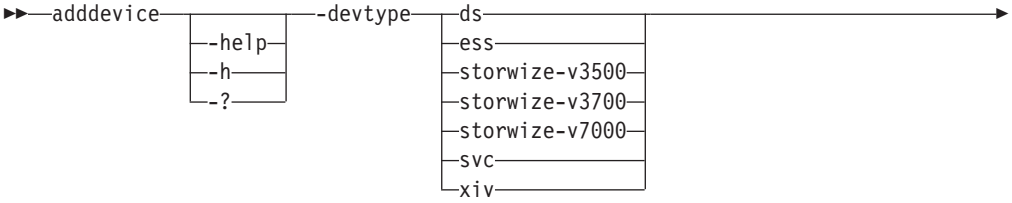
adddevice

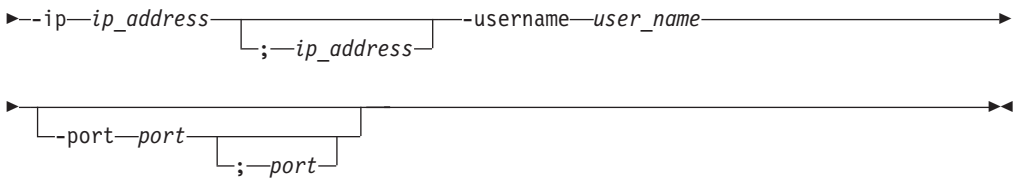
Use the **adddevice** command to add a storage system.

To add a storage system that is attached through an IBM z/OS connection, use the **addstorsys** command.

To change the location of a storage system, use the **chlocation** command.

Syntax





Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-devtype { ds | ess | storwize-v3500 | storwize-v3700 | storwize-v7000 | svc | xiv }
Specifies the type of storage system. The following list shows the parameter values and the storage systems that they represent.

- `ds`: IBM System Storage DS8000 or IBM System Storage DS6000
- `ess`: IBM TotalStorage Enterprise Storage Server Model 800
- `storwize-v3500`: IBM Storwize V3500
- `storwize-v3700`: IBM Storwize V3700
- `storwize-v7000`: IBM Storwize V7000 or IBM Storwize V7000 Unified
- `svc`: IBM System Storage SAN Volume Controller
- `xiv`: IBM XIV Storage System

-ip *ip_address*[;*ip_address*]
Specifies the IP address or host name of the clusters or nodes that are used by the storage system.

The following storage systems use two clusters. You must specify the IP address or host name for each cluster by using a semicolon between the addresses (for example, `192.0.2.0;192.0.2.1`):

- TotalStorage Enterprise Storage Server Model 800
- System Storage DS8000
- System Storage DS6000

The following storage systems use one node and require only one address or host name:

- SAN Volume Controller
- Storwize V3500
- Storwize V3700
- Storwize V7000
- Storwize V7000 Unified

The XIV system uses multiple nodes. Specify the IP address or host name for one node and the remaining nodes are discovered automatically.

-username *user_name*[;*user_name*]
Specifies the user name for the clusters or nodes.

For the following storage systems, you can provide one user name, which is used for both clusters, or you can specify two user names. If you have separate user names, include a semicolon between the user name for cluster 0 and cluster 1.

- TotalStorage Enterprise Storage Server Model 800

- System Storage DS8000
- System Storage DS6000

For the following storage systems, provide one user name:

- SAN Volume Controller
- Storwize V3500
- Storwize V3700
- Storwize V7000
- Storwize V7000 Unified
- The XIV system

Important: After you enter the parameters for the **adddevice** command, you are prompted to enter the password for this user name. The password is not displayed in the command window.

-port *port*[;*port*]
Specifies the port to use for accessing the clusters or nodes.

For the following storage systems, you can provide one port number, which is used for both clusters, or you can provide two port numbers. If you have separate port numbers, include a semicolon between the port for cluster 0 and cluster 1. The default port number is 2433.

- TotalStorage Enterprise Storage Server Model 800
- System Storage DS8000
- System Storage DS6000

For the XIV system, provide one port number, which is used for all nodes. The default port number is 7778.

The following storage systems do not require this parameter.

- SAN Volume Controller
- Storwize V3500
- Storwize V3700
- Storwize V7000
- Storwize V7000 Unified
- The XIV system

Example: Adding a storage system

The following command adds a TotalStorage Enterprise Storage Server Model 800 storage system to Tivoli Storage Productivity Center for Replication.

```
csmcli> adddevice -devtype ess -ip sts596c0;sts596c1 -username admin
```

The following output is returned:

```
Please enter a password for the device cluster 0 userid of admin:
IWNH1612I  The connection sts596c0:sts596c1 was successfully added.
```

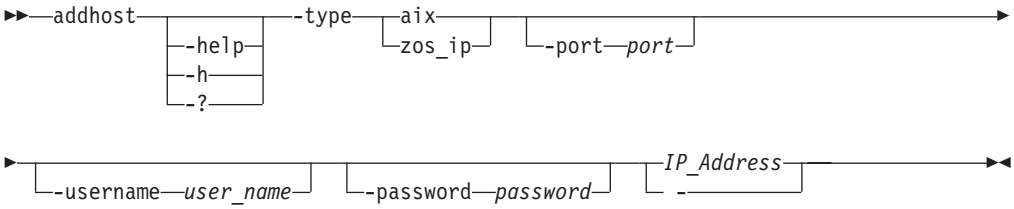
addhost

Use the **addhost** command to add AIX or IBM z/OS host system connections to the Tivoli Storage Productivity Center for Replication server.

For z/OS host systems, this command is required only if you are connecting to the host system by using an IP address or host name. If Tivoli Storage Productivity

Center for Replication is installed on the z/OS host system, the host system connection is automatically added. This connection is referred to as the native z/OS connection.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-type { aix | zos_ip }
Specifies the type of host system: AIX or z/OS.

-username *user_name*
Specifies the user name for a z/OS host system. This parameter is required to connect to a z/OS host.

-password *password*
Specifies the password for a z/OS host system. This parameter is required to connect to a z/OS host. If you do not include this parameter, you are prompted for the password. However, the password is not displayed in the command window.

-port *port*
Specifies the port to use to access the host system, if other than the default port. If a port is not specified, the default port is 5858 for z/OS and 9930 for AIX.

IP_Address **|** **-**
Specifies the IP address or host name of the host system.

Alternatively, use the dash (-) to specify that input for this parameter comes from an input stream (stdin). The dash is supported only in single-shot mode.

Example: Adding an AIX host system

The following command adds an AIX host system with the IP address `192.0.2.0`. In this example, you could omit the `-port` parameter because port 9930 is the default.

```
csmcli> addhost -type aix -port 9930  192.0.2.0
```

Example: Adding a z/OS host system

The following command adds a z/OS host system with the IP address `192.0.2.1`.

```
csmcli> addhost -type zos -username abcuser 192.0.2.1
```

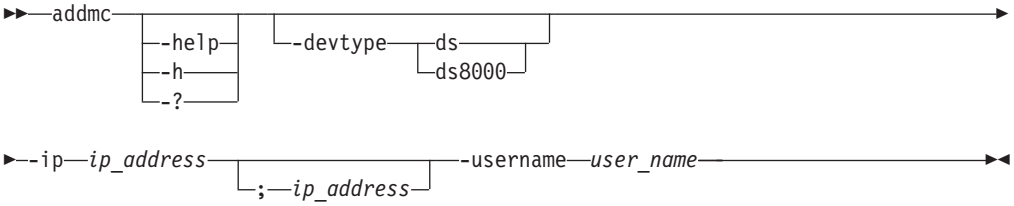
The following output is returned:

```
Please enter a password for the host userid of abcuser:
 IWNR7000I Connection 192.0.2.1 added successfully.
```

addmc

Use the **addmc** command to add a management console connection and all the storage systems that are managed by that management console.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-devtype { ds | ds8000 }
Specifies the type of hardware device. You can specify either `ds` or `ds8000`.

-ip *ip_address*[;*ip_address*]
Specifies the IP addresses of the management consoles to be added. For dual-management console configurations, both IP addresses must be specified with a semicolon in between (for example, `192.0.2.0;192.0.2.1`).

-username *user_name*
Specifies the user name for the management console. For dual management console configurations, the management consoles must have the same user name.

Important: After you enter the parameters for the **addmc** command, you are prompted to enter the password for this user name. For security, the password is not displayed in the command window.

Example: Adding a management console

The following command adds a management console to Tivoli Storage Productivity Center for Replication.

```
csmcli> addmc -devtype ds -ip 127.0.0.1 -username admin
```

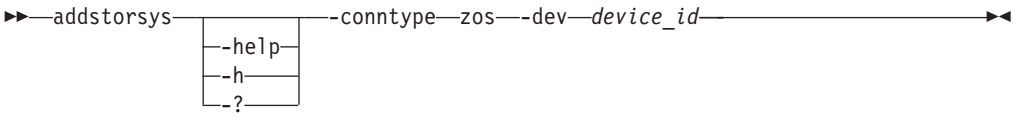
The following output is returned:

```
Please enter a password for the device userid of admin:
IWNH1612I  The connection HMC:127.0.0.1 was successfully added.
```

addstorsys

Use the **addstorsys** command to add a specific storage system and its volumes that are attached to the IBM Tivoli Storage Productivity Center for Replication server to the IBM Tivoli Storage Productivity Center for Replication configuration through a z/OS connection.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-conntype zos
Specifies the type of connection that the storage system uses. Currently, you can specify only `zos` for a z/OS connection.

-dev *device_id*
Specifies the ID of the DS or ESS storage system that is to be added to the IBM Tivoli Storage Productivity Center for Replication configuration.

Tip: Use the **lsdevice** command to display a list of valid storage system IDs.

Description

Important:

- You must have Administrator privileges to run this command.
- You can run this command only from the IBM Tivoli Storage Productivity Center for Replication server that is installed on a system that is running z/OS.
- You can use this command to add only DS and ESS type storage systems.

If the storage system has been previously added through another connection type, then z/OS is added to the storage system's connection types.

To add a storage system that is attached through a direct connection, use the **adddevice** command. To add a storage system that is attached through a hardware-management-console (HMC) connection, use the **addmc** command.

To change the location of the storage system, use the **chlocation** command.

Example: Adding an ESS storage system

This example illustrates how to add the storage system with ID `ESS:BOX:2105.12345` to the IBM Tivoli Storage Productivity Center for Replication configuration through the z/OS connection.

```
csmcli> addstorsys -dev ESS:BOX:2105.12345 -conntype zos
```

The following output is returned:

```
IWNH1612I  The connection ESS:BOX:2105.12345 was successfully added.
```

Example: Adding an DS8000 storage system

This example illustrates how to add the storage system with ID `DS8000:BOX:2107.MV492` to the IBM Tivoli Storage Productivity Center for Replication configuration through the z/OS connection.

```
csmcli> addstorsys -dev DS8000:BOX:2107.MV492 -conntype zos
```

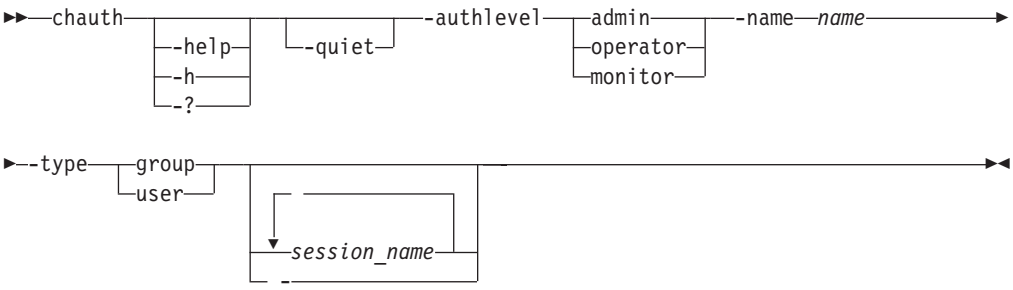
The following output is returned:

```
IWNH1619I  The storage device 2107.MV492 at ZOS was successfully added.
```

chauth

Use the **chauth** command to change the authorization level of a user.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-quiet
Suppresses the confirmation prompt for this command. This flag answers `yes` to all confirmation prompts.

-authlevel { admin | operator | monitor }
Specifies the new authorization level. You can specify one of these authorization levels: `admin`, `operator`, or `monitor`.

-name *name*
Specifies a user ID or group name for which you are changing the authorization level.

-type group | user
Specifies whether authorization is to be changed for a user group or user.

session_name... **|** **-**
Specifies one or more sessions that the user can access. Separate multiple session names using a blank space. Use this parameter when you are changing the authorization level from user to operator. This parameter does not apply to monitors or administrators.

If no session name is specified, all sessions are used by default, unless another filter is used.

Alternatively, use the dash (-) to specify that input for this parameter comes from an input stream (stdin). The dash is supported only in single-shot mode.

Example: Changing user authorization to administrator

The following command changes the authorization level for the user `csmuser` to operator privileges with permission to manage session `session1`.

```
csmcli> chauth -name csmuser -type user -authlevel operator session1
```

The following output is returned:

```
Are you sure you want to change access for user csmuser? [y/n]:y
IWNR4016I  Successfully granted the session operator role to csmuser.

IWNR4026I  Successfully granted permission for session session1 for
user csmuser.
```

Example: Changing user authorization to monitor privileges

The following command changes the authorization level for the user `Guest` to monitor privileges.

```
csmcli> chauth -name Guest -type user -authlevel monitor
```

The following output is returned:

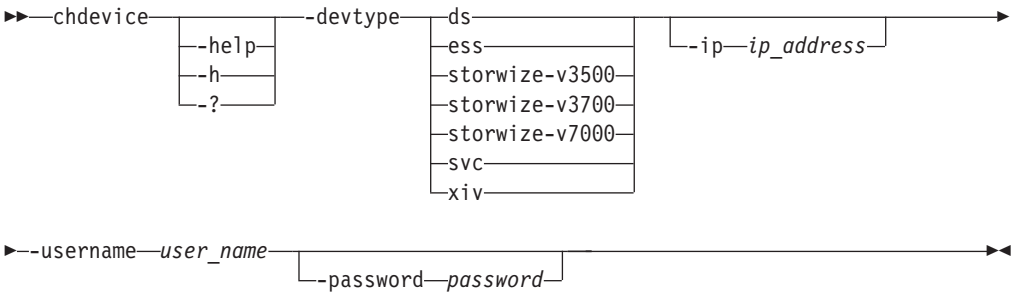
```
Are you sure you want to change access for user Guest? [y/n]:y
 IWNR4017I  Successfully granted the monitor role to Guest.
```

chdevice

Use the **chdevice** command to change user names and passwords for storage systems.

Tip: To change the location of storage systems, use the **chlocation** command.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-devtype { ds | ess | storwize-v3500 | storwize-v3700 | storwize-v7000 | svc | xiv }
Specifies the type of storage system. The parameter values are:

- **ds**: System Storage DS8000 or IBM System Storage DS6000
- **ess**: IBM TotalStorage Enterprise Storage Server Model 800
- **storwize-v3500**: IBM Storwize V3500
- **storwize-v3700**: IBM Storwize V3700
- **storwize-v7000**: IBM Storwize V7000 or IBM Storwize V7000 Unified
- **svc**: IBM System Storage SAN Volume Controller
- **xiv**: IBM XIV Storage System

-ip *ip_address* **[;***ip_address***]**
Specifies the IP address or host name of the clusters or nodes that are used by the storage system.

The following storage systems use two clusters. You must specify the IP address or host name for each cluster by using a semicolon between the addresses (for example, `192.0.2.0;192.0.2.1`):

- TotalStorage Enterprise Storage Server Model 800
- System Storage DS8000
- System Storage DS6000

The following storage systems use one node and require only one address or host name:

- SAN Volume Controller
- Storwize V3500
- Storwize V3700
- Storwize V7000
- Storwize V7000 Unified

The XIV system uses multiple nodes. Specify the IP address or host name for one node and the remaining nodes are discovered automatically.

Tip: To list the IP address of storage system clusters or nodes, use the **lsdevice** command.

-username *user_name* **[;***user_name***]**
Specifies the user name for the clusters or nodes that are used by the storage system. Enter the user name or user names that you want to change. If you want to change passwords associated with user names (but not the user names), enter the currently valid user names.

For the following storage systems, you can provide one user name, which is used for both clusters, or you can specify two user names. If you have separate user names, include a semicolon between the user name for cluster 0 and cluster 1.

- TotalStorage Enterprise Storage Server Model 800
- System Storage DS8000
- System Storage DS6000

For the following storage systems, provide one user name:

- SAN Volume Controller
- Storwize V3500
- Storwize V3700
- Storwize V7000
- Storwize V7000 Unified
- The XIV system

-password *password* **[;***password***]**
Specifies the passwords for the user names. If you want to change user names, but do not want to change the passwords that are associated with the user names, enter the current passwords. If you do not include this parameter, you are prompted for the passwords.

Example: Changing user names and passwords

The following command shows how to change the IP address or host name and port number for a host system connection. The following output is returned:

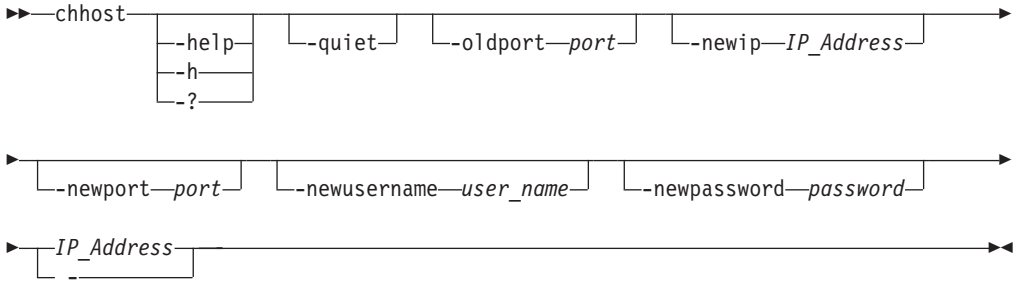
```
Please enter a password for the device cluster 0 userid of admin:
IWNH1613I User profile information for the storage device at
ds8kboxc0.domain.company.com;ds8kboxc1.domain.company.com was successfully updated.
```

chhost

Use the **chhost** command to change the connection information for host systems that are connected to the IBM Tivoli Storage Productivity Center for Replication server.

For z/OS host systems, this command is applicable only if Tivoli Storage Productivity Center for Replication is connected to the host system by using an IP address or host name.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-quiet
Suppresses the confirmation prompt for this command. This flag answers yes to all confirmation prompts.

-oldport *port*
Specifies the old port number for the host system connection to be modified.

-newip *IP_Address*
Specifies the new IP address or host name of the host system connection to be modified.

-newport *port*
Specifies the new port number for the host system connection to be modified.

-newusername *user_name*
Specifies the new user name for the IBM z/OS host system connection to be modified.

-newpassword *password*
Specifies the new password for the z/OS host system connection to be modified.

IP_Address **|** **-**
Specifies the IP address or host name of the host system connection to be modified.

Alternatively, use the dash (-) to specify that input for this parameter comes from an input stream (stdin). The dash is supported only in single-shot mode.

Example: Changing an AIX host system credentials

The following command changes the IP address and port number for an AIX host system connection.

```
csmcli> chhost -oldport 9930 -newip 192.0.2.2 -newport 9931  192.0.2.0
```

Example: Changing a z/OS host system credentials

The following command changes the user name for a z/OS host system connection.

```
csmcli> chhost -oldport 5858 -newusername xyzuser 192.0.2.1
```

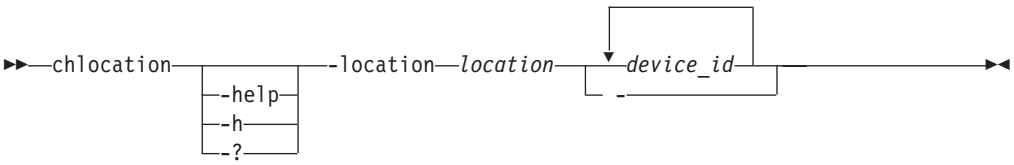
The following output is returned:

```
Are you sure you want to change the host 192.0.2.1? [y/n]:y
Please enter a password for the host userid of xyzuser:
IWNR7005I Update to connection 192.0.2.1:5858 successful.
```

chlocation

Use the **chlocation** command to change the location associated with the specified storage systems.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-location *location*
Specifies the location to associate with the specified storage systems. The location can be up to 32 alphanumeric characters.

device_id... **|** **-**
Specifies the ID of one or more storage systems whose location is to be changed, separated by a space.

Alternatively, use the dash (-) to specify that input for this parameter comes from an input stream (stdin). The dash is supported only in single-shot mode.

Tip: Use the **lsdevice** command to list the valid storage system IDs.

Description

Important: You must have Administrator privileges to run this command.

To list the locations that have already been associated with storage systems, use the **lslocation** command.

Example: Changing the location of multiple storage systems

The following command changes the location of multiple storage systems to Tucson.

```
csmcli> chlocation -location Tucson ESS:BOX:2105.18596 DS8000:BOX:2107.NK791
```

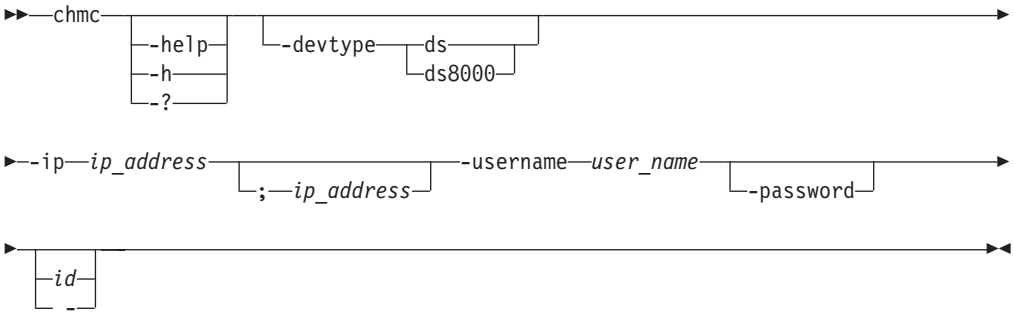
The following output is returned:

```
IWNH1222I  The site location for storage system ESS:BOX:2105.18596
was successfully changed to Tucson.

IWNH1222I  The site location for storage system DS8000:BOX:2107.NK791 was
successfully changed to Tucson.
```

chmc

Use the **chmc** command to set or change the hardware credentials for the hardware management console (HMC).

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-devtype ds | ds8000
Specifies the hardware type.

-ip *ip_address*[;*ip_address*]
Specifies the IP addresses of the primary and secondary management consoles. For single HMC configurations only one IP address is necessary. For dual HMC configurations, two IP addresses must be specified separated with a semicolon (;).

-username *user_name*
Specifies the user names of the management console.

-password
Prompts you for a new password for the device.

id | **-**
Specifies the ID of the management console to change.

Alternatively, use the dash (-) to specify that input for this parameter comes from an input stream (stdin). The dash is supported only in single-shot mode.

Tip: Use the **lsmc** command to list the management console IDs.

Description

To change the location of a storage system behind a HMC connection, use the **chlocation** command.

Example: Changing hardware credentials

The following command changes the user name and password for the HMC with ID HMC:127.0.0.1 and IP address 9.11.222.33.

```
csmcli> chmc -devtype ds -ip 127.0.0.1 -username admin -password HMC:127.0.0.1
```

The following output is returned:

```
Please enter a password for the device userid of admin: ******
 IWNH1613I  The storage device at HMC:127.0.0.1 successfully updated.
```

chsess

Use the **chsess** command to change the description or options for an existing session. If you want to change the session type, you must delete the session and create another session.

Syntax

Parameters that begin with ds, such as **-dsinc**, apply only to sessions for the following storage systems:

- IBM TotalStorage Enterprise Storage Server
- IBM System Storage DS8000
- IBM System Storage DS6000

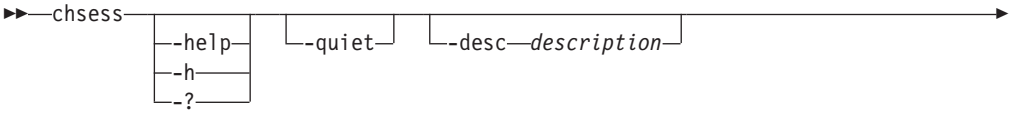
For practice sessions, the **-dspers** parameter applies only to sessions for System Storage DS8000 version 4.2 or later.

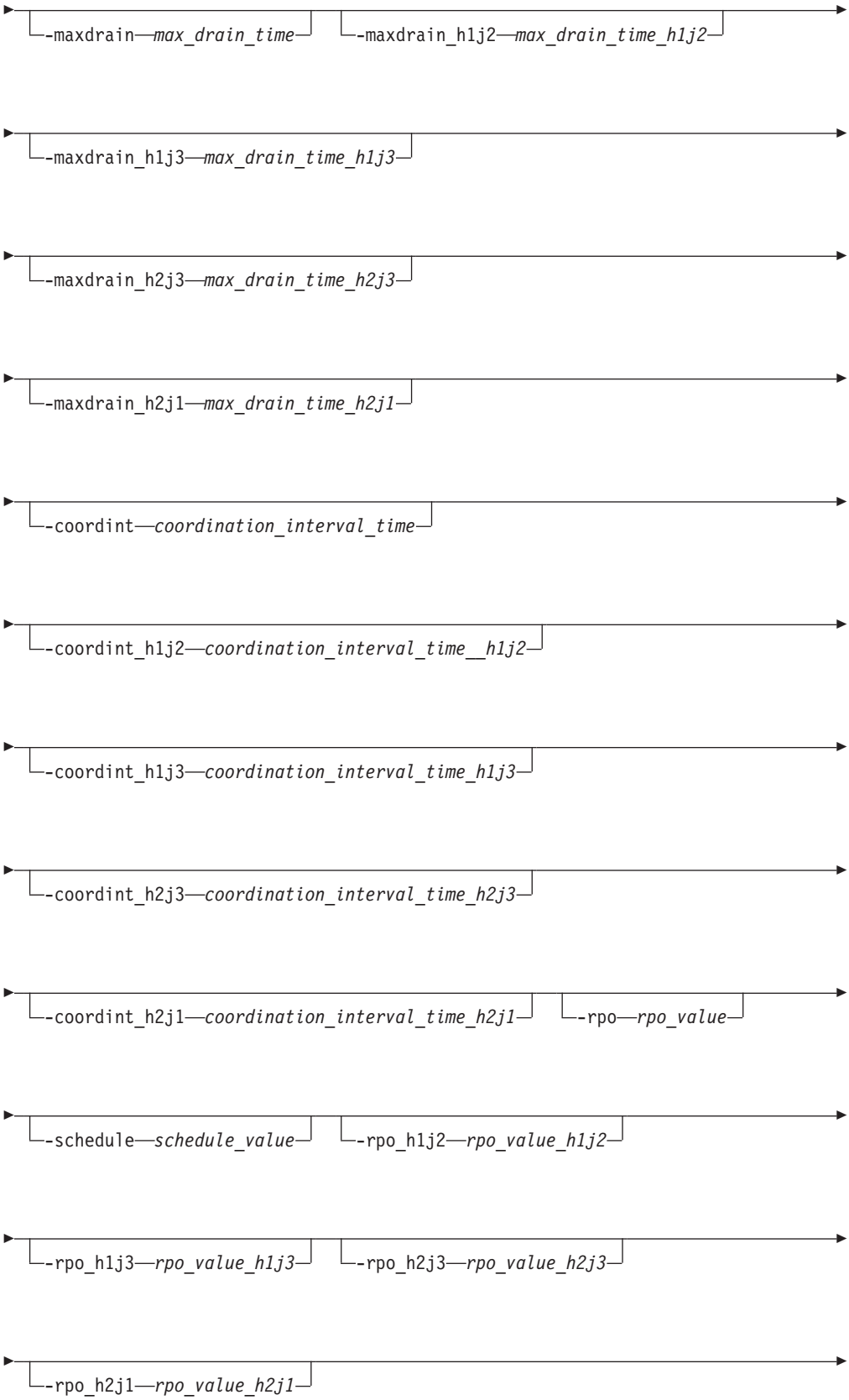
Parameters that begin with svc, such as **-svcinc**, apply to sessions for the following storage systems:

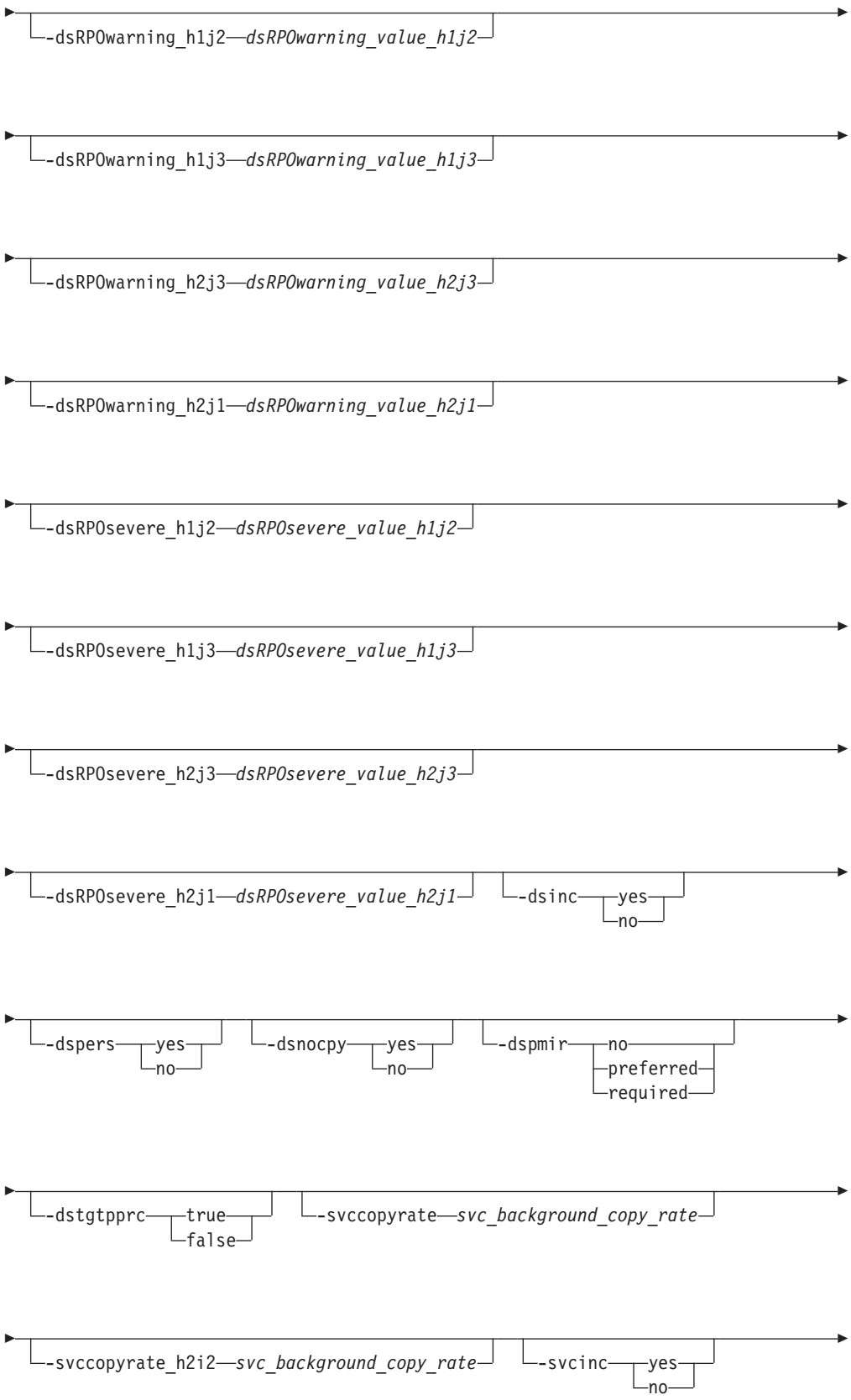
- IBM System Storage SAN Volume Controller
- IBM Storwize V3500
- IBM Storwize V3700
- IBM Storwize V7000
- IBM Storwize V7000 Unified

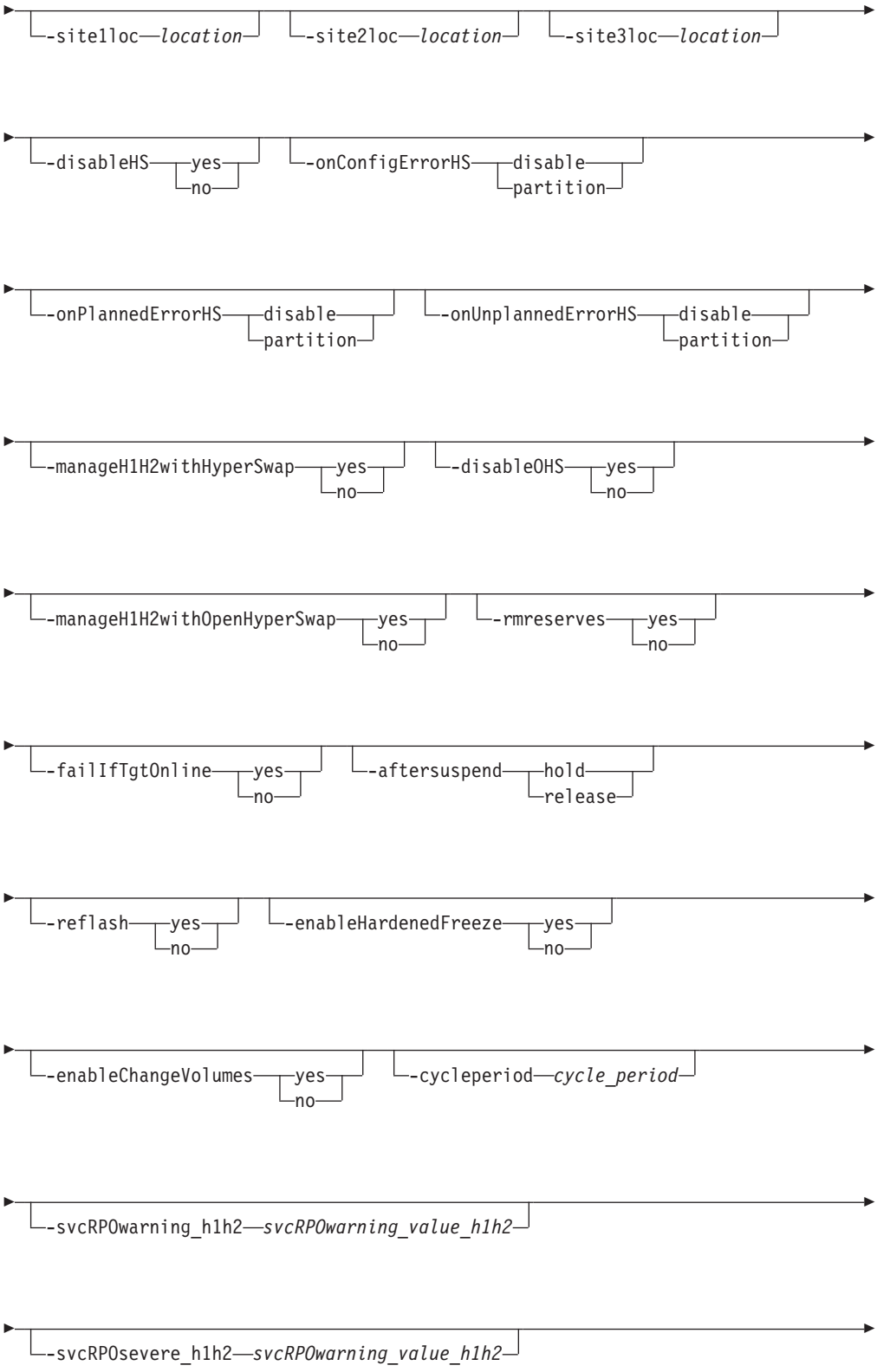
Parameters that end with HS, such as **-onConfigErrorHS**, apply only to the following session types. You can use HyperSwap® with these session types:

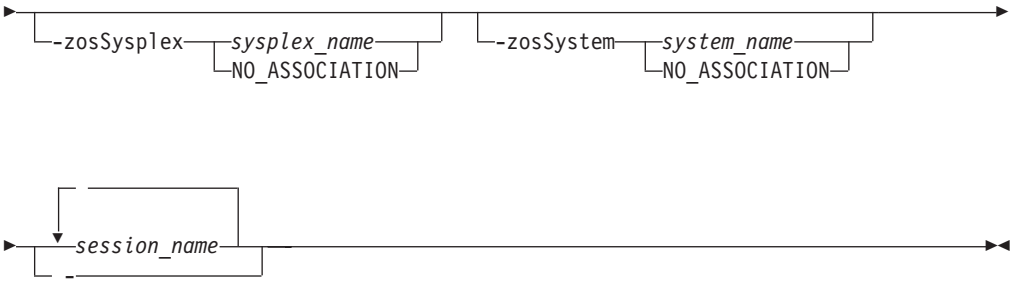
- Basic HyperSwap
- Metro Mirror Failover/Failback
- Metro Global Mirror
- Metro Global Mirror with Practice




-maxdrain—max_drain_time
-maxdrain_h1j2—max_drain_time_h1j2
-maxdrain_h1j3—max_drain_time_h1j3
-maxdrain_h2j3—max_drain_time_h2j3
-maxdrain_h2j1—max_drain_time_h2j1
-coordint—coordination_interval_time
-coordint_h1j2—coordination_interval_time__h1j2
-coordint_h1j3—coordination_interval_time_h1j3
-coordint_h2j3—coordination_interval_time_h2j3
-coordint_h2j1—coordination_interval_time_h2j1
-rpo—rpo_value
-schedule—schedule_value
-rpo_h1j2—rpo_value_h1j2
-rpo_h1j3—rpo_value_h1j3
-rpo_h2j3—rpo_value_h2j3
-rpo_h2j1—rpo_value_h2j1


-dsRPOwarning_h1j2—dsRPOwarning_value_h1j2
-dsRPOwarning_h1j3—dsRPOwarning_value_h1j3
-dsRPOwarning_h2j3—dsRPOwarning_value_h2j3
-dsRPOwarning_h2j1—dsRPOwarning_value_h2j1
-dsRPOsevere_h1j2—dsRPOsevere_value_h1j2
-dsRPOsevere_h1j3—dsRPOsevere_value_h1j3
-dsRPOsevere_h2j3—dsRPOsevere_value_h2j3
-dsRPOsevere_h2j1—dsRPOsevere_value_h2j1
-dsinc
yes
no
-dspers
yes
no
-dsnocpy
yes
no
-dspmir
no
preferred
required
-dstgtpprc
true
false
-svccopyrate—svc_background_copy_rate
-svccopyrate_h2i2—svc_background_copy_rate
-svcinc
yes
no


-site1loc—location
-site2loc—location
-site3loc—location
-disableHS
yes
no
-onConfigErrorHS
disable
partition
-onPlannedErrorHS
disable
partition
-onUnplannedErrorHS
disable
partition
-manageH1H2withHyperSwap
yes
no
-disableOHS
yes
no
-manageH1H2withOpenHyperSwap
yes
no
-rmreserves
yes
no
-failIfTgtOnline
yes
no
-aftersuspend
hold
release
-reflash
yes
no
-enableHardenedFreeze
yes
no
-enableChangeVolumes
yes
no
-cycleperiod—cycle_period
-svcRPOwarning_h1h2—svcRPOwarning_value_h1h2
-svcRPOsevere_h1h2—svcRPOwarning_value_h1h2



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-quiet
Suppresses the confirmation prompt for this command. This flag answers yes to all confirmation prompts.

-desc *description*
Specifies the new description for the session. This description can have up to 250 alphanumeric characters. If the description contains white space, enclose it in single quotation marks.

-maxdrain *max_drain_time*
Specifies the new maximum drain time for Global Mirror type sessions. This parameter is meant to be used by advanced users.

If you specify **-maxdrain 0**, the DS storage system uses its default value instead of zero. Any other positive integer in the valid range is accepted by the DS storage system. However, when a zero is sent to the DS storage system, the DS storage system is instructed to set the value back to its default value.

The **-maxdrain** parameter is related to the DS **-drain** parameter. The default value for the **-drain** parameter is 30 seconds; the maximum value for the **-maxdrain** parameter is 65,535 seconds. For more information, see the **mkgmir** command in the *IBM TotalStorage DS8000 Command-Line Interface User's Guide*.

The **-maxdrain_h1j3** and **-maxdrain_h2j3** parameters relate to a Metro Global Mirror session. The **-maxdrain_h1j3** parameter refers to the Global Mirror portion of a Metro Global Mirror session when the session is running from site 1 to site 3 and the **-maxdrain_h2j3** parameter refers to the Global Mirror portion of a Metro Global Mirror session that is running between site 2 and site 3.

The **-maxdrain_h2j1** parameter relates to a Global Mirror Either Direction with Two-Site Practice session.

-coordint *coordination_interval_time*
Specifies the new coordination interval time for Global Mirror type sessions. This parameter is meant to be used by advanced users. **-coordint_h1j3**, **-coordint_h2j1**, and **-coordint_h2j3** relate to the role pair.

-rpo *rpo_value*
For TotalStorage Enterprise Storage Server, System Storage DS8000, or DS6000, this value specifies the new consistency group interval time in seconds for the XX-XX role pair. The value of data exposure for the session trends toward this value. This parameter applies only to Global Mirror session types and copy types where the recovery point objective (RPO) is mapped. A value of 0

specifies that the storage system continuously attempt to form consistency groups. The possible range of values is 0 - 65535. The default is 0.

Parameters **-rpo_h1j2**, **-rpo_h1j3**, **-rpo_h2j1**, and **-rpo_h2j3** relate to the role pair.

For the XIV system, this value specifies the RPO threshold for the session in seconds. The **–rpo** parameter works with the **–schedule** parameter to determine:

- How often the XIV system attempts to form a consistency group.
- Whether the RPO value exceeds the threshold.

If the RPO on the storage system exceeds the RPO threshold for the session, the session changes to the Severe state and an alert is generated. The possible range of values is 30 - 86400. The default is 30.

-schedule *schedule*
For an XIV system Global Mirror session, this option specifies how often the XIV system forms a consistency group to ensure consistency on the secondary side and achieve the RPO that is set by the **-rpo** option.

The following are the possible values for **–schedule**: {never | min_interval | 00:00:30 | 00:00:40 | 00:00:50 | 00:01:00 | 00:01:10 | 00:01:20 | 00:01:30 | 00:01:40 | 00:01:50 | 00:02:00 | 00:05:00 | 00:10:00 | 00:15:00 | 00:30:00 | 01:00:00 | 02:00:00 | 03:00:00 | 04:00:00 | 06:00:00 | 08:00:00 | 12:00:00}

The default is min_interval, which is 20 seconds.

-dsRPOwarning *dsRPOwarning_value*
Specifies whether an alert is generated when an RPO threshold is exceeded for a role pair. This parameter applies only to Global Mirror and Metro Global Mirror sessions.

The range of values is 0 - 65535. The default is 0, which specifies that no alerts are generated. If the value is other than 0, it must be greater than the value for the **-rpo** parameter and less than the value for the **-dsRPOsevere** parameter.

Parameters **-dsRPOwarning_h1j2**, **-dsRPOwarning_h1j3**, **-dsRPOwarning_h2j1**, and **-dsRPOwarning_h2j3** relate to the role pair.

-dsRPOsevere *dsRPOsevere_value*
Specifies whether an alert is generated and the session status is changed to Severe when an RPO threshold is exceeded for a role pair. This parameter applies only to Global Mirror and Metro Global Mirror sessions.

The range of values is 0 - 65535. The default is 0, which specifies that no alerts are generated. If the value is other than 0, it must be greater than the value for the **-dsRPOwarning** parameter.

Parameters **-dsRPOsevere_h1j2**, **-dsRPOsevere_h1j3**, **-dsRPOsevere_h2j1**, and **-dsRPOsevere_h2j3** relate to the role pair.

-dsinc { yes | no }
For a point-in-time session, specifies whether the FlashCopy relationship is incremental for the next Flash or Start command. Valid values are yes or no.

-dspers { yes | no }
Specifies whether the next FlashCopy relationship for this session is persistent. Valid values are yes or no.

-dsnocpy { yes | no }
For a point-in-time session, specifies whether the FlashCopy relationship is established with a background copy for the next Flash or Start command. Valid values are `yes` or `no`.

-dspmir { no | preferred | required }
Specifies the Preserve Mirror option for storage systems. You can specify `no`, `preferred`, or `required`. If this option is not specified, the default is no preserve mirror options.

-dstgtpprc { true | false }
Allows the FlashCopy target volume to be a remote mirror and copy source volume if the option is set to `true`. This parameter must be set to `true` for the **dspmir** parameter to take effect. The default option for this parameter is `false`.

-svccopyrate *svc_background_copy_rate*
Specifies the copy rate that the storage systems use to complete the background copy of the FlashCopy relationships. Specify a percentage of 0 - 100; the default is 50.

When you specify 0, you are specifying the equivalent of the no-copy option for a TotalStorage Enterprise Storage Server, System Storage DS8000, or DS6000 FlashCopy session. If the session is completing a background copy when you change the option, IBM Tivoli Storage Productivity Center for Replication immediately modifies the background copy rate of the consistency group on the storage system.

The consistency group immediately uses the new rate to complete the background copy.

-svccopyrate_h2i2 *svc_background_copy_rate*
Specifies the copy rate that the storage systems use to complete the background copy of the FlashCopy role pair. Specify a percentage of 0 - 100; the default is 50.

A value of 0 is the equivalent of specifying the no-copy option for a TotalStorage Enterprise Storage Server, System Storage DS8000, or DS6000 FlashCopy session. If the session is completing a background copy when you change the option, Tivoli Storage Productivity Center for Replication immediately modifies the background copy rate of the consistency group on the storage system. The consistency group immediately uses the rate to complete the background copy.

-svcinc {yes | no }
For a point-in-time session, specifies whether the FlashCopy relationship for the storage systems is incremental for the next Flash or Start command. Valid values are `yes` or `no`.

-site1loc *location*
Specifies a location to associate with the site 1 volume role.

-site2loc *location*
Specifies a location to associate with the site 2 volume role.

-site3loc *location*
Specifies a location to associate with the site 3 volume role.

-disableHS { yes | no }
Disables HyperSwap for the session.

If HyperSwap detects a triggering event while it is disabled, it does not perform a swap.

Issuing the **-disableHS no** parameter resets the disable command (**-disableHS yes**), but does not necessarily mean that HyperSwap is enabled. It might mean only that HyperSwap is no longer disabled for operator reasons. For example, the HyperSwap address spaces were not started, a new member was in the process of joining the sysplex, or there was a HyperSwap in progress.

To determine the reasons that HyperSwap might be disabled, see the Session Messages panel by selecting the **View Messages** from the **Actions** list on the Sessions panel.

This parameter is applicable only if the `-manageH1H2withHyperSwap` parameter is set to `yes`.

-onConfigErrorHS { disable | partition }
Specifies the policy for the action to be taken for a configuration error. Valid policies are:

disable
HyperSwap is disabled.

partition
New member is not allowed to join the sysplex and is partitioned out.

All members of an IBM z/OS sysplex must be able to access all devices in a session. If a new member that is joining the sysplex cannot access all devices, it fails validation and it must be partitioned out of the sysplex, or HyperSwap must be disabled until the problem is resolved.

Similarly, all members of the sysplex must be able to complete HyperSwap commands. If the HyperSwap API address space is unavailable on one system, that system must either be partitioned out of the sysplex, or HyperSwap must be disabled until the problem is resolved.

-onPlannedErrorHS { disable | partition }
This optional parameter specifies the policy for the action to be taken when an error occurs during a planned HyperSwap. Valid policies are:

disable
HyperSwap processing is stopped and backed up, and HyperSwap is disabled.

partition
Systems that cannot complete the swap operation are partitioned out of the sysplex, and the HyperSwap continues with the remaining members of the sysplex. This is the default value.

-onUnplannedErrorHS { disable | partition }
Specifies the policy for the action to be taken when an error occurs during an unplanned HyperSwap. Valid policies are:

disable
HyperSwap processing is stopped and backed up, HyperSwap is disabled, and a permanent I/O error is returned to any users of the failing device.

partition
Systems that cannot complete the swap operation are partitioned out of the sysplex, and the HyperSwap continues with the remaining members of the sysplex. This is the default value.

-manageH1H2withHyperSwap { yes | no }
Enables the following session types to use Basic HyperSwap:

- Metro Mirror Failover/Failback

- Metro Global Mirror
- Metro Global Mirror with Practice

yes
Enables the following HyperSwap options to be set for the sessions:
- **-disableHS yes | no**
- **-onConfigErrorHS disable | partition**
- **-onPlannedErrorHS disable | partition**
- **-onUnplannedErrorHS disable | partition**

no Disables HyperSwap options for the session.

-disableOHS { yes | no }
Disables Open HyperSwap in Metro Mirror Failover/Failback sessions. This parameter is applicable only if the manageH1H2withOpenHyperSwap parameter is set to yes. The default option for this parameter is no.

-manageH1H2withOpenHyperSwap { yes | no }
Enables Open HyperSwap support for Metro Mirror Failover/Failback sessions.

yes
The following Open HyperSwap option is supported for the Metro Mirror Failover/Failback session:
- **-disableOHS{ yes | no }**

no Open HyperSwap options are not supported. All Metro Mirror Failover/Failback functions are still supported. If no is specified and the session previously loaded a configuration on the hosts and one of the volumes is OPEN, the manageH1H2withOpenHyperSwap option remains yes.

-rmreserves { yes | no }
Removes the persistent reserve on the target volume to allow the establishment of a Metro Mirror session. When this parameter is set to yes, the setting persists for the session and remains set until you change the value. Warnings are displayed to indicate that the value is set to yes when you attempt to start the session.

-failIfTgtOnline { yes | no }
Determines whether the **Start** command fails if the target is online. If the parameter is set to yes, the target is determined to be online to a host, and the **Start** command fails.

Notes:
- Tivoli Storage Productivity Center for Replication cannot determine with absolute certainty whether the target is online to a host.
- This parameter affects only count key data (CKD) volumes.
- Online means that path groups are present. A path group is necessary, but is not enough to indicate that the volume is online. For example, an LPAR that is not part of a sysplex can be taken down (for example, through a power-off without a shutdown) and path groups display as present, but no LPAR has the volume online. That is, the path groups are present, but z/OS software might think the volumes are offline.

-aftersuspend{ hold | release }
(Metro Mirror sessions) Specifies the session operation after a suspend occurs. Valid policies are:

hold Does not allow any updates to the primary volume after a suspend.

release
Allows updates to the primary volume after a suspend.

-reflash { yes | no }
Specifies whether a FlashCopy replication can be created between the I2 and J2 volumes after the recovery of a Global Mirror session. Valid values are yes or no. If you enter no, a FlashCopy replication is created only between the I2 and H2 volumes.

-enableHardenedFreeze { yes | no }
Specifies whether the z/OS Input/Output Supervisor (IOS) is used to manage freeze operations. If this parameter is set to yes, the following actions can occur:

- A freeze can occur regardless of whether the Tivoli Storage Productivity Center for Replication server is started or stopped.
- You can include z/OS system volumes such as paging, database, and WebSphere Application Server hierarchical file system (HFS) volumes as Metro Mirror volumes in the session. When you set the **-enableHardenedFreeze** parameter to yes, IOS manages the freeze operations for all Metro Mirror volumes in the session, which prevents Tivoli Storage Productivity Center for Replication from freezing the volumes and possibly freezing itself. This parameter does not enable IOS to manage freeze operations for Global Mirror volumes.

If the **-manageH1H2withHyperSwap** parameter is set to yes, this parameter is ignored. IOS support for managing freeze operations is included with HyperSwap.

Requirement: This parameter requires two z/OS address spaces: the Basic HyperSwap Management address space and the Basic HyperSwap API address space. For instructions about how to start these address spaces, see the information about preparing to use Basic HyperSwap from z/OS in the *IBM Tivoli Storage Productivity Center for Replication for System z Installation and Configuration Guide*.

-enableChangeVolumes { yes | no }
Specifies whether the use of change volumes is enabled in the copy sets for the session. Change volumes are denoted as C*x*, where *x* identifies the site. These volumes contain point-in-time images that are copied from the H1 and H2 volumes. The C1 volume stores changes from the H1 volume. These changes are sent from the C1 volume to the H2 volume, and then to the C2 volume.

Because the data that is replicated between sites contains point-in-time changes rather than all changes, a lower bandwidth link is required between the sites when change volumes are used. However, the use of change volumes can result in an increase to data exposure. Therefore, you might want to enable or disable this option depending on your network traffic or business requirements.

The valid values for this parameter are yes or no. The default is yes. This parameter applies only to Global Mirror Failover/Failback with Change Volumes sessions.

The images are copied to the change volumes during the cycle period that is defined by the **-cycleperiod** parameter.

The use of this parameter requires that the session is in an inactive state. An example of an inactive state is Defined or Suspended.

-cycleperiod *cycle_period*
Specifies the period in seconds in which the change volumes are refreshed with a consistent copy of the data. If a copy does not complete in the cycle period, the next cycle period will not start until the copy is complete. The range of possible values is 60 - 86400. The default is 300. This parameter applies only to Global Mirror Failover/Failback with Change Volumes sessions.

-svcRPOwarning_h1h2 *svcRPOwarning_h1h2_value*
Specifies whether an alert is generated when an RPO threshold is exceeded for a H1-H2 role pair. This parameter applies only to Global Mirror Failover/Failback with Change Volumes sessions.

The range of values is 0 - 172800. The default is 0, which specifies that no alerts are generated. If the value is other than 0, it must be greater than the value for the **-cycleperiod** parameter and less than the value for the **-svcRPOsevere_h1h2** parameter.

-svcRPOsevere_h1h2 *svcRPOsevere_h1h2_value*
Specifies whether an alert is generated and the session status is changed to Severe when an RPO threshold is exceeded for a H1-H2 role pair. This parameter applies only to Global Mirror Failover/Failback with Change Volumes sessions.

The range of values is 0 - 172800. The default is 0, which specifies that no alerts are generated. If the value is other than 0, it must be greater than the value for the **-svcRPOwarning_h1h2** parameter.

-zosSysplex {*sysplex_name* **| NO_ASSOCIATION}**
Specifies or clears the z/OS sysplex that is associated with the session. The **-zosSysplex** or **-zosSystem** parameter is required to use the **-enableHardenedFreeze** and **-manageH1H2withHyperSwap** parameters.

sysplex_name
Specifies the z/OS sysplex that contains the host system that is connected to the storage system.

NO_ASSOCIATION
Clears the associated sysplex if a sysplex is defined for the session.

-zosSystem {*system_name* **| NO_ASSOCIATION}**
Specifies or clears the z/OS system that is associated with the session. The **-zosSystem** or **-zosSysplex** parameter is required to use the **-enableHardenedFreeze** and **-manageH1H2withHyperSwap** parameters.

system_name
Specifies the z/OS system that is connected to the storage system.

NO_ASSOCIATION
Clears the associated system if a system is defined for the session.

session_name... **|** **-**
Specifies the name of the session that is to be modified.

Alternatively, use the dash (-) to specify that input for this parameter comes from an input stream (stdin). The dash is supported only in single-shot mode.

Example: Changing the description of a session

The following command changes the description of the session `session1` to `MGM session`.

```
csmcli> chsess -quiet -desc "MGM session" session1
```

The following output is returned:

```
IWNR1124I  The description for session session1 was modified successfully.
The new description is MGM session.
```

Example: Changing the session site locations

The following command changes location of each site in Metro Global Mirror session session2.

```
csmcli> chsess -quiet -site1loc Boulder -site2loc Tucson -site3loc Marana session2
```

The following output is returned:

```
IWNR1096I  The locations for sessions session2 and Site 3 were set successfully.
```

Example: Disabling HyperSwap for a session

The following command disables HyperSwap for session session3.

```
csmcli> chsess -quiet -disableHS yes session3
```

The following output is returned:

```
IWNR5411E  Basic HyperSwap is disabled by operator for session session3.
```

Example: Setting the cycle period for a Global Mirror Failover/Failback with Change Volumes session

The following command sets the cycle period for session session4. The cycle period is the period in seconds during which a point-in-time image is copied to the change volumes.

```
csmcli> chsess -quiet -cycleperiod 567 session4
```

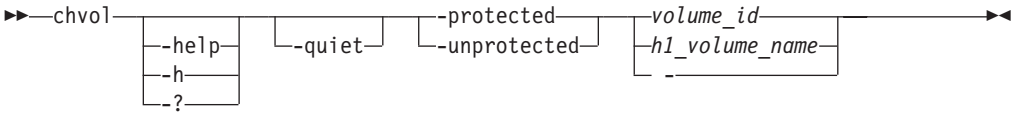
The following output is returned:

```
IWNR1228I The options for session session4 have been set successfully.
```

chvol

Use the **chvol** command to change the protection setting for a volume. You cannot change the protection setting for a volume that is in a session.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-quiet
Suppresses the confirmation prompt for this command. This flag answers yes to all confirmation prompts.

-protected
Marks the volume or volumes as protected. It specifies that the volumes cannot be used in an add copy set action.

-unprotected
Marks the volume or volumes as unprotected. It specifies that the volumes can be used in an add copy set action.

volume_id | *volume_name* | **-**
Specifies the volume for which you want to change the protection setting.

For IBM System Storage DS8000, IBM System Storage DS6000, and IBM TotalStorage Enterprise Storage Server Model 800 storage systems, use the volume ID for this parameter.

For other storage systems, you can use the volume ID or name for this parameter.

Alternatively, use the dash (-) to specify that input for this parameter comes from an input stream (stdin). The dash is supported only in single-shot mode.

Example: Protecting a volume by using a volume ID

The following command marks the volume DS8000:2107.04131:VOL:0001 as protected.

```
csmcli> chvol -protected DS8000:2107.04131:VOL:0001
```

The following output is returned:

```
Are you sure you want to change volume DS8000:2107.04131:VOL:0001? [y/n]:y
 IWNE9300I  The set protection command completed without any errors. There
were 1 element(s) protected and 0 element(s) unprotected.

IWNE9302I  The element DS8000:2107.04131:VOL:0001 has been protected.
```

Example: Unprotecting a volume by using a volume ID

The following command marks the volume DS8000:2107.04131:VOL:0001 as unprotected.

```
csmcli> chvol -unprotected DS8000:2107.04131:VOL:0001
```

The following output is returned:

```
Are you sure you want to change volume DS8000:2107.04131:VOL:0001?
[y/n]:y
IWNE9300I  The set protection command completed without any errors. There
were 0 element(s) protected and 1 element(s) unprotected.
IWNE9303I  The element DS8000:2107.04131:VOL:0001 has been unprotected.
```

Example: Protecting a volume by using a volume name

The following command marks the volume STORWIZE-V7000:VOL:FREEBIRD2:myvolume1 as protected.

```
csmcli> chvol -protected STORWIZE-V7000:VOL:FREEBIRD2:myvolume1
```

The following output is returned:

```
Are you sure you want to change volume
STORWIZE-V7000:VOL:FREEBIRD2:7(myvolume1)? [y/n]:y
IWNE9300I  The set protection command completed without any errors. There
were 1 element(s) protected and 0 element(s) unprotected.

IWNE9302I  The element STORWIZE-V7000:VOL:FREEBIRD2:7(myvolume1)
has been protected.
```

Example: Unprotecting a volume by using a volume name

The following command marks the volume STORWIZE-V7000:VOL:FREEBIRD2:myvolume1 as unprotected.

```
csmcli> chvol -uprotected STORWIZE-V7000:VOL:FREEBIRD2:myvolume1
```

The following output is returned:

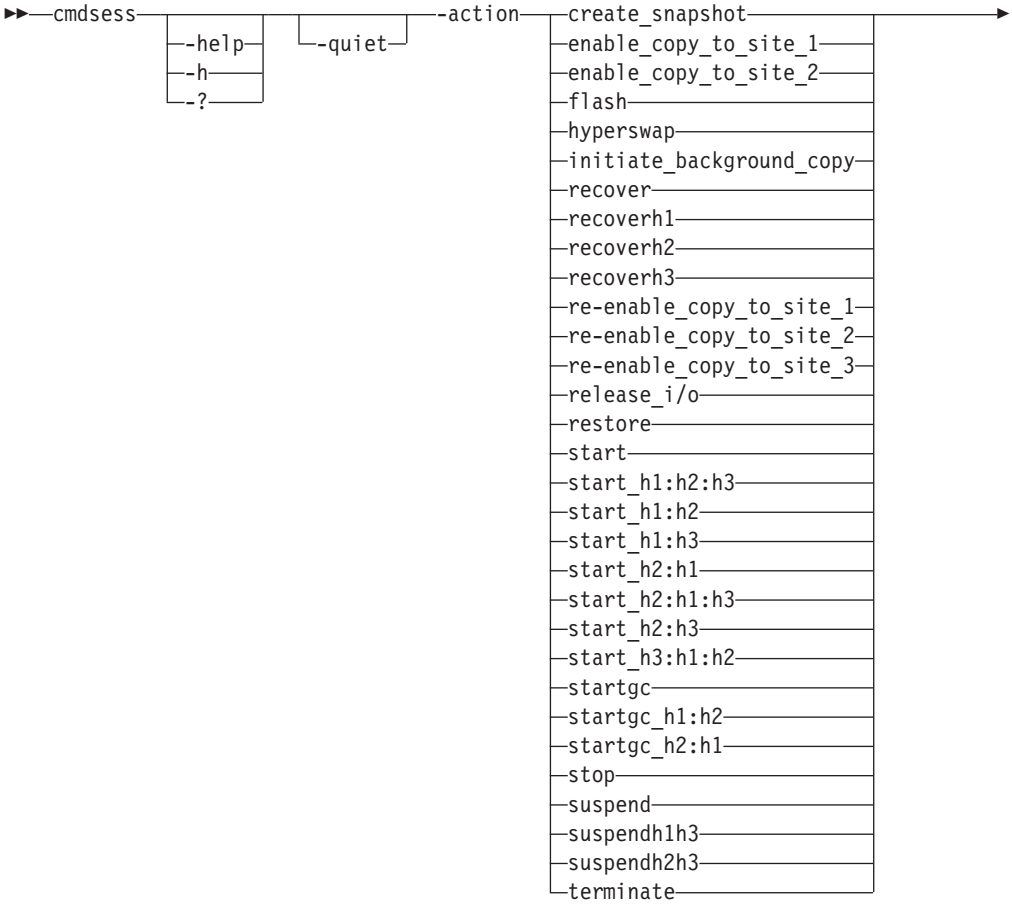
```
Are you sure you want to change volume
STORWIZE-V7000:VOL:FREEBIRD2:7(myvolume1)? [y/n]:y
IWNE9300I  The set protection command completed without any errors. There
were 0 element(s) protected and 1 element(s) unprotected.

IWNE9302I  The element STORWIZE-V7000:VOL:FREEBIRD2:7(myvolume1)
has been unprotected.
```

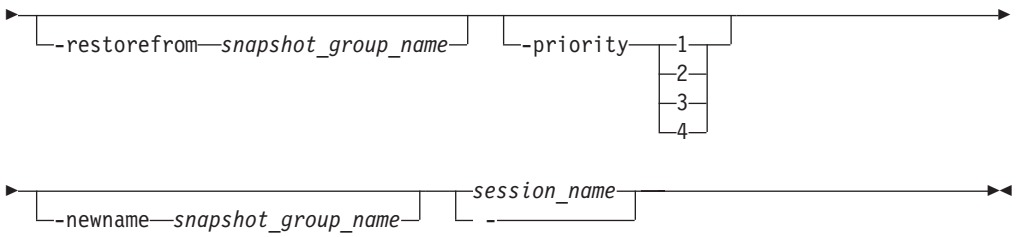
cmdsess

Use the **cmdsess** command to run a specific action against a session.

Tip: To list all of the session actions that can be run for a session, use the **lssessactions** command.

Syntax





Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-quiet
Suppresses the confirmation prompt for this command. This flag answers yes to all confirmation prompts.

-action *action_type*
Specifies the action type (command) depending on the state and type of session. The possible action types are displayed in the syntax diagram and are described in the *IBM Tivoli Storage Productivity Center User's Guide* and *IBM Tivoli Storage Productivity Center for Replication for System z User's Guide*.

-restorefrom *snapshot_group_name*
Specifies the name of the snapshot group that you want to use to restore the data in the H1 volumes for the session. The snapshot group must be in the session.

This parameter is required if the **-action** parameter value is restore.

-priority { 1 | 2 | 3 | 4}
Specifies the priority in which the snapshot group is deleted from the session. The value is the number 1 - 4. A value of 1 specifies that the snapshot group is deleted last. A value of 4 specifies that the snapshot group is deleted first.

This parameter is optional and only used if the **-action** parameter value is create_snapshot.

-newname *snapshot_group_name*
Specifies the new name for the snapshot group.

This parameter is optional and only used if the **-action** parameter value is create_snapshot.

session_name **|** **-**

Specifies the name of the session that the action will run against.

Alternatively, use the dash (-) to specify that input for this parameter comes from an input stream (stdin). The dash is supported only in single-shot mode.

Example: Starting a session

The following command runs the **Start H1->H2->H3** action on session session1:

```
csmcli> cmdsess -action start_h1:h2:h3 session1
```

The following output is returned:

```
IWNR1813W  This command will initiate the copying of data from
Site 1 to Site 2 and Site 3 for session session1, overwriting any data on Site 2
and Site 3 for any inactive copy sets. For ESS/DS devices, exactly one path will
```

```
be established between each LSS pair without existing paths. Do you want to
continue? [y/n]:y

IWNR1027I  The command Start H1->H2->H3 in session session1 has completed
successfully.
```

Example: Reversing the direction of replication

The following command runs the **Enable Copy to Site 1** action on the `session1` session without prompting for confirmation:

```
csmcli> cmdsess -quiet -action enable_copy_to_site_1 session1
```

The following output is returned:

```
IWNR1027I  The command Enable Copy to Site 1 in session session1 has
completed successfully.
```

Example: Creating a snapshot group in an XIV system snapshot session

The following command creates a snapshot group in session `snap1`:

```
csmcli> cmdsess -action create_snapshot snap1
```

The following output is returned:

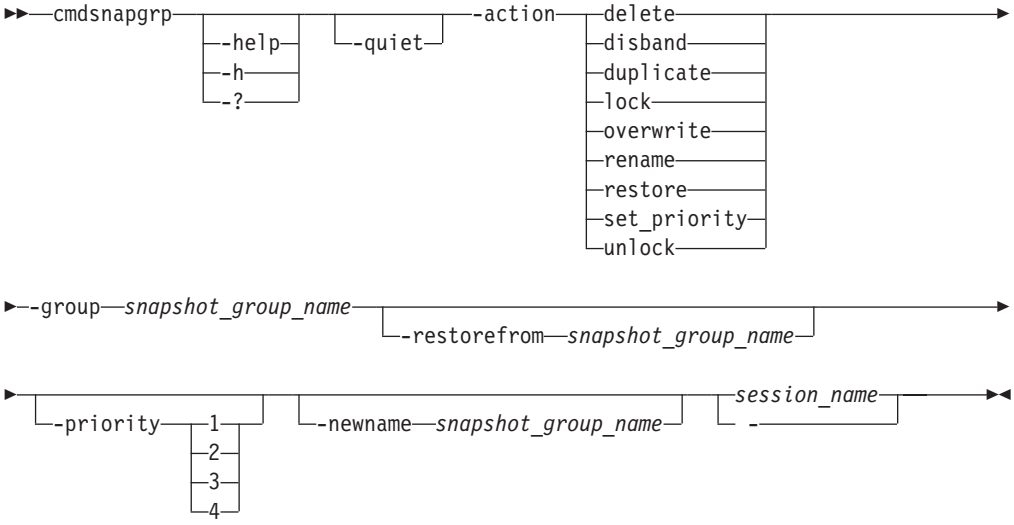
```
IWNR1855W  This command will create a new snapshot group containing
snapshots of the source volumes in session snap1. Do you want to continue? [y/n]:y
IWNR1026I  The Create Snapshot command in session snap1 has completed.
```

cmdsnapgrp

Use the **cmdsnapgrp** command to run a specific action against a snapshot group that is in an IBM XIV Storage System snapshot session.

A snapshot group is a grouping of snapshots of individual volumes in a consistency group at a specific point in time.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-quiet
Suppresses the confirmation prompt for this command. This flag answers yes to all confirmation prompts.

-action *action_type*
Specifies the action that you want to complete for a snapshot group in a session. The valid values are:

delete Deletes the snapshot group and all the individual snapshots that are in the group from the session and from XIV system.

If the deleted snapshot group is the last snapshot group that is associated with the session, the session returns to the Defined state.

disband
Disbands the snapshot group. When a snapshot group is disbanded, the snapshot group no longer exists. All snapshots in the snapshot group become individual snapshots that are no longer associated to the consistency group or the session.

After a snapshot group is disbanded, it is no longer shown in or managed by IBM Tivoli Storage Productivity Center for Replication. If the disbanded snapshot group is the last snapshot group that is associated with the session, the session returns to the Defined state.

duplicate
Duplicates the snapshot group. When a snapshot group is duplicated, a new snapshot group is created with new snapshots for all volumes that are in the duplicated group. A name for the duplicated snapshot group is generated automatically by XIV system.

lock Locks a snapshot group. If the snapshot group is locked, write operations to the snapshots within the snapshot group are prevented. By default, a snapshot group is locked when it is created.

This action is valid only if the snapshot group is unlocked.

overwrite
Overwrites the snapshot group to reflect the data that is on the master volume.

rename
Renames the snapshot group.

To specify the new name, use the **-newname** parameter.

restore
Restores the contents of a snapshot group by using another snapshot group in the session. Both of the snapshot groups must contain the same subset of volumes.

To specify the snapshot group from which you want to restore, use the **-restorefrom** parameter.

set_priority
Sets the priority in which a snapshot group is deleted. The value is the number 1 - 4. A value of 1 specifies that the snapshot group is deleted last. A value of 4 specifies that the snapshot group is deleted first.

To set the deletion priority, use the **-priority** parameter.

unlock
Unlocks a snapshot group. If the snapshot group is unlocked, write operations to the snapshots within the snapshot group are enabled and the snapshot group is shown as modified if you run the **lssnapgrp** command.

This action is valid only if the snapshot group is locked.

-group *snapshot_group_name*
Specifies the name of the snapshot group that you want to run the action against.

-restorefrom *snapshot_group_name*
Specifies the name of the snapshot group that you want to use to restore the snapshot group that is defined by the **-group** parameter.

This parameter is required if the **-action** parameter value is `restore`.

-priority { 1 | 2 | 3 | 4}
Specifies the priority in which the snapshot group will be deleted from the session. The value is the number 1 - 4. A value of 1 specifies that the snapshot group is deleted last. A value of 4 specifies that the snapshot group is deleted first.

This parameter is required if the **-action** parameter value is `set_prioirity`.

-newname *snapshot_group_name*
Specifies the new name for the snapshot group.

This parameter is required if the **-action** parameter value is `rename`.

session_name **|** **-**

Specifies the name of the session that contains the snapshot group.

Alternatively, use the dash (-) to specify that input for this parameter comes from an input stream (stdin). The dash is supported only in single-shot mode.

Example: Deleting a snapshot group

The following command deletes the snapshot group `snap1_002.snap_group_00018` in the session `snap1`.

```
csmcli> cmdsnapgrp -group snap1_002.snap_group_00018 -action delete -quiet snap1
```

The following output is returned:

```
IWNR1322I The Delete command has completed for snapshot groups
snap1_002.snap_group_00018 in session snap1.
```

Example: Disbanding a snapshot group

The following command disbands the snapshot group `snap1_002.snap_group_00017` in the session `snap1`.

```
csmcli> cmdsnapgrp -group snap1_002.snap_group_00017 -action disband -quiet snap1
```

The following output is returned:

```
IWNR1322I The Disband command has completed for snapshot groups
snap1_002.snap_group_00017 in session snap1.
```

Example: Duplicating a snapshot group

The following command duplicates the snapshot group snap1_002.snap_group_0001 in the session snap1.

```
csmcli> cmdsnapgrp -group snap1_002.snap_group_0001 -action duplicate -quiet snap1
```

The following output is returned:

```
IWNR1322I The Duplicate command has completed for snapshot groups
snap1_002.snap_group_0001 in session snap1.
```

Example: Locking a snapshot group

The following command locks the snapshot group snap1_002.snap_group_0001 in the session snap1.

```
csmcli> cmdsnapgrp -group snap1_002.snap_group_0001 -action lock -quiet snap1
```

The following output is returned:

```
IWNR1322I The Lock command has completed for snapshot groups
snap1_002.snap_group_0001 in session snap1.
```

Example: Overwriting a snapshot group

The following command overwrites the snapshot group snap1_002.snap_group_0001 in the session snap1.

```
csmcli> cmdsnapgrp -group snap1_002.snap_group_0001 -action overwrite -quiet snap1
```

The following output is returned:

```
IWNR1322I The Overwrite command has completed for snapshot groups
snap1_002.snap_group_0001 in session snap1.
```

Example: Renaming a snapshot group

The following command renames the snapshot group snap1_002.snap_group_00016 to snapgroup1 in the session snap1.

```
csmcli> cmdsnapgrp -group snap1_002.snap_group_00016 -action rename
-newname snapgroup1 -quiet snap1
```

The following output is returned:

```
IWNR1326I The snapshot group snap1_002.snap_group_00016 in session
snap1 was renamed to snapgroup1.
```

Example: Restoring a snapshot group

The following command restores the snapshot group snap1_002.snap_group_0001 from snap1_002.snap_group_00017 in the session snap1.

```
csmcli> cmdsnapgrp -group snap1_002.snap_group_0001 -action restore
-restorefrom snap1_002.snap_group_00017 -quiet snap1
```

The following output is returned:

```
IWNR1325I The snapshot group snap1_002.snap_group_0001 in session
snap1 was restored from snapshot group snap1_002.snap_group_00017.
```

Example: Setting the deletion priority for a snapshot group

The following command sets a deletion priority of 4 for the snapshot group snap1_002.snap_group_0001 in the session snap1.

```
csmcli> cmdsnapgrp -group snap1_002.snap_group_0001 -action set_priority -priority 4
-quiet snap1
```

The following output is returned:

```
IWNR1324I The deletion priority for snapshot groups
snap1_002.snap_group_0001 in session snap1 was set to 4.
```

Example: Unlocking a snapshot group

The following command unlocks the snapshot group snap1_002.snap_group_0001 in the session snap1.

```
csmcli> cmdsnapgrp -group snap1_002.snap_group_0001 -action unlock -quiet snap1
```

The following output is returned:

```
IWNR1322I The Unlock command has completed for snapshot groups
snap1_002.snap_group_0001 in session snap1.
```

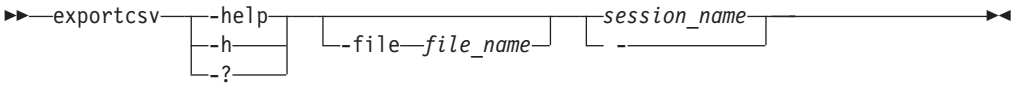
exportcsv

Use the **exportcsv** command to export the copy sets in a session to a comma-separated values (CSV) file or to the console. You are prompted to overwrite the CSV file if it exists.

For IBM System Storage DS8000, IBM System Storage DS6000, and IBM TotalStorage Enterprise Storage Server Model 800 storage systems, the volume ID is provided in the CSV file.

For other storage systems, the volume ID is provided in the CSV file if the volume does not have a name. If the volume has a name, the name is provided.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-file *file_name*
Specifies the name and path of the CSV file. If you do not specify this parameter, the CSV output is displayed on the command-line interface.

session_name **|** **-**
Specifies the name of the session from which you are exporting the copy sets.

Example: Exporting copy sets to a file

The following command exports the copy sets in session session1 to the file c:\session1.csv.

```
csmcli> exportcsv -file c:\session1.csv session1
```

The following output is returned:

```
Exporting...
IWNC6506I  The export copy set command for session session1 succeeded.  The
file was exported to the path: c:\session1.csv.
```

Example: Exporting copy sets to standard out

The following command exports the copy sets in session session1 to standard output:

```
csmcli> exportcsv session1
```

The following output is returned:

```
Exporting...
#203
#Metro Global Mirror w/ Practice
#Aug 25 1:44:16 PM

H1,H2,H3,I3,J3
DS8000:2107.NK791:VOL:1500,DS8000:2107.MW931:VOL:1500,
DS8000:2107.04131:VOL:1500,DS8000:2107.04131:VOL:1505,
DS8000:2107.04131:VOL:150A
DS8000:2107.NK791:VOL:1501,DS8000:2107.MW931:VOL:1501,
DS8000:2107.04131:VOL:1501,DS8000:2107.04131:VOL:1506,
DS8000:2107.04131:VOL:150B
DS8000:2107.NK791:VOL:1502,DS8000:2107.MW931:VOL:1502,
DS8000:2107.04131:VOL:1502,DS8000:2107.04131:VOL:1507,
DS8000:2107.04131:VOL:150C
DS8000:2107.NK791:VOL:1503,DS8000:2107.MW931:VOL:1503,
DS8000:2107.04131:VOL:1503,DS8000:2107.04131:VOL:1508,
DS8000:2107.04131:VOL:150D
DS8000:2107.NK791:VOL:1504,DS8000:2107.MW931:VOL:1504,
DS8000:2107.04131:VOL:1504,DS8000:2107.04131:VOL:1509,
DS8000:2107.04131:VOL:150E
ESS:2105.FCA57:VOL:1500,DS8000:2107.NF111:VOL:1505,
DS8000:2107.04131:VOL:1600,DS8000:2107.04131:VOL:1605,
DS8000:2107.04131:VOL:160A
ESS:2105.FCA57:VOL:1501,DS8000:2107.NF111:VOL:1506,
DS8000:2107.04131:VOL:1601,DS8000:2107.04131:VOL:1606,
DS8000:2107.04131:VOL:160B
ESS:2105.FCA57:VOL:1502,DS8000:2107.NF111:VOL:1507,
DS8000:2107.04131:VOL:1602,DS8000:2107.04131:VOL:1607,
DS8000:2107.04131:VOL:160C
ESS:2105.FCA57:VOL:1503,DS8000:2107.NF111:VOL:1508,
DS8000:2107.04131:VOL:1603,DS8000:2107.04131:VOL:1608,
DS8000:2107.04131:VOL:160D
ESS:2105.FCA57:VOL:1504,DS8000:2107.NF111:VOL:1509,
DS8000:2107.04131:VOL:1604,DS8000:2107.04131:VOL:1609,
DS8000:2107.04131:VOL:160E

IWNR1301I  The export of a copy set for session session1 succeeded.
```

Example: Exporting copy sets to standard out where the volume name is provided in the output

The following command exports the copy sets in the XIV system Global Mirror Failover/Failback session xiv_gm_1 to standard output.

```
csmcli> exportcsv xiv_gm_1
```

The following output is returned:

```
Exporting...
#xiv_gm_1
#Global Mirror Failover/Failback
##Aug 25 9:48:26 AM

H1,H2
XIV:VOL:7803448:myvolume1,XIV:VOL:7804988:myvolume2

IWNR1301I The export of a copy set for session xiv_gm_1 succeeded.
```

exportgmdata

Use the **exportgmdata** command to export data for a Global Mirror role pair to a comma-separated value (CSV) file. You can then use the data in the CSV file to analyze trends in your storage environment that affect your recovery point objective (RPO).

Attention: Because historical data is purged when you delete a session or set the management server as the standby server, export data before you complete these actions.

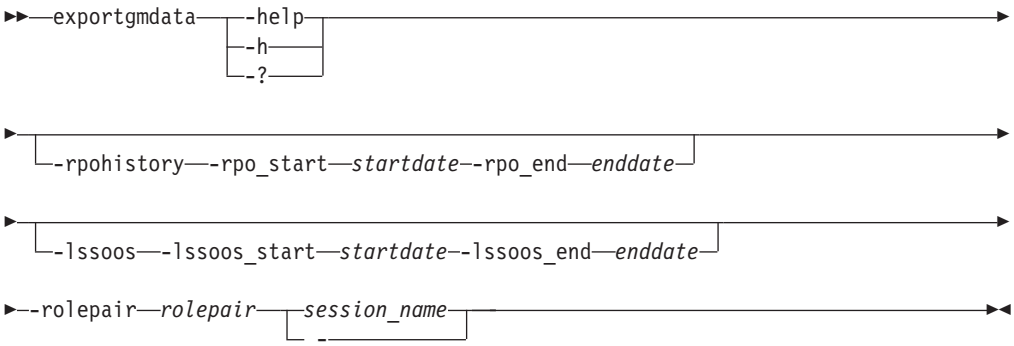
This command can create two types of CSV files: a file that contains data about the RPO and a file that contains data about logical subsystem (LSS) out-of-sync tracks. You can use both files to better analyze trends.

For example, the file that contains data for the RPO might show that the RPO threshold is often exceeded on a particular day and time. You can then view the file that contains data for LSS out-of-sync tracks to see whether a particular LSS or set of LSSs have high out-of-sync track values for that day and time.

Syntax

This command is available for the following storage systems:

- TotalStorage Enterprise Storage Server Model 800
- System Storage DS6000
- System Storage DS8000



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-rpohistory
Specifies that the CSV file contains data for the RPO. The data includes the average RPO for the dates that you select and information that is related to the formation of consistency groups.

-rpo_start *startdate*
Specifies the start date for the RPO data that is in the CSV file. The format is yyyy-mm-dd.

By default, the date range maximum is 31 days of data.

This parameter is required if the **-rpohistory** parameter is present.

-rpo_end *enddate*
Specifies the end date for the RPO data that is in the CSV file. The format is yyyy-mm-dd.

This parameter is required if the **-rpohistory** parameter is present.

-lssoos
Specifies that the export file contains data for the out-of-sync tracks in that are in the LSSs.

-lssoos_start *startdate*
Specifies the start date for the LSS out-of-sync track data that is in the CSV file. The format is yyyy-mm-dd.

By default, the date range maximum is seven days of data.

This parameter is required if the **-lssoos** parameter is present.

-lssoos_end *enddate*
Specifies the end date for the LSS out-of-sync track data that is in the CSV file. The format is yyyy-mm-dd.

This parameter is required if the **-lssoos** parameter is present.

-rolepair *rolepair*
Specifies the role pair for which you are exporting the data.

session_name | **-**
Specifies the name of the session for which you are exporting the data.

Example: Exporting RPO data to an export file

The following command exports RPO data to the file gmsession1H1-J2rpo2012-02-28-16-18-25.csv. The confirmation message contains the path to the file.

```
csmcli> exportgmdata -rpohistory -rpo_start 2012-02-01 -rpo_end 2012-02-28
-rolepair h1-j2 gmsession1
```

The following output is returned:

```
IWNR1262I The data for session gmsession1 was exported.
The CSV file is located on the server at: C:\Program Files\IBM\TPC\
\wlp\usr\servers\replicationServer\exportdir\
gmsession1H1-J2rpo2012-02-28-16-18-25.csv
```

Example: Exporting LSS out-of-sync track data to an export file

The following command exports LSS out-of-sync track data to the file gmsession1H1-J2lssoos2012-02-28-16-45-46.csv. The confirmation message contains the path to the file.

```
csmcli> exportgmdata -lssoos -lssoos_start 2012-02-01 -lssoos_end 2012-02-08
-rolepair h1-j2 gmsession1
```

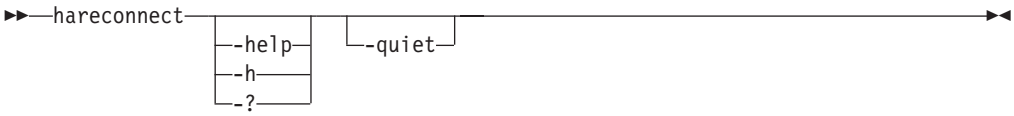
The following output is returned:

```
IWNR1262I The data for session gmsession1 was exported.
The CSV file is located on the server at: C:\Program Files\IBM\TPC\
\wlp\usr\servers\replicationServer\exportdir\
gmsession1H1-J2lssoos2012-02-28-16-45-46.csv
```

hareconnect

Use the **hareconnect** command to reconnect the active and standby servers for high availability (HA).

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-quiet
Suppresses the confirmation prompt for this command. This flag answers `yes` to all confirmation prompts.

Example: Reconnecting the active and standby management servers

The following command reconnect the active and standby management servers.

```
csmcli> hareconnect
```

The following output is returned:

```
IWNR3052I  Successfully reconnected with the high availability
erver tpcserver1.tpc.example.com from the server tpcserver2.tpc.example.com
```

hatakeover

Use the **hatakeover** command to change the standby server to the active server.

Syntax

Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-quiet
Suppresses the confirmation prompt for this command. This flag answers `yes` to all confirmation prompts.

Description

Note: For the several commands that implement high-availability with the definition of a standby server, the standby server must be at the same level of IBM Tivoli Storage Productivity Center for Replication code as the active server.

Example: Changing the standby server to the active server

The following command changes the standby server to the active server.

```
csmcli> hatakeover
```

The following output is returned:

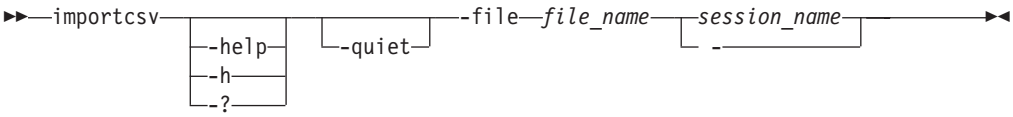
```
IWNR3063I  Successfully issued the takeover to the standby server
tpcserver2.tpc.example.com with the active HA server
tpcserver1.tpc.example.com.
```

importcsv

Use the **importcsv** command to parse a comma-separated values (CSV) file to create copy sets for a session.

The CSV file is parsed and copy sets are created from the data in the file. The CSV file must contain data for all the necessary roles in the session for which the copy sets are being created.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-quiet
Suppresses the confirmation prompt for this command. This flag answers `yes` to all confirmation prompts.

-file *file_name*
A required parameter that specifies the name of the CSV file.

session_name **|** **-**
Specifies the name of the session for which you are creating copy sets.

Alternatively, use the dash (-) to specify that input for this parameter comes from an input stream (stdin). The dash is supported only in single-shot mode.

Example: Importing a CSV file for a session

The following CSV file is named `session1.csv`:

```
#session1,
#FlashCopy,
#Oct 2 10:03:18 AM

H1,T1
```

```
DS8000:2107.FRLL1:VOL:1004,DS8000:2107.FRLL1:VOL:1104
DS8000:2107.FRLL1:VOL:1011,DS8000:2107.FRLL1:VOL:1101
DS8000:2107.FRLL1:VOL:1005,DS8000:2107.FRLL1:VOL:1105
```

Example: Importing a file into a session without prompting for a confirmation

The following command imports the file into the session `session2` without prompting for a confirmation:

```
csmcli> importcsv -quiet -file session1.csv session2
```

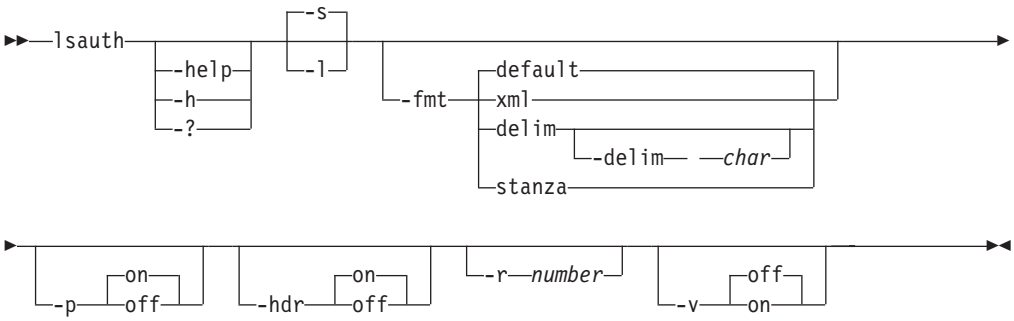
The following output is returned:

```
IWNR2001I  The pair was successfully created in session session2 for
copy set
DS8000:2107.FRLL1:VOL:1004 with source DS8000:2107.FRLL1:VOL:1004 and target
DS8000:2107.FRLL1:VOL:1104.

IWNR2001I  The pair was successfully created in session session2 for copy set
DS8000:2107.FRLL1:VOL:1011 with source DS8000:2107.FRLL1:VOL:1011 and target
DS8000:2107.FRLL1:VOL:1101.

IWNR2001I  The pair was successfully created in session session2 for copy set
DS8000:2107.FRLL1:VOL:1005 with source DS8000:2107.FRLL1:VOL:1005 and target
DS8000:2107.FRLL1:VOL:1105.
```

lsauth

Use the **lsauth** command to lists the name, authorization level, and session permission for each user or user group.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-s Displays default information about each user and user group, including the name, classification, and role.

-l Displays detailed information for each user and user group, including:

Column label	Details
User name	The user name for each authorization and session that the user has permission to manage.
Classification	The type: `user` or `group`.

Column label	Details
Role	The role: `Administrator`, `Operator`, or `Monitor`
Session	The session name if the role is Operator, or a dash (-) if the role is Administrator or Monitor.

-fmt { default | xml | delim | stanza }
Specifies the format of the output. You can specify one of these values:

default
Specifies that the output is displayed in tabular format using spaces as delimiters between columns. This is the default value.

xml Specifies that the output is displayed in XML format.

delim Specifies that output is displayed in a tabular format using commas as delimiters between columns.

To use a character other than a comma as the delimiter, specify `-fmt delim -delim` *char* , where *char* represents the character that you want to use as the delimiter. For example, if you want to use a colon (:) as the delimiter, use the following `-fmt` parameter:

```
-fmt delim -delim :
```

If you use a shell metacharacter as the delimiting character, enclose the character in quotation marks or single quotation marks. A blank space is not a valid character.

stanza Specifies that the output is displayed as one keyword-value pair per line.

-p { on | off }
Specifies whether to display one page of text at a time or all text at once.

on Displays one page of text at a time. Pressing any key displays the next page. This is the default value when the command is run in interactive mode.

off Displays all text at once. This is the default value when the command is run in single-shot mode.

-hdr { on | off }
Specifies whether to display the table header. You can specify one of these values:

on Displays the table header. This is the default value.

off Hides the table header.

-r *number*
Specifies the number of rows per page to display when the **-p** parameter is specified. You can specify a value of `1 - 100`. The default value is `22`.

-v { on | off }
Specifies whether to enable verbose mode. You can specify one of these values:

on Enable verbose mode.

off Disable verbose mode. This is the default value.

Example: Listing all users and user groups

The following command lists all currently defined users and user groups.

```
csmcli> lsauth
```

The following output is returned:

```
Name    Classification Role
==================================
csmuser User           Administrator
```

Example: Listing detailed authorization information

The following command lists detailed information about the user csmuser.

```
csmcli> lsauth -l
```

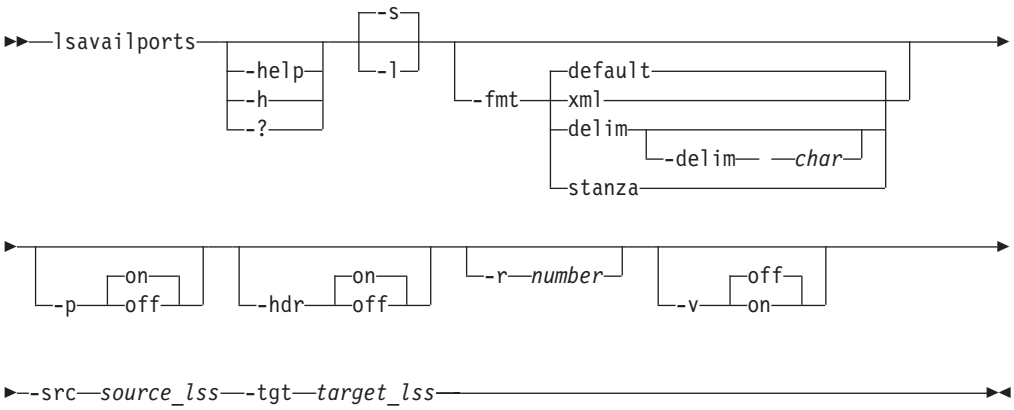
The following output is returned:

```
Name    Classification Role          Session
=============================================
csmuser User           Administrator -
```

lsavailports

Use the **lsavailports** command to display the port configuration types for a specific path.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-s
Displays default information, including the source and target LSS and the type of port configuration.

-l
Displays detailed information for each port, including:

Column label	Details
Source	Origin of the path; for ESS, an LSS.

Column label	Details
Target	Target of the path; for ESS, an LSS.
Type	The configuration of the port (such as Enterprise Systems Connection [ESCON®] or Fibre Channel).

-fmt { default | xml | delim | stanza }
Specifies the format of the output. You can specify one of these values:

default
Specifies that the output is displayed in tabular format using spaces as delimiters between columns. This is the default value.

xml Specifies that the output is displayed in XML format.

delim Specifies that output is displayed in a tabular format using commas as delimiters between columns.

To use a character other than a comma as the delimiter, specify `-fmt delim -delim` *char* , where *char* represents the character that you want to use as the delimiter. For example, if you want to use a colon (:) as the delimiter, use the following `-fmt` parameter:

```
-fmt delim -delim :
```

If you use a shell metacharacter as the delimiting character, enclose the character in quotation marks or single quotation marks. A blank space is not a valid character.

stanza Specifies that the output is displayed as one keyword-value pair per line.

-p { on | off }
Specifies whether to display one page of text at a time or all text at once.

on Displays one page of text at a time. Pressing any key displays the next page. This is the default value when the command is run in interactive mode.

off Displays all text at once. This is the default value when the command is run in single-shot mode.

-hdr { on | off }
Specifies whether to display the table header. You can specify one of these values:

on Displays the table header. This is the default value.

off Hides the table header.

-r *number*
Specifies the number of rows per page to display when the **-p** parameter is specified. You can specify a value of `1 - 100`. The default value is `22`.

-v { on | off }
Specifies whether to enable verbose mode. You can specify one of these values:

on Enable verbose mode.

off Disable verbose mode. This is the default value.

-src *source_lss*
Specifies the source LSS (for example, `ESS:2105.FCA57:LSS:21`).

-tgt *target_lss*
Specifies the target LSS (for example, `ESS:2105.FCA57:LSS:21`).

Example: Listing port configuration for paths

The following command lists the port configuration used for each path with source LSS DS8000:2107.04131:LSS:15 and target LSS ESS:2105.FCA57:LSS:15.

```
csmcli> lsavailports -src DS8000:2107.04131:LSS:15 -tgt ESS:2105.FCA57:LSS:15
```

The following output is returned:

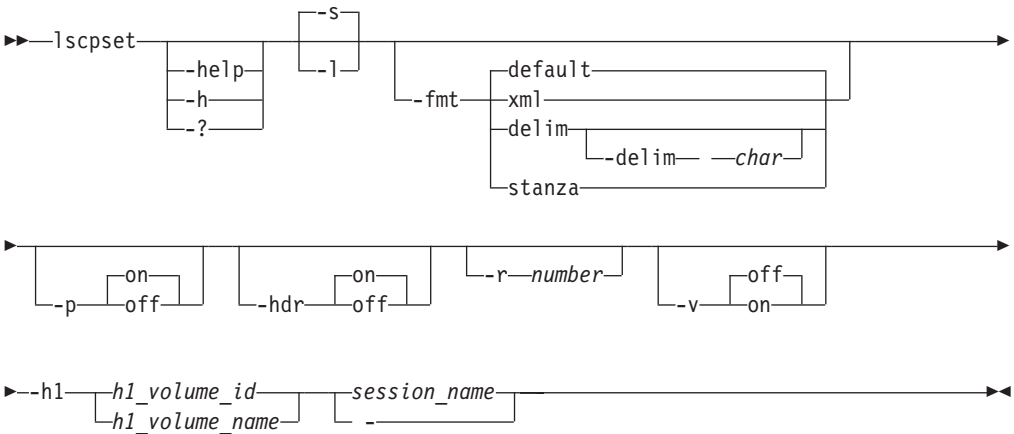
```
Source            Target               Type
==========================================================================
DS8000:2107.04131:LSS:15.0x0330  ESS:2105.FCA57:LSS:15.0x008C  Fibre Channel
DS8000:2107.04131:LSS:15.0x0110  ESS:2105.FCA57:LSS:15.0x000C  Fibre Channel
DS8000:2107.04131:LSS:15.0x0110  ESS:2105.FCA57:LSS:15.0x008C  Fibre Channel
DS8000:2107.04131:LSS:15.0x0110  ESS:2105.FCA57:LSS:15.0x0088  Fibre Channel
DS8000:2107.04131:LSS:15.0x0110  ESS:2105.FCA57:LSS:15.0x0028  Fibre Channel
```

lscpset

Use the **lscpset** command to list the IDs and number of volumes for the copy sets that are in a session.

Tip: Use the **showcpset** command to list the volumes in a copy set and use the **lsvol** command to display the status of volumes in a copy set.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-s | -l
Displays the following information.

Column Label	Details
H1 Volume ID	The ID of the volume at host site 1. This ID is used to identify a copy set in a session. The volume ID is displayed regardless of whether you provide the volume ID or name for the **-h1** parameter.
Session	The name of the session that contains the copy set.
Volumes	The number of volumes that are associated with the copy set.

-fmt { default | xml | delim | stanza }
Specifies the format of the output. You can specify one of these values:

default
Specifies that the output is displayed in tabular format using spaces as delimiters between columns. This is the default value.

xml Specifies that the output is displayed in XML format.

delim Specifies that output is displayed in a tabular format using commas as delimiters between columns.

To use a character other than a comma as the delimiter, specify `-fmt delim -delim` *char* , where *char* represents the character that you want to use as the delimiter. For example, if you want to use a colon (:) as the delimiter, use the following `-fmt` parameter:

```
-fmt delim -delim :
```

If you use a shell metacharacter as the delimiting character, enclose the character in quotation marks or single quotation marks. A blank space is not a valid character.

stanza Specifies that the output is displayed as one keyword-value pair per line.

-p { on | off }
Specifies whether to display one page of text at a time or all text at once.

on Displays one page of text at a time. Pressing any key displays the next page. This is the default value when the command is run in interactive mode.

off Displays all text at once. This is the default value when the command is run in single-shot mode.

-hdr { on | off }
Specifies whether to display the table header. You can specify one of these values:

on Displays the table header. This is the default value.

off Hides the table header.

-r *number*
Specifies the number of rows per page to display when the **-p** parameter is specified. You can specify a value of `1 - 100`. The default value is `22`.

-v { on | off }
Specifies whether to enable verbose mode. You can specify one of these values:

on Enable verbose mode.

off Disable verbose mode. This is the default value.

-h1 {*h1_volume_id* | *h1_volume_name***}**
Specifies the volume at host site 1.

For IBM System Storage DS8000, IBM System Storage DS6000, and IBM TotalStorage Enterprise Storage Server Model 800 storage systems, use the volume ID for this parameter.

For other storage systems, you can use the volume ID or name for this parameter.

session_name | **-**
Specifies the name of the session that contains the copy sets.

Alternatively, use the dash (-) to specify that input for this parameter comes from an input stream (stdin). The dash is supported only in single-shot mode.

Example: Listing the IDs of all copy sets that are in a session

The following command lists the volume IDs and the number of volumes that are associated with the copy sets in a session called `session1`:

```
csmcli> lscpset session1
```

The following output is returned.

```
H1 Volume ID               Session       Volumes
=============================================
DS8000:2107.NK791:VOL:1500 session1      5
DS8000:2107.NK791:VOL:1501 session1      5
DS8000:2107.NK791:VOL:1502 session1      5
DS8000:2107.NK791:VOL:1503 session1      5
DS8000:2107.NK791:VOL:1504 session1      5
ESS:2105.FCA57:VOL:1500    session1      5
ESS:2105.FCA57:VOL:1501    session1      5
ESS:2105.FCA57:VOL:1502    session1      5
ESS:2105.FCA57:VOL:1503    session1      5
ESS:2105.FCA57:VOL:1504    session1      5
```

Example: Listing a specific copy set that is in a session

The following command lists the number of volumes for a specific copy set in the session `fc1`. In this example, the volume name `CSMRegr_vol08` is provided for the copy set in the command. The corresponding volume ID is shown in the output.

```
lscpset -h1 STORWIZE-V7000:VOL:TPCRTBIRD2:CSMRegr_vol08 fc1
```

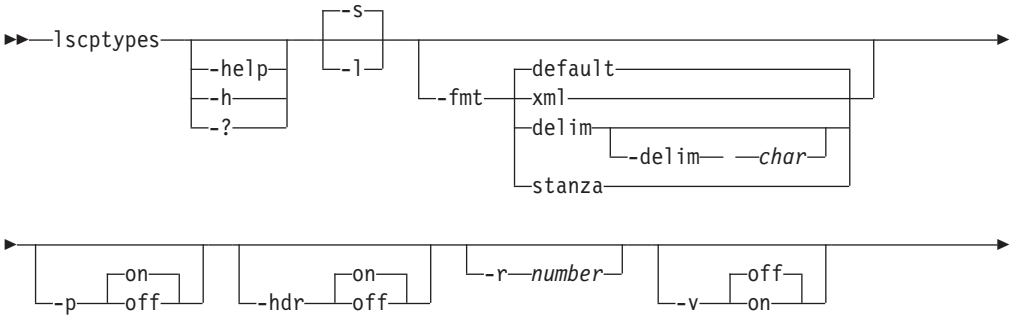
The following output is returned:

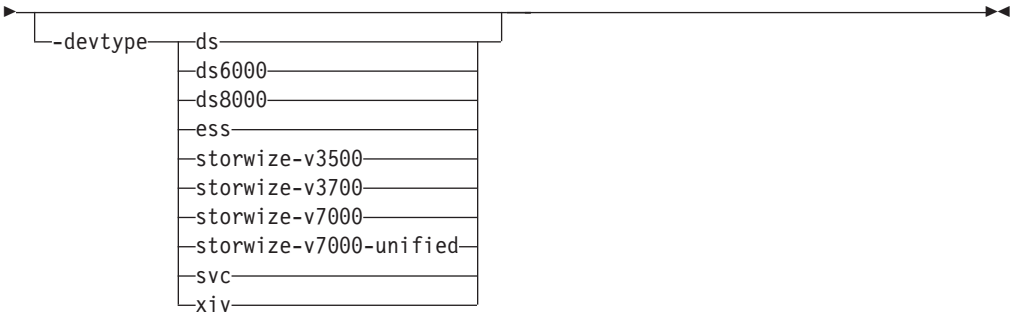
```
H1 Volume ID                    Session       Volumes
=====================================================
STORWIZE-V7000:VOL:TPCRTBIRD2:7 fc1           2
```

lscptypes

Use the **lscptypes** command to display the session types and the storage systems that you can use with the session types.

Syntax





Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-s | -l
Displays the following information.

Column label	Details
Copy Type	The abbreviated name of the session type. For example, mgm is an abbreviation for Metro Global Mirror. The abbreviated session type name is used as a parameter value for the **mksess** command.
Full Name	The full name of the session type. For example, Metro Global Mirror.
Device Types	The storage systems that can be used with the session type. The values are: `DS6000`, `DS8000`, `ESS`, `SAN Volume Controller`, `STORWIZE-V3500`, `STORWIZE-V3700`, `STORWIZE-V7000`, `STORWIZE-V7000-Unified`, and `XIV`.

-fmt { default | xml | delim | stanza }
Specifies the format of the output. You can specify one of these values:

default
Specifies that the output is displayed in tabular format using spaces as delimiters between columns. This is the default value.

xml Specifies that the output is displayed in XML format.

delim Specifies that output is displayed in a tabular format using commas as delimiters between columns.

To use a character other than a comma as the delimiter, specify `-fmt delim -delim` *char* , where *char* represents the character that you want to use as the delimiter. For example, if you want to use a colon (:) as the delimiter, use the following `-fmt` parameter:

```
-fmt delim -delim :
```

If you use a shell metacharacter as the delimiting character, enclose the character in quotation marks or single quotation marks. A blank space is not a valid character.

stanza Specifies that the output is displayed as one keyword-value pair per line.

-p { on | off }
Specifies whether to display one page of text at a time or all text at once.

on Displays one page of text at a time. Pressing any key displays the next page. This is the default value when the command is run in interactive mode.

off Displays all text at once. This is the default value when the command is run in single-shot mode.

-hdr { on | off }
Specifies whether to display the table header. You can specify one of these values:

on Displays the table header. This is the default value.

off Hides the table header.

-r *number*
Specifies the number of rows per page to display when the **-p** parameter is specified. You can specify a value of 1 - 100. The default value is 22.

-v { on | off }
Specifies whether to enable verbose mode. You can specify one of these values:

on Enable verbose mode.

off Disable verbose mode. This is the default value.

-devtype { ds | ds6000 | ds8000 | ess | storwize-v3500 | storwize-v3700 | storwize-v7000 | svc | xiv }
Specifies the session types that are available for specific storage system types. The parameter values are:

- **ds**: IBM System Storage DS8000 or IBM System Storage DS6000
- **ds6000:** System Storage DS6000
- **ds8000**: System Storage DS8000
- **ess**: IBM TotalStorage Enterprise Storage Server Model 800
- **storwize-v3500**: IBM Storwize V3500
- **storwize-v3700**: IBM Storwize V3700
- **storwize-v7000**: IBM Storwize V7000
- **storwize-v7000-unified**: IBM Storwize V7000 Unified
- **svc**: IBM System Storage SAN Volume Controller
- **xiv**: IBM XIV Storage System

Example: Listing all session types and storage systems

The following command lists all the session types that you can use.

```
csmcli> lscptypes
```

The following output is returned:

```
Copy Type Full Name           Device Types
=============================================================================================
fc        FlashCopy           DS8000, DS6000, ESS, SVC, STORWIZE-V7000, STORWIZE-V7000-Unified,
                              STORWIZE-V3500, STORWIZE-V3700

snap      Snapshot            XIV

mmsd      Metro Mirror        DS8000, DS6000, ESS, SVC, STORWIZE-V7000, STORWIZE-V7000-Unified,
          Single Direction    STORWIZE-V3500, STORWIZE-V3700

mmfofb    Metro Mirror        DDS8000, DS6000, ESS, SVC, STORWIZE-V7000, STORWIZE-V7000-Unified,
          Failover/Failback   STORWIZE-V3500, STORWIZE-V3700
```

```
mmfofbxiv Metro Mirror        XIV
          Failover/Failback

pmm       Metro Mirror        DS8000, DS6000, ESS
          Failover/Failback
          w/ Practice

pmmsvc    Metro Mirror        SVC, STORWIZE-V7000, STORWIZE-V7000-Unified,
          Failover/Failback   STORWIZE-V3500, STORWIZE-V3700
          w/ Practice

gmsd      Global Mirror       DS8000, DS6000, ESS
          Single Direction

gmsdsvc   Global Mirror       SVC, STORWIZE-V7000, STORWIZE-V7000-Unified,
          Single Direction    STORWIZE-V3500, STORWIZE-V3700

gmfofb    Global Mirror       DS8000, DS6000, ESS
          Failover/Failback

gmfofbsvc Global Mirror       SVC, STORWIZE-V7000, STORWIZE-V7000-Unified,
          Failover/Failback   STORWIZE-V3500, STORWIZE-V3700

gmfofbxiv Global Mirror       XIV
          Failover/Failback

pgm       Global Mirror       DS8000, DS6000, ESS
          Failover/Failback
          w/ Practice

pgmsvc    Global Mirror       SVC, STORWIZE-V7000, STORWIZE-V7000-Unified,
          Failover/Failback   STORWIZE-V3500, STORWIZE-V3700
          w/ Practice

pgm2s     Global Mirror       DS8000, DS6000, ESS
          Either Direction
          w/ Two Site Practice

mgm       Metro Global Mirror DS8000, ESS

pmgm      Metro Global Mirror DS8000, ESS
          w/ Practice
```

Example: Listing session types for System Storage DS8000 and System Storage DS6000 storage systems

```
csmcli> lscptypes -devtype ds
```

The following output is returned:

```
Copy Type Full Name           Device Types
=============================================================================================================
fc        FlashCopy           DS8000, DS6000, ESS, SVC, STORWIZE-V7000, STORWIZE-V7000-Unified,
                              STORWIZE-V3500, STORWIZE-V3700

mmsd      Metro Mirror        DS8000, DS6000, ESS, SVC, STORWIZE-V7000, STORWIZE-V7000-Unified,
          Single Direction    STORWIZE-V3500, STORWIZE-V3700

mmfofb    Metro Mirror        DS8000, DS6000, ESS, SVC, STORWIZE-V7000, STORWIZE-V7000-Unified,
          Failover/Failback   STORWIZE-V3500, STORWIZE-V3700

pmm       Metro Mirror        DS8000, DS6000, ESS
          Failover/Failback
          w/ Practice

gmsd      Global Mirror       DS8000, DS6000, ESS
          Single Direction

gmfofb    Global Mirror       DS8000, DS6000, ESS
          Failover/Failback

pgm       Global Mirror       DS8000, DS6000, ESS
          Failover/Failback
          w/ Practice

pgm2s     Global Mirror       DS8000, DS6000, ESS
          Either Direction
          w/ Two Site Practice

mgm       Metro Global Mirror DS8000, ESS

pmgm      Metro Global Mirror DS8000, ESS
          w/ Practice
```

Example: Listing session types supported for an XIV system

```
csmcli> lscptypes -devtype xiv
```

The following output is returned:

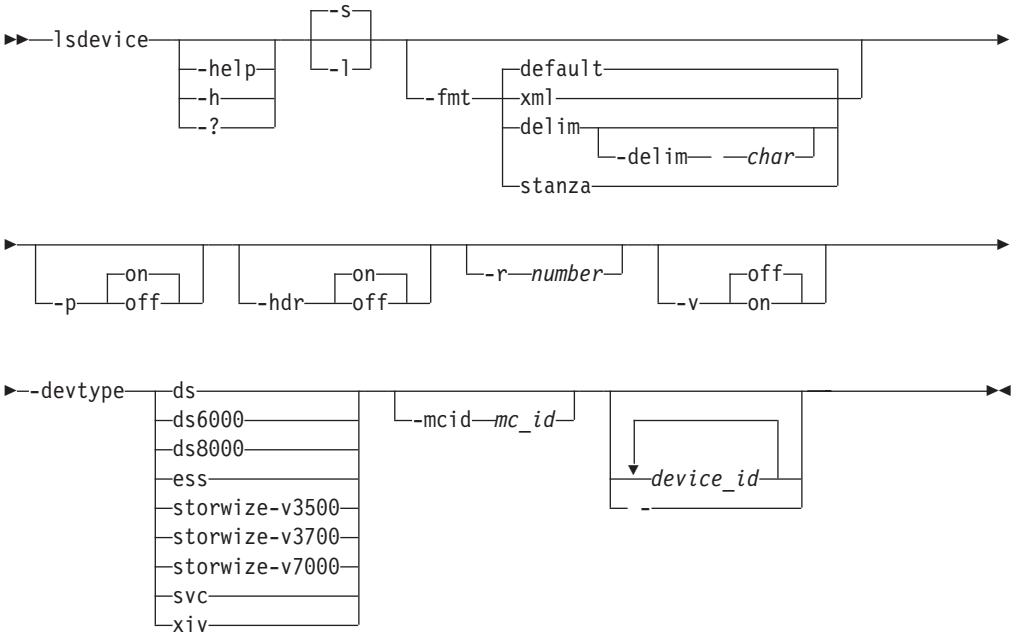
```
Copy Type Full Name           Device Types
=============================================================================================================
snap      Snapshot            XIV

mmfofbxiv Metro Mirror        XIV
          Failover/Failback

gmfofbxiv Global Mirror       XIV
          Failover/Failback
```

lsdevice

Use the **lsdevice** command to list storage systems and properties.

Tip: To list storage systems that can be discovered through an IBM z/OS connection, use the **lsstorcandidate** command.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-s
Displays default information for each storage system, including the device ID, connection type, device type, and local server connection status.

-l
Displays the following detailed information for each storage system.

Column Label	Details
Device ID	The name, nickname, or model-serial-manufacturer of the storage system.
Connection Type	The connection type. The values are: `Direct`, `HMC`, or `ZOS Connection`.
Device Type	The storage system type. The values are: `DS6000`, `DS8000`, `ESS`, `SAN Volume Controller`, `STORWIZE-V3500`, `STORWIZE-V3700`, `STORWIZE-V7000`, and `XIV`.
Device IP Address	The IP address or host name for the nodes or clusters that are used by the storage system. If there are multiple nodes or clusters, the values in this column are delimited by a semicolon. For example, *ip_address*;*ip_address*.
Local Server Connection	The state of the direct connections to the local management server. If there are multiple servers, the values in this column are delimited by a semicolon. For example, *cluster0_status*;*cluster1_status*.
Remote Server Connection	The state of the direct connections to the remote management server. If there are multiple servers, the values in this column are delimited by a semicolon. For example, *cluster0_status*;*cluster1_status*.
Connection ID	The ID for the Hardware Management Console (HMC) or IBM z/OS host system that is used to connect the storage system.
Location	The location of the storage system.
Manufacturer	The manufacturer of the storage system.
Device Name	The user-defined name of the storage system.

-fmt { default | xml | delim | stanza }
Specifies the format of the output. You can specify one of these values:

default
Specifies that the output is displayed in tabular format using spaces as delimiters between columns. This is the default value.

xml Specifies that the output is displayed in XML format.

delim Specifies that output is displayed in a tabular format using commas as delimiters between columns.

To use a character other than a comma as the delimiter, specify `-fmt delim -delim` *char* , where *char* represents the character that you want to use as the delimiter. For example, if you want to use a colon (:) as the delimiter, use the following `-fmt` parameter:

```
-fmt delim -delim :
```

If you use a shell metacharacter as the delimiting character, enclose the character in quotation marks or single quotation marks. A blank space is not a valid character.

stanza Specifies that the output is displayed as one keyword-value pair per line.

-p { on | off }
Specifies whether to display one page of text at a time or all text at once.

on Displays one page of text at a time. Pressing any key displays the next page. This is the default value when the command is run in interactive mode.

off Displays all text at once. This is the default value when the command is run in single-shot mode.

-hdr { on | off }
Specifies whether to display the table header. You can specify one of these values:

on Displays the table header. This is the default value.

off Hides the table header.

-r *number*
Specifies the number of rows per page to display when the **-p** parameter is specified. You can specify a value of `1 - 100`. The default value is `22`.

-v { on | off }
Specifies whether to enable verbose mode. You can specify one of these values:

on Enable verbose mode.

off Disable verbose mode. This is the default value.

-devtype { ds | ds6000 | ds8000 | ess | storwize-v3500 | storwize-v3700| storwize-v7000 | svc | xiv }
Specifies the type of storage system. The parameter values are:

- **ds**: System Storage DS8000 or IBM System Storage DS6000
- **ds6000:** System Storage DS6000
- **ds8000**: System Storage DS8000
- **ess**: IBM TotalStorage Enterprise Storage Server Model 800
- **storwize-v3500**: IBM Storwize V3500
- **storwize-v3700**: IBM Storwize V3700
- **storwize-v7000**: IBM Storwize V7000 or IBM Storwize V7000 Unified
- **svc**: IBM System Storage SAN Volume Controller
- **xiv**: IBM XIV Storage System

-mcid *mc_id*
Specifies storage systems that are connected through a specific management console.

device_id... **|** **-**
Specifies one or more storage systems by ID. The storage system ID is in the element ID format (for example, `ess:box:2105.fca57`). Separate multiple storage system IDs with a space.

Alternatively, use the dash (-) to specify that input for this parameter comes from an input stream (stdin). The dash is supported only in single-shot mode.

Example: Listing all storage systems

The following command lists information for all storage systems.

```
csmcli> lsdevice -devtype ds
```

The following output is returned:

```
Device ID             Connection Type Device Type Local Server Connection
=========================================================================
DS8000:BOX:1234.56789 Direct          DS8000      Connected;Connected
DS8000:BOX:1234.56789 ZOS Connection  DS8000      Connected
DS8000:BOX:1234.AB123 HMC             DS8000      Connected;Connected
```

Example: Listing detailed attributes for all storage systems

The following command lists detailed information for all storage systems.

```
csmcli> lsdevice -l -devtype ds -fmt stanza
```

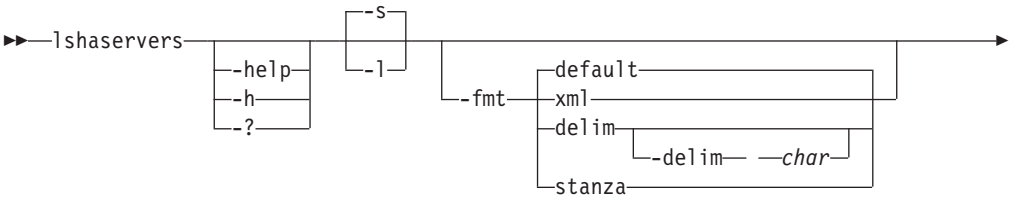
The following output is returned:

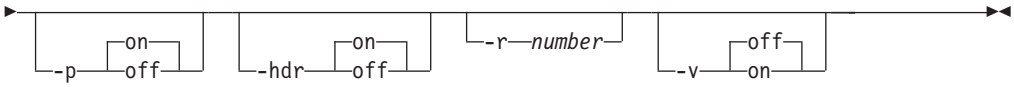
```
Device ID                DS8000:BOX:1234.56789
Connection Type          Direct
Device Type              DS8000
Device IP Address        -
Local Server Connection  Connected;Connected
Remote Server Connection -
Connection ID            -
Location                 None
Manufacturer             IBM
Device Name              -

Device ID                DS8000:BOX:1234.56789
Connection Type          ZOS Connection
Device Type              DS8000
Device IP Address        -
Local Server Connection  Connected
Remote Server Connection -
Connection ID            ZOS:abc68.storage.sacramento.xyz.com:5858
Location                 None
Manufacturer             IBM
Device Name              -

Device ID                DS8000:BOX:1234.AB123
Connection Type          HMC
Device Type              DS8000
Device IP Address        -
Local Server Connection  Connected;Connected
Remote Server Connection -
Connection ID            HMC:Stg8k11.storage.sacramento.xyz.com
Location                 None
Manufacturer             IBM
Device Name              -
```

lshaservers

Use the **lshaservers** command to show the status of each active and standby management server.

Syntax





Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-l | -s
Displays detailed information for each management server, including:

Column label	Details
Server	The domain or IP address of the management server
Role	The role of management server: `Active` or `Standby`
Status	The status of the relationship
Port	The standby management server port number. This port is used for communication between the active and standby management server. This port number is initially set at installation time. **Important:** The port number for the standby management server must be the same on both the management server and the standby management server in a high-availability relationship. If you change the standby management server port number on either the management server or the standby management server, you must also change the port number on the other server.

-fmt { default | xml | delim | stanza }
Specifies the format of the output. You can specify one of these values:

default
Specifies that the output is displayed in tabular format using spaces as delimiters between columns. This is the default value.

xml Specifies that the output is displayed in XML format.

delim Specifies that output is displayed in a tabular format using commas as delimiters between columns.

To use a character other than a comma as the delimiter, specify `-fmt delim -delim` *char* , where *char* represents the character that you want to use as the delimiter. For example, if you want to use a colon (:) as the delimiter, use the following `-fmt` parameter:

```
-fmt delim -delim :
```

If you use a shell metacharacter as the delimiting character, enclose the character in quotation marks or single quotation marks. A blank space is not a valid character.

stanza Specifies that the output is displayed as one keyword-value pair per line.

-p { on | off }
Specifies whether to display one page of text at a time or all text at once.

on Displays one page of text at a time. Pressing any key displays the next page. This is the default value when the command is run in interactive mode.

off Displays all text at once. This is the default value when the command is run in single-shot mode.

-hdr { on | off }
Specifies whether to display the table header. You can specify one of these values:

on Displays the table header. This is the default value.

off Hides the table header.

-r *number*
Specifies the number of rows per page to display when the **-p** parameter is specified. You can specify a value of 1 - 100. The default value is 22.

-v { on | off }
Specifies whether to enable verbose mode. You can specify one of these values:

on Enable verbose mode.

off Disable verbose mode. This is the default value.

Example: Listing management server status

The following command lists the status of the active and standby management servers.

```
csmcli> lshaservers
```

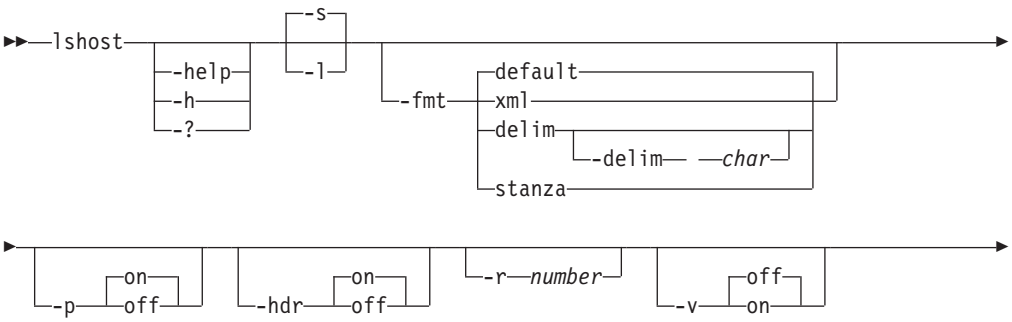
The following output is returned:

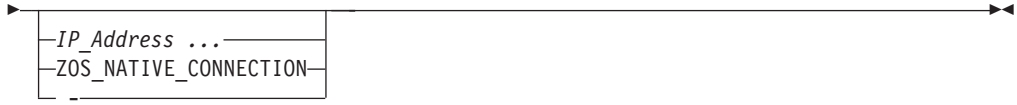
```
Server                        Role     Status        Port
=========================================================
tpcserver1.tpc.example.com  ACTIVE   Synchronized  5120
tpcserver2.tpc.example.com  STANDBY  Synchronized  5120
```

lshost

Use the **lshost** command to view host systems that are added to IBM Tivoli Storage Productivity Center for Replication.

Syntax





Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-s Specifies that default information for each host system is displayed.

-l Specifies that the following detailed information for each host system is displayed:

Column Label	Details
Host System	If the IBM z/OS host system is the system on which Tivoli Storage Productivity Center for Replication is installed, ZOS_NATIVE_CONNECTION is shown in this column. For AIX and z/OS host systems that are connected by using an IP address or host name, the IP address or host name is shown.
Port	The port number for the connection to the host system.
Type	The type of host system. One of the following values is shown: **AIX** The host is an AIX system. **ZOS_NATIVE** The host is the z/OS system on which Tivoli Storage Productivity Center for Replication is installed. **ZOS_IP** The host is a z/OS system that is connected by using an IP address or host name.
Local Status	The status of the connection between the Tivoli Storage Productivity Center for Replication server and the host system.

Column Label	Details
Remote Status	In high availability (HA) environments that have an active and standby management server, the status of the connection between the remote Tivoli Storage Productivity Center for Replication server and the host system. If you are running the **lshost** command on the active server, the remote server is the standby server. If you are running the command on the standby server, the remote server is the active server. If the status of a host connection at the remote Tivoli Storage Productivity Center for Replication server cannot be determined, `Unknown` is displayed. This status might be because the HA configuration is disconnected or the status was not sent from the remote Tivoli Storage Productivity Center for Replication server.
Connection Message	If connection to the host system failed, an error message is shown.

-fmt { default | xml | delim | stanza }
Specifies the format of the output. You can specify one of these values:

default
Specifies that the output is displayed in tabular format using spaces as delimiters between columns. This is the default value.

xml Specifies that the output is displayed in XML format.

delim Specifies that output is displayed in a tabular format using commas as delimiters between columns.

To use a character other than a comma as the delimiter, specify `-fmt delim -delim` *char* , where *char* represents the character that you want to use as the delimiter. For example, if you want to use a colon (:) as the delimiter, use the following `-fmt` parameter:

```
-fmt delim -delim :
```

If you use a shell metacharacter as the delimiting character, enclose the character in quotation marks or single quotation marks. A blank space is not a valid character.

stanza Specifies that the output is displayed as one keyword-value pair per line.

-p { on | off }
Specifies whether to display one page of text at a time or all text at once.

on Displays one page of text at a time. Pressing any key displays the next page. This is the default value when the command is run in interactive mode.

off Displays all text at once. This is the default value when the command is run in single-shot mode.

-hdr { on | off }
Specifies whether to display the table header. You can specify one of these values:

on Displays the table header. This is the default value.

off Hides the table header.

-r *number*
Specifies the number of rows per page to display when the **-p** parameter is specified. You can specify a value of 1 - 100. The default value is 22.

-v { on | off }
Specifies whether to enable verbose mode. You can specify one of these values:

on Enable verbose mode.

off Disable verbose mode. This is the default value.

IP_Address **| ZOS_NATIVE_CONNECTION | -**
If you want to view specific host systems only, specifies the IP or host name for the host system or the value ZOS_NATIVE_CONNECTION.

If you want to list information for an AIX host system or a z/OS host system that is connected by using an IP address or host name, enter the IP address or host name for this parameter.

If Tivoli Storage Productivity Center for Replication is installed on the host system, enter ZOS_NATIVE_CONNECTION for this parameter.

Alternatively, use the dash (-) to specify that input for this parameter comes from an input stream (stdin). The dash is supported only in single-shot mode.

Example: Listing all host systems

The following command lists default information about all host systems that are added to Tivoli Storage Productivity Center for Replication.

```
csmcli> lshost
```

The following output is returned:

```
Host System Port Type    Local Status
=======================================================
192.0.2.0   9930 AIX     Connected
192.0.2.1   9990 Unknown Disconnected
```

Example: Listing detailed information for all host systems

The following command lists detailed information about the host system connections.

```
csmcli> lshost -l
```

The following output is returned:

```
Host System Port Type   Local Status Remote Status Connection Message
=====================================================================
192.0.2.2   5858 ZOS_IP Connected    -             -
```

Example: Listing information for the native Z/OS host system

If Tivoli Storage Productivity Center for Replication is installed on the z/OS host system, the following command lists default information about the z/OS host system connection.

```
csmcli> lshost ZOS_NATIVE_CONNECTION
```

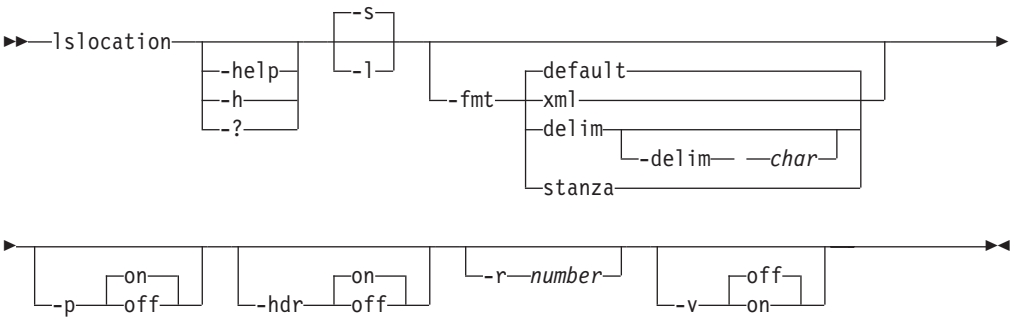
The following output is returned:

```
Host System             Port Type       Local Status
================================================
ZOS_NATIVE_CONNECTION   5858 ZOS_NATIVE Connected
```

lslocation

Use the **lslocation** command to list all defined locations.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-l | -s
Displays detailed information for each location, including:

Column label	Details
Location	An integer representing the location.
Details	The alphanumeric text string that was given to the location. The string can be descriptive of the location.

-fmt { default | xml | delim | stanza }
Specifies the format of the output. You can specify one of these values:

default
Specifies that the output is displayed in tabular format using spaces as delimiters between columns. This is the default value.

xml Specifies that the output is displayed in XML format.

delim Specifies that output is displayed in a tabular format using commas as delimiters between columns.

To use a character other than a comma as the delimiter, specify `-fmt delim -delim` *char* , where *char* represents the character that you want to use as the delimiter. For example, if you want to use a colon (:) as the delimiter, use the following `-fmt` parameter:

```
-fmt delim -delim :
```

If you use a shell metacharacter as the delimiting character, enclose the character in quotation marks or single quotation marks. A blank space is not a valid character.

stanza Specifies that the output is displayed as one keyword-value pair per line.

-p { on | off }
Specifies whether to display one page of text at a time or all text at once.

on Displays one page of text at a time. Pressing any key displays the next page. This is the default value when the command is run in interactive mode.

off Displays all text at once. This is the default value when the command is run in single-shot mode.

-hdr { on | off }
Specifies whether to display the table header. You can specify one of these values:

on Displays the table header. This is the default value.

off Hides the table header.

-r *number*
Specifies the number of rows per page to display when the **-p** parameter is specified. You can specify a value of `1 - 100`. The default value is `22`.

-v { on | off }
Specifies whether to enable verbose mode. You can specify one of these values:

on Enable verbose mode.

off Disable verbose mode. This is the default value.

Example: Listing locations

The following command lists all locations.

```
csmcli> lslocation
```

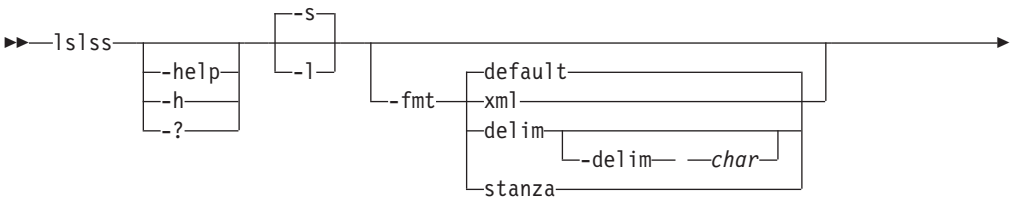
The following output is returned:

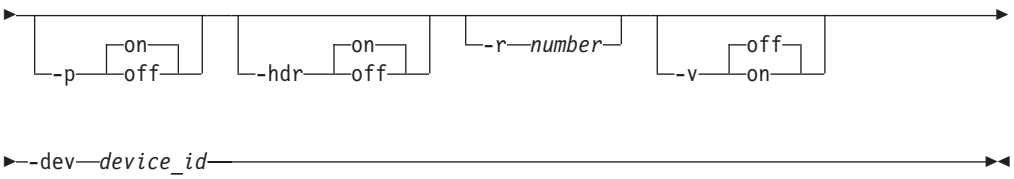
```
Location  Details
=================
1         Boulder
3         Marana
2         Tucson
```

lslss

Use the **lslss** command to list the logical subsystems (LSSes) for the specified DS or ESS storage system. You can use this output with the **mkpath** command.

Syntax





Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-l | -s
Displays detailed information for each storage system, including:

Column label	Details
Device	Storage system of the LSSs
LSS ID	LSS identifier

-fmt { default | xml | delim | stanza }
Specifies the format of the output. You can specify one of these values:

default
Specifies that the output is displayed in tabular format using spaces as delimiters between columns. This is the default value.

xml Specifies that the output is displayed in XML format.

delim Specifies that output is displayed in a tabular format using commas as delimiters between columns.

To use a character other than a comma as the delimiter, specify `-fmt delim -delim` *char* , where *char* represents the character that you want to use as the delimiter. For example, if you want to use a colon (:) as the delimiter, use the following `-fmt` parameter:

```
-fmt delim -delim :
```

If you use a shell metacharacter as the delimiting character, enclose the character in quotation marks or single quotation marks. A blank space is not a valid character.

stanza Specifies that the output is displayed as one keyword-value pair per line.

-p { on | off }
Specifies whether to display one page of text at a time or all text at once.

on Displays one page of text at a time. Pressing any key displays the next page. This is the default value when the command is run in interactive mode.

off Displays all text at once. This is the default value when the command is run in single-shot mode.

-hdr { on | off }
Specifies whether to display the table header. You can specify one of these values:

on Displays the table header. This is the default value.

off Hides the table header.

-r *number*
Specifies the number of rows per page to display when the **-p** parameter is specified. You can specify a value of 1 - 100. The default value is 22.

-v { on | off }
Specifies whether to enable verbose mode. You can specify one of these values:

on Enable verbose mode.

off Disable verbose mode. This is the default value.

-dev *device_id*
Lists information for the specified DS or ESS storage system.

Example: Listing LSS for a storage system

The following command lists all available LSSs associated with the storage system DS8000:BOX:2107.04131.

```
csmcli> lslss -dev DS8000:BOX:2107.04131
```

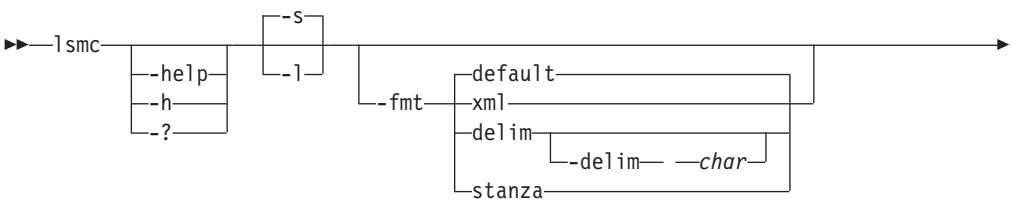
The following output is returned:

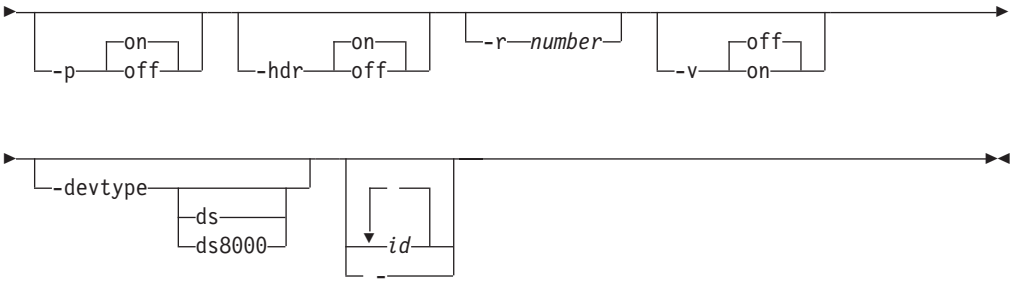
```
Device                LSS
==========================================
DS8000:BOX:2107.04131 DS8000:2107.04131:LSS:00
DS8000:BOX:2107.04131 DS8000:2107.04131:LSS:01
DS8000:BOX:2107.04131 DS8000:2107.04131:LSS:02
DS8000:BOX:2107.04131 DS8000:2107.04131:LSS:03
DS8000:BOX:2107.04131 DS8000:2107.04131:LSS:04
DS8000:BOX:2107.04131 DS8000:2107.04131:LSS:05
DS8000:BOX:2107.04131 DS8000:2107.04131:LSS:06
DS8000:BOX:2107.04131 DS8000:2107.04131:LSS:07
DS8000:BOX:2107.04131 DS8000:2107.04131:LSS:08
DS8000:BOX:2107.04131 DS8000:2107.04131:LSS:09
DS8000:BOX:2107.04131 DS8000:2107.04131:LSS:0A
DS8000:BOX:2107.04131 DS8000:2107.04131:LSS:0B
DS8000:BOX:2107.04131 DS8000:2107.04131:LSS:0C
DS8000:BOX:2107.04131 DS8000:2107.04131:LSS:0D
DS8000:BOX:2107.04131 DS8000:2107.04131:LSS:0E
DS8000:BOX:2107.04131 DS8000:2107.04131:LSS:0F
DS8000:BOX:2107.04131 DS8000:2107.04131:LSS:10
DS8000:BOX:2107.04131 DS8000:2107.04131:LSS:11
DS8000:BOX:2107.04131 DS8000:2107.04131:LSS:12
DS8000:BOX:2107.04131 DS8000:2107.04131:LSS:14
```

lsmc

Use the **lsmc** command to display a summary of management consoles and settings.

Syntax





Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-s
Displays default information for each management console, including the ID and local server connection.

-l Displays detailed information for each management console, including:

Column label	Details
Management console ID	The ID of the management console.
Management console IP	The cluster 0 IP address or domain.
Local Server Connection	The connection status of the management console to the local server.
Location	The associated location of the management console or `None`.

-fmt { default | xml | delim | stanza }
Specifies the format of the output. You can specify one of these values:

default
Specifies that the output is displayed in tabular format using spaces as delimiters between columns. This is the default value.

xml Specifies that the output is displayed in XML format.

delim Specifies that output is displayed in a tabular format using commas as delimiters between columns.

To use a character other than a comma as the delimiter, specify `-fmt delim -delim` *char* , where *char* represents the character that you want to use as the delimiter. For example, if you want to use a colon (:) as the delimiter, use the following `-fmt` parameter:

```
-fmt delim -delim :
```

If you use a shell metacharacter as the delimiting character, enclose the character in quotation marks or single quotation marks. A blank space is not a valid character.

stanza Specifies that the output is displayed as one keyword-value pair per line.

-p { on | off }
Specifies whether to display one page of text at a time or all text at once.

on Displays one page of text at a time. Pressing any key displays the next page. This is the default value when the command is run in interactive mode.

off Displays all text at once. This is the default value when the command is run in single-shot mode.

-hdr { on | off }
Specifies whether to display the table header. You can specify one of these values:

on Displays the table header. This is the default value.

off Hides the table header.

-r *number*
Specifies the number of rows per page to display when the **-p** parameter is specified. You can specify a value of 1 - 100. The default value is 22.

-v { on | off }
Specifies whether to enable verbose mode. You can specify one of these values:

on Enable verbose mode.

off Disable verbose mode. This is the default value.

-devtype ds | ds8000
Displays information for the specified device type. You can specify one of these values:

ds - any DS device

ds8000 - only DS8000 devices

id... **|** **-**
Displays only the threshold settings for one or more specified management console IDs. The management console ID is in the element ID format (for example, HMC:9.11.222.333). Separate multiple IDs with a blank space.

Alternatively, use the dash (-) to specify that input for this parameter comes from an input stream (stdin). The dash is supported only in single-shot mode.

Example: Listing management consoles

The following command lists the management consoles and settings for all DS storage systems.

```
csmcli> lsmc -devtype ds -l
```

The following output is returned:

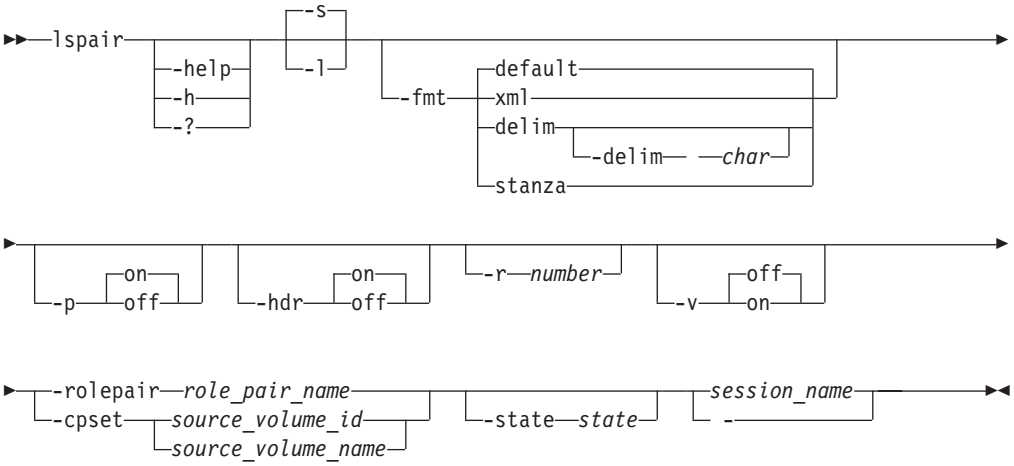
```
MC ID                    HMC:2002:90B:E006:222:9:11:223:2
MC IP address            2002:90b:e006:222:9:11:223:2
Local Server Connection  Connected
Location                 tucson
```

lspair

Use the **lspair** command to list the copy pairs for a specified role pair or to list the copy pairs for a specified copy set.

Important: The **lspair** command is not used for IBM XIV Storage System Snapshot sessions because copy pairs do not exist in this session type.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-s Specifies that default information for each copy pair is displayed. The default information is the source and target volumes in the pair and the role pair.

-l Displays the following detailed information for each copy pair.

Column Label	Details
Source Volume	The ID of the source volume in the copy pair. The volume ID is displayed regardless of whether you provide the volume ID or name for the **-cpset** parameter.
Target Volume	The ID of the target volume in the copy pair.
Role Pair	The associated role pair for the copy pair. For sample role pair values, see the **-rolepair** parameter.

State	The state of the copy pair. The valid values include:
	`Defined`
	`Preparing`
	`Prepared`
	`TargetAvailable`
	`Suspended`
	`SuspendedInconsistent`

Recoverable	Specifies `Yes` or `No` to indicate whether the copy pair is recoverable.
Copying	Specifies `Yes` or `No` to indicate whether the copy pair is in the process of copying data.
Progress	The overall copy progress that is associated with the copy pair (if applicable).
New	Specifies `Yes` or `No` to indicate whether the copy pair is a new pair.
Copy Set	The host site 1 volume ID of the copy set with which the copy pair is associated.
Timestamp	The date and time that the copy pair was suspended, if applicable.

Column Label	Details
Last Result	The last message that was issued for the copy pair. If message ends in E or W, the copy pair is an exception pair.

-fmt { default | xml | delim | stanza }
Specifies the format of the output. You can specify one of these values:

default
Specifies that the output is displayed in tabular format using spaces as delimiters between columns. This is the default value.

xml Specifies that the output is displayed in XML format.

delim Specifies that output is displayed in a tabular format using commas as delimiters between columns.

To use a character other than a comma as the delimiter, specify **-fmt delim -delim** *char* , where *char* represents the character that you want to use as the delimiter. For example, if you want to use a colon (:) as the delimiter, use the following **-fmt** parameter:

```
-fmt delim -delim :
```

If you use a shell metacharacter as the delimiting character, enclose the character in quotation marks or single quotation marks. A blank space is not a valid character.

stanza Specifies that the output is displayed as one keyword-value pair per line.

-p { on | off }
Specifies whether to display one page of text at a time or all text at once.

on Displays one page of text at a time. Pressing any key displays the next page. This is the default value when the command is run in interactive mode.

off Displays all text at once. This is the default value when the command is run in single-shot mode.

-hdr { on | off }
Specifies whether to display the table header. You can specify one of these values:

on Displays the table header. This is the default value.

off Hides the table header.

-r *number*
Specifies the number of rows per page to display when the **-p** parameter is specified. You can specify a value of 1 - 100. The default value is 22.

-v { on | off }
Specifies whether to enable verbose mode. You can specify one of these values:

on Enable verbose mode.

off Disable verbose mode. This is the default value.

-rolepair *role_pair_name*
Specifies that only copy pairs that are associated with the specified role pair name are displayed. Role pair names are defined by the **lsrolepairs** command.

The following list provides sample role-pair names:

- h1-h2
- h1-h3
- h1-i1
- h1-i2
- h1-i3
- h1-j2
- h1-t1
- h2-i1
- h2-i2
- h2-i3
- h2-j1
- h2-j3
- h3-i3
- i1-j1
- i2-j2
- i3-j3

This parameter is mutually exclusive with the **-cpset** parameter.

-cpset {*source_volume_id* | *source_volume_name***}**
Specifies that only copy pairs that are associated with the specified source volume of a copy set are displayed.

For IBM System Storage DS8000, IBM System Storage DS6000, and IBM TotalStorage Enterprise Storage Server Model 800 storage systems, use the volume ID for this parameter.

For other storage systems, you can use the volume ID or name for this parameter.

This parameter is mutually exclusive with the **-rolepair** parameter.

-state *state*
Specifies that only copy pairs in a specified state are displayed. You can specify one of these states:
- Defined
- Preparing
- Prepared
- TargetAvailable
- Suspended
- SuspendedInconsistent

session_name | **-**
Specifies that only copy pairs for the specified session are displayed.

Alternatively, use the dash (-) to specify that input for this parameter comes from an input stream (stdin). The dash is supported only in single-shot mode.

Example: Listing all copy pairs for a specific role pair

The following command lists the copy pairs that are associated with role pair h1-h2 in the session session1:

```
csmcli> lspair -rolepair h1-h2 session1
```

The following output is returned:

```
Source Volume               Target Volume               Role Pair
============================================================
DS8000:2107.NK791:VOL:1500  DS8000:2107.MW931:VOL:1500  H1-H2
DS8000:2107.NK791:VOL:1501  DS8000:2107.MW931:VOL:1501  H1-H2
DS8000:2107.NK791:VOL:1502  DS8000:2107.MW931:VOL:1502  H1-H2
```

```
DS8000:2107.NK791:VOL:1503  DS8000:2107.MW931:VOL:1503  H1-H2
DS8000:2107.NK791:VOL:1504  DS8000:2107.MW931:VOL:1504  H1-H2
ESS:2105.FCA57:VOL:1500     DS8000:2107.NF111:VOL:1505  H1-H2
ESS:2105.FCA57:VOL:1501     DS8000:2107.NF111:VOL:1506  H1-H2
ESS:2105.FCA57:VOL:1502     DS8000:2107.NF111:VOL:1507  H1-H2
ESS:2105.FCA57:VOL:1503     DS8000:2107.NF111:VOL:1508  H1-H2
ESS:2105.FCA57:VOL:1504     DS8000:2107.NF111:VOL:1509  H1-H2
```

Example: Listing all copy pairs in a specific state

The following command lists the copy pairs that are associated with role pair `h2-i3` in the session `session1` and are in the Suspended state:

```
csmcli> lspair -rolepair h2-i3 -state Suspended session1
```

The following output is returned:

```
Source Volume              Target Volume              Role Pair
=========================================================
DS8000:2107.MW931:VOL:1500 DS8000:2107.04131:VOL:1505 H2-I3
DS8000:2107.MW931:VOL:1501 DS8000:2107.04131:VOL:1506 H2-I3
DS8000:2107.MW931:VOL:1502 DS8000:2107.04131:VOL:1507 H2-I3
DS8000:2107.MW931:VOL:1503 DS8000:2107.04131:VOL:1508 H2-I3
DS8000:2107.MW931:VOL:1504 DS8000:2107.04131:VOL:1509 H2-I3
DS8000:2107.NF111:VOL:1505 DS8000:2107.04131:VOL:1605 H2-I3
DS8000:2107.NF111:VOL:1506 DS8000:2107.04131:VOL:1606 H2-I3
DS8000:2107.NF111:VOL:1507 DS8000:2107.04131:VOL:1607 H2-I3
DS8000:2107.NF111:VOL:1508 DS8000:2107.04131:VOL:1608 H2-I3
DS8000:2107.NF111:VOL:1509 DS8000:2107.04131:VOL:1609 H2-I3
```

Example: Listing detailed information for all copy pairs for a specific copy set

The following command lists detailed information about the copy pairs that are associated with the copy set `DS8000:2107.NK791:VOL:1500` in the session `session1`. The **`-fmt stanza`** parameter specifies that the output is displayed as one keyword-value pair per line.

```
csmcli> lspair -l -fmt stanza -cpset DS8000:2107.NK791:VOL:1500 session1
```

The following output is returned:

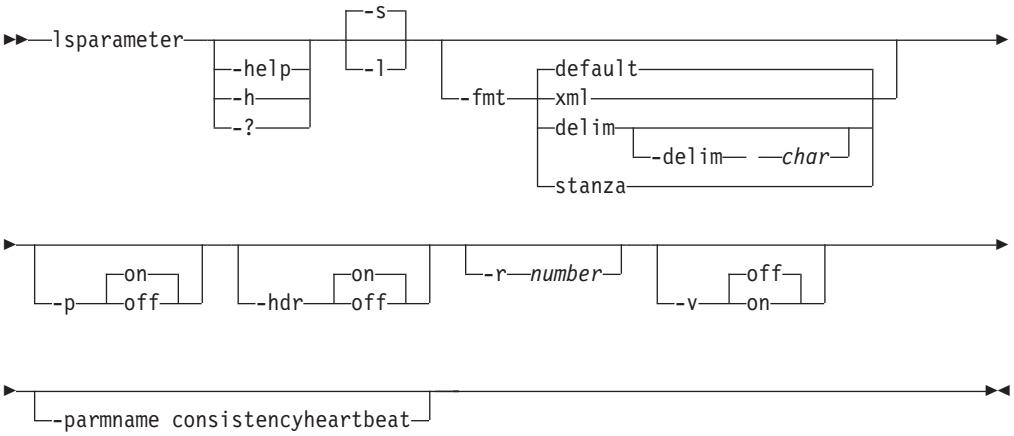
```
Source Volume DS8000:2107.04131:VOL:1500
Target Volume DS8000:2107.04131:VOL:1505
Role Pair     H3-I3
State         Defined
Recoverable   No
Copying       No
Progress      -
New           Yes
Copy Set      DS8000:2107.NK791:VOL:1500
Timestamp     n/a
Last Result   IWNR2024I

Source Volume DS8000:2107.04131:VOL:1505
Target Volume DS8000:2107.04131:VOL:150A
Role Pair     I3-J3
State         Defined
Recoverable   No
Copying       No
Progress      -
New           Yes
Copy Set      DS8000:2107.NK791:VOL:1500
Timestamp     n/a
Press Enter To Continue...
```

```
Last Result   IWNR2013I

Source Volume DS8000:2107.MW931:VOL:1500
Target Volume DS8000:2107.04131:VOL:150A
Role Pair     H2-J3
State         Defined
Recoverable   No
Copying       No
Progress      -
New           Yes
Copy Set      DS8000:2107.NK791:VOL:1500
Timestamp     n/a
Last Result   IWNR2024I

...
```

lsparameter

Use the **lsparameter** command to list Metro Mirror heartbeat setting.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-s Displays default information for each system parameter, including the parameter name and value.

-l Displays detailed information for each system parameter, including:

Column label	Details
Parameter Name	Value of the system parameter
Value	The value of the system parameter (for example, `Yes` or `No`).
Parm Name	Name of the system parameter

-fmt { default | xml | delim | stanza }
Specifies the format of the output. You can specify one of these values:

default
Specifies that the output is displayed in tabular format using spaces as delimiters between columns. This is the default value.

xml Specifies that the output is displayed in XML format.

delim Specifies that output is displayed in a tabular format using commas as delimiters between columns.

To use a character other than a comma as the delimiter, specify `-fmt delim -delim` *char* , where *char* represents the character that you want to use as the delimiter. For example, if you want to use a colon (:) as the delimiter, use the following `-fmt` parameter:

```
-fmt delim -delim :
```

If you use a shell metacharacter as the delimiting character, enclose the character in quotation marks or single quotation marks. A blank space is not a valid character.

stanza Specifies that the output is displayed as one keyword-value pair per line.

-p { on | off }
Specifies whether to display one page of text at a time or all text at once.

on Displays one page of text at a time. Pressing any key displays the next page. This is the default value when the command is run in interactive mode.

off Displays all text at once. This is the default value when the command is run in single-shot mode.

-hdr { on | off }
Specifies whether to display the table header. You can specify one of these values:

on Displays the table header. This is the default value.

off Hides the table header.

-r *number*
Specifies the number of rows per page to display when the **-p** parameter is specified. You can specify a value of `1 - 100`. The default value is `22`.

-v { on | off }
Specifies whether to enable verbose mode. You can specify one of these values:

on Enable verbose mode.

off Disable verbose mode. This is the default value.

-parmname consistencyheartbeat
Displays whether the Metro Mirror heartbeat is enabled (on) or disabled (off).

Example: Listing all parameters

The following command lists detailed information about all parameters.

Note: Only the heartbeat setting is currently supported and returned by this command.

```
csmcli> lsparameter -l
```

The following output is returned:

```
Parameter Name                 Value Parm Name
=======================================================
The heartbeat function is set  on    consistencyheartbeat
```

Example: Displaying the Metro Mirror heartbeat setting

The following command displays the current setting for the Metro Mirror heartbeat.

```
csmcli> lsparameter -parmname consistencyheartbeat
```

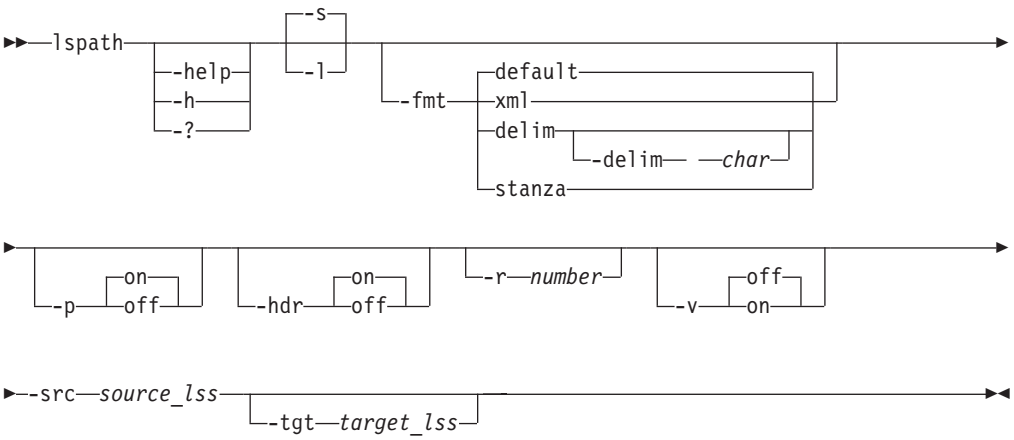
The following output is returned:

```
Parameter Name                 Value
==================================
The heartbeat function is set  on
```

lspath

Use the **lspath** command to display paths between ESS and DS devices. You can then use this information for a remote copy.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-s Displays default information for each path, including the source and target LSS, path type, status, and whether the path was auto-generated.

-l Displays detailed information for each path, including:

Column label	Details
Source	Origin of the path. For ESS, this is an LSS. For the format of this field, see the **mkpath** command.
Target	Target of the path. For ESS this is an LSS. For the format of this field, see the **mkpath** command.
Type	ESCON (ESS or DS only) or Fibre Channel.
Status	Whether the path is currently established or not.

Column label	Details
Auto-Generated	Yes, if the path was generated by the IBM Tivoli Storage Productivity Center for Replication component. No, if you specified the path.

-fmt { default | xml | delim | stanza }
Specifies the format of the output. You can specify one of these values:

default
Specifies that the output is displayed in tabular format using spaces as delimiters between columns. This is the default value.

xml Specifies that the output is displayed in XML format.

delim Specifies that output is displayed in a tabular format using commas as delimiters between columns.

To use a character other than a comma as the delimiter, specify `-fmt delim -delim` *char* , where *char* represents the character that you want to use as the delimiter. For example, if you want to use a colon (:) as the delimiter, use the following `-fmt` parameter:

```
-fmt delim -delim :
```

If you use a shell metacharacter as the delimiting character, enclose the character in quotation marks or single quotation marks. A blank space is not a valid character.

stanza Specifies that the output is displayed as one keyword-value pair per line.

-p { on | off }
Specifies whether to display one page of text at a time or all text at once.

on Displays one page of text at a time. Pressing any key displays the next page. This is the default value when the command is run in interactive mode.

off Displays all text at once. This is the default value when the command is run in single-shot mode.

-hdr { on | off }
Specifies whether to display the table header. You can specify one of these values:

on Displays the table header. This is the default value.

off Hides the table header.

-r *number*
Specifies the number of rows per page to display when the **-p** parameter is specified. You can specify a value of `1 - 100`. The default value is `22`.

-v { on | off }
Specifies whether to enable verbose mode. You can specify one of these values:

on Enable verbose mode.

off Disable verbose mode. This is the default value.

-src *source_lss*
Specifies the source LSS. This must be specified in the format *type.serial.lss(hex).port(hex)* (for example, `ESS:2105.FCA18:LSS:10.00FF`).

-tgt *target_lss*
Specifies the target LSS. This must be specified in the format type.serial.lss(hex).port(hex) (for example, ESS:2105.FCA18:LSS:10.00FF).

Example: Listing all paths with the same source LSS

The following command lists all paths that use source LSS DS8000:2107.04131:LSS:15.

```
csmcli> lspath -src DS8000:2107.04131:LSS:15
```

The following output is returned:

```
Source                           Target                           Type
================================================================================
DS8000:2107.04131:LSS:15.0x0330 DS8000:2107.NF111:LSS:15.0x0030 Fibre Channel
DS8000:2107.04131:LSS:15.0x0110 ESS:2105.FCA57:LSS:15.0x000C    Fibre Channel
DS8000:2107.04131:LSS:15.0x0110 DS8000:2107.NK791:LSS:15.0x0032 Fibre Channel

Status      Auto-Generated
==========================
Established Yes
Established Yes
Established Yes
```

Example: Listing information about a specific path

The following command lists information about the path with source LSS DS8000:2107.04131:LSS:15.

```
csmcli> lspath -src DS8000:2107.04131:LSS:15 -tgt ESS:2105.FCA57:LSS:15
```

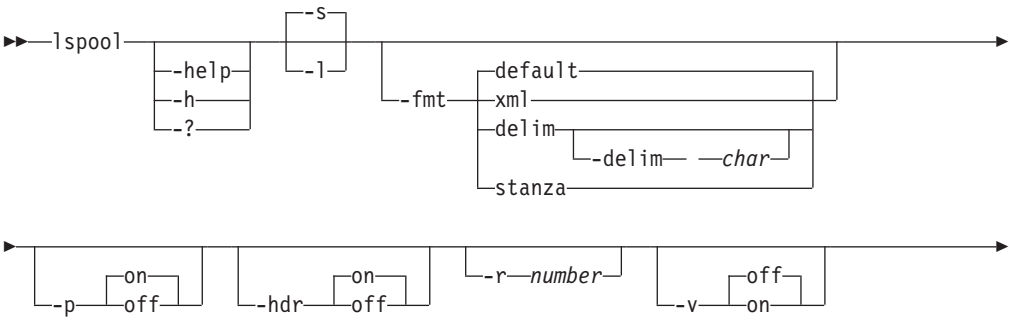
The following output is returned:

```
Source                           Target                         Type
================================================================================
DS8000:2107.04131:LSS:15.0x0110 ESS:2105.FCA57:LSS:15.0x000C Fibre Channel

Status      Auto-Generated
==========================
Established Yes
```

lspool

Use the **lspool** command to list pools that are on XIV systems.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-s | -l
Displays the following information:

Column Label	Details
Device Name	The name of the XIV system that contains the pools.
Device ID	The ID of the XIV system that contains the pools.
Pool Name	The name of the pool.
Pool ID	The ID for the pool.

-fmt { default | xml | delim | stanza }
Specifies the format of the output. You can specify one of these values:

default
Specifies that the output is displayed in tabular format using spaces as delimiters between columns. This is the default value.

xml Specifies that the output is displayed in XML format.

delim Specifies that output is displayed in a tabular format using commas as delimiters between columns.

To use a character other than a comma as the delimiter, specify `-fmt delim -delim` *char* , where *char* represents the character that you want to use as the delimiter. For example, if you want to use a colon (:) as the delimiter, use the following `-fmt` parameter:

```
-fmt delim -delim :
```

If you use a shell metacharacter as the delimiting character, enclose the character in quotation marks or single quotation marks. A blank space is not a valid character.

stanza Specifies that the output is displayed as one keyword-value pair per line.

-p { on | off }
Specifies whether to display one page of text at a time or all text at once.

on Displays one page of text at a time. Pressing any key displays the next page. This is the default value when the command is run in interactive mode.

off Displays all text at once. This is the default value when the command is run in single-shot mode.

-hdr { on | off }
Specifies whether to display the table header. You can specify one of these values:

on Displays the table header. This is the default value.

off Hides the table header.

-r *number*
Specifies the number of rows per page to display when the **-p** parameter is specified. You can specify a value of 1 - 100. The default value is 22.

-v { on | off }
Specifies whether to enable verbose mode. You can specify one of these values:

on Enable verbose mode.

off Disable verbose mode. This is the default value.

-dev *device_ID* **and -devicename** *device_name*
Both of these parameters specify that only pools on a specific storage system are displayed. The **-dev** parameter specifies that the storage system is determined by the ID for the system. The **-devicename** parameter specifies that the storage system is determined by the name of the storage system.

The **-dev** and **-devicename** parameters are mutually exclusive.

If the **-dev** or **-devicename** parameter is not provided, the output shows the pools for all XIV systems.

Example: Listing pools on all XIV systems

The following command lists the pools that are on all XIV systems.

```
csmcli> lspool -l
```

The following output is returned:

```
Device Name         Device ID             Pool Name       Pool ID
================================================================================
XIV 1300202 Troy    XIV:BOX:1300202       mysnappool1     XIV:POOL:1300202:100929
XIV 1300202 Troy    XIV:BOX:1300202       mysnappool2     XIV:POOL:1300202:100930
XIV 1300202 Troy    XIV:BOX:1300202       mysnappool3     XIV:POOL:1300202:100931
XIV 1300202 Troy    XIV:BOX:1300202       mysnappool4     XIV:POOL:1300202:112412
XIV_B               XIV:BOX:1566078       healthcare      XIV:POOL:1566078:436473
XIV_B               XIV:BOX:1566078       mysnappool1     XIV:POOL:1566078:436474
XIV_B               XIV:BOX:1566078       yogapool        XIV:POOL:1566078:436475
```

Example: Listing pools on a specific XIV system by storage system ID

The following command lists the pools that are on the XIV system with the ID XIV:BOX:1300202.

```
csmcli> lspool -dev XIV:BOX:1300202 -l
```

The following output is returned:

```
Device Name         Device ID             Pool Name       Pool ID
================================================================================
XIV 1300202 Troy    XIV:BOX:1300202       mysnappool1     XIV:POOL:1300202:100929
XIV 1300202 Troy    XIV:BOX:1300202       mysnappool2     XIV:POOL:1300202:100930
XIV 1300202 Troy    XIV:BOX:1300202       mysnappool3     XIV:POOL:1300202:100931
XIV 1300202 Troy    XIV:BOX:1300202       mysnappool4     XIV:POOL:1300202:112412
```

Example: Listing pools on a specific XIV system by storage system name

The following command lists the pools that are on the XIV system that is named XIV:BOX:1300202 Troy.

```
csmcli> lspool -devicename 'XIV:BOX:1300202 Troy'
```

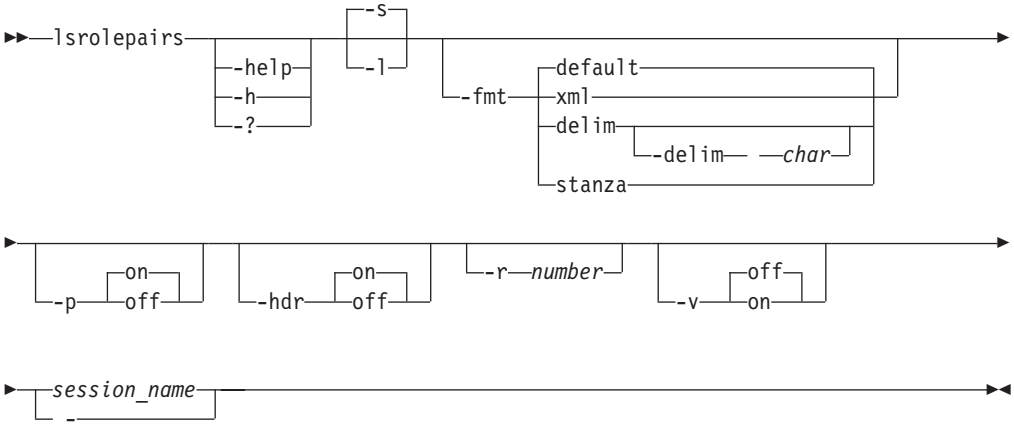
The following output is returned:

```
Device Name         Device ID            Pool Name       Pool ID
================================================================================
XIV 1300202 Troy    XIV:BOX:1300202      mysnappool1     XIV:POOL:1300202:100929
XIV 1300202 Troy    XIV:BOX:1300202      mysnappool2     XIV:POOL:1300202:100930
XIV 1300202 Troy    XIV:BOX:1300202      mysnappool3     XIV:POOL:1300202:100931
XIV 1300202 Troy    XIV:BOX:1300202      mysnappool4     XIV:POOL:1300202:112412
```

lsrolepairs

Use the **lsrolepairs** command to display role pairs in a session.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-s Displays default information for each role pair, including the role name, session (copy) type, and whether the role pair is recoverable, has errors, or is in the process of copying data.

-l Displays detailed information for each role pair, including:

Column label	Details
Name	System-generated text string used to identify a role pair. The value listed here is what is to be entered on the **lspair** command.
Recoverable	An indicator of whether the role pair is recoverable. Value values are `Yes` or `No`.
Error	An indicator of whether the role pair has errors. Value values are `Yes` or `No`.
Copying	An indicator of the role pair is in the process of copying data. Value values are `Yes` or `No`.
Progress	The overall copy progress associated with the role pair.
Copy Type	The current session (copy) type of the role pair.
Error Volumes	Total number of volumes in an exception state.

Column label	Details
Recoverable pairs	Number of recoverable pairs
Copying Pairs	Number of copying pairs
Total Pairs	Total number of pairs
Recovery Time	An indicator of the time to which the session is recoverable. Includes both date and time. For point-in-time copy, this is the time that the copy was taken. For continuous synchronous remote copy, this is the time at which the **Freeze** and **Run** commands were issued. This field is blank if Recoverable is set to `No`.

-fmt { default | xml | delim | stanza }
Specifies the format of the output. You can specify one of these values:

default
Specifies that the output is displayed in tabular format using spaces as delimiters between columns. This is the default value.

xml Specifies that the output is displayed in XML format.

delim Specifies that output is displayed in a tabular format using commas as delimiters between columns.

To use a character other than a comma as the delimiter, specify `-fmt delim -delim` *char* , where *char* represents the character that you want to use as the delimiter. For example, if you want to use a colon (:) as the delimiter, use the following `-fmt` parameter:

```
-fmt delim -delim :
```

If you use a shell metacharacter as the delimiting character, enclose the character in quotation marks or single quotation marks. A blank space is not a valid character.

stanza Specifies that the output is displayed as one keyword-value pair per line.

-p { on | off }
Specifies whether to display one page of text at a time or all text at once.

on Displays one page of text at a time. Pressing any key displays the next page. This is the default value when the command is run in interactive mode.

off Displays all text at once. This is the default value when the command is run in single-shot mode.

-hdr { on | off }
Specifies whether to display the table header. You can specify one of these values:

on Displays the table header. This is the default value.

off Hides the table header.

-r *number*
Specifies the number of rows per page to display when the **-p** parameter is specified. You can specify a value of `1 - 100`. The default value is `22`.

-v { on | off }
Specifies whether to enable verbose mode. You can specify one of these values:

on Enable verbose mode.

off Disable verbose mode. This is the default value.

session_name | **-**
Specifies the session name for which you display the role pairs.

Alternatively, use the dash (-) to specify that input for this parameter comes from an input stream (stdin). The dash is supported only in single-shot mode.

Description

To see the volumes that are in a copy set, use the **showcpset** command.

To see the status of volumes that are in a copy set, use the **lsvol** command.

Example: Listing role pairs in a session

The following command lists information about the role pairs in the session session1.

```
csmcli> lsrolepairs session1
```

The following output is returned:

```
Name  Recoverable Error Copying Copy Type
=======================================
H1-H2 No          Yes   Yes     MM
H2-J3 No          No    No      GM
H1-I3 No          No    No      GC
I3-J3 No          No    No      FC
H1-J3 No          No    No      GM
H3-I3 No          No    No      FC
H2-I3 No          No    Yes     GC
H1-H3 No          No    No      GC
```

Example: Listing detailed information for the role pairs in a session

The following command lists detailed information about the role pairs in the session session1.

```
csmcli> lsrolepairs -fmt stanza -l session1
```

The following output is returned:

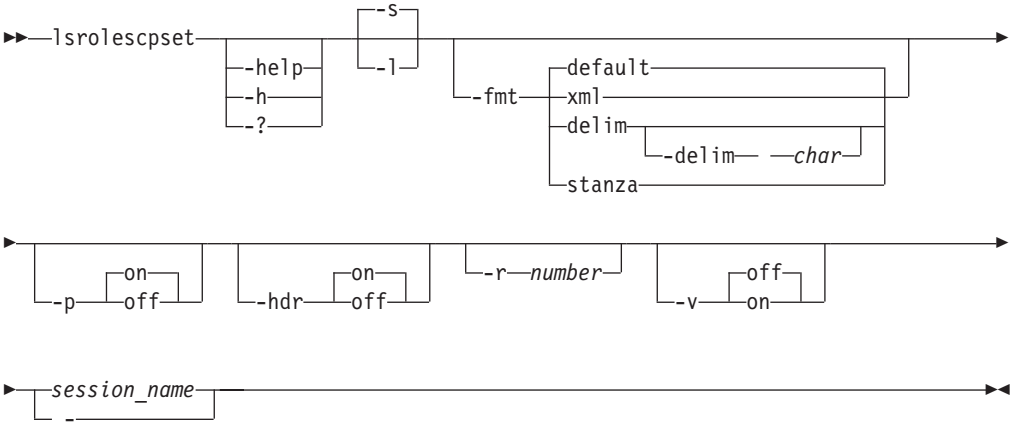
```
Name              H1-H2
Recoverable       No
Error             Yes
Copying           Yes
Copy Type         MM
Progress          66
Error volumes     5
Recoverable pairs 5
Copying pairs     5
Total pairs       10
Recovery time     n/a

Name              H2-J3
Recoverable       No
Error             No
Copying           No
Copy Type         GM
Progress          -
Error volumes     0
Recoverable pairs 0
Copying pairs     0
```

```
Total pairs       10
Recovery time     n/a

Name              H1-I3
Recoverable       No
Error             No
Copying           No
Copy Type         GC
Progress          -
Error volumes     0
Recoverable pairs 0
Copying pairs     0
Total pairs       10
Recovery time     n/a

...
```

lsrolescpset

Use the **lsrolescpset** command to list the volume roles in the specified session.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-l | -s
Displays detailed information for each session, including:

Column Label	Details
Name	Short name for the role.
Description	Description of the role.

-fmt { default | xml | delim | stanza }
Specifies the format of the output. You can specify one of these values:

default
Specifies that the output is displayed in tabular format using spaces as delimiters between columns. This is the default value.

xml Specifies that the output is displayed in XML format.

delim Specifies that output is displayed in a tabular format using commas as delimiters between columns.

To use a character other than a comma as the delimiter, specify **-fmt delim -delim** *char* , where *char* represents the character that you want to use as the delimiter. For example, if you want to use a colon (:) as the delimiter, use the following **-fmt** parameter:

```
-fmt delim -delim :
```

If you use a shell metacharacter as the delimiting character, enclose the character in quotation marks or single quotation marks. A blank space is not a valid character.

stanza Specifies that the output is displayed as one keyword-value pair per line.

-p { on | off }
Specifies whether to display one page of text at a time or all text at once.

on Displays one page of text at a time. Pressing any key displays the next page. This is the default value when the command is run in interactive mode.

off Displays all text at once. This is the default value when the command is run in single-shot mode.

-hdr { on | off }
Specifies whether to display the table header. You can specify one of these values:

on Displays the table header. This is the default value.

off Hides the table header.

-r *number*
Specifies the number of rows per page to display when the **-p** parameter is specified. You can specify a value of 1 - 100. The default value is 22.

-v { on | off }
Specifies whether to enable verbose mode. You can specify one of these values:

on Enable verbose mode.

off Disable verbose mode. This is the default value.

session_name **|** **-**
Specifies the session name for which you are going to list the roles of the copy set.

Alternatively, use the dash (-) to specify that input for this parameter comes from an input stream (stdin). The dash is supported only in single-shot mode.

Example: Listing copy set roles

The following command lists the volume roles in session session1.

```
csmcli> lsrolescpset session1
```

The following output is returned:

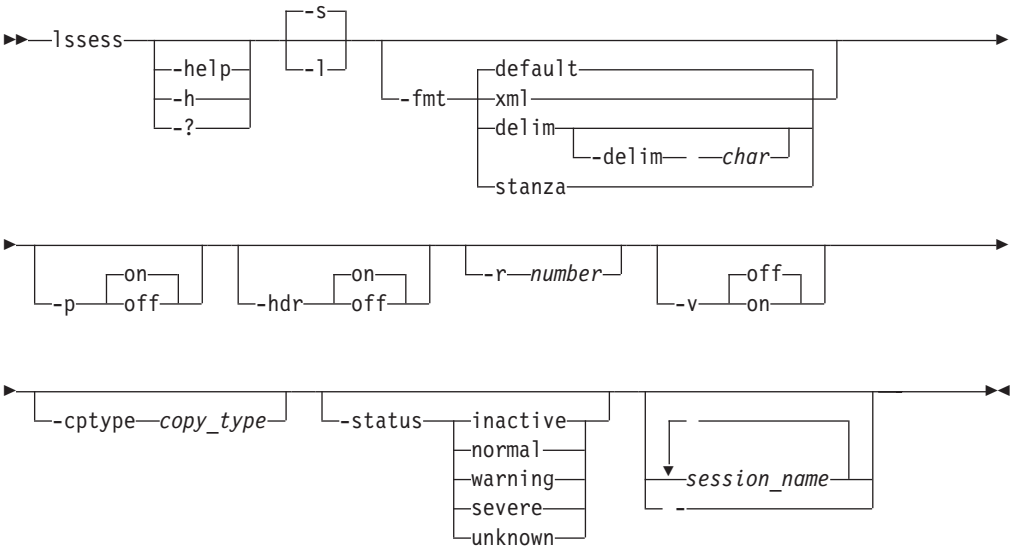
```
Name Description
=========================
H1   Host on Site1
```

```
H2   Host on Site2
H3   Host on Site3
I3   Intermediate on Site3
J3   Journal on Site3
```

lssess

Use the **lssess** command to display sessions and their status.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-s Displays default information for each session, including the session name, status, state, and session type.

-l
Displays the following detailed information for each session.

Column Label	Details
Name	The user-defined name of the session.
Status	The status level. The values are: `Inactive`, `Normal`, `Warning`, `Severe`, or `Unknown`.
State	The session state. The values are: `Defined`, `Preparing`, `Prepared`, `Suspended`, `TargetAvailable`, or `SuspendedInconsistent`.
Copy Type	The session type. For a list of values, see the **-cptype** parameter.
Recoverable	Specifies whether a session is recoverable. The values are `yes` or `no`.
Copying	Specifies whether a copying operation is taking place. The values are `yes` or `no`.
Copy Sets	The number of copy sets that are in the session.

Column Label	Details
Error	Specifies whether a session has errors. The values are `yes` or `no`.

-fmt { default | xml | delim | stanza }
Specifies the format of the output. You can specify one of these values:

default
Specifies that the output is displayed in tabular format using spaces as delimiters between columns. This is the default value.

xml Specifies that the output is displayed in XML format.

delim Specifies that output is displayed in a tabular format using commas as delimiters between columns.

To use a character other than a comma as the delimiter, specify `-fmt delim -delim` *char* , where *char* represents the character that you want to use as the delimiter. For example, if you want to use a colon (:) as the delimiter, use the following `-fmt` parameter:

```
-fmt delim -delim :
```

If you use a shell metacharacter as the delimiting character, enclose the character in quotation marks or single quotation marks. A blank space is not a valid character.

stanza Specifies that the output is displayed as one keyword-value pair per line.

-p { on | off }
Specifies whether to display one page of text at a time or all text at once.

on Displays one page of text at a time. Pressing any key displays the next page. This is the default value when the command is run in interactive mode.

off Displays all text at once. This is the default value when the command is run in single-shot mode.

-hdr { on | off }
Specifies whether to display the table header. You can specify one of these values:

on Displays the table header. This is the default value.

off Hides the table header.

-r *number*
Specifies the number of rows per page to display when the **-p** parameter is specified. You can specify a value of `1 - 100`. The default value is `22`.

-v { on | off }
Specifies whether to enable verbose mode. You can specify one of these values:

on Enable verbose mode.

off Disable verbose mode. This is the default value.

-cptype *copy_type*
Specifies the session type. The storage systems that are available for a session differ by session type. The following parameter values are listed by storage system type.

IBM TotalStorage Enterprise Storage Server Model 800, IBM System Storage DS8000, and IBM System Storage DS6000

- `fc`: FlashCopy
- `hs`: Basic HyperSwap
- `mmsd`: Metro Mirror Single Direction
- `mmfofb`: Metro Mirror Failover/Failback
- `pmm`: Metro Mirror Failover/Failback with Practice
- `gmsd`: Global Mirror Single Direction
- `gmfofb`: Global Mirror Failover/Failback
- `pgm`: Global Mirror Failover/Failback with Practice
- `pgm2s`: Global Mirror Either Direction with Two Site Practice
- `mgm`: Metro Global Mirror
- `pmgm`: Metro Global Mirror with Practice

IBM Storwize V3500

- `fc`: FlashCopy

IBM System Storage SAN Volume Controller, IBM Storwize V7000, IBM Storwize V7000 Unified, and IBM Storwize V3700

- `fc`: FlashCopy
- `mmsd`: Metro Mirror Single Direction
- `mmfofb`: Metro Mirror Failover/Failback
- `pmmsvc`: Metro Mirror Failover/Failback with Practice
- `gmsdsvc`: Global Mirror Single Direction
- `gmfofbsvc`: Global Mirror Failover/Failback
- `pgmsvc`: Global Mirror Failover/Failback with Practice
- `gmcvsvc`: Global Mirror Failover/Failback with Change Volumes

IBM XIV Storage System

- `snap`: Snapshot
- `mmfofbxiv`: Metro Mirror Failover/Failback
- `gmfofbxiv`: Global Mirror Failover/Failback

-status inactive | normal | warning | severe | unknown
Specifies that only sessions with the specified status of Inactive, Normal, Warning, Severe, or Unknown are displayed.

session_name... **| -**
Specifies that only sessions with a specified session name are displayed. Separate multiple session names with a space between each name. All sessions are displayed by default.

Alternatively, use a dash (-) to specify that input for this parameter comes from an input stream (stdin). The dash is supported only in single-shot mode.

Example: Listing all sessions

The following command lists information about all sessions.

```
csmcli> lssess
```

The following output is returned:

```
Name       Status  State              Copy Type
================================================================
session1   Normal  Target Available   Metro Global Mirror w/ Practice
```

Example: Listing sessions that have errors

The following command lists detailed information about sessions that have a status of Severe.

```
csmcli> lssess -status severe
```

The following output is returned:

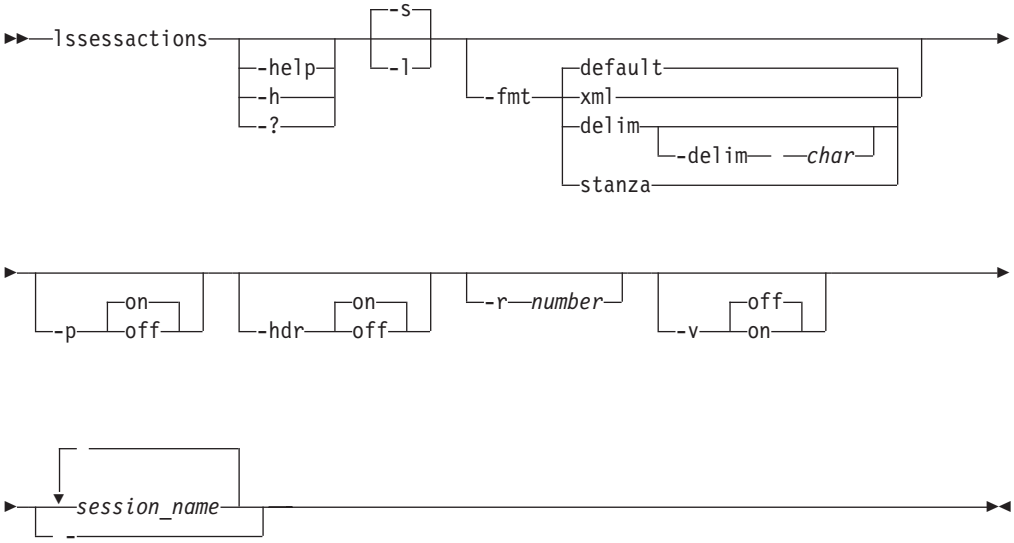
```
Name      Status  State      Copy Type
============================================================
session1  Severe  Preparing  Metro Global Mirror w/ Practice
```

lssessactions

Use the **lssessactions** command to list all the session actions (commands) that can be run for a session.

Tip: To run an action for a session, use the **cmdsess** command.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-s | -l
Specifies that the following information is displayed for each session:

Column Label	Details
Action	Name of the session action (command) that can be run on the session.
Description	The description of the command.

-fmt { default | xml | delim | stanza }
Specifies the format of the output. You can specify one of these values:

default
Specifies that the output is displayed in tabular format using spaces as delimiters between columns. This is the default value.

xml Specifies that the output is displayed in XML format.

delim Specifies that output is displayed in a tabular format using commas as delimiters between columns.

To use a character other than a comma as the delimiter, specify `-fmt delim -delim` *char* , where *char* represents the character that you want to use as the delimiter. For example, if you want to use a colon (:) as the delimiter, use the following `-fmt` parameter:

```
-fmt delim -delim :
```

If you use a shell metacharacter as the delimiting character, enclose the character in quotation marks or single quotation marks. A blank space is not a valid character.

stanza Specifies that the output is displayed as one keyword-value pair per line.

-p { on | off }
Specifies whether to display one page of text at a time or all text at once.

on Displays one page of text at a time. Pressing any key displays the next page. This is the default value when the command is run in interactive mode.

off Displays all text at once. This is the default value when the command is run in single-shot mode.

-hdr { on | off }
Specifies whether to display the table header. You can specify one of these values:

on Displays the table header. This is the default value.

off Hides the table header.

-r *number*
Specifies the number of rows per page to display when the **-p** parameter is specified. You can specify a value of `1 - 100`. The default value is `22`.

-v { on | off }
Specifies whether to enable verbose mode. You can specify one of these values:

on Enable verbose mode.

off Disable verbose mode. This is the default value.

session_name... **|** **-**

Specifies that only valid actions for the specified session name or names are displayed. Separate multiple session names with a space between each name. If you provide more than one session name, all commands that are valid for the combined sessions are listed.

Alternatively, use the dash (-) to specify that input for this parameter comes from an input stream (stdin). The dash is supported only in single-shot mode.

Example: Listing available actions for a session

The following command lists all actions that can be run for the session named session1:

```
csmcli> lssessactions session1
```

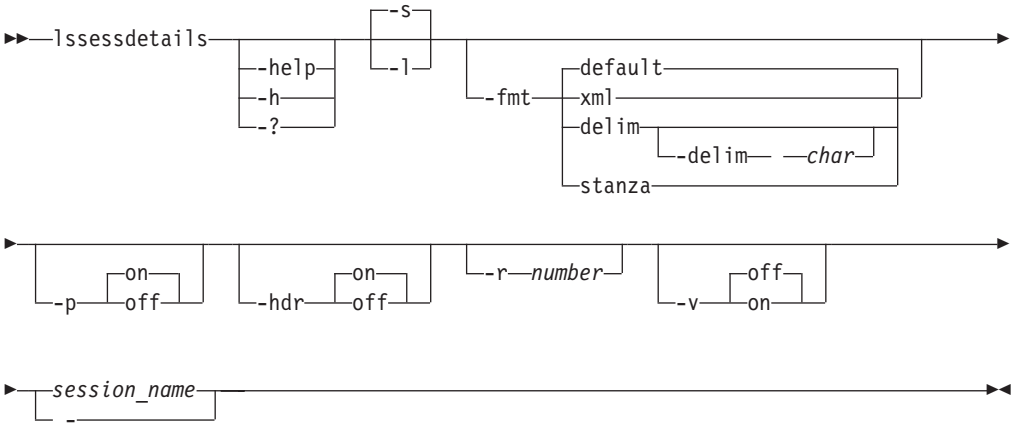
The following output is returned:

```
Action         Description
================================================
start_h1:h3    Start host1 to host3 copying
suspend        Suspend session
start_h1:h2:h3 Start host1 to host2 to host3 copying
terminate      Terminate session
```

lssessdetails

Use the **lssessdetails** command to display the details of a session.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-s
Displays default information for each session, including option names and values.

-l
Displays detailed information for each session, including:

Column label	Details
Option Name	Name of the option that is set for this session.
Value	Value of the detail that is set for this session.
Description	Description of the session option.

-fmt { default | xml | delim | stanza }
Specifies the format of the output. You can specify one of these values:

default
Specifies that the output is displayed in tabular format using spaces as delimiters between columns. This is the default value.

xml Specifies that the output is displayed in XML format.

delim Specifies that output is displayed in a tabular format using commas as delimiters between columns.

To use a character other than a comma as the delimiter, specify `-fmt delim -delim` *char* , where *char* represents the character that you want to use as the delimiter. For example, if you want to use a colon (:) as the delimiter, use the following `-fmt` parameter:

```
-fmt delim -delim :
```

If you use a shell metacharacter as the delimiting character, enclose the character in quotation marks or single quotation marks. A blank space is not a valid character.

stanza Specifies that the output is displayed as one keyword-value pair per line.

-p { on | off }
Specifies whether to display one page of text at a time or all text at once.

on Displays one page of text at a time. Pressing any key displays the next page. This is the default value when the command is run in interactive mode.

off Displays all text at once. This is the default value when the command is run in single-shot mode.

-hdr { on | off }
Specifies whether to display the table header. You can specify one of these values:

on Displays the table header. This is the default value.

off Hides the table header.

-r *number*
Specifies the number of rows per page to display when the **-p** parameter is specified. You can specify a value of `1 - 100`. The default value is `22`.

-v { on | off }
Specifies whether to enable verbose mode. You can specify one of these values:

on Enable verbose mode.

off Disable verbose mode. This is the default value.

session_name **|** **-**
Lists the details that are relevant to the specified session.

Alternatively, use the dash (-) to specify that input for this parameter comes from an input stream (stdin). The dash is supported only in single-shot mode.

Example: Listing detailed information about a Metro Global Mirror with Practice session

The following command lists detailed information about a Metro Global Mirror with Practice session named `session1`.

```
csmcli> lssessdetails -l session1
```

The following output is returned:

```
Option Name           Value       Description
================================================================================
aftersuspend          Release     Policy for I/O after suspend
maxdrain_h1j3         30          Maximum consistency group drain time for the H1-J3
                                    role pair
dsRPOwarning_h1j3     1           Warning level threshold in seconds for the  H1-J3
                                    role pair
maxdrain_h2j3         30          Maximum consistency group drain time for the H2-J3
                                    role pair
dsRPOwarning_h2j3     1           Warning level threshold in seconds for the H2-J3
                                    role pair
rpo_h2j3              0           Recovery point objective in seconds for the H2-J3
                                    role pair
rpo_h1j3              0           Recovery point objective in seconds for the H1-J3
                                    role pair
dsnocpy               No          No copying of the volume
enableHardenedFreeze  No          Policy for whether to use z/OS hardened freeze
dsRPOsevere_h1j3      2           Severe level threshold in seconds for the H1-J3
                                    role pair
dsRPOsevere_h2j3      2           Severe level threshold in seconds for the H2-J3
                                    role pair
rmreserves            No          Remove secondary reserves
coordint_h1j3         50          Extended distance copy coordination interval for
                                    the H1-J3 role pair
coordint_h2j3         50          Extended distance copy coordination interval for
                                    the H2-J3 role pair
failIfTgtOnline       No          Fail MM/GC if the target is online (CKD only)
```

Example: Listing detailed information about a Global Mirror Failover/Failback with Change Volumes session

The following command lists detailed information about a Global Mirror Failover/Failback with Change Volumes session named session2.

```
csmcli> lssessdetails -l session2
```

The following output is returned:

```
Option Name           Value    Description
================================================================================
svcRPOsevere_h1h2     900      Severe level threshold in seconds for the H1-H2
                                 role pair
svcRPOwarning_h2h2    600      Warning level threshold in seconds for the H1-H2
                                 role pair
enableChangeVolumes   Yes      Enable SVC change volumes
cycleperiod           200      SVC change volume cycle period
```

Example: Listing detailed information about a Basic HyperSwap session

The following command lists detailed information about a Basic HyperSwap session named session3.

```
csmcli> lssessdetails -l session3
```

The following output is returned:

```
Option Name         Value           Description
================================================================================
disableHS           No              Prevent an automatic z/OS HyperSwap from occurring
onConfigErrorHS     partition       Policy for a failed load configuration for
                                      sysplex members
onPlannedErrorHS    disable         Policy for a error during a planned HyperSwap for
                                      sysplex members
onUnplannedErrorHS  partition       Policy for a error during an unplanned HyperSwap for
                                      sysplex members
```

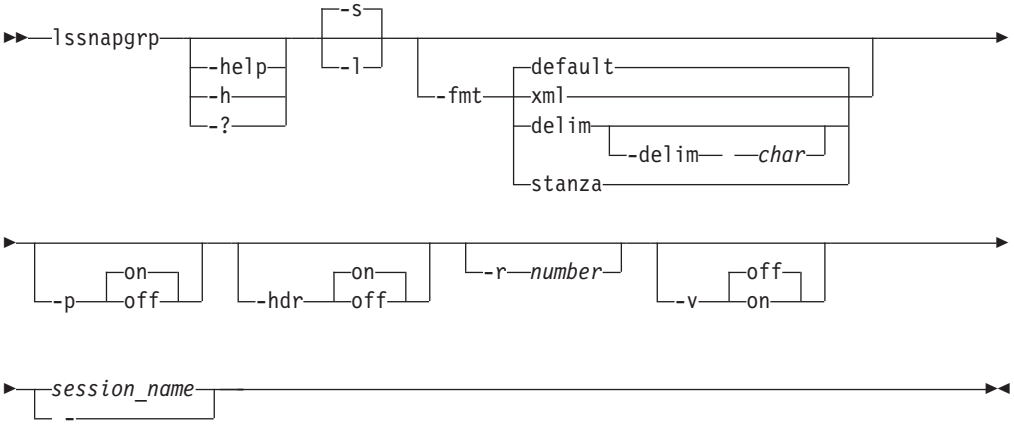
```
failIfTgtOnline     Yes             Fail MM/GC if the target is online (CKD only)
zosAssociation      PLEX1 (sysplex) The z/OS system or sysplex that is associated with
                                      this session
```

lssnapgrp

Use the **lssnapgrp** command to view snapshot groups that are in an IBM XIV Storage System snapshot session.

A snapshot group is a grouping of snapshots of individual volumes in a consistency group at a specific point in time.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-s
Specifies that default information for each snapshot group is displayed. The default information is the name of the snapshot group and the date and time that the group was created.

-l
Specifies that detailed information for each snapshot group is displayed, including:

Column Label	Details
Name	The name of the snapshot group.
Timestamp	The date and time that the snapshot group was created.
Deletion Priority	The priority in which the snapshot group is deleted from the session. The value is the number 1 - 4. A value of 1 specifies that the snapshot group is deleted last. A value of 4 specifies that the snapshot group is deleted first. Multiple snapshot groups might exist until XIV system identifies that there is not enough space in the storage pool to keep all of the snapshots.

Column Label	Details
Restore Master	Specifies whether the snapshot group listed can be used to restore the master volumes of the session. Values for this are `Yes` and `No`.
Locked	Specifies whether the snapshot group is currently locked. If the snapshot group is locked, write operations to the snapshots within the snapshot group are prevented.
Modified	Specifies whether the snapshot group has been modified. A snapshot group is marked as modified when it is unlocked for the first time.

-fmt { default | xml | delim | stanza }
Specifies the format of the output. You can specify one of these values:

default
Specifies that the output is displayed in tabular format using spaces as delimiters between columns. This is the default value.

xml Specifies that the output is displayed in XML format.

delim Specifies that output is displayed in a tabular format using commas as delimiters between columns.

To use a character other than a comma as the delimiter, specify `-fmt delim -delim` *char* , where *char* represents the character that you want to use as the delimiter. For example, if you want to use a colon (:) as the delimiter, use the following `-fmt` parameter:

```
-fmt delim -delim :
```

If you use a shell metacharacter as the delimiting character, enclose the character in quotation marks or single quotation marks. A blank space is not a valid character.

stanza Specifies that the output is displayed as one keyword-value pair per line.

-p { on | off }
Specifies whether to display one page of text at a time or all text at once.

on Displays one page of text at a time. Pressing any key displays the next page. This is the default value when the command is run in interactive mode.

off Displays all text at once. This is the default value when the command is run in single-shot mode.

-hdr { on | off }
Specifies whether to display the table header. You can specify one of these values:

on Displays the table header. This is the default value.

off Hides the table header.

-r *number*
Specifies the number of rows per page to display when the **-p** parameter is specified. You can specify a value of `1 - 100`. The default value is `22`.

-v { on | off }
Specifies whether to enable verbose mode. You can specify one of these values:

on Enable verbose mode.

off Disable verbose mode. This is the default value.

session_name | **-**
Specifies the name of the Snapshot session.

Alternatively, use a dash (-) to specify that input for this parameter comes from an input stream (stdin). The dash is supported only in single-shot mode.

Example: Listing all snapshot groups that are in a session

The following command lists all snapshot groups that are in the session snap6:

```
csmcli> lssnapgrp snap6
```

The following output is returned:

```
Name                    Timestamp
================================================
snap6.snap_group_00001 2011-04-01 00:04:49.000-0500
```

Example: Listing detailed information about the snapshot groups that are in a session

The following command lists detailed information about the snapshot groups that are in the session snap6:

```
csmcli> lssnapgrp -l snap6
```

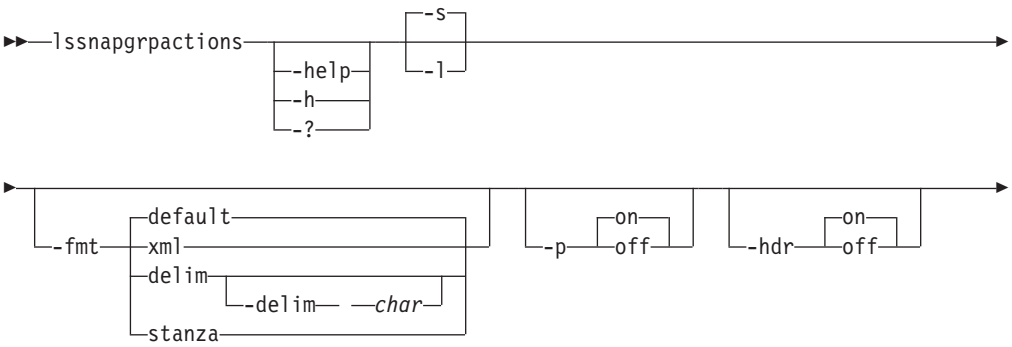
The following output is returned:

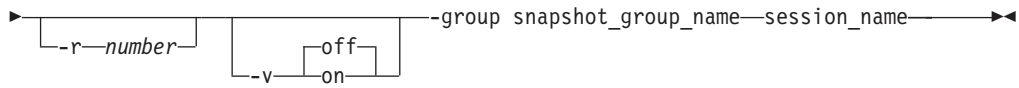
```
Name                   Timestamp                   Deletion Priority Restore Master
=============================================================================================
snap6.snap_group_00001 2011-07-18 15:22:14.000-0700                1 No
snap6.snap_group_00002 2011-07-18 15:22:41.000-0700                1 Yes

Locked Modified
===============
Yes    No
Yes    No
```

lssnapgrpactions

Use the **lssnapgrpactions** command to specify the session and snapshot group name that you want to view available actions for.

Syntax





Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-s | -l

-s Specifies the default output which is action name and description.

-l Specifies the detailed output. In this case, specifies the same output as the **-s** parameter.

-fmt { default | xml | delim | stanza }
Specifies the format of the output. You can specify one of these values:

default
Specifies that the output is displayed in tabular format using spaces as delimiters between columns. This is the default value.

xml Specifies that the output is displayed in XML format.

delim Specifies that output is displayed in a tabular format using commas as delimiters between columns.

To use a character other than a comma as the delimiter, specify `-fmt delim -delim` *char* , where *char* represents the character that you want to use as the delimiter. For example, if you want to use a colon (:) as the delimiter, use the following `-fmt` parameter:

```
-fmt delim -delim :
```

If you use a shell metacharacter as the delimiting character, enclose the character in quotation marks or single quotation marks. A blank space is not a valid character.

stanza Specifies that the output is displayed as one keyword-value pair per line.

-p { on | off }
Specifies whether to display one page of text at a time or all text at once.

on Displays one page of text at a time. Pressing any key displays the next page. This is the default value when the command is run in interactive mode.

off Displays all text at once. This is the default value when the command is run in single-shot mode.

-hdr { on | off }
Specifies whether to display the table header. You can specify one of these values:

on Displays the table header. This is the default value.

off Hides the table header.

-r *number*
Specifies the number of rows per page to display when the **-p** parameter is specified. You can specify a value of `1 - 100`. The default value is `22`.

-v { on | off }
Specifies whether to enable verbose mode. You can specify one of these values:

on Enable verbose mode.

off Disable verbose mode. This is the default value.

-group snapshot_group_name
Specifies the name of the snapshot group to list snapshot group actions for.

session_name | -
Specifies the session for which the properties are to be displayed.

Alternatively, use the dash (-) to specify that input for this parameter comes from an input stream (stdin). The dash is supported only in single-shot mode.

Example: Specifying the session and snapshot group name

The following command specifies the session and snapshot group name that you want to view available actions for.

```
csmcli> lssnapgrpactions -group MySnapSession.snap_group_0001  MySnapSession
```

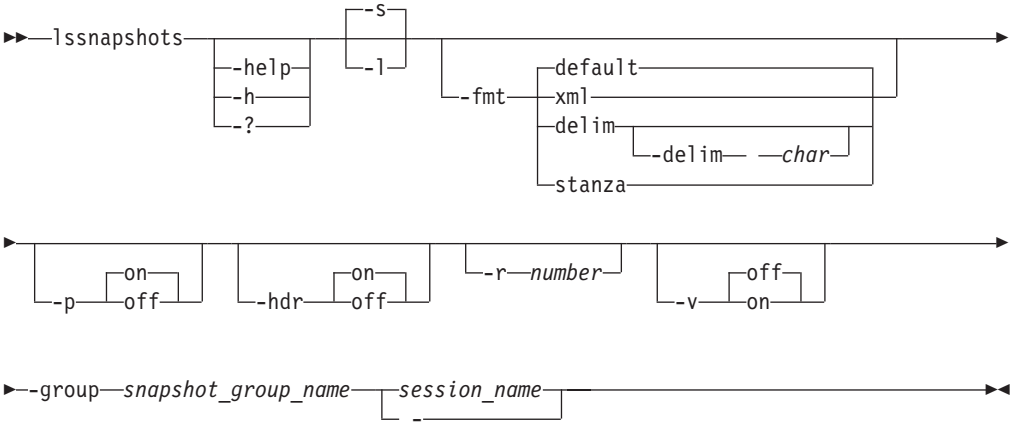
The following output is returned:

```
Action              Description
============================================================
delete              Deletes a snapshot group
disband             Disbands a snapshot group
duplicate           Duplicates a snapshot group
lock                Locks a snapshot group
restore             Restores a snapshot group from another snapshot group
set_priority        Sets the deletion priority for a snapshot group
```

lssnapshots

Use the **lssnapshots** command to view snapshots that are in a snapshot group in a IBM XIV Storage System snapshot session.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-s
Specifies that default information for each snapshot in the snapshot group is displayed. The default information is the name of the snapshot.

-l
Specifies that detailed information for each snapshot in the snapshot group is displayed, including:

Column Label	Details
Name	The name of the snapshot.
H1 Volume ID	The ID of the H1 volume that is associated with the snapshot.
Size	The size of the H1 volume at the time that the snapshot was created.
Size Unit	The unit of measure for the size of the H1 volume at the time that the snapshot was created.

-fmt { default | xml | delim | stanza }
Specifies the format of the output. You can specify one of these values:

default
Specifies that the output is displayed in tabular format using spaces as delimiters between columns. This is the default value.

xml Specifies that the output is displayed in XML format.

delim Specifies that output is displayed in a tabular format using commas as delimiters between columns.

To use a character other than a comma as the delimiter, specify `-fmt delim -delim` *char* , where *char* represents the character that you want to use as the delimiter. For example, if you want to use a colon (:) as the delimiter, use the following `-fmt` parameter:

```
-fmt delim -delim :
```

If you use a shell metacharacter as the delimiting character, enclose the character in quotation marks or single quotation marks. A blank space is not a valid character.

stanza Specifies that the output is displayed as one keyword-value pair per line.

-p { on | off }
Specifies whether to display one page of text at a time or all text at once.

on Displays one page of text at a time. Pressing any key displays the next page. This is the default value when the command is run in interactive mode.

off Displays all text at once. This is the default value when the command is run in single-shot mode.

-hdr { on | off }
Specifies whether to display the table header. You can specify one of these values:

on Displays the table header. This is the default value.

off Hides the table header.

-r *number*
Specifies the number of rows per page to display when the **-p** parameter is specified. You can specify a value of 1 - 100. The default value is 22.

-v { on | off }
Specifies whether to enable verbose mode. You can specify one of these values:

on Enable verbose mode.

off Disable verbose mode. This is the default value.

-group *snapshot_group_name*
Specifies the name of the snapshot group that contains the snapshots.

session_name **|** **-**
Specifies the name of the Snapshot session that contains the snapshot group.

Alternatively, use a dash (-) to specify that input for this parameter comes from an input stream (stdin). The dash is supported only in single-shot mode.

Example: Listing all snapshots that are in a snapshot group in a session

The following command lists all snapshots that are in the snapshot group snap6.snap_group_00001 for session snap6:

```
csmcli> lssnapshots -group snap6.snap_group_00001 snap6
```

The following output is returned:

```
Name
================================================
snap6.snap_group_00001_vol1
snap6.snap_group_00001_vol2
```

Example: Listing detailed information about the snapshots that are in a snapshot group for a session

The following command lists detailed information about the snapshots that are in snapshot group for the session snap6:

```
csmcli> lssnapshots -group snap6.snap_group_00001 -l snap6
```

The following output is returned:

```
Name                        H1 Volume ID             Size     Size Unit
=============================================================================
snap6.snap_group_00001_vol1 XIV:VOL:7803307:115017   16.0     GiB
snap6.snap_group_00001_vol2 XIV:VOL:7803307:115018   16.0     GiB
```

lssnmp

Use the **lssnmp** command to list the SNMP managers to which IBM Tivoli Storage Productivity Center for Replication is configured to send SNMP alerts.

Syntax

Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

Description

The information displayed is either the domain name or the IP address of the server, depending on how you specified it.

SNMP traps are not specific to any particular session. All traps for any session are sent to each server.

For each SNMP manager, the following information is displayed:

Column label	Details
SNMP Manager	Domain name or IP address of the management server to which SNMP traps are sent
Port	The specific UDP port to which SNMP traps are sent

Example: Listing SNMP managers

The following command list the SNMP managers.

```
csmcli> lssnmp
```

The following output is returned:

```
SNMP Manager Port
=================
9.11.10.1     162
127.0.0.1     163
```

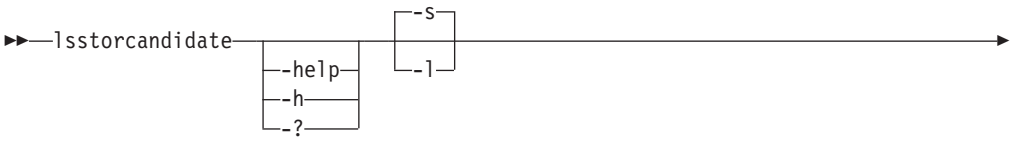
lsstorcandidate

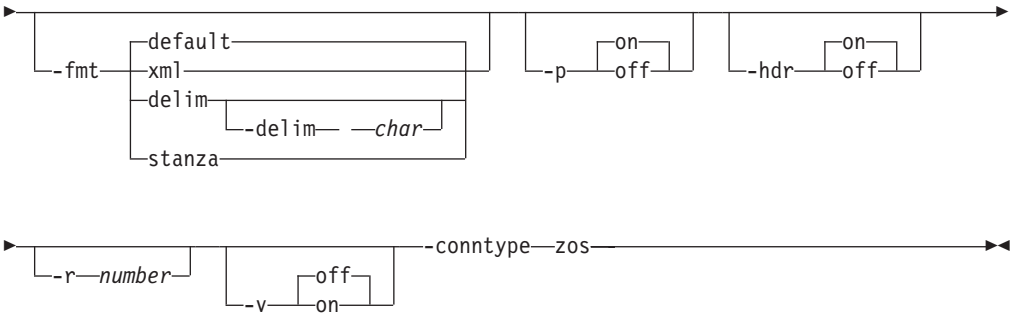
Use the **lsstorcandidate** command to list the storage systems that can be discovered through an IBM z/OS connection. This command does not list storage systems that are already added to the IBM Tivoli Storage Productivity Center for Replication configuration.

To list storage systems that are already in the Tivoli Storage Productivity Center for Replication configuration, use the **lsdevice** command.

You can run the **lsstorcandidate** command only from a Tivoli Storage Productivity Center for Replication server that is installed on a system that is running the z/OS operating system.

Syntax





Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-s | -l
Specifies that the following information is displayed for each storage system:

Column Label	Details
Device ID	The storage system ID.
Manufacturer	The manufacturer of the storage system.

-fmt { default | xml | delim | stanza }
Specifies the format of the output. You can specify one of these values:

default
Specifies that the output is displayed in tabular format using spaces as delimiters between columns. This is the default value.

xml Specifies that the output is displayed in XML format.

delim Specifies that output is displayed in a tabular format using commas as delimiters between columns.

To use a character other than a comma as the delimiter, specify `-fmt delim -delim` *char* , where *char* represents the character that you want to use as the delimiter. For example, if you want to use a colon (:) as the delimiter, use the following `-fmt` parameter:

```
-fmt delim -delim :
```

If you use a shell metacharacter as the delimiting character, enclose the character in quotation marks or single quotation marks. A blank space is not a valid character.

stanza Specifies that the output is displayed as one keyword-value pair per line.

-p { on | off }
Specifies whether to display one page of text at a time or all text at once.

on Displays one page of text at a time. Pressing any key displays the next page. This is the default value when the command is run in interactive mode.

off Displays all text at once. This is the default value when the command is run in single-shot mode.

-hdr { on | off }
Specifies whether to display the table header. You can specify one of these values:

on Displays the table header. This is the default value.

off Hides the table header.

-r *number*
Specifies the number of rows per page to display when the **-p** parameter is specified. You can specify a value of 1 - 100. The default value is 22.

-v { on | off }
Specifies whether to enable verbose mode. You can specify one of these values:

on Enable verbose mode.

off Disable verbose mode. This is the default value.

-conntype zos
Specifies the type of connection that the storage systems use. Currently, you can specify only zos for a z/OS connection.

Example: Listing candidate storage systems

The following command lists candidate storage systems:

```
csmcli> lsstorcandidate -conntype zos
```

The following output is returned:

```
Device ID              Manufacturer
==================================
ESS:BOX:2105.12345     IBM
```

lsvol

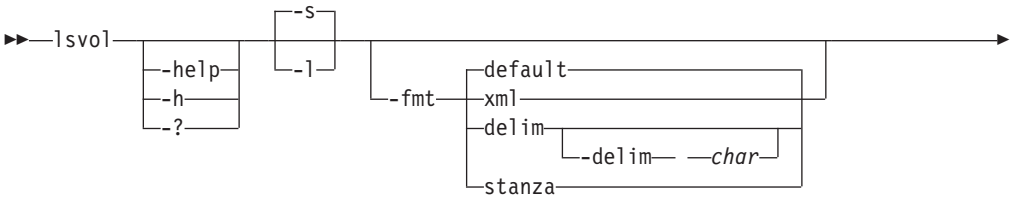
Use the **lsvol** command to display detailed information about volumes.

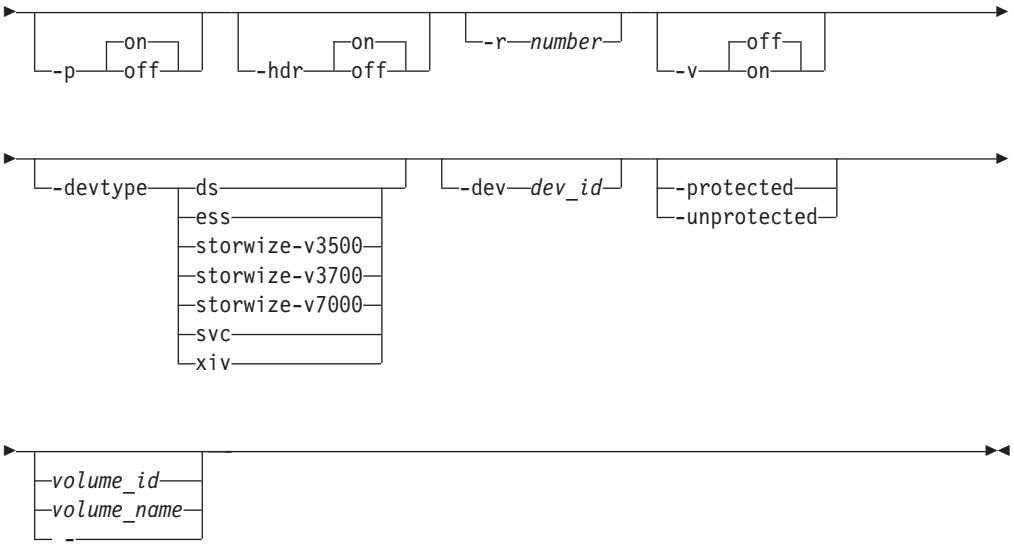
You can use the **lsvol** command to:

- Choose available volumes for copy sets.
- View properties of volumes such as capacity, type, and whether a volume is space efficient or protected.

Important: If you issue the **lsvol** command without parameters, a list of all the volumes for all storage systems is displayed. The processing of the command can take minutes or hours depending on the size of your environment. Press Enter to continue listing the output or press Ctrl+C to discontinue.

Syntax





Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-s Displays default information for each volume, including the name, ID, device, manufacturer, volume type, and whether the volume is protected and space efficient.

-l Displays the following detailed information for each volume.

Column Label	Details
Name	The volume name.
ID	The volume ID. The volume ID is displayed regardless of whether you provide the volume ID or name for the volume parameter.
Device	The ID of the storage system
Manufacturer	The manufacturer of the storage system. Currently, only IBM storage systems are supported.
Type	The values `CKD` for count key data or `FB` for fixed block. The value that is displayed depends on the storage system type.
Protected	`Yes` if the volume is protected. `No` if the volume is not protected.
Space Efficient	`Yes` if the volume is a space-efficient volume.`No` if the volume is not a space-efficient volume.
Format	Volume format
LSS/IO Group/Pool	The logical subsystem (LSS), IO group, or pool. The value that is displayed depends on the storage system type.
Size	The volume size.
Size Unit	The unit of measure that the capacity is given in, either gigabytes or cylinders.

Column Label	Details
Is Z Attached	Identifies whether the volumes are connected through an IBM z/OS connection.
Locked	Indicates whether the volume is locked. Applies only to IBM XIV Storage System.

-fmt { default | xml | delim | stanza }
Specifies the format of the output. You can specify one of these values:

default
Specifies that the output is displayed in tabular format using spaces as delimiters between columns. This is the default value.

xml Specifies that the output is displayed in XML format.

delim Specifies that output is displayed in a tabular format using commas as delimiters between columns.

To use a character other than a comma as the delimiter, specify `-fmt delim -delim` *char* , where *char* represents the character that you want to use as the delimiter. For example, if you want to use a colon (:) as the delimiter, use the following `-fmt` parameter:

```
-fmt delim -delim :
```

If you use a shell metacharacter as the delimiting character, enclose the character in quotation marks or single quotation marks. A blank space is not a valid character.

stanza Specifies that the output is displayed as one keyword-value pair per line.

-p { on | off }
Specifies whether to display one page of text at a time or all text at once.

on Displays one page of text at a time. Pressing any key displays the next page. This is the default value when the command is run in interactive mode.

off Displays all text at once. This is the default value when the command is run in single-shot mode.

-hdr { on | off }
Specifies whether to display the table header. You can specify one of these values:

on Displays the table header. This is the default value.

off Hides the table header.

-r *number*
Specifies the number of rows per page to display when the **-p** parameter is specified. You can specify a value of `1 - 100`. The default value is `22`.

-v { on | off }
Specifies whether to enable verbose mode. You can specify one of these values:

on Enable verbose mode.

off Disable verbose mode. This is the default value.

-devtype { ds | ess | storwize-v3500 | storwize-v3700 | storwize-v7000 | svc | xiv }
Specifies volumes by storage system type. The parameter values are:

- **ds**: System Storage DS8000 or IBM System Storage DS6000
- **ess**: IBM TotalStorage Enterprise Storage Server Model 800
- **storwize-v3500**: IBM Storwize V3500
- **storwize-v3700**: IBM Storwize V3700
- **storwize-v7000**: IBM Storwize V7000 and IBM Storwize V7000 Unified
- **svc**: IBM System Storage SAN Volume Controller
- **xiv**: The XIV system

-dev *dev_ id*
Specifies volumes by storage system ID.

-protected
Specifies that only protected volumes, or volumes that cannot be used in an add copy set action, are shown.

-unprotected
Specifies that only unprotected volumes, or volumes that can be used in an add copy set action, are shown.

volume_id | *volume_name* | **-**
Specifies the volume for which data is listed. The same volume can be in multiple groups but not multiple pools.

For System Storage DS8000, DS6000, and TotalStorage Enterprise Storage Server Model 800 storage systems, use the volume ID for this parameter.

For other storage systems, you can use the volume ID or name for this parameter.

Alternatively, use the dash (-) to specify that input for this parameter comes from an input stream (stdin). The dash is supported only in single-shot mode.

Example: Listing volumes for a specific storage system

The following command lists information about all volumes in the storage system with ID DS8000:BOX:2107.02191.

```
csmcli> lsvol -devtype ds -dev DS8000:BOX:2107.02191
```

The following output is returned:

```
Name    ID                          Device     Manufacturer Type     Protected Space Efficient
=============================================================================================
8K410F  DS8000:2107.02191:VOL:010F 2107-02191 IBM          CKD      No        No
8K410E  DS8000:2107.02191:VOL:010E 2107-02191 IBM          CKD      No        No
8K410D  DS8000:2107.02191:VOL:010D 2107-02191 IBM          CKD      No        No
```

Example: Listing protected volumes for all storage systems

The following command lists information about all protected volumes.

```
csmcli> lsvol -protected
```

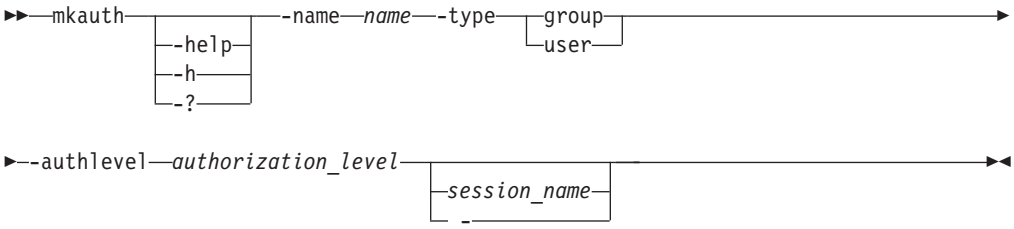
The following output is returned:

```
Name    ID                          Device     Manufacturer Type     Protected Space Efficient
=============================================================================================
8K9005  DS8000:2107.LT742:VOL:0005 2107-LT742 IBM          CKD      Yes       No
8K9004  DS8000:2107.LT742:VOL:0004 2107-LT742 IBM          CKD      Yes       No
8K9003  DS8000:2107.LT742:VOL:0003 2107-LT742 IBM          CKD      Yes       No
```

mkauth

Use the **mkauth** command to grant monitor, administrator, or operator authorization to a user.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-name *name*
Specifies a user ID or group name to which you grant authorization.

-type group | user
Specifies whether the name is of a group or user.

-authlevel *authorization_level*
Specifies the authorization level: `admin`, `operator`, or `monitor`.

session_name **|** **-**
Use this optional parameter when you are assigning operator authorization to a user and want to specify one or more sessions to which the operator has access. This parameter does not apply to monitors or administrators.

If no session name is specified, all sessions are used by default, unless another filter is used. If you specify **-authlevel operator** but do not specify a session name, the user is not granted operator status to any of the existing sessions but is granted permission to create new sessions.

Alternatively, use the dash (-) to specify that input for this parameter comes from an input stream (stdin). You can specify multiple session names from **stdin** when the dash (-) is specified. The dash is supported only in single-shot mode.

Example: Adding a group with monitor privileges

The following command grants administrator authorization to the user named `csmgroup`.

```
csmcli> mkauth -name csmgroup -type group -authlevel monitor
```

The following output is returned:

```
IWNR4018I  Successfully granted the monitor role to csmgroup.
```

Example: Adding a user with operator privileges

The following command grants administrator authorization to the user named `csmuser`.

```
csmcli> mkauth -name csmuser -type user -authlevel operator session1
```

The following output is returned:

```
IWNR4016I  Successfully granted the session operator role to csmuser.
```

Example: Adding the Superuser group

The following command adds the IBM Tivoli Storage Productivity Center Superuser group to the Administrator role.

```
csmcli> mkauth -name Superuser -type group -authlevel admin
```

The following output is returned:

```
IWNR4017I  Successfully granted the administrator role to Superuser.
```

mkbackup

Use the **mkbackup** command to create a backup of Tivoli Storage Productivity Center for Replication configuration data (including storage systems, sessions, and copy sets) in the zero-administration embedded repository.

Syntax

Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

Description

Prerequisites:

- You must have Administrator privileges to run this command.
- This procedure applies to only the zero-administration embedded repository. This procedure is not applicable when IBM DB2 is being used as the persistent data store for the Tivoli Storage Productivity Center for Replication database. For information about restoring your DB2 environment, refer to your DB2 documentation.
- The user ID that was used to create the backup file must exist on the management server that is being restored.

By default, the backup file is stored in the following location:

Tivoli Storage Productivity Center for Replication
TPC_install_directory\wlp\usr\servers\replicationServer\database\backup\

Tivoli Storage Productivity Center for Replication for System z
path_prefix/opt/Tivoli/RM/wlp/usr/servers/replicationServer/database/backup/

You can change the default location by editing the **db.backup.location** property in the rmserver.properties file, which is in the following location:

Tivoli Storage Productivity Center for Replication
TPC_install_directory\wlp\usr\servers\replicationServer\properties\

Tivoli Storage Productivity Center for Replication for System z
path_prefix/opt/Tivoli/RM/wlp/usr/servers/replicationServer/properties/

You can use the backup file to restore the zero-administration embedded repository on the same management server or on another management server that is running on the same operating system. You cannot use the backup file to restore the zero-administration embedded repository on a management server that is running on a different operating system or on a management server that uses the DB2 database.

Example: Backing up configuration data on a Windows operating system

The following command backs up the Tivoli Storage Productivity Center for Replication configuration data.

```
csmcli> mkbackup
```

The following output is returned:

```
IWNR1905I Backup of internal data store completed successfully.
Thefollowing file was created: C:\Program Files\IBM\TPC\wlp\usr\servers\
replicationServer\database\backup\tpcrBackup_20120825_120138984.zip
```

mkcpset

Use the **mkcpset** command to create copy sets.

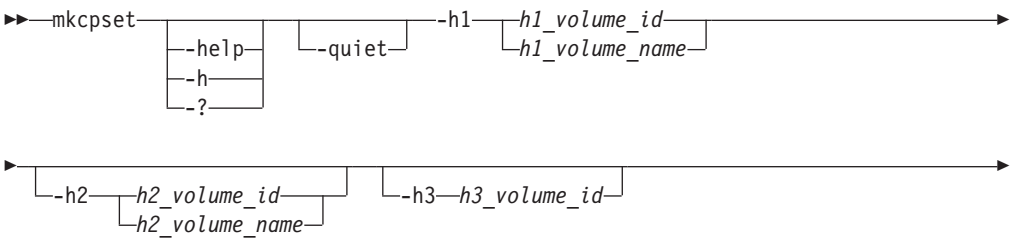
When you run the **mkcpset** command for sessions other than IBM XIV Storage System Snapshot, you can specify both the host volume and target volume for the copy set. For Snapshot sessions, specify only the host volume for the copy set. The target volume for a Snapshot session is automatically created when the snapshot is created.

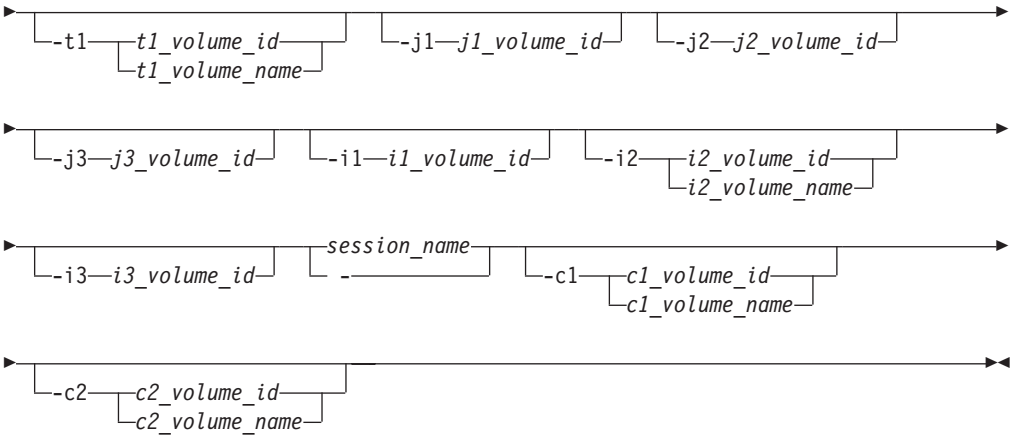
For IBM System Storage DS8000, IBM System Storage DS6000, and IBM TotalStorage Enterprise Storage Server Model 800 storage systems, you must use the volume ID to specify a volume. For other storage systems, you can use the volume ID or a user-defined name as shown in the examples that are at the end of this topic. You specify the name for the volume by using the user interface for the storage system.

The types of volumes that you can specify for a copy set depend on the storage system and session type.

Tip: To display the status of volumes in a copy set, use the **lsvol** command.

Syntax





Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-quiet
Suppresses the confirmation prompt for this command. This flag answers yes to all confirmation prompts.

-h1 {*h1_volume_id* | *h1_volume_name*}
Specifies the host volume for the copy set at site 1.

-h2 {*h2_volume_id* | *h2_volume_name*}
Specifies the host volume for the copy set at site 2.

-h3 *h3_volume_id*
Specifies the host volume for the copy set at site 3.

-t1 {*t1_volume_id* | *t1_volume_name*}
Specifies the target volume for the copy set at site 1.

-j1 *j1_volume_id*
Specifies the journal volume for the copy set at site 1.

-j2 *j2_volume_id*
Specifies the journal volume for the copy set at site 2.

-j3 *j3_volume_id*
Specifies the journal volume for the copy set at site 3.

-i1 *i1_volume_id*
Specifies the intermediate volume for the copy set at site 1.

-i2 {*i2_volume_id* | *i2_volume_name*}
Specifies the intermediate volume for the copy set at site 2.

-i3 *i3_volume_id*
Specifies the intermediate volume for the copy set at site 3.

-c1 {*c1_volume_id* | *c1_volume_name*}
Specifies the change volume for the copy set at site 1.

-c2 {*c2_volume_id* | *c2_volume_name*}
Specifies the change volume for the copy set at site 2.

session_name | **-**
Specifies the name of the session that contains the copy sets.

Alternatively, use the dash (-) to specify that input for this parameter comes from an input stream (stdin). The dash is supported only in single-shot mode.

When you run Metro Global Mirror on the OMVS command line, the parameters for the **mkcpset** command can exceed the character limit that is set by the OMVS prompt. To overcome this limitation, create a script file that is called `mgm_mkcpset.txt` that contains the command that you want to issue. For example:

```
csmcli> mkcpset -h1 DS8000:2107.12345:VOL:0000 -h2 DS8000:2107.67890:VOL:0000
-h3 DS8000:2107.02468:VOL:0000 -J3 DS8000:2107.01934:VOL:0000 myMGMSess
```

To run the script, you must ensure that you are in the IBM Tivoli Storage Productivity Center for Replication `CLI` directory and have the appropriate paths exported. You then run the script from the command line by using the following sample code:

```
csmcli.sh -script mgm_mkcpset.txt
```

Example: Creating a copy set for a System Storage DS8000 FlashCopy session by using the volume ID

The following command creates a copy set for a FlashCopy session that is named `session1`. The host volume at site 1 is `DS8000:2107.04131:VOL:0A05` and the target volume is `DS8000:2107.04131:VOL:0A06`.

```
csmcli> mkcpset -h1 DS8000:2107.04131:VOL:0A05 -t1 DS8000:2107.04131:VOL:0A06
session1
```

The following output is returned:

```
IWNR1000I  Copy sets were successfully created for the session
named session1.

IWNR2001I  The pair, the ID of the source volume and the ID of the target volume,
was created in the session named session1 for the copy set with a
volume ID of DS8000:2107.04131:VOL:0A05, a source volume ID of
DS8000:2107.04131:VOL:0A05, and a target volume ID of DS8000:2107.04131:VOL:0A06.
```

Example: Creating a copy set for an IBM Storwize V7000 FlashCopy session by using the volume ID

The following command creates a copy set for a FlashCopy session that is named `session2`. The host volume at site 1 is `STORWIZE-V7000:VOL:FREEBIRD2:7` and the target volume is `STORWIZE-V7000:VOL:FREEBIRD2:8`.

```
csmcli> mkcpset -quiet -h1 STORWIZE-V7000:VOL:FREEBIRD2:7 -t1
STORWIZE-V7000:VOL:FREEBIRD2:8 session2
```

The following output is returned:

```
IWIWNR2001I The pair was created in session session2 for copy set
with a copy set ID of STORWIZE-V7000:VOL:FREEBIRD2:7,
with a source volume ID of STORWIZE-V7000:VOL:FREEBIRD2:7(myvolume1),
and a target volume ID of STORWIZE-V7000:VOL:FREEBIRD2:8(myvolume2).
```

Example: Creating a copy set for a Storwize V7000 FlashCopy session by using the volume name

The following command creates a copy set for a FlashCopy session that is named `session2`. The host volume at site 1 is `STORWIZE-V7000:VOL:FREEBIRD2:myvolume1` and the target volume is `STORWIZE-V7000:VOL:FREEBIRD2:myvolume2`.

```
csmcli> mkcpset -quiet -h1 STORWIZE-V7000:VOL:FREEBIRD2:myvolume1 -t1
STORWIZE-V7000:VOL:FREEBIRD2:myvolume2 session2
```

The following output is returned:

```
IWIWNR2001I The pair was created in session session2 for copy set
with a copy set ID of STORWIZE-V7000:VOL:FREEBIRD2:7,
with a source volume ID of STORWIZE-V7000:VOL:FREEBIRD2:7(myvolume1),
and a target volume ID of STORWIZE-V7000:VOL:FREEBIRD2:8(myvolume2).
```

Example: Creating a copy set for an XIV system Snapshot session by using the volume ID

The following command creates the volume `XIV:VOL:6000646:110789` for an XIV system Snapshot session that is named `session3`.

```
csmcli> mkcpset -h1 XIV:VOL:6000646:110789 session3
```

The following output is returned:

```
IWNR1000I Copy sets were created for the session named session3.
```

Example: Creating a copy set for an XIV system Snapshot session by using the volume name

The following command creates the volume `XIV:VOL:6000646:myvolume` for an XIV system Snapshot session that is named `session3`.

```
csmcli> mkcpset -h1 XIV:VOL:6000646:myvolume session3
```

The following output is returned:

```
IWNR1000I Copy sets were created for the session named session3.
```

Example: Creating a copy set for a SAN Volume Controller Global Mirror Failover/Failback with Change Volumes session

The following command creates a copy set for a Global Mirror Failover/Failback with Change Volumes session that is named `session4`. The host volume at site 1 is `SVC:VOL:NYSVC08:1010` and the host change volume is `SVC:VOL:NYSVC08:1011`. The target volume is `SVC:VOL:NYSVC08:1012` and the target change volume is `SVC:VOL:NYSVC08:1013`.

```
csmcli> mkcpset -h1 SVC:VOL:NYSVC08:1010 -c1 SVC:VOL:NYSVC08:1011
-h2 SVC:VOL:NYSVC08:1012 -c2 SVC:VOL:NYSVC08:1013 session4
```

The following output is returned:

```
IWNR2001I The pair was created in session session4 for
copy set with a copy set ID of SVC:VOL:NYSVC08:1010,
with a source volume ID of SVC:VOL:NYSVC08:1010(tvdisk2010),
and a target volume ID of SVC:VOL:NYSVC08:1012(tvdisk2012).
```

mklogpkg

Use the **mklogpkg** command to create a log package. The log package is written to the file that is specified in the *TPC_install_directory*`\wlp\usr\servers\replicationServer\properties\Diagnostics.properties` file.

Syntax

Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

Example: Creating a log package on a Windows operating system

The following command creates a log package.

```
csmcli> mklogpkg
```

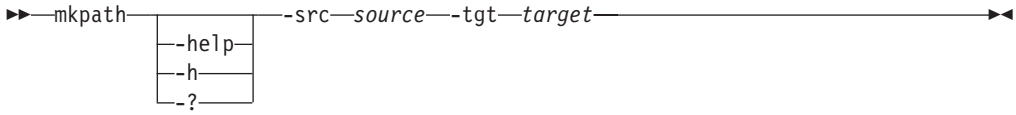
The following output is returned:

```
IWNR1198I  Log packages were successfully created and placed at
location C:\Program Files\IBM\TPC\wlp\usr\servers\replicationServer\properties\
TPC_RM-tpcr-1234_2012-10-29_11-11-02.jar
```

mkpath

Use the **mkpath** command to create a Fibre Channel path or paths between a source logical subsystem (LSS) and a target LSS.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-src *source*
Specifies the source LSS and port (ESS and DS series storage servers). This must be specified in the format *type.serial.lss(hex).port(hex)* (for example, ESS:2105.FCA18:LSS:10.00FF).

-tgt *target*
Specifies the target LSS and port (ESS and DS series storage servers). This must be specified in the format *type.serial.lss(hex).port(hex)* (for example, ESS:2105.FCA18:LSS:10.00FF).

Description

The **mkpath** command uses the information from the **lslss** command to create a path or paths between the source LSS and the target LSS. You can specify a number of paths to create between 1 and 8.

Notes:

- This command creates new paths in addition to paths that already exist between the two specified LSSs.
- Only Fibre Channel paths are supported for ESS and DS series storage servers.
- You must verify the ports that are to be used in the path.
- For DS series storage servers, the plant of manufacturer must be added to the beginning of the serial number, making the serial number a seven-digit number.

- If you specify a number of paths greater than the number of available paths, existing paths are overwritten.

Example: Creating Fibre Channel paths

The following command creates a Fibre Channel path between the source LSS ESS:2105.20870:12.1 and target LSS ESS:2105.20870:14.2.

```
csmcli> mkpath –src ESS:2105.20870:12.1 –tgt ESS:2105.20870:14.2
```

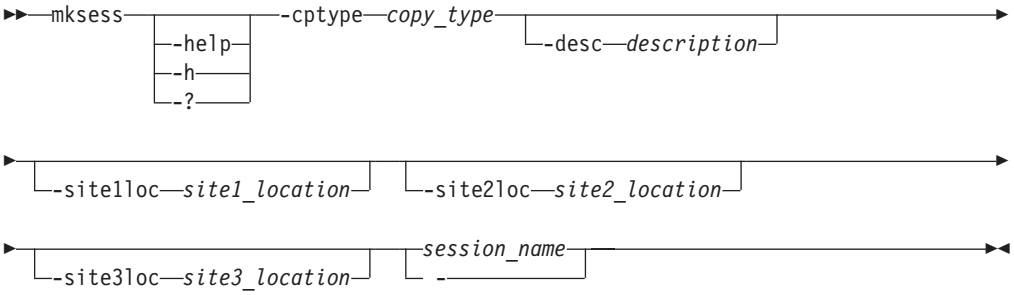
The following output is returned:

```
Path successfully created.
```

mksess

Use the **mksess** command to create a session.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-cptype *copy_type*
Specifies the session type. The storage systems that are available for a session differ by session type. The following parameter values are listed by storage system type.

IBM TotalStorage Enterprise Storage Server Model 800, IBM System Storage DS8000, and IBM System Storage DS6000

- fc: FlashCopy
- hs: Basic HyperSwap
- mmsd: Metro Mirror Single Direction
- mmfofb: Metro Mirror Failover/Failback
- pmm: Metro Mirror Failover/Failback with Practice
- gmsd: Global Mirror Single Direction
- gmfofb: Global Mirror Failover/Failback
- pgm: Global Mirror Failover/Failback with Practice
- pgm2s: Global Mirror Either Direction with Two Site Practice
- mgm: Metro Global Mirror
- pmgm: Metro Global Mirror with Practice

IBM Storwize V3500

- fc: FlashCopy

IBM System Storage SAN Volume Controller, IBM Storwize V7000, IBM Storwize V7000 Unified, and IBM Storwize V3700

- fc: FlashCopy
- mmsd: Metro Mirror Single Direction
- mmfofb: Metro Mirror Failover/Failback
- pmmsvc: Metro Mirror Failover/Failback with Practice
- gmsdsvc: Global Mirror Single Direction
- gmfofbsvc: Global Mirror Failover/Failback
- pgmsvc: Global Mirror Failover/Failback with Practice
- gmcvsvc: Global Mirror Failover/Failback with Change Volumes

IBM XIV Storage System

- snap: Snapshot
- mmfofbxiv: Metro Mirror Failover/Failback
- gmfofbxiv: Global Mirror Failover/Failback

-desc *description*
Specifies a description for the session. The description can have up to 250 alphanumeric characters.

-site1loc
Specifies a location to associate with the *site 1* volume role.

-site2loc
Specifies a location to associate with the *site 2* volume role.

-site3loc
Specifies a location to associate with the *site 3* volume role.

session_name | **-**

Specifies a name for the session. For sessions that contain an XIV system, the session name can have up to 58 alphanumeric characters. For sessions that contain other storage system types, the session name can have up to 250 alphanumeric characters. Session names must be unique.

Alternatively, use the dash (-) to specify that input for this parameter comes from an input stream (stdin). The dash is supported only in single-shot mode.

Example: Creating a FlashCopy session

The following command creates a FlashCopy session named session1. The location of the site 1 volume role is Boulder.

```
csmcli> mksess -cptype fc -site1loc Boulder session1
```

The following output is returned:

```
IWNR1021I  Session session1 was successfully created.
IWNR1096I  The locations for sessions session1 and Site 1 were set successfully.
```

Example: Creating a Global Mirror with Practice session for System Storage DS8000

The following command creates a System Storage DS8000 Global Mirror with Practice session named session1.

```
csmcli> mksess -cptype pgm -desc "DS8000 Global Mirror with Practice" session1
```

The following output is returned:

```
IWNR1021I Session session1 was successfully created.
```

Example: Creating a Global Mirror with Practice session for SAN Volume Controller

The following command creates a SAN Volume Controller Global Mirror with Practice session named session1.

```
csmcli> mksess -cptype pgmsvc -desc "SVC Global Mirror with Practice" session1
```

The following output is returned:

```
IWNR1021I Session session1 was successfully created.
```

Example: Creating a Metro Global Mirror session

The following command creates a Metro Global Mirror session named session1.

```
csmcli> mksess -cptype mgm -desc "Metro Global Mirror" session1
```

The following output is returned:

```
IWNR1021I Session session1 was successfully created.
```

Example: Creating a Metro Mirror Failover/Failback session

The following command creates a Metro Mirror Failover/Failback session named session1.

```
csmcli> mksess -cptype mmfofb -desc "Metro Mirror" session1
```

The following output is returned:

```
IWNR1021I Session session1 was successfully created.
```

Example: Creating a Metro Mirror Failover/Failback session for an XIV system

The following command creates a Metro Mirror Failover/Failback session named session1. The location of the site 1 volume role is Tucson and the location of the site 2 volume role is Chicago.

```
 csmcli> mksess -cptype mmfofbxiv -desc "session1 on xiv" -site1loc Tucson
-site2loc Chicago session1
```

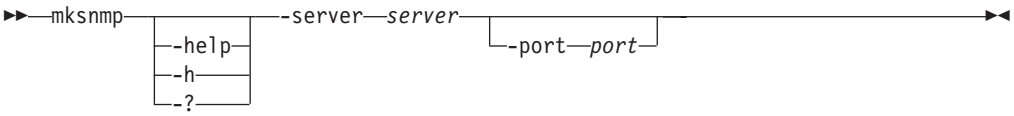
The following output is returned:

```
IWNR1021I  Session session1 was successfully created.
```

mksnmp

Use the **mksnmp** command to add a specified manager to the list of servers to which SNMP traps are sent. SNMP traps are not specific to any particular session. All traps for any session are sent to each server.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-server *server*
Specifies the IP address or domain name of the management server that is to receive SNMP traps.

-port *port*
Specifies a port number to use for receiving SNMP traps. If not specified, the default port is 162.

Example: Sending SNMP traps to a specific management server

The following command sends SNMP traps to the management server with ID 9.11.207.17 and port 2626.

```
csmcli> mksnmp -server 9.11.207.17 -port 2626
```

The following output is returned:

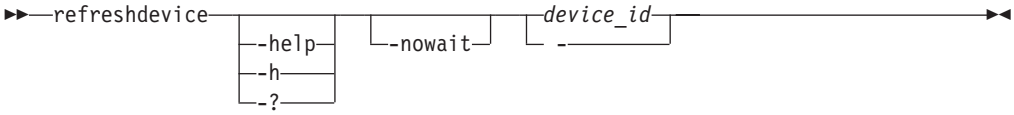
```
IWNR1701I  Host 9.11.207.17:2626 was added to the SNMP listeners list.
```

refreshdevice

Use the **refreshdevice** command refresh the volumes and configuration elements of a storage device.

You must have Administrator privileges to run this command.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-nowait

Specifies that the command response is returned when the command has been submitted and accepted by the server. The command response does not require that the command is completed.

device_id **|** **-**

Specifies the ID of the storage system that you want to refresh.

Alternatively, use the dash (-) to specify that input for this parameter comes from an input stream (stdin). The dash is supported only in single-shot mode.

Tip: To list the valid storage system IDs, use the **lsdevice** command.

Example: Refreshing a System Storage DS8000 (includes the -nowait parameter)

The following command refreshes the storage system DS8000:BOX:2107.02341 before the command has completed.

```
csmcli> refreshdevice -nowait DS8000:BOX:2107.02341
```

The following output is returned when command has been submitted and accepted by the server:

```
IWNH1611I A refresh of the storage configuration has completed
for the storage device DS8000:BOX:2107.02341.
```

rmactive

Use the **rmactive** command to remove an active management server.

Syntax

Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-quiet
Suppresses the confirmation prompt for this command. This flag answers yes to all confirmation prompts.

Description

You can run the **rmactive** command only from the standby management server and only when the active and standby management servers are in a non-synchronized state (such as when they are first connecting).

When a standby and active management servers are synchronized, use the **hatakeover** command.

The **rmactive** command corresponds to the Remove Active action in the GUI. Unless the **-quiet** parameter is used, you are prompted to confirm this action.

Example: Removing the active management server

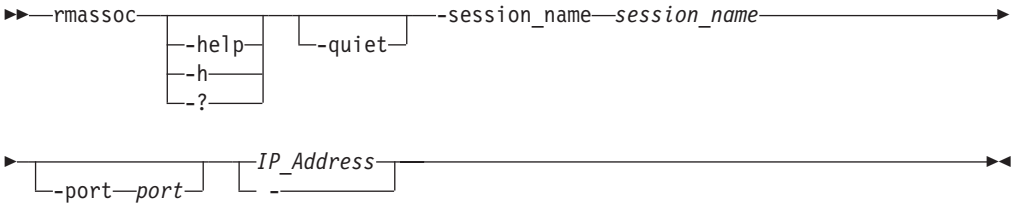
The following command removes the active management server with IP address 127.0.0.1.

```
csmcli> rmactive -server 127.0.0.1
```

rmassoc

Use the **rmassoc** command to remove a session association from the host system; this command removes a session associated with a host system but does not remove the connection to the host system.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-quiet
Suppresses the confirmation prompt for this command. This flag answers yes to all confirmation prompts.

-session_name *session_name*
Specifies the name of the session to remove from the host system.

-port *port*
Specifies the port number for the host system if the system was added with a port other than the default port 9930.

IP_Address **|** **-**
Specifies the IP address or host name of the host system to remove the session from.

Alternatively, use the dash (-) to specify that input for this parameter comes from an input stream (stdin). The dash is supported only in single-shot mode.

Example: Removing a session from a host system

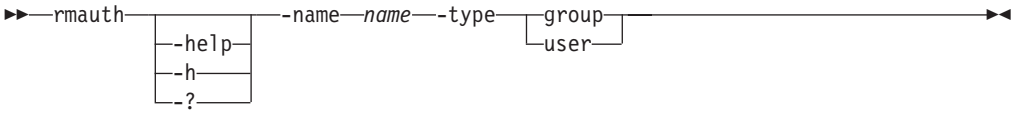
The following command shows how to remove the MyMMsession session from the host system with the 9.11.223.43 IP address. In this example, you could omit the **-port** parameter because port 9930 is the default.

```
csmcli> rmassoc -session_name MyMMsession –port 9930 9.11.223.43
```

rmauth

Use the **rmauth** command to remove monitor, administrator, or operator authorization from a user or user group.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-name *name*
Specifies a user ID or group name from which you remove authorization.

-type group | user
Specifies whether the name is of a user group or user.

Example: Removing authorization for a group

The following command removes authorization from the csmgroup user group.

```
csmcli> rmauth -name csmgroup -type group
```

The following output is returned:

```
Are you sure you want to remove access for user csmgroup? [y/n]:y

IWNR4013I  Successfully revoked access from csmgroup.
```

Example: Removing authorization for a user

The following command removes authorization from the csmuser user.

```
csmcli> rmauth -name csmuser -type user
```

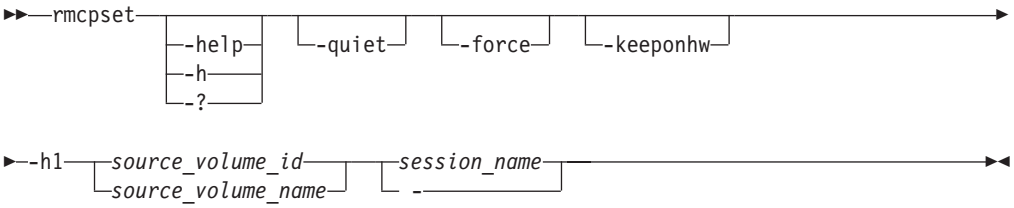
The following output is returned:

```
Are you sure you want to remove access for user csmuser? [y/n]:y

IWNR4013I  Successfully revoked access from csmuser.
```

rmcpset

Use the **rmcpset** command to remove a copy set.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-quiet
Suppresses the confirmation prompt for this command. This flag answers yes to all confirmation prompts.

-force
Forces the removal of the copy set despite any errors that occur when removing the copy set relationships from the storage system. When a forced removal is complete, any relationships that remain on the storage system for that copy set must be removed manually using the storage system interface.

-keeponhw
Specifies that all of the base relationships (Metro Mirror, Global Copy, Snapshot, and FlashCopy) on the storage system are kept even though the copy set is removed from the session. The relationships are removed from any consistency groups that are defined on the storage system.

-h1 {*source_volume_id* | *source_volume_name***}**
Specifies the volume to be removed.

For IBM System Storage DS8000, IBM System Storage DS6000, and IBM TotalStorage Enterprise Storage Server Model 800 storage systems, use the volume ID for this parameter.

For other storage systems, you can use the volume ID or name for this parameter.

session_name | **-**
Specifies the name of the session from which the copy set is being removed.

Alternatively, use the dash (-) to specify that input for this parameter comes from an input stream (stdin). The dash is supported only in single-shot mode.

Example: Removing a copy set

The following command removes the copy set with DS8000:2107.04131:VOL:0A05 source volume in the session1 session without prompting for confirmation.

```
csmcli> rmcpset -quiet -h1 DS8000:2107.04131:VOL:0A05 session1
```

The following output is returned:

```
IWNR1058I  The copy sets for session session1 were deleted.

IWNR2002I  The pair was successfully deleted in session session1 for copy set
DS8000:2107.04131:VOL:0A05 with source DS8000:2107.04131:VOL:0A05 and target
DS8000:2107.04131:VOL:0A06.

IWNR1095I  Copy set DS8000:2107.04131:VOL:0A05 in session session1 was
successfully deleted.
```

Example: Removing a copy set from a session by using the volume nickname

The following command removes the copy set with XIV:VOL:6000646:myvolume source volume in the snap2 session without prompting for confirmation.

```
csmcli> rmcpset -h1 XIV:VOL:6000646:myvolume snap2
```

The following output is returned:

```
IWNR1058I The copy sets for session snap2 were deleted.

IWNR2005I The volume with a volume ID of XIV:VOL:6000646:110789(myvolume) was
successfully removed from the copy set with a source volume ID
of XIV:VOL:6000646:110789 from the session named snap2.

IWNR1095I Copy set XIV:VOL:6000646:myvolume in session snap2 was
successfully deleted.
```

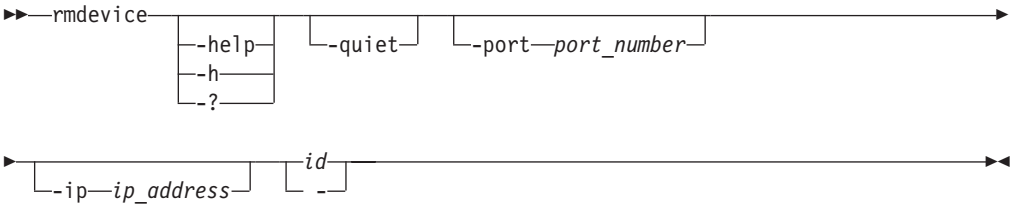
rmdevice

Use the **rmdevice** command to remove a direct connection to a storage system.

To remove a storage system that is attached through a Hardware Management Console (HMC) connection, use the **rmmc** command.

To remove a storage system that is attached through an IBM z/OS connection, use the **rmstorsys** command.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-quiet
Suppresses the confirmation prompt for this command. This flag answers yes to all confirmation prompts.

-port *port_number*
Specifies the port number if a nondefault port number was entered when the storage system was added.

-ip *ip_address*
Specifies the IP address or host name of the node that is used by the following storage systems:

- IBM Storwize V3500
- IBM Storwize V3700
- IBM Storwize V7000 or IBM Storwize V7000 Unified
- IBM System Storage SAN Volume Controller

This parameter is ignored for all other storage systems.

id **|** **-**
Specifies the ID of the storage system to be removed.

Alternatively, use the dash (-) to specify that input for this parameter comes from an input stream (stdin). The dash is supported only in single-shot mode.

Example: Removing an IBM TotalStorage Enterprise Storage Server Model 800

The following command removes the TotalStorage Enterprise Storage Server Model 800 with ID ESS:BOX:2105.18596 without prompting for confirmation.

```
csmcli> rmdevice -quiet ESS:BOX:2105.18596
```

The following output is returned:

```
IWNH1614I The connection at sts596c0:sts596c1 was successfully removed.
```

Example: Removing a SAN Volume Controller

The following command removes the SAN Volume Controller with ID SVC:CLUSTER:RMSVC02 and IP address 127.0.0.1 without prompting for confirmation.

```
csmcli> rmdevice -quiet -ip 127.0.0.1 SVC:CLUSTER:RMSVC02
```

The following output is returned:

```
IWNH1614I  The storage device at 127.0.0.1 was successfully removed.
```

Example: Removing an IBM XIV Storage System

The following command removes the XIV system with ID `XIV:BOX:6000646` without prompting for confirmation.

```
csmcli> rmdevice -quiet XIV:BOX:6000646
```

The following output is returned:

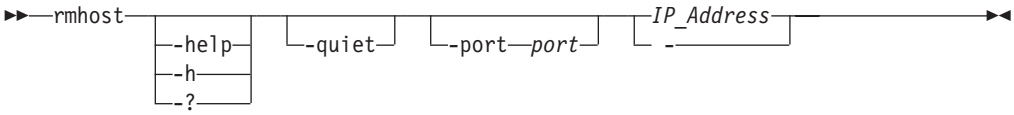
```
IWNH1624I  The storage system XIV:BOX:6000646 was successfully removed.
```

rmhost

Use the **rmhost** command to remove a connection to a host system from the Tivoli Storage Productivity Center for Replication server.

For z/OS host systems, this command is applicable only if Tivoli Storage Productivity Center for Replication is connected to the host system by using an IP address or host name.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-quiet
Suppresses the confirmation prompt for this command. This flag answers `yes` to all confirmation prompts.

-port *port*
Specifies the port number for the host system to be removed if the system was added with a port other than the default port 9930.

IP_Address **|** **-**
Specifies the IP address or host name of the host system to be removed.

Alternatively, use the dash (-) to specify that input for this parameter comes from an input stream (stdin). The dash is supported only in single-shot mode.

Example: Removing host systems

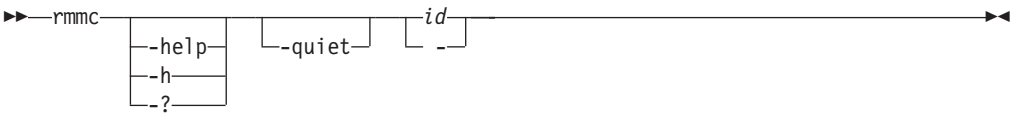
The following command shows how to remove a host system with IP address `192.0.2.0`. In this example, you could omit the **-port** parameter because port 9930 is the default.

```
csmcli> rmhost -port 9930  192.0.2.0
```

rmmc

Use the **rmmc** command to remove a management console.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-quiet
Suppresses the confirmation prompt for this command. This flag answers yes to all confirmation prompts.

id **|** **-**
Specifies the ID of the management console to be removed.

Alternatively, use the dash (-) to specify that input for this parameter comes from an input stream (stdin). The dash is supported only in single-shot mode.

Example: Removing a management console

The following command removes a Hardware Management Console with ID HMC:127.0.0.1 without prompting for confirmation.

```
csmcli> rmmc -quiet HMC:127.0.0.1
```

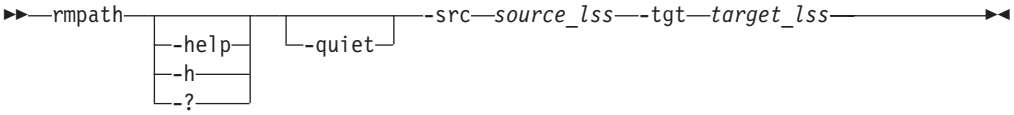
The following output is returned:

```
IWNH1614I  The storage device at HMC:127.0.0.1 was successfully removed.
```

rmpath

Use the **rmpath** command to remove a path or paths between a source logical subsystem (LSS) and a target LSS.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-quiet
Suppresses the confirmation prompt for this command. This flag answers yes to all confirmation prompts.

-src *source_lss*
Specifies the source LSS and port (ESS and DS series storage servers) for the path to be removed. Use the following format: DS/ESS: 2105.20870:12.1.

-tgt *target_lss*
Specifies the target LSS and port (ESS and DS series storage severs) for the path to be removed. Use the following format: DS/ESS: 2105.20870:12.1.

Description

Notes:

- Removing a path removes only the path and ports specified and will not remove any additional paths.
- Only Fibre Channel paths are supported for ESS800, DS6000, and DS8000.

Example: Removing paths

The following command removes the paths between the source LSS `ess:2015.23884:11.4` and a target LSS `ess:2105.23005:11.3`.

```
csmcli> rmpath -src ess:2015.23884:11.4 -tgt ess:2105.23005:11.3
```

The following output is returned:

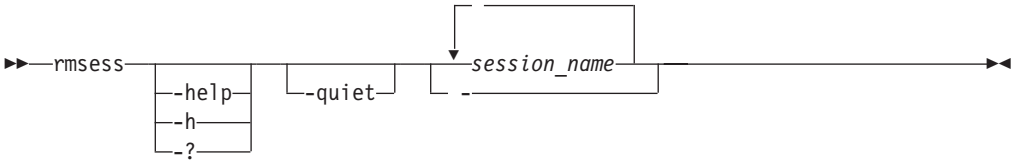
```
Path successfully removed.
```

rmsess

Use the **rmsess** command to remove a session.

Important: You can remove only those sessions that are in the Defined state.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-quiet
Suppresses the confirmation prompt for this command. This flag answers `yes` to all confirmation prompts.

session_name... **|** **-**
Specifies the name of the session to be removed. Separate multiple session names using a blank space.

Alternatively, use the dash (-) to specify that input for this parameter comes from an input stream (stdin). The dash is supported only in single-shot mode.

Example: Removing a session

The following command removes the `session1` session.

```
csmcli> rmsess -quiet session1
```

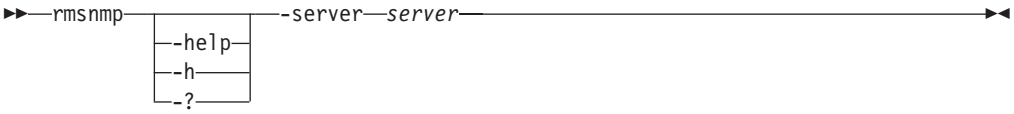
The following output is returned:

```
IWNR1022I  Session session1 was successfully deleted.
```

rmsnmp

You can use the **rmsnmp** command to remove the specified manager from the list of servers to which SNMP traps are sent.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-server *server*
Specifies the IP address or domain name of the server that will no longer receive SNMP traps.

Example: Removing a server from receiving SNMP traps

The following command removes the management server with IP address 127.0.0.1 from receiving SNMP traps.

```
csmcli> rmsnmp -server 127.0.0.1
```

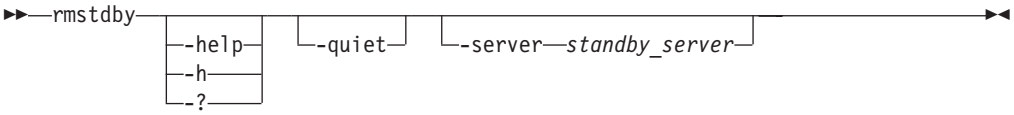
The following output is returned:

```
IWNR1702I  Host 127.0.0.1 was removed from the SNMP listeners list.
```

rmstdby

Use the **rmstdby** command to remove a standby management server.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-quiet
Suppresses the confirmation prompt for this command. This flag answers yes to all confirmation prompts.

-server *standby_server*
The IP address of the standby management server that you are removing.

Example: Removing a standby management server

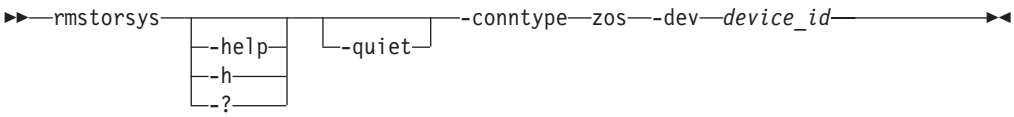
The following command removes the standby management server with IP address 127.0.0.1.

```
csmcli> rmstdby -server 127.0.0.1
```

rmstorsys

Use the **rmstorsys** command to remove a specific storage system and its volumes that are attached to the IBM Tivoli Storage Productivity Center for Replication server from the IBM Tivoli Storage Productivity Center for Replication configuration through a z/OS connection.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-quiet
Suppresses the confirmation prompt for this command. This flag answers yes to all confirmation prompts.

-conntype zos
Specifies the type of connection that the storage systems uses. Currently, you can specify only zos for a z/OS connection.

-dev *device_id*
Specifies the ID of the DS or ESS storage system that is to be removed from the IBM Tivoli Storage Productivity Center for Replication configuration.

Tip: Use the **lsdevice** command to display a list of valid storage system IDs.

Description

Important:

- You must have Administrator privileges to run this command.
- You can run this command only from the IBM Tivoli Storage Productivity Center for Replication server that is installed on a system running the z/OS operating system.
- This command removes only the z/OS connection to the specified storage system. To remove other connection types to the same storage system, use the **rmdevice** or **rmmc** command.

If Tivoli Storage Productivity Center for Replication has multiple connections to a storage system, the order in which you remove the connections produces different results:

- If you remove direct and HMC connections first, the fixed-block and non-attached CKD volumes that are attached through these connection types are removed from the Tivoli Storage Productivity Center for Replication configuration.
- The remaining CKD volumes that are attached through the z/OS host connection remain in the Tivoli Storage Productivity Center for Replication configuration until the z/OS host connection is removed.
- If you remove the z/OS host connection first and there is an HMC or direct connection to volumes, those volumes are not removed from the Tivoli Storage Productivity Center for Replication configuration.

To remove a storage system that is attached through a direct connection, use the **rmdevice** command. To remove a storage system that is attached through an hardware-management-console (HMC) connection, use the **rmmc** command.

Example: Removing the z/OS connection

This example illustrates how to remove the z/OS connection to the storage system with ID `ESS:BOX:2105.12345`.

```
csmcli> rmstorsys -dev ESS:BOX:2105.12345 -conntype zos
```

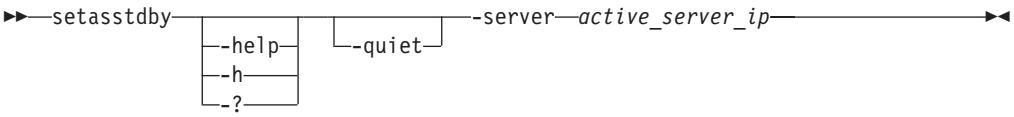
The following output is returned:

```
IWNH1614I  The storage device at ESS:BOX:2105.12345 was successfully removed.
```

setasstdby

Use the **setasstdby** command to set a management server to be the standby management server of another active management server.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-quiet
Suppresses the confirmation prompt for this command. This flag answers `yes` to all confirmation prompts.

-server *active_server_ip*
Specifies the IP address of the active management server for which the local management server is to be the standby server.

Example: Creating a standby management server

The following command sets the local server as a standby management server for the active management server with IP address `127.0.0.1`.

```
csmcli> setasstdby -server 127.0.0.1
```

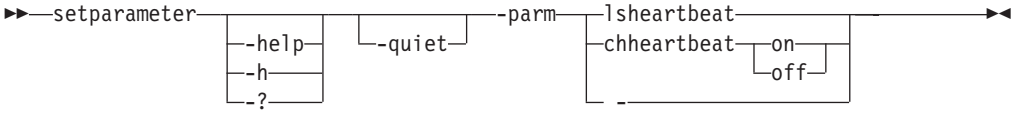
The following output is returned:

```
IWNR3020I  Connection to the active high-availability server at
tpcserver1.tpc.example.com making the server
tpcserver2.tpc.example.com a standby was successful.
```

setparameter

Use the **setparameter** command to set the system parameters.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-quiet
Suppresses the confirmation prompt for this command. This flag answers `yes` to all confirmation prompts.

-parm {lsheartbeat | - chheartbeat { on | off } | -}
Specifies one of these system parameters:

lsheartbeat
Displays whether the Metro Mirror heartbeat is enabled.

chheartbeat { on | off }
Specifies whether the Metro Mirror heartbeat is enabled (on) or not enabled (off).

Alternatively, use the dash (-) to specify that input for this parameter comes from an input stream (stdin). The dash is supported only in single-shot mode.

Example: Listing the Metro Mirror heartbeat status

The following command displays whether the Metro Mirror heartbeat is enabled or disabled.

```
csmcli> setparameter -parm lsheartbeat
```

The following output is returned:

```
The heartbeat function is set on.

IWNR1208I  The heartbeat was retrieved successfully.
```

Example: Enabling the Metro Mirror heartbeat

The following command turns on the Metro Mirror heartbeat.

```
csmcli> setparameter -parm chheartbeat on
```

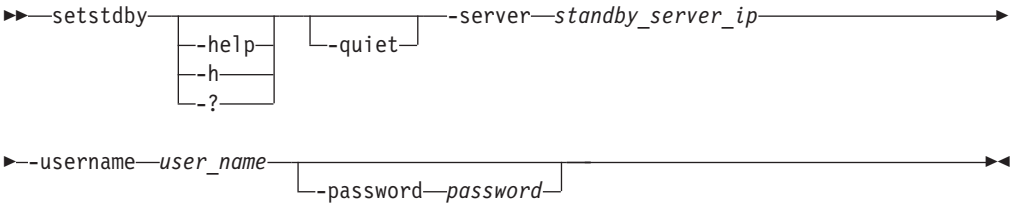
The following output is returned:

```
IWNR1204I  The heartbeat has been successfully turned on with the
hardware.
```

setstdby

Use the **setstdby** command to set the standby management server for an active management server.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-quiet
Suppresses the confirmation prompt for this command. This flag answers yes to all confirmation prompts.

-username *user_name*
Specify the user name for the device.

-password *password*
Specifies this parameter to receive a password prompt. The password will not be visible.

-server *standby_server_ip*
Specify the IP address of the server to be the standby management server for the local management server.

Description

Notes:

- If a standby management server is already defined for the active management server, the previously defined standby management server is replaced by the server specified by this command.
- Only the **hatakeover** command can change a backup server to the active server. High availability (HA) must be active before setting an HA role.

Example: Setting the standby management server

The following command sets the server with IP address 127.0.0.1 as the standby management server for active management server on which this command run without prompting for confirmation.

```
csmcli> setstdby -quiet -server 127.0.0.1 -username csmuser
```

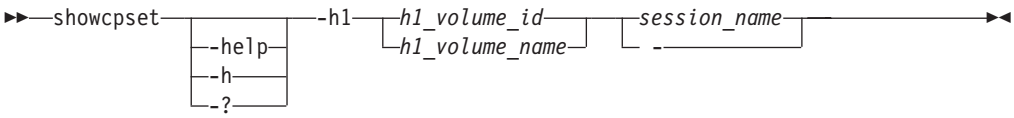
The following output is returned:

```
IWNR3020I  Connection to the active high-availability server at
tpc1.storage.tucson.example.com making the server
tpc2.storage.tucson.example.com a standby was successful.
```

showcpset

Use the **showcpset** command to display properties for a copy set.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-h1 {*h1_volume_id* **|** *h1_volume_name***}**
Specifies the volume at host site 1.

For IBM System Storage DS8000, IBM System Storage DS6000, and IBM TotalStorage Enterprise Storage Server Model 800 storage systems, use the volume ID for this parameter.

For other storage systems, you can use the volume ID or name for this parameter.

session_name **| -**
Specifies the session name to which the copy set belongs.

Alternatively, use the dash (-) to specify that input for this parameter comes from an input stream (stdin). The dash is supported only in single-shot mode.

The following information is listed for the copy set.

Column Label	Details
H1 Volume ID	The ID of the volume at host site 1. This ID is used to identify a copy set in a session. The volume ID is displayed regardless of whether you provide the volume ID or name for the **-h1** parameter.
Session	The session name.
Volumes	The volumes that are associated with the copy set. Output is formatted to show the role and the volume ID for that role in the copy set.
Last Result	The last message that was issued.

Example: Listing copy set properties by using the volume ID

The following command lists the properties for the copy set with the host volume ID `DS8000:2107.NK791:VOL:1500` in the session `session1`:

```
csmcli> showcpset -h1 DS8000:2107.NK791:VOL:1500 session1
```

The following output is returned:

```
H1 Volume ID  DS8000:2107.NK791:VOL:1500
Session       session1
Volumes       H1-DS8000:2107.NK791:VOL:1500, H2-DS8000:2107.MW931:VOL:1500,
              H3-DS8000:2107.04131:VOL:1500, I3-DS8000:2107.04131:VOL:1505,
              J3-DS8000:2107.04131:VOL:150A
```

```
Last result   None

IWNR1500I  Session information about session session1 was successfully obtained.
```

Example: Listing copy set properties by using the volume name

The following command lists the properties for the copy set with the host volume STORWIZE-V7000:VOL:TPCRTBIRD2:CSMRegr_vol08 in the session session2. In this example, the volume name CSMRegr_vol08 is provided for the copy set in the command. The corresponding volume ID is shown in the output.

```
csmcli> showcpset -h1 STORWIZE-V7000:VOL:TPCRTBIRD2:CSMRegr_vol08 session2
```

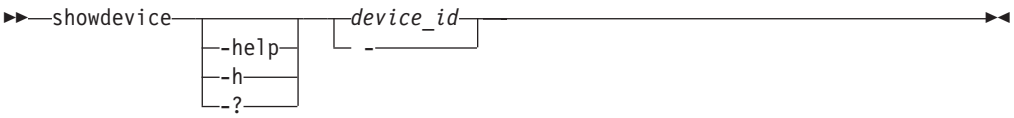
The following output is returned:

```
H1 Volume ID  STORWIZE-V7000:VOL:TPCRTBIRD2:7
Session       session2
Volumes       H1-STORWIZE-V7000:VOL:TPCRTBIRD2:7, T1-STORWIZE-V7000:VOL:TPCRTBIRD2:8
Last result   None

IWNR1500I  Session information about session session2 was successfully obtained.
```

showdevice

Use the **showdevice** command to display storage system properties.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

device_id **|** **-**
Displays a unique identifier for each storage system in IBM Tivoli Storage Productivity Center for Replication. The element ID format, for example ESS:BOX:2105.FCA57, is used to display storage system IDs.

Alternatively, use the dash (-) to specify that input for this parameter comes from an input stream (stdin). The dash is supported only in single-shot mode.

For each storage system, the following information is listed. The connection information for the storage system is designated by the connection type.

General

Column Label	Details
Device ID	The storage system ID.
Device Name	The user-defined name of the storage system.
Device Type	The type of storage system. The values are: DS6000, DS8000, ESS, SAN Volume Controller, STORWIZE-V3500, STORWIZE-V3700, STORWIZE-V7000, and XIV
Manufacturer	The manufacturer of the storage system.

Column Label	Details
Location	The user-defined location associated with the storage system or `None`.

Direct Connect Information

Column Label	Details
Device IP Address	The IP address or host name of the clusters or nodes that are used by the storage system. IBM TotalStorage Enterprise Storage Server Model 800, IBM System Storage DS8000, and IBM System Storage DS6000 use two clusters. Each cluster address is separated by a semicolon. IBM XIV Storage System uses three nodes. Each node address is separated by a semicolon.
User name	The user name for the clusters or nodes that are used by the storage system. For TotalStorage Enterprise Storage Server Model 800, System Storage DS8000, System Storage DS6000, and the XIV system, user names are separated by a semicolon.
Port	The port number of the clusters or nodes that are used by the storage system. For TotalStorage Enterprise Storage Server Model 800, System Storage DS8000, System Storage DS6000, the port number of each cluster is separated by a semicolon. For the XIV system, the port number of each node is separated by a semicolon. For example, `node1_port;node2_port;node3_port`.
Local Server Connection	The state of direct connections to a local management server. For TotalStorage Enterprise Storage Server Model 800, System Storage DS8000, System Storage DS6000, this value shows status of the connection to each cluster separated by a semicolon. For example, `cluster0_status:cluster1_status`. For the XIV system, this value shows the status of each node separated by a semicolon. For example, `node1_status;node2_status;node3_status`.
Remote Server Connection	The state of direct connections to a remote management server. For TotalStorage Enterprise Storage Server Model 800, System Storage DS8000, System Storage DS6000, this value shows the connection status of each cluster separated by a semicolon. For example `cluster0_status:cluster1_status`. For the XIV system, this value shows the connection status of each node separated by a semicolon. For example `node1_status;node2_status;node3_status`.

Management Console Information

Column Label	Details
Management Console Local Server Connection	The state of the hardware management console (HMC) connections to the local management server.
Management Console Remote Server Connection	The state of the HMC connections to the remote management server.
Management Console IDs	The ID of the HMC. If there are dual HMCs, the ID for each HMC is separated by a comma.

z/OS Connection Information

Column Label	Details
z/OS Local Server Connection	The state of the z/OS connections to the local management server.
z/OS Remote Server Connection	The state of the z/OS connections to the remote management server.
z/OS Connection IDs	The ID for the IBM z/OS host system that is used to connect the storage system. If the storage system is connected through multiple host systems, the ID for each host system is separated by a comma.

Example: Listing storage system properties for a direct connection

The following command lists the properties of an XIV system storage system with the ID `XIV:BOX:1234567` and the user-defined name `XIV_B`. The storage system is connected by using a direct connection.

```
csmcli> showdevice XIV:BOX:1234567
```

The following output is returned:

```
Device ID                                   XIV:BOX:1234567
Device Name                                 XIV_B
Device Type                                 XIV
Manufacturer                                IBM
Location                                    xiv_west
Direct Connect Information                  -------------------------
Device IP Address                           tpcserver1.srm1.tpc.example.com;
                                            tpcserver1.srm2.tpc.example.com;
                                            tpcserver1.srm3.tpc.example.com
User Name                                   admin
Port                                        7778;7778;7778
Local Server Connection                     Connected;Connected;Connected
Remote Server Connection                    -
Management Console Information              -------------------------
Management Console Local Server Connection  -
Management Console Remote Server Connection -
Management Console IDs                      -
z/OS Connection Information                 -------------------------
z/OS Local Server Connection                -
z/OS Remote Server Connection               -
z/OS Connection IDs                         -

IWNC4103I  The showdevice command completed successfully.
```

Example: Listing storage system properties for an HMC connection

The following command lists the properties of a System Storage DS8000 storage system with the ID `DS8000:BOX:1234.AB123`. The storage system is connected by using an HMC connection.

```
csmcli> showdevice DS8000:BOX:1234.AB123
```

The following output is returned:

```
Device ID                                   DS8000:BOX:1234.AB123
Device Name                                 -
Device Type                                 DS8000
Manufacturer                                IBM
Location                                    None
Direct Connect Information                  --------------------------
Device IP Address                           -
User Name                                   -
Port                                        -
Local Server Connection                     -
Remote Server Connection                    -
Management Console Information              --------------------------
Management Console Local Server Connection  Connected
Management Console Remote Server Connection -
Management Console IDs                      HMC:Stg8k11.srm3.tpc.example.com
z/OS Connection Information                 --------------------------
z/OS Local Server Connection                -
z/OS Remote Server Connection               -
z/OS Connection IDs                         -

IWNC4103I  The showdevice command completed successfully.
```

Example: Listing storage system properties for an IBM z/OS host connection

The following command lists the properties of a System Storage DS8000 storage system with the ID DS8000:BOX:1234.56789. The storage system is connected by using a z/OS host connection.

```
csmcli> showdevice DS8000:BOX:1234.56789
```

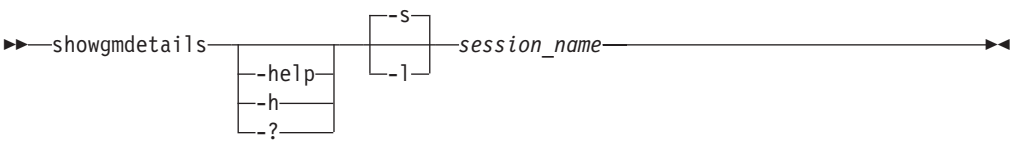
The following output is returned:

```
Device ID                                   DS8000:BOX:1234.56789
Device Name                                 -
Device Type                                 DS8000
Manufacturer                                IBM
Location                                    None
Direct Connect Information                  --------------------------
Device IP Address                           -
User Name                                   -
Port                                        -
Local Server Connection                     -
Remote Server Connection                    -
Management Console Information              --------------------------
Management Console Local Server Connection  -
Management Console Remote Server Connection -
Management Console IDs                      -
z/OS Connection Information                 --------------------------
z/OS Local Server Connection                Disconnected
z/OS Remote Server Connection               -
z/OS Connection IDs                         ZOS:abc68.srm3.tpc.example.com:5858

IWNC4103I  The showdevice command completed successfully.
```

showgmdetails

Use the **showgmdetails** command to display detailed status information for a Global Mirror session. Use this command for only TotalStorage Enterprise Storage Server Model 800, System Storage DS8000, and System Storage DS6000 storage systems only.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-s Displays default information for the Global Mirror session.

-l Displays detailed information for the Global Mirror session, including:

Column label	Details
Session ID	The Global Mirror session ID.
Master LSS	The name of the storage system acting as the Global Mirror master. Includes storage system ID and subsystem ID.
Copy State	Options are: • Running • Paused • Fatal • Pause in Progress
Fatal Reason	Fatal reason code of the Global Mirror session.
CG Time	The time of the last consistency group formation according to the Master Storage system. The format is MM/DD/YYYY HH:MM:SS in 24 hour time. The time is based on a 24-hour clock.
Query Time	The time of the query according to the Master Storage system. The format is MM/DD/YYYY HH:MM:SS in 24 hour time. The time is based on a 24-hour clock.
Data Exposure	The average exposure to data loss, in seconds, over the query interval.
Total Failed CGs	The total number of failed consistency group formation attempts since the Global Mirror session has been in Running state.
Total Successful CGs	The total number of successful consistency group formations since the Global Mirror session has been in Running state.
Failed CG Attempts since last success	The number of failed consistency group formation attempts since the last successful consistency group was formed.
Successful CG Percentage	The total percentage since the Global Mirror session has been in Running state.
CG Interval Time	The interval time between attempts to form a consistency group.
Max Coordination Interval	Extended distance consistency maximum coordination interval.

Column label	Details
Max CG Drain Time	The maximum time the consistent set of data is allowed to drain at the remote site before failing consistency group formation.
Last Failure LSS	Name of the storage system for the most recent failure of the consistency group formation. Includes storage system ID and subsystem ID.
Last Failure Reason	The reason code for the most recent failure of the consistency group formation.
Last Failure Master State	The master state for the most recent failure of the consistency group formation.
Previous Failure LSS	Name of the storage system for the previous failure of the consistency group formation. Includes storage system ID and subsystem ID.
Previous Failure Reason	Reason code for the previous failure of the consistency group formation.
Previous Failure Master State	Master state for the second most recent consistency group formation failure.
Subordinate Count	The number of subordinates for this Global Mirror session.
Subordinate Associations	The subordinate boxes for the master Global Mirror box.

session_name
Specifies the Global Mirror session for which the properties are to be displayed.

Example: Displaying management console properties

The following command displays detailed information for the Global Mirror session gmme.

```
csmcli> showgmdetails -l gmme
```

The following output is returned:

```
Session ID                              0x2

Master LSS                              DS8000:2107.FX102:LSS:71

Copy State                              Running

Fatal Reason                            0x00 Global Mirror Not Fatal

CG Time                                 2010/04/16 23:32:58 EDT

Query Time                              2010/04/16 23:32:58 EDT

Data Exposure                           1.00 s

Total Failed CGs                        1

Total Successful CGs                    725

Failed CG Attempts since last success 0

Successful CG Percentage                99

CG Interval Time                        0 s
```

```
Max Coordination Interval             50 ms

Max CG Drain Time                     30 s

Last Failure LSS                      DS8000:2107.FX102:LSS:71

Last Failure Reason                   0x0FCC XDC starting increment with wrong state
Last Failure Master State             0x4 Global Mirror Start Increment In Progress
Previous Failure LSS                  -

Previous Failure Reason               -

Previous Failure Master State         -

Subordinate Count                     0

Subordinate Associations              -
```

showha

Use the **showha** command to display the high-availability status.

Syntax

Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

Description

This command displays the following information:

Column label	Details
Status	High availability status.
Error	Error message, if applicable

Example: Listing high-availability status

The following command lists the high-availability status.

```
csmcli> showha
```

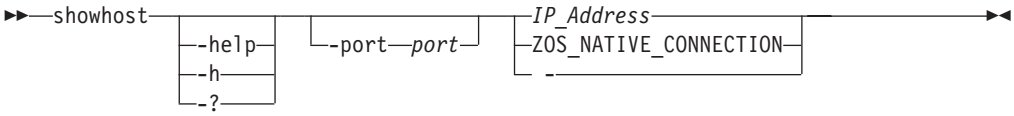
The following output is returned:

```
Status Synchronized
Error  None

 IWNR3048I  The high availability status from server tpcserver1.tpc.example.com
was successfully queried.
```

showhost

Use the **showhost** command to show information about host system connections to the Tivoli Storage Productivity Center for Replication server.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

-port *port*
Specifies the port to use to access the host system if other than the default port. If a port is not specified, the default port is 5858 for z/OS and 9930 for AIX.

IP_Address **| ZOS_NATIVE_CONNECTION | -**
Specifies the IP or host name for the host system or the value ZOS_NATIVE_CONNECTION.

If you want to show information for an AIX host system or a z/OS host system that is connected by using an IP address or host name, enter the IP address or host name for this parameter.

If Tivoli Storage Productivity Center for Replication is installed on the host system, enter ZOS_NATIVE_CONNECTION for this parameter.

Alternatively, use the dash (-) to specify that input for this parameter comes from an input stream (stdin). The dash is supported only in single-shot mode.

The information that is listed for each host system depends on the host system type, as shown in the following tables:

AIX Host Systems

Column Label	Details
IP Address	The IP address or host name for the host system.
Port	The port number for the connection to the host system.
Type	The type of host system.
Local Status	The status of the connection between the Tivoli Storage Productivity Center for Replication server and the host system.

Column Label	Details
Remote Status	In high availability (HA) environments that have an active and standby management server, the status of the connection between the remote Tivoli Storage Productivity Center for Replication server and the host system. If you are running the **lshost** command on the active server, the remote server is the standby server. If you are running the command on the standby server, the remote server is the active server. If the status of a host connection at the remote Tivoli Storage Productivity Center for Replication server cannot be determined, `Unknown` is displayed. This status might be because the HA configuration is disconnected or the status was not sent from the remote Tivoli Storage Productivity Center for Replication server.
Sessions	The sessions that are associated with the host system. Sessions are shown only if the Open HyperSwap feature is enabled for the session.

IBM z/OS

Column Label	Details
IP Address	The IP address or host name for the host system.
Port	The port number for the connection to the host system.
Type	The type of host system. One of the following values is shown: **ZOS_NATIVE** The host is the z/OS system on which Tivoli Storage Productivity Center for Replication is installed. **ZOS_IP** The host is a z/OS system that is connected by using an IP address or host name.
Local Status	The status of the connection between the Tivoli Storage Productivity Center for Replication server and the host system.

Column Label	Details
Remote Status	In HA environments that have an active and standby management server, the status of the connection between the remote Tivoli Storage Productivity Center for Replication server and the host system. If you are running the **lshost** command on the active server, the remote server is the standby server. If you are running the command on the standby server, the remote server is the active server. If the status of a host connection at the remote Tivoli Storage Productivity Center for Replication server cannot be determined, `Unknown` is displayed. This status might be because the HA configuration is disconnected or the status was not sent from the remote Tivoli Storage Productivity Center for Replication server.
System Name	The name of the host system. If there is no connection to the host system, `Unknown` is displayed.
Sysplex Name	Shows the name of the sysplex that the host system is in, if applicable. If there is no connection to the host system, `Unknown` is displayed.
User Name	The user name for the host system. The user name is shown only if the host system is connected by using an IP address or host name.

Example: Showing the connection properties for an AIX host system

The following command lists the connection properties for an AIX host system that is connected by using the IP address `192.0.2.0`.

```
csmcli> showhost 192.0.2.0
```

The following output is returned:

```
IP Address    192.0.2.0
Port          9930
Type          AIX
Local Status  Disconnected
Remote Status -
Sessions      -
```

Example: Showing the connection properties for a z/OS host system that is connected by using an IP address

The following command lists the connection properties for z/OS host system that is connected by using the IP address `192.0.2.1`.

```
csmcli> showhost 192.0.2.1
```

The following output is returned:

```
IP Address    192.0.2.1
Port          5858
Type          ZOS_IP
Local Status  Connected
Remote Status -
System Name   SYSTEM1
Sysplex Name  SYSPLEX1
User Name     ABCUSER
```

Example: Showing the connection properties for a native z/OS host system

If Tivoli Storage Productivity Center for Replication is installed on the z/OS host system, the following command lists the connection properties for the host system.

```
csmcli> showhost ZOS_NATIVE_CONNECTION
```

The following output is returned:

```
IP Address    ZOS_NATIVE_CONNECTION
Type          ZOS_NATIVE
Local Status  Connected
Remote Status -
System Name   SYSTEM2
Sysplex Name  SYSPLEX2
```

showmc

Use the **showmc** command to display the properties of a management console.

Syntax

Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

id **|** **-**
Specifies the management console ID in the element ID format (for example, `HMC:127.0.0.1`).

Alternatively, use the dash (-) to specify that input for this parameter comes from an input stream (stdin). The dash is supported only in single-shot mode.

Description

The following information is listed for the management console:

Column label	Details
Management console ID	The management console ID in the element ID format.
MC IP address	The IP address or domain name of the management console. For dual management console configurations the IP addresses or domain names are separated by semicolon; for example `192.0.2.0;192.0.2.1`.
Device Type	Device Type (HMC)
Location	User-defined location associated with the management console, or `None`.
User name	The user name for the management console.
Local Connection Status	The state of the connection to the local management server.

Column label	Details
Remote Connection Status	The state of the connection to the remote management server.
Attached Devices	The devices that are attached to this management console.

Example: Displaying management console properties

The following command displays the properties of the management console with ID HMC:127.0.0.1.

```
csmcli> showmc HMC:127.0.0.1
```

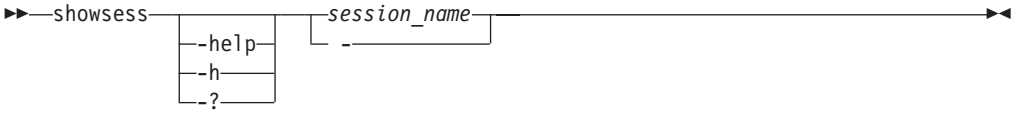
The following output is returned:

```
Management Console ID     HMC:127.0.0.1
MC ID address             127.0.0.1
Device Type               HMC
Location                  tucson
User name                 admin
Local Connection Status   Connected
Remote Connection Status  -
Attached Devices          DS8000:BOX:2107.BRXXX,DS8000:BOX:2107.BRXXX,
                          DS8000:BOX:2107.FNXXX
```

showsess

Use the **showsess** command to display properties for a selected session, including name, description, group managed, and copy type.

Syntax



Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

session_name **|** **-**
Specifies the session for which the properties are to be displayed.

Alternatively, use the dash (-) to specify that input for this parameter comes from an input stream (stdin). The dash is supported only in single-shot mode.

Description

For each session, the following information is listed:

Column Label	Details
Name	Session name.

Column Label	Details

Type	Session type. Values include:
	`FlashCopy`
	`Basic HyperSwap`
	`Metro Mirror Single Direction`
	`Metro Mirror Practice`
	`Metro Mirror Failover/Failback`
	`Global Mirror Single Direction`
	`Global Mirror Practice`
	`Global Mirror Failover/Failback`
	`Global Mirror Either Direction w/ Two Site Practice`
	`Global Mirror Failover/Failback w/ Change Volumes`
	`Metro Global Mirror`
	`Metro Global Mirror w/ Practice`
	`Snapshot`

State	Session state. Values include:
	`Defined`
	`Flashing`
	`Preparing`
	`Prepared`
	`Recovering`
	`Suspended`
	`SuspendedH2H3`
	`SuspendedH1H3`
	`Suspending`
	`TargetAvailable`
	`Terminating`

Status	Session status. Values include:
	`Unknown`
	`Normal`
	`Warning`
	`Error`
	`Inactive`

Locations	A list of the locations that are associated with the session.
Copy sets	The number of copy sets that the session is managing.
Copying	An indicator of whether a copying operation is occurring. Values are `Yes` or `No`.
Recoverable	An indicator of whether the session is recoverable. Values are `Yes` or `No`.
Active host	Name of the active host.
Error Count	Number of errors for all roles.
Description	Session description that you define.

Example: Listing session properties for a Metro Global Mirror with Practice session

The following command lists properties for the session named `session1`.

```
csmcli> showsess session1
```

The following output is returned:

```
Name            session1
Type            Metro Global Mirror w/ Practice
State           Defined
Status          Inactive
Locations       Site1, Site2, Site3
Copy Sets       10
Copying         No
Recoverable     No
Active Host     H1
Error Count     0
Description     -
Transitioning   No
Detailed Status -

IWNR1500I  Session information about session session1 was successfully obtained.
```

Example: Listing session properties for an XIV system Snapshot session

The following command lists properties for the session named session1.

```
csmcli> showsess session1
```

The following output is returned:

```
Name                 session1
Type                 Snapshot
State                Target Available
Status               Active
Locations            Site1
Copy Sets            10
Copying              No
Recoverable          Yes
Active Host          H1
Error Count          0
Description          -
Transitioning        No
H1 Pool              XIV:POOL:12345:67890
H1 Consistency Group session1
Detailed Status      -

IWNR1500I Session information about session session2 was successfully obtained.
```

Example: Listing session properties for an XIV system Metro Mirror session

The following command lists properties for the session named session1.

```
csmcli> showsess session1
```

The following output is returned:

```
Name                 session1
Type                 Metro Mirror Failover/Failback
State                Prepared
Status               Active
Locations            Site1, Site2
Copy Sets            10
Copying              Yes
Recoverable          Yes
Active Host          H1
Error Count          0
Description          -
Transitioning        No
H1 Pool              XIV:POOL:12345:67890
H2 Pool              XIV:POOL:12345:67890
H1 Consistency Group session1
```

```
H2 Consistency Group session1
Detailed Status      -

IWNR1500I Session information about session session1 was successfully obtained.
```

Example: Listing session properties for an XIV system Global Mirror session

The following command lists properties for the session named session1.

```
csmcli> showsess session1
```

The following output is returned:

```
Name                 session1
Type                 Global Mirror Failover/Failback
State                Prepared
Status               Active
Locations            Site1, Site2
Copy Sets            10
Copying              Yes
Recoverable          Yes
Active Host          H1
Error Count          0
Description          -
Transitioning        No
H1 Pool              XIV:POOL:12345:67890
H2 Pool              XIV:POOL:12345:67890
H1 Consistency Group session1
H2 Consistency Group session1
Detailed Status      -
WNR2750E Recovery Point Objective for session session1 has passed the threshold
of 30 seconds.
IWNR1500I Session information about session session1 was successfully obtained.
```

ver

Use the **ver** command to display the current version of IBM Tivoli Storage Productivity Center for Replication.

Syntax

Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

Example: Displaying the current version

The following command displays the current version of IBM Tivoli Storage Productivity Center for Replication that is running on the local system.

```
csmcli> ver
```

The following output is returned:

```
Tivoli Storage Productivity Center for Replication Command Line
Interface (CLI)
Copyright 2013 IBM Corporation
Version: 4.1.1
Build: g100-090804
```

whoami

Use the **whoami** command to show the name of the user that is logged on.

Syntax

Parameters

-help | -h | -?
Lists help for the command. If you specify additional parameters and arguments, those parameters and arguments are ignored.

Example: Displaying the current user name

The following command displays the name of the current user.

```
csmcli> whoami
```

The following output is returned:

```
Currently logged in as administrator
Server: server1
Port: 9560
Authentication file: null
```

Command aliases

This topic discusses command aliasing.

With aliasing, you define a name for the alias followed by a value that is the name of a command and any options associated with command. The aliased command string is replaced by the defined value and the entire line is reparsed. Passwords used in aliased commands must first be encrypted using the **encrypt** command.

Aliased commands are saved in the command configuration file. The default configuration file is c:\program files\ibm\tpc\cli\libs\tpccli.conf.

For example, to shorten a frequently used command, you can define the following alias:

```
tpctool>lsperf = lsdev -user dsadmin -pwd 1ac75d82784ce0a327d45289604ae7b227
-url 9.44.33.126:8990 -fabric -perf
```

After the alias is defined, you can run the **lsperf** command to run the aliased **lsdev** command previously displayed.

You can provide a short form command targeting different device servers, as follows:

```
tpctool>lsperfd1 = lsdev -user dsadmin -pwd 1ac75d82784ce0a327d45289604ae7b227
-url hostOne:9161 -perf

tpctool>lsperfd2 = lsdev -user dsadmin -pwd 1ac75d82784ce0a327d45289604ae7b227
-url hostTwo:9161 -perf
```

You can specify additional options and arguments for an aliased command:

```
tpctool>lsperfd2 -fabric -ctype port
```

The command is expanded as follows:

```
tpctool>lsdev -user dsadmin -pwd 1ac75d82784ce0a327d45289604ae7b227
-url hostTwo:9161 -perf -fabric -ctype port
```

You can also nest aliases:

```
tpctool>lsperf = lsdev -user dsadmin -pwd 1ac75d82784ce0a327d45289604ae7b227
-url hostTwo:9161 -perf -fabric

tpctool>lsperfd1 = lsdev -user dsadmin -pwd 1ac75d82784ce0a327d45289604ae7b227
-url hostOne:9161

tpctool>lsperfd2 = lsdev -user dsadmin -pwd 1ac75d82784ce0a327d45289604ae7b227
-url hostTwo:9161
```

To unset an alias, type the name of the command alias followed by the '=' sign:

```
lsperf =
```

Parameter aliases

This topic lists common parameters and their aliases.

The following list shows parameters and their corresponding aliases.

-pwd Password. The password is automatically encrypted using the same encryption algorithm as the **password** command before being stored in the config file. In conjunction with the interactive mode, this enables secure password encryption (plain text passwords will not appear in a command line).

-url URL

-fs Field-separator

-silent Suppress-output

-header
Show-header

-l Long

-dev subsystem

-fabric Fabric

-svr Server

Appendix A. Accessibility features for Tivoli Storage Productivity Center

Accessibility features help users who have a disability, such as restricted mobility or limited vision, to use information technology products successfully.

Accessibility features

The following list includes the major accessibility features in IBM Tivoli Storage Productivity Center:

- Keyboard-only operation in the stand-alone GUI and the web-based GUI. Restriction: In the stand-alone GUI, you must use the mouse to navigate the Topology Viewer and report graphs.
- Interfaces that are commonly used by screen readers.
- An information center that includes the following accessibility features:
  - The information center is provided in XHTML 1.0 format, which is viewable in most web browsers. With XHTML, you can view documentation according to the display preferences that are set in your browser. XHTML supports screen readers and other assistive technologies.
  - All documentation for Tivoli Storage Productivity Center is available in Adobe Portable Document Format (PDF) by using the Adobe Acrobat Reader. You can access the PDFs from the Printable PDFs topic in the information center at http://publib.boulder.ibm.com/infocenter/tivihelp/v59r1/index.jsp.
  - All images in the information center are provided with alternative text, so that visually impaired users can understand the contents of the images.

Keyboard navigation in the stand-alone GUI

The stand-alone GUI uses standard Microsoft Windows navigation keys. However, you must use the mouse to navigate the Topology Viewer and report graphs. Standard operating system keystrokes are used for standard operating system operations.

Keyboard navigation in the web-based GUI

Most of the features of the web-based GUI are accessible by using the keyboard. For those features that are not accessible, equivalent function is available by using the command-line interface (CLI), except as noted in the product release notes.

You can use keys or key combinations to perform operations and initiate many menu actions that can also be done through mouse actions. The following sections describe the keys or key combinations for different parts of the web-based GUI:

For navigating the web-based GUI and the context-sensitive help system:

- To navigate to the next link, button, or topic within a panel, press Tab.
- To move to the previous link, button, or topic within a panel, press Shift+Tab.
- To select an object, when the object is in focus, press Enter.

For actions menus:

- To navigate to the grid header, press Tab.

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- To reach the drop-down field, press the Left Arrow or Right Arrow key.
- To open the drop-down menu, press Enter.
- To select the menu items, press the Up Arrow or Down Arrow key.
- To start the action, press Enter.

For filters:

To specify a filter option and text:

1. Press Tab to navigate to the magnifying glass icon.
2. Press the Up Arrow or Down Arrow key to navigate the filtering list.
3. Press Enter to select a filtering option.
4. When a filtering option is selected, the cursor moves to the filter text box. Type the filter text and press Enter. To reset a filter, press Enter.

For text fields:

- To navigate to text fields, press Tab.
- To navigate to the fields that are available for editing, press Tab.
- To navigate to the next field or to the **Submit** button, press Tab.

For tables or lists:

- To navigate between column headers, focus on a column header and use the Left Arrow and Right Arrow keys to move to other column headers.
- To navigate between data cells, focus on a data cell and use the Left, Right, Up, Down, Pageup, and Pagedown Arrow keys.
- To sort a column, focus on a column header and press Enter. The focus remains on the column header after the sort occurs.
- To change the size of a column, focus on the column header, hold Shift+Control, and press the Left or Right Arrow keys.
- To follow a link in a data cell, focus on a data cell and press Shift+F9.
- To open a menu for a table row, focus on the row and press Shift+F10.
- To select consecutive rows, select the first row and hold Shift, press the Up or Down Arrow keys to go to the last row in the range, and press the Space bar to add the new rows to the selection.
- To select non-consecutive rows, select a row and hold Control, press the Up or Down Arrow keys, and press the Space bar to add the new row to the selection.

Restriction: For Chinese languages, the keyboard combination Control+Space bar is not enabled for selecting multiple rows at the same time.

IBM and accessibility

For more information about IBM's commitment to accessibility, see the IBM Human Ability and Accessibility Center website at http://www.ibm.com/able/.

Appendix B. Accessibility features for Tivoli Storage Productivity Center for Replication

Accessibility features help users who have a disability, such as restricted mobility or limited vision, to use information technology products successfully.

The following list includes the major accessibility features in Tivoli Storage Productivity Center for Replication:

- Keyboard-only operation
- Interfaces that are commonly used by screen readers
- Keys that are discernible by touch but do not activate just by touching them
- Industry-standard devices for ports and connectors
- The attachment of alternative input and output devices

For more information about the commitment that IBM has for accessibility, see the IBM Human Ability and Accessibility Center website at www.ibm.com/able.

Accessibility and keyboard shortcuts in the information center

Accessibility features help users with physical disabilities, such as restricted mobility or limited vision, to use software products successfully. Using the major accessibility features in this product, users can perform these tasks:

- Use assistive technologies, such as screen-reader software and digital speech synthesizer, to hear what is displayed on the screen. Consult the product documentation of the assistive technology for details on using those technologies with this product.
- Operate specific or equivalent features by using only the keyboard.
- Magnify what is displayed on the screen.

In addition, the documentation was modified to include the following features to aid accessibility:

- All documentation is available in HTML formats to give the maximum opportunity for users to apply screen-reader software technology.
- All images in the documentation are provided with alternative text so that users with vision impairments can understand the contents of the images.

Use the following key combinations to navigate the interface by keyboard:

- To go directly to the Topic pane, press Alt+K, and then press Tab.
- In the Topic pane, to go to the next link, press Tab.
- To go directly to the Search Results view, press Alt+R, and then press the Enter or Up-Arrow key to enter the view.
- To go directly to the Navigation (Table of Contents) view, press Alt+C, and then press the Enter or Up-Arrow key to enter the view.
- To expand and collapse a node in the navigation tree, press the Right and Left-Arrow keys.
- To move to the next topic node, press the Down-Arrow or Tab key.
- To move to the previous topic node, press the Up-Arrow key or Shift+Tab.
- To go to the next link, button, or topic node from inside on of the views, press Tab.

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- To scroll all the way up or down in a pane, press Home or End.
- To go back, press Alt+Left Arrow; to go forward, press Alt+Right Arrow.
- To go to the next pane, press F6.
- To move to the previous pane, press Shift+F6.
- To print the active pane, press Ctrl+P.

Related accessibility information for sight-impaired users

The following list contains hints and tips that can help you more fully use the graphical user interface:

Drop-down lists are positioned directly over or before the radio button that activates it.

If you use a screen reader, you should be aware that there are radio buttons to activate drop-down lists for several GUI pages. The way to activate the drop-down list is by selecting the associated radio button. The drop-down list is positioned directly over or before the radio button that activates it. When you use a screen reader that processes the fields and controls of a page sequentially, you might select the radio button, but not know that the associated drop-down list has been activated. The screen reader processes inactive drop-down lists first, and then processes the next radio button. The drop-down list is activated if you select the radio button.

On the following pages, keep in mind that radio buttons activate a drop-down list:
- Administration
- ESS/DS Paths
- Sessions
- Session Details
- Storage Systems

Tables are best understood by reviewing the surrounding text and the table row and column number of the table.

On some graphical user pages, tables use the header or row ID attributes when reading a single cell. The screen reader reads the table row and column number, along with cell data. Therefore, you can infer the column header and row ID.

Experiment with and fine-tune the way your screen reader pronounces some of the product abbreviations.

Your screen reader might pronounce abbreviations as if they were words. For example, the common abbreviation for Enterprise Storage Server is ESS. Your screen reader might read ESS as the word "ess". With some screen readers you can hear alternate pronunciations. If you frequently use the software you might prefer to fine-tune such associations in your settings. When an association is created, the screen reader can recognize the abbreviation as a word. If you can add dictionary words with your screen reader, replace the capitalized character sequence with the sequence E space S space S.

Typically, this abbreviation is used in the combination form of ESS/DS. This term refers to the Enterprise Storage Server 800, the DS6000, or the DS8000.

Some decorative artifacts might persist if the cascading style sheet is disabled.

Enable cascading style sheets when possible; otherwise, some decorative elements might persist in the web browser GUI. These artifacts do not affect performance. If they become too distracting, consider using the command-line interface instead.

For efficiency, confirmation dialogs place initial focus on the Yes button.

When a confirmation dialog box is displayed, focus is given to the **Yes** button. Therefore, the screen reader reads "Yes" but does not read the confirmation text. The software processes the information in this way when you do the following types of tasks:

- Perform an action on a session
- Remove a connection to a storage system
- Click the **About link**
- Create a high-availability connection

To read the confirmation text before clicking the **Yes**, **No**, or **OK** button, view the previous heading before the button.

Dojo components are not read by all screen readers.

The Job Access for Windows and Speech (JAWS) screen reader does not read some Dojo components on Windows Internet Explorer. Use the command-line interface instead of the GUI with JAWS on Windows Internet Explorer.

Firefox is the preferred browser for use with a screen reader.

Use Firefox as the screen reader because other browsers might not fully expose assistive technology content to the screen reader.

Glossary

A glossary is available with terms and definitions for the IBM Tivoli Storage Productivity Center family of products.

You can view the glossary in the IBM Tivoli Storage Productivity Center Information Center at http://publib.boulder.ibm.com/infocenter/tivihelp/v59r1/index.jsp.

To view glossaries for other IBM products, see http://www.ibm.com/software/globalization/terminology/.

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