Oracle Flash Storage System

CLI Reference

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Oracle FS1-2 Flash Storage System release 6.1
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Contents

List of Tables

Preface

Oracle Resources

Table 1: Oracle resources

For help with...	Contact...
Support	*http://www.oracle.com/support* (www.oracle.com/support)
Training	*https://education.oracle.com* (https://education.oracle.com)
Documentation	• *Oracle Help Center*: (http://www.oracle.com/goto/FSStorage/docs) • From Oracle FS System Manager (GUI): Help > Documentation • From Oracle FS System HTTP access: (http://system-name-ip/documentation.php where system-name-ip is the name or the public IP address of your system)
Documentation feedback	*http://www.oracle.com/goto/docfeedback* (http://www.oracle.com/goto/docfeedback)
Contact Oracle	*http://www.oracle.com/us/corporate/contact/index.html* (http://www.oracle.com/us/corporate/contact/index.html)

Command Syntax Conventions

Table 2 : Typography to mark command syntax

Typographic symbol	Meaning
[ ]	Square brackets. Delimits an optional command parameter or a set of optional command parameters.
{ }	Braces. Delimits a set of command parameters, one of which must be selected.
|	Vertical bar. Separates mutually exclusive parameters.
...	Ellipsis. Indicates that the immediately preceding parameter or group of parameters can be repeated.

Table 2 : Typography to mark command syntax

Typographic symbol	Meaning
monospace	Indicates the name of a command or the name of a command option (sometimes called a *flag* or *switch*).
italic	Indicates a variable for which you need to supply a value.

Command parameters that are not enclosed within square brackets ([ ]) are required.

Important: The above symbols (and font styling) are based on the POSIX. 1-2008 specification. These symbols are used in the command syntax only to clarify how to use the command parameters. *Do not enter these symbols on the command line.*

CHAPTER 1

Installing the FSCLI Application

Install the Oracle FS CLI Software

Before using the Oracle FS CLI software, you need to install the software on your local workstation.

Prerequisite: If the Oracle FS CLI software is installed on a local workstation that is outside a firewall surrounding the Oracle FS System, make sure that the TCP port 8083 in the firewall is open. If TCP port 8083 is not open, TCP/IP traffic is not allowed between the local workstation and the Pilot.

You need to download and extract platform-specific Oracle FS CLI archive file (`tar` or `ZIP`) before you can install theOracle FS CLI software.

Note: For optimal performance , install the Oracle FS CLI only on a local disk drive. Issuing commands from Oracle FS CLI on a remote, network-mounted filesystem can cause significant performance issues.

1. On your local workstation, browse to the location where you want to install the Oracle FS CLI (for example on Windows, `C:\` or `C:\Program Files`).
2. (Optional): You can create a subfolder for the Oracle FS CLI software. For Windows, to create the `FSCLI` subfolder, you can run the following command:
   ```
   C:\ mkdir FSCLI
   ```
3. Download the Oracle FS CLI archive file (`tar` or `ZIP`) from Management Software > Oracle Command Line Interface on your Oracle FS System website (for example, `http://`*`oraclefssystem`*, where *oraclefssystem* is the name of your Oracle FS System).
4. Using a platform-specific extraction tool, extract the downloaded Oracle FS CLI archive file into the created `FSCLI` folder you created on your local workstation.
5. (Optional): Add the Oracle FS CLI installation folder to the `Path` system environment variable which is described in this document.

CHAPTER 2

Global Command Line Options

Global Options

The Oracle FS CLI management software provides a set of command line options that apply to all commands.

For example:

- One set of options allows you to query for the syntax of a command or to verify the syntax of a fully formed command.
- Another set of options allows you to differentiate among multiple `fscli` sessions or among multiple Oracle FS Systems.
- Another set of options allows you to manage the output of a command.

Command Global Options

Some global options can be used when entering an `fscli` command that does not include a subcommand. These command global options allow you to discover the syntax for a command.

-help	Displays command usage and additional help about the command.
-usage	Returns a summary of the subcommands that are available for this command.

Example:

```
$ fscli account -usage
```

Subcommand Global Options

Some global options can be used when entering an `fscli` command that includes one of the subcommands. These subcommand global options allow you to discover the syntax for the included subcommand.

The following global options can be used for `fscli` command-subcommand pairs that do not include other command-line options:

-help	Returns the context-sensitive help for the specified subcommand.

-usage — Returns the subcommand syntax for the given command, including all of the options that are available for the command-subcommand pair.

Example:
```
$ fscli account -forgotPassword -help
```

Complete Command Global Options

Some global options can be used when entering an `fscli` command that is complete. These global options for fully formed commands allow you to manage a variety of runtime aspects of a command, including having the system verify its formulation.

The following global options can be used for fully formed `fscli` commands:

-example — Returns sample output from the specified command.

Note: To see the output in XML format, include the -o xml option.

-timeout *timeout-in-seconds* — Specifies the length of time (*timeout-in-seconds*) that the command line interface waits before another command is allowed to run. If the command takes longer to run than the specified time limit, the system continues processing the command, but the command prompt is made available so that you can issue another command. If the -timeout option is omitted, the command line interface blocks until the one of the following conditions is met:

- The command completes successfully.
- The command returns with an error.
- The session times out.

Note: Be sure to check the state of the system after initiating a long running command with the -timeout option. Many `fscli` commands run a series of underlying commands in sequence. When the timeout value is reached before all of the underlying commands have completed, the `fscli` command does not complete with the outstanding tasks reporting a failure status.

-outputformat | **-o** { **text** | **xml** } — Controls the type of the output the system returns from a command. If the -outputformat option is not included, the format of the output defaults to simple text. If *xml* is provided, the output is a collection of XML elements.

Note: For XML output, if internal errors occur during command execution, each error is included in a separate `<ErrorList>` tag.

Tip: The -outputformat option has no effect when used with the following commands:

`storage_allocation -list`	The output format is always XML.
`topology -download -topoMap`	The output format is always simple text.

For both commands, -outputformat can be included to provide consistency across all subcommands.

`-verify`

Inspects the validity of the command syntax, not the semantics. Used to test the structure of a command without running the command. Does not determine whether errors would be produced if you issue a structurally correct command with the input provided.

`-sessionkey`

Directs the CLI to prompt you to supply a session key when you issue the command. The CLI displays `Sessionkey:` as the prompt. To obtain a session key, log in with the -returnKey option specified. After the session is established, the session key is displayed in STDOUT. If you request a session key, the -sessionkey option is required syntax for all commands that are issued in a given session. In environments with more than one Oracle FS System, the session key is used to determine to which Oracle FS System to direct the command for validation. Session keys are also used to establish two or more CLI sessions when using a shared administrator account.

`-u` *admin-user* **`-oracleFS`** *oracle-fs-system*

Routes the command to a particular Oracle FS System for execution. This option passes the name of the administrator account to use when opening the session on the specified system. Identify a specific Oracle FS System by its IP address or by the name that is recorded in the domain name system (DNS). When logging in to the Oracle FS System using the -u option and the -oracleFS option, the `fscli` application prompts you for a password on the command line interface for access. The Oracle FS System and the account login information are used to authenticate the current session. Establishing a login session by specifying an Oracle FS System and an account does not change the credentials that are

associated with the active sessions that are running on other clients.

CAUTION: Oracle recommends that you not use the Cygwin command line interface to run the `fscli` application on Windows platforms. If you are running the Cygwin interface and include the -u option as a part of the `-list` subcommand, the password for the specified account is included in the results. Exposing the password can cause a breach in security.

Example:

```
$ fscli hostgroup -list -details -example -outputformat xml
```

CHAPTER 3

FSCLI Command Reference

account

Manages administrator accounts and displays information used to monitor administrator sessions.

SYNOPSIS

`account { [ -add | -delete | -forgotPassword | -list | -modify | -resetPassword] | [ -usage | -help ] }`

DESCRIPTION

The following default accounts are pre-configured for the Oracle FS System:

`/administrator`	Authorized to run all Oracle FS CLI commands except for the commands that are restricted to Oracle Customer Support. This account is authorized to modify any other account, including the Oracle Customer Support account. The default password for the Administrator account is *pillar*.
`/pillar`	Authorized to run specialized support operations as Oracle Customer Support. Oracle support representatives cannot access or make changes to customer data or configurations, and cannot access, create, or change any administrator-defined accounts. The default password for the Oracle Customer Support (pillar) account is *pillar*.

Note: Default accounts cannot be disabled or deleted.

SUBCOMMANDS

`-add`	Creates an account.
`-delete`	Deletes the specified account.
`-forgotPassword`	Instructs the Oracle FS System to send a password recovery token to the email address that is associated with the specified account.
`-list`	Displays information about account sessions and account settings.
`-modify`	Changes account settings.

-resetPassword Resets the password for the specified account using the password recovery token.

EXAMPLE

Task	Create a new administrator account.
Parameters	• Name of the account: **flash_store_admin** • Role: admin1 • Password duration in days: 180

```
$ fscli account -add -name flash_store_admin -role
admin1 -passwordDuration 180
```

Related Links

account -add

account -delete

account -forgotPassword

account -list

account -modify

account -resetPassword

account -add

Creates an account.

SYNOPSIS

```
account -add
   -name account-name
   -role {admin1 | admin2 | monitor | support}
   [-email email-address]
   [-phone phone-number]
   [{-enable | -disable}]
   [-fullName full-name]
   [-passwordDuration duration-in-days]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

The **account -add** command creates additional accounts. To base a new account on an existing account, run the **account -list -account *account-id-or-fqn* -details** command to obtain information about the roles and other settings that are currently defined for the account that you want to replicate.

Note: Only administrators with primary administrator or admin1 roles are authorized to run the account -add command.

OPTIONS

-name Specifies the name of the account.Use double quotation marks around names containing dashes.

The following characters are invalid in an account name:

- Non-printable characters, including ASCII 0 through 31.
- / (slash) and \ (backslash)
- . (dot) and .. (dot-dot)
- Tabs or spaces

The Oracle FS System removes leading spaces and trailing spaces. Names are case sensitive.

-role Specifies the permissions that are granted to users of the account. To specify permissions, assign one of the following roles:

admin1 Authorizes the administrator to perform the following types of tasks:

- Administration
- Configuration
- Recovery

admin2 Authorizes the administrator to perform all administrative tasks that an *admin1* role can perform *except* for the following tasks:

- Create, modify, or delete administrator accounts
- Modify Call-Home settings.
- Create, modify, or delete LUNs, File Servers, and filesystems.
- Modify system-wide settings.
- Modify software configurations
- Modify hardware configurations.
- Shut down the Oracle FS System.

monitor Authorizes the administrator to perform read-only tasks and to modify the attributes of their account.

support	Authorizes the administrator to perform support operations as instructed by Oracle Customer Support. This role does not authorize the administrator to modify or delete data resources, system alerts, or administrator accounts.

-email Specifies the email address of the account owner. The Oracle FS System does not verify the validity of the email address.

Important: An email address is required to allow accounts to recover their passwords.

-phone Specifies the phone number of the account owner. The Oracle FS System does not verify the validity of the phone number.

-enable Specifies that the new account is enabled when the system creates the account. If not specified, the account is enabled by default.

-disable Specifies that the new account is disabled when it is created. If not specified, the account is enabled by default.

-fullName Specifies the name of the account owner. If the full name contains spaces, enclose the entire name inside double quotation marks. For example: *"Tyler Leslie Mendoza"*.

-passwordDuration Specifies the number of days that the password that the administrator provides is valid. When the password expires, the Oracle FS System prompts the account user to provide a new password.

EXAMPLE

Task	Create a new administrator account.
Parameters	• Name of the account: **flash_store_admin** • Role: admin1 • Password duration in days: 180

```
$ fscli account -add -name flash_store_admin -role
admin1 -passwordDuration 180
```

Related Links

account

account -delete

Deletes the specified account.

SYNOPSIS

```
account -delete
   -account account-id-or-fqn [,account-id-or-fqn]...

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Administrators with a role of Administrator 1 can delete any account *except* for the `/administrator` account, the `/pillar` account, and any account that is in use. The Primary administrator account cannot disable or delete the `/administrator` or `/pillar` accounts.

Note: When temporarily disabling an account, run the **`account -modify -disable`** command instead of deleting the account and then adding it later.

Note: Only administrators with primary administrator or admin1 roles are authorized to run the `account -delete` command.

OPTIONS

`-account`

Specifies the fully qualified name (FQN) or unique identifier (ID) of the account. Account names are case sensitive.

You can delete a group of accounts by providing a comma-separated list.

EXAMPLE

Task	Remove an administrator account from the Oracle FS System.
Parameters	• Fully qualified name of the account: **`/flash_store_admin`**

```
$ fscli account -delete -account /flash_store_admin
```

Related Links

account

account -forgotPassword

Instructs the Oracle FS System to send a password recovery token to the email address that is associated with the specified account.

SYNOPSIS

```
account -forgotPassword
   -name account-name
   {-oracleFS oracle-fs-system | -sessionKey}

   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Any administrator can run the **account -forgotPassword** command to request that the Oracle FS System send an email to the email address that is associated with a specified account. The email contains a password token and provides instructions that the account owner uses to reset the password. The password token is only valid for one hour. To reset the password using the FSCLI, the account owner runs the **account -resetPassword** command. Either the -oracleFS or -sessionkey options must be used in conjunction with the **account -resetPassword** command.

Note: Alternatively, the Primary administrator or Administrator 1 account can reset the password, including the passwords of the `/pillar` or `/administrator` accounts.

Note: Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run the `account -forgotPassword` command.

OPTIONS

-name	Specifies the name of the account. Do not specify the fully qualified name (FQN) or unique identifier (ID) of the account.
-oracleFS	Specifies the name of the Oracle FS System.
-sessionkey	Directs the CLI to prompt you to supply a session key when you issue the command. The CLI displays `Sessionkey:` as the prompt. To obtain a session key, log in with the -returnKey option specified. After the session is established, the session key is displayed in STDOUT. If you request a session key, the -sessionkey option is required syntax for all commands that are issued in a given session. In environments with more than one Oracle FS System, the session key is used to determine to which Oracle FS System to direct the command for validation. Session keys are also used to establish

two or more CLI sessions when using a shared administrator account.

EXAMPLE

Task	Send an email that contains a password token so that the password for an account can be reset.
Parameters	• Name of the account: **flash_store_admin** • Name of the Oracle FS System: **oracle_fs_system**

```
$ fscli account -forgotPassword -name
flash_store_admin -oracleFS oracle_fs_system
```

Related Links

account

account -list

Displays information about account sessions and account settings.

SYNOPSIS

```
account -list
   [-details]
   [-account [account-id-or-fqn [,account-id-or-fqn]... ] ]
   [-userSessions [session-id-or-fqn [, session-id-or-fqn]...] ]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

When you run the **account -list** command without specifying options, the Oracle FS System returns the following information:

- Session information for the accounts that are currently logged in.
- A listing of all accounts that are defined on the Oracle FS System.

To request information about your current session, run the **account -list -userSessions** command with the unique identifier (ID) or fully qualified name of your account. If you know the session ID, you can also use it to request information about your session.

When requesting detailed output, you can specify the -account option or the -userSessions option to limit the details that are displayed to only account information or session information. You can further refine your search criteria by

specifying one or more account names or by specifying one or more user session IDs.

Note: Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run the `account -list` command.

OPTIONS

`-details`

For accounts, displays the following information:

- The account name
- The role
- The email address
- The phone number
- Whether an account is enabled

For each logged in administrator, displays all of the session information, including the user name, login time, and remote IP address. Displays the login time in the YYYY-MM-DD[THH[:mm[:SS[.xxx]]]] format. The T character is a literal separator that distinguishes the date portion of the timestamp from the time portion. The SS characters are seconds and the numbers displayed in the xxx placeholder after the dot (.) character are milliseconds. The time is displayed in GMT.

`-account`

Specifies the fully qualified name (FQN) or unique identifier (ID) of the account. Account names are case sensitive.

`-userSessions`

Displays information about the specified user sessions. If you do not specify a session, information about all currently logged in user sessions on the Oracle FS System are displayed.

EXAMPLE

Task	Display a list of all administrative sessions followed by account information.
Parameters	• None

```
$ fscli account -list
```

Related Links

account

system_log -list

`account -modify`

Changes account settings.

SYNOPSIS

```
account -modify
    [-account account-id-or-fqn]
    [-fullName full-name]
    [-password]
    [-email email-address]
    [-phone phone-number]
    [-name new-account-name]
    [-role { admin1 | admin2 | monitor | support}]
    [{-enable | -disable}]
    [-passwordDuration duration-in-days]

    [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
    [{-outputformat | -o} { text | xml }]
    [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Use the **`account -modify`** command to change any of the following fields for administrator-defined accounts:

- Full name
- Password duration
- Email address
- Phone number
- Account name
- Role
- Account availability status (enabled or disabled)

Disabling an account that has active sessions does not terminate the sessions. You cannot change the Primary administrator role that is permanently assigned to the `/administrator` account. Also, you cannot change the Oracle Customer Support role that is permanently assigned to the `/pillar` account.

If one or more administrators are logged in to a specific account, you cannot modify the role for that account until all of the administrators log out. However, changes to the other fields are permitted, including resetting the password and disabling the account. These changes take effect immediately after the administrators end their sessions.

When logging in, if a non-primary administrator fails to enter the correct password after making a maximum number of attempts, the Oracle FS System automatically disables the account. Use the **`system -modify`**

-maximumFailedLogins command to change the maximum number of failed attempts that are permitted before an account is disabled. Because the default /administrator and /pillar accounts are required for basic administration, that account cannot be disabled even if the maximum number of failed attempts has been reached. To prevent security breaches, frequently change the passwords of the /administrator and /pillar accounts and provide access to the current password through a restricted site.

To enable an administrator-defined account that has been disabled, log in with the /administrator account or an Administrator 1 account and run the **account -modify -enable** command.

To disable an account, run the **account -modify -disable** command.

Note: Only administrators with primary administrator, admin1, admin2, or support roles are authorized to run the account -modify command.

OPTIONS

-account — Specifies the fully qualified name (FQN) or unique identifier (ID) of the account. Account names are case sensitive.

If you do not supply an account name, the account under which you are currently logged in will be modified.

-fullName — Specifies the name of the account owner. If the full name contains spaces, enclose the entire name inside double quotation marks. For example: *"Tyler Leslie Mendoza"*.

-password — Requests that the administrator provide a new password.

-email — Specifies the email address of the account owner. The Oracle FS System does not verify the validity of the email address.

Important: An email address is required to allow accounts to recover their passwords.

-phone — Specifies the phone number of the account owner. The Oracle FS System does not verify the validity of the phone number.

-name — Specifies the account name. Use double quotation marks around names containing dashes.

-role — Specifies the permissions that are granted to users of the account. To specify permissions, assign one of the following roles:

admin1 — Authorizes the administrator to perform the following types of tasks:

- Administration
- Configuration
- Recovery

admin2 — Authorizes the administrator to perform all administrative tasks that an *admin1* role can perform *except* for the following tasks:

- Create, modify, or delete administrator accounts
- Modify Call-Home settings.
- Create, modify, or delete LUNs, File Servers, and filesystems.
- Modify system-wide settings.
- Modify software configurations
- Modify hardware configurations.
- Shut down the Oracle FS System.

monitor — Authorizes the administrator to perform read-only tasks and to modify the attributes of their account.

support — Authorizes the administrator to perform support operations as instructed by Oracle Customer Support. This role does not authorize the administrator to modify or delete data resources, system alerts, or administrator accounts.

-enable — Enables the specified account.

-disable — Disables the specified account.

-passwordDuration — Specifies the number of days that the password that the administrator provides is valid. When the password expires, the Oracle FS System prompts the account user to provide a new password.

EXAMPLE

Task	Disable an account.
Parameters	• Fully qualified name of the account: **/flash_store_admin** • Disable account flag

```
$ fscli account -modify -account /flash_store_admin
-disable
```

Related Links

account

system -modify

login

account -resetPassword

Resets the password for the specified account using the password recovery token.

SYNOPSIS

```
account -resetPassword
   -name account-name
   {-currentPassword | -resetToken}
   {-oracleFS oracle-fs-system | -sessionKey}

   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Run the **account -resetPassword** command to reset the password for an account by using one of the following methods:

- If an email with a token was sent to you, specify the -resetToken option. When the Oracle FS System prompts you for a token, provide the token.
- If you did not receive an email with a token, specify the -currentPassword option. When the system prompts you, provide the current password. Only the `/administrator` and Administrator 1 accounts can reset accounts without either a token or the current password.

Note: After providing a token or a current password, the system prompts you to enter a new password and requests that you retype the password for verification.

Note: Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run the `account -resetPassword` command.

OPTIONS

-name	Specifies the account name. Use double quotation marks around names containing dashes.
-currentPassword	Specifies that the Oracle FS System will prompt the administrator for the password that the administrator currently uses to log into the Oracle FS System. If this option is not specified, then the -resetToken option must be specified.

-resetToken	Specifies that the Oracle FS System will prompt the administrator for the token that the administrator received in an email. The password reset token is valid for up to one hour after it is generated. The password reset token is valid for up to one hour after it is generated. After one hour, the token must be regenerated.
-oracleFS	Specifies the name of the Oracle FS System.

EXAMPLE

Task	After receiving an email containing a password token, type the token on the command line to reset the password for the account.
Parameters	• Name of the account: **flash_store_admin** • Name of the Oracle FS System: **oracle_fs_system**

```
$ fscli account -resetPassword -name
flash_store_admin -oracleFS oracle_fs_system
-resetToken
```

Related Links

account

call_home

Creates and manages the Call-Home feature.

SYNOPSIS

`call_home { [ -list | -modify | -reset | -test | -uploadMatrix] | [ -usage | -help ] }`

DESCRIPTION

Use the `call_home -modify` command to enable and configure the Call-Home feature. Call-Home is a feature that, when enabled, works with the Auto Service Request (ASR) feature to send all notifications and associated logs about specific Oracle FS System events to My Oracle Support (MOS). After the ASR feature is activated, MOS expects to receive an event, known as a heartbeat, each day from the Oracle FS System. The daily heartbeat keeps the ASR feature in an active state. The following `-modify` options keep the heartbeats active:

- Setting the `-enableEventTrigger` option enables the Call-Home feature.

- Setting the -`enableStandardPeriodic` option on a daily schedule keeps the ASR feature active.
- Setting the -`enableLargerPeriodic` option on a weekly schedule ensures that Oracle Customer Support receives log bundles that include the complete system configuration and performance and statistical information.

You can use the `call_home` -`test` command to verify the functionality and configuration of the Call-Home feature. The test command is also used to activate the ASR feature, which should be completed at the time of installation.

Configure the Call-Home feature to send the log bundles to the Oracle server. You can optionally use a proxy server if site security requirements do not allow direct connections to the Oracle server.

You can send the log bundles to a local server, if necessary. However, sending log bundles to the local server disables all ASR functionality. Instead, use the `system_log` -`collect` -`sendToCallHome` command to manually send log bundles to MOS. You can also associate the log bundle with an existing service request (SR) by using the -`collectionReason` option with the `system_log` -`collect` command.

SUBCOMMANDS

-list	Displays the Call-Home settings.
-modify	Updates the Call-Home settings.
-reset	Restores the Call-Home feature functionality to the default settings.
-test	Verifies the functionality of the Call-Home feature.
-uploadMatrix	Replaces the Call-Home matrix file.

EXAMPLE

Task	Display a list of all the Call-Home settings and Matrix information that exists on the Oracle FS System.
Parameters	• None

```
$ fscli call_home -list
```

Related Links

call_home -list
call_home -modify
call_home -reset
call_home -test
call_home -uploadMatrix
system_log -collect

call_home -list

Displays the Call-Home settings.

SYNOPSIS

```
call_home -list
   [-details]
   [-settings]
   [-matrix]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

When the `call_home -list` command is used without additional options, the Oracle FS System displays all of the information about the Call-Home settings and the Call-Home matrix. The information includes the following items:

- Event and periodic trigger options
- Periodic schedules
- Number of events to include in each Call-Home bundle
- Call-Home destination server name
- Call-Home matrix version and format
- Proxy configuration, if enabled

Use the `-settings` option to display only Call-Home settings. Use the `-matrix` option to display only Call-Home matrix details.

Note: Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run the `call_home -list` command.

OPTIONS

-details	Provides no additional information. This option is included for consistency across all subcommands.
-matrix	Displays the version and the format of the Call-Home matrix.

If the -matrix option and the -settings option are both omitted, the information for both options is displayed.

-settings Displays all of the Call-Home settings except for the password that is associated with the user account on the local destination server.

If the -matrix option and the -settings option are both omitted, the information for both options is displayed.

EXAMPLE

Task	Display a list of all the Call-Home settings and Matrix information that exists on the Oracle FS System.
Parameters	• None

```
$ fscli call_home -list
```

Related Links

call_home

call_home -modify

Updates the Call-Home settings.

SYNOPSIS

```
call_home -modify
   [{-enableEventTrigger |-disableEventTrigger}]
   [{-enableLargeFile | -disableLargeFile}]
   [{-enableStandardPeriodic | -disableStandardPeriodic}]
   [{-enableLargerPeriodic | -disableLargerPeriodic}]
   [-numberOfEvents number-of-events-to-include]
   [{ -callHomeDestination https-server_ip_or_dns
         [{-proxy
            -proxyIp proxy_ip
            -proxyPort proxy_port
            -proxyConnection {http | socks4 | socks5}
         | -noProxy}]
    | -localDestination local_server_ip_or_dns
      -directory local_directory
      -userName user_name
   }]
   [ -schedulePeriodic {standard | large}
     -interval { daily | weekly | monthly}
     -frequency interval_frequency
     -startTime date-time
   ]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Use the `call_home -modify` command to configure or update the Call-Home options. You can use the command to add a proxy server that resolves the name of the destination Oracle server.

You can enable or disable the Call-Home feature that are triggered by system events. Some options disable the Auto Service Request (ASR) feature. If you disable ASR configure the `-localDestination` Call-Home server and implement some other means to monitor the Oracle FS System.

Note: Only administrators with primary administrator or admin1 roles are authorized to run the `call_home -modify` command.

OPTIONS

`-callHomeDestination`

Specifies that the Call-Home data is to be sent to the Oracle server. The data must be sent using the HTTPS protocol.

To use a proxy server to send the data, you can include the `-proxy` option. In this scenario, you must specify the following options:

- `-proxyIp`
- `-proxyPort`
- `-proxyConnection`

If you omit the `-proxy` option, or if you specify the `-noProxy` option, no proxy server is used.

`-directory`

Identifies the full directory path on the local Call-Home server in which to store the Call-Home log bundles.

`-disableEventTrigger`

Disables the Call-Home feature for system events. This feature, when enabled, disables ASR functionality.

`-disableLargeFile`

Specifies that Call-Home log bundles only include the header information, resulting in smaller file size. Selecting this option disables the system from sending any event or manual logs to the Oracle server.

If `-disableLargeFile` is enabled and a system event occurs, you will need to manually download the logs and upload them to My Oracle Support (MOS).

When the `-disableLargeFile` option and the `-disableLargerPeriodic` option are used together, the effect is the same as using the `-enableStandardPeriodic` option.

-disableLargerPeriodic

Disables the periodic transmission of a larger amount of Call-Home data to the designated destination server.

Note: Do not use this option unless you are using the -localDestination Call-Home server and you have implemented some other means to monitor the Oracle FS System.

-disableStandardPeriodic

Disables the periodic sending of the Call-Home header data to the designated destination server.

Use of this option disables the ASR feature. The option also disables the periodic heartbeat that is sent to My Oracle Support (MOS) and triggers an automatic service request for a missing system heartbeat.

Note: Do not use this option unless you are using the -localDestination Call-Home server and you have implemented some other means to monitor the Oracle FS System.

-enableEventTrigger

Enables the Call-Home feature to send status messages for selected system events to the designated server. Enable -enableEventTrigger option to support the ASR feature.

You can also designate a local server by using the -localDestination option. Using a local Call-Home server disables all ASR functionality.

-enableLargeFile

Enables the transmission of diagnostic logs to the designated server.

During a system event, if this option is not enabled, the system does not send debug or other diagnostic logs to the Oracle server. Instead, you would need to manually send the diagnostic logs to a specific service request (SR) on My Oracle Support (MOS).

-enableLargerPeriodic

Enables the periodic transmission of a larger amount of Call-Home data to the designated destination server.

If the transmission of larger Call-Home files is disabled by specifying the -disableLargeFile option, enabling the periodic transmission of larger amounts of data has the same effect as enabling standard periodic transfers by means of the -enableStandardPeriodic option.

Define the time interval and the frequency for this data transmission by specifying the -schedulePeriodic large option.

Use the following option values to keep the ASR feature active:

- -interval **weekly**
- -frequency **1**

You may also specify a -startTime with the -schedulePeriodic option.

-enableStandardPeriodic

Enables the periodic transmission of the Call-Home data to the designated destination server.

Define the time interval and the frequency for this data transmission by specifying the -schedulePeriodic standard option.

Use the following options and values to keep the ASR feature active and to prevent My Oracle System (MOS) from creating any unnecessary service requests for missing heartbeats.

- -interval **daily**
- -frequency **1**

You may also specify a -startTime with the -schedulePeriodic option.

-frequency

Defines the number of time units as specified by the -interval option between the time when one task is run and the time when the next task is run. The value must be a positive integer.

Use the following frequency values for each -interval option:

daily	**1** through **100**
weekly	**1** through **14**
monthly	**1** through **3**

-interval

Defines the time unit to use as the basis for the repeating interval between the following tasks. Valid values:

daily	Specifies that the interval is in days.
weekly	Specifies that the interval is in weeks.
monthly	Specifies that the interval is in months.

-localDestination

Specifies the IP address or DNS address of the local server where the Call-Home logs should be sent.

Using a local server disables all Auto Service Request (ASR) functionality, which means that Oracle

Customer Support is not notified of any system events.

-noProxy Specifies that Call-Home does not use a proxy server.

Note: If your environment does not use a proxy, you must configure at least one DNS server. Ensure that the DNS server resolves to the host name of the Oracle server: callhome.support.pillardata.com.

-numberOfEvents Defines the maximum number of system events to include in a Call-Home bundle. Specify the operand as an integer that is greater than or equal to **0**.

Note: Do not change this value if the ASR feature is used.

-proxy Specifies that Call-Home uses a proxy server to provide the connection to the Oracle server.

To use the -proxy option, you must specify the following options:

- -proxyIp
- -proxyPort
- -proxyConnection

-proxyConnection Identifies the routing protocol to use.

Valid protocols:

- http
- socks4
- socks5

-proxyIp Identifies the IP address of the proxy server.

-proxyPort Identifies the TCP port on the proxy server to use.

-schedulePeriodic Specifies the size of the periodic log bundles that the system sends to the designated server. The schedule can be set for the following periodic bundle sizes:

standard Specifies that the system sends standard sized log bundles to the designated server.

Use the following options and values to keep the ASR feature active and to prevent My Oracle System (MOS) from creating any unnecessary service requests for missing daily heartbeats.

- -interval **daily**

- -frequency **1**

large — Specifies that the system sends large sized log bundles to the designated server.

Use the following options and values to keep the ASR feature active and to prevent My Oracle System (MOS) from creating any unnecessary service requests for missing weekly heartbeats.

- -interval **weekly**
- -frequency **1**

-startTime — Defines the time and the date of when the task is to begin.

Use the following format for the date and the time: *YYYY-MM-DD*[T*HH*[:*mm*[:*SS*[.*xxx*]]]][+|-*HH*:*mm*] where:

YYYY-MM-DD	Designates a 4-digit year, a 2-digit month, and a 2-digit day. If the remaining values are omitted, the time is set to **12:00:00.000+00:00**.
T	A separator that designates the start of the time portion of the string.
HH*:*mm*:*SS*.*xxx	Designates the hours, the minutes, and the seconds (to three decimals) in terms of a 24-hour clock. If only *HH* is defined, the remaining values default to **00**.
HH*:*mm	Designates the time zone as an offset from Coordinated Universal Time (UTC) in hours and minutes.

-userName — Specifies the user log in name to the -localDestination server.

EXAMPLE

Task	Change the Call-Home settings for the Oracle FS System.

Parameters	• The size of the periodic log bundles: `standard` • The interval at which to send the log bundles: `weekly` • The frequency at which to send the log bundles: `2` • The start time at which to begin the process of sending the log bundles: `2014-08-01`

```
$ fscli call_home -modify -schedulePeriodic standard
-interval weekly -frequency 2 -startTime 2014-08-01
```

Related Links

call_home

`call_home -reset`

Restores the Call-Home feature functionality to the default settings.

SYNOPSIS

```
call_home -reset
   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Restores the Call-Home feature functionality to the default settings.

Note: Only administrators with primary administrator, admin1, or support roles are authorized to run the `call_home -reset` command.

EXAMPLE

Task	Resets the Call-Home options to the default values.
Parameters	• None

```
$ fscli call_home -reset
```

Related Links

call_home

call_home -test

Verifies the functionality of the Call-Home feature.

SYNOPSIS

```
call_home -test
   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Use the `call_home -test` command to verify the functionality of the Call-Home feature. The test option is also used to activate the Auto Service Request (ASR) feature. The activation process should be completed at the time of installation. The Call-Home information is collected and sent to My Oracle Support (MOS).

Note: If you configured the Call-Home feature to use a local server, the `call_home-test` command sends the Call-Home files to a `/dev/null` folder or the recycle bin.

Note: Only administrators with primary administrator, admin1, admin2, or monitor roles are authorized to run the `call_home -test` command.

EXAMPLE

Task	Tests the Call-Home feature to verify that Call-Home is correctly configured.
Parameters	• None

```
$ fscli call_home -test
```

Related Links

call_home

system_log -download

call_home -uploadMatrix

Replaces the Call-Home matrix file.

SYNOPSIS

```
call_home -uploadMatrix
   -file matrix-file-name

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

The Call-Home matrix file that is located on the Oracle FS System contains the list of system events that trigger a Call-Home action.

Oracle Customer Support might send you a new Call-Home matrix file to upload that replaces the existing file that is in the Oracle FS System. Use the `-file` option to specify the file on the local host to upload. A custom file is provided only in instances where a specific issue requires non-standard information for diagnosis.

Note: Only administrators with support roles are authorized to run the `call_home -uploadMatrix` command.

OPTIONS

`-file`	Specifies the name of the file for the Oracle FS System to upload.

EXAMPLE

Task	Upload the Call-Home Matrix file.
Parameters	• The Call-Home Matrix file name: `CallHomeMatrix.xml`

```
$ fscli call_home -uploadMatrix -file
CallHomeMatrix.xml
```

Related Links

call_home

clone_lun

Creates and manages the Clone LUNs on an Oracle FS System.

SYNOPSIS

`clone_lun { [ -add | -commit | -copy | -delete | -list | -modify | -prepare | -restore] | [-usage | -help ] }`

DESCRIPTION

A Clone LUN is a readable and writable point-in-time snapshot of a LUN or another Clone LUN that does not require the system overhead of a full block-level copy. Clone LUNs can be used for the following purposes:

- To test a new application without impacting the original LUN
- To assign different Quality of Service (QoS) properties to the clone to maximize system resources for a specific task

- To preserve a point-in-time view of the data that can be restored to the source LUN at a later time

When a Clone LUN is created, the data contained in the Clone LUN is a snapshot of the data in its source LUN. Write operations to the Clone LUN are not reflected in the data of the source LUN. In addition, any changes to data in a source LUN are not reflected in its clones. However, the size of a clone is increased by write operations to its source LUN.

Note: A write operation to either a source LUN or its clones increases the size of its clones.

You can use the `clone_lun -add` command to create a Clone LUN that is an exact snapshot of its source LUN, and you can use the `clone_lun -copy` command to replicate an existing Clone LUN. The `-add` or `-copy` subcommands enable you to change the Clone LUN properties.

Alternatively, you can use the `clone_lun -prepare` command to set up a Clone LUN profile, which you can activate later by running the `clone_lun -commit` command. After creating a Clone LUN, you can use the `clone_lun -modify` command to change the properties, the host mappings, and the QoS properties. You can run the `clone_lun -restore` command to return a source LUN to a state that was previously captured through a Clone LUN.

By default, a Clone LUN retains the same QoS properties as the source LUN and consumes space that is allocated for the clone repository. If necessary, you can adjust the amount of space that is available for clones of a LUN by using the `lun -modify` command and specifying the -capacity option, the -repositoryPercentage option, or both.

SUBCOMMANDS

-add	Creates a clone of an existing LUN on the Oracle FS System.
-commit	Creates one or more Clone LUNs that were profiled using the `clone_lun -prepare` command.
-copy	Creates a LUN by copying the contents and the settings of an existing Clone LUN.
-delete	Removes a particular Clone LUN from the Oracle FS System.
-list	Displays the status and the configuration information for Clone LUNs.
-modify	Changes the properties of an existing Clone LUN on the Oracle FS System.
-prepare	Enables you to set up a Clone LUN without completing its creation.
-restore	Resets a particular LUN to a state that you previously captured through a Clone LUN.

EXAMPLE

Task	Create a Clone LUN.
Parameters	• The name of the Clone LUN: `CLONE_DISK1` • The fully qualified name (FQN) of the source LUN: `/user1_vg/DISK1`

```
$ fscli clone_lun -add -name CLONE_DISK1
-source /user1_vg/DISK1
```

Related Links

clone_lun -add

clone_lun -commit

clone_lun -copy

clone_lun -delete

clone_lun -list

clone_lun -modify

clone_lun -prepare

clone_lun -restore

`clone_lun -add`

Creates a clone of an existing LUN on the Oracle FS System.

SYNOPSIS

```
clone_lun -add
   -name clone-lun-name
   -source source-lun-id-or-fqn
   [-capacity capacity]
   [-priority {premium | high | medium | low | archive}]
   [-volumeGroup volume-group-id-or-fqn]
   [{ -unmapped
    | -globalMapping lun-number
    | { -hostmap host-id-or-fqn [, host-id-or-fqn]...
      | -hostGroupMap host-group-id-or-fqn
      }
      -lunNumber lun-number
    }]
   [{-fibreChannelAccess | -noFibreChannelAccess}]
   [{-iscsiAccess | -noIscsiAccess}]
   [-maskedControllerPorts /controller[/slot[/port]]
                        [, /controller[/slot[/port]]]... ]
   [{-active | -inactive }]
   [{-disableRefTagChecking | -enableRefTagChecking}]
   [-bootLun | -noBootLun]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Use the `clone_lun -add` command to create a point-in-time, read-write snapshot of a LUN that can be accessed immediately. When you create a Clone LUN, the properties of the source LUN are applied to the clone by default. You can assign different mapping, performance settings, and QoS characteristics by using the `clone_lun -add` options.

The Clone LUN consumes space from the repository that was allocated for clones when the source LUN was created. You can adjust the amount of space that is available for clones of a LUN by using the `lun -modify` command.

Note: Only administrators with primary administrator, admin1, or admin2 roles are authorized to run the `clone_lun -add` command.

OPTIONS

-active	Makes a Clone LUN visible on the network so that the clone can be discovered and accessed by a SAN host. By default, the Clone LUN is active.
-bootLun	Identifies that the Clone LUN can be used as a boot drive in the SAN.
-capacity	Specifies the storage space in gigabytes for the clone. Specify this value if you want the capacity of the clone volume to be different from the capacity of the source volume. This value must be equal to or larger than the source volume. This space is sometimes referred to as *addressable capacity*.
-disableRefTagChecking	Instructs the HBA to bypass the check of whether a host has written to a specific area of the LUN before the host reads from that same area. If this option is omitted, read-before-write error events can be generated. If this option is omitted, reference tag checking is enabled by default.
-enableRefTagChecking	Instructs the HBA to check whether a SAN host has written to a specific area of the LUN before the host reads from that area. When a host reads from a specific area before writing to that area, the Oracle FS System generates a read-before-write error event. **Note:** This check is sometimes called a *reference tag check* and is a part of the process for ensuring data protection integrity. By default, reference tag checking is enabled.
-fibreChannelAccess	Allows users to access to the volume through the Fibre Channel (FC) ports. By default, FC access is enabled.

-globalMapping Maps the Clone LUN globally to all hosts using the specified *lun-number*.

-hostGroupMap Specifies a mapping relationship between a Clone LUN and a host group. You identify the host group mapping by providing a fully qualified name (FQN) or a unique ID (ID).

-hostmap Specifies a mapping between a Clone LUN and a SAN host. You identify the host by providing a unique ID (ID) or a fully qualified name (FQN).

-inactive Renders the LUN volume invisible on the network. An inactive volume is not accessible and cannot be used by a SAN host.

-iscsiAccess Allows access to the Clone LUN through the iSCSI ports.

-lunNumber Identifies the logical unit number of a LUN or of a Clone LUN to present to a SAN host or to a host group.

Note: The `clone_lun -add` command does not map the new Clone LUN if the host or host group already contains a LUN with the specified number. You can run the `clone_lun -modify` command to map the new Clone LUN after determining the number to use.

-maskedControllerPorts Restricts access to the Clone LUN through one or more Controller ports. Use the following format to mask all of the ports in a Controller, to mask all of the ports for a given Controller slot, or to mask only a specific Controller port: `/controller[/slot[/port]]`

- For *controller*, provide a string that includes the FQN or ID of the Controller.
- For *slot*, specify the HBA slot number.
- For *port*, specify the port number.

If you do not include this option, the Clone LUN becomes accessible on all Controller ports on the assigned node by default.

-name Specifies the name of the Clone LUN that you are creating on the Oracle FS System. Use double quotation marks around names containing dashes.

The following characters are invalid in a LUN name:

- Non-printable characters, including ASCII 0 through 31, decimal
- / (slash) and \ (backslash)
- . (dot) and .. (dot-dot)
- Embedded tabs

Note: The `clone_lun -add` command does not map the new Clone LUN if the Oracle FS System already contains a LUN with the specified name within the same volume group. You can run the `clone_lun -modify` command to map the new LUN after determining the name to assign.

-noBootLun Identifies that the Clone LUN cannot be used as a boot drive in the SAN. Not using the Clone LUN as a boot drive is the default.

-noFibreChannelAccess Disables access to the new Clone LUN through FC ports. By default, access is enabled.

-noIscsiAccess Disables access to the Clone LUN through use of the iSCSI protocol. By default, the Clone LUN is not accessible through the iSCSI protocol.

-priority Identifies the priority that the system gives to various operational aspects of a logical volume. These operational aspects include the Controller processing queue, the SAN interface requests, and the migration of the auto-tiered LUN extents.

Note: The processing-queue priority defines the percentage of the Controller CPU cycles that are dedicated to the volume.

Valid priority levels:

Premium	Indicates the highest priority for responding to requests in the processing queue. For auto-tiered LUNs, busy LUN extents receive the highest priority when the system migrates the data to the higher-performing storage tiers.
High	Indicates the next highest priority for responding to requests in the processing queue. For auto-tiered LUNs, busy LUN extents receive the next highest priority when the system migrates the data to the higher-performing storage tiers.
Medium	Indicates an intermediate priority for responding to requests in the processing queue. For auto-tiered LUNs, busy LUN

		extents receive an intermediate priority when the system migrates the data to the higher-performing storage tiers.
	Low	Indicates the next to lowest priority for responding to requests in the processing queue. For auto-tiered LUNs, busy LUN extents receive the next to lowest priority when the system migrates the data to the higher-performing storage tiers.
	Archive	Indicates the lowest priority for responding to requests in the processing queue. For auto-tiered LUNs, busy LUN extents receive the lowest priority when the system migrates the data to the higher-performing storage tiers.

-source	Specifies the FQN or unique identifier (ID) of the source LUN.
-unmapped	Prevents the Clone LUN from being detected or accessed by any SAN host.
-volumeGroup	Specifies the FQN or the ID of the volume group to which the Clone LUN is assigned. If you do not include this option, the Clone LUN is assigned to the root level volume group.

EXAMPLE

Task	Create a Clone LUN.
Parameters	• The name of the Clone LUN: `CLONE_DISK1` • The fully qualified name (FQN) of the source LUN: `/user1_vg/DISK1`

```
$ fscli clone_lun -add -name CLONE_DISK1
-source /user1_vg/DISK1
```

Related Links

clone_lun

lun -modify

clone_lun -commit

Creates one or more Clone LUNs that were profiled using the `clone_lun -prepare` command.

SYNOPSIS

```
clone_lun -commit
   -cloneLun clone-lun-id-or-fqn [,clone-lun-id-or-fqn]...

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

The `clone_lun -commit` command implements one or more new Clone LUNs by using the clone profiles that you set up previously using the `clone_lun -prepare` command. The new Clone LUN consists of a point-in-time, read-write clone of the source LUN, which is available immediately for use.

The Clone LUN consumes space from the repository that was allocated for clones when the source LUN was created. You can adjust the amount of space that is available for clones of a LUN by using the `lun -modify` command.

Note: Only administrators with primary administrator, admin1, or admin2 roles are authorized to run the `clone_lun -commit` command.

OPTIONS

`-cloneLun` — Specifies the ID or the fully qualified name (FQN) of the Clone LUN. When specifying two or more Clone LUNs, provide a comma-separated list.

EXAMPLE

Task	Complete the creation of a Clone LUN that you previously set up using the `clone_lun -prepare` command.
Parameters	• The fully qualified name (FQN) of the prepared Clone LUN: `/user1_vg/CLONE_DISK1`

```
$ fscli clone_lun -commit -cloneLun /user1_vg/DISK1
```

Related Links

clone_lun

clone_lun -prepare

lun -modify

clone_lun -copy

Creates a LUN by copying the contents and the settings of an existing Clone LUN.

SYNOPSIS

```
clone_lun -copy
   -source source-clone-lun-id-or-fqn
   -name clone-lun-name
   [-capacity capacity]
   [-allocatedCapacity allocated-logical-capacity]
   [{ -profile performance-profile-id-or-fqn
    | -priority {premium | high | medium | low | archive}
      [-storageClass {capDisk | perfDisk | perfSsd | capSsd}]
      { [-redundancy {1 | 2}]
        [-accessBias {sequential | random | mixed} ]
        [-ioBias {read | write | mixed}]
      | [-raidLevel {raid5 | raid10 | raid6 | default}]
        [-readAhead {default | normal | aggressive |
conservative}]
      }
    }]
   [{ -singleTier
    | -autoTier
      [-preferredStorageClass {capDisk | perfDisk | perfSsd |
capSsd}
                        [, {capDisk | perfDisk | perfSsd |
capSsd} ]... ]
      [-preferredRepositoryStorageClass {capDisk | perfDisk |
perfSsd | capSsd}
                        [, {capDisk | perfDisk | perfSsd |
capSsd} ]... ]
      [{-enableTierReallocation | -disableTierReallocation}]
    }]
   [-repositoryPercentage clone-capacity]
   [{ -matchTierQos
    |   [-noMatchTierQos]
      [-repositoryPriority {premium | high | medium | low |
archive}]
   [-repositoryStorageClass {capDisk | perfDisk | perfSsd |
capSsd}]
   { [-repositoryRedundancy {1 | 2}]
     [-repositoryAccessBias {sequential | random | mixed}]
     [-repositoryIoBias {read | write | mixed}]
   | [-repositoryRaidLevel {raid5 | raid10 | raid6 | default}]
   }
 }]
   [-volumeGroup volume-group-id-or-fqn]
   [{ -unmapped
    | -globalMapping lun-number
    | -hostmap host-id-or-fqn [, host-id-or-fqn]...
      -lunNumber lun-number
    | -hostGroupMap host-group-id-or-fqn
      -lunNumber lun-number
    }]
   [{-fibreChannelAccess | -noFibreChannelAccess}]
   [{-iscsiAccess | -noIscsiAccess}]
   [{ -maskedControllerPorts   /controller[/slot[/port]]
                             [, /controller[/slot[/port]]]...
    | -unMaskedControllerPorts /controller[/slot[/port]]
                             [, /controller[/slot[/port]]]...
    }]
   [-storageDomain storage-domain-id-or-fqn]
   [{-active | -inactive}]
   [-copyPriority {auto | low | high}]
   [{-conservativeMode | -noConservativeMode}]
```

```
   [{-disableRefTagChecking | -enableRefTagChecking}]
   [-bootLun | -noBootLun]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

You can run the `clone_lun -copy` command to copy the contents of a Clone LUN to a new LUN. The new LUN is fully independent, and does not reflect changes to the source Clone LUN or its source LUN. By default, the properties of the source Clone LUN are applied to the new LUN. Use the `clone_lun -copy` options to assign different properties to the new LUN, including:

- Storage capacity
- Priority level
- Redundancy setting
- Volume group attributes
- Single-tiering or auto-tiering capability

The new LUN consumes space from the repository that was allocated for clones when the source LUN was created. You can adjust the amount of space that is available for clones of a LUN by using the `lun -modify` command.

Note: Only administrators with primary administrator, admin1, or admin2 roles are authorized to run the `clone_lun –copy` command.

OPTIONS

`-accessBias`

Identifies the expected access pattern for the logical volume. Valid biases:

- sequential. Indicates that the read requests and the write requests operate on the data mostly by accessing the records one after the other in a physical order.
- random. Indicates that the read requests and the write requests operate on the data mostly by accessing the records in an arbitrary order.
- mixed. Indicates that the read requests and the write requests operate on the data sometimes in sequential order and sometimes in random order. Accessing in a mixed pattern is the default.

Note: Do not use the -accessBias option if you use the -profile option to apply a QoS Storage Profile to the volume.

-active
Enables the LUN to be accessible and available for use immediately after the LUN is created. To ensure accurate mapping relationships, use the -globalMapping option, the -hostmap option, or the -hostGroupMap option with the -active option. Enabling the LUN to be accessible is the default.

-allocatedCapacity
Specifies the amount of space, in gigabytes, that the Oracle FS System sets aside for a LUN. This number can be less than the addressable logical capacity for the LUN as defined by the -capacity option. When the allocated capacity is less than the space that is requested for -capacity, the system creates what is called a *thinly provisioned* LUN.

If you do not provide a value for -allocatedCapacity, Oracle FS System sets the allocated amount of space to the size used by the source LUN.

-autoTier
Enables the auto-tiering capability, also called QoS Plus, as needed. An auto-tiered LUN monitors the data activity and automatically adjusts the QoS properties. Based on historical usage information, the system moves the data block to a Storage Class within the Storage Domain that can optimally store the data and best use the available storage types and capacities.

If you do not specify the singleTier or the autoTier option, the default is whatever the source LUN's setting is. If the source LUN's setting is single tier, the source's copy defaults to single tier. If the source LUN's setting is autotier, the source's copy defaults to auto tier.

-bootLun
Identifies that the LUN can be used as a boot drive in the SAN.

-capacity
Specifies the storage space in gigabytes for the new LUN. Specify this value if you want the capacity to be different from the capacity of the source Clone LUN. This space is sometimes referred to as *addressable capacity*.

-conservativeMode
Allows the Oracle FS System to enter conservative mode for the specified LUN if a Controller node fails. In conservative mode, data is written to the storage array before the write operation is reported as complete to the SAN host. Allowing conservative mode is the default.

-copyPriority
Identifies the setting to use when copying or migrating data from one location to another. To

control the impact on system performance, you can specify one of the following priority levels:

- auto. Balances data movement rate and system performance. If you do not use the -copyPriority option, the default priority is auto.
- low. Completes copy operations and data migration without degrading overall system performance. Completion rate might be slower.
- high. Completes copy operations and data migration as quickly as possible. System performance might be degraded.

-disableRefTagChecking

Instructs the HBA to bypass the check of whether a host has written to a specific area of the LUN before the host reads from that same area. If this option is omitted, read-before-write error events can be generated.

If this option is omitted, reference tag checking is enabled by default.

-disableTierReallocation

Turns off dynamic data migration for the LUN. The Oracle FS System does not migrate the LUN data to other Storage Classes.

-enableRefTagChecking

Instructs the HBA to check whether a SAN host has written to a specific area of the LUN before the host reads from that area. When a host reads from a specific area before writing to that area, the Oracle FS System generates a read-before-write error event.

Note: This check is sometimes called a *reference tag check* and is a part of the process for ensuring data protection integrity.

By default, reference tag checking is enabled.

-enableTierReallocation

Turns on dynamic data migration for the LUN. The Oracle FS System migrates the LUN data to the appropriate Storage Class based on the usage patterns of the data. By default, tier reallocation is enabled.

-fibreChannelAccess

Allows users to access to the volume through the Fibre Channel (FC) ports. By default, FC access is enabled.

-globalMapping

Maps the LUN globally to all hosts using the specified *lun-number*.

-hostGroupMap

Specifies a mapping relationship between a LUN and a host group. You identify the host group mapping

	by providing a fully qualified name (FQN) or a unique ID (ID).
-hostmap	Specifies a mapping relationship between a LUN and a SAN host. You identify the host by providing a unique ID (ID) or a fully qualified name (FQN).
-inactive	Renders the LUN volume invisible on the network. An inactive volume is not accessible and cannot be used by a SAN host.
-ioBias	Indicates the typical read-write ratio. Valid I/O biases: • read. Indicates that most of the access requests are for `read` operations. • write. Indicates that most of the access requests are for `write` operations. • mixed. Indicates that the number of access requests are similar for `read` operations and `write` operations. A mixed read-write ratio is the default. Do not use the -ioBias option if you use the -profile option to apply a QoS Storage Profile to the LUN.
-iscsiAccess	Allows access to the LUN through the iSCSI ports.
-lunNumber	Identifies the logical unit number that is used to present a LUN to a SAN host or a host group. Note: The `clone_lun -copy` command does not map the new LUN if the host already contains a LUN with the specified number. You can run the `clone_lun -modify` command to map the new LUN after determining the number to use.
-maskedControllerPorts	Restricts access to the LUN through one or more Controller ports. Use the following format to mask all of the ports in a Controller, to mask all of the ports for a given Controller slot, or to mask only a specific Controller port: `/controller[/slot[/port]]` • For *controller*, provide a string that includes the FQN or ID of the Controller. • For *slot*, specify the HBA slot number. • For *port*, specify the port number. If you do not include this option, the LUN becomes accessible on all Controller ports on the assigned node by default.
-matchTierQos	Sets the QoS settings of the clone repository to match the QoS settings of the LUN.

-name

Specifies a name for the LUN. The name that you provide must be between 1 and 40 characters. Use double quotation marks around names containing one or more spaces or dashes to prevent parsing errors.

The following characters are invalid in a LUN name:

- Tab
- / (slash) and \ (backslash)
- . (dot) and .. (dot-dot)
- Embedded tabs

Note: The `clone_lun -copy` command does not create the LUN if the Oracle FS System already contains a LUN with the specified name within the same volume group.

-noBootLun

Identifies that the LUN cannot be used as a boot drive in the SAN. Not using the LUN as a boot drive is the default.

-noConservativeMode

Prevents the Oracle FS System from entering conservative mode for the specified LUN.

CAUTION: If a Controller node fails, the system does not enable write-through mode, which it normally would. If the remaining node fails, any data that has not been written to the storage arrays is lost.

-noFibreChannelAccess

Disables access to the LUN through FC ports. By default, access is enabled.

-noIscsiAccess

Disables access to the LUN through use of the iSCSI protocol. By default, the LUN is not accessible through the iSCSI protocol.

-noMatchTierQos

Indicates that the QoS settings of the clone repository are not automatically set to the QoS settings of the LUN. Not automatically matching the QoS settings is the default.

-preferredRepositoryStorageClass

Identifies the Storage Classes for the Clone LUNs that are created for the new LUN, based on the usage patterns of the Clone LUNs. The Storage Classes do not need to be physically present on the Oracle FS System when you set this property. Storage Classes that are not present can be used after they are installed in the Oracle FS System.

Specify one or more Storage Classes:

- capDisk. Specifies that the data is stored on high-capacity, rotating HDDs. This Storage Class optimizes capacity at some sacrifice of speed. For a storage system that does not include tape storage as an option, this Storage Class always provides the lowest cost for each GB of capacity.
- perfDisk. Specifies that the data is stored on high-speed hard disk drives (HDDs). This Storage Class sacrifices some capacity to reduce the access time and the latency of the read operations and of the write operations.
- perfSsd. Specifies that the data is stored on solid state drives (SSDs) that are optimized for the performance of balanced read and write operations.
- capSsd. Specifies that the data is stored on SSDs that are optimized for the performance of capacity and for read operations. The write performance for this Storage Class is sacrificed somewhat to achieve the optimizations for read performance and for capacity.

If you do not include this option, all Storage Classes can be used based on usage patterns.

-preferredStorageClass

Identifies the Storage Classes for the LUN based on the usage patterns of the LUN data. The Storage Classes do not need to be physically present on the Oracle FS System when you set this property. Storage Classes that are not present can be used after they are installed in the Oracle FS System.

Specify one or more Storage Classes:

- capDisk. Specifies that the data is stored on high-capacity, rotating HDDs. This Storage Class optimizes capacity at some sacrifice of speed. For a storage system that does not include tape storage as an option, this Storage Class always provides the lowest cost for each GB of capacity.
- perfDisk. Specifies that the data is stored on high-speed hard disk drives (HDDs). This Storage Class sacrifices some capacity to reduce the access time and the latency of the read operations and of the write operations.
- perfSsd. Specifies that the data is stored on solid state drives (SSDs) that are optimized for

the performance of balanced read and write operations.

- capSsd. Specifies that the data is stored on SSDs that are optimized for the performance of capacity and for read operations. The write performance for this Storage Class is sacrificed somewhat to achieve the optimizations for read performance and for capacity.

If you do not include the -preferredStorageClass option, all Storage Classes can be used based on usage patterns.

-priority

Assigns a priority level that determines the system response to incoming I/O requests against the LUN. In general, the higher the priority level, the faster the system can respond to an access request. Valid priority levels:

- premium. Indicates the highest priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive the highest priority when the system migrates the data to the higher-performing storage tiers.
- high. Indicates the next highest priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive the next highest priority when the system migrates the data to the higher-performing storage tiers.
- medium. Indicates an intermediate priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive an intermediate priority when the system migrates the data to the higher-performing storage tiers.
- low. Indicates the next to lowest priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive the next to lowest priority when the system migrates the data to the higher-performing storage tiers.
- archive. Indicates the lowest priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive the lowest priority when the system migrates the data to the higher-performing storage tiers.

Note: When copying a Clone LUN to create a new LUN, you can include the -priority option or the -profile option. Do not include both options.

-profile

Specifies the fully qualified name (FQN) or unique identifier (ID) of the QoS Storage Profile to apply to the LUN. Use double quotes around names containing one or more spaces or dashes to prevent parsing errors. If the -profile option is omitted, the profile of the source Clone LUN is applied.

Note: When copying a Clone LUN to create a new LUN, you can include either the -profile option or the -priority option. Do not include both options.

-raidLevel

Specifies the level of RAID data protection to use for the logical volume. Valid values:

raid5 Indicates that, in addition to the actual data, one set of parity bits exists for the logical volume. This parity level protects against the loss of one drive.

raid6 Indicates that, in addition to the actual data, two sets of parity bits exist for the logical volume. This parity level protects against the loss of one or two drives with a slight cost to write performance.

raid10 Indicates that no parity bits exist for the volume. Instead, the system writes the data in two different locations. This RAID level protects against the loss of at least one drive and possibly more drives with an improvement of the performance of random write operations.

default Indicates that the level of RAID protection is determined by the Storage Class. For large form factor (capacity) hard disk drives, RAID 6 is the default level of protection. For the other Storage Classes, RAID 5 is the default level of protection.

Do not use the -raidLevel option if you use the -profile option to apply a QoS Storage Profile to the LUN.

-readAhead

Identifies the read-ahead policy to use for the logical volume for sequential read operations. The policy determines the amount of additional data, if any, that the system places into the Controller cache. Valid policies:

default and normal	Indicates that the input requests and the output requests are accessing the data mostly in a random manner or in a mixed sequential and random manner.
aggressive	Indicates that the input requests and the output requests are accessing the data mostly in a sequential manner and that the workload is biased toward read operations.
conservative	Indicates that the input requests and the output requests are mostly sequential and that the workload is biased toward write operations.

-redundancy

Identifies the number of copies of the parity bits that the Oracle FS System creates for the LUN. Valid values:

- 1. Stores the original user data plus one set of parity bits to help in the recovery of lost data. Access to the data is preserved even after the failure of one drive. Single parity is implemented using RAID 5 technology.
- 2. Stores the original user data plus two sets of parity bits to help in the recovery of lost data. Access to the data is preserved even after the simultaneous failure of two drives. Double parity is implemented using RAID 6 technology.

  Note: Double parity is the default for large form factor (capacity) hard disk drives. Single parity is the default for the other storage classes.

Do not use the -redundancy option if you use the -profile option to apply a QoS Storage Profile to the LUN.

-repositoryAccessBias

Identifies the expected access pattern for the LUN. Valid biases:

- sequential. Indicates that the read requests and the write requests operate on the data mostly by accessing the records one after the other in a physical order.

- random. Indicates that the read requests and the write requests operate on the data mostly by accessing the records in an arbitrary order.
- mixed. Indicates that the read requests and the write requests operate on the data sometimes in sequential order and sometimes in random order. Accessing in a mixed pattern is the default.

Do not use the -repositoryAccessBias option if you use the -matchTierQos option to match the QoS settings of the Clone LUN source.

-repositoryIoBias Indicates the typical read-write ratio for the Clone LUNs that are created for the new LUN. Valid I/O biases:

- *read*. Indicates that most of the access requests are for `read` operations.
- *write*. Indicates that most of the access requests are for `write` operations.
- *mixed*. Indicates that the number of access requests are similar for `read` operations and `write` operations.

A mixed read-write ratio is the default. Do not use the -repositoryIoBias option if you use the -matchTierQos option to match the QoS settings of the source Clone LUN.

-repositoryPercentage Determines the amount of extra space to set aside as a repository for Clone LUNs. Specify the amount as a percentage of the maximum capacity for the LUN. The default capacity is set to 110%. If you do not want to create a repository, specify **0**.

-repositoryPriority Assigns a priority level to determine the system response to incoming I/O requests against all Clone LUNs that are created from the new LUN. In general, the higher the priority level, the faster the system can respond to an access request. Valid priority levels:

- premium. Indicates the highest priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive the highest priority when the system migrates the data to the higher-performing storage tiers.
- high. Indicates the next highest priority for responding to requests in the processing

queue. For Auto-Tier LUNs, busy LUN extents receive the next highest priority when the system migrates the data to the higher-performing storage tiers.

- medium. Indicates an intermediate priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive an intermediate priority when the system migrates the data to the higher-performing storage tiers.
- low. Indicates the next to lowest priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive the next to lowest priority when the system migrates the data to the higher-performing storage tiers.
- archive. Indicates the lowest priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive the lowest priority when the system migrates the data to the higher-performing storage tiers.

Do not use the -repositoryPriority option if you use the -matchTierQos option to match the QoS settings of the source Clone LUN.

-repositoryRaidLevel

Specifies the level of RAID data protection to use for the clone repository. Valid values:

- raid5. Indicates that, in addition to the actual data, one set of parity bits exists for the logical volume. Single parity protects against the loss of one drive. Single parity is implemented as a variant of the RAID 5 storage technology.
- raid6. Indicates that, in addition to the actual data, two sets of parity bits exist for the logical volume. Double parity protects against the loss of one or two drives with a slight cost of write performance. Double parity is implemented as a variant of the RAID 6 storage technology.
- raid10. Indicates that no parity bits exist for the volume. Instead, the system writes the data in two different locations. Mirroring protects against the loss of at least one drive and possibly more drives with an improvement of the performance of random write operations.

Mirrored RAID is implemented as a variant of the RAID 10 storage technology.

- default. Indicates that the level of protection is determined by the storage class. For large form factor (capacity) hard disk drives, the RAID 6 level of protection is the default. For the other storage classes, the RAID 5 level of protection is the default.

Do not use the -repositoryRaidLevel option if you use the -matchTierQos option to match the QoS settings of the source Clone LUN.

-repositoryRedundancy

Identifies the number of copies of the parity bits that the Oracle FS System creates for clones of the new LUN. Valid values:

- 1. Stores the original user data plus one set of parity bits to help in the recovery of lost data. Access to the data is preserved even after the failure of one drive. Single parity is implemented using RAID 5 technology.
- 2. Stores the original user data plus two sets of parity bits to help in the recovery of lost data. Access to the data is preserved even after the simultaneous failure of two drives. Double parity is implemented using RAID 6 technology.

  Note: Double parity is the default for large form factor (capacity) hard disk drives. Single parity is the default for the other storage classes.

Do not use the -repositoryRedundancy option if you use the -matchTierQos option to match the QoS settings of the source Clone LUN.

-repositoryStorageClass

Identifies the type of storage media to be used for all Clone LUNs that are created for the new LUN. Valid Storage Classes:

- capDisk. Specifies that the data is stored on high-capacity, rotating hard disk drives (HDDs). This Storage Class optimizes capacity at some sacrifice of speed. For the FS1, this storage class provides the lowest cost for each GB of capacity.
- perfDisk. Specifies that the data is stored on high-speed HDDs. This Storage Class sacrifices some capacity to reduce the access time and

the latency of the read operations and of the write operations.

- perfSsd. Specifies that the data is stored on SSDs that are optimized for the performance of balanced read and write operations.
- capSsd. Specifies that the data is stored on solid state drives (SSDs) that are optimized for the performance of read operations and for capacity. The write performance for this Storage Class is sacrificed somewhat to achieve the optimizations for read performance and for capacity.

Do not use the -repositoryStorageClass option if you use the -matchTierQos option to match the QoS settings of the source Clone LUN.

-singleTier Creates a LUN that uses standard QoS properties. A single-tier LUN has QoS properties that you set to specify the Storage Class and other performance parameters for storing the LUN data onto the storage media. The QoS properties remain unchanged until you change these properties.

If you do not specify the singleTier or the autoTier option, the default is whatever the source LUN's setting is. If the source LUN's setting is single tier, the source's copy defaults to single tier. If the source LUN's setting is autotier, the source's copy defaults to auto tier.

-source Specifies the FQN or unique identifier (ID) of the source Clone LUN.

-storageClass Indicates the type of storage media to be used for the clone repository.

If you do not use the -profile option, the -storageClass option is required if the Oracle FS System supports two or more Storage Classes.

Do not use the -storageClass option if you use the -profile option to match the QoS settings of the LUN.

-storageDomain Specifies the FQN or GUID of the Storage Domain that contains the clone repository. If you do not include this option, and there is only one Storage Domain on the Oracle FS System, the system uses the default Storage Domain in which to create the clone repository. If you do not include this option, and there are multiple Storage Domains available, the system prompts you to specify a Storage Domain.

-unMaskedControllerPorts

Opens access to the volume through the Controller ports that were previously set to restricted access.

Specify the port using the form *HBA slot number*/*port number*. Specify the arguments in the following manner:

HBA slot number	Specifies the PCIE slot number of the HBA on which the port is located. The slot number must be 0 or greater.
port number	Identifies the port number on the HBA slot. The port number must be 0 or greater.

For example, **0/1** specifies port 1 on HBA slot 0 of the specified Controller.

-unmapped

Prevents the LUN from being detected or accessed by any SAN host.

-volumeGroup

Specifies the FQN or the ID of the volume group to which the Clone LUN is assigned. If you do not include this option, the Clone LUN is assigned to the root level volume group.

EXAMPLE

Task	Copy a Clone LUN to create a LUN on the Oracle FS System. Increase the maximum logical capacity and apply a different Storage Profile to the new LUN.
Parameters	• The fully qualified name (FQN) of the source Clone LUN: `/user1_vg/CLONE_DISK1` • The name of the new LUN: `DISK2` • The size of the new LUN: 64 GB • The Storage Profile to apply: **`/user_adv_group1`**

```
$ fscli clone_lun -copy -source /user1_vg/CLONE_DISK1
-name DISK2 -capacity 64 -profile /user_adv_group1
```

Related Links

clone_lun

lun -modify

clone_lun -delete

Removes a particular Clone LUN from the Oracle FS System.

SYNOPSIS

```
clone_lun -delete
   -cloneLun clone-lun-id-or-fqn [,clone-lun-id-or-fqn]...
   [-suppressWarnings]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

The `clone_lun -delete` command removes the specified Clone LUN. If the Clone LUN is the parent or source for other clones, the child clones are not deleted. Instead, the child clones become children of the next higher parent level in the hierarchy. If you omit the -suppressWarnings option, the Oracle FS System prompts you to confirm the deletion of the clones and the mappings.

Note: Only administrators with primary administrator, admin1, or admin2 roles are authorized to run the `clone_lun -delete` command.

OPTIONS

-cloneLun	Specifies the ID or the fully qualified name (FQN) of the Clone LUN. When specifying two or more Clone LUNs, provide a comma-separated list.
-suppressWarnings	Requests that the Oracle FS System not display a message on the command line to warn that all the Clone LUNs, the host mappings, and the host group mappings will be deleted. If omitted, the Oracle FS System prompts you to confirm the deletions.

EXAMPLE

Task	Delete a Clone LUN.
Parameters	• The fully qualified name (FQN) of the Clone LUN: `/user1_vg/CLONE_DISK1`

```
$ fscli clone_lun -delete
-cloneLun /user1_vg/CLONE_DISK1
```

Related Links

clone_lun

clone_lun -list

Displays the status and the configuration information for Clone LUNs.

SYNOPSIS

```
clone_lun -list
   [-details [-bs ]]
   [ -cloneLun clone-lun-id-or-fqn [, clone-lun-id-or-fqn]...
     [{-mappingStatus | -noMappingStatus}]
   ]
   [ -source source-lun-id-or-fqn [, source-lun-id-or-fqn]...
     [-hierarchy]
   ]
   [-volumeGroup volume-group-id-or-fqn [,
volume-group-id-or-fqn]... ]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Run the `clone_lun -list` command to obtain fully qualified names (FQNs), the configuration information, and the capacity information about Clone LUNs that are configured on the Oracle FS System. If you do not specify the -cloneLun option, the -source option, or the -volumeGroup option, information about all Clone LUNs is displayed.

Note: Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run the `clone_lun -list` command, except for the `-bs` option. Only administrators with support roles are authorized to use the `-bs` option.

OPTIONS

-bs

Returns additional information about the underlying virtual LUNs (VLUNs) that are associated with the specified Clone LUNs. Use this option with the -details option.

Note: Only administrators with support roles are authorized to run the `clone_lun -list -bs` option.

-cloneLun

Specifies the ID or the fully qualified name (FQN) of the Clone LUN. When specifying two or more Clone LUNs, provide a comma-separated list.

If omitted, all Clone LUNs are displayed.

-details

Returns detailed configuration and the state information for the specified Clone LUNs, including the type of the clone and the name of the source LUN.

Note: The following capacity values do not apply and are not displayed:

- Allocated capacity
- Used capacity
- Physical allocated capacity
- Physical used capacity
- Physical maximum capacity

-hierarchy Displays a hierarchical view of all Clone LUNs that are associated with each source LUN.

-mappingStatus Returns information about status of the host mappings or the host group mappings of the Clone LUN. Use this option with the -details option.

-noMappingStatus Specifies that no information is returned about the status of the host mappings or the host group mappings of the Clone LUN. Use this option with the -details option. Not returning status information is the default.

-source Specifies the FQN or unique identifier (ID) of the source LUN.

-volumeGroup Specifies the FQN or the ID of one or more volume groups. When you specify two or more volume groups, provide a comma-separated list. Returns all the Clone LUNs that are associated with each of the specified volume groups.

EXAMPLE

Task	Display a detailed listing of the status and configuration of a Clone LUN.
Parameters	• The fully qualified name (FQN) of the Clone LUN: `/user1_vg/CLONE_DISK1`

```
$ fscli clone_lun -list -details
-cloneLun /user1_vg/CLONE_DISK1
```

Related Links

clone_lun

clone_lun -modify

Changes the properties of an existing Clone LUN on the Oracle FS System.

SYNOPSIS

```
clone_lun -modify
   -cloneLun clone-lun-id-or-fqn
   [-name new-name]
   [-capacity capacity]
   [-priority {premium | high | medium | low | archive}]
   [-volumeGroup volume-group-id-or-fqn]
   [{-fibreChannelAccess | -noFibreChannelAccess}]
   [{-iscsiAccess | -noIscsiAccess}]
   [{ -maskedControllerPorts  /controller[/slot[/port]]
                              [, /controller[/slot[/port]]]...
    | -unMaskedControllerPorts /controller[/slot[/port]]
                              [, /controller[/slot[/port]]]...
    }]
   [{ -unmapped
    | -globalMapping lun-number
    }]
   [{-active | -inactive}]
   [-clearPinnedData]
   [{-disableRefTagChecking | -enableRefTagChecking}]
   [-bootLun | -noBootLun]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Use the `clone_lun -modify` command to change the Quality of Service (QoS) attributes for a Clone LUN to address the needs of a specific task, such as increasing the capacity that is allocated to the Clone LUN. You can also modify the mapping of a Clone LUN as well as change the Controller to which the Clone LUN is assigned.

Note: Only administrators with primary administrator, admin1, or admin2 roles are authorized to run the `clone_lun -modify` command.

OPTIONS

-active	Enables the Clone LUN to be accessible and available for use immediately after the Clone LUN is modified. Enabling the Clone LUN to be accessible is the default.
-bootLun	Identifies that the Clone LUN can be used as a boot drive in the SAN.
-capacity	Specifies the storage space in gigabytes for the volume. The amount of space cannot be less than the current maximum capacity of the Clone LUN. This space is sometimes referred to as *addressable capacity*.
-clearPinnedData	Clears any pinned data on the specified volume.

	Important: Contact Oracle Customer Support to resolve any issues with the Backend SAS Interconnect, a storage condition, or both, which might be causing the pinned data. Clearing pinned data guarantees that host data is deleted permanently.
-cloneLun	Specifies the ID or the fully qualified name (FQN) of the Clone LUN to modify.
-disableRefTagChecking	Instructs the HBA to bypass the check of whether a host has written to a specific area of the LUN before the host reads from that same area. If this option is omitted, read-before-write error events can be generated.
-enableRefTagChecking	Instructs the HBA to check whether a SAN host has written to a specific area of the LUN before the host reads from that area. When a host reads from a specific area before writing to that area, the Oracle FS System generates a read-before-write error event. **Note:** This check is sometimes called a *reference tag check* and is a part of the process for ensuring data protection integrity.
-fibreChannelAccess	Allows users to access to the volume through the Fibre Channel (FC) ports. By default, FC access is enabled.
-globalMapping	Maps the Clone LUN globally to all hosts using the specified *lun-number*.
-inactive	Renders the LUN volume invisible on the network. An inactive volume is not accessible and cannot be used by a SAN host.
-iscsiAccess	Allows access to the modified Clone LUN through the iSCSI ports.
-maskedControllerPorts	Restricts access to the Clone LUN through one or more Controller ports. Use the following format to mask all of the ports in a Controller, to mask all of the ports for a given Controller slot, or to mask only a specific Controller port: `/controller[/slot[/port]]` • For *controller*, provide a string that includes the FQN or ID of the Controller. • For *slot*, specify the HBA slot number. • For *port*, specify the port number.

If you do not include this option, the Clone LUN becomes accessible on all Controller ports on the assigned node by default.

-name

Specifies a new name for the Clone LUN. The name that you provide must be between 1 and 40 characters. Use double quotation marks around names containing one or more spaces or dashes to prevent parsing errors.

The following characters are invalid in a LUN name:

- Tab
- / (slash) and \ (backslash)
- . (dot) and .. (dot-dot)
- Embedded tabs

Note: The `clone_lun -modify` command does not map the modified LUN if the Oracle FS System already contains a LUN with the specified name within the same volume group. You can use the `clone_lun -modify` command to map the modified Clone LUN after determining the name to assign.

-noBootLun

Identifies that the Clone LUN cannot be used as a boot drive in the SAN. Not using the Clone LUN as a boot drive is the default.

-noFibreChannelAccess

Disables access to the modified Clone LUN through FC ports. By default, access is enabled.

-noIscsiAccess

Disables access to the modified Clone LUN through use of the iSCSI protocol. By default, the Clone LUN is not accessible through the iSCSI protocol.

-priority

Assigns a priority level that determines the system response to incoming I/O requests against the Clone LUN. In general, the higher the priority level, the faster the system can respond to an access request. Valid priority levels:

- premium. Indicates the highest priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive the highest priority when the system migrates the data to the higher-performing storage tiers.
- high. Indicates the next highest priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive the next highest priority when the

system migrates the data to the higher-performing storage tiers.

- medium. Indicates an intermediate priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive an intermediate priority when the system migrates the data to the higher-performing storage tiers.
- low. Indicates the next to lowest priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive the next to lowest priority when the system migrates the data to the higher-performing storage tiers.
- archive. Indicates the lowest priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive the lowest priority when the system migrates the data to the higher-performing storage tiers.

-unMaskedControllerPorts

Opens access to the volume through the Controller ports that were previously set to restricted access.

Specify the port using the form *HBA slot number*/*port number*. Specify the arguments in the following manner:

HBA slot number	Specifies the PCIE slot number of the HBA on which the port is located. The slot number must be 0 or greater.
port number	Identifies the port number on the HBA slot. The port number must be 0 or greater.

For example, **0/1** specifies port 1 on HBA slot 0 of the specified Controller.

-unmapped

Prevents the Clone LUN from being detected or accessed by any SAN host.

-volumeGroup

Specifies the FQN or the ID of the volume group to which the Clone LUN is assigned. If you do not include this option, the Clone LUN is assigned to the root level volume group.

EXAMPLE

Task	Change the name of a Clone LUN and increase the logical capacity. Change

	the priority to the highest processing queue setting for testing purposes, and make the Clone LUN accessible immediately.
Parameters	• The fully qualified name (FQN) of the Clone LUN: `/user1_vg/CLONE_DISK1` • The new name of the Clone LUN: `/user1_vg/CLONE_DISK3` • The size of the Clone LUN, in gigabytes: 128 • The priority level: `premium`

```
$ fscli clone_lun -modify
-cloneLun /user1_vg/CLONE_DISK1 -name CLONE_DISK3
-capacity 128 -priority premium
```

Related Links

clone_lun

clone_lun -prepare

Enables you to set up a Clone LUN without completing its creation.

SYNOPSIS

```
clone_lun -prepare
   -name clone-lun-name
   -source source-lun-id-or-fqn
   [-capacity capacity]
   [-priority {premium | high | medium | low | archive}]
   [-volumeGroup volume-group-id-or-fqn]
   [{ -unmapped
    | -globalMapping lun-number
    | -hostmap host-id-or-fqn [, host-id-or-fqn]...
      -lunNumber lun-number
    | -hostGroupMap host-group-id-or-fqn
      -lunNumber lun-number
    }]
   [{-fibreChannelAccess | -noFibreChannelAccess}]
   [{-iscsiAccess | -noIscsiAccess}]
   [-maskedControllerPorts /controller[/slot[/port]]
                        [, /controller[/slot[/port]]]... ]
   [{-active | -inactive }]
   [{-disableRefTagChecking | -enableRefTagChecking}]
   [-bootLun | -noBootLun]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

The `clone_lun -prepare` command enables you to organize the details of a new Clone LUN without creating an active clone. You can define the

characteristics for the new clone, such as Quality of Service (QoS) attributes, mapping, and storage capacity. When you are ready to complete the creation of the new Clone LUN, run the `clone_lun -commit` command.

Note: Only administrators with primary administrator, admin1, or admin2 roles are authorized to run the `clone_lun -prepare` command.

OPTIONS

-active	Enables the Clone LUN to be accessible and available for use immediately after you run the `clone_lun -commit` command. To ensure accurate mapping relationships, use the -globalMapping option, the -hostmap option, or the -hostGroupMap option with the -active option. Enabling the Clone LUN to be accessible is the default.
-bootLun	Identifies that the Clone LUN can be used as a boot drive in the SAN.
-capacity	Specifies the storage space in gigabytes for the clone. Specify this value if you want the capacity of the clone volume to be different from the capacity of the source volume. This value must be equal to or larger than the source volume. This space is sometimes referred to as *addressable capacity*.
-disableRefTagChecking	Instructs the HBA to bypass the check of whether a host has written to a specific area of the LUN before the host reads from that same area. If this option is omitted, read-before-write error events can be generated. If this option is omitted, reference tag checking is enabled by default.
-enableRefTagChecking	Instructs the HBA to check whether a SAN host has written to a specific area of the LUN before the host reads from that area. When a host reads from a specific area before writing to that area, the Oracle FS System generates a read-before-write error event. **Note:** This check is sometimes called a *reference tag check* and is a part of the process for ensuring data protection integrity. By default, reference tag checking is enabled.
-fibreChannelAccess	Allows users to access to the volume through the Fibre Channel (FC) ports. By default, FC access is enabled.
-globalMapping	Maps the Clone LUN globally to all hosts using the specified *lun-number*.

-hostGroupMap Specifies a mapping relationship between a Clone LUN and a host group. You identify the host group mapping by providing a fully qualified name (FQN) or a unique ID (ID).

-hostmap Specifies a mapping relationship between a Clone LUN and a SAN host. You identify the host by providing a unique ID (ID) or a fully qualified name (FQN).

-inactive Renders the LUN volume invisible on the network. An inactive volume is not accessible and cannot be used by a SAN host.

-iscsiAccess Allows access to the Clone LUN through the iSCSI ports.

-lunNumber Identifies the logical unit number that is used to present a Clone LUN to a SAN host or a host group.

Note: The `clone_lun -prepare` command does not map the new Clone LUN if the host already contains a LUN with the specified number. You can run the `clone_lun -modify` command to map the new Clone LUN after determining the number to use.

-maskedControllerPorts Restricts access to the Clone LUN through one or more Controller ports. Use the following format to mask all of the ports in a Controller, to mask all of the ports for a given Controller slot, or to mask only a specific Controller port: `/controller[/slot[/port]]`

- For *controller*, provide a string that includes the FQN or ID of the Controller.
- For *slot*, specify the HBA slot number.
- For *port*, specify the port number.

If you do not include this option, the Clone LUN becomes accessible on all Controller ports on the assigned node by default.

-name Specifies a name for the Clone LUN. The name that you provide must be between 1 and 40 characters. Use double quotation marks around names containing one or more spaces or dashes to prevent parsing errors.

The following characters are invalid in a LUN name:

- Tab
- / (slash) and \ (backslash)

- . (dot) and .. (dot-dot)
- Embedded tabs

Note: The `clone_lun -commit` command does not create the prepared Clone LUN if the Oracle FS System already contains a LUN with the specified name within the same volume group.

-noBootLun — Identifies that the Clone LUN cannot be used as a boot drive in the SAN. Not using the Clone LUN as a boot drive is the default.

-noFibreChannelAccess — Disables access to the Clone LUN through FC ports. By default, access is enabled.

-noIscsiAccess — Disables access to the Clone LUN through use of the iSCSI protocol. By default, the Clone LUN is not accessible through the iSCSI protocol.

-priority — Assigns a priority level that determines the system response to incoming I/O requests against the Clone LUN. In general, the higher the priority level, the faster the system can respond to an access request. Valid priority levels:

- premium. Indicates the highest priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive the highest priority when the system migrates the data to the higher-performing storage tiers.
- high. Indicates the next highest priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive the next highest priority when the system migrates the data to the higher-performing storage tiers.
- medium. Indicates an intermediate priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive an intermediate priority when the system migrates the data to the higher-performing storage tiers.
- low. Indicates the next to lowest priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive the next to lowest priority when the

system migrates the data to the higher-performing storage tiers.

- archive. Indicates the lowest priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive the lowest priority when the system migrates the data to the higher-performing storage tiers.

-source Specifies the FQN or unique identifier (ID) of the source LUN.

-unmapped Prevents the Clone LUN from being detected or accessed by any SAN host.

-volumeGroup Specifies the FQN or the ID of the volume group to which the Clone LUN is assigned. If you do not include this option, the Clone LUN is assigned to the root level volume group.

EXAMPLE

Task	Prepare a Clone LUN that will be created later using the `clone_lun -commit` command.
Parameters	• The name of the Clone LUN: `CLONE_DISK1` • The fully qualified name (FQN) of the source LUN: `/user1_vg/DISK1`

```
$ fscli clone_lun -prepare -name CLONE_DISK1
-source /user1_vg/DISK1
```

Related Links

clone_lun

clone_lun -commit

clone_lun -restore

Resets a particular LUN to a state that you previously captured through a Clone LUN.

SYNOPSIS

```
clone_lun -restore
   -cloneLun clone-lun-id-or-fqn

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
```

```
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

A LUN might need to be restored to an earlier state after undesirable changes were made, or after corruption by an external client application. The `clone_lun -restore` command restores the state of a LUN to a known good image that was preserved by a Clone LUN. The restoration process uses partial block snapshot technology, which allows the LUN to keep its identity and to come back online quickly. The restoration process copies only the data that was modified after the snapshot was taken to create the Clone LUN.

Note: Only administrators with primary administrator, admin1, or admin2 roles are authorized to run the `clone_lun -restore` command.

OPTIONS

`-cloneLun`	Specifies the ID or the fully qualified name (FQN) of the Clone LUN from which to restore the source LUN.

EXAMPLE

Task	Restore a source LUN to an earlier state that was preserved by a Clone LUN.
Parameters	• The FQN of the Clone LUN: `/user1_vg/CLONE_DISK1`

```
$ fscli clone_lun -restore
-cloneLun /user1_vg/CLONE_DISK1
```

Related Links

clone_lun

controller

Displays or modifies the configuration of one or both Controllers and performs FRU replacement procedures.

SYNOPSIS

`controller { [ -beacon | -command | -completeFru | -discardFBM | -forceFailure | -list | -modify | -modifyAgentHaFlags | -reenable | -rejoin | -remove | -replaceFru | -reset | -runDiagnostics ] | [ -usage | -help ] }`

DESCRIPTION

The **controller** command performs the following operations:

- Obtains status and other details.
- Prepares the Oracle FS System for maintenance.
- Provisions ports.
- Assigns peers.
- Performs diagnostics.
- Modifies the number that is displayed on the chassis.
- Issues native Controller commands.

Note: In most instances, when replacing a FRU, you use Guided Maintenance, not the Oracle FS CLI. In rare instances, however, Oracle Customer Support might direct you to use the FSCLI. When issuing the **controller** commands, follow the instructions that are provided by Oracle Customer Support

SUBCOMMANDS

-beacon	Flashes the LEDs of the specified Controller.
-command	Issues one or more native Controller commands on the Controller.
-completeFru	Notifies the Oracle FS System that the maintenance operations that were performed on the Controller are complete.
-discardFBM	Deletes all user data that is stored in the flash-backed memory (FBM) cache of one or more Controllers.
-forceFailure	Forces the specified Controller to fail over to the partner Controller.
-list	Returns status and configuration information for one or both Controllers.
-modify	Modifies the configuration of a Controller.
-modifyAgentHaFlags	Modifies the high availability (HA) settings for a Controller.
-reenable	Re-enables a Controller that was previously excluded from the Oracle FS System due to failures.
-rejoin	Forces the specified Controller to rejoin the Oracle FS System.
-remove	Removes the configuration information that is stored on disk for a Controller or an HBA.
-replaceFru	Prepares the Controller for maintenance.
-reset	Performs a soft and fast reset of the Controller. A Controller reset is also known as a warmstart.

-runDiagnostics Performs the diagnostic tests that are used to troubleshoot a faulty or failed Controller. Some of the diagnostic tests are disruptive and can the data volumes offline.

EXAMPLE

Task	Identify a failed power supply that was prepared for replacement.
Parameters	• The name of the Controller preceded by a forward slash: `/CONTROLLER-0` • The FRU number of the failed power supply: **0**

```
$ fscli controller -beacon -controller /CONTROLLER-01
-reverseBeacon -powerSupply 0
```

Related Links

controller -beacon
controller -command
controller -completeFru
controller -discardFBM
controller -forceFailure
controller -list
controller -modify
controller -modifyAgentHaFlags
controller -reenable
controller -rejoin
controller -remove
controller -replaceFru
controller -reset
controller -runDiagnostics

controller -beacon

Flashes the LEDs of the specified Controller.

SYNOPSIS

```
controller -beacon
   -controller controller-id-or-fqn
   [-stop]
   [-reverseBeacon]
   { -powerSupply powerSupply-fru-number
   | -fan fan-fru-number
   | -mb   mb-fru-number
   | -chassis chassis-fru-number
   | -cpu cpu-fru-number
```

```
      [-memory memory-fru-number]
    | -esm esm-fru-number
    | -pcieRiser pcieRiser-fru-number
    | -nicHba nicHba-fru-number
    | -sasHba sasHba-fru-number
   }

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Run the **`controller -beacon -controller`** ***`controller-id-or-fqn`*** command to identify the specified Controller in your data center. If you do not specify a Controller, an error message displays the list of available Controllers.

Note: Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run `controller -beacon` command.

OPTIONS

`-chassis`	Specifies 0 as the FRU number for the chassis of the Controller to beacon. The value for the chassis is 0.
`-controller`	Specifies the fully qualified name (FQN) or the unique identifier (ID) of a Controller.
`-cpu`	Specifies the CPU to beacon. The LEDs flash on the Controller within which the CPU resides. When specifying memory to beacon, provide a value to identify the CPU in which the specified memory card slot resides. Values are 0 or 1.
`-esm`	Specifies the energy storage module (ESM) to beacon. Flashes the LEDs for the ESM card and the LEDs for the Controller in which the specified FRU resides. Values are 0 and 1.
`-fan`	Specifies the fan to beacon. Flashes the LEDs for the Controller within which the fan resides. Values are 0 through 4.
`-mb`	Specifies the motherboard to beacon. The flashing LEDs identify the Controller in which the motherboard resides. There is only one motherboard in the Controller. The value is 0.
`-memory`	Specifies the DIMM or NVDIMM card slot. Beacons the Controller chassis in which the memory card resides. Values are 0 through 7. **Note:** In addition to the slot number, you must specify the CPU in which the memory card resides by specifying a value for the -cpu option. The DIMM

	cards reside in slots 0 through 7 on CPU 0, and in slots 2 through 7 on CPU 1. The NVDIMM cards reside in slots 0 and 1 on CPU 1.
-nicHba	Specifies the network interface HBA card to beacon. Flashes the LEDs for the Controller in which the card resides. Values are 0 through 5.
-pcieRiser	Specifies the PCIe riser to beacon. Flashes the LEDs for the Controller within which the PCIe riser resides. Values are 0, 1, or 2.
-powerSupply	Specifies the power supply to beacon. Flashes the LEDs for the Controller in which the power supply resides. Values are 0 or 1.
-reverseBeacon	Flashes the LEDs on the Controller. Also flashes the component LEDs except for the LEDs of the specified FRU. Use reverse beaconing to identify the failed FRU in a pair of FRUs for the following FRUs: • The power supplies. • The energy storage modules (ESMs).
-sasHba	Specifies the SAS HBA card to beacon. Flashes the LEDs for the Controller in which the SAS HBA card resides. Values are 0 through 5.
-stop	Stops the specialized LED beaconing request and returns all LED indicators to their normal function.

EXAMPLE

Task	Identify a failed power supply that was prepared for replacement.
Parameters	• The name of the Controller preceded by a forward slash: `/CONTROLLER-0` • The FRU number of the failed power supply: **0**

```
$ fscli controller -beacon -controller /CONTROLLER-01
-reverseBeacon -powerSupply 0
```

Related Links

controller

controller -command

Issues one or more native Controller commands on the Controller.

SYNOPSIS

```
controller -command
   -controller controller-id-or-fqn
   -commandString command-string
   [-parameters parameter-string]
   [-environment envname1:value1 [, envname2:value2]... ]
   [-timeout timeout-value]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

When diagnosing an environmental issue, to check the configuration, or to verify the health of the components in the Controller, Oracle Customer Support might require that you issue native Controller commands directly on the Controller. These commands bypass the Oracle FS System management software. Use only as instructed by Oracle Customer Support.

Note: In a production environment, do not attempt to issue native commands on a Controller that are potentially disruptive unless the Controller is already excluded from the system, or Oracle Customer Support has forced the Controller to fail. Verify that the partner Controller has assumed the responsibilities of the failed Controller. Before issuing native Controller commands, check the status of the `FailoverFailbackState` field in the output of the **`controller -list -details`** command.

Note: Only administrators with primary administrator, admin1, or support roles are authorized to run `controller -command` command.

OPTIONS

`-commandString`	Specifies the native Controller command. Specify the command name only. If any parameters are required, specify the parameters as variables to the -parameters option.
`-controller`	Specifies the fully qualified name (FQN) or the unique identifier (ID) of the Controller to which the native Controller command is sent. Run the **`controller -list -details`** command to obtain the FQN or ID.
`-environment`	Sets one or more native Controller environmental variables. Set each environmental variable by providing a colon-separated name and value pairing. Use commas when specifying more than one environmental variable pairing.

-parameters	Specifies the native Controller command parameters. When specifying two or more parameters, use a space to separate each parameter in the string. Enclose the entire string in quotes.
-timeout	Specifies the time in seconds for the native Controller command to run. If a timeout value is not specified, then the command runs until it fails, succeeds, or continues until Oracle Customer Support cancels the command.

EXAMPLE

Task	Oracle Customer Support issues a native Controller **netstat** command on a Controller.
Parameters	• The name of the Controller preceded by a forward slash: `/CONTROLLER-0` • The name of the native Controller command: **netstat**

```
$ fscli controller -command
-controller /CONTROLLER-01 -commandString netstat
```

Related Links

controller

controller -list

controller -completeFru

Notifies the Oracle FS System that the maintenance operations that were performed on the Controller are complete.

SYNOPSIS

```
controller -completeFru
   -controller controller-id-or-fqn
   { -powerSupply powerSupply-fru-number
   | -fan fan-fru-number
   | -mb mb-fru-number
   | -chassis chassis-fru-number
   | -cpu cpu-fru-number
     [-memory memory-fru-number]
   | -esm esm-fru-number
   | -pcieRiser pcieRiser-fru-number
   | -nicHba nicHba-fru-number
   | -sasHba sasHba-fru-number
   }

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

After the field support representative replaces a FRU or upgrades the Controller hardware, the Oracle Customer Support representative might request that you run the **`controller -completeFru`** command. Before issuing the command, the Oracle Customer Support representative might request that you verify that the following conditions have been met:

- The Oracle FS System has marked the upgraded or replaced FRU with a `NORMAL` status in the output of the **`controller -list -details`** command.
- The Controller is marked as `NORMAL` in the output of the **`controller -list -details`** command.
- The partner Controller is no longer marked as `CONSERVATIVE` in the output of the **`system -list -details`** command.

Note: If one or more memory or HBA cards were added to the system, the Oracle FS System first runs acceptance tests on the Controllers before allowing them to rejoin the system. The Oracle Customer Support representative might request that you check the `Management State` of both Controllers and verify that both Controllers are marked as `AVAILABLE`. The Oracle Customer Support representative might also request that you run the **`controller -list -details`** command to verify that all of the new memory or HBA cards have also passed the acceptance tests.

Note: Only administrators with primary administrator, admin1, or support roles are authorized to run `controller -completeFru` command.

OPTIONS

`-chassis`

Specifies the FRU number for the chassis in the Controller that was replaced. The value for the chassis is 0. The system brings the Controller online by performing the following operations:

- The system powers up the Controller and runs acceptance tests.
- The system fails back to the restored Controller from the partner Controller.
- The restored Controller is brought online.
- The partner Controller is taken out of a conservative mode.

`-controller`

Specifies the fully qualified name (FQN) or unique identifier (ID) of the repaired Controller.

`-cpu`

Specifies the CPU in the Controller that was replaced. Runs acceptance tests on the CPU and Controller. If the hardware components pass the acceptance tests, the Controller is placed online. The partner

Controller is taken out of a conservative mode. Values are 0 or 1.

Note: If the -memory option is specified, indicates the CPU on which the replaced DIMM or NVDIMM resides.

-esm Specifies the energy storage module that was replaced. Runs acceptance tests on the new energy storage module and Controller. If the Controller passes the acceptance tests, the Controller is placed online. The partner Controller is taken out of a conservative mode. Values are 0 and 1.

-fan Specifies the fan that was replaced. Runs acceptance tests on the fan and the Controller. After the fan and Controller pass the acceptance tests, the Controller is placed online. The partner Controller is taken out of a conservative mode. The values for fans are 0 through 4.

-mb Specifies the motherboard that was replaced. Runs acceptance tests on the new motherboard and on the Controller. If the motherboard and Controller pass the acceptance tests, the Controller is placed online. The Controller is taken out of a conservative mode. There is only one motherboard in the Controller. The value is 0.

-memory Specifies the memory slot on the CPU in which the replaced DIMM or NVDIMM memory card resides. Values are 0 through 7.

Note: In addition to the slot number, you must specify the CPU in which the memory card resides by specifying a value for the -cpu option. The DIMM cards reside in slots 0 through 7 on CPU 0, and in slots 2 through 7 on CPU 1. The NVDIMM cards reside in slots 0 and 1 on CPU 1.

-nicHba Specifies the network interface HBA card that was replaced. The system also enables and brings online the PCIe riser in which the HBA card resides. Runs acceptance tests on the following components:

- The HBA card
- The PCIe riser
- The Controller

If the hardware components pass the acceptance tests, the Controller is placed online. The partner Controller is taken out of a conservative mode. If the Controller is set to automatically provision the

	network interface cards, the provisioning protocols are automatically configured for the HBA ports. The values for the network interface HBA cards are 0 through 5.
-pcieRiser	Specifies the PCIe riser to enable and bring online. The HBA cards that are inserted into the new riser are also enabled and brought online. PCIe riser values are 0, 1, or 2.
-powerSupply	Specifies the power supply to enable and bring online. Runs acceptance tests on the power supply and the Controller. After the power supply passes the acceptance tests, the Controller is placed online. The partner Controller is taken out of a conservative mode. The values for the power supplies are 0 or 1.
-sasHba	Specifies the SAS HBA card to enable and bring online. Runs acceptance tests on the HBA card, on the PCIe riser, and on the Controller. After each of the hardware components pass the acceptance tests, the Controller is placed online. The partner Controller is taken out of a conservative mode. The system updates the private interconnect topology to include the new SAS HBA card. The values for the SAS HBA cards are 0 through 5.

EXAMPLE

Task	Oracle Customer Support instructs you to complete the process of replacing a failed power supply. After preparing the Controller for the replacement procedure, you remove the failed supply and insert a replacement. The **controller -resumeFru** command, performs acceptance tests and brings the new power supply online.
Parameters	• The name of the Controller preceded by a forward slash: `/CONTROLLER-0` • The FRU number of the power supply: **0**

```
$ fscli controller -completeFru
-controller /CONTROLLER-0 -powerSupply 0
```

Related Links

controller

controller -list

system -list

controller -discardFBM

Deletes all user data that is stored in the flash-backed memory (FBM) cache of one or more Controllers.

SYNOPSIS

```
controller -discardFBM
   [-controller controller-id-or-fqn]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

The data stored in the flash-backed memory (FBM) cache that has not been written to disk is called immobile data. Immobile data can become corrupted and can cause a reboot loop in one or more Controllers. To clear the corrupted FBM, an Oracle Customer Support representative might instruct you to use the `controller -discardFBM` command to delete the immobile data from the caches of all the Controllers. You would then need to force the Oracle FS System to reboot.

Note: Only administrators with support roles are authorized to run `controller -discardFBM` command.

OPTIONS

-controller	Specifies the fully qualified name (FQN) or the unique identifier (ID) of a Controller from which the contents of the flash-backed memory is discarded.

EXAMPLE

Task	The Oracle Customer Support representative requests that you discard the immobile data that is stored in the FBM of a Controller.
Parameters	• The name of the Controller preceded by a forward slash: `/CONTROLLER-01`

```
$ fscli controller -discardFBM
-controller /CONTROLLER-01
```

Related Links

controller

controller -forceFailure

Forces the specified Controller to fail over to the partner Controller.

SYNOPSIS

```
controller -forceFailure
   -controller controller-id-or-fqn

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

When troubleshooting an Oracle FS System, the Oracle Customer Support representative might fail a Controller before performing a series of diagnostic tests. Forcing the failure of a Controller causes the Controller to fail over to the partner Controller. When the partner Controller assumes the responsibilities of the failed Controller, the changes the configuration of the private interconnect topology. The Oracle FS System issues a **PCP_EVT_CONTROLLER_FAILOVER_COMPLETE** event.

Note: Only administrators with support roles are authorized to run `controller -forceFailure` command.

OPTIONS

-controller	Specifies the fully qualified name (FQN) or the unique identifier (ID) of the Controller that the Oracle Customer Support representative is forcing to fail. When the Controller fails, the redundant controller becomes the master.

EXAMPLE

Task	Oracle Customer Support forces a Controller to fail over to the partner Controller. When the partner has assumed the operations of the failed Controller, it is placed into a conservative operational mode.
Parameters	• The name of the Controller preceded by a forward slash: `/CONTROLLER-0`

```
$ fscli controller -forceFailure
-controller /CONTROLLER-01
$ fscli system_alert -list
```

Related Links

controller

controller -list

Returns status and configuration information for one or both Controllers.

SYNOPSIS

```
controller -list
   [-details]
   [{ [-controller controller-id-or-fqn [,controller-id-or-fqn]... ]
      [-diagnostics]
      [-master]
      [-linkAggregation]
    | -port [controller[/slot[/port]] [,controller[/slot[/
port]]]... ]
    }]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Run the **controller -list** command to obtain the fully qualified names of the Controllers.

Run the **controller -list -details** command to obtain status and configuration information for the Controllers and their components. Additional options are available to inquire about the network interface ports. The port information can optionally include the link aggregation status.

Note: Administrators with primary administrator, admin1, admin2, monitor, or support roles can run the `controller -list` command and most of the options. However, only administrators with primary administrator, admin1, or support roles are authorized to run the -master option.

OPTIONS

-controller	Specifies the fully qualified name (FQN) or unique identifier (ID) of one or more Controllers. When specifying more than one Controller, provide commas to separate the FQNs or IDs.
-details	Returns the following information for each of the specified Controllers:

- The temperature status, serial number, and revision number of the Controller.
- The service type of the Controller: `nas`, `san`, `nasBias`, or `sanBias`
- The port provisioning settings for each HBA, if the -port option is included. Includes the link aggregation settings of the ports, if -linkAggregation is included.
- The status and configurations of the Controller, the power supplies, and the power supply fans.
- The fully qualified name of the master Controller, if the -controller option is included. In a peer-to-peer configuration, the master Controller assumes the functioning of the failed Controller and operates in a conservative mode.

`-diagnostics` Returns the most recent diagnostics report for the specified Controller.

`-linkAggregation` Returns the link aggregation settings that show individual HBA ports that are linked to present their combined throughput to the network as a single port. Only two ports on a given HBA card can be link aggregated.

`-master` Returns the fully qualified name or ID of the Controller that is designated to be the master Controller. In the Oracle FS System, the master Controller maintains the system configuration information, and communicates with the Pilot.

Only administrators with primary administrator, admin1, or support roles are authorized to run this option.

`-port` Returns information about one or more ports. To specify a port, use the following format: `controller/slot/port`. Specify each portion of the variable by providing the following values:

- For the *controller* portion of the variable, provide a string that includes the fully qualified name or ID of the Controller.
- For the *slot* portion of the variable, specify the HBA slot number.
- For the *port* portion of the variable, specify the port number. You can optionally provide **`"Port"`** as a label before the number.

Separate each element in the string with a forward slash character (/). If you do not specify a port, `controller -list` returns information about all of the ports.

EXAMPLE

Task	Before replacing a failed FRU, Oracle Customer Support requests that you verify that the Controller has failed over to the partner Controller.
Parameters	• None

```
$ fscli controller -list -details
```

Related Links

controller

controller -modify

Modifies the configuration of a Controller.

SYNOPSIS

```
controller -modify
   { -acceptHardwareProvisioning
   | -controller controller-id-or-fqn
     { -serviceType {san | nas | sanBias | nasBias}
       -buddyController controller-id-or-fqn
     | [-displayNumber controller-display-number]
       [-comment controller-descriptive-command]
     | -provisionPort (
         -slot hba-slot-number
         -port port-number
         -provision {fc | iScsi}
       )...
     | -linkAggregation (
         -slot hba-slot
         [{-aggregate | -noAggregate}]
         [-priority aggregation-priority]
       )...
     }
   }

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

The following attributes can be modified without the assistance of Oracle Customer Support:

- The display number
- The informational comment string

- The partner Controller assignments
- The port provisioning settings
- The link aggregation settings

Contact Oracle Customer Support for assistance with changing the service type setting.

CAUTION: Changing the display number, the partner Controller assignment, or the service type results in an immediate system shut down and restart.

Note: Only administrators with primary administrator or admin1 roles are authorized to run `controller -modify` command.

OPTIONS

`-acceptHardwareProvisioning`	Specifies that the ports on the network interface HBA cards are automatically provisioned with the appropriate protocol when the Controller is powered up. The system selects the appropriate protocol when it detects a Fibre Channel (FC)or an Ethernet connector. If the system detects a FC connection, it provisions the port as FC. If the system detects an Ethernet connection, it provisions the port as iSCSI. The service type of the Controller must be SAN, biased for SAN, or biased for NAS for the network interface HBA card to be detected and provisioned.
`-aggregate`	Specifies that all ports on the HBA will appear as one port on the network. If this option is not provided, the default is to aggregate.
`-buddyController`	Specifies the fully qualified name (FQN) or unique identifier (ID) of the Controller to configure as the partner Controller.
`-comment`	Specifies a string of 256 characters that further identifies the Controller.
`-controller`	Specifies the fully qualified name (FQN) or unique identifier (ID) of the Controller to modify.
`-displayNumber`	Specifies the number that is displayed on the outside of the Controller. Values range from 01 to 99 and A0 to FF. The display number is included in the fully qualified name (FQN) of the Controller.
`-linkAggregation`	Indicates that the individual HBA ports are linked and their combined throughput is presented to the network as a single port. Only two ports on a given HBA card can be link aggregated. Specify the following syntax for each set of ports to link aggregate:

-linkAggregation (-slot *hba-slot*[{-aggregate | -noAggregate}][-priority *aggregationPriority*])

-linkAggregation (-slot *hba-slot*[{-aggregate | -noAggregate}][-priority *aggregationPriority*])

Note: Depending on your operating system, you might have to escape the parentheses to use this option.

-noAggregate Reverses the link aggregation configuration that was previously set for the network interface HBA ports. Presents the ports as individual ports to the network.

-port Specifies a port number on the network interface HBA card to provision.

-priority Specifies the priority for the link aggregation operation. Values range from 0 to 65535. Higher values indicate a lower priority. The value is used by the Oracle FS System as part of the link identity. If you do not specify a priority, the default value is 60000.

-provision Specifies the provisioning protocol for the specified HBA port. Values are *fc* for the fiber channel ports and *iScsi* for the iSCSI ports. The Oracle FS System automatically provisions Ethernet ports.

-provisionPort Provisions a specific HBA port. Specify the following syntax for each port: **-provisionPort (-slot *slot* -port *port* -provision {fc | iscsi})**

Note: Depending on your operating system, you might have to escape the parentheses to use this option.

-serviceType Specifies the type of protocol support the Oracle FS System provides. Valid values: *san*, *nas*, *sanBias*, or *nasBias*. The correct Service Type for your system is specified on the Sales Order and the System Customer Information Documents and should not be changed. If the installed hardware in the Controllers does not allow the changed Service Type, the system will not boot. Modify the service type only as instructed by Oracle Customer Support.

This option can only be used on Controllers that do not have a Service Type. After you change the Service Type, you must then run the **haltpoint -resume** command to resume the system restart.

-slot	Specifies the slot number for the HBA card to provision. If this option is provided with the -linkAggregation option, the slot number specifies the HBA card to link aggregate.

EXAMPLE

Task	Change the display number of a Controller.
Parameters	• The name of the Controller preceded by a forward slash: `/CONTROLLER-00` • The new display number: **`05`**

```
$ fscli controller -modify
-controller /CONTROLLER-00 -displayNumber 05
```

Related Links

controller

controller -modifyAgentHaFlags

Modifies the high availability (HA) settings for a Controller.

SYNOPSIS

```
controller -modifyAgentHaFlags
   [-controller controller-id-or-fqn ]
   { [-noWarmstart]
     [-noFailover]
     [-clearWsCounter]
     [-debugMode]
   | -clearFlags
   }

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

When troubleshooting a Controller, an Oracle Customer Support representative might change one or more of the high availability (HA) settings. The HA flags modify the normal operating behaviors of the Controllers in the following ways:

- The no warm start HA flag instructs the Oracle FS System to convert all attempts to perform a soft reboot (warmstart) into a Controller failure so that all resources are failed over to the peerController.
- The no Failover HA flag instructs the Oracle FS System to prevent the Controller from failing when the warm start counter reaches a value of four. The clear HA flag undoes the no Failover HA flag.

- The clear warm start HA flag instructs the Oracle FS System to clear the number of warm starts that have been recorded for the specified Controller.
- The debug HA flag instructs the Oracle FS System to capture additional information that can assist Oracle Customer Support with troubleshooting the Controller.

Note: Do not run the **`controller -modifyAgentHAFlags`** command unless instructed to do so by Oracle Customer Support. Only administrators with support roles are authorized to run `controller -modifyAgentHaFlags` command.

OPTIONS

`-controller`	Specifies the fully qualified name (FQN) or unique identifier (ID) of the Controller if you are resetting the Agent HA flags for a specific Controller. If no controller is specified, the HA flags are reset for all Controllers.
`-noWarmstart`	Indicates that if the Oracle FS System attempts to perform a warmstart on the Controller, the warmstart attempt is re-initialized as a Controller failure. The Controller fails over to the peer. Then, the Controller attempts to re-initialize and fail back.
`-noFailover`	Indicates that on the fourth attempt, the Oracle FS System will warm start the Controller instead of failing over the Controller to its peer.
`-clearWsCounter`	Resets the warm start counter. If you clear the warm start counter for a Controller before the possibility of a fourth warm start occurring, the fourth warm start will not be converted into a Controller failure.
`-debugMode`	Places the Controller in a debugging mode.
`-clearFlags`	Clears all high availability (HA) indicators and returns the settings to the default values, including the warm start counter. Note: The Oracle FS System maintains the failure history of the Controller on the Pilot. Clearing the warm start counter does not affect the failure history. To reset the failure history, run the **`controller -reenable`** command.

EXAMPLE

Task	For diagnostic purposes, Oracle Customer Support changes the high

	availability (HA) settings for a Controller. The Oracle Customer Support representatives sets a specific flag to prevent the Controller from failing over to the partner Controller.
Parameters	• The name of the Controller preceded by a forward slash: `/CONTROLLER-0`

```
$ fscli controller -modifyAgentHaFlags
-controller /CONTROLLER-0 -noFailover
```

Related Links

controller

`controller -reenable`

Re-enables a Controller that was previously excluded from the Oracle FS System due to failures.

SYNOPSIS

```
controller -reenable
   [-controller controller-id-or-fqn]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

The Oracle FS System excludes a Controller from the cluster when the number of Controller failures reaches a predefined value. When running diagnostics, the counter can record an excessive number of Controller failures that do not correspond to actual failures. In some scenarios, the additional Controller failures might cause the Oracle FS System to fail the acceptance tests after FRU replacements.

Note: Only administrators with support roles are authorized to run `controller -reenable` command.

OPTIONS

`-controller`	Specifies the fully qualified name (FQN) or unique identifier (ID) of the Controller to re-enable. If no FQN or ID is specified, all Controllers are re-enabled. Do not specify a Controller when leaving the other Controllers offline while recovering a faulted Controller.

EXAMPLE

Task	Oracle Customer Support re-enables a Controller that was previously repaired and tested. When the Controller is placed online in a production environment, the Oracle FS System marks the Controller as faulty. The Oracle Customer Support representative clears an incorrect health indicator and brings the Controller online.
Parameters	• The name of the Controller preceded by a forward slash: `/CONTROLLER-0`

```
$ fscli controller -modifyAgentHaFlags
-controller /CONTROLLER-0 -clearWsCounter
$ fscli controller -reenable
-controller /CONTROLLER-0
$ fscli controller -rejoin -controller /CONTROLLER-0
```

Related Links

controller

controller -rejoin

Forces the specified Controller to rejoin the Oracle FS System.

SYNOPSIS

```
controller -rejoin
   -controller controller-id-or-fqn [, controller-id-or-fqn]...

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

During normal operation, a Controller that has been serviced will automatically rejoin the Oracle FS System after passing a series of acceptance tests. However, when the Oracle Customer Support representative manually performs the acceptance tests, the Oracle Customer Support representative forces the Controller to rejoin the cluster by issuing the **`controller -rejoin -controller`** ***`controller-id-or-fqn`*** command.

Note: Only administrators with support roles are authorized to run `controller -rejoin` command.

OPTIONS

-controller	Specifies the fully qualified name (FQN) or unique identifier (ID) of one or more Controllers to rejoin the Oracle FS System.

EXAMPLE

Task	After re-enabling the Controller, Oracle Customer Support representative brings the Controller online by rejoining it into the Oracle FS System.
Parameters	• The name of the Controller preceded by a forward slash: `/CONTROLLER-0`

```
$ fscli controller -rejoin -controller /CONTROLLER-0
```

Related Links

controller

controller -remove

Removes the configuration information that is stored on disk for a Controller or an HBA.

SYNOPSIS

```
controller -remove
   -controller controller-id-or-fqn
   [ -slot hba-slot-number ]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

After a Controller is forced to fail over to a partner Controller, a field service representative can power down the Controller, and physically remove it from the Oracle FS System. When the system marks the Controller as `missing`, the Oracle Customer Support representative can issue a **controller -remove -controller *controller-id-or-fqn*** command to delete the Controller from the configuration database that is stored on disk. Similarly, the Oracle Customer Support representative can issue a **controller -remove -controller *controller-id-or-fqn* -hba *hba-slot-number*** command to delete the HBA from the configuration database that is stored on disk. Only Controllers and HBAs that are in a *missing* state can be removed from the configuration database

that is stored on disk. The Oracle FS System does not allow you to remove Controllers or HBAs in any other state.

Note: Removing a Controller without providing a replacement Controller compromises the high availability access to user data. To prevent this risk, the field support representative may choose to install a replacement Controller while the faulty Controller is being serviced.

Note: Only administrators with support roles are authorized to run `controller -remove` command.

OPTIONS

`-controller`	Specifies the fully qualified name (FQN) or unique identifier (ID) of the Controller for which the configuration information that is stored on disk is removed.
`-slot`	Specifies the HBA slot-number for which the configuration information that is stored on disk is to be removed. If specified, only the HBA configuration information is removed.

EXAMPLE

Task	The Oracle Customer Support representative removes a Controller from the Oracle FS System by deleting the configuration information about the Controller that is stored on disk.
Parameters	• The name of the Controller preceded by a forward slash: `/CONTROLLER-0`

```
$ fscli controller -remove -controller /CONTROLLER-0
```

Related Links

controller

`controller -replaceFru`

Prepares the Controller for maintenance.

SYNOPSIS

```
controller -replaceFru
   -controller controller-id-or-fqn
   { -powerSupply powerSupply-fru-number
   | -fan fan-fru-number
   | -mb mb-fru-number
   | -chassis chassis-fru-number
```

```
    | -cpu cpu-fru-number
      [-memory memory-fru-number]
    | -esm esm-fru-number
    | -pcieRiser pcieRiser-fru-number
    | -nicHba nicHba-fru-number
    | -sasHba sasHba-fru-number
   }
   [-abort]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Oracle Customer Support might request that you issue a **`controller -replaceFru`** command to prepare the Controller for the following maintenance operations:

- Replacing FRUs
- Upgrading Controllers
- Adding or removing network interface HBA cards
- Adding or removing SAS HBA cards
- Adding or removing memory (NVDIMM or DIMM)

Note: Immediately after you run the **`controller -replaceFru`** command, the FSCLI returns with a successful status if the specified Controller is in an `AVAILABLE` management state. Receiving the successful status does not mean that the Controller is fully prepared for a FRU replacement procedure. Instead, the Oracle FS System must complete the following processes before it is safe to power off the Controller:

- The Controller fails over to the partner Controller.
- The partner Controller assumes the responsibilities of the failed over Controller.
- The system places the partner Controller into a conservative operational mode.
- The system marks the prepared Controller as `FAILED_OVER`.

Note: When preparing the Controller for the replacement of a failed component, specify a FRU number. To obtain the FRU number, use one of the following methods:

- The **`system_alert -list -details`** command provides information to identify the component. For some of the components, the FRU number is displayed in the `slot` field.
- The **`controller -list -details`** command marks a failed FRU with a `WARNING` or `CRITICAL` status. The `Location` field provides the FRU number.

Note: The Oracle FS System requires that memory or HBA cards are added to both Controllers in a symmetrical configuration. When adding memory or HBA cards, Oracle Customer Support might request that you run the **`controller -list -details`** command to identify the empty slots. After Oracle Customer Support determines the most appropriate slot to specify as the FRU number, run the **`controller -replaceFru`** command to prepare one of the Controllers. The Controller fails over to the partner Controller. To prepare the partner Controller, Oracle Customer Support might request that you run a **`system -shutdown`** command. Before shutting down the Oracle FS System, be sure to stop all I/O traffic to the partner Controller.

Note: Only administrators with primary administrator, admin1, or support roles are authorized to run `controller -replaceFru` command.

OPTIONS

`-abort`

Cancels the processes that prepare the specified FRU for replacement.

`-chassis`

Specifies the FRU number for the chassis in the Controller to prepare for replacement. The value for the chassis is 0. The system performs the following operations:

- The system marks the chassis as `missing`.
- The system fails the Controller over to the partnerController.
- The prepared Controller is powered off and marked as `missing`.
- The system places the partner Controller into a conservative mode.

`-controller`

Specifies the fully qualified name (FQN) or unique identifier (ID) of a Controller to prepare for upgrade or maintenance.

`-cpu`

If the -memory option is not provided, specifies the CPU to prepare for replacement. The system performs the following operations:

- The Controller with the faulty CPU fails over to the partner Controller.
- The Controller is powered off and is marked as `missing`.
- The system places the partner Controller into a conservative mode.

If the -memory option is provided, specifies the CPU on which the faulted DIMM or NVDIMM memory card resides.

Values are 0 or 1.

-esm

Specifies the energy storage module in the Controller to prepare for replacement. Values are 0 and 1. The system performs the following operations:

- The Controller with the faulty energy storage module fails over to the partner Controller.
- The Controller is powered off and marked as `missing`.
- The system places the failed to Controller into a conservative mode.

-fan

Specifies the fan to prepare for replacement. The system performs the following operations:

- The system powers down the fan and marks it as `missing`.
- The Controller with the faulty fan fails over to the partner Controller.
- The Controller is powered off and is marked as `missing`.
- The system places the partner Controller into a conservative mode.

The values for the fans are 0 through 4.

-mb

Specifies the motherboard to prepare for replacement. The system performs the following operations:

- The system prepares the motherboard for replacement and marks it as `missing`.
- The Controller with the faulty motherboard fails over to the partner Controller.
- The Controller is powered off and the Controller is marked as `missing`.
- The system places the partner Controller into a conservative mode.

There is only one motherboard in the Controller. The value is 0.

-memory

Specifies the memory slot on the CPU in which the faulted DIMM or NVDIMM memory card resides. The system performs the following operations:

- The system prepares the DIMM or NVDIMM card for replacement and marks it as `missing`.
- The Controller with the faulty memory card fails over to the partner Controller.
- The Controller is powered off and the Controller is marked as `missing`.
- The Oracle FS System places the partner Controller into a conservative mode.

Values are 0 through 7.

Note: In addition to the slot number, you must specify the CPU in which the memory card resides by specifying a value for the -cpu option. The DIMM cards reside in slots 0 through 7 on CPU 0, and in slots 2 through 7 on CPU 1. The NVDIMM cards reside in slots 0 and 1 on CPU 1.

-nicHba

Specifies the network interface HBA card to prepare for replacement. The system performs the following operations:

- The system disables the card and marks it as `missing`.
- The Controller with the faulty HBA card fails over to the partner Controller.
- The Controller is powered off and is marked as `missing`.
- The system places the partner Controller into a conservative mode.

The values for the network interface HBA cards are 0 through 5.

-pcieRiser

Specifies the PCIe riser to prepare for replacement. The system performs the following operations:

- The system disables the PCIe riser and marks it as `missing`.
- The HBA cards that are inserted into the PCIe riser are marked as `missing`.
- The Controller with the faulty PCIe riser fails over to the partner Controller.
- The Controller is powered off and is marked as `missing`.
- The system places the partner Controller into a conservative mode.

The values for the PCIe riser are 0, 1, or 2.

-powerSupply Specifies the power supply to prepare for replacement. The system performs the following operations:

- The system disables the power supply and marks it as `missing`.
- The Controller with the faulty power supply fails over to the partner Controller.
- The Controller is powered off and is marked as `missing`.
- The system places the partner Controller into a conservative mode.

Values of the power supplies are 0 or 1.

-sasHba Specifies the SAS HBA card to prepare for replacement. The system performs the following operations:

- The system disables the SAS HBA card and marks it as `missing`.
- The Controller with the faulty HBA card fails over to the partner Controller.
- The Controller is powered off and is marked as `missing`.
- The system places the partner Controller into a conservative mode.

Values of the SAS HBA cards are 0 through 5.

EXAMPLE

Task	To begin the process of replacing a faulty power supply, Oracle Customer Support instructs you to prepare the Controller for a FRU replacement.
Parameters	• The name of the Controller preceded by a forward slash: `/CONTROLLER-0` • The FRU number of the power supply: **`0`**

```
$ fscli controller -replaceFru
-controller /CONTROLLER-0 -powerSupply 0
```

Related Links

controller

system_alert -list

controller -list

system -shutdown

controller -completeFru

`controller -reset`

Performs a soft and fast reset of the Controller. A Controller reset is also known as a warmstart.

SYNOPSIS

```
controller -reset
   -controller controller-id-or-fqn

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

While troubleshooting a faulted Controller, the Oracle Customer Support representative might restart the Controller. When the Controller restarts, it rejoins the cluster and resumes its normal operation after passing a series of acceptance tests.

Note: Resetting the Controller does not restore or reset the configuration of the Controller to the predefined defaults.

Note: Only administrators with support roles are authorized to run `controller -reset` command.

OPTIONS

`-controller`	Specifies the fully qualified name (FQN) or unique identifier (ID) of the Controller for which the configuration is reset.

EXAMPLE

Task	The Oracle Customer Support representative resets the configuration of the Controller that is stored on disk.
Parameters	• The name of the Controller preceded by a forward slash: `/CONTROLLER-0`

```
$ fscli controller -reset -controller /CONTROLLER-0
```

Related Links

controller

controller -runDiagnostics

Performs the diagnostic tests that are used to troubleshoot a faulty or failed Controller. Some of the diagnostic tests are disruptive and can the data volumes offline.

SYNOPSIS

```
controller -runDiagnostics
   -controller controller-id-or-fqn

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Before or while running the diagnostic tests, the Oracle Customer Support representative might force the Controller to fail over to its partner. After running the diagnostic tests, the Oracle Customer Support representative might force the Controller to rejoin the system. When the Controller rejoins the system, the partner Controller releases the responsibilities that it assumed for the failed Controller.

Note: Only administrators with support roles are authorized to run `controller -runDiagnostics` command.

OPTIONS

-controller — Specifies the fully qualified name (FQN) or unique identifier (ID) of the Controller for which diagnostics are run.

EXAMPLE

Task	The Oracle Customer Support representative runs diagnostic tests.
Parameters	• The name of the Controller preceded by a forward slash: `/CONTROLLER-0`

```
$ fscli controller -runDiagnostics
-controller /CONTROLLER-0
```

Related Links

controller

controller -list

drive_group

Manages the groups of drives that are configured to function together as a unit in the Drive Enclosures.

SYNOPSIS

```
drive_group { [ -acceptMisplacedDriveGroups | -delete |
-forceDrivesOnline | -list | -modify | -restoreDriveGroup |
-setPersistence | -verifyDataConsistency ] | [ | -usage | -help ] }
```

DESCRIPTION

When you physically add a new Drive Enclosure to the Oracle FS System, the system creates one or more drive groups. A new drive group can also be created when a set of drives is added to a Drive Enclosure that is partially populated. The Oracle FS System uses the following guidelines to determine whether to create a drive group from a group of new drives:

- If the number of newly added drives reaches or exceeds the number that is required to create a drive group, the Oracle FS System automatically creates a drive group. The system marks the drives that are not included in the new drive group as `NOT_USED`.
- If the number of the newly added drives is less than the number that is required to create a drive group, the Oracle FS System marks all of the new drives as `NOT_USED`.

Important: The spare drives that are `NOT_USED` are available to all of the drive groups in the Drive Enclosure. When one of the drives in a drive group is marked as `CRITICAL`, `WARNING`, or `MISSING`, the Oracle FS System places the drive group in a conservative mode. While the drive group is operating in a conservative mode, the Oracle FS System rebuilds the data that was stored on the `FAULTED` drive onto a drive that is marked as `NOT_USED`. During the rebuilding process, expect reduced performance and increased latency when accessing the data that is stored on the drive group. When the faulted drive is replaced, and the drive group recovery processes have completed, the drive that was previously allocated as a spare becomes part of the drive group. The Oracle FS System marks the replaced drive as `NOT_USED`.

When the Oracle FS System creates a new drive group, the system performs the following actions to prepare the drive group for provisioning:

- The Oracle FS System assigns a fully qualified name (FQN) and a unique identifier (ID) to the drive group.

- The system associates the physical slot numbers to the drives in the drive group. In the drive group, drives are referenced by slot numbers.

In addition to displaying configuration and status information, the **drive_group** command also performs the following recovery and maintenance operations:

- Reassigns the persistence volume to another drive group
- Brings replacement drives online
- Restores a drive group that is running in conservative mode because one or more drives in the group are incorrectly marked as `CRITICAL`, `WARNING`, or `MISSING`
- Verifies the consistency of the data that is stored on the drive group
- Excludes the drive group from the assigned Storage Domain
- Assigns the drive group to another Storage Domain
- Removes the drive group from the Oracle FS System to prepare the system for physically removing the Drive Enclosure from the system

SUBCOMMANDS

-acceptMisplacedDriveGroups	Accepts one or more drive groups that are misplaced.
-delete	Removes one or more drive groups from the Oracle FS System.
-forceDrivesOnline	Forces replaced drives online and forces the drives that were incorrectly marked as `CRITICAL`, `WARNING`, or `MISSING` to return to a `NORMAL` operational state.
-list	Returns information about the drive groups, and, optionally, returns the health and status of each of the drives in the drive groups.
-modify	Includes or excludes a drive group from a Storage Domain.
-restoreDriveGroup	Brings online a drive group that is currently offline.
-setPersistence	Designates a drive group to store the persistence data that is managed by the Controller.
-verifyDataConsistency	Performs a data consistency check on the drive group.

EXAMPLE

Task	Display a list of drive groups with details about the drives that are in the drive group.
Parameters	• None

```
$ fscli drive_group -list -details
```

Related Links

drive_group -acceptMisplacedDriveGroups
drive_group -delete
drive_group -forceDrivesOnline
drive_group -list
drive_group -modify
drive_group -restoreDriveGroup
drive_group -setPersistence
drive_group -verifyDataConsistency

drive_group -acceptMisplacedDriveGroups

Accepts one or more drive groups that are misplaced.

SYNOPSIS

```
drive_group -acceptMisplacedDriveGroups
   -driveGroup drive-group-id-or-fqn [,drive-group-id-or-fqn]...

[{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

When a Drive Enclosure is moved from one Drive Enclosure string to another string, a possibility exists that the data in flash-backed memory (FBM) could be lost.

When an Oracle FS System is cleanly shut down, the system writes all of the data that exists in the FBM to the appropriate drive groups. No data is lost.

When the system is not cleanly shut down, for example, as the result of a sudden power failure, the system is not able to write the data that exists in FBM to the drive groups. In this situation, if you then move a Drive Enclosure , or the drives in an entire drive group from a Drive Enclosure from one string to another string, data can be lost during a system restart operation.

CAUTION: If you run the `drive_group -acceptMisplacedDriveGroups` command under these circumstances, the system cannot determine the location of the drive groups and data will be lost. This is similar to clearing Pinned Data, except that it will affect all volumes on the Drive Enclosure or drive group. To avoid data loss, whenever possible return the Drive Enclosure to its original string.

In this scenario, the drive groups in the moved Drive Enclosure are referred to as *misplaced* drive groups.

Note: Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run the `drive_group -acceptMisplacedDriveGroups` command.

OPTIONS

`-driveGroup`	Specifies the fully qualified name (FQN) or the unique identifier (ID) of the drive group that is misplaced and that you want to accept. **CAUTION:** When the `-acceptMisplacedDriveGroups` subcommand is run, the data in the flash-backed memory that is associated with the specified drive group is lost.

EXAMPLE

Task	Accepts a drive group that has been misplaced.
Parameters	• The fully qualified name (FQN) of the drive group: **`/ENCLOSURE01-DG001`**

```
$ fscli drive_group -acceptMisplacedDriveGroups
-driveGroup /ENCLOSURE01-DG001
```

Related Links

drive_group

`drive_group -delete`

Removes one or more drive groups from the Oracle FS System.

SYNOPSIS

```
drive_group -delete
   -driveGroup drive-group-id-or-fqn [,drive-group-id-or-fqn]...

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Deleting a drive group removes its record from the Oracle FS System. Before deleting a drive group that contains data, you must exclude the drive group from the Storage Domain by running the **`drive_group -modify -excludeFromStorageDomain`** command. Then, you can remove the physical drives from the Oracle FS System. Run the **`drive_group -delete`** command only after running the **`drive_group -list -details`** command to confirm that all of the drives in the drive group are marked `MISSING`.

CAUTION: Do not remove a Drive Enclosure from the Oracle FS System without first excluding the drive groups from the Storage Domains in which the drive groups reside. Physically removing a Drive Enclosure without first excluding the drive groups from their Storage Domains can cause data loss. Excluding the drive groups impacts performance and can cause latency.

Only administrators with primary administrator, admin1, or support roles are authorized to run this command.

OPTIONS

-driveGroup

Specifies the fully qualified name (FQN) or the unique identifier (ID) of the drive group. When a Drive Enclosure is added to the Oracle FS System, the system automatically allocates the storage by generating one or more drive groups. The **drive_group -list** command displays the names of all drive groups that are defined on the Oracle FS System. The FQN consists of the name that the system generates preceded by a forward slash (/) character.

EXAMPLE

Task	Complete the process of removing a Drive Enclosure from the Oracle FS System by deleting the drive groups. In this example, only one drive group resides on the Drive Enclosure. **Note:** The drive group must be removed from the Storage Domain before running this example.
Parameters	• The fully qualified name (FQN) of the drive group: **/ENCLOSURE01-DG001**

```
$ fscli drive_group -delete
-driveGroup /ENCLOSURE01-DG001
```

Related Links

drive_group

drive_group -modify

drive_group -list

drive_group -forceDrivesOnline

Forces replaced drives online and forces the drives that were incorrectly marked as CRITICAL, WARNING, or MISSING to return to a NORMAL operational state.

SYNOPSIS

```
drive_group -forceDrivesOnline
   -driveGroup drive-group-id-or-fqn

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

The Oracle FS System can mark a drive as CRITICAL, WARNING, or MISSING for many reasons that do not necessarily involve a mechanical failure. Unless a drive fails to power up, the data on the drive can be intact and accessible, and, therefore, recoverable. If the Oracle FS System marks only one drive in the drive group with a label that indicates failure, replace the drive. If the Oracle FS System marks two or more drives in the drive group as CRITICAL, WARNING, or MISSING, immediately run the **drive_group -forceDrivesOnline** command. Any of the drives that were incorrectly marked are brought online. If one drive is marked with a label that indicates failure after running the **drive_group -forceDrivesOnline** command, replace the drive.

CAUTION: After forcing the drives in the drive group online, if two or more drives in the drive group are marked with a label that indicates failure, exclude the drive group from the Storage Domain. Excluding the drive group from the Storage Domain gives you the best opportunity to safeguard the data. After the data migration operation completes, contact Oracle Customer Support for further instructions.

Note: After one or more drives have been replaced, the **drive_group -forceDrivesOnline** command brings the drives online if the drive group was not automatically brought online when the drives were replaced. When a drive is marked as CRITICAL, WARNING, or MISSING, the Oracle FS System rebuilds the data onto unused portions of the remaining drives or rebuilds the data onto a spare drive that is marked NOT_USED. While the system is rebuilding the data, the drive group operates in a conservative mode, with reduced performance and increased latency. The rebuilding process might require several hours to complete. If data is rebuilt onto a NOT_USED drive, the drive is marked with various indicators to communicate the current status of the data migration and rebuilding process. The system marks the drive as NORMAL when the data rebuilding process has completed. The replaced drive is marked as NOT_USED. After waiting a reasonable amount of time, if the drive group is not in a NORMAL or REBUILDING_ONLINE state, run the **drive_group -forceDrivesOnline** command.

Only administrators with primary administrator, admin1, or support roles are authorized to run this command.

OPTIONS

-driveGroup

Specifies the fully qualified name (FQN) or the unique identifier (ID) of the drive group. When a Drive Enclosure is added to the Oracle FS System, the system automatically allocates the storage by generating one or more drive groups. The **drive_group -list** command displays the names of all drive groups that are defined on the Oracle FS System. The FQN consists of the name that the system generates preceded by a forward slash (/) character.

EXAMPLE

Task	Bring online any of the drives in the specified drive group that are currently offline.
Parameters	• The fully qualified name (FQN) of the drive group: **/ENCLOSURE01-DG001**

```
$ fscli drive_group -forceDrivesOnline
-driveGroup /ENCLOSURE01-DG001
```

Related Links

drive_group

drive_group -list

drive_group -list

Returns information about the drive groups, and, optionally, returns the health and status of each of the drives in the drive groups.

SYNOPSIS

```
drive_group -list
   [-details]
   {[-misplacedDriveGroups]
   |
   [-driveGroup drive-group-id-or-fqn [,drive-group-id-or-fqn]...]
   [{ -unassigned
    | -persistenceDriveGroup
    | -offlineVolumes drive-group-id
    }]
   [-dataConsistency]
   }

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Run the **drive_group -list** command to list all of the drive groups in the Oracle FS System. The output of the **drive_group -list -details** command reports the following information:

- The Drive Enclosure that is associated with each drive group.
- The total capacity of each drive group.
- The status of each drive in the drive group.

Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run this command.

OPTIONS

-dataConsistency	Displays data consistency information of the specified drive group.
-details	Returns detailed configuration and state information for the specified drive groups.
-driveGroup	Specifies the fully qualified name (FQN) or the unique identifier (ID) of the drive group. When a Drive Enclosure is added to the Oracle FS System, the system automatically allocates the storage by generating one or more drive groups. The **drive_group -list** command displays the names of all drive groups that are defined on the Oracle FS System. The FQN consists of the name that the system generates preceded by a forward slash (/) character.
-misplacedDriveGroups	Returns a list of drive groups that are misplaced. A *misplaced* drive group results when all of the following conditions occur: • Data exists in flash-backed memory that belongs to the drive group. • The system is not cleanly shut down. • The Drive Enclosure in which the drive group is configured is moved to a different Drive Enclosure string or the drives in the drive group are moved to another Drive Enclosure that is on a different Drive Enclosure string. • The Oracle FS System restarts, but the system cannot locate the drive group on the original string.
-offlineVolumes	Displays a list of any offline SAN LUNs or NAS filesystem data tiers that are residing on compromised drive groups.

-persistenceDriveGroup	Displays the drive group that is holding Persistence data.
-unassigned	Displays any drive groups that are not assigned to a storage domain. If all of the drive groups are assigned, the command returns without displaying any output.

EXAMPLE

Task	Display a list of drive groups with details about the drives that are in the drive group.
Parameters	• None

```
$ fscli drive_group -list -details
```

Related Links

drive_group

drive_group -modify

Includes or excludes a drive group from a Storage Domain.

SYNOPSIS

```
drive_group -modify
   { -driveGroup drive-group-id-or-fqn [,drive-group-id-or-fqn]...
       { -includeInStorageDomain storage-domain-id-or-fqn
            [{-rebalanceVolumes | -noRebalanceVolumes}]
       | -excludeFromStorageDomain
            [-priority {default | maximumSpeed | minimumImpact}]
       }
   | -cancelExcludeFromStorageDomain storage-domain-id-or-fqn
   }

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

When the Oracle FS System creates a new drive group, the drive group is not associated with any Storage Domain. To assign the drive group to a Storage Domain, run the **drive_group -modify -includeStorageDomain** command. To create the Storage Domain, run the **storage_domain -add** command.

Important: Excluding the drive group reduces performance and causes latency while the Oracle FS System migrates the data volumes to the remaining drives. To address this, you can set a -priority option to minimize the impact. When adding a drive group to a Storage Domain that has drive groups already included in the Storage Domain, you can rebalance the existing data volumes.

Rebalancing data volumes also reduces performance and causes latency while the Oracle FS System migrates the data. After the migration processes complete, expect increased performance and decreased latency.

Only administrators with primary administrator or admin1 roles are authorized to run this command.

OPTIONS

-cancelExcludeFromStorageDomain
Terminates the drive group exclusion operations that are currently processing. Resets the storage domain to the state that it was in before the drive group exclusion command was initiated.

-driveGroup
Specifies the fully qualified name (FQN) or unique identifier (ID) of one or more drive groups. When a Drive Enclosure is added to the Oracle FS System, the system automatically allocates the storage by generating one or more drive groups. The **drive_group -list** command displays the names of all drive groups that are defined on the Oracle FS System. The FQN consists of the name that the system generates preceded by a forward slash (/) character.

-excludeFromStorageDomain
Migrates the data volumes from the drives in the drive group onto other storage in the Storage Domain. Use with the -priority option to specify the priority of the background processes that perform the exclusion.

-includeInStorageDomain
Includes the specified drive group in the Storage Domain. You can specify that the Oracle FS System rebalance the volumes across all drive groups in the Storage Domain. Not rebalancing the volumes is the default.

-noRebalanceVolumes
Specifies that the existing logical volumes are not rebalanced after one or more drive groups are added to a Storage Domain. This action is the default.

-priority
Specifies the priority of the background processes that migrate the data as a result of excluding the drive group from the storage domain:

default	Balances the impact and the speed based on the data access activity.
maximumSpeed	Increases the priority of the background operations.

minimumImpact	Allows the background processes to run when the processes do not significantly impact I/O.

-rebalanceVolumes Rebalances the existing volumes that reside on all of the drive groups in the Storage Domain after adding one or more drive groups to the Storage Domain.

EXAMPLE

Task	Add the specified drive group to the specified storage domain without rebalancing the data volumes.
Parameters	• The fully qualified name (FQN) of the drive group: **/ENCLOSURE01-DG001** • The fully qualified name (FQN) of the storage domain: **/OracleDatabase12c**

```
$ fscli drive_group -modify
-driveGroup /ENCLOSURE-1-DG001
-includeInStorageDomain /OracleDatabase12c
```

Related Links

drive_group

drive_group -list

drive_group -restoreDriveGroup

Brings online a drive group that is currently offline.

SYNOPSIS

```
drive_group -restoreDriveGroup
   -driveGroup drive-group-id-or-fqn
   [-withDataLoss]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

CAUTION: Do not run the **drive_group -restoreDriveGroup** command unless explicitly instructed to do so by Oracle Customer Support. If you are recovering a drive group in which more than one drive has faulted, restoring the drive group with data loss could result in compromised data integrity.

If any of the data volumes a drive group were provisioned using a redundancy scheme other than RAID6, and two or more drives in the drive group are marked with a label that indicates failure, the Oracle FS System takes the drive group offline. Offline drive groups are marked `DEGRADED_CRITICAL`. To recover the data on the faulted drives, first run the **`drive_group -forceOnline`** command. If, after running the command, only one drive is reported as `CRITICAL`, `WARNING`, or `MISSING`, replace the drive. If two or more drives are marked with a label that indicates failure, contact Oracle Customer Support.

To recover the data on the faulted drives, Oracle Customer Support might request that you first run the **`drive group -restoreDriveGroup`** ***`drive-group-id-or-fqn`*** command before instructing you to replace the drives. If the recovery command succeeds, the Oracle FS System restores the affected data volumes with minimal data loss. If the command fails, Oracle Customer Support might request that you review the system alerts by running the **`system_alert -list -details`** command and reporting the results. The Oracle Customer Support representative may also provide you with a procedure for collecting system logs.

Only administrators with primary administrator or admin1 roles are authorized to run this command.

OPTIONS

`-driveGroup`	Specifies the fully qualified name (FQN) or the unique identifier (ID) of the drive group. When a Drive Enclosure is added to the Oracle FS System, the system automatically allocates the storage by generating one or more drive groups. The **`drive_group -list`** command displays the names of all drive groups that are defined on the Oracle FS System. The FQN consists of the name that the system generates preceded by a forward slash (/) character.
`-withDataLoss`	Indicates that the data volumes on the specified drive group will be restored with data loss after the compromised drives are replaced. If not specified, the SAN LUNs or file system tiers can come online with minimum data loss after drive replacement.

EXAMPLE

Task	Restore a drive group that is currently offline.
Parameters	• The fully qualified name (FQN) of the drive group: **`/ENCLOSURE01-DG001`**

```
$ fscli drive_group -restoreDriveGroup
-driveGroup /ENCLOSURE01-DG001
```

Related Links

drive_group

drive_group -forceDrivesOnline

system_alert -list

drive_group -list

drive_group -setPersistence

Designates a drive group to store the persistence data that is managed by the Controller.

SYNOPSIS

```
drive_group -setPersistence
   -driveGroup drive-group-id-or-fqn

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

The Oracle FS System uses a persistence database to store the following types of system information in a VLUN that is reserved for system use:

- Global system settings
- Administrator account definitions
- NAS configuration information
- LUN mappings

Note: The Oracle FS System stores the persistence database on one of the drive groups that you specify. In contrast, the Oracle FS System stores the Configuration on Disk (COD) on all drive groups in the Oracle FS System. The COD includes the following types of information:

- The configuration of all data volumes and their clones.
- The MARKS database that manages the Backend SAS Interconnect topology
- The hardware manifest

Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run this command.

OPTIONS

-driveGroup Specifies the fully qualified name (FQN) or the unique identifier (ID) of the drive group. When a

Drive Enclosure is added to the Oracle FS System, the system automatically allocates the storage by generating one or more drive groups. The **drive_group -list** command displays the names of all drive groups that are defined on the Oracle FS System. The FQN consists of the name that the system generates preceded by a forward slash (/) character.

EXAMPLE

Task	Specify a drive group to hold the persistence database.
Parameters	• The fully qualified name (FQN) of the drive group: **/ENCLOSURE01-DG001**

```
$ fscli drive_group -setPersistence
-driveGroup /ENCLOSURE01-DG001
```

Related Links

drive_group

drive_group -list

drive_group -verifyDataConsistency

Performs a data consistency check on the drive group.

SYNOPSIS

```
drive_group -verifyDataConsistency
   -driveGroup drive-group-id-or-fqn
   -priority {high | low}

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

The data consistency check is a long running operation. Since the data consistency check can impact performance or cause latency, you have the option of running the check with a high or low priority. The **task -list** command provides completion status information for long running commands.

Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run this command.

OPTIONS

-driveGroup	Specifies the fully qualified name (FQN) or the unique identifier (ID) of the drive group. When a Drive Enclosure is added to the Oracle FS System, the system automatically allocates the storage by generating one or more drive groups. The **drive_group -list** command displays the names of all drive groups that are defined on the Oracle FS System. The FQN consists of the name that the system generates preceded by a forward slash (/) character.
-priority	Specifies the priority of the background process that verifies the data consistency of all of the drives in the drive group.

EXAMPLE

Task	Verify the data consistency of the specified drive group. Use a low priority for the background tasks.
Parameters	• The fully qualified name (FQN) of the drive group: **/ENCLOSURE01-DG001**

```
$ fscli drive_group -verifyDataConsistency
-driveGroup /ENCLOSURE01-DG001 -priority low
```

Related Links

drive_group

task -list

drive_group -list

enclosure

Performs maintenance and troubleshooting operations on the Drive Enclosures and performs hardware replacement procedures.

SYNOPSIS

`enclosure { [ -autoEnclosureOps | -beacon | -clearDriveHistory | -completeFru | -download | -list | -modify | -replaceFru | -setDisplayNumbers ] | [ -usage | -help ] }`

DESCRIPTION

The **enclosure** command performs the following operations:

- Obtains status and environmental data
- Modifies the number that is displayed on the chassis
- Prepares the Oracle FS System for Drive Enclosure repair and maintenance
- Notifies the Oracle FS System that a FRU replacement procedure has been completed

Note: The **enclosure** command performs maintenance operations on individual drives. The **drive_group** command performs operations on the sets of drives. An Oracle Customer Support representative might instruct you to use the information in the system alerts and events to determine when to run an **enclosure** command or when to run a **drive_group** command.

Note: In most instances, when replacing a FRU, you use Guided Maintenance, not the Oracle FS CLI. In rare instances, however, an Oracle Customer Support representative might direct you to use the FSCLI. When running the **enclosure** commands, follow the instructions that are provided by Oracle Customer Support.

SUBCOMMANDS

-autoEnclosureOps	Disables or enables the automatic management operations that run in the background on the specified Drive Enclosure.
-beacon	Flashes the LEDs for a specific FRU in the Drive Enclosure.
-clearDriveHistory	Clears the failure history that is associated with the specified drive slot.
-completeFru	Completes the FRU replacement procedures to bring the replaced hardware online.
-download	Returns statistics and diagnostic information for a particular I/O module (IOM).
-list	Returns information about one or more Drive Enclosures.
-modify	Changes the configuration of a Drive Enclosure.
-replaceFru	Prepares the specified FRU for replacement.
-setDisplayNumbers	Loads a file that contains the display numbers of each Drive Enclosure in the Oracle FS System.

EXAMPLE

Task	Identify a failed drive that was prepared for replacement by flashing all the LEDs in the Drive Enclosure except for the LEDs of the failed drive.

Parameters	• The name of theDrive Enclosure preceded by a forward slash: `/ENCLOSURE-01` • The slot number of the failed drive: 22

```
$ fscli enclosure -beacon -enclosure /ENCLOSURE-01
-reverseBeacon -diskDrive 22
```

Related Links

enclosure -autoEnclosureOps
enclosure -beacon
enclosure -clearDriveHistory
enclosure -completeFru
enclosure -list
enclosure -modify
enclosure -replaceFru
enclosure -setDisplayNumbers
drive_group

`enclosure -autoEnclosureOps`

Disables or enables the automatic management operations that run in the background on the specified Drive Enclosure.

SYNOPSIS

```
enclosure -autoEnclosureOps
   -enclosure enclosure-id-or-fqn
   {-enable | -disable}

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

To support troubleshooting and performing diagnostics, an Oracle Customer Support representative might request that you disable the automatic management operations. Disabling these operations allows the Oracle Customer Support representative to manually run diagnostics and to perform other tests on the system without interference from the automatic management software.

Important: After the Oracle Customer Support representative has resolved the problem, run the **`enclosure -autoEnclosureOps -enable`** command. Although the Drive Enclosure can serve data with the automatic management operations disabled, it is not recommended.

Only administrators with primary administrator, admin1, or support roles are authorized to run this command.

OPTIONS

-disable	Disables the automatic maintenance operations that run in the background on the Drive Enclosure.
-enable	Enables the automatic maintenance operations that run in the background on the Drive Enclosure.
-enclosure	Specifies the fully qualified name (FQN) or unique identifier (ID) of the designated Drive Enclosure. The FQN includes the chassis ID, which is displayed on the front of the Drive Enclosure.

EXAMPLE

Task	After Oracle Customer Support has completed running diagnostics, enable the automatic management operations that run in the background.
Parameters	• None

```
$ fscli enclosure -autoEnclosureOps -enable
```

Related Links

enclosure

enclosure -beacon

Flashes the LEDs for a specific FRU in the Drive Enclosure.

SYNOPSIS

```
enclosure -beacon
   -enclosure enclosure-id-or-fqn
   [-stop]
   [-reverseBeacon]
   { -powerCoolingModule powerCoolingModule-fru-number
   | -diskDrive diskDrive-fru-number
   | -chassis chassis-fru-number
   | -iom io-module-fru-number
     [-sasPort sasPort-fru-number]
   }

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Run the **enclosure -beacon** command to flash the LEDs of a Drive Enclosure or to flash the LEDs for a component of a Drive Enclosure. When replacing a failed component, flashing the LEDs helps the administrator to locate the component in the rack. If the component is powered off or missing, run the reverse beaconing

command to flash all of the LEDs on the specified Drive Enclosure except for the component that you are replacing.

OPTIONS

-enclosure	Specifies the fully qualified name (FQN) or unique identifier (ID) of the Drive Enclosure in which the FRUs to beacon are located. The FQN includes the chassis ID, which is displayed on the front of the Drive Enclosure.
-stop	Stops the specialized LED beaconing request and returns all LED indicators to their normal function.
-reverseBeacon	Flashes all LEDs except for the LEDs that are associated with the specified FRU.
-powerCoolingModule	Specifies the power cooling module to beacon. Values are 0 and 1.
-diskDrive	Specifies the slot number of the drive to beacon. Values are 0 to 23 for rotating media (performance or archive). Values are 0 to 18 for SSDs.
-chassis	Specifies the FRU number for the chassis in the Drive Enclosure to beacon. The value for the chassis is 0.
-iom	Specifies the FRU number for the I/O module to beacon. Valid values are 0 and 1.
-sasPort	Specifies the SAS port on an I/O Module to beacon. The -sasPort option must be specified with the -iom option. SAS port values are 0, 1, and 2.

EXAMPLE

Task	Identify a failed drive that was prepared for replacement by flashing all the LEDs in the Drive Enclosure except for the LEDs of the failed drive.
Parameters	• The name of theDrive Enclosure preceded by a forward slash: `/ENCLOSURE-01` • The slot number of the failed drive: 22

```
$ fscli enclosure -beacon -enclosure /ENCLOSURE-01
-reverseBeacon -diskDrive 22
```

Related Links

enclosure

enclosure -clearDriveHistory

Clears the failure history that is associated with the specified drive slot.

SYNOPSIS

```
enclosure -clearDriveHistory
   -enclosure enclosure-id-or-fqn
   -driveSlot drive-index

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

An Oracle Customer Support representative might require that you clear the history of a specific drive slot. Clearing the drive slot history removes the persistent record of drive failures that have occurred in the slot. Running the **`enclosure -clearDriveHistory`** command also clears the history of the drives that were pulled and reinserted. Whenever a drive is pulled and reinserted, the drive failure count increments. When the drive count increments to four failures, the Oracle FS System marks the drive slot as `faulty`. Clearing the drive slot history prevents the drive slot from being marked as `faulty` if no drive replacement was done.

Only administrators with primary administrator, admin1, or support roles are authorized to run this command.

OPTIONS

`-driveSlot`	Specifies the drive slot number for the drive. Drive slot numbers range from 0 to the total number of drives in the Drive Enclosure minus 1.
`-enclosure`	Specifies the fully qualified name (FQN) or unique identifier (ID) of the Drive Enclosure that contains the drive with the history to clear. The FQN includes the chassis ID, which is displayed on the front of the Drive Enclosure.

EXAMPLE

Task	Following the instructions that were provided by Oracle Customer Support, clear the history of a drive slot that had no drive failures or replacements.

Parameters	• The name of the Drive Enclosure preceded by a forward slash: `/ENCLOSURE-01` • The slot number of the drive: 22

```
$ fscli enclosure -clearDriveHistory
-enclosure /ENCLOSURE-01 -driveSlot 22
```

Related Links

enclosure

enclosure -completeFru

Completes the FRU replacement procedures to bring the replaced hardware online.

SYNOPSIS

```
enclosure -completeFru
   -enclosure enclosure-id-or-fqn
   { -powerCoolingModule powerCoolingModule-fru-number
   | -diskDrive diskDrive-fru-number
   | -chassis chassis-fru-number
   | -iom io-module-fru-number
      [-sasPort sasPort-fru-number]
   }

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

In most instances, when replacing a FRU, you use Guided Maintenance, not the Oracle FS CLI. In rare instances, however, an Oracle Customer Support representative might direct you to use the FSCLI. When issuing the **enclosure** commands, follow the instructions that are provided to you by Oracle Customer Support.

Only administrators with primary administrator, admin1, or support roles are authorized to run this command.

OPTIONS

-chassis

Specifies the FRU number for the chassis in the Drive Enclosure that was replaced. The value for the chassis is 0. The Oracle FS System brings the Drive Enclosure online by performing the following operations:

- Powers up the Drive Enclosure.

	• Runs acceptance tests. • Restores all I/O traffic to the Drive Enclosure.
-diskDrive	Specifies the slot number of the drive that was replaced. Values are 0 to 23 for rotating media (performance or archive). Values are 0 to 18 for SSDs. **Note:** The **enclosure -completeFru** command does not bring the specified drive online. Run the **enclosure -modify -acceptDrive *drive-slot-number*** command to bring the specified drive online before finalizing the drive replacement process.
-enclosure	Specifies the fully qualified name (FQN) or unique identifier (ID) of the Drive Enclosure to bring online. The FQN includes the chassis ID, which is displayed on the front of the Drive Enclosure.
-iom	Specifies the FRU number for the I/O module to resume. Valid values are 0 and 1.
-powerCoolingModule	Specifies the power cooling module that was replaced. Runs acceptance tests on the power cooling module and the Drive Enclosure. After the tests complete, places the module online. Values are 0 or 1.
-sasPort	Specifies the SAS port on an I/O Module to resume. The -sasPort option must be specified with the -iom option. SAS port values are 0, 1, and 2.

EXAMPLE

Task	After replacing a failed chassis, bring the drive online.
Parameters	• The name of the enclosure preceded by a forward slash: `/ENCLOSURE-01` • The slot number of the replaced chassis FRU: 0

```
$ fscli enclosure -resumeFru -enclosure /ENCLOSURE-01
-chassis 22
```

Related Links

enclosure

enclosure -modify

enclosure -download

Returns statistics and diagnostic information for a particular I/O module (IOM).

SYNOPSIS

```
enclosure -download
   -enclosure enclosure-id-or-fqn
   -iom io-module-fru-number
   -ddump download-file

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Typically, this command is run only when Oracle Customer Support requests diagnostic information for a particular Drive Enclosure IOM. After running this command, you can provide this information to Oracle Customer Support.

To determine the ID or the fully qualified name (FQN) of a Drive Enclosure and the replaceable unit number of the IOM, run **`enclosure -list -details`**.

Only administrators with support roles are authorized to run this command.

OPTIONS

`-ddump`	Identifies the name for the downloaded diagnostics file. The value for *download-file* can be a regular file name, which causes the system to download the file to your working directory. The value can also contain the directory path, in which case the file is downloaded to the specified directory.
`-enclosure`	Specifies the fully qualified name (FQN) or the unique identifier (ID) of the Drive Enclosure. The FQN includes the chassis ID, which is displayed on the front of the Drive Enclosure.
`-iom`	Identifies the replaceable unit number for the I/O module (IOM). The valid values are **`0`** or **`1`**.

EXAMPLE

Task	Return statistics and diagnostic information for a particular I/O module (IOM).
Parameters	• The name of the enclosure: XXX • The name of the IOM: YYY

```
$ fscli enclosure -download -enclosure XXX -iom YYY
```

Related Links

enclosure -list

enclosure -list

Returns information about one or more Drive Enclosures.

SYNOPSIS

```
enclosure -list
   [-details]
   [ -enclosure enclosure-id-or-fqn [, enclosure-id-or-fqn]...
     [-driveSmartData drive-slot-number]
   ]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Run the **enclosure -list** command to return the names of all of the Drive Enclosures in the Oracle FS System.

Run the **enclosure -list -details** command to view the status and configuration information for each of the FRUs in the one or more Drive Enclosures. When replacing a FRU, the Oracle Customer Support representative might instruct you to review the output to report the status of the FRU that you are replacing.

Note: You can obtain SMART data for a specific drive to assist with predictive failure analysis. Run the **enclosure -list -enclosure *enclosure-id-or-fqn* -driveSmartData *drive-slot-number*** command.

Only administrators with primary administrator, admin1, or support roles are authorized to run the `enclosure -list -dataConsistency` option.

OPTIONS

-details

Returns configuration information for the Drive Enclosures and the following status information:

- The Hardware Component Status
- Management State
- Overall Drive Enclosure Status

For each drive group in the Drive Enclosure, the status and slot number for each drive are returned. Also provides manufacturing information, the firmware version, and the physical capacity. The storage information for the drive groups includes the amount of storage allocated, available, unavailable,

and used. Drive capacities are displayed in bytes and gigabytes in decimal units.

For the fans and chassis, the configuration and manufacturing information are returned. For the I/O module, the status and configuration information for the module and for each port are returned.

-driveSmartData — Displays the SMART data for the indicated drives. You specify drives by slot numbers ranging from 0 to 23, 0 to 19, or 0 to 5, depending on the hardware configuration of the Drive Enclosure.

-enclosure — Specifies the fully qualified name (FQN) or the unique identifier (ID) of the Drive Enclosure. The FQN includes the chassis ID, which is displayed on the front of the Drive Enclosure.

EXAMPLE

Task	Locate information about a missing drive in a Drive Enclosure.
Parameters	• The name of the Drive Enclosure preceded by a forward slash: `/ENCLOSURE-01`

```
$ fscli enclosure -list -details
-enclosure /ENCLOSURE-01
```

Related Links

enclosure

enclosure -modify

Changes the configuration of a Drive Enclosure.

SYNOPSIS

```
enclosure -modify
   -enclosure enclosure-id-or-fqn
   [{ [-displayNumber enclosure-display-number]
      [-comment enclosure-descriptive-comment]
    | -acceptDrive drive-slot-number [, drive-slot-number ]...
    | -remove
    | -resetOverheatState
    }]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Use the **`enclosure -modify`** command to perform the following configuration changes:

- Change the display number that appears on the outside of the Drive Enclosure.
- Provide a string of optional text to describe the Drive Enclosure.

If you are replacing a failed drive, an Oracle Customer Support representative might request that you run the **`enclosure -modify -enclosure`** ***`enclosure-id-or-fqn`*** **`-acceptDrive`** ***`drive-slot-number`*** command to accept the replaced drive into the system. If the drive is accepted, the Oracle Customer Support representative might request that you finalize the FRU replacement process by running the **`enclosure -completeFru -enclosure`** ***`enclosure-id-or-fqn`*** **`-diskDrive`** ***`drive-slot-number`*** command.

If you are removing a Drive Enclosure from a Oracle FS System, the Oracle Customer Support representative might request that you run the **`enclosure -modify -remove -enclosure`** ***`enclosure-id-or-fqn`*** command before physically removing the Drive Enclosure from the Oracle FS System.

Only administrators with primary administrator, admin1, or support roles are authorized to run the `enclosure -modify -remove` option. Only administrators with primary administrator or admin1 roles are authorized to run the other `enclosure -modify` options.

OPTIONS

`-enclosure`	Specifies the fully qualified name (FQN) or unique identifier (ID) of the Drive Enclosure to modify. The FQN includes the chassis ID, which is displayed on the front of the Drive Enclosure.
`-displayNumber`	Specifies the number that is displayed on the outside of the Drive Enclosure. Values range from 01 to 99 and A0 to FF. The display number is included in the fully qualified name of the Drive Enclosure.
`-comment`	Specifies a string of 256 characters that you provide to further identify the Drive Enclosure.
`-acceptDrive`	Specifies the slot number of one or more new drives. Instructs the Drive Enclosure to accept the drive, and adds the new drive capacity to the overall physical capacity available to Oracle FS System. Slot numbers range from 0 to 23, 0 to 11, or 0 to 5, depending on the hardware configuration of the Drive Enclosure.
`-remove`	Specifies the fully qualified name (FQN) or unique identifier (ID) of the Drive Enclosure to remove. The FQN includes the chassis ID, which is displayed on the front of the Drive Enclosure. Determines the

drive's capacity and subtracts it from the calculations of total physical storage capacity available for use on the Oracle FS System.

Note: To prepare a Drive Enclosure for removal, you must ensure that the disks in the Drive Enclosure are not members of a drive group. Exclude any drive groups on the Drive Enclosure from their storage domain, and then delete the drive groups. Also, you must power down the Drive Enclosure and remove connections to the Oracle FS System.

`-resetEnclosureOverheatState` Resets the overheat status on the Drive Enclosure.

EXAMPLE

Task	Change the display number for a Drive Enclosure to a new number that is not in use.
Parameters	• The name of the Drive Enclosure preceded by a forward slash: `/ENCLOSURE-01` • The new display number: 05

```
$ fscli enclosure -modify -enclosure /ENCLOSURE-01
-displayNumber 05
```

Related Links

enclosure

enclosure -completeFru

`enclosure -replaceFru`

Prepares the specified FRU for replacement.

SYNOPSIS

```
enclosure -replaceFru
   -enclosure enclosure-id-or-fqn
   [-abort ]
   { -powerCoolingModule powerCoolingModule-fru-number
   | -diskDrive diskDrive-fru-number
   | -chassis chassis-fru-number
   | -iom io-module-fru-number
     [-sasPort sasPort-fru-number]
   }

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

In most instances, when replacing a FRU, you use Guided Maintenance, not the Oracle FS CLI. In rare instances, however, an Oracle Customer Support representative might direct you to use the FSCLI. When issuing the **`enclosure`** commands, follow the instructions that are provided to you by Oracle Customer Support.

Only administrators with primary administrator, admin1, or support roles are authorized to run this command.

CAUTION: When replacing several drives in a Drive Enclosure, replace the drives one at a time. To verify that the process has completed, inspect the output of the **`system_alert -list`** command. After accepting the new drive and bringing the drive group online, the Oracle FS System removes all system alerts that were associated with the failed drive. Wait for the system to remove the alerts before replacing another drive. Replacing a drive before the previous drive replacement procedure has completed can cause data loss.

OPTIONS

`-abort`

Cancels the processes that prepare the specified FRU for replacement.

`-chassis`

Specifies the FRU number for the chassis in the Drive Enclosure. The value for the chassis is 0. To prepare the chassis for replacement, the system performs the following operations:

- Stops all I/O traffic to the Drive Enclosure.
- Marks all of the drive groups as `missing`.
- Marks all of the volumes that are provisioned on the Drive Enclosure as `offline`.
- Marks the Drive Enclosure as `missing`.
- Powers down the Drive Enclosure.

`-diskDrive`

Specifies the slot number of the drive to replace. The Oracle FS System marks the drive slot as `EMPTY` and marks the drive in the drive group as `MISSING`. Values are 0 to 23 for rotating media (performance or archive). Values are 0 to 18 for SSDs.

`-enclosure`

Specifies the fully qualified name (FQN) or unique identifier (ID) of the Drive Enclosure that contains the FRU to replace. The FQN includes the chassis ID, which is displayed on the front of the Drive Enclosure.

`-iom`

Specifies the FRU number for the I/O module to replace. Valid values are 0 and 1.

-powerCoolingModule	Specifies the power cooling module to replace. To prepare a power cooling module for replacement, the system powers off the module and marks it as `missing`. Values are 0 or 1.
-sasPort	Specifies the SAS port on an I/O Module to replace. The -sasPort option must be specified with the -iom option. SAS port values are 0, 1, and 2.

EXAMPLE

Task	Prepare a drive for replacement.
Parameters	• The name of the Drive Enclosure preceded by a forward slash: `/ENCLOSURE-01` • The slot number of the replaced drive: 22

```
$ fscli enclosure -replaceFru
-enclosure /ENCLOSURE-01 -diskDrive 22
```

Related Links

enclosure

system_alert -list

enclosure -setDisplayNumbers

Loads a file that contains the display numbers of each Drive Enclosure in the Oracle FS System.

SYNOPSIS

```
enclosure -setDisplayNumbers
   -file enclosure-display-number-file

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

To set the display number for the Drive Enclosures in the Oracle FS System, choose one of the following methods:

- Run the **enclosure -modify -DisplayNumber *enclosure-display-number*** command to set the display number for one Drive Enclosure at a time.
- Create a file that contains a comma-separated list of **enclosure:display number** pairs. Run the **enclosure -setDisplayNumbers -file *enclosure-display-number-file*** command. Include the path for the file

that contains the list of pairs if you saved the file outside the directory where the FSCLI executable was installed. The system uses the `enclosure:display number` pairings to assign a display number to each of the Drive Enclosures that you specified.

Only administrators with primary administrator or admin1 roles are authorized to run this command.

OPTIONS

`-file` Specifies the name of the file that the Oracle FS System uses to assign display numbers to a group of Drive Enclosures. The assignments are made by providing a comma separated list of pairings in the format of **`enclosure-id-or-fqn`**:**`display-number`**. In addition to using commas, the pairings can be separated by a new line character in an ASCII file.

EXAMPLE

Task	Using a file of assignments, assign a set of display numbers to a group of Drive Enclosures.
Parameters	• A file that contains a series of display number assignments in the following format: `/ENCLOSURE-01:A, /ENCLOSURE-02:B, /ENCLOSURE-01:C, /ENCLOSURE-01:D` • A file name: `AlphaEnclosureAssignments`

```
$ fscli enclosure -setDisplayNumbers -file
AlphaEnclosureAssignments
```

Related Links

enclosure

enclosure -modify

enclosure_console

Used for diagnostic purposes to view information or send commands to a Drive Group in a Drive Enclosure.

`enclosure_console { [ -close | -open | -read | -write ] | [ -usage | -help ] }`

DESCRIPTION

When diagnosing or testing a Drive Enclosure, an Oracle Customer Support representative might request that you run the Enclosure Console to read status or

enter commands. To do this, you must first open a Drive Enclosure console session. Some of the commands can disrupt normal I/O and can compromise data integrity.

Only administrators with primary administrator or support roles are authorized to run the `enclosure_console` commands.

CAUTION: Use Drive Enclosure console commands only under the direction of Oracle Customer Support. Your Oracle Customer Support representative uses console commands to gather diagnostic information or to resolve problematic conditions that cannot be researched or resolved another way.

Note: Establishing a Drive Enclosure console session prevents you from running other types of commands during an FSCLI session.

SUBCOMMANDS

-close	Closes the console session with an I/O module on the specified Drive Enclosure.
-open	Opens a console session between a Controller and an I/O module for the specified Drive Enclosure.
-read	Displays the data that is generated for the specified Drive Enclosure.
-write	Writes a -request or other option to the specified I/O module for the specified Enclosure. This option should never be used except as directed by Oracle Customer Support.

EXAMPLE

Task	Close a Drive Enclosure console session.
Parameters	• The FQN of the Drive Enclosure: `/ENCLOSURE-00` • The identifier of the I/O module: 0

```
$ fscli enclosure_console -close
-enclosure /ENCLOSURE-00 -iom 0
```

Related Links

enclosure_console -close

enclosure_console -open

enclosure_console -read

enclosure_console -write

enclosure_console -close

Closes the console session with an I/O module on the specified Drive Enclosure.

SYNOPSIS

```
enclosure_console -close
   -enclosure enclosure-id-or-fqn
   -iom {0 | 1}

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Run the **enclosure_console -close** command to end the console session. The console commands that are currently running must complete before the Oracle FS System processes the **enclosure_console -close** command. If a console read or write command has not completed after a reasonable amount of time, type Ctrl-C to force the command to terminate.

Only administrators with primary administrator or support roles are authorized to run the enclosure_console commands.

OPTIONS

-enclosure	Specifies the fully qualified name (FQN) or unique identifier (ID) of the Drive Enclosure.
-iom	Specifies the I/O module of the Drive Enclosure for the session being closed. Valid values are 0 and 1.

EXAMPLE

Task	Close a Drive Enclosure console session.
Parameters	• The FQN of the Drive Enclosure: /ENCLOSURE-00 • The identifier of the I/O module: 0

```
$ fscli enclosure_console -close
-enclosure /ENCLOSURE-00 -iom 0
```

Related Links

enclosure_console

enclosure_console -open

Opens a console session between a Controller and an I/O module for the specified Drive Enclosure.

SYNOPSIS

```
enclosure_console -open
   -enclosure enclosure-id-or-fqn
   -iom {0 | 1}

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

The `enclosure_console -open` command establishes a console session on the specified I/O module.

To prevent data loss do not open an enclosure console session unless directed to do so by Oracle Customer Support.

Only administrators with primary administrator or support roles are authorized to run the `enclosure_console` commands.

CAUTION: Use Drive Enclosure console commands only under the direction of Oracle Customer Support. Your Oracle Customer Support representative uses console commands to gather diagnostic information or to resolve problematic conditions that cannot be researched or resolved another way.

OPTIONS

-enclosure	Specifies the fully qualified name (FQN) or unique identifier (ID) of the Drive Enclosure.
-iom	Specifies the I/O module to which the Drive Enclosure console on the Controller directs reads and writes. Valid values are 0 and 1.

EXAMPLE

Task	Open a Drive Enclosure console session.
Parameters	• The FQN of the Drive Enclosure: `/ENCLOSURE-00` • The identifier of the I/O module: 0

```
$ fscli enclosure_console -open
-enclosure /ENCLOSURE-00 -iom 0
```

Related Links

enclosure_console

enclosure_console -close

enclosure_console -read

Displays the data that is generated for the specified Drive Enclosure.

SYNOPSIS

```
enclosure_console -read
   -enclosure enclosure-id-or-fqn
   -iom {0 | 1}
   [ -poll read-interval-in-seconds
     [-duration duration-in-seconds]
   ]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

If a read operation is open-ended or does not complete after a reasonable amount of time, type Ctrl-C to stop the operation.

To poll for responses from previous write commands, issue the read command with the **-poll** option specified.

Only administrators with primary administrator or support roles are authorized to run the `enclosure_console` commands.

CAUTION: Use Drive Enclosure console commands only under the direction of Oracle Customer Support. Your Oracle Customer Support representative uses console commands to gather diagnostic information or to resolve problematic conditions that cannot be researched or resolved another way.

OPTIONS

-duration	Specifies number of seconds that the console reads data from the specified Drive Enclosure. If the read does not terminate after the specified number of seconds, to discontinue reading, enter Ctrl-C. This option requires that you also specify the -poll option.
-enclosure	Specifies the fully qualified name (FQN) or unique identifier (ID) of the Drive Enclosure.
-iom	Specifies the I/O module to which the Drive Enclosure console on the Controller issues reads or queries the status. Valid values are 0 and 1.
-poll	Specifies the time interval in seconds between console reads. During a read operation, you cannot

enter new commands. To discontinue reading, enter Ctrl-C.

EXAMPLE

Task	Display data from a Drive Enclosure during a console session.
Parameters	• The FQN of the Drive Enclosure: `/ENCLOSURE-00` • The identifier of the I/O Module: 0 • The number of seconds the data is read: 5

```
$ fscli enclosure_console -read
-enclosure /ENCLOSURE-00 -iom 0 -poll -duration 5
```

Related Links

enclosure_console

enclosure_console -write

Writes a -request or other option to the specified I/O module for the specified Enclosure. This option should never be used except as directed by Oracle Customer Support.

SYNOPSIS

```
enclosure_console -write
   -enclosure enclosure-id-or-fqn
   -iom {0 | 1}
   -request enclosure-console-request
   [{-readAfter | -noReadAfter}]
   [ -poll read-interval-in-seconds
     [-duration duration-in-seconds]
   ]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

A Oracle Customer Support representative might request that you send commands to the Drive Enclosure through specified the I/O module. If the write operation does not complete after a reasonable amount of time, type Ctrl-C to stop writing data or sending an instruction.

Only administrators with primary administrator or support roles are authorized to run the `enclosure_console` commands.

CAUTION: Use Drive Enclosure console commands only under the direction of Oracle Customer Support. Your Oracle Customer Support representative uses console commands to gather diagnostic information or to resolve problematic conditions that cannot be researched or resolved another way.

OPTIONS

-duration	Specifies number of seconds that the console reads data from the specified Drive Enclosure. If the read does not terminate after the specified number of seconds, to discontinue reading, enter Ctrl-C. This option requires that you also specify the -poll option.
-enclosure	Specifies the fully qualified name (FQN) or unique identifier (ID) of the Drive Enclosure.
-iom	Specifies the I/O module to which the Drive Enclosure console on the Controller directs writes. Valid values are 0 and 1.
-noReadAfter	Indicates that a read operation is not automatically initiated as soon as a write operation completes.
-poll	Specifies the time interval in seconds between console reads. During a read operation, you cannot enter new commands. To discontinue reading, enter Ctrl-C. This option requires that you also specify the -readAfter option.
-readAfter	Initiates a read operation on the specified Drive Enclosure after a write operation completes. If no other option is specified, this option is the default.
-request	Specifies the RAID console request of no more than 2048 characters. Use double quotes around names containing one or more spaces or dashes to prevent parsing errors.

EXAMPLE

Task	Check for the status of drives in a Drive Enclosure.
Parameters	• The FQN of the Drive Enclosure: `/ENCLOSURE-00` • The identifier of the I/O Module: 0

```
$ fscli enclosure_console -write
-enclosure /ENCLOSURE-00 -iom 0 -request chk
```

Related Links

enclosure_console

errors

Displays a list of error messages that can be generated by the Oracle FS System for Oracle FS CLI commands.

SYNOPSIS

```
errors {[-list] | [-usage | -help]}
```

DESCRIPTION

When a command fails during a Oracle FS CLI session, the Oracle FS System generates an error message for one of the following reasons:

- The Oracle FS CLI does not recognize the options that were specified for a given command.
- The command fails with a return code other than zero.

The **errors -list** command only displays information about Oracle FS CLI command failures. When the Oracle FS System cannot perform the requested operation , it generates one of the error messages that are listed in the **errors -list** output. Errors caused by incorrect command usage are generated by the Oracle FS CLI and are displayed on the command line.

Note: The error messages that are listed in the output of the **errors -list** command are not displayed in the event log or in the task list.

SUBCOMMANDS

-list	Lists a summary of all of the errors that can be generated by the Oracle FS System when a command fails.

EXAMPLE

Task	List a summary of all of the errors that can be generated by the Oracle FS System.
Parameters	• None

```
$ fscli errors -list
```

Related Links

errors -list

errors -list

Lists a summary of all of the errors that can be generated by the Oracle FS System when a command fails.

SYNOPSIS

```
errors -list
   [-details]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

The **errors -list** command displays the name of the error. Specify the -details option to obtain detailed information about why the error condition occurred and how to address it.

Note: EXAMPLE – Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run the `errors -list` command.

OPTIONS

-details Displays the following information for each error:

- Error name
- Short description
- Long description
- Comment

EXAMPLE

Task	List a summary of all of the errors that can be generated by the Oracle FS System.
Parameters	• None

```
$ fscli errors -list
```

Related Links

errors

event_log

Displays or clears the Oracle FS System event log.

SYNOPSIS

```
event_log {[-list | -reset] | [-usage | -help]}
```

DESCRIPTION

The Oracle FS System generates an event as conditions or status changes occur in the Oracle FS System.

The event log captures system events and stores them in a the event log database. When the event log fills up, older events are discarded as newer events are added. Options are available to the **`event_log -list`** command to filter the size of the event log output that you request.

SUBCOMMANDS

`-list`	Displays a list of events or types of events.
`-reset`	Clears the event log on the Oracle FS System. Performed by Oracle Customer Support and the administrators who have a support role defined for their account.

EXAMPLE

Task	Save a log of the summarized events to a local file. **Note:** For each event, the summarized output contains the following types of information: • The severity of the event. • The timestamp of the event in Universal Coordinated Time (UTC). • The name of the event. • A short description of the cause of the event.
Parameters	• Local filename: `Oracle_FS_events_2013.08.07`

```
$ fscli event_log -list > Oracle_FS_events_2013.08.07
```

Related Links

event_log -list

event_log -reset

event_log -list

Displays a list of events or types of events.

SYNOPSIS

```
event_log -list
   [-details]
   { -eventTypes
   | [-severity severity-value [, severity-value ]... ]
     [-before date-time]
     [-after date-time]
     [-eventType event-type]
     [-category category-value [, category-value]... ]
     [-eventCount number-of-events]
     [-startingIndex starting-event-index]
     [-internal]
   }

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

The `event_log -list` command returns a listing of Oracle FS System events.

You can list a block of events by specifying the index of the first log entry and the number of log entries that meet your selection criteria that follow the first log entry. Use -startingIndex to specify the starting point and -eventCount to specify the number of log entries. Combined, the values you specify for the -startingIndex option and the -eventCount option determine the ending index.

To reduce the number of events that are displayed, run the **`event_log`** command with any combination of options. By choosing various option combinations, you can filter the output based on the following selection criteria:

- Events by severity: informational, warning, or critical.
- Events that were logged after a start date.
- Events that were logged before an end date.
- Events of the specified type.
- Events by category: security, audit, or system.
- A limited number of events.
- Internal system events that are not generated by administrators.

The `event_log -list -eventType` command lists all event types that can be generated on the system. To display only the events of a specific type, select an *event_type* from the list of possible event types, and pass it into the `event_log`

`-list -eventType` *event_type* command. In addition to the name of the event, specifying the -details option returns the following additional information for each event type:

- Category
- Severity
- Short Description
- Long Description

Note: An Oracle Customer Support representative might request that you capture the output of the `event_log -list -details` command in a file. Do not filter or reduce the size of the output that you generate.

Note: Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run the `event_log -list` command, except for the -internal option. Only administrators with support roles are authorized to use the -internal option.

OPTIONS

-after	Requests events that were posted after the specified date and time. Use Coordinated Universal Time (UTC). Specify the before timestamp by using the YYYY-MM-DD[THH[:mm[:SS[.xxx]]]][+-HH:mm] format.
-before	Requests events that were posted before the specified date and time. Use Coordinated Universal Time (UTC). Specify the before timestamp by using the YYYY-MM-DD[THH[:mm[:SS[.xxx]]]][+-HH:mm] format. The T character is a literal character that separates the date portion of the timestamp from the time portion. The SS characters indicate seconds and the xxx characters indicate milliseconds. The colon (:) and period (.) characters are required characters.
-category	Displays events that fall within one of the following categories: • Security • Audit • System
-details	Displays the details of each event or event type.
-eventCount	Limits the number of events returned to the value specified. The most recent events are returned first.
-eventType	Displays the events in the event log that match the specified event type.

-eventTypes	Displays a list of all known event types. If used with the -details option, the -eventTypes option also displays a description of each event.
-internal	Displays internal system events. Note: Only administrators with support roles are authorized to run the `event_log -list -internal` command.
-severity	Displays events that have one of the following severity levels: Informational — Requires no action for events that are information only. Warning — Requires no immediate action for minor conditions that you can address at your convenience. Critical — Requires prompt action to prevent system failures or offline conditions. If not specified, displays events of all severities.
-startingIndex	Defines a position within the event log from which to start listing events. Set the position by counting backwards in time. The most recent event has the starting index value of one.

EXAMPLE

Task	Save a log of the summarized events to a local file. Note: For each event, the summarized output contains the following types of information: • The severity of the event. • The timestamp of the event in Universal Coordinated Time (UTC). • The name of the event. • A short description of the cause of the event.
Parameters	• Local filename: `Oracle_FS_events_2013.08.07`

```
$ fscli event_log -list > Oracle_FS_events_2013.08.07
```

Related Links

event_log

event_log -reset

Clears the event log on the Oracle FS System. Performed by Oracle Customer Support and the administrators who have a support role defined for their account.

SYNOPSIS

```
event_log -reset
   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

When the event log database reaches the maximum number of events, the Oracle FS System deletes the oldest events to store new ones. Do not reset the event log unless instructed by Oracle Customer Support. Clearing the event log may result in loss of information needed to diagnose an issue.

Note: Only administrators with support roles are authorized to run the `event_log -reset` command.

EXAMPLE

Task	Clear the event log.
Parameters	• None

```
$ fscli event_log -reset
```

Related Links

event_log

event_notification

Manages the subscribers of the Oracle FS System event notification service.

SYNOPSIS

```
event_notification { [ -add | -delete | -list | -modify | -test] | [ -usage |
-help ] }
```

DESCRIPTION

The Oracle FS System event notification service sends event notifications to the specified subscribers. Subscribers to the event notification service do not need to have an administrator account on the Oracle FS System.

Note: event_notification requires that there is an email server configured that will accept email from the Oracle FS System.

Note: To ensure that critical alerts can be delivered in the event of power loss, check that the network and switches between the Oracle FS System and the SMTP server are connected to an uninterruptible power supply (UPS). To verify that the Oracle FS System can communicate with the SMTP server, perform the following tasks:

- Run the **`event_notification -add`** command to define a test event notification. Set the severity level to *informational*.
- Run the **`event_notification -test`** command. Specify your email address as the recipient.

.

SUBCOMMANDS

`-add`	Adds an event notification entry to the Oracle FS System event notification service.
`-delete`	Deletes event notification entries from the Oracle FS System.
`-list`	Displays a list of event notification entries.
`-modify`	Changes the event selection criteria for an event notification and changes the list of subscribers subscribed to the event notification.
`-test`	Sends a test email to one or more recipients to verify that the mail server is properly configured and that the mail server will accept email from the Oracle FS System.

EXAMPLE

Task	Configure the system to send an email to the facilities manager if the internal temperature of the Oracle FS System rises to an unacceptable level. **Note:** Run the **`event_log -list -eventTypes`** command to list the types of events that Oracle FS System generates. Inspect the list of

	event types to determine which ones report problematic environmental conditions. **Note:** For the facilities manager to receive the event notification, the SMTP server must be running. Configure the environment so that the SMTP server and the network switches or routers are protected by an uninterruptable power supply (UPS) and are in a different physical location than the Oracle FS System. **Note:** To define the behavior of the SMTP server that the event notification service uses to send event notifications to subscribers, run the **`system -modify`** command. Specify the following information: • The IP address of the SMTP server. • The port number that the SMTP server uses to receive event notifications from the Oracle FS System. • The email domain name. • The email flood interval.

Parameters	• The name of the event notification: **`lost-AC`**
	• A description: **`The air conditioning system is not working properly. Facilities alerted.`**
	• The email address of the facilities manager: **`facilities-IT@mydatacenter.com`**
	• A list of event types:
	
	`PSG_DMS_EVENT_THERM_WARN`
	`PSG_DMS_EVENT_THERM_WARN_LONG`
	`PSG_DMS_EVENT_THERM_CRIT`

```
$ fscli event_notification -add -name lost-AC
-description "The air conditioning system is not
working properly. Facilities alerted." -recipients
facilities-IT@mydatacenter.com -eventType
PSG_DMS_EVENT_THERM_WARN,
PSG_DMS_EVENT_THERM_WARN_LONG,
PSG_DMS_EVENT_THERM_CRIT
```

Related Links

event_notification -add
event_notification -delete
event_notification -list
event_notification -modify
event_notification -test
system -modify

event_notification -add

Adds an event notification entry to the Oracle FS System event notification service.

SYNOPSIS

```
event_notification -add
   -name notification-name
   [-description descriptive-string]
   -recipients email-address [, email-address ]...
   [-severity severity:category [, severity:category ]... ]
   [-eventType type [, type ]... ]
   [{-enable | -disable}]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

The subscribers of the Oracle FS System event notification service receive event notifications when a predefined system event occurs. The severity threshold of an event is determined by specifying the event severity and category.

The events that are classified as critical or warning can occur for the following reasons:

- The Oracle FS System encounters a predefined error condition.
- The Oracle FS System has encountered an environmental problem.
- The storage management thresholds have been reached.

Informational events include all normal system and administrator activities on the Oracle FS System that do not cause the system to be in a warning or critical condition.

Note: Providing a severity level is optional. The default is *informational*. Specify the least critical event severity that you are interested in. For example, setting the

severity level to *informational* indicates that the subscribers will also receive notifications of warning and critical conditions. However, the subscribers will also receive almost every event generated by the system.

To define the type of events to send to specified subscribers, run the **event_notification -add** command. At a minimum, provide the following information:

- The name of the event notification
- A list of subscriber email addresses

To obtain a list of events that can be generated by the Oracle FS System, run the **event_log -eventTypes** command.

Note: Only administrators with primary administrator or admin1 roles are authorized to run the event_notification -add command.

OPTIONS

-description	Specifies a string of up to 256 characters as the description of the event notification. Enclose the descriptions that contain more than one word in quotation marks. The default description is the name of the event notification.
-disable	Disables the event notification service from sending the event notification to the registered subscribers.
-enable	Enables the event notification service to send the event notification to the registered subscribers.
-eventType	Specifies one or more event types in a comma separated list.
-name	Specifies the name of the event notification that you are setting up on the Oracle FS System. The name that you provide is used to create the fully qualified name (FQN) after the Oracle FS System creates the new event notification. Use double quotation marks around names containing spaces or dashes.
-recipients	Specifies the email addresses of one to four subscribers or externally defined mailing lists to which the Oracle FS System sends the event notification. Provide the email addresses in a comma separated list.
-severity	Specifies a combination of event severity and category. Any combination is allowed. Multiple combinations are specified in a comma separated list. Specifes the severity and category in the format of *severity:category*.

Severity levels	Critical	Requires prompt action to prevent system failures or offline conditions.
	Warning	Requires no immediate action for minor conditions that you can address at your convenience.
	Informational	Requires no action for events that are information only.
Categories	Security	Events to notify of a security problem, such as an unauthorized request.
	Audit	Events that keep track of what administrators are doing, such as the operations that they performed.
	System	Events to notify of system problems, such as a missing Drive Enclosure or Controller.

For each severity level, specify one of the following event categories:

If you do not define a **`severity:category`** pair, notifications of all events are sent to the specified recipients.

EXAMPLE

Task	Configure the system to send an email to the facilities manager if the internal temperature of the Oracle FS System rises to an unacceptable level. **Note:** Run the **`event_log -list -eventTypes`** command to list the types of events that Oracle FS System generates. Inspect the list of event types to determine which ones

	report problematic environmental conditions. **Note:** For the facilities manager to receive the event notification, the SMTP server must be running. Configure the environment so that the SMTP server and the network switches or routers are protected by an uninterruptable power supply (UPS) and are in a different physical location than the Oracle FS System. **Note:** To define the behavior of the SMTP server that the event notification service uses to send event notifications to subscribers, run the **`system -modify`** command. Specify the following information: • The IP address of the SMTP server. • The port number that the SMTP server uses to receive event notifications from the Oracle FS System. • The email domain name. • The email flood interval.

Parameters	• The name of the event notification: **`lost-AC`**
	• A description: **`The air conditioning system is not working properly. Facilities alerted.`**
	• The email address of the facilities manager: **`facilities-IT@mydatacenter.com`**
	• A list of event types:
	
	`PSG_DMS_EVENT_THERM_WARN`
	`PSG_DMS_EVENT_THERM_WARN_LONG`
	`PSG_DMS_EVENT_THERM_CRIT`

```
$ fscli event_notification -add -name lost-AC
-description "The air conditioning system is not
```

```
working properly. Facilities alerted." -recipients
facilities-IT@mydatacenter.com -eventType
PSG_DMS_EVENT_THERM_WARN,
PSG_DMS_EVENT_THERM_WARN_LONG,
PSG_DMS_EVENT_THERM_CRIT
```

Related Links

event_notification

event_log -list

event_notification -delete

Deletes event notification entries from the Oracle FS System.

SYNOPSIS

```
event_notification -delete
   -eventNotification event-notification-id-or-fqn
                      [,event-notification-id-or-fqn]...

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

The **event_notification -delete** command requires that you provide the name or ID of the event notification to delete. Run the **event_notification -list** command to obtain the names and IDs of event notifications that are currently defined on the Oracle FS System.

In addition to deleting event notifications, you can also prevent event notifications from being sent to registered subscribers in one of the following ways:

- Run the **system -modify -disableEmail** command to disable the SMTP server from sending email that is generated by the Oracle FS System. This is not recommended except as a short term measure, since a configured email server is necessary for password recovery.
- Run the **event_notification -modify -disable** command to temporarily disable the notification.

Note: Only administrators with primary administrator or admin1 roles are authorized to run the `event_notification -delete` command.

OPTIONS

-eventNotification	Specifies the fully qualified name (FQN) of the event notification. The name must be preceded by a forward slash (/). You can also specify the unique ID for the event notification.

EXAMPLE

Task	Delete a notification when it is no longer desired or needed. **Note:** Before running this example, obtain the list of event notifications by running the **`event_notification -list -details`** command.
Parameters	• The name of the event notification preceded by a forward slash (/) character: **`/MyNotify`**

```
$ fscli event_notification -delete
-eventNotification /MyNotify
```

Related Links

event_notification

event_notification -list

system -modify

event_notification -modify

`event_notification -list`

Displays a list of event notification entries.

SYNOPSIS

```
event_notification -list
   [-details]
   [-eventNotification event-notification-id-or-fqn
                    [,event-notification-id-or-fqn]... ]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Run the **`event_notification -list`** command to display the names of event notifications that are defined on the Oracle FS System. You can display the list of subscribers and severity levels for each notification by specifying the -details. To filter the list by the names of event notifications, run the **`event_notification -list -eventNotification`** ***`event-notification-id-or-fqn`*** command. Be sure to include a forward slash (/) character with one or more names that you provide.

Note: Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run the `event_notification -list` command.

OPTIONS

-details	Returns detailed configuration and state information for the specified Oracle FS System components.
-eventNotification	Specifies the fully qualified name (FQN) of the event notification. The name must be preceded by a forward slash (/). You can also specify the unique ID for the event notification.

EXAMPLE

Task	List all event notifications and the subscribers to the event notifications that are defined on the Oracle FS System.
Parameters	• None

```
$ fscli event_notification -list -details
```

Related Links

event_notification

event_notification -modify

Changes the event selection criteria for an event notification and changes the list of subscribers subscribed to the event notification.

SYNOPSIS

```
event_notification -modify
   -eventNotification event-notification-id-or-fqn
   [-description descriptive-string]
   [-recipients email-address [, email-address ]... ]
   [-severity severity:category [, severity:category ]... ]
   [-name notification-name]
   [{-enable | -disable}]
   [-eventType type [, type ]... ]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

The **event_notification -modify** command requires that you provide the unique ID or fully qualified name (FQN) of the notification to modify. To provide a fully qualified name, specify the name preceded by a forward slash (/) character. Run the **event_notification -list** command to obtain a list of the event notifications that are currently defined on the Oracle FS System.

To obtain a list of events that can be generated by the Oracle FS System, run the **event_log -eventTypes** command.

Note: Only administrators with primary administrator or admin1 roles are authorized to run the `event_notification -modify` command.

OPTIONS

`-description` Specifies a string of up to 256 characters as the description of the event notification. Enclose the descriptions that contain more than one word in quotation marks. The default description is the name of the event notification.

`-disable` Disables the event notification service from sending the event notification to the registered subscribers.

`-enable` Enables the event notification service to send the event notification to the registered subscribers.

`-eventNotification` Specifies the fully qualified name (FQN) of the event notification. The name must be preceded by a forward slash (/). You can also specify the unique ID for the event notification.

`-eventType` Specifies one or more event types in a comma separated list.

`-name` Specifies the new name of the event notification. The name that you provide is used to create the fully qualified name (FQN) and replaces the FQN for the event notification that you defined previously. Use double quotation marks around names containing spaces or dashes.

`-recipients` Specifies the email addresses of one to four subscribers or externally defined mailing lists to which the Oracle FS System sends the event notification. Provide the email addresses in a comma separated list.

`-severity` Specifies any combination of severity and category as the threshold for sending event notifications to subscribers. Specify multiple combinations in a comma separated list. Define the combination of severity and category in the format of **`severity:category`**.

Severity levels	Critical	Requires prompt action to prevent system failures or offline conditions.
	Warning	Requires no immediate action for minor conditions that

			you can address at your convenience.
		Informational	Requires no action for events that are information only.
	Categories	Security	Events to notify of a security problem, such as an unauthorized request.
		Audit	Events that keep track of what administrators are doing, such as the operations that they performed.
		System	Events to notify of system problems, such as a missing Drive Enclosure or Controller.

EXAMPLE

Task	Change the list of email subscribers to the facilities manager and the primary Oracle FS System administrator when the temperature in the data center reaches an unacceptable level. **Note:** Before running this example, obtain the list of event notifications by running the **`event_notification -list -details`** command. For each event notification, the output returns the email addresses of the subscribers. Using the email address that you are interested in, locate the name of the event notification to which it is associated.
Parameters	• The name of the event notification preceded by a forward slash (/) character: **`/lost-AC`** • List of subscribers: **`facilities-`**

```
                        IT@mydatacenter.com,
                        OracleFS-admin-
                        IT@mydatacenter.com

$ fscli event_notification -modify
-eventNotification /lost-AC -recipients facilities-
IT@mydatacenter.com, OracleFS-admin-
IT@mydatacenter.com
```

Related Links

event_notification

event_notification -list

system -modify

event_log -list

event_notification -test

Sends a test email to one or more recipients to verify that the mail server is properly configured and that the mail server will accept email from the Oracle FS System.

SYNOPSIS

```
event_notification -test
   -recipients email-address [, email-address]...

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Run the **event_notification -test** command to send a test email to the specified recipients. The recipients that you specify do not need to be subscribers of the event notification service. This test functionality is useful for verifying the email addresses entered for account password recovery.

Note: Only administrators with primary administrator or admin1 roles are authorized to run the event_notification -test command.

OPTIONS

-recipients	Specifies the email addresses of one to four recipients to which the Oracle FS System sends the test notification. Provide the email addresses in a comma separated list.

EXAMPLE

Task	Verify that the email server is properly configured and the recipient

	email address is recognized by the mail server.
Parameters	• The email address of the test email recipient: **your.admin@yourcompany.com**

```
$ fscli event_notification -test -recipients
your.admin@yourcompany.com
```

Related Links

event_notification

haltpoint

Manages the system halt points.

SYNOPSIS

`haltpoint { [ -add | -delete | -list | -resume] | [ -usage | -help ] }`

DESCRIPTION

CAUTION: System halt points are used for recovery purposes only. Your Oracle Customer Support representative uses them to gather diagnostic information or to clear problematic conditions that cannot be obtained or resolved another way. Halt points should never be set or cleared without assistance from your Oracle Customer Support representative.

When troubleshooting the Oracle FS System, your Oracle Customer Support representative might instruct you to set one or more halt points. Setting a halt point on a particular software component causes the system to pause the startup sequence at a step associated with that component. The system will generate an event and an alert indicating it has reached a halt point.

Your Oracle Customer Support representative might require that you log in to the `/administrator` account as the Primary Administrator and perform one of the following operations:

- Set one or more active halt points for one or more components.
- Remove one or more halt points.
- Display all or only the active halt points.
- Display the halt point where the system startup process is currently paused.
- Resume starting up the system from the current halt point.

Run the **haltpoint** command using the options and arguments as instructed by your Oracle Customer Support representative.

SUBCOMMANDS

-add	Adds one or more active halt points for the specified components. Before adding halt points, contact Oracle Customer Support for instructions.
-delete	Removes one or more halt points. Before removing halt points, contact Oracle Customer Support for instructions. In order to allow the Oracle FS System to boot properly, all halt points must be removed after system diagnosis or recovery is completed.
-list	Displays all halt points or only the active halt points that are currently set, as well as the halt point at which the system is currently paused. To interpret the list of halt points, contact Oracle Customer Support for instructions.
-resume	Resumes the system startup process from the current halt point. Before resuming from an halt point, contact Oracle Customer Support for instructions.

EXAMPLE

Task	Using the instructions from your Oracle Customer Support representative, set a halt point for the step in the start up process where the SAN software is started.
Parameters	• The component name: **PDS_COMP_SAN** • The halt point step: **STOP_BEFORE_CONFIGURE_STARTED**

```
$ fscli haltpoint -add -haltpoint
PDS_COMP_SAN:STOP_BEFORE_CONFIGURE_STARTED
```

Related Links

haltpoint -add
haltpoint -delete
haltpoint -list
haltpoint -resume

haltpoint -add

Adds one or more active halt points for the specified components. Before adding halt points, contact Oracle Customer Support for instructions.

SYNOPSIS

```
haltpoint -add
   -haltpoint componentName:haltPointStep [,
```

```
componentName:haltPointStep]...
   [-suppressWarnings]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Your Oracle Customer Support representative might request that you set up one or more active halt points for the specified components. As a new halt point is added, existing active halt points remain active until they are explicitly deleted.

Note: EXAMPLE – Only administrators with primary administrator or support roles are authorized to run the `haltpoint -add` command.

OPTIONS

`-haltpoint`

Specifies one or more system components to which the halt point is added. Use the component names that your Oracle Customer Support representative specifies. Halt points are defined using a comma-separated list of the following sets of elements:

- The name of the software component that is associated with the system halt point.
- A colon (:) as a separator.
- A start up phase or step.

`-suppressWarnings`

Suppresses the FSCLI from displaying a message on the command line to warn the administrator that the new halt point is incompatible with one or more existing halt points.

EXAMPLE

Task	Using the instructions from your Oracle Customer Support representative, set a halt point for the step in the start up process where the SAN software is started.
Parameters	• The component name: **`PDS_COMP_SAN`** • The halt point step: **`STOP_BEFORE_CONFIGURE_STARTED`**

```
$ fscli haltpoint -add -haltpoint
PDS_COMP_SAN:STOP_BEFORE_CONFIGURE_STARTED
```

Related Links

haltpoint

haltpoint -delete

Removes one or more halt points. Before removing halt points, contact Oracle Customer Support for instructions. In order to allow the Oracle FS System to boot properly, all halt points must be removed after system diagnosis or recovery is completed.

SYNOPSIS

```
haltpoint -delete
   { -all
   | -haltpoint componentName:haltPointStep [,
componentName:haltPointStep]...
   }

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Your Oracle Customer Support representative might require that you remove specific halt points. Removing one or more halt points takes effect the next time that you restart Oracle FS System. If you remove the halt point at which the system is currently paused, run the **haltpoint -resume** command to continue the system restarting operations that are currently in progress. The system will resume the start up process until it reaches the next active halt point or completes the start up. When specifying the component name and halt point step, be sure to specify the exact combination that your Oracle Customer Support representative had requested. If your representative requests that you remove a sequence of halt points in a specific order, either specify the component name and halt point step for each halt point in a comma separated list or issue separate delete commands. Run the `haltpoint -list -active` command to list of active haltpoints.

Note: Only administrators with primary administrator or the Oracle support role are authorized to run the `haltpoint -delete` command.

OPTIONS

-all

Removes all of the active halt points that are in effect on the Oracle FS System. To return the system to normal operation, after all diagnostic and or recovery has been completed, run the `haltpoint -delete -all` command. This option may be used even when there are no active halt points. Run the `haltpoint -list -active` command to verify that all halt points have been removed.

-haltpoint	Specifies one or more system components to which the halt point is deleted. Use the component names that your Oracle Customer Support representative specifies. Halt points are defined using a comma-separated list of the following sets of elements: • The name of the software component that is associated with the system halt point. • A colon (:) as a separator. • A start up phase or step.

EXAMPLE

Task	After completing all diagnostic and/or recovery procedures as instructed by Oracle Customer Support, delete all active halt points to return the system to normal operation, so it can be shut down and restarted normally. **Note:** First, check to see if the system has active halt points, and whether the system is paused at any of those active halt points. If the system is paused at any halt point, you must run the `haltpoint -resume` command after deleting all halt points.
Parameters	• None

```
$ fscli haltpoint -list -active
$ fscli haltpoint -delete -all
$ fscli haltpoint -resume
```

Run the `haltpoint -resume` only if the system was paused on any halt point in the list of active halt points.

Related Links

haltpoint

haltpoint -resume

haltpoint -list

Displays all halt points or only the active halt points that are currently set, as well as the halt point at which the system is currently paused. To interpret the list of halt points, contact Oracle Customer Support for instructions.

SYNOPSIS

```
haltpoint -list
   [-details]
   {-active | -all}

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Run the **list -all** command to display a list of the halt points that are defined on the Oracle FS System. Run the **list -active** command to display the halt points that are currently set on the Oracle FS System.

Note: Only administrators with primary administrator, admin1, admin2, or support roles are authorized to run the `haltpoint -list -active` option. Only administrators with primary administrator or support roles are authorized to run the `haltpoint -list -all` option.

OPTIONS

-active

Displays the active halt points on the Oracle FS System. An active halt point is one that you set by issuing a **haltpoint -add** command. If the Oracle FS System is currently paused at any active halt point, the system will indicate that it is paused in the list of active halt points.

Note: Only administrators with primary administrator, admin1, admin2, or support roles are authorized to run the `haltpoint -list -active` option.

-all

Displays all of the halt points that can be set on the Oracle FS System.

Note: Only administrators with primary administrator or support roles are authorized to run the `haltpoint -list -all` option.

-details

Provides no additional information. This option is included for consistency across all subcommands.

EXAMPLE

Task	Using the instructions from your Oracle Customer Support representative, list the active halt points that are set on your system, and whether the system is currently paused on a halt point, save the output to a file.
Parameters	• The name of the file: **SAN_haltpoints_10-23-2014**

```
$ fscli haltpoint -list -active >
SAN_haltpoints_10-23-2014
```

Related Links

haltpoint

haltpoint -add

haltpoint -resume

Resumes the system startup process from the current halt point. Before resuming from an halt point, contact Oracle Customer Support for instructions.

SYNOPSIS

```
haltpoint -resume

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Your Oracle Customer Support representative might require that you step through the startup process. At a halt point, the process pauses. Using the **haltpoint -resume** command, the startup process continues until the system encounters another halt point or the startup process completes.

Note: Only administrators with primary administrator or support roles are authorized to run the `haltpoint -resume` command.

EXAMPLE

Task	Using the instructions from your Oracle Customer Support representative, resume the start up processes.
Parameters	• None

```
$ fscli haltpoint -resume
```

Related Links

haltpoint

host_group

Creates and modifies Storage Area Network (SAN) host groups. You can assign any SAN host to a host group.

SYNOPSIS

`host_group { [ -add | -delete | -list | -modify] | [ -usage | -help ] }`

DESCRIPTION

A host group is a named, logical collection of one or more SAN host entries. The logical collection is defined in an internal table that the system manages as a group. Creating a host group simplifies the task of associating hosts to LUNs.

Use the **host_group** command to add, modify, list, or delete SAN host groups.

SUBCOMMANDS

-add	Creates a new host group that the Oracle FS System can manage.
-delete	Removes specific host entries from an existing host group in an internal table from the Oracle FS System.
-list	Displays the host groups that are defined on the Oracle FS System.
-modify	Specifies a new name for an existing host group on the Oracle FS System.

EXAMPLE

Task	Create a host group.
Parameters	• The name of the new host group: `hostgroup_1`

```
$ fscli host_group -add -name hostgroup_1
```

Related Links

host_group -add
host_group -delete
host_group -list
host_group -modify
lun -modify

host_group -add

Creates a new host group that the Oracle FS System can manage.

SYNOPSIS

```
host_group -add
   -name host-group-name

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Use the **host_group -add** command to create a host group. Host groups allow you to associate the host entries that are defined in an internal table into logical organizational units.

Note: Only administrators with primary administrator, admin1, and admin2 roles are authorized to run the `host_group -add` command.

OPTIONS

-name	Specifies the name of the host group that you are creating on the Oracle FS System. The name that you provide is used to create a fully qualified name (FQN) after the Oracle FS System creates the new host group. Use double quotation marks around names containing dashes.

EXAMPLE

Task	Create a host group.
Parameters	• The name of the new host group: `hostgroup_1`

```
$ fscli host_group -add -name hostgroup_1
```

Related Links

host_group
lun -list
san_host -add
san_host -list
hostmap -add
hostmap -list

host_group -delete

Removes specific host entries from an existing host group in an internal table from the Oracle FS System.

SYNOPSIS

```
host_group -delete
   -hostGroup host-group-id-or-fqn [, host-group-id-or-fqn]...

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Use the **host_group -delete** command to delete a host group. Use the -hostGroup option to specify the host groups that you want to delete. The -hostGroup option allows you to specify the unique identifiers (IDs) or the fully qualified names (FQNs) of the host groups to be deleted.

Before removing a host group, delete all of its host entries or assign them to other host groups. After a host group is empty, run the **host_group -delete** command to remove the group.

Note: Only administrators with primary administrator, admin1, and admin2 roles are authorized to run the `host_group -delete` command.

OPTIONS

-hostGroup	Specifies a group of computers on the customer SAN. You identify the host group by providing a unique ID (ID) or a fully qualified name (FQN) for the group.

EXAMPLE

Task	Delete a host group.
Parameters	• The fully qualified name of the host group: `/hostgroup_1`

```
$ fscli host_group -delete -hostgroup /hostgroup_1
```

Related Links

host_group

lun -delete

host_group -list

Displays the host groups that are defined on the Oracle FS System.

SYNOPSIS

```
host_group -list
   [-details]
   [-hostGroup host-group-id-or-fqn [, host-group-id-or-fqn]...]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Use the **host_group -list** command to display the fully-qualified names of the host groups that have been defined in the Oracle FS System. Use the -hostGroup option to specify the host groups that you want to display. The -hostGroup option allows you to specify the unique identifiers (IDs) or the fully qualified names (FQNs) of the host groups to be displayed.

Note: Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run the `host_group -list` command.

OPTIONS

-details	Returns the names, the fully-qualified names (FQNs), and the host group unique identifiers (IDs) for the specified host groups as well as the FQNs and the IDs of all of the hosts that are associated with the host group.
-hostGroup	Specifies a group of computers on the customer SAN. You identify the host group by providing a unique ID (ID) or a fully qualified name (FQN) for the group.

EXAMPLE

Task	Display a detailed listing of the host groups on the Oracle FS System.
Parameters	• The fully qualified name of the host group: `hostgroup_1`

```
$ fscli host_group -list -details -
hostgroup /hostgroup_1
```

Related Links

host_group

host_group -modify

Specifies a new name for an existing host group on the Oracle FS System.

SYNOPSIS

```
host_group -modify
   -hostGroup host-group-id-or-fqn
   -name host-group-name

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Use the **host_group -modify** command to specify a new name for an existing host group on the Oracle FS System. Changing the name creates a new fully qualified name (FQN) for the host group. The unique identifier (ID) remains the same. Use the -hostGroup option to specify the host name to be changed. The -hostGroup option allows you to specify the IDs or the FQNs of the host groups to be renamed. Use the -name option to specify the new host group name.

Note: Only administrators with primary administrator, admin1, and admin2 roles are authorized to run the `host_group -modify` command.

OPTIONS

-hostGroup	Specifies a group of computers on the customer SAN. You identify the host group by providing a unique ID (ID) or a fully qualified name (FQN) for the group.
-name	Identifies the new storage object to be created.

EXAMPLE

Task	Change the name of a host group on the Oracle FS System.
Parameters	• The fully qualified name of the host group: `hostgroup_1` • The new name of the host group: `hostgroup_A`

```
$ fscli host_group -modify -hostgroup /hostgroup_1
-name hostgroup_A
```

Related Links

host_group

hostmap -list

hostmap

Manages the mappings between Oracle FS System SAN LUNs and hosts.

SYNOPSIS

`hostmap { [ -add | -delete | -list | -modify ] | [ -usage | -help ] }`

DESCRIPTION

Prior to making a LUN available to one or more hosts, confirm that your SAN environment meets the following requirements:

- The LUN exists on the Oracle FS System.
- For SAN hosts that are running Oracle FS Path Manager (FSPM), verify that FSPM has connected to the Oracle FS System and has created a host entry. For more information, see the appropriate *Oracle FS Path Manager Installation Guide* for the version of FSPM that is running on the SAN host.
- For SAN hosts that are *not* running FSPM, define the host on the Oracle FS System by using the **san_host -add** command.

When you provision a LUN by using the **lun -add** command, the following mapping options are available to you:

- Globally mapped: All hosts which can access the Oracle FS System Controllers can access the LUN
- Mapped to one or more host entries: Only the specified hosts can access the LUN
- Mapped to a host group: Only the hosts that are associated with a specified host group can access the LUN
- Unmapped: None of the hosts on the SAN can access the LUN

To make a LUN visible to additional hosts, create a separate host map for each host or map the LUN to a host group. When working with hosts in a high-availability clustered environment, designate a host group for each group of hosts in the cluster.

Note: When you associate a host that has mapped LUNs with a host group, the Oracle FS System retains the individual host maps in most cases. The only exception is when the host group has LUN mappings that are also individually mapped to one or more hosts that are associated with the host group. In this scenario, the individual host mappings are replaced with the host group mappings.

Important: Host mapping and Controller port masking are two methods to prevent access to a given LUN. If you have provisioned your LUN with masking set to restrict access to the LUN from the Controller ports to which your host is connected, clear the port masking before attempting to present the LUN to the

host. To clear the port masking, use the **lun -modify -unMaskedControllerPorts** command.

SUBCOMMANDS

-add	Establishes an association between a SAN LUN and a host or a group of hosts.
-delete	Deletes the mappings between the specified LUN and the specified hosts.
-list	Displays a list of host maps or available LUN numbers.
-modify	Changes the logical unit number assignment for a given host map.

EXAMPLE

Task	Using an unmapped logical unit number, create a host map that presents a LUN to a host.
Parameters	• Fully qualified name of the LUN: /lun_1 • Logical unit number : 20 • Fully qualified name of the host: /sanhost_1

```
$ fscli  hostmap -add -lun /lun_1 -lunNumber 20
-host /sanhost_1
```

Related Links

hostmap -add

hostmap -delete

hostmap -list

hostmap -modify

lun -modify

hostmap -add

Establishes an association between a SAN LUN and a host or a group of hosts.

SYNOPSIS

```
hostmap -add
   -lun lun-or-clone-id-or-fqn
   -lunNumber logical-unit-number
   { -host host-id-or-fqn
   | -hostGroup host-group-id-or-fqn
   }

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
```

```
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

A host map defines which host or hosts can access an Oracle FS System LUN. You present a LUN to a host by creating a host map and assigning a logical unit number to the LUN. To provide access to a LUN from more than one host, use one of the following methods:

- Create a host group and map it to the LUN.
- Create multiple host maps, one for each host.

For a clustered environment, create a host group for the cluster.

Prior to creating a host map, the following requirements must be met:

- The LUN must already exist on the Oracle FS System. To confirm that the LUN exists, use the **`lun -list`** command.
- The host must be defined on the Oracle FS System. To verify that a host definition exists, use **`san_host -list`** command.
- The logical unit number that you select must be available for the host on the Oracle FS System. Use **`hostmap -list -availableLunNumbers`** to obtain a list of unmapped logical unit numbers.

Note: You can create host maps for hosts that are disconnected from or not communicating with the Oracle FS System. You can also create host maps for empty host groups.

Note: Only administrators with primary administrator, admin1, or admin2 roles are authorized to run the `hostmap -add` command.

OPTIONS

`-host`	Specifies a host entry which represents a computer on the customer SAN. You identify a host by providing a unique ID (ID) or a fully qualified name (FQN) for the host entry. This host is mapped to the specified LUN.
`-hostGroup`	Specifies a group of computers on the customer SAN. You identify the host group by providing a unique ID (ID) or a fully qualified name (FQN) for the group. This host group is mapped to the specified LUN.
`-lun`	Specifies the ID or the fully qualified name (FQN) of a LUN that resides on the Oracle FS System. An FQN begins with a forward slash character (/) and is followed by a path expression to locate the LUN.

-lunNumber Identifies the logical unit number of a LUN or of a Clone LUN to present to the SAN host.

EXAMPLE

Task	Using an unmapped logical unit number, create a host map that presents a LUN to a host.
Parameters	• Fully qualified name of the LUN: /lun_1 • Logical unit number : 20 • Fully qualified name of the host: /sanhost_1

```
$ fscli  hostmap -add -lun /lun_1 -lunNumber 20
-host /sanhost_1
```

Related Links

hostmap

lun -list

san_host -add

san_host -list

hostmap -list

hostmap -add

hostmap -delete

Deletes the mappings between the specified LUN and the specified hosts.

SYNOPSIS

```
hostmap -delete
   { -host host-id-or-fqn [, host-id-or-fqn]...
     [-lun lun-or-clone-id-or-fqn] [, lun-or-clone-id-or-fqn]... ]
   | -hostmap hostmap-id-or-fqn [, hostmap-id-or-fqn]...
   | -hostGroup host-group-id-or-fqn [, host-group-id-or-fqn]...
     [-lun lun-or-clone-id-or-fqn [,lun-or-clone-id-or-fqn]... ]
   | -hostGroupMap host-group-map-id-or-fqn [,
host-group-map-id-or-fqn]...
   }

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

You sever the association between LUNs and hosts by removing host maps. When you remove a host map, you have the option of removing all host maps associated with that host in a single operation or in multiple operations.

Two methods are available to delete any host maps that are associated with a LUN or a set of LUNs.

- Delete the LUN and all of its associated mappings in one operation by using the **`lun -delete`** command. Answer "yes" to all verification questions appearing on the command line.
- Use the **`hostmap -delete`** command to remove the host mappings that are associated with a given LUN or a given set of LUNs.

The following options are mutually exclusive (only one must be selected):

- -host
- -hostmap
- -hostGroup
- -hostGroupMap

Note: Only administrators with primary administrator, admin1, or admin2 roles are authorized to run the `hostmap -delete` command.

OPTIONS

`-host`	Specifies a host entry which represents a computer on the customer SAN. You identify a host by providing a unique ID (ID) or a fully qualified name (FQN) for the host entry. To delete the entries for multiple hosts, provide a comma-separated list of hosts.
`-hostGroup`	Specifies a group of computers on the customer SAN. You identify the host group by providing a unique ID (ID) or a fully qualified name (FQN) for the group. To delete the mappings for multiple host groups, provide a comma-separated list of host groups.
`-hostGroupMap`	Specifies a mapping between a LUN and a host group. You identify the host group mapping by providing a fully qualified name (FQN) or a unique ID (ID). To delete the LUN mappings for multiple host groups, provide a comma-separated list of host group maps.
`-hostmap`	Identifies a mapping between a LUN and a SAN host. You identify the hostmap by providing a unique ID (ID) or a fully qualified name (FQN). To delete multiple hostmaps, provide a comma-separated list of hostmaps.

-lun

Specifies the ID or the fully qualified name (FQN) of a LUN that resides on the Oracle FS System. An FQN begins with a forward slash character (/) and is followed by a path expression to locate the LUN.

The -lun option specifies one or more LUN or Clone LUN entries that are contained in the host maps for the specified host or host group to delete. If the -lun option is omitted, all of the host maps for the given host or host group are deleted.

EXAMPLE

Task	Delete all LUN mappings for a host.
Parameters	• Fully qualified name of the host: `/sanhost_1`

```
$ fscli hostmap -delete -host /sanhost_1
```

Related Links

hostmap

lun -delete

hostmap -list

Displays a list of host maps or available LUN numbers.

SYNOPSIS

```
hostmap -list
   [-details]
   [{ -lun lun-or-clone-id-or-fqn [, lun-or-clone-id-or-fqn]...
    | -availableLunNumbers
    }]
   [{ -host host-id-or-fqn [, host-id-or-fqn]...
    | -hostmap hostmap-id-or-fqn [, hostmap-id-or-fqn]...
    | -hostGroup host-group-id-or-fqn [, host-group-id-or-fqn]...
    | -hostGroupMap host-group-map-id-or-fqn [,
host-group-map-id-or-fqn]...
    } ]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Displays a list of the fully qualified names (FQNs) of the hosts, and the LUNs to which they are mapped. Use the -details option to see hostmap or hostgroupmap FQNs and unique identifiers (IDs), LUN numbers, and mapping types.

Note: Only administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run the `hostmap -list` command.

OPTIONS

-availableLunNumbers	Returns a list of all of the logical unit numbers that are available on the Oracle FS System, for a given SAN host or hostmap or SAN host group or hostgroup map. If neither hosts, host groups, nor maps are provided, then the globally available numbers are returned.
-details	Provides the following information for each host mapping: • The fully qualified name (FQN) and unique identifier (ID) of the LUN or of the Clone LUN • The logical unit number of the LUN or of the Clone LUN • The FQN and the ID of the SAN host • The FQN and the ID of each initiator that is associated with the SAN host
-host	Specifies a host entry which represents a computer on the customer SAN. You identify a host by providing a unique ID (ID) or a fully qualified name (FQN) for the host entry. The list of host mappings are returned only for the specified SAN hosts.
-hostGroup	Specifies a group of computers on the customer SAN. You identify the host group by providing a unique ID (ID) or a fully qualified name (FQN) for the group. The list of host mappings are returned only for the specified host groups.
-hostGroupMap	Specifies a mapping between a LUN and a host group. You identify the host group mapping by providing a fully qualified name (FQN) or a unique ID (ID). The list of host mappings are returned only for the specified host group maps.
-hostmap	Identifies a mapping between a LUN and a SAN host. You identify the hostmap by providing a unique ID (ID) or a fully qualified name (FQN). The list of host mappings are returned only for the specified host maps.
-lun	Specifies the ID or the fully qualified name (FQN) of a LUN that resides on the Oracle FS System. An FQN begins with a forward slash character (/) and is followed by a path expression to locate the LUN.

EXAMPLE

Task	Display a detailed list of host maps that are associated with a given LUN.
Parameters	• The details option

```
$ fscli hostmap -list -details
```

Related Links

hostmap

hostmap -modify

Changes the logical unit number assignment for a given host map.

SYNOPSIS

```
hostmap -modify
   -lun lun-or-clone-id-or-fqn
   -lunNumber logical-unit-number
   { -host host-id-or-fqn
   | -hostmap hostmap-id-or-fqn
   | -hostGroup host-group-id-or-fqn
   | -hostGroupMap host-group-map-id-or-fqn
   }

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Modifying the logical unit number that is assigned to a host map alters the presentation of a LUN to a host or a host group. Run the **hostmap -list -availableLunNumbers** command to find which LUN numbers are currently unused for a host or group of hosts.

Note: Only administrators with primary administrator, admin1, or admin2 roles are authorized to run the `hostmap -modify` command.

OPTIONS

-host	Specifies a host entry which represents a computer on the customer SAN. You identify a host by providing a unique ID (ID) or a fully qualified name (FQN) for the host entry. For the specified SAN host, the system modifies the LUN number of the LUN that is identified by the -lun option.
-hostGroup	Specifies a group of computers on the customer SAN. You identify the host group by providing a unique

	ID (ID) or a fully qualified name (FQN) for the group.
-hostGroupMap	Specifies a mapping between a LUN and a host group. You identify the host group mapping by providing a fully qualified name (FQN) or a unique ID (ID). For the specified instance of a host group map , the system modifies the LUN number of the LUN that is identified by the -lun option.
-hostmap	Identifies a mapping between a LUN and a SAN host. You identify the hostmap by providing a unique ID (ID) or a fully qualified name (FQN). For the specified hostmap instance, the system modifies the LUN number of the LUN that is identified by the -lun option.
-lun	Specifies the ID or the fully qualified name (FQN) of a LUN that resides on the Oracle FS System. An FQN begins with a forward slash character (/) and is followed by a path expression to locate the LUN.
-lunNumber	Identifies the logical unit number of a LUN or of a Clone LUN to present to the SAN host.

EXAMPLE

Task	Change the value of the logical unit number that is used to present a LUN to a host.
Parameters	• Fully qualified name of the hostmap: `/lun_1/2001000B08000520` • Fully qualified name of LUN: `/lun_1` • New logical unit number: 35

```
$ fscli hostmap -modify
-hostmap /lun_1/2001000B08000520 -lun /lun_1
-lunNumber 35
```

Related Links

hostmap

hostmap -list

iscsi

Manages the iSCSI feature.

SYNOPSIS

```
iscsi {[-list | -modify | -ping] | [-usage | -help]}
```

DESCRIPTION

The `iscsi` command displays the hardware ports and the global settings that support the Internet Small Computer System Interface (iSCSI) feature on the Oracle FS System. This command also can change many of those settings, such as the gateway and the type of client authentication to use.

SUBCOMMANDS

-list	Displays information about the implementation of iSCSI.
-modify	Changes the iSCSI settings globally or for a port.
-ping	Checks whether a Controller iSCSI port can communicate.

EXAMPLE

Task	Display a list of all the global iSCSI settings that exist on the Oracle FS System.
Parameters	• None

```
$ fscli iscsi -list -global
```

Related Links

iscsi -list

iscsi -modify

iscsi -ping

iscsi -list

Displays information about the implementation of iSCSI.

SYNOPSIS

```
iscsi -list
   [-details]
   [ -controller controller-id-or-fqn
     [-port hba-slot-number/port-number ]
   ]
   [-global ]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
```

```
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

The `iscsi -list` command returns settings at the following granularities regarding the Internet Small Computer System Interface (iSCSI) protocol on the Oracle FS System:

- An individual iSCSI port
- System wide

Note: Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run the `iscsi -list` command.

OPTIONS

`-controller` Specifies the fully qualified name (FQN) or the unique identifier (ID) of a Controller for which the iSCSI port information is displayed. When this option is omitted, the iSCSI port information for all Controllers is displayed.

`-details` Provides no additional information. This option is included for consistency across all subcommands.

`-global` Specifies that the global iSCSI settings be displayed.

`-port` Identifies a specific port on a Controller HBA, which limits the display to the iSCSI settings for the specified port.

Specify the port using the form *HBA slot number*/*port number*. Specify the arguments in the following manner:

HBA slot number	Specifies the PCIE slot number of the HBA on which the port is located. The slot number must be 0 or greater.
port number	Identifies the port number on the HBA slot. The port number must be 0 or greater.

For example, **`0/1`** specifies port 1 on HBA slot 0 of the specified Controller.

EXAMPLE

Task	Display a list of all the global iSCSI settings that exist on the Oracle FS System.

Parameters	• None

```
$ fscli iscsi -list -global
```

Related Links

iscsi

iscsi -modify

Changes the iSCSI settings globally or for a port.

SYNOPSIS

```
iscsi -modify
   { -controller controller-id-or-fqn
     -port hba-slot-number/port-number
      [-tcpPort port-number]
      [-mtu mtu]
      [{-dhcp | -noDhcp}]
      [-ip ip-address]
      [-netmask netmask]
      [-gateway gateway-ip]
      [{-enableVlan | -disableVlan}]
      [-vlanId vlan-id-number]
   |
      [-accessControl {isns | oracleFS | none}]
      [-alias alias-name]
      [-authentication {allInitiators | perInitiator}]
      [-authenticationServer {oracleFS | radius}]
      [{-headerDigest | -noHeaderDigest}]
      [{-dataDigest | -noDataDigest}]
      [{-biDirectionalChap | -noBiDirectionalChap}]
      [-chapSecret]
      [{-isnsRegistration | -noIsnsRegistration}]
      [-isnsDiscovery {dhcp | static}]
      [-isnsServerIp ip-address]
      [-isnsTcpPort port-number]
      [-radiusIp ip-address]
      [-radiusUdpPort udp-port]
      [-radiusSecret]
      [-secondaryRadiusIp ip-address]
      [-secondaryRadiusUdpPort udp-port]
      [-secondaryRadiusSecret]
   }

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

The `iscsi -modify` command changes the Internet Small Computer System Interface (iSCSI) settings for the entire Oracle FS System or for a particular Controller port.

Note: Only administrators with primary administrator or admin1 roles are authorized to run the `iscsi -modify` command.

OPTIONS

-accessControl Specifies the access control method for iSCSI initiators.

none	Allows all iSCSI initiators to login.
isns	Disallows all iSCSI login attempts from initiators that have not been granted access by the Internet Storage Name Service (iSNS) server.
oracleFS	Disallows all iSCSI login attempts from initiators that have not been given the appropriate CHAP credentials through Oracle FS System Manager (GUI) or through the `sanhost -add` command or the `sanhost -modify` command.

-alias Specifies the name or the description of the Oracle FS System as an iSCSI target.

-authentication Specifies how iSCSI authentication is performed. Valid operands:

perinitiator	Indicates that the Oracle FS System does not always negotiate for Challenge-Handshake Authentication Protocol (CHAP) authentication during a login operation, but the initiator might require authentication.
allinitiators	Indicates that the Oracle FS System requires CHAP authentication of initiators for all login operations.

-authenticationServer Specifies whether the Oracle FS System or a Remote Authentication Dial In User Service (RADIUS) server performs the authentication.

-biDirectionalChap Directs the Oracle FS System to require that the iSCSI initiator provide the Challenge-Handshake Authentication Protocol (CHAP) secret that is stored within the Oracle FS System when the initiator performs an iSCSI login.

Regardless of whether this option is provided, the iSCSI initiator must provide its CHAP secret.

-chapSecret Specifies the Challenge-Handshake Authentication Protocol (CHAP) security key to use for authenticating iSCSI login operations. The Oracle FS System prompts for the key to use.

-controller Specifies the fully qualified name (FQN) or the unique identifier (ID) of a Controller.

-dataDigest Directs the Oracle FS System to negotiate for iSCSI data digests during the session login operation for all initiators.

-dhcp Specifies that Dynamic Host Configuration Protocol (DHCP) is enabled for the specified Controller port.

-disableVlan Removes support for VLAN tagging from the iSCSI port.

-enableVlan Adds support for VLAN tagging on the iSCSI port.

-gateway Assigns the IP address of the gateway network node in the subnetwork of which the Oracle FS System (the Pilot) is a member. If the port is configured for DHCP, this option returns an error.

-headerDigest Directs the Oracle FS System to negotiate for iSCSI header digests during the session login operation for all initiators.

-ip Identifies the IP address of a network device. For the iSCSI port, this address is a static address. If the port is configured to use DHCP, this option returns an error.

-isnsDiscovery Instructs the Oracle FS System how to discover the iSNS server.

Valid arguments to specify the discovery method:

dhcp	Directs the system to use DHCP to discover an iSNS server.
static	Directs the system to use the IP address that is defined by the values for the -isnsServerIp option and the -isnsTcpPort option.

-isnsRegistration Directs the Oracle FS System to register with an iSNS server. The system queries the iSNS server for the list of iSCSI initiators that are permitted to login to the Oracle FS System.

-isnsServerIp Identifies the IP address of the iSNS server that the Oracle FS System uses to authenticate the iSCSI login credentials.

-isnsTcpPort Identifies the TCP port number that the Oracle FS System uses when accessing the iSNS server.

-mtu Identifies the number of bytes to use for the maximum transmission unit (MTU).

This MTU setting applies to the specified Controller port.

-netmask Identifies a subnetwork mask for the range of IP addresses that is associated with the destination of the iSCSI port. If the port has been configured to use DHCP, this option returns an error.

-noBiDirectionalChap Directs the Oracle FS System not to require that the iSCSI initiator provide the CHAP secret that is stored within the Oracle FS System when the initiator performs an iSCSI login.

Regardless whether this option is provided, the iSCSI initiator must provide its CHAP secret.

-noDataDigest Directs the Oracle FS System not to negotiate for iSCSI data digests during the session login operation for all initiators.

-noDhcp Specifies that Dynamic Host Configuration Protocol (DHCP) is disabled for the specified Controller port.

-noHeaderDigest Directs the Oracle FS System not to negotiate for iSCSI header digests during the session login operation for all initiators.

-noIsnsRegistration Directs the Oracle FS System not to register with an iSNS server and not to use the iSNS services.

-port Identifies a specific port on a Controller HBA.

Specify the port using the form *HBA slot number*/*port number*. Specify the arguments in the following manner:

HBA slot number	Specifies the PCIE slot number of the HBA on which the port is located. The slot number must be 0 or greater.
port number	Identifies the port number on the HBA slot. The port number must be 0 or greater.

-radiusIp Identifies the IP address of the primary RADIUS server that the Oracle FS System uses to validate the iSCSI login credentials. This option is active only when **radius** is specified for the -authenticationServer option.

-radiusSecret Specifies the password (secret) that the Oracle FS System uses when accessing the primary RADIUS

	server. The system prompts for the RADIUS secret when this option is included on the command line.
-radiusUdpPort	Identifies the UDP port number that the Oracle FS System uses to validate the iSCSI login credentials on the primary RADIUS server. This option is active only when **radius** is specified for the -authenticationServer option.
-secondaryRadiusIp	Identifies the IP address of the secondary RADIUS server that the Oracle FS System uses to validate the iSCSI login credentials. This option is active only when **radius** is specified for the -authenticationServer option.
-secondaryRadiusSecret	Specifies the password (secret) that the Oracle FS System uses when accessing the secondary RADIUS server. The system prompts for the RADIUS secret when this option is included on the command line.
-secondaryRadiusUdpPort	Identifies the UDP port number that the Oracle FS System uses to validate the iSCSI login credentials on the secondary RADIUS server. This option is active only when **radius** is specified for the -authenticationServer option.
-tcpPort	Identifies the TCP port number to use for the specified iSCSI port.
-vlanId	Sets the virtual LAN identifier for the iSCSI port.

EXAMPLE

Task	Change the access control method for iSCSI initiators.
Parameters	• The access control method for iSCSI initiators: `oracleFS`

```
$ fscli iscsi -modify -accessControl oracleFS
```

Related Links

iscsi

san_host -add

san_host -modify

iscsi -ping

Checks whether a Controller iSCSI port can communicate.

SYNOPSIS

```
iscsi -ping
   -controller controller-id-or-fqn
   -port hba-slot-number/port-number
   -ip ip-address

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

The `iscsi -ping` command requests the specified Controller to send an echo request through the TCP/IP network to the storage devices that are using the Internet Small Computer System Interface (iSCSI) protocol. The iSCSI devices include the initiators (such as File Servers) and the targets (such as disk arrays and tape subsystems) that are connected to the Controller.

The `iscsi -ping` command returns a message that states that the `ping` operation was successful or, when an error occurs, a message that describes the problem.

Note: Only administrators with primary administrator, admin1, or support roles are authorized to run the `iscsi -ping` command.

OPTIONS

-controller — Specifies the fully qualified name (FQN) or the unique identifier (ID) of a Controller. This Controller hosts the iSCSI port that is identified by the -port option.

-ip — Specifies the IP address of the data storage device to ping.

-port — Identifies a specific port on a Controller HBA. This port must support the iSCSI protocol.

Specify the port using the form *HBA slot number*/*port number*. Specify the arguments in the following manner:

HBA slot number	Specifies the PCIE slot number of the HBA on which the port is located. The slot number must be 0 or greater.
port number	Identifies the port number on the HBA slot. The port number must be 0 or greater.

EXAMPLE

Task	Check whether a Controller iSCSI port can communicate.
Parameters	• The FQN of the Controller: `/CONTROLLER-03` • The HBA slot number/port number: `1/0` • The IP address of the data storage device to ping: `10.154.127.217`

```
$ fscli iscsi -ping -controller /CONTROLLER-03 -port
1/0 -ip 10.154.127.217
```

Related Links

iscsi

job

Manages the internal table entries that define configuration tasks.

SYNOPSIS

`job { [ -add | -delete | -list | -modify ] | [ -usage | -help ] }`

DESCRIPTION

When a configuration task (called a *job*) runs, it creates one of the following objects depending on the properties of the job:

- A clone of a logical volume
- A report

A job can run one time or repeatedly.

SUBCOMMANDS

-add	Creates a job.
-delete	Removes one or more jobs.
-list	Displays information for any job or for all jobs.
-modify	Changes the properties of a job.

EXAMPLE

Task	Add a new job using a point-in-time snapshot of a LUN.

Parameters

- The name of the job: `job_1`
- The date and time when the job is to run: `2014-08-01`
- The name of the Clone LUN: `clone_1`
- The (FQN) of the source volume to use when cloning: `/lun_1`

```
$ fscli job -add -name job_1 -oneTime 2014-08-01
-addCloneLun -cloneName clone_1 -source /lun_1
```

Related Links

job -add

job -delete

job -list

job -modify

job -add

Creates a job.

SYNOPSIS

```
job -add
   -name job-name
   [{-enable | -disable}]
   { -oneTime date-time
   | -recurring
     -interval {hourly | daily | weekly | monthly}
     -frequency interval_frequency
     -startTime date-time
   }
   {  -addCloneLun
     -cloneName clone-lun-name
     -source source-lun-id-or-fqn
     [-capacity capacity]
     [-priority {premium | high | medium | low | archive}]
     [-volumeGroup volume-group-id-or-fqn]
     [{-fibreChannelAccess | -noFibreChannelAccess}]
     [{-iscsiAccess | -noIscsiAccess}]
     [-maskedControllerPorts /controller[/slot[/port]]
                          [, /controller[/slot[/port]]]... ]
     [{-active | -inactive}]
     [{-disableRefTagChecking | -enableRefTagChecking}]
     [-bootLun | -noBootLun]
   | -addCloneFilesystem
     -source source-filesystem-id-or-fqn
     -cloneName clone-filesystem-name
     [-dataTier (
         -tier tier-id-or-fqn
         [-tierName tier-name]
         [-capacity capacity]
         [-priority {premium | high | medium | low | archive}]
          )... ]
     [-volumeGroup volume-group-id-or-fqn]
     [{-protection | -noProtection}]
     [{-immutability | -noImmutability}]
```

```
      [{-allowNonEmptyDeletion | -noAllowNonEmptyDeletion}]
      [-wormCompliance {none | secure}]
      [-minRetention number {days | months | years}]
      [-maxRetention number {days | months | years}]
      [-defaultRetention number {days | months | years}]
      [{-expiredFileDeletion | -noExpiredFileDeletion}]
      [-minSnapshotCapacity minimum-snapshot-capacity]
      [-maxSnapshotCapacity maximum-snapshot-capacity]
      [{ -defaultSnapshotSchedule
       | -noDefaultSnapshotSchedule
       }]
      [{-asynchronousJournaling | -noAsynchronousJournaling}]
      [{-aTimeUpdates |-noATimeUpdates}]
      [-comment comment]
    | -generateReport
      -type {system | storageUse | volumeUse | performance
            | sanHosts | systemSummary | quotas | autoTier}
      [-filesystem filesystem-id-or-fqn]
      [-storageDomain storage-domain-id-or-fqn]
      [-language locale-language ]
      [-country locale-country ]
      [-variant locale-variant]
   }

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

In creating a job, you define the properties of the following objects:

- The job itself
- The clone or the report that the job creates or generates when the job runs

Note: Only administrators with primary administrator, admin1, or admin2 roles are authorized to run the `job -add` command.

OPTIONS

-aTimeUpdates	Instructs the Oracle FS System to record the access times when a file in the filesystem is updated.
-active	Makes a Clone LUN visible on the network so that the clone can be discovered and accessed by a SAN host. By default, the Clone LUN is active.
-addCloneFilesystem	Specifies that the job creates a point-in-time snapshot of a filesystem. The snapshot is referred to as a Clone FS. All clones are readable and writable and are partial-block copies of the specified source volume.
-addCloneLun	Specifies that the job is to create a point-in-time snapshot of a LUN . The snapshot is referred to as a Clone LUN. All clones are readable and writable and are partial-block copies of the specified source volume.

-allowNonEmptyDeletion	Specifies that the volume can be deleted even when the volume contains files. Furthermore, if the -noAllowNonEmptyDeletion option or the -secureWormFilesystem option is omitted, the volume can also be deleted when the volume contains files.
-asynchronousJournaling	Instructs the Oracle FS System to write the client data to the secondary cache later. Delayed write operations to the secondary cache creates a risk of the cached changes being lost. If the -asynchronousJournaling option is omitted, the system writes the data to the primary cache and then immediately writes the data to the secondary cache.
-bootLun	For the -addCloneLUN option, identifies that the Clone LUN can be used as a boot drive in the SAN.
-capacity	Specifies the storage space in gigabytes for the clone volume. Specify this value if you want the capacity of the clone volume to be different from the capacity of the source volume. This value must be equal to or larger than the source volume.
-cloneName	Specifies the name to use for the new Clone FS or for the new Clone LUN.
-comment	Defines a character string, such as a description, that the Oracle FS System associates with the filesystem clone.
-country	Specifies the country locale (two uppercase letters that conform to ISO-3166) to use for generating the report. Use the country locale ISO code to specify the country locale when creating the report. For example, to request a report in Canadian French, you could use the variant *fr_CA* (language option combined with country option). You can find a copy of ISO-3166 at https://www.iso.org/obp/ui/.
-dataTier	Specifies the properties of up to three data tiers, each being a separate collection of contiguous storage for user data. When using the -dataTier option, include the pair of parenthesis characters to delimit the specification of the -tier option. Up to three data tiers can be specified by repeating the -dataTier option, once for each tier. By default, the Oracle FS System derives the properties of each data tier for the Clone FS from the data tier of the source filesystem.

-defaultRetention	For protected files that have no retention period specified, identifies the number of days, months, or years during which a protected file must be retained. The -defaultRetention option can be specified for any type of filesystem. One of the following arguments must be specified for the time unit of the retention period: days, months, or years. When the -secureWormFilesystem option is used, the -defaultRetention option must be specified using a value that is greater then zero.
-defaultSnapshotSchedule	Instructs the Oracle FS System to create a default snapshot schedule for the Clone FS.
-disable	Prevents the job from being active after the job is created.
-disableRefTagChecking	Instructs the HBA to bypass the check of whether a host has written to a specific area of the LUN before the host reads from that same area. If this option is omitted, read-before-write error events can be generated.
-enable	Makes the job active. You can select the -enable option, the -disable option, or neither option. If you select neither option, the job becomes active after it is created.
-enableRefTagChecking	Instructs the HBA to check whether a SAN host has written to a specific area of the LUN before the host reads from that area. When a host reads from a specific area before writing to that area, the Oracle FS System generates a read-before-write error event. Note: This check is sometimes called a *reference tag check* and is a part of the process for ensuring data protection integrity. By default, reference tag checking is enabled.
-expiredFileDeletion	Allows the filesystem to delete files when the retention period expires, if the -defaultRetention option is also used. When the -expiredFileDeletion option is omitted, the default action is for the filesystem to prevent the deletion of files when the retention period expires.
-fibreChannelAccess	Allows users to access to the volume through the Fibre Channel (FC) ports. By default, FC access is enabled.
-filesystem	Identifies a filesystem in the Oracle FS System.

When the -quotas option is included in the command, the -`filesystem` option must also be specified.

-frequency Defines the number of time units as specified by the -`interval` option between the time when one task is run and the time when the next task is run. The value must be a positive integer.

For example, to create a Clone LUN once every two weeks, specify **`weekly`** for the -interval option and **`2`** for the -frequency option.

-generateReport Specifies that the job creates a report.

-immutability Specifies that none of the files that are contained by the filesystem volume can be modified after the file is created. If this option is omitted, any file can be modified after the file is created.

-inactive Renders the LUN volume invisible on the network. An inactive volume is not accessible and cannot be used by a SAN host.

-interval Defines the time unit to use as the basis for the repeating interval between the following tasks. Valid values:

hourly	Specifies that the interval is in hours.
daily	Specifies that the interval is in days.
weekly	Specifies that the interval is in weeks.
monthly	Specifies that the interval is in months.

-iscsiAccess Allows access to the Clone LUN through the iSCSI ports.

-language Specifies the language. The format is two lowercase letters that conform to ISO-639. Use the language ISO code to specify the language when creating the report. For example, to request a report in Canadian French, you could use the variant *fr_CA* (language option combined with country option). You can find a copy of ISO-639 at http://userpage.chemie.fu-berlin.de/diverse/doc/ISO_639.html.

-maskedControllerPorts Prevents SAN hosts from accessing the LUN through the specified Controller ports. If this option is omitted, the LUN can be accessed through any of the ports.

Note: If a Controller port is not masked, a SAN host can access the LUN through that port.

Specify the ports using the following arguments:

controller Specifies the ID or the fully qualified name (FQN) of the Controller that is hosting the port.

slot Specifies the PCIE slot number of the HBA on which the port is located. The slot number must be 0 or greater.

port Identifies the port number on the HBA slot. The port number must be 0 or greater.

For example, **`/husky/0/1`** specifies port 1 on HBA slot 0 of the Controller that is named `husky`.

`-maxRetention` Identifies the most number of days, months, or years during which a protected file must be retained. The `-maxRetention` option can be specified for any type of filesystem. One of the following arguments must be specified for the time unit of the retention period: days, months, or years. If this option is omitted, the maximum retention period is set to the value of the -defaultRetention option.

`-maxSnapshotCapacity` Indicates the maximum amount of storage, in gigabytes, to reserve for storing snapshots of the filesystem. If the value is 0, the snapshots are allowed to consume all of the unused capacity that is allocated to the filesystem.

`-minRetention` Identifies the fewest number of days, months, or years during which a protected file must be retained. The `-minRetention` option can be specified for any type of filesystem. One of the following arguments must be specified for the time unit of the retention period: days, months, or years. If this option is omitted, the minimum retention period is set to the value of the -defaultRetention option.

`-minSnapshotCapacity` Indicates the amount of storage, in gigabytes, to reserve for storing snapshots of the filesystem (Snap FSs). This storage cannot be used for filesystem data.

If `-minSnapshotCapacity` is omitted, no capacity is dedicated to snapshots.

`-name` Specifies the name of the job. The name that you provide is used to create the fully qualified name (FQN) of the job. Use double quotation marks around names containing dashes.

-noATimeUpdates	Instructs the Oracle FS System not to record the access times when a file in the filesystem is updated. Preventing the recording of the access time improves the performance of the filesystem. If the -noATimeUpdates option is omitted, the system records the access times.
-noAllowNonEmptyDeletion	Specifies that the volume cannot be deleted when the volume contains files. Using the -noAllowNonEmptyDeletion option and the -secureWormFilesystem option together identifies the volume as a compliance Oracle FS SecureWORMfs volume.
-noAsynchronousJournaling	Instructs the Oracle FS System to write the client data to the primary cache and then immediately to write the data to the secondary cache.
-noBootLun	Identifies that the logical volume cannot be used as a boot drive in the SAN. Not using the LUN volume as a boot drive is the default action.
-noDefaultSnapshotSchedule	Instructs the Oracle FS System not to create a default snapshot schedule for the filesystem volume. If -noDefaultSnapshotSchedule is omitted, the system creates a default snapshot schedule for the volume.
-noExpiredFileDeletion	Directs the filesystem to prevent the deletion of files when the retention period expires. When the -expiredFileDeletion option is omitted, the default action is for the filesystem to prevent the deletion of files when the retention period expires.
-noFibreChannelAccess	Disables access to the volume through the Fibre Channel (FC) ports.
-noImmutability	Specifies that any file that is contained by the filesystem volume can be modified after the file is created. This capability is the default feature of the volume.
-noIscsiAccess	Disables access to the volume through the iSCSI ports. By default, iSCSI access is not allowed.
-noProtection	Indicates that the filesystem is not to verify the integrity of the data in user files that are stored in the volume.

-oneTime

Defines the date and the time when the job is to run. The job is run only one time.

Use the following format for the date and the time:
YYYY-MM-DD[T*HH*[:*mm*[:*SS*[.*xxx*]]]][+|-*HH*:*mm*]
where:

YYYY-MM-DD	Designates a 4-digit year, a 2-digit month, and a 2-digit day. If the remaining values are omitted, the time is set to **12:00:00.000+00:00**.
T	A separator that designates the start of the time portion of the string.
HH*:*mm*:*SS*.*xxx	Designates the hours, the minutes, and the seconds (to three decimals) in terms of a 24-hour clock. If only *HH* is defined, the remaining values default to **00**.
HH*:*mm	Designates the time zone as an offset from Coordinated Universal Time (UTC) in hours and minutes.

-priority

Identifies the priority that the system gives to various operational aspects of a logical volume, such as the Controller processing queue. The processing-queue priority defines the percentage of the Controller CPU cycles that are dedicated to the volume. Identifies as well where the data is striped on rotating drives. Valid priority levels:

Premium	Indicates the highest priority for responding to requests in the processing queue.
High	Indicates the next highest priority for responding to requests in the processing queue.
Medium	Indicates an intermediate priority for responding to requests in the processing queue.
Low	Indicates the next to lowest priority for responding to requests in the processing queue.

Archive	Indicates the lowest priority for responding to requests in the processing queue.

-protection Indicates that the filesystem is to verify the integrity of the data in user files that are stored in the volume. This protection uses MD5 checksums to verify the data. If this option is omitted, the integrity of the user data is not verified.

-recurring Causes the job to be run on a regular, repeating basis.

-source Specifies the unique ID or the fully qualified name (FQN) of the source volume to use when cloning the volume.

-startTime Defines the time and the date of when the task is to begin.

Use the following format for the date and the time: *YYYY-MM-DD*[T*HH*[:*mm*[:*SS*[.*xxx*]]]][+|-*HH*:*mm*] where:

YYYY-MM-DD	Designates a 4-digit year, a 2-digit month, and a 2-digit day. If the remaining values are omitted, the time is set to **12:00:00.000+00:00**.
T	A separator that designates the start of the time portion of the string.
HH*:*mm*:*SS*.*xxx	Designates the hours, the minutes, and the seconds (to three decimals) in terms of a 24-hour clock. If only *HH* is defined, the remaining values default to **00**.
HH*:*mm	Designates the time zone as an offset from Coordinated Universal Time (UTC) in hours and minutes.

-storageDomain Specifies the fully qualified name (FQN) or the unique identifier (ID) of the Storage Domain on which the system bases the auto-tier effectiveness report. The -storageDomain option is required when the -type option is set to autoTier.

-tier Identifies the unique ID or the fully qualified name (FQN) of a filesystem data tier. The options that follow can be used to override the QoS properties of

the source tier during the creation of the tier for the clone.

-tierName Specifies the name of the data tier for the Clone FS.

-type Specifies the type of report to generate. Valid types:

autoTier	Returns information about the effectiveness of auto-tiering for a Storage Domain. This option requires that the -storageDomain option be specified as well.
performance	Returns performance information about the Oracle FS System LUNs. This information includes, for example, the I/O operations per second and the I/O MB per second for each LUN.
quotas	Returns detailed information about the capacity controls that exist for a filesystem. This option requires that the -filesystem option be specified as well.
sanHosts	Returns detailed configuration information about the SAN hosts and about the components that are configured on those hosts.
system	Returns detailed information on the configuration and the current status of the Oracle FS System and of all of its components.
systemSummary	Returns a configuration summary of the Pilots, the Controllers, and the Drive Enclosures, including the status of each of those components.
volumeUse	Returns capacity information for each logical volume in the Oracle FS System.

-variant Specifies the locale variant to use for generating the report. Multiple variants can be connected with an underscore. For example, to request a report in Canadian French, use the variant *fr_CA*.

-volumeGroup Specifies the fully qualified name (FQN) or the unique ID of a volume group to which the logical volume is assigned.

-wormCompliance Identifies whether the volume is an Oracle FS SecureWORMfs volume and, if it is, whether the volume can be deleted when it contains user data. Valid arguments:

none	Specifies that the volume is not an Oracle FS SecureWORMfs volume.
secure	Specifies that the volume is an Oracle FS SecureWORMfs volume. A file that is created in the volume is made immutable immediately after the file is created (similar to the -protection option). Also, the integrity of the data in the user files that are stored in the volume are verified with MD5 checksums (similar to the -immutability option). The value for the -defaultRetention option must also be provided and have a value greater than zero.
compliant	Specifies that the volume is a secure Oracle FS SecureWORMfs volume (see the secure argument) that cannot be deleted when the volume contains files. The value for the -defaultRetention option must also be provided and have a value greater than zero.

EXAMPLE

Task	Add a new job using a point-in-time snapshot of a LUN.
Parameters	• The name of the job: `job_1` • The date and time when the job is to run: `2014-08-01` • The name of the Clone LUN: `clone_1` • The (FQN) of the source volume to use when cloning: `/lun_1`

```
$ fscli job -add -name job_1 -oneTime 2014-08-01
-addCloneLun -cloneName clone_1 -source /lun_1
```

Related Links

job

job -delete

Removes one or more jobs.

SYNOPSIS

```
job -delete
   -job job-id-or-fqn [,job-id-or-fqn]...

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Removes from the Oracle FS System one or more jobs, each of which configures a clone or a report.

Note: Only administrators with primary administrator, admin1, or admin2 roles are authorized to run the `job -delete` command.

OPTIONS

-job	Specifies the ID or the fully qualified name (FQN) of a job to delete.

EXAMPLE

Task	Remove a job.
Parameters	• The FQN of the job to delete: `/job_1`

```
$ fscli job -delete -job /job_1
```

Related Links

job

job -list

Displays information for any job or for all jobs.

SYNOPSIS

```
job -list
   [-details]
   [-job job-id-or-fqn [,job-id-or-fqn]... ]
```

```
   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Displays the fully qualified name (FQN) of the specified jobs that are scheduled to run on the Oracle FS System. Other information about the jobs can optionally be displayed as well.

Tip: Replication jobs and backup jobs that are using Network Data Management Protocol (NDMP) are also displayed.

Note: Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run the `job -list` command.

OPTIONS

`-details`	Returns the name of the job, the configuration task that the job performs, the schedule information for the job, and whether the job is currently enabled or disabled.
`-job`	Specifies the ID or the fully qualified name (FQN) of a job to list.

EXAMPLE

Task	Display a list of all the jobs that exist on the Oracle FS System.
Parameters	• None

```
$ fscli job -list
```

Related Links

job

job -modify

Changes the properties of a job.

SYNOPSIS

```
job -modify
   -job job-id-or-fqn
   [-name job-name]
   [{-enable | -disable}]
   [{ -oneTime date-time
    | -recurring
      -interval {hourly | daily | weekly | monthly}
      -frequency interval_frequency
      -startTime date-time
```

```
     }]
    [{-addCloneLun
       [-cloneName new-name]
       [-source source-lun-id-or-fqn]
       [-capacity capacity]
       [-priority {premium | high | medium | low | archive}]
       [-volumeGroup volume-group-id-or-fqn]
       [{-fibreChannelAccess | -noFibreChannelAccess}]
       [{-iscsiAccess | -noIscsiAccess}]
       [{ -maskedControllerPorts /controller[/slot[/port]]
                              [, /controller[/slot[/port]]]...
        | -unMaskedControllerPorts /controller[/slot[/port]]
                              [, /controller[/slot[/port]]]...
}]
       [{-active | -inactive}]
       [{-disableRefTagChecking | -enableRefTagChecking}]
       [-bootLun | -noBootLun]
     | -addCloneFilesystem
       [-cloneName new-name]
       [-dataTier (
          -tier tier-id-or-fqn
          [-tierName tier-name]
          [-capacity capacity]
          [-priority {premium | high | medium | low | archive}]
           )... ]
       [-volumeGroup volume-group-id-or-fqn]
       [{-protection | -noProtection}]
       [{-immutability | -noImmutability}]
       [{-allowNonEmptyDeletion | -noAllowNonEmptyDeletion}]
       [-wormCompliance {none | secure}]
       [-minRetention number {days | months | years}]
       [-maxRetention number {days | months | years}]
       [-defaultRetention number {days | months | years}]
       [{-expiredFileDeletion | -noExpiredFileDeletion}]
       [-minSnapshotCapacity minimum-snapshot-capacity]
       [-maxSnapshotCapacity maximum-snapshot-capacity]
       [{-asynchronousJournaling | -noAsynchronousJournaling}]
       [{-aTimeUpdates |-noATimeUpdates}]
       [-comment comment]
     | -generateReport
       -type {system | storageUse | volumeUse | performance
              | sanHosts | systemSummary | quotas | autoTier}
       [-filesystem filesystem-id-or-fqn]
       [-storageDomain storage-domain-id-or-fqn]
       [-language locale-language ]
       [-country locale-country ]
       [-variant locale-variant]
    }]

    [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
    [{-outputformat | -o} { text | xml }]
    [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Changes the properties of an existing job such as its schedule, the properties of the object that the job creates, or both. You cannot, however, change the type of object that the job creates. To change the type of object that the job creates, delete the job and then create a another job that performs the desired task.

Note: Only administrators with primary administrator, admin1, or admin2 roles are authorized to run the `job -modify` command.

OPTIONS

-aTimeUpdates	Instructs the Oracle FS System to record the access times when a file in the filesystem is updated.
-active	Makes a Clone LUN visible on the network so that the clone can be discovered and accessed by a SAN host. By default, the Clone LUN is active.
-addCloneFilesystem	Changes the properties of an existing job that creates a Clone FS.
-addCloneLun	Changes the properties of an existing job that creates a Clone LUN.
-allowNonEmptyDeletion	Specifies that the volume can be deleted even when the volume contains files. Furthermore, if the -noAllowNonEmptyDeletion option or the -secureWormFilesystem option is omitted, the volume can also be deleted when the volume contains files.
-asynchronousJournaling	Instructs the Oracle FS System to write the client data to the secondary cache later. Delayed write operations to the secondary cache creates a risk of the cached changes being lost.
-bootLun	For the -addCloneLUN option, identifies that the Clone LUN can be used as a boot drive in the SAN.
-capacity	Specifies the storage space in gigabytes for the clone volume. Specify this value if you want the capacity of the clone volume to be different from the capacity of the source volume. This value must be equal to or larger than the source volume.
-cloneName	Specifies the name to use for the new Clone FS or for the new Clone LUN.
-comment	Defines a character string, such as a description, that the Oracle FS System associates with the filesystem clone.
-country	Specifies the country locale (two uppercase letters that conform to ISO-3166) to use for generating the report. Use the country locale ISO code to specify the country locale when creating the report. For example, to request a report in Canadian French, you could use the variant *fr_CA* (language option combined with country option). You can find a copy of ISO-3166 at https://www.iso.org/obp/ui/.
-dataTier	Specifies the properties of up to three data tiers, each being a separate collection of contiguous storage for user data when modifying the cloned volume.

-defaultRetention	For protected files that have no retention period specified, identifies the number of days, months, or years during which a protected file must be retained. The -defaultRetention option can be specified for any type of filesystem. One of the following arguments must be specified for the time unit of the retention period: days, months, or years. When the -secureWormFilesystem option is used, the -defaultRetention option must be specified using a value that is greater then zero.
-disable	Prevents the job from being active after the job is modified.
-disableRefTagChecking	Instructs the HBA to bypass the check of whether a host has written to a specific area of the LUN before the host reads from that same area. If this option is omitted, read-before-write error events can be generated.
-enable	Makes the job active. You can select the -enable option, the -disable option, or neither option. If you select neither option, the job becomes active after it is created.
-enableRefTagChecking	Instructs the HBA to check whether a SAN host has written to a specific area of the LUN before the host reads from that area. When a host reads from a specific area before writing to that area, the Oracle FS System generates a read-before-write error event. Note: This check is sometimes called a *reference tag check* and is a part of the process for ensuring data protection integrity. By default, reference tag checking is enabled.
-expiredFileDeletion	Allows the filesystem to delete files when the retention period expires, if the -defaultRetention option is also used. When the -expiredFileDeletion option is omitted, the default action is for the filesystem to prevent the deletion of files when the retention period expires.
-fibreChannelAccess	Allows users to access to the volume through the Fibre Channel (FC) ports. By default, FC access is enabled.
-filesystem	Identifies a filesystem in the Oracle FS System. When the -quotas option is included in the command, the -filesystem option must also be specified.

-frequency Defines the number of time units as specified by the -`interval` option between the time when one task is run and the time when the next task is run. The value must be a positive integer.

For example, to create a Clone LUN once every two weeks, specify **`weekly`** for the -interval option and **`2`** for the -frequency option.

-generateReport Specifies that the job creates a report.

-immutability Specifies that none of the files that are contained by the filesystem volume can be modified after the file is created. If this option is omitted, any file can be modified after the file is created.

-inactive Renders the LUN volume invisible on the network. An inactive volume is not accessible and cannot be used by a SAN host.

-interval Defines the time unit to use as the basis for the repeating interval between the following tasks. Valid values:

hourly	Specifies that the interval is in hours.
daily	Specifies that the interval is in days.
weekly	Specifies that the interval is in weeks.
monthly	Specifies that the interval is in months.

-iscsiAccess Allows access to the Clone LUN through the iSCSI ports.

-job Specifies the ID or the fully qualified name (FQN) of a job to modify.

-language Specifies the language. The format is two lowercase letters that conform to ISO-639. Use the language ISO code to specify the language when creating the report. For example, to request a report in Canadian French, you could use the variant *fr_CA* (language option combined with country option). You can find a copy of ISO-639 at http://userpage.chemie.fu-berlin.de/diverse/doc/ISO_639.html.

-maskedControllerPorts Prevents SAN hosts from accessing the LUN through the specified Controller ports. If this option is omitted, the LUN can be accessed through any of the ports.

Note: If a Controller port is not masked, a SAN host can access the LUN through that port.

Specify the ports using the following arguments:

controller	Specifies the ID or the fully qualified name (FQN) of the Controller that is hosting the port.
slot	Specifies the PCIE slot number of the HBA on which the port is located. The slot number must be 0 or greater.
port	Identifies the port number on the HBA slot. The port number must be 0 or greater.

For example, **`/husky/0/1`** specifies port 1 on HBA slot 0 of the Controller that is named `husky`.

`-maxRetention`

Identifies the most number of days, months, or years during which a protected file must be retained. The `-maxRetention` option can be specified for any type of filesystem. One of the following arguments must be specified for the time unit of the retention period: days, months, or years. If this option is omitted, the maximum retention period is set to the value of the -defaultRetention option.

`-maxSnapshotCapacity`

Indicates the maximum amount of storage, in gigabytes, to reserve for storing snapshots of the filesystem. If the value is 0, the snapshots are allowed to consume all of the unused capacity that is allocated to the filesystem.

`-minRetention`

Identifies the fewest number of days, months, or years during which a protected file must be retained. The `-minRetention` option can be specified for any type of filesystem. One of the following arguments must be specified for the time unit of the retention period: days, months, or years. If this option is omitted, the minimum retention period is set to the value of the -defaultRetention option.

`-minSnapshotCapacity`

Indicates the amount of storage, in gigabytes, to reserve for storing snapshots of the filesystem (Snap FSs). This storage cannot be used for filesystem data.

If `-minSnapshotCapacity` is omitted, no capacity is dedicated to snapshots.

`-name`

Specifies the name of the job. The name that you provide is used to create the fully qualified name (FQN) of the job. Use double quotation marks around names containing dashes.

`-noATimeUpdates`

Instructs the Oracle FS System not to record the access times when a file in the filesystem is updated.

Preventing the recording of the access time improves the performance of the filesystem.

-noAllowNonEmptyDeletion Specifies that the volume cannot be deleted when the volume contains files. Using the -noAllowNonEmptyDeletion option and the -secureWormFilesystem option together identifies the volume as a compliance Oracle FS SecureWORMfs volume.

-noAsynchronousJournaling Instructs the Oracle FS System to write the client data to the primary cache and then immediately to write the data to the secondary cache.

-noBootLun Identifies that the logical volume cannot be used as a boot drive in the SAN.

Not using the LUN volume as a boot drive is the default action.

-noExpiredFileDeletion Directs the filesystem to prevent the deletion of files when the retention period expires. When the -expiredFileDeletion option is omitted, the default action is for the filesystem to prevent the deletion of files when the retention period expires.

-noFibreChannelAccess Disables access to the volume through the Fibre Channel (FC) ports.

-noImmutability Specifies that any file that is contained by the filesystem volume can be modified after the file is created. This capability is the default feature of the volume.

-noIscsiAccess Disables access to the volume through the iSCSI ports.

-noProtection Indicates that the filesystem is not to verify the integrity of the data in user files that are stored in the volume.

-oneTime Defines the date and the time when the job is to run. The job is run only one time.

Use the following format for the date and the time: *YYYY-MM-DD*[T*HH*[:*mm*[:*SS*[.*xxx*]]][+|-*HH*:*mm*] where:

YYYY-MM-DD Designates a 4-digit year, a 2-digit month, and a 2-digit day. If the remaining values are omitted, the time is set to **12:00:00.000+00:00**.

T	A separator that designates the start of the time portion of the string.
HH*:*mm*:*SS*.*xxx	Designates the hours, the minutes, and the seconds (to three decimals) in terms of a 24-hour clock. If only *HH* is defined, the remaining values default to **00**.
HH*:*mm	Designates the time zone as an offset from Coordinated Universal Time (UTC) in hours and minutes.

-priority Identifies the priority that the system gives to various operational aspects of a logical volume, such as the Controller processing queue. The processing-queue priority defines the percentage of the Controller CPU cycles that are dedicated to the volume. Identifies as well where the data is striped on rotating drives. Valid priority levels:

Premium	Indicates the highest priority for responding to requests in the processing queue.
High	Indicates the next highest priority for responding to requests in the processing queue.
Medium	Indicates an intermediate priority for responding to requests in the processing queue.
Low	Indicates the next to lowest priority for responding to requests in the processing queue.
Archive	Indicates the lowest priority for responding to requests in the processing queue.

-protection Indicates that the filesystem is to verify the integrity of the data in user files that are stored in the volume. This protection uses MD5 checksums to verify the data. If this option is omitted, the integrity of the user data is not verified.

-recurring Causes the job to be run on a regular, repeating basis.

-source Specifies the unique ID or the fully qualified name (FQN) of the source volume to use when cloning the volume.

-startTime Defines the time and the date of when the task is to begin.

Use the following format for the date and the time: *YYYY-MM-DD*[T*HH*[:*mm*[:*SS*[.*xxx*]]][+|-*HH*:*mm*] where:

YYYY-MM-DD	Designates a 4-digit year, a 2-digit month, and a 2-digit day. If the remaining values are omitted, the time is set to **12:00:00.000+00:00**.
T	A separator that designates the start of the time portion of the string.
HH*:*mm*:*SS*.*xxx	Designates the hours, the minutes, and the seconds (to three decimals) in terms of a 24-hour clock. If only *HH* is defined, the remaining values default to **00**.
HH*:*mm	Designates the time zone as an offset from Coordinated Universal Time (UTC) in hours and minutes.

-storageDomain Specifies the fully qualified name (FQN) or the unique identifier (ID) of the Storage Domain on which the system bases the auto-tier effectiveness report. The -storageDomain option is required when the -type option is set to autoTier.

-tier Identifies the unique ID or the fully qualified name (FQN) of a filesystem data tier in the source filesystem. The options that follow can be used to override the QoS properties of the source tier during the creation of the tier for the clone.

-tierName Specifies the name of the data tier for the Clone FS.

-type Specifies the type of report to generate. Valid types:

autoTier	Returns information about the effectiveness of auto-tiering for a Storage Domain. This option requires that the -storageDomain option be specified as well.

performance	Returns performance information about the Oracle FS System LUNs. This information includes, for example, the I/O operations per second and the I/O MB per second for each LUN.
quotas	Returns detailed information about the capacity controls that exist for a filesystem. This option requires that the -filesystem option be specified as well.
sanHosts	Returns detailed configuration information about the SAN hosts and about the components that are configured on those hosts.
system	Returns detailed information on the configuration and the current status of the Oracle FS System and of all of its components.
systemSummary	Returns a configuration summary of the Pilots, the Controllers, and the Drive Enclosures, including the status of each of those components.
volumeUse	Returns capacity information for each logical volume in the Oracle FS System.

-unMaskedControllerPorts

Opens access to the volume through the Controller ports that were previously set to restricted access.

Specify the ports using the following arguments:

controller	Specifies the ID or the fully qualified name (FQN) of the Controller that is hosting the port.
slot	Specifies the PCIE slot number of the HBA on which the port is located. The slot number must be 0 or greater.
port	Identifies the port number on the HBA slot. The port number must be 0 or greater.

For example, **`/husky/0/1`** specifies port 1 on HBA slot 0 of the Controller that is named `husky`.

-variant Specifies the locale variant to use for generating the report. Multiple variants can be connected with an underscore. For example, to request a report in Canadian French, use the variant *fr_CA*.

-volumeGroup Specifies the fully qualified name (FQN) or the unique ID of a volume group to which the logical volume is assigned.

-wormCompliance Identifies whether the volume is an Oracle FS SecureWORMfs volume and, if it is, whether the volume can be deleted when it contains user data. Valid arguments:

- none — Specifies that the volume is not an Oracle FS SecureWORMfs volume.
- secure — Specifies that the volume is an Oracle FS SecureWORMfs volume. A file that is created in the volume is made immutable immediately after the file is created (similar to the -protection option). Also, the integrity of the data in the user files that are stored in the volume are verified with MD5 checksums (similar to the -immutability option).

  The value for the -defaultRetention option must also be provided and have a value greater than zero.
- compliant — Specifies that the volume is a secure Oracle FS SecureWORMfs volume (see the secure argument) that cannot be deleted when the volume contains files.

  The value for the -defaultRetention option must also be provided and have a value greater than zero.

EXAMPLE

Task	Change the capacity of the clone volume.
Parameters	• The FQN of the job: `/job_1` • The new capacity: `20`

```
$ fscli job -modify -job /job_1 -addCloneLun -capacity
20
```

Related Links

job

login

Creates a secure connection and logs you in to the Oracle FS System.

SYNOPSIS

```
login
   [ -u admin-user
     -oracleFS oracle-fs-system
     [-webcliPort port-number]
   ]
   [-returnKey]
   [-force]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

The following information is required to log in to an Oracle FS System:

- The name of the account that you are using.
- The host name or IP address of the Oracle FS System that you are logging in to.
- A valid password when the system prompts you for it on the command line.

To log in without providing the account name and system name in the **login** command, define the following environmental variables before you log in:

- **PDS_USER**: account name
- **PDS_HOST**: system name

Note: The Oracle FS System prompts you for a password by displaying the `Password:` string on the command-line. The system validates the password that you entered when you press the **[Enter]** key. For security, the account password cannot be defined in an environment variable. If you are already logged into another FSCLI session, the command line prompts you to continue the new login, which will terminate your previous existing FSCLI session. Oracle recommends that you not use the Cygwin command line interface to run the `fscli` application on Windows platforms. If you are running the Cygwin interface and include the -u option as a part of the `-list` subcommand, the password for the specified account is included in the results. Exposing the password can cause a breach in security.

In addition to the environmental variables that are used to log in, you can also set the **PDS_TIMEOUT** environmental variable. The **PDS_TIMEOUT** variable specifies the maximum time each command can block the command-line before you can

issue another command. When running a given command, you have the option of overriding the time specified by the **PDS_TIMEOUT** variable. If a given command does not complete before you log out or the session times out, the Oracle FS System will continue running the command until it completes or fails. To determine whether the command completed after a session ends, log back in and check the command completion status in the task list or event log by issuing the following commands:

- **task -list -details**
- **event_log -list -before *current-time* -after *command-issued***

After logging in, run the **system -list -status** command to check overall system status. Also, check for any outstanding system alerts by running the **system_alert -list** command. Be sure to check the system status before issuing any administrative commands. Many of the FSCLI commands will not run or complete successfully if the system is operating in a compromised state.

Note: Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run the `login` command.

OPTIONS

-force	Logs out all current administration sessions for the username provided. Use the -force option in the following cases: • To log in when the maximum number of 10 sessions are in use. • To perform commands that make system changes that could affect other administrators.
-oracleFS	Specifies the name of the Oracle FS System that you are logging in to. Identify the system by IP address or hostname.
-returnKey	Used in scripting environments. Requests that a session key be returned. The session key provides additional authentication for each FSCLI command at the time the command is issued in a batch process.
-u	Specifies the name of the account on the designated system.
-webcliPort	Directs the login request to an alternate webcli port number on the Oracle FS System. This option is only necessary if the webcli port number in use has been modified from its default value.

EXAMPLE

Task	Logs out all current administration sessions for the username provided.
Parameters	• The name of the account: **administrator** • The name of the Oracle FS System: **production** • A flag to force a logout and session termination for all other users with the same account name.

```
$ fscli login -u administrator -oracleFS production
-force
```

Related Links

task -list

event_log -list

version -list

system -list

system_alert -list

logout

Logs out the administrator from an active Oracle FS System session.

SYNOPSIS

`logout [ -usage | -help ]`

DESCRIPTION

The **logout** command requires no additional input.

The Oracle FS CLI automatically logs out an administrator when the session has been idle for a predefined amount of time. Run the **system -modify -sessionTimeout** command to change the amount of time that FSCLI sessions can be idle.

Some commands take a longer to run than the maximum amount of time that a session can be idle. When running these commands, you do not need to abandon the session while waiting for the command to complete. Run lengthy commands with the -timeout option. For the *timeout-in-seconds* parameter, specify the length of time that the command-line waits before another command is allowed to run. If the command takes longer to run than the specified time limit, the system continues processing the command, but the command prompt is made available so that you can issue another command. If the -timeout option is omitted, the command-line blocks until the one of the following conditions is met:

- The command completes successfully.
- The command returns with an error.
- The session times out.

To check on the status of a command that is still running after the session ends, log into the Oracle FS System, and issue a **`task -list -details`** command.

Note: Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run the `logout` command.

EXAMPLE

Task	Log out of an FSCLI session.
Parameters	• None
`$ fscli logout`	

Related Links

system -modify
task -list

lun

Creates and manages the LUNs on an Oracle FS System.

SYNOPSIS

`lun { [ -add | -cloneDelete | -copy | -delete | -list | -maximumCapacity | -modify ] | [ -usage | -help ] }`

DESCRIPTION

Within the Oracle FS System, a LUN is a logical volume that is defined over a collection of drive groups and is addressed using SCSI protocol in a SAN. When you create a LUN, use the `lun -add` command to assign storage resources and QoS attributes, including storage utilization and performance settings. Later, you can use the `lun -modify` command to change the properties, the host mappings, and the QoS attributes of the LUN. You can use the `lun -copy` command to copy an existing LUN and assign different storage and QoS properties to the new LUN.

The Oracle FS System provides auto-tiering support for LUNs as well as single-tiering support. For auto-tiering, the system actively monitors the read operations and the write operations on the LUN data and automatically adjusts the QoS properties of the LUN based on the results of that monitoring. The system does not monitor the read operations and the write operations on a single-tiered LUN or adjust the QoS properties of the single-tiered LUN.

SUBCOMMANDS

-add	Creates a LUN on the Oracle FS System.
-cloneDelete	Removes all the clones of a particular LUN.
-copy	Creates a new LUN by copying the contents and settings of a LUN.
-delete	Removes a particular LUN from the Oracle FS System.
-list	Displays the status and the configuration information for LUNs.
-maximumCapacity	Returns the amount of storage that can be allocated to a LUN.
-modify	Changes the properties of an existing LUN.

EXAMPLE

Task: Create a LUN.

Parameters:

- The name of the new LUN: `DISK1`
- The size of the LUN: 16 GB
- The priority of the LUN: medium
- The Storage Class of the LUN: high-capacity hard disk drive
- The volume group in which the LUN resides: `/user1_vg`
- The Controller to which the LUN is assigned: `/CONTROLLER-01`
- The Storage Domain in which the LUN is created: `/sd1`

```
$ fscli lun -add -name DISK1 -capacity 16 -priority
medium -storageClass capDisk -volumeGroup /user1_vg
-controller /CONTROLLER-01 -storageDomain /sd1
```

Related Links

lun -add
lun -cloneDelete
lun -copy
lun -delete
lun -list
lun -maximumCapacity
lun -modify

lun -add

Creates a LUN on the Oracle FS System.

SYNOPSIS

```
lun -add
   -name lun-name
   -capacity capacity
   [-allocatedCapacity allocated-logical-capacity]
   { -profile performance-profile-id-or-fqn
   | -priority {premium | high | medium | low | archive}
     [-storageClass {capDisk | perfDisk | perfSsd | capSsd}]
     { [-redundancy {1 | 2}]
       [-accessBias {sequential | random | mixed}]
       [-ioBias {read | write | mixed}]
     | [-raidLevel {raid5 | raid10 | raid6 | default}]
       [-readAhead {default | normal | aggressive | conservative}]
     }
   }
   [{ -singleTier
    | -autoTier
      [-preferredStorageClass {capDisk | perfDisk | perfSsd |
capSsd}
                        [, {capDisk | perfDisk | perfSsd |
capSsd} ]... ]
      [-preferredRepositoryStorageClass {capDisk | perfDisk |
perfSsd | capSsd}
                        [, {capDisk | perfDisk | perfSsd |
capSsd} ]... ]
      [{-enableTierReallocation | -disableTierReallocation}]
    }]
   [-repositoryPercentage capacity-percentage]
   [{ -matchTierQos
    |   [-noMatchTierQos]
      [-repositoryPriority {premium | high | medium | low |
archive}]
   [-repositoryStorageClass {capDisk | perfDisk | perfSsd |
capSsd}]
   { [-repositoryRedundancy {1 | 2}]
     [-repositoryAccessBias {sequential | random | mixed}]
     [-repositoryIoBias {read | write | mixed}]
   | [-repositoryRaidLevel {raid5 | raid10 | raid6 | default}]
   }
 }]
   [-volumeGroup volume-group-id-or-fqn]
   [-controller controller-id-or-fqn ]
   [-maskedControllerPorts /controller[/slot[/port]]
                           [, /controller[/slot[/port]]]... ]
   [{ -unmapped
    | -globalMapping lun-number
    | { -hostmap host-id-or-fqn [, host-id-or-fqn]...
      | -hostGroupMap host-group-id-or-fqn
```

```
      }
      -lunNumber lun-number
   }]
   [{-fibreChannelAccess | -noFibreChannelAccess}]
   [{-iscsiAccess | -noIscsiAccess}]
   [-storageDomain storage-domain-id-or-fqn]
   [{-active | -inactive}]
   [-copyPriority {auto | low | high}]
   [{-conservativeMode | -noConservativeMode}]
   [{-disableRefTagChecking | -enableRefTagChecking}]
   [-bootLun | -noBootLun]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Use the `lun -add` command to create a LUN that allocates storage across multiple drive groups based on storage or performance priorities. When you create a LUN, you can assign storage resources and QoS attributes, including storage utilization and performance settings. You can efficiently copy the characteristics of an existing Storage Profile by including the -profile option. If you do not want to use the characteristics of an existing Storage Profile, you can create a LUN that uses a custom Storage Profile by including one or more of the following QoS options with the -priority option:

- -storageClass
- -redundancy
- -accessBias
- -ioBias
- -raidLevel
- -readAhead

Note: Only administrators with primary administrator, admin1, or admin2 roles are authorized to run the `lun -add` command.

OPTIONS

-accessBias Identifies the expected access pattern for the logical volume. Valid biases:

- sequential. Indicates that the read requests and the write requests operate on the data mostly by accessing the records one after the other in a physical order.
- random. Indicates that the read requests and the write requests operate on the data mostly by accessing the records in an arbitrary order.

- mixed. Indicates that the read requests and the write requests operate on the data sometimes in sequential order and sometimes in random order. Accessing in a mixed pattern is the default.

Note: Do not use the -accessBias option if you use the -profile option to apply a QoS Storage Profile to the volume.

-active Enables the LUN to be accessible and available for use immediately after the LUN is created. To ensure accurate mapping relationships, use the -globalMapping option, the -hostmap option, or the -hostGroupMap option with the -active option.

-allocatedCapacity Specifies the amount of space, in gigabytes, that the Oracle FS System sets aside for a LUN. This number can be less than the amount that you specify for the addressable logical capacity for the LUN using the -capacity option. When the allocated capacity is less than the space that is requested for -capacity, the system creates what is called a *thinly provisioned* LUN.

If you do not provide a value for -allocatedCapacity, Oracle FS System sets the allocated amount of space to the size defined by the -capacity option.

-autoTier Enables the auto-tiering capability, also called QoS Plus, as needed. An auto-tiered LUN monitors the data activity and automatically adjusts the QoS properties. Based on historical usage information, the system moves the data block to a Storage Class within the Storage Domain that can optimally store the data and best use the available storage types and capacities.

If you do not specify the singleTier or the autoTier option, the single-tiering feature is selected by default even if there is more than one storage class available on the Oracle FS System.

-bootLun Identifies that the LUN can be used as a boot drive in the SAN.

-capacity Specifies the storage space in gigabytes for the volume. If you intend to create clones of this LUN, be sure to include in this value sufficient space for the clone repository. The value you specify for -capacity is sometimes referred to as *addressable capacity*.

-conservativeMode Allows the Oracle FS System to enter conservative mode for the specified LUN if a Controller node fails.

	In conservative mode, data is written to the storage array before the write operation is reported as complete to the SAN host. Allowing conservative mode is the default.
-controller	Specifies the fully qualified name (FQN) or the unique identifier (ID) of a Controller to which the LUN is assigned. By default, the Oracle FS System chooses the Controller. If included, the FQN format consists of */controller-name*. For example, /CONTROLLER-01 specifies Controller01.
-copyPriority	Identifies the setting to use when copying or migrating data from one location to another. To control the impact on system performance, you can specify one of the following priority levels: • auto. Balances data movement rate and system performance. If you do not use the -copyPriority option, the default priority is auto. • low. Completes copy operations and data migration without degrading overall system performance. Completion rate might be slower. • high. Completes copy operations and data migration as quickly as possible. System performance might be degraded.
-disableRefTagChecking	Instructs the HBA to bypass the check of whether a host has written to a specific area of the LUN before the host reads from that same area. If this option is omitted, read-before-write error events can be generated. If this option is omitted, reference tag checking is enabled by default.
-disableTierReallocation	Turns off dynamic data progression for the LUN. The Oracle FS System does not migrate the LUN data to other Storage Classes.
-enableRefTagChecking	Instructs the HBA to check whether a SAN host has written to a specific area of the LUN before the host reads from that area. When a host reads from a specific area before writing to that area, the Oracle FS System generates a read-before-write error event. Note: This check is sometimes called a *reference tag check* and is a part of the process for ensuring data protection integrity. By default, reference tag checking is enabled.

-enableTierReallocation Turns on dynamic data migration for the LUN. The Oracle FS System migrates the LUN data to the appropriate Storage Class based on the usage patterns of the data. By default, tier reallocation is enabled.

-fibreChannelAccess Allows users to access to the volume through the Fibre Channel (FC) ports. By default, FC access is enabled.

-globalMapping Maps the LUN globally to all hosts using the specified *lun-number*.

-hostGroupMap Specifies a mapping between a LUN and a host group. You identify the host group mapping by providing a fully qualified name (FQN) or a unique ID (ID).

-hostmap Identifies a mapping between a LUN and a SAN host. You identify the hostmap by providing a unique ID (ID) or a fully qualified name (FQN).

-inactive Renders the LUN volume invisible on the network. An inactive volume is not accessible and cannot be used by a SAN host.

-ioBias Indicates the typical read-write ratio. Valid I/O biases:

- read. Indicates that most of the access requests are for `read` operations.
- write. Indicates that most of the access requests are for `write` operations.
- mixed. Indicates that the number of access requests are similar for `read` operations and `write` operations.

A mixed read-write ratio is the default. Do not use the -ioBias option if you use the -profile option to apply a QoS Storage Profile to the LUN.

-iscsiAccess Allows access to the LUN through the iSCSI ports.

-lunNumber Identifies the logical unit number that is used to present an Oracle FS System LUN to a SAN host or a host group.

Note: The `lun -add` command does not map the new LUN if the host already contains a LUN with the specified number. You can run the `lun -modify` command to map the new LUN after determining the number to use.

-maskedControllerPorts

Restricts access to the LUN through one or more Controller ports. Use the following format to mask all of the ports in a Controller, to mask all of the ports for a given Controller slot, or to mask only a specific Controller port: `/controller[/slot[/port]]`

- For *controller*, provide a string that includes the FQN or ID of the Controller.
- For *slot*, specify the HBA slot number.
- For *port*, specify the port number.

If you do not include this option, the LUN becomes accessible on all Controller ports on the assigned node by default.

-matchTierQos

Sets the QoS settings of the clone repository to match the QoS settings of the LUN.

-name

Specifies the name of the LUN that you are creating on the Oracle FS System. Use double quotation marks around names containing dashes.

The following characters are invalid in a LUN name:

- Non-printable characters, including ASCII 0 through 31, decimal
- / (slash) and \ (backslash)
- . (dot) and .. (dot-dot)
- Embedded tabs

Note: The `lun -add` command does not map the new LUN if the Oracle FS System already contains a LUN with the specified name within the same volume group. You can run the `lun -modify` command to map the new LUN after determining the name to assign.

-noBootLun

Identifies that the LUN cannot be used as a boot drive in the SAN. Not using the LUN as a boot drive is the default.

-noConservativeMode

Prevents the Oracle FS System from entering conservative mode for the specified LUN.

CAUTION: If a Controller node fails, the system does not enable write-through mode, which it normally would. If the remaining node fails, any data that has not been written to the storage arrays is lost.

-noFibreChannelAccess

Disables access to the LUN through FC ports. By default, access is enabled.

-noIscsiAccess

Disables access to the LUN through use of the iSCSI protocol. By default, the LUN is not accessible through the iSCSI protocol.

-noMatchTierQos

Indicates that the QoS settings of the clone repository are not automatically set to the QoS settings of the LUN. Not automatically matching the QoS settings is the default.

-preferredRepositoryStorageClass

Identifies the Storage Classes for the Clone LUNs that are created for the LUN, based on the usage patterns of the Clone LUNs. The Storage Classes do not need to be physically present on the Oracle FS System when you set this property. Storage Classes that are not present can be used after they are installed in the Oracle FS System.

Specify one or more Storage Classes:

- capDisk. Specifies that the data is stored on high-capacity, rotating HDDs. This Storage Class optimizes capacity at some sacrifice of speed. For a storage system that does not include tape storage as an option, this Storage Class always provides the lowest cost for each GB of capacity.
- perfDisk. Specifies that the data is stored on high-speed hard disk drives (HDDs). This Storage Class sacrifices some capacity to reduce the access time and the latency of the read operations and of the write operations.
- perfSsd. Specifies that the data is stored on solid state drives (SSDs) that are optimized for the performance of balanced read and write operations.
- capSsd. Specifies that the data is stored on SSDs that are optimized for the performance of capacity and for read operations. The write performance for this Storage Class is sacrificed somewhat to achieve the optimizations for read performance and for capacity.

If you do not include this option, all Storage Classes can be used based on usage patterns. Do not use this option with the -matchTierQos option.

-preferredStorageClass

Identifies the Storage Classes for the LUN based on the usage patterns of the LUN data. The Storage Classes do not need to be physically present on the Oracle FS System when you set this property. Storage Classes that are not present can be used after they are installed in the Oracle FS System.

Specify one or more Storage Classes:

- capDisk. Specifies that the data is stored on high-capacity, rotating HDDs. This Storage Class optimizes capacity at some sacrifice of speed. For a storage system that does not include tape storage as an option, this Storage Class always provides the lowest cost for each GB of capacity.
- perfDisk. Specifies that the data is stored on high-speed hard disk drives (HDDs). This Storage Class sacrifices some capacity to reduce the access time and the latency of the read operations and of the write operations.
- perfSsd. Specifies that the data is stored on solid state drives (SSDs) that are optimized for the performance of balanced read and write operations.
- capSsd. Specifies that the data is stored on SSDs that are optimized for the performance of capacity and for read operations. The write performance for this Storage Class is sacrificed somewhat to achieve the optimizations for read performance and for capacity.

If you do not include the -preferredStorageClass option, all Storage Classes can be used based on usage patterns.

-priority

Identifies the priority that the system gives to various operational aspects of a logical volume. These operational aspects include the Controller processing queue, the SAN interface requests, and the migration of the auto-tiered LUN extents.

Note: The processing-queue priority defines the percentage of the Controller CPU cycles that are dedicated to the volume.

Valid priority levels:

Premium	Indicates the highest priority for responding to requests in the processing queue. For auto-tiered LUNs, busy LUN extents receive the highest priority when the system migrates the data to the higher-performing storage tiers.
High	Indicates the next highest priority for responding to requests in the processing queue. For auto-tiered LUNs, busy LUN extents receive the next highest priority

when the system migrates the data to the higher-performing storage tiers.

Medium — Indicates an intermediate priority for responding to requests in the processing queue. For auto-tiered LUNs, busy LUN extents receive an intermediate priority when the system migrates the data to the higher-performing storage tiers.

Low — Indicates the next to lowest priority for responding to requests in the processing queue. For auto-tiered LUNs, busy LUN extents receive the next to lowest priority when the system migrates the data to the higher-performing storage tiers.

Archive — Indicates the lowest priority for responding to requests in the processing queue. For auto-tiered LUNs, busy LUN extents receive the lowest priority when the system migrates the data to the higher-performing storage tiers.

Note: When creating a LUN, you can include the -priority option or the -profile option. Do not include both options.

-profile — Specifies the fully qualified name (FQN) or unique identifier (ID) of the QoS Storage Profile to apply to the LUN. Use double quotes around names containing one or more spaces or dashes to prevent parsing errors.

Note: When creating a LUN, you must include either the -profile option or the -priority option. Do not include both options.

-raidLevel — Specifies the level of RAID data protection to use for the logical volume. Valid values:

raid5 — Indicates that, in addition to the actual data, one set of parity bits exists for the logical volume. This parity level protects against the loss of one drive.

raid6 — Indicates that, in addition to the actual data, two sets of parity bits exist for the logical volume. This parity level protects against the loss of one or two drives with a slight cost to write performance.

raid10	Indicates that no parity bits exist for the volume. Instead, the system writes the data in two different locations. This RAID level protects against the loss of at least one drive and possibly more drives with an improvement of the performance of random write operations.
default	Indicates that the level of RAID protection is determined by the Storage Class. For large form factor (capacity) hard disk drives, RAID 6 is the default level of protection. For the other Storage Classes, RAID 5 is the default level of protection.

Do not use the -raidLevel option if you use the -profile option to apply a QoS Storage Profile to the LUN.

-readAhead Identifies the read-ahead policy to use for the logical volume for sequential read operations. The policy determines the amount of additional data, if any, that the system places into the Controller cache. Valid policies:

default and normal	Indicates that the input requests and the output requests are accessing the data mostly in a random manner or in a mixed sequential and random manner.
aggressive	Indicates that the input requests and the output requests are accessing the data mostly in a sequential manner and that the workload is biased toward read operations.
conservative	Indicates that the input requests and the output requests are mostly sequential and that the workload is biased toward write operations.

Do not use the -readAhead option if you use the -profile option to apply a QoS Storage Profile to the volume.

-redundancy Identifies the number of copies of the parity bits that the Oracle FS System creates for the LUN. Valid values:

- 1. Stores the original user data plus one set of parity bits to help in the recovery of lost data. Access to the data is preserved even after the failure of one drive. Single parity is implemented using RAID 5 technology.
- 2. Stores the original user data plus two sets of parity bits to help in the recovery of lost data. Access to the data is preserved even after the simultaneous failure of two drives. Double parity is implemented using RAID 6 technology.

  Note: Double parity is the default for large form factor (capacity) hard disk drives. Single parity is the default for the other storage classes.

Do not use the -redundancy option if you use the -profile option to apply a QoS Storage Profile to the LUN.

-repositoryAccessBias Identifies the expected access pattern for the Clone LUN. Valid biases:

- sequential. Indicates that the read requests and the write requests operate on the data mostly by accessing the records one after the other in a physical order.
- random. Indicates that the read requests and the write requests operate on the data mostly by accessing the records in an arbitrary order.
- mixed. Indicates that the read requests and the write requests operate on the data sometimes in sequential order and sometimes in random order. Accessing in a mixed pattern is the default.

Do not use the -repositoryAccessBias option if you use the -matchTierQos option to match the QoS settings of the LUN.

-repositoryIoBias Indicates the typical read-write ratio for the Clone LUNs that are created for the LUN. Valid I/O biases:

- read. Indicates that most of the access requests are for `read` operations.
- write. Indicates that most of the access requests are for `write` operations.
- mixed. Indicates that the number of access requests are similar for `read` operations and `write` operations.

A mixed read-write ratio is the default. Do not use the -repositoryIoBias option if you use the -matchTierQos option to match the QoS settings of the LUN.

-repositoryPercentage

Determines the amount of extra space to set aside as a repository for Clone LUNs. Specify the amount as a percentage of the maximum capacity for the LUN. The default capacity is set to 110%. If you do not want to create a repository, specify **0**.

-repositoryPriority

Assigns a priority level to determine the system response to incoming I/O requests against all Clone LUNs that are created from the LUN. In general, the higher the priority level, the faster the system can respond to an access request. Valid priority levels:

- premium. Indicates the highest priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive the highest priority when the system migrates the data to the higher-performing storage tiers.
- high. Indicates the next highest priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive the next highest priority when the system migrates the data to the higher-performing storage tiers.
- medium. Indicates an intermediate priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive an intermediate priority when the system migrates the data to the higher-performing storage tiers.
- low. Indicates the next to lowest priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive the next to lowest priority when the system migrates the data to the higher-performing storage tiers.
- archive. Indicates the lowest priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive the lowest priority when the system migrates the data to the higher-performing storage tiers.

Do not use the -repositoryPriority option if you use the -matchTierQos option to match the QoS settings of the LUN.

-repositoryRaidLevel

Specifies the level of RAID data protection to use for the clone repository. Valid values:

- raid5. Indicates that, in addition to the actual data, one set of parity bits exists for the logical volume. Single parity protects against the loss of one drive. Single parity is implemented as a variant of the RAID 5 storage technology.
- raid6. Indicates that, in addition to the actual data, two sets of parity bits exist for the logical volume. Double parity protects against the loss of one or two drives with a slight cost of write performance. Double parity is implemented as a variant of the RAID 6 storage technology.
- raid10. Indicates that no parity bits exist for the volume. Instead, the system writes the data in two different locations. Mirroring protects against the loss of at least one drive and possibly more drives with an improvement of the performance of random write operations. Mirrored RAID is implemented as a variant of the RAID 10 storage technology.
- default. Indicates that the level of protection is determined by the storage class. For large form factor (capacity) hard disk drives, the RAID 6 level of protection is the default. For the other storage classes, the RAID 5 level of protection is the default.

Do not use the -repositoryRaidLevel option if you use the -matchTierQos option to match the QoS settings of the LUN.

-repositoryRedundancy

Identifies the number of copies of the parity bits that the Oracle FS System creates for the Clone LUN. Valid values:

- 1. Stores the original user data plus one set of parity bits to help in the recovery of lost data. Access to the data is preserved even after the failure of one drive. Single parity is implemented using RAID 5 technology.
- 2. Stores the original user data plus two sets of parity bits to help in the recovery of lost data. Access to the data is preserved even after the simultaneous failure of two drives. Double parity is implemented using RAID 6 technology.

Note: Double parity is the default for large form factor (capacity) hard disk drives. Single parity is the default for the other storage classes.

Do not use the -repositoryRedundancy option if you use the -matchTierQos option to match the QoS settings of the LUN.

-repositoryStorageClass

Identifies the type of storage media to be used for all Clone LUNs that are created for the LUN. Valid Storage Classes:

- capDisk. Specifies that the data is stored on high-capacity, rotating hard disk drives (HDDs). This Storage Class optimizes capacity at some sacrifice of speed. For the FS1, this storage class provides the lowest cost for each GB of capacity.
- perfDisk. Specifies that the data is stored on high-speed HDDs. This Storage Class sacrifices some capacity to reduce the access time and the latency of the read operations and of the write operations.
- perfSsd. Specifies that the data is stored on SSDs that are optimized for the performance of balanced read and write operations.
- capSsd. Specifies that the data is stored on solid state drives (SSDs) that are optimized for the performance of read operations and for capacity. The write performance for this Storage Class is sacrificed somewhat to achieve the optimizations for read performance and for capacity.

Do not use the -repositoryStorageClass option if you use the -matchTierQos option to match the QoS settings of the LUN.

-singleTier

Creates a LUN that uses standard QoS properties. A single-tier LUN has QoS properties that you set to specify the Storage Class and other performance parameters for storing the LUN data onto the storage media. The QoS properties remain unchanged until you change these properties.

If you do not specify the singleTier or the autoTier option, the single-tiering feature is selected by default even if there is more than one storage class available on the Oracle FS System.

-storageClass Identifies the type of physical media on which the data is stored. Valid media types (sorted from the highest performance priority to the lowest performance priority):

- perfSsd — Specifies that the data is stored on solid state drives (SSDs) that are optimized for the performance of balanced read and write operations.
- capSsd — Specifies that the data is stored on SSDs that are optimized for the performance of capacity and for read operations. The write performance for this Storage Class is sacrificed somewhat to achieve the optimizations for read performance and for capacity.
- perfDisk — Specifies that the data is stored on high-speed hard disk drives (HDDs). This Storage Class sacrifices some capacity to reduce the access time and the latency of the read operations and of the write operations.
- capDisk — Specifies that the data is stored on high-capacity, rotating HDDs. This Storage Class optimizes capacity at some sacrifice of speed. For a storage system that does not include tape storage as an option, this Storage Class always provides the lowest cost for each GB of capacity.

Do not use the -storageClass option if you use the -profile option to match the QoS settings of the LUN.

-storageDomain Specifies the FQN or GUID of the Storage Domain that contains the LUN. If you do not include this option, and there is only one Storage Domain on the Oracle FS System, the system uses the default Storage Domain in which to create the LUN. If you do not include this option, and there are multiple Storage Domains available, the system prompts you to specify a Storage Domain.

-unmapped Prevents the LUN from being detected or accessed by any SAN host.

-volumeGroup Specifies the FQN or the ID of the volume group to which the LUN is assigned. If you do not include this option, the LUN is assigned to the root level volume group.

EXAMPLE

Task	Create a LUN.
Parameters	• The name of the new LUN: `DISK1` • The size of the LUN: 16 GB • The priority of the LUN: medium • The Storage Class of the LUN: high-capacity hard disk drive • The volume group in which the LUN resides: `/user1_vg` • The Controller to which the LUN is assigned: `/CONTROLLER-01` • The Storage Domain in which the LUN is created: `/sd1`

```
$ fscli lun -add -name DISK1 -capacity 16 -priority
medium -storageClass capDisk -volumeGroup /user1_vg
-controller /CONTROLLER-01 -storageDomain /sd1
```

Related Links

lun

lun -modify

lun -cloneDelete

Removes all the clones of a particular LUN.

SYNOPSIS

```
lun -cloneDelete
   -lun lun-id-or-fqn
   [-suppressWarnings]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

The `lun -cloneDelete` command removes the entire Clone LUN hierarchy of a specified LUN. Any host mapping or host group mappings of the Clone LUN are also deleted.

Note: The `lun -cloneDelete` command does not delete the source LUN.

Note: Only administrators with primary administrator, admin1, or admin2 roles are authorized to run the `lun -cloneDelete` command.

OPTIONS

-lun	Specifies the ID or the fully qualified name (FQN) of the source LUN for the clones. The source LUN is not deleted.
-suppressWarnings	Requests that the Oracle FS System not display a message on the command line to warn that all the Clone LUNs, the host mappings, and the host group mappings will be deleted. If omitted, the Oracle FS System prompts you to confirm the deletions.

EXAMPLE

Task	Delete all the Clone LUNs of a LUN.
Parameters	• The fully qualified name (FQN) of the source LUN: `/user1_vg/DISK1`

```
$ fscli lun -cloneDelete -lun /user1_vg/DISK1
```

Related Links

lun

lun -copy

Creates a new LUN by copying the contents and settings of a LUN.

SYNOPSIS

```
lun -copy
   -source source-lun-id-or-fqn
   -name lun-name
   [-capacity capacity]
   [{ -profile performance-profile-id-or-fqn
    | -priority {premium | high | medium | low | archive}
      [-storageClass {capDisk | perfDisk | perfSsd | capSsd}]
      { [-redundancy {1 | 2}]
        [-accessBias {sequential | random | mixed}]
        [-ioBias {read | write | mixed}]
      | [-raidLevel {raid5 | raid10 | raid6 | default}]
        [-readAhead {default | normal | aggressive |
conservative}]
      }
    }]
   [{ -singleTier
    | -autoTier
      [-preferredStorageClass {capDisk | perfDisk | perfSsd |
capSsd}
                        [, {capDisk | perfDisk | perfSsd |
capSsd} ]... ]
      [-preferredRepositoryStorageClass {capDisk | perfDisk |
perfSsd | capSsd}
                        [, {capDisk | perfDisk | perfSsd |
capSsd} ]... ]
      [{-enableTierReallocation | -disableTierReallocation}]
    }]
```

```
   [-allocatedCapacity allocated-logical-capacity]
   [-repositoryPercentage capacity-percentage]
   [{ -matchTierQos
    |   [-noMatchTierQos]
      [-repositoryPriority {premium | high | medium | low |
archive}]
   [-repositoryStorageClass {capDisk | perfDisk | perfSsd |
capSsd}]
   { [-repositoryRedundancy {1 | 2}]
     [-repositoryAccessBias {sequential | random | mixed}]
     [-repositoryIoBias {read | write | mixed}]
   | [-repositoryRaidLevel {raid5 | raid10 | raid6 | default}]
   }
 }]
   [-volumeGroup volume-group-id-or-fqn]
   [{ -unmapped
    | -globalMapping lun-number
    | -hostmap host-id-or-fqn [, host-id-or-fqn]...
      -lunNumber lun-number
    | -hostGroupMap host-group-id-or-fqn
      -lunNumber lun-number
    }]
   [{-fibreChannelAccess | -noFibreChannelAccess}]
   [{-iscsiAccess | -noIscsiAccess}]
   [{ -maskedControllerPorts /controller[/slot[/port]]
                             [,/controller[/slot[/port]]]...
    | -unMaskedControllerPorts /controller[/slot[/port]]
                             [,/controller[/slot[/port]]]...
    }]
   [-storageDomain storage-domain-id-or-fqn]
   [{-active | -inactive}]
   [-copyPriority {auto | low | high}]
   [{-conservativeMode | -noConservativeMode}]
   [{-disableRefTagChecking | -enableRefTagChecking}]
   [-bootLun | -noBootLun]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

You can run the `lun -copy` command to copy the contents of an existing LUN and assign different QoS properties to the new LUN. When you copy a LUN, the properties of the existing LUN are applied to the new LUN by default. Use the `lun -copy` options to assign different properties to the new LUN, including:

- Storage capacity
- Priority level
- Redundancy setting
- Volume group attributes
- Single-tiering or auto-tiering capability

Before running the `lun -copy` command, you can use the `lun -maximumCapacity` command to determine if enough space is available to copy the LUN, based on the specified Storage Domain, priority, redundancy, and Storage Class settings.

Note: Only administrators with primary administrator, admin1, or admin2 roles are authorized to run the `lun -copy` command.

OPTIONS

`-accessBias`

Identifies the expected access pattern for the logical volume. Valid biases:

- sequential. Indicates that the read requests and the write requests operate on the data mostly by accessing the records one after the other in a physical order.
- random. Indicates that the read requests and the write requests operate on the data mostly by accessing the records in an arbitrary order.
- mixed. Indicates that the read requests and the write requests operate on the data sometimes in sequential order and sometimes in random order. Accessing in a mixed pattern is the default.

Note: Do not use the -accessBias option if you use the -profile option to apply a QoS Storage Profile to the volume.

`-active`

Enables the LUN to be accessible and available for use immediately after the LUN is created. To ensure accurate mapping relationships, use the -globalMapping option, the -hostmap option, or the -hostGroupMap option with the -active option.

`-allocatedCapacity`

Specifies the amount of space, in gigabytes, that the Oracle FS System sets aside for a LUN. This number can be less than the addressable logical capacity for the LUN as defined by the -capacity option. When the allocated capacity is less than the space that is requested for -capacity, the system creates what is called a *thinly provisioned* LUN.

If you do not provide a value for -allocatedCapacity, Oracle FS System sets the allocated amount of space to the size used by the source LUN.

`-autoTier`

Enables the auto-tiering capability, also called QoS Plus, as needed. An auto-tiered LUN monitors the data activity and automatically adjusts the QoS properties. Based on historical usage information, the system moves the data block to a Storage Class within the Storage Domain that can optimally store the data and best use the available storage types and capacities.

	If you do not specify the singleTier or the autoTier option, the default is whatever the source LUN's setting is. If the source LUN's setting is single tier, the source's copy defaults to single tier. If the source LUN's setting is autotier, the source's copy defaults to auto tier.
-bootLun	Identifies that the LUN can be used as a boot drive in the SAN.
-capacity	Specifies the storage space in gigabytes for the volume. If you intend to create clones of this LUN, be sure to include in this value sufficient space for the clone repository. The value you specify for -capacity is sometimes referred to as *addressable capacity*.
-conservativeMode	Allows the Oracle FS System to enter conservative mode for the specified LUN if a Controller node fails. In conservative mode, data is written to the storage array before the write operation is reported as complete to the SAN host. Allowing conservative mode is the default.
-copyPriority	Identifies the setting to use when copying or migrating data from one location to another. To control the impact on system performance, you can specify one of the following priority levels: • auto. Balances data movement rate and system performance. If you do not use the -copyPriority option, the default priority is auto. • low. Completes copy operations and data migration without degrading overall system performance. Completion rate might be slower. • high. Completes copy operations and data migration as quickly as possible. System performance might be degraded.
-disableRefTagChecking	Instructs the HBA to bypass the check of whether a host has written to a specific area of the LUN before the host reads from that same area. If this option is omitted, read-before-write error events can be generated. If this option is omitted, reference tag checking is enabled by default.
-disableTierReallocation	Turns off dynamic data progression for the LUN. The Oracle FS System does not migrate the LUN data to other Storage Classes.

-enableRefTagChecking

Instructs the HBA to check whether a SAN host has written to a specific area of the LUN before the host reads from that area. When a host reads from a specific area before writing to that area, the Oracle FS System generates a read-before-write error event.

Note: This check is sometimes called a *reference tag check* and is a part of the process for ensuring data protection integrity.

By default, reference tag checking is enabled.

-enableTierReallocation

Turns on dynamic data migration for the LUN. The Oracle FS System migrates the LUN data to the appropriate Storage Class based on the usage patterns of the data. By default, tier reallocation is enabled.

-fibreChannelAccess

Allows users to access to the volume through the Fibre Channel (FC) ports. By default, FC access is enabled.

-globalMapping

Maps the LUN globally to all hosts using the specified *lun-number*.

-hostGroupMap

Specifies a mapping relationship between a LUN and a host group. You identify the host group mapping by providing a fully qualified name (FQN) or a unique ID (ID).

-hostmap

Identifies a mapping between a LUN and a SAN host. You identify the hostmap by providing a unique ID (ID) or a fully qualified name (FQN).

-inactive

Renders the LUN volume invisible on the network. An inactive volume is not accessible and cannot be used by a SAN host.

-ioBias

Indicates the typical read-write ratio. Valid I/O biases:

- read. Indicates that most of the access requests are for `read` operations.
- write. Indicates that most of the access requests are for `write` operations.
- mixed. Indicates that the number of access requests are similar for `read` operations and `write` operations.

A mixed read-write ratio is the default. Do not use the -ioBias option if you use the -profile option to apply a QoS Storage Profile to the LUN.

-iscsiAccess Allows access to the new LUN through the iSCSI ports.

-lunNumber Identifies the logical unit number that is used to present an Oracle FS System LUN to a SAN host or a host group.

Note: The `lun -copy` command does not map the copied LUN if the host already contains a LUN with the specified number. You can run the `lun -modify` command to map the copied LUN after determining the number to use.

-maskedControllerPorts Restricts access to the LUN through one or more Controller ports. Use the following format to mask all of the ports in a Controller, to mask all of the ports for a given Controller slot, or to mask only a specific Controller port: `/controller[/slot[/port]]`

- For *controller*, provide a string that includes the FQN or ID of the Controller.
- For *slot*, specify the HBA slot number.
- For *port*, specify the port number.

If you do not include this option, the LUN becomes accessible on all Controller ports on the assigned node by default.

-matchTierQos Sets the QoS settings of the clone repository to match the QoS settings of the LUN.

-name Specifies a name for the copied LUN. The name that you provide must be between 1 and 40 characters. Use double quotation marks around names containing one or more spaces or dashes to prevent parsing errors.

The following characters are invalid in a LUN name:

- Tab
- / (slash) and \ (backslash)
- . (dot) and .. (dot-dot)
- Embedded tabs

Note: The `lun -copy` command does not map the copied LUN if the Oracle FS System already contains a LUN with the specified name within the same volume group.

-noBootLun Identifies that the LUN cannot be used as a boot drive in the SAN. Not using the LUN as a boot drive is the default.

-noConservativeMode

Prevents the Oracle FS System from entering conservative mode for the specified LUN.

CAUTION: If a Controller node fails, the system does not enable write-through mode, which it normally would. If the remaining node fails, any data that has not been written to the storage arrays is lost.

-noFibreChannelAccess

Disables access to the copied LUN through FC ports. By default, access is enabled.

-noIscsiAccess

Disables access to the copied LUN through use of the iSCSI protocol. By default, the LUN is not accessible through the iSCSI protocol.

-noMatchTierQos

Indicates that the QoS settings of the clone repository are not automatically set to the QoS settings of the LUN. Not automatically matching the QoS settings is the default.

-preferredRepositoryStorageClass

Identifies the Storage Classes for the Clone LUNs that are created for the LUN, based on the usage patterns of the Clone LUNs. The Storage Classes do not need to be physically present on the Oracle FS System when you set this property. Storage Classes that are not present can be used after they are installed in the Oracle FS System.

Specify one or more Storage Classes:

- capDisk. Specifies that the data is stored on high-capacity, rotating HDDs. This Storage Class optimizes capacity at some sacrifice of speed. For a storage system that does not include tape storage as an option, this Storage Class always provides the lowest cost for each GB of capacity.
- perfDisk. Specifies that the data is stored on high-speed hard disk drives (HDDs). This Storage Class sacrifices some capacity to reduce the access time and the latency of the read operations and of the write operations.
- perfSsd. Specifies that the data is stored on solid state drives (SSDs) that are optimized for the performance of balanced read and write operations.
- capSsd. Specifies that the data is stored on SSDs that are optimized for the performance of capacity and for read operations. The write performance for this Storage Class is sacrificed

somewhat to achieve the optimizations for read performance and for capacity.

If you do not include this option, all Storage Classes can be used based on usage patterns. Do not use this option with the -matchTierQos option.

-preferredStorageClass

Identifies the Storage Classes for the copied LUN based on the usage patterns of the LUN data. The Storage Classes do not need to be physically present on the Oracle FS System when you set this property. Storage Classes that are not present can be used after they are installed in the Oracle FS System.

Specify one or more Storage Classes:

- capDisk. Specifies that the data is stored on high-capacity, rotating HDDs. This Storage Class optimizes capacity at some sacrifice of speed. For a storage system that does not include tape storage as an option, this Storage Class always provides the lowest cost for each GB of capacity.
- perfDisk. Specifies that the data is stored on high-speed hard disk drives (HDDs). This Storage Class sacrifices some capacity to reduce the access time and the latency of the read operations and of the write operations.
- perfSsd. Specifies that the data is stored on solid state drives (SSDs) that are optimized for the performance of balanced read and write operations.
- capSsd. Specifies that the data is stored on SSDs that are optimized for the performance of capacity and for read operations. The write performance for this Storage Class is sacrificed somewhat to achieve the optimizations for read performance and for capacity.

If you do not include the -preferredStorageClass option, all Storage Classes can be used based on usage patterns.

-priority

Assigns a priority level to determine the system response to incoming I/O requests against the LUN. In general, the higher the priority level, the faster the system can respond to an access request. Valid priority levels:

- premium. Indicates the highest priority for responding to requests in the processing

queue. For Auto-Tier LUNs, busy LUN extents receive the highest priority when the system migrates the data to the higher-performing storage tiers.

- high. Indicates the next highest priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive the next highest priority when the system migrates the data to the higher-performing storage tiers.
- medium. Indicates an intermediate priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive an intermediate priority when the system migrates the data to the higher-performing storage tiers.
- low. Indicates the next to lowest priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive the next to lowest priority when the system migrates the data to the higher-performing storage tiers.
- archive. Indicates the lowest priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive the lowest priority when the system migrates the data to the higher-performing storage tiers.

Note: When copying a LUN, you can include the -priority option or the -profile option. Do not include both options.

-profile Specifies the fully qualified name (FQN) or unique identifier (ID) of the QoS Storage Profile to apply to the LUN. Use double quotes around names containing one or more spaces or dashes to prevent parsing errors. If the -profile option is omitted, the profile of the source LUN is applied.

Note: When copying a LUN, you can include either the -profile option or the -priority option. Do not include both options.

-raidLevel Specifies the level of RAID data protection to use for the logical volume. Valid values:

raid5 Indicates that, in addition to the actual data, one set of parity bits exists for the

logical volume. This parity level protects against the loss of one drive.

raid6 — Indicates that, in addition to the actual data, two sets of parity bits exist for the logical volume. This parity level protects against the loss of one or two drives with a slight cost to write performance.

raid10 — Indicates that no parity bits exist for the volume. Instead, the system writes the data in two different locations. This RAID level protects against the loss of at least one drive and possibly more drives with an improvement of the performance of random write operations.

default — Indicates that the level of RAID protection is determined by the Storage Class. For large form factor (capacity) hard disk drives, RAID 6 is the default level of protection. For the other Storage Classes, RAID 5 is the default level of protection.

Do not use the -raidLevel option if you use the -profile option to apply a QoS Storage Profile to the LUN.

-readAhead — Identifies the read-ahead policy to use for the logical volume for sequential read operations. The policy determines the amount of additional data, if any, that the system places into the Controller cache. Valid policies:

default and normal — Indicates that the input requests and the output requests are accessing the data mostly in a random manner or in a mixed sequential and random manner.

aggressive — Indicates that the input requests and the output requests are accessing the data mostly in a sequential manner and that the workload is biased toward read operations.

conservative — Indicates that the input requests and the output requests are mostly sequential and that the workload is biased toward write operations.

Do not use the -readAhead option if you use the -profile option to apply a QoS Storage Profile to the LUN.

-redundancy

Identifies the number of copies of the parity bits that the Oracle FS System creates for the LUN. Valid values:

- 1. Stores the original user data plus one set of parity bits to help in the recovery of lost data. Access to the data is preserved even after the failure of one drive. Single parity is implemented using RAID 5 technology.
- 2. Stores the original user data plus two sets of parity bits to help in the recovery of lost data. Access to the data is preserved even after the simultaneous failure of two drives. Double parity is implemented using RAID 6 technology.

  Note: Double parity is the default for large form factor (capacity) hard disk drives. Single parity is the default for the other storage classes.

Do not use the -redundancy option if you use the -profile option to apply a QoS Storage Profile to the LUN.

-repositoryAccessBias

Identifies the expected access pattern for the Clone LUN. Valid biases:

- sequential. Indicates that the read requests and the write requests operate on the data mostly by accessing the records one after the other in a physical order.
- random. Indicates that the read requests and the write requests operate on the data mostly by accessing the records in an arbitrary order.
- mixed. Indicates that the read requests and the write requests operate on the data sometimes in sequential order and sometimes in random order. Accessing in a mixed pattern is the default.

Do not use the -repositoryAccessBias option if you use the -matchTierQos option to match the QoS settings of the source Clone LUN.

-repositoryIoBias

Indicates the typical read-write ratio for the Clone LUNs that are created for the LUN. Valid I/O biases:

- read. Indicates that most of the access requests are for `read` operations.
- write. Indicates that most of the access requests are for `write` operations.
- mixed. Indicates that the number of access requests are similar for `read` operations and `write` operations.

A mixed read-write ratio is the default. Do not use the -repositoryIoBias option if you use the -matchTierQos option to match the QoS settings of the LUN.

-repositoryPercentage Determines the amount of extra space to set aside as a repository for Clone LUNs. Specify the amount as a percentage of the maximum capacity for the LUN. The default capacity is set to 110%. If you do not want to create a repository, specify **0**.

-repositoryPriority Assigns a priority level to determine the system response to incoming I/O requests against all Clone LUNs that are created from the LUN. In general, the higher the priority level, the faster the system can respond to an access request. Valid priority levels:

- premium. Indicates the highest priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive the highest priority when the system migrates the data to the higher-performing storage tiers.
- high. Indicates the next highest priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive the next highest priority when the system migrates the data to the higher-performing storage tiers.
- medium. Indicates an intermediate priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive an intermediate priority when the system migrates the data to the higher-performing storage tiers.
- low. Indicates the next to lowest priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive the next to lowest priority when the

system migrates the data to the higher-performing storage tiers.

- archive. Indicates the lowest priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive the lowest priority when the system migrates the data to the higher-performing storage tiers.

Do not use the -repositoryPriority option if you use the -matchTierQos option to match the QoS settings of the LUN.

-repositoryRaidLevel

Specifies the level of RAID data protection to use for the clone repository. Valid values:

- raid5. Indicates that, in addition to the actual data, one set of parity bits exists for the logical volume. Single parity protects against the loss of one drive. Single parity is implemented as a variant of the RAID 5 storage technology.
- raid6. Indicates that, in addition to the actual data, two sets of parity bits exist for the logical volume. Double parity protects against the loss of one or two drives with a slight cost of write performance. Double parity is implemented as a variant of the RAID 6 storage technology.
- raid10. Indicates that no parity bits exist for the volume. Instead, the system writes the data in two different locations. Mirroring protects against the loss of at least one drive and possibly more drives with an improvement of the performance of random write operations. Mirrored RAID is implemented as a variant of the RAID 10 storage technology.
- default. Indicates that the level of protection is determined by the storage class. For large form factor (capacity) hard disk drives, the RAID 6 level of protection is the default. For the other storage classes, the RAID 5 level of protection is the default.

Do not use the -repositoryRaidLevel option if you use the -matchTierQos option to match the QoS settings of the LUN.

-repositoryRedundancy

Identifies the number of copies of the parity bits that the Oracle FS System creates for the Clone LUN. Valid values:

- 1. Stores the original user data plus one set of parity bits to help in the recovery of lost data. Access to the data is preserved even after the failure of one drive. Single parity is implemented using RAID 5 technology.
- 2. Stores the original user data plus two sets of parity bits to help in the recovery of lost data. Access to the data is preserved even after the simultaneous failure of two drives. Double parity is implemented using RAID 6 technology.

  Note: Double parity is the default for large form factor (capacity) hard disk drives. Single parity is the default for the other storage classes.

Do not use the -repositoryRedundancy option if you use the -matchTierQos option to match the QoS settings of the LUN.

-repositoryStorageClass

Identifies the type of storage media to be used for all Clone LUNs that are created for the LUN. Valid Storage Classes:

- capDisk. Specifies that the data is stored on high-capacity, rotating hard disk drives (HDDs). This Storage Class optimizes capacity at some sacrifice of speed. For the FS1, this storage class provides the lowest cost for each GB of capacity.
- perfDisk. Specifies that the data is stored on high-speed HDDs. This Storage Class sacrifices some capacity to reduce the access time and the latency of the read operations and of the write operations.
- perfSsd. Specifies that the data is stored on SSDs that are optimized for the performance of balanced read and write operations.
- capSsd. Specifies that the data is stored on solid state drives (SSDs) that are optimized for the performance of read operations and for capacity. The write performance for this Storage Class is sacrificed somewhat to achieve the optimizations for read performance and for capacity.

Do not use the -repositoryStorageClass option if you use the -matchTierQos option to match the QoS settings of the LUN.

-singleTier

Creates a LUN that uses standard QoS properties. A single-tier LUN has QoS properties that you set to specify the Storage Class and other performance parameters for storing the LUN data onto the storage media. The QoS properties remain unchanged until you change these properties.

If you do not specify the singleTier or the autoTier option, the default is whatever the source LUN's setting is. If the source LUN's setting is single tier, the source's copy defaults to single tier. If the source LUN's setting is autotier, the source's copy defaults to auto tier.

-source

Specifies the FQN or unique identifier (ID) of the source LUN.

-storageClass

Indicates the type of storage media to be used for the LUN. If you do not use the -profile option, the -storageClass option is required if the Oracle FS System supports two or more Storage Classes.

Valid Storage Classes:

- capDisk. Specifies that the data is stored on high-capacity, rotating hard disk drives (HDDs). This Storage Class optimizes capacity at some sacrifice of speed. For the FS1, this storage class provides the lowest cost for each GB of capacity.
- perfDisk. Specifies that the data is stored on high-speed HDDs. This Storage Class sacrifices some capacity to reduce the access time and the latency of the read operations and of the write operations.
- perfSsd. Specifies that the data is stored on SSDs that are optimized for the performance of balanced read and write operations.
- capSsd. Specifies that the data is stored on solid state drives (SSDs) that are optimized for the performance of read operations and for capacity. The write performance for this Storage Class is sacrificed somewhat to achieve the optimizations for read performance and for capacity.

Do not use the -storageClass option if you use the -profile option to match the QoS settings of the LUN.

-unMaskedControllerPorts

Opens access to the volume through the Controller ports that were previously set to restricted access.

Specify the port using the form *HBA slot number*/*port number*. Specify the arguments in the following manner:

HBA slot number	Specifies the PCIE slot number of the HBA on which the port is located. The slot number must be 0 or greater.
port number	Identifies the port number on the HBA slot. The port number must be 0 or greater.

For example, **`0/1`** specifies port 1 on HBA slot 0 of the specified Controller.

-unmapped Prevents the LUN from being detected or accessed by any SAN host.

-volumeGroup Specifies the FQN or the ID of the volume group to which the LUN is assigned. If you do not include this option, the LUN is assigned to the root level volume group.

EXAMPLE

Task	Copy a LUN to a new drive on the Oracle FS System. Increase the maximum logical capacity and apply a different Storage Profile to the copied LUN.
Parameters	• The name of the source LUN: `DISK1` • The volume group in which the LUN resides: `/user1_vg` • The name of the copied LUN: `DISK2` • The size of the copied LUN: 64 GB • The Storage Profile to apply: **`user_adv_group1`**

```
$ fscli lun -copy -source /user1_vg/DISK1 -name DISK2
-capacity 64 -profile user_adv_group1
```

Related Links

lun

lun -delete

Removes a particular LUN from the Oracle FS System.

SYNOPSIS

```
lun -delete
   -lun lun-id-or-fqn [,lun-id-or-fqn ]...
   [-suppressWarnings]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

The `lun -delete` command removes the specified LUN and all clones, host mappings, and group mappings that are associated with the LUN. If you omit the -suppressWarnings option, the Oracle FS System prompts you to confirm the deletion of the clones and the mappings.

Note: Only administrators with primary administrator, admin1, or admin2 roles are authorized to run the `lun -delete` command.

OPTIONS

-lun	Specifies the ID or the fully qualified name (FQN) of the LUN. If specifying two or more LUNs, provide a comma-separated list. All clones of the specified LUN are also deleted.
-suppressWarnings	Requests that the Oracle FS System not display a message on the command line to warn the administrator that all the Clone LUNs, the host mappings, and the host group mappings will be deleted. If omitted, the Oracle FS System prompts you to confirm the deletion of all Clone LUNs, host mappings, and host group mappings.

EXAMPLE

Task	Remove a LUN from the Oracle FS System, including all the clone LUNs, the host mappings, and the host group mappings that are associated with the LUN.
Parameters	• The name of the LUN: `DISK1` • The volume group in which the LUN resides: `/user1_vg`

```
$ fscli lun -delete -lun /user1_vg/DISK1
```

Related Links

lun

lun -list

Displays the status and the configuration information for LUNs.

SYNOPSIS

```
lun -list
   [-details [-bs ] ]
   [ -lun lun-id-or-fqn [,lun-id-or-fqn ]...
     [{ -mappingStatus
      | -noMappingStatus
      }]
   ]
   [-volumeGroup volume-group-id-or-fqn [,volume-group-id-or-fqn]... ]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Run the `lun -list` command to obtain fully qualified names (FQNs), the configuration information, and capacity information about SAN logical volumes that are configured on the Oracle FS System. If you do not specify the -lun option or the -volumeGroup option, information about all SAN volumes is displayed.

Note: Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run the `lun -list` command.

OPTIONS

-bs	Returns additional information about the underlying virtual LUNs (VLUNs) that are associated with the specified LUNs. Use this option with the -details option.
-details	Returns detailed configuration and state information for the specified LUNs.
-lun	Specifies the ID or the fully qualified name (FQN) of the LUN. If specifying two or more LUNs, provide a comma-separated list.
-mappingStatus	Returns information about status of the host mappings or the host group mappings of the LUN. Use this option with the -details option.
-noMappingStatus	Specifies that no information is returned about the status of the host mappings or the host group mappings of the LUN. Use this option with the -details option. Not returning status information is the default.

-volumeGroup	Specifies the FQN or the ID of one or more volume groups. When you specify two or more volume groups, provide a comma-separated list. Returns all the LUNs that are associated with each of the specified volume groups.

EXAMPLE

Task	Display a detailed listing of the properties and configuration of a LUN.
Parameters	• The name of the LUN: `DISK1` • The volume group in which the LUN resides: `/user1_vg`

```
$ fscli lun -list -details -lun /user1_vg/DISK1
```

Related Links

lun

lun -maximumCapacity

Returns the amount of storage that can be allocated to a LUN.

SYNOPSIS

```
lun -maximumCapacity
   -storageDomain storage-domain-id-or-fqn
   -priority {premium | high | medium | low | archive}
   -redundancy {1 | 2}
   [-raidLevel {raid5 | raid6 | raid10 | default}]
   [-stripeWidth stripe-width]
   [-enableEnclosureWideStriping]
   -storageClass {capDisk | perfDisk | perfSsd | capSsd}

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

You can run the `lun -maximumCapacity` command to display the actual storage capacity that could be allocated to a LUN. The Oracle FS System returns the maximum capacity (in bytes) that is available for creating a LUN, a copy of a LUN, or increasing the size of a LUN. You can examine the impact of different QoS properties on the storage capacity by running the `lun -maximumCapacity` command with different values.

Note: Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run the `lun -maximumCapacity` command.

OPTIONS

-enableEnclosureWideStriping Enables data striping for the LUN across the entire Drive Enclosure.

-priority Assigns a priority level to determine the system response to incoming I/O requests against the LUN. In general, the higher the priority level, the faster the system can respond to an access request. Valid priority levels:

- premium. Indicates the highest priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive the highest priority when the system migrates the data to the higher-performing storage tiers.
- high. Indicates the next highest priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive the next highest priority when the system migrates the data to the higher-performing storage tiers.
- medium. Indicates an intermediate priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive an intermediate priority when the system migrates the data to the higher-performing storage tiers.
- low. Indicates the next to lowest priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive the next to lowest priority when the system migrates the data to the higher-performing storage tiers.
- archive. Indicates the lowest priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive the lowest priority when the system migrates the data to the higher-performing storage tiers.

-raidLevel Specifies the level of RAID data protection to use for the LUN. Valid values:

- raid5. Indicates that, in addition to the actual data, one set of parity bits exists for the logical volume. Single parity protects against the loss

of one drive. Single parity is implemented as a variant of the RAID 5 storage technology.

- raid6. Indicates that, in addition to the actual data, two sets of parity bits exist for the logical volume. Double parity protects against the loss of one or two drives with a slight cost of write performance. Double parity is implemented as a variant of the RAID 6 storage technology.
- raid10. Indicates that no parity bits exist for the volume. Instead, the system writes the data in two different locations. Mirroring protects against the loss of at least one drive and possibly more drives with an improvement of the performance of random write operations. Mirrored RAID is implemented as a variant of the RAID 10 storage technology.
- default. Indicates that the level of protection is determined by the storage class. For large form factor (capacity) hard disk drives, the RAID 6 level of protection is the default. For the other storage classes, the RAID 5 level of protection is the default.

-redundancy

Identifies the number of copies of the parity bits that the Oracle FS System creates for the LUN. Valid values:

- 1. Stores the original user data plus one set of parity bits to help in the recovery of lost data. Access to the data is preserved even after the failure of one drive. Single parity is implemented using RAID 5 technology.
- 2. Stores the original user data plus two sets of parity bits to help in the recovery of lost data. Access to the data is preserved even after the simultaneous failure of two drives. Double parity is implemented using RAID 6 technology.

  Note: Double parity is the default for large form factor (capacity) hard disk drives. Single parity is the default for the other storage classes.

-storageClass

Indicates the type of storage media to be used for the LUN. If you do not use the -profile option, the -storageClass option is required if the Oracle FS System supports two or more Storage Classes.

Valid Storage Classes:

- capDisk. Specifies that the data is stored on high-capacity, rotating hard disk drives (HDDs). This Storage Class optimizes capacity at some sacrifice of speed. For the FS1, this storage class provides the lowest cost for each GB of capacity.
- perfDisk. Specifies that the data is stored on high-speed HDDs. This Storage Class sacrifices some capacity to reduce the access time and the latency of the read operations and of the write operations.
- perfSsd. Specifies that the data is stored on SSDs that are optimized for the performance of balanced read and write operations.
- capSsd. Specifies that the data is stored on solid state drives (SSDs) that are optimized for the performance of read operations and for capacity. The write performance for this Storage Class is sacrificed somewhat to achieve the optimizations for read performance and for capacity.

Do not use the -storageClass option if you use the -profile option to match the QoS settings of the LUN.

-storageDomain Specifies the FQN or GUID of the Storage Domain that contains the LUN. If you do not include this option, and there is only one Storage Domain on the Oracle FS System, the system uses the default Storage Domain in which to create the LUN. If you do not include this option, and there are multiple Storage Domains available, the system prompts you to specify a Storage Domain.

-stripeWidth Specifies the number of drive groups across which to stripe the LUN. Values are 1 to 64. If you do not specify a size, the system uses the maximum possible stripe width.

EXAMPLE

Task	Display the maximum capacity that could be allocated to a LUN.
Parameters	• The Storage Domain: `/sd1` • The priority level: **`medium`** • The level of redundancy: **`1`** • The Storage Class: **`capDisk`**

```
$ fscli lun -maximumCapacity -storageDomain /sd1
-priority medium -redundancy 1 -storageClass capDisk
```

Related Links

lun

lun -modify

Changes the properties of an existing LUN.

SYNOPSIS

```
lun -modify
   -lun lun-id-or-fqn
   [-name new-lun-name]
   [-capacity capacity]
   [-allocatedCapacity allocated-logical-capacity]
   [{ -profile performance-profile-id-or-fqn
    | [-priority {premium | high | medium | low | archive}]
      [-storageClass {capDisk | perfDisk | perfSsd | capSsd}]
      { -redundancy {1 | 2}
        -accessBias {sequential | random | mixed}
        -ioBias {read | write | mixed}
      | [-raidLevel {raid5 | raid10 | raid6 | default}]
        [-readAhead {default | normal | aggressive |
conservative}]
      }
    }]
   [{ -singleTier
    | -autoTier
      [-preferredStorageClass {capDisk | perfDisk | perfSsd |
capSsd}
                        [, {capDisk | perfDisk | perfSsd |
capSsd} ]... ]
      [-preferredRepositoryStorageClass {capDisk | perfDisk |
perfSsd | capSsd}
                        [, {capDisk | perfDisk | perfSsd |
capSsd} ]... ]
      [{-enableTierReallocation | -disableTierReallocation}]
    }]
   [-repositoryPercentage capacity-percentage]
   [{ -matchTierQos
    |   [-noMatchTierQos]
      [-repositoryPriority {premium | high | medium | low |
archive}]
   [-repositoryStorageClass {capDisk | perfDisk | perfSsd |
capSsd}]
   { -repositoryRedundancy {1 | 2}
     -repositoryAccessBias {sequential | random | mixed}
     -repositoryIoBias {read | write | mixed}
   | [-repositoryRaidLevel {raid5 | raid10 | raid6 | default}]
   }
 }]
   [-volumeGroup volume-group-id-or-fqn]
   [-controller controller-id-or-fqn]
   [{-fibreChannelAccess | -noFibreChannelAccess}]
   [{-iscsiAccess | -noIscsiAccess}]
   [{ -maskedControllerPorts /controller[/slot[/port]]
                             [, /controller[/slot[/port]]]...
    | -unMaskedControllerPorts /controller[/slot[/port]]
                             [, /controller[/slot[/port]]]...
    }]
   [{ -unmapped
    | -globalMapping lun-number
    }]
```

```
    [-storageDomain storage-domain-id-or-fqn]
    [{-active | -inactive}]
    [-copyPriority {auto | low | high}]
    [{-conservativeMode | -noConservativeMode}]
    [-clearPinnedData]
    [{-disableRefTagChecking | -enableRefTagChecking}]
    [-bootLun | -noBootLun]

    [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
    [{-outputformat | -o} { text | xml }]
    [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Use the `lun -modify` command to change the QoS attributes for a LUN, such as increasing the capacity that is allocated to the LUN or allocating space for clones of the LUN. You can also modify the mapping of a LUN as well as change the Controller to which the LUN is assigned.

Before using the `lun -modify` command, you can run the `lun -maximumCapacity` command to test different settings for the RAID level, the priority level, and the Storage Class to determine the effect of these properties on the modified LUN.

When specifying any of the following options, use all of the options, or none of the options:

- -IOBias
- -AccessBias
- -Redundancy

Likewise, when specifying any of the following options, use all of the options, or none of the options:

- -repositoryIOBias
- -repositoryAccessBias
- -repositoryRedundancy

Note: Only administrators with primary administrator, admin1, or admin2 roles are authorized to run the `lun -modify` command.

OPTIONS

-accessBias Identifies the expected access pattern for the logical volume. Valid biases:

- sequential. Indicates that the read requests and the write requests operate on the data mostly by accessing the records one after the other in a physical order.

- random. Indicates that the read requests and the write requests operate on the data mostly by accessing the records in an arbitrary order.
- mixed. Indicates that the read requests and the write requests operate on the data sometimes in sequential order and sometimes in random order. Accessing in a mixed pattern is the default.

Note: Do not use the -accessBias option if you use the -profile option to apply a QoS Storage Profile to the volume.

Note: During a modify operation of a LUN, if you need to change the value of one of the following options, you must specify the values of all three options: -accessBias, -ioBias, and -redundancy. Specify all three of these options or none.

-active Enables the LUN to be accessible and available for use immediately after the LUN is created. To ensure accurate mapping relationships, use the -globalMapping option, the -hostmap option, or the -hostGroupMap option with the -active option.

-allocatedCapacity Specifies the amount of space, in gigabytes, that the Oracle FS System sets aside for a LUN. This number cannot be less than the currently allocated size of the LUN, and cannot exceed the addressable logical capacity for the LUN as defined by the -capacity option.

-autoTier Enables the auto-tiering capability, also called QoS Plus, as needed. An auto-tiered LUN monitors the data activity and automatically adjusts the QoS properties. Based on historical usage information, the system moves the data block to a Storage Class within the Storage Domain that can optimally store the data and best use the available storage types and capacities.

-bootLun Identifies that the LUN can be used as a boot drive in the SAN.

-capacity Specifies the storage space in gigabytes for the volume. The amount of space cannot be less than the current maximum capacity of the LUN. This space is also referred to as *addressable capacity*. Repository space for the Clone LUNs is also included.

-clearPinnedData Clears any pinned data on the specified volume.

	Important: Contact Oracle Customer Support to resolve any issues with the Backend SAS Interconnect, a storage condition, or both, which might be causing the pinned data. Clearing pinned data guarantees that host data is deleted permanently.
-conservativeMode	Allows the Oracle FS System to enter conservative mode for the specified LUN if a Controller node fails. In conservative mode, data is written to the storage array before the write operation is reported as complete to the SAN host. Allowing conservative mode is the default.
-controller	Specifies the fully qualified name (FQN) or the unique identifier (ID) of a Controller to which the LUN is assigned. By default, the Oracle FS System chooses the Controller. If included, the FQN format consists of */controller-name*. For example, `/CONTROLLER-01` specifies Controller01.
-copyPriority	Identifies the setting to use when copying or migrating data from one location to another. To control the impact on system performance, you can specify one of the following priority levels: • auto. Balances data movement rate and system performance. If you do not use the -copyPriority option, the default priority is auto. • low. Completes copy operations and data migration without degrading overall system performance. Completion rate might be slower. • high. Completes copy operations and data migration as quickly as possible. System performance might be degraded.
-disableRefTagChecking	Instructs the HBA to bypass the check of whether a host has written to a specific area of the LUN before the host reads from that same area. If this option is omitted, read-before-write error events can be generated.
-disableTierReallocation	Turns off dynamic data progression for the LUN. The Oracle FS System does not migrate the LUN data to other Storage Classes.
-enableRefTagChecking	Instructs the HBA to check whether a SAN host has written to a specific area of the LUN before the host reads from that area. When a host reads from a specific area before writing to that area, the Oracle FS System generates a read-before-write error event.

	Note: This check is sometimes called a *reference tag check* and is a part of the process for ensuring data protection integrity.
-enableTierReallocation	Turns on dynamic data migration for the LUN. The Oracle FS System migrates the LUN data to the appropriate Storage Class based on the usage patterns of the data. By default, tier reallocation is enabled.
-fibreChannelAccess	Allows users to access to the volume through the Fibre Channel (FC) ports. By default, FC access is enabled.
-globalMapping	Maps the LUN globally to all hosts using the specified *lun-number*.
-inactive	Renders the LUN volume invisible on the network. An inactive volume is not accessible and cannot be used by a SAN host.
-ioBias	Indicates the typical read-write ratio. Valid I/O biases: • read. Indicates that most of the access requests are for `read` operations. • write. Indicates that most of the access requests are for `write` operations. • mixed. Indicates that the number of access requests are similar for `read` operations and `write` operations. A mixed read-write ratio is the default. Do not use the -ioBias option if you use the -profile option to apply a QoS Storage Profile to the LUN. **Note:** During a modify operation of a LUN, if you need to change the value of one of the following options, you must specify the values of all three options: -accessBias, -ioBias, and -redundancy. Specify all three of these options or none.
-iscsiAccess	Allows access to the modified LUN through the iSCSI ports.
-lun	Specifies the ID or the FQN of the LUN that you are changing.
-maskedControllerPorts	Restricts access to the LUN through one or more Controller ports. Use the following format to mask all of the ports in a Controller, to mask all of the ports for a given Controller slot, or to mask only a specific Controller port: `/controller[/slot[/port]]`

- For *controller*, provide a string that includes the FQN or ID of the Controller.
- For *slot*, specify the HBA slot number.
- For *port*, specify the port number.

If you do not include this option, the LUN becomes accessible on all Controller ports on the assigned node by default.

-matchTierQos Sets the QoS settings of the clone repository to match the QoS settings of the LUN.

-name Specifies a new name for the LUN. The name that you provide must be between 1 and 40 characters. Use double quotation marks around names containing one or more spaces or dashes to prevent parsing errors.

The following characters are invalid in a LUN name:

- Tab
- / (slash) and \ (backslash)
- . (dot) and .. (dot-dot)
- Embedded tabs

Note: The `lun -modify` command does not map the modified LUN if the Oracle FS System already contains a LUN with the specified name within the same volume group. You can use the `lun -modify` command to map the modified LUN after determining the name to assign.

-noBootLun Identifies that the LUN cannot be used as a boot drive in the SAN. Not using the LUN as a boot drive is the default.

-noConservativeMode Prevents the Oracle FS System from entering conservative mode for the specified LUN.

CAUTION: If a Controller node fails, the system does not enable write-through mode, which it normally would. If the remaining node fails, any data that has not been written to the storage arrays is lost.

-noFibreChannelAccess Disables access to the modified LUN through FC ports. By default, access is enabled.

-noIscsiAccess Disables access to the modified LUN through use of the iSCSI protocol. By default, the LUN is not accessible through the iSCSI protocol.

-noMatchTierQos Indicates that the QoS settings of the clone repository are not automatically set to the QoS settings of the

LUN. Not automatically matching the QoS settings is the default.

-preferredRepositoryStorageClass

Identifies the Storage Classes for the Clone LUNs that are created for the LUN, based on the usage patterns of the Clone LUNs. The Storage Classes do not need to be physically present on the Oracle FS System when you set this property. Storage Classes that are not present can be used after they are installed in the Oracle FS System.

Specify one or more Storage Classes:

- capDisk. Specifies that the data is stored on high-capacity, rotating HDDs. This Storage Class optimizes capacity at some sacrifice of speed. For a storage system that does not include tape storage as an option, this Storage Class always provides the lowest cost for each GB of capacity.
- perfDisk. Specifies that the data is stored on high-speed hard disk drives (HDDs). This Storage Class sacrifices some capacity to reduce the access time and the latency of the read operations and of the write operations.
- perfSsd. Specifies that the data is stored on solid state drives (SSDs) that are optimized for the performance of balanced read and write operations.
- capSsd. Specifies that the data is stored on SSDs that are optimized for the performance of capacity and for read operations. The write performance for this Storage Class is sacrificed somewhat to achieve the optimizations for read performance and for capacity.

If you do not include this option, all Storage Classes can be used based on usage patterns. Do not use this option with the -matchTierQos option.

-preferredStorageClass

Identifies the Storage Classes for the LUN based on the usage patterns of the LUN data. The Storage Classes do not need to be physically present on the Oracle FS System when you set this property. Storage Classes that are not present can be used after they are installed in the Oracle FS System.

Specify one or more Storage Classes:

- capDisk. Specifies that the data is stored on high-capacity, rotating HDDs. This Storage

Class optimizes capacity at some sacrifice of speed. For a storage system that does not include tape storage as an option, this Storage Class always provides the lowest cost for each GB of capacity.

- perfDisk. Specifies that the data is stored on high-speed hard disk drives (HDDs). This Storage Class sacrifices some capacity to reduce the access time and the latency of the read operations and of the write operations.
- perfSsd. Specifies that the data is stored on solid state drives (SSDs) that are optimized for the performance of balanced read and write operations.
- capSsd. Specifies that the data is stored on SSDs that are optimized for the performance of capacity and for read operations. The write performance for this Storage Class is sacrificed somewhat to achieve the optimizations for read performance and for capacity.

If you do not include the -preferredStorageClass option, all Storage Classes can be used based on usage patterns.

-priority Assigns a priority level to determine the system response to incoming I/O requests against the LUN. In general, the higher the priority level, the faster the system can respond to an access request. Valid priority levels:

- premium. Indicates the highest priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive the highest priority when the system migrates the data to the higher-performing storage tiers.
- high. Indicates the next highest priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive the next highest priority when the system migrates the data to the higher-performing storage tiers.
- medium. Indicates an intermediate priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive an intermediate priority when the system migrates the data to the higher-performing storage tiers.

- low. Indicates the next to lowest priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive the next to lowest priority when the system migrates the data to the higher-performing storage tiers.
- archive. Indicates the lowest priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive the lowest priority when the system migrates the data to the higher-performing storage tiers.

Note: When modifying a LUN, you can include the -priority option or the -profile option. Do not include both options.

-profile Specifies the fully qualified name (FQN) or unique identifier (ID) of the QoS Storage Profile to apply to the LUN. Use double quotes around names containing one or more spaces or dashes to prevent parsing errors.

Note: When modifying a LUN, you can include either the -profile option or the -priority option. Do not include both options.

-raidLevel Specifies the level of RAID data protection to use for the LUN. Valid values:

- raid5. Indicates that, in addition to the actual data, one set of parity bits exists for the logical volume. Single parity protects against the loss of one drive. Single parity is implemented as a variant of the RAID 5 storage technology.
- raid6. Indicates that, in addition to the actual data, two sets of parity bits exist for the logical volume. Double parity protects against the loss of one or two drives with a slight cost of write performance. Double parity is implemented as a variant of the RAID 6 storage technology.
- raid10. Indicates that no parity bits exist for the volume. Instead, the system writes the data in two different locations. Mirroring protects against the loss of at least one drive and possibly more drives with an improvement of the performance of random write operations.

Mirrored RAID is implemented as a variant of the RAID 10 storage technology.

- default. Indicates that the level of protection is determined by the storage class. For large form factor (capacity) hard disk drives, the RAID 6 level of protection is the default. For the other storage classes, the RAID 5 level of protection is the default.

Do not use the -raidLevel option if you use the -profile option to apply a QoS Storage Profile to the LUN.

-readAhead

Identifies the read-ahead policy to use for the logical volume for sequential read operations. The policy determines the amount of additional data, if any, that the system places into the Controller cache. Valid policies:

default and normal	Indicates that the input requests and the output requests are accessing the data mostly in a random manner or in a mixed sequential and random manner.
aggressive	Indicates that the input requests and the output requests are accessing the data mostly in a sequential manner and that the workload is biased toward read operations.
conservative	Indicates that the input requests and the output requests are mostly sequential and that the workload is biased toward write operations.

-redundancy

Identifies the number of copies of the parity bits that the Oracle FS System creates for the LUN. Valid values:

- 1. Stores the original user data plus one set of parity bits to help in the recovery of lost data. Access to the data is preserved even after the failure of one drive. Single parity is implemented using RAID 5 technology.
- 2. Stores the original user data plus two sets of parity bits to help in the recovery of lost data. Access to the data is preserved even after the simultaneous failure of two drives. Double parity is implemented using RAID 6 technology.

Do not use the -redundancy option if you use the -profile option to apply a QoS Storage Profile to the LUN.

Note: During a modify operation of a LUN, if you need to change the value of one of the following options, you must specify the values of all three options: -accessBias, -ioBias, and -redundancy. Specify all three of these options or none.

-repositoryAccessBias

Identifies the expected access pattern for the Clone LUN. Valid biases:

- sequential. Indicates that the read requests and the write requests operate on the data mostly by accessing the records one after the other in a physical order.
- random. Indicates that the read requests and the write requests operate on the data mostly by accessing the records in an arbitrary order.
- mixed. Indicates that the read requests and the write requests operate on the data sometimes in sequential order and sometimes in random order. Accessing in a mixed pattern is the default.

Do not use the -repositoryAccessBias option if you use the -matchTierQos option to match the QoS settings of the LUN.

Note: During a modify operation of a LUN repository, if you need to change the value of one of the following options, you must specify the values of all three options: -repositoryAccessBias, -repositoryIoBias, and -repositoryRedundancy. Specify all three of these options or none.

-repositoryIoBias

Indicates the typical read-write ratio for the Clone LUNs that are created for the LUN. Valid I/O biases:

- read. Indicates that most of the access requests are for `read` operations.
- write. Indicates that most of the access requests are for `write` operations.
- mixed. Indicates that the number of access requests are similar for `read` operations and `write` operations.

A mixed read-write ratio is the default. Do not use the -repositoryIoBias option if you use the -matchTierQos option to match the QoS settings of the LUN.

Note: During a modify operation of a LUN repository, if you need to change the value of one of the following options, you must specify the values of all three options: -repositoryAccessBias, -repositoryIoBias, and -repositoryRedundancy. Specify all three of these options or none.

-repositoryPercentage Determines the amount of extra space to set aside as a repository for Clone LUNs. Specify the amount as a percentage of the maximum capacity for the LUN. The default capacity is set to 110%. If you do not want to create a repository, specify **0**.

-repositoryPriority Assigns a priority level to determine the system response to incoming I/O requests against all Clone LUNs that are created from the LUN. In general, the higher the priority level, the faster the system can respond to an access request. Valid priority levels:

- premium. Indicates the highest priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive the highest priority when the system migrates the data to the higher-performing storage tiers.
- high. Indicates the next highest priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive the next highest priority when the system migrates the data to the higher-performing storage tiers.
- medium. Indicates an intermediate priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive an intermediate priority when the system migrates the data to the higher-performing storage tiers.
- low. Indicates the next to lowest priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive the next to lowest priority when the system migrates the data to the higher-performing storage tiers.
- archive. Indicates the lowest priority for responding to requests in the processing queue. For Auto-Tier LUNs, busy LUN extents receive the lowest priority when the system migrates the data to the higher-performing storage tiers.

Do not use the -repositoryPriority option if you use the -matchTierQos option to match the QoS settings of the LUN.

-repositoryRaidLevel

Specifies the level of RAID data protection to use for the clone repository. Valid values:

- raid5. Indicates that, in addition to the actual data, one set of parity bits exists for the logical volume. Single parity protects against the loss of one drive. Single parity is implemented as a variant of the RAID 5 storage technology.
- raid6. Indicates that, in addition to the actual data, two sets of parity bits exist for the logical volume. Double parity protects against the loss of one or two drives with a slight cost of write performance. Double parity is implemented as a variant of the RAID 6 storage technology.
- raid10. Indicates that no parity bits exist for the volume. Instead, the system writes the data in two different locations. Mirroring protects against the loss of at least one drive and possibly more drives with an improvement of the performance of random write operations. Mirrored RAID is implemented as a variant of the RAID 10 storage technology.
- default. Indicates that the level of protection is determined by the storage class. For large form factor (capacity) hard disk drives, the RAID 6 level of protection is the default. For the other storage classes, the RAID 5 level of protection is the default.

Do not use the -repositoryRaidLevel option if you use the -matchTierQos option to match the QoS settings of the LUN.

-repositoryRedundancy

Identifies the number of copies of the parity bits that the Oracle FS System creates for the Clone LUN. Valid values:

- 1. Stores the original user data plus one set of parity bits to help in the recovery of lost data. Access to the data is preserved even after the failure of one drive. Single parity is implemented using RAID 5 technology.
- 2. Stores the original user data plus two sets of parity bits to help in the recovery of lost data. Access to the data is preserved even after the simultaneous failure of two drives. Double

parity is implemented using RAID 6 technology.

Do not use the -repositoryRedundancy option if you use the -matchTierQos option to match the QoS settings of the LUN.

Note: During a modify operation of a LUN repository, if you need to change the value of one of the following options, you must specify the values of all three options: -repositoryAccessBias, -repositoryIoBias, and -repositoryRedundancy. Specify all three of these options or none.

-repositoryStorageClass

Identifies the type of storage media to be used for all Clone LUNs that are created for the LUN. Valid Storage Classes:

- capDisk. Specifies that the data is stored on high-capacity, rotating hard disk drives (HDDs). This Storage Class optimizes capacity at some sacrifice of speed. For the FS1, this storage class provides the lowest cost for each GB of capacity.
- perfDisk. Specifies that the data is stored on high-speed HDDs. This Storage Class sacrifices some capacity to reduce the access time and the latency of the read operations and of the write operations.
- perfSsd. Specifies that the data is stored on SSDs that are optimized for the performance of balanced read and write operations.
- capSsd. Specifies that the data is stored on solid state drives (SSDs) that are optimized for the performance of read operations and for capacity. The write performance for this Storage Class is sacrificed somewhat to achieve the optimizations for read performance and for capacity.

Do not use the -repositoryStorageClass option if you use the -matchTierQos option to match the QoS settings of the LUN.

-singleTier

Creates a LUN that uses standard QoS properties. A single-tier LUN has QoS properties that you set to specify the Storage Class and other performance parameters for storing the LUN data onto the storage media. The QoS properties remain unchanged until you change these properties.

-storageClass

Indicates the type of storage media to be used for the LUN. If you do not use the -profile option, the -storageClass option is required if the Oracle FS System supports two or more Storage Classes.

Valid Storage Classes:

- capDisk. Specifies that the data is stored on high-capacity, rotating hard disk drives (HDDs). This Storage Class optimizes capacity at some sacrifice of speed. For the FS1, this storage class provides the lowest cost for each GB of capacity.
- perfDisk. Specifies that the data is stored on high-speed HDDs. This Storage Class sacrifices some capacity to reduce the access time and the latency of the read operations and of the write operations.
- perfSsd. Specifies that the data is stored on SSDs that are optimized for the performance of balanced read and write operations.
- capSsd. Specifies that the data is stored on solid state drives (SSDs) that are optimized for the performance of read operations and for capacity. The write performance for this Storage Class is sacrificed somewhat to achieve the optimizations for read performance and for capacity.

Do not use the -storageClass option if you use the -profile option to match the QoS settings of the LUN.

-storageDomain

Specifies the FQN or GUID of the Storage Domain that contains the LUN. If you do not include this option, and there is only one Storage Domain on the Oracle FS System, the system uses the default Storage Domain in which to create the LUN. If you do not include this option, and there are multiple Storage Domains available, the system prompts you to specify a Storage Domain.

-unMaskedControllerPorts

Opens access to the volume through the Controller ports that were previously set to restricted access.

Specify the port using the form *HBA slot number*/*port number*. Specify the arguments in the following manner:

HBA slot number	Specifies the PCIE slot number of the HBA on which the port is located. The slot number must be 0 or greater.

port number	Identifies the port number on the HBA slot. The port number must be 0 or greater.

For example, **`0/1`** specifies port 1 on HBA slot 0 of the specified Controller.

-unmapped	Prevents the LUN from being detected or accessed by any SAN host.
-volumeGroup	Specifies the FQN or the ID of the volume group to which the LUN is assigned.

EXAMPLE

Task	Change the name of a LUN on the Oracle FS System and increase the logical capacity of the LUN. Change the priority to the highest processing queue setting for testing purposes, and make the LUN accessible immediately.
Parameters	• The FQN or the ID of the LUN: `DISK1/user1_vg` • The new name of the LUN: `DISK3` • The size of the LUN, in gigabytes: 128 • The priority level: `premium`

```
$ fscli lun -modify -lun /user1_vg/DISK1 -name DISK3
-capacity 128 -priority premium -active
```

Related Links

lun

lun -maximumCapacity

pilot

Performs troubleshooting and maintenance operations on the Pilots.

SYNOPSIS

`pilot { [ -beacon | -forceFailover | -list | -sendInfoToSan | -serverHealthCheck | -shutdown ] | [ -usage | -help ] }`

DESCRIPTION

When troubleshooting or maintaining an Oracle FS System, Oracle Customer Support might require that you issue one or more **`pilot`** commands. Except for the **`pilot -beacon`** command and the **`pilot -shutdown`** command, the **`pilot`** commands are not directed to a specific Pilot. Instead, the system automatically directs the **`pilot`** command to the active Pilot.

Note: The standby Pilot becomes the active Pilot in the following situations:

- The active Pilot fails.
- The active Pilot is forced to fail over.
- The active Pilot is shut down.

Oracle Customer Support might instruct you to run a **`pilot -list`** command to identify the active or standby Pilot. If the IP addresses for the Pilots are required, Oracle Customer Support might request that you issue a **`system -list -details`** command.

The Pilot provides an interface for the `fspm` client, the `fscli` client, and the client for the Oracle FS System Manager to communicate with the Oracle FS System through port `26012`. Within the Oracle FS System, port `26012` is enabled by default and must remain open.

SUBCOMMANDS

`-beacon`	Flashes the LEDs of the specified Pilot to identify the Pilot in the data center.
`-forceFailover`	Forces the active Pilot to fail over to the standby Pilot.
`-list`	Returns status and operational information for the Pilots.
`-sendInfoToSan`	Sends the shared IP address of the Pilots to the SAN components on the Controllers.
`-serverHealthCheck`	Performs diagnostic tests on the active Pilot.
`-shutdown`	Prepares the standby Pilot for maintenance.

EXAMPLE

Task	Before running diagnostic tests on an active Pilot, an Oracle Customer Support representative fails over the active Pilot to the standby Pilot. After completing the failover processes, the system marks the Pilot as `SECONDARY`. The system marks the former standby Pilot as `PRIMARY`.

Parameters	• None

```
$ fscli pilot -forceFailover
```

Related Links

pilot -beacon
pilot -forceFailover
pilot -list
pilot -sendInfoToSan
pilot -serverHealthCheck
pilot -shutdown
system -list

`pilot -beacon`

Flashes the LEDs of the specified Pilot to identify the Pilot in the data center.

SYNOPSIS

```
pilot -beacon
   -pilot {pilot1 | pilot2}
   [-stop]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

To flash the LEDs of the active Pilot or the standby Pilot, first run a **`pilot -list -details`** command to identify which Pilot is active and which Pilot is standby. Then, after identifying the Pilot, run the **`pilot -beacon`** command to flash the LEDs on the specified Pilot. Refer to the Pilots as **`pilot1`** and **`pilot2`** instead of using their FQNs or unique IDs.

Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run this command.

OPTIONS

`-pilot`	Identifies the Pilot to beacon. Use *pilot1* for `Pilot_1` and *pilot2* for `Pilot_2`.
`-stop`	Stops the specialized LED beaconing request and returns all LED indicators to their normal function.

EXAMPLE

Task	To flash the LEDs of the active Pilot, determine which Pilot is active by

	reviewing the output of the **pilot -list** command. . Then, issue a **pilot -beacon** command using *pilot1* for `Pilot_1` and *pilot2* for `Pilot_2`.
Parameters	• The variable name that identifies the Pilot: pilot1

```
$ fscli pilot -beacon -pilot pilot1
```

Related Links

pilot

pilot -list

pilot -forceFailover

Forces the active Pilot to fail over to the standby Pilot.

SYNOPSIS

```
pilot -forceFailover

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Before troubleshooting or servicing the Oracle FS System, Oracle Customer Support representative might issue a **pilot -forceFailover** command. When the active Pilot fails over, it becomes the standby Pilot and the system marks it as `Standby`. The systems marks the newly active Pilot as `Active`.

Only Oracle Customer Support representatives or administrators with support roles are authorized to run this command.

EXAMPLE

Task	Before running diagnostic tests on an active Pilot, an Oracle Customer Support representative fails over the active Pilot to the standby Pilot. After completing the failover processes, the system marks the Pilot as `SECONDARY`. The system marks the former standby Pilot as `PRIMARY`.
Parameters	• None

```
$ fscli pilot -forceFailover
```

Related Links

pilot

pilot -list

Returns status and operational information for the Pilots.

SYNOPSIS

```
pilot -list
   [-details]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Run the **pilot -list** command to obtain the following information about the Pilots:

- The status of each Pilot (active or standby)
- The management state of each Pilot
- The status of the hardware that is installed in the Pilots
- The operating system and the Oracle FS System software version that is running on each Pilot
- The port configuration for each Pilot

Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run this command.

OPTIONS

-details

Returns the following information:

- The status of each Pilot (active or standby)
- The management state of each Pilot
- The status of the hardware that is installed in the Pilots
- The operating system and the Oracle FS System software version that is running on each Pilot
- The port configuration for each Pilot

Note: The output of the **pilot -list -details** command is the same as the output of the **pilot -list** command.

EXAMPLE

Task	To assist them with fault identification, Oracle Customer Support requests that you obtain all information that is available about both Pilots.
Parameters	• None

```
$ fscli pilot -list -details
```

Related Links

pilot

pilot -sendInfoToSan

Sends the shared IP address of the Pilots to the SAN components on the Controllers.

SYNOPSIS

```
pilot -sendInfoToSan

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

When you change the public IP address of the Oracle FS System, the SAN hosts that are running the Oracle FS Path Manager software can lose their ability to communicate with the Oracle FS System. To restore data accessibility, issue a **pilot -sendInfoToSan** command. This command sends the new public IP address to the SAN components on the Controllers. When the client hosts issue SCSI **Inquiry** commands to the SAN HBAs on the Controllers, the Controllers reply with the shared IP address in the **Inquiry** response.

Only administrators with primary administrator or admin1 roles are authorized to run this command.

EXAMPLE

Task	After making several changes to the system configuration, Oracle FS Path Manager on the SAN hosts can no longer communicate with the Oracle FS System. Oracle Customer Support requests that you issue this command to send the Pilot Management Interface IP address to

	the SAN modules in the Controllers. To obtain the IP address, the SAN client systems that have the Oracle FS Path Manager software running issue a SCSI **Inquiry** request. Using the IP address that is returned, the clients are able to log into the active Pilot.
Parameters	• None

```
$ fscli pilot -sendInfoToSan
```

Related Links

pilot

pilot -serverHealthCheck

Performs diagnostic tests on the active Pilot.

SYNOPSIS

```
pilot -serverHealthCheck

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

When troubleshooting the Pilots or the status display on the GUI, an Oracle Customer Support representative might run the **pilot -serverHealthCheck** command. The command checks all interfaces and reports the status of the software on the active Pilot. The health check is not disruptive.

Only Oracle Customer Support representatives or administrators with support roles can run this command.

EXAMPLE

Task	To diagnose a suspected problem with the active Pilot, an Oracle Customer Support representative performs diagnostics on the Pilot.
Parameters	• None

```
$ fscli pilot -serverHealthCheck
```

Related Links

pilot

pilot -shutdown

Prepares the standby Pilot for maintenance.

SYNOPSIS

```
pilot -shutdown
   -pilot {pilot1 | pilot2}

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Use the **pilot -shutdown** command to prepare the standby Pilot for maintenance. To prepare the active Pilot for maintenance, first force the Pilot to fail over by running the **pilot -forceFailover** command. After verifying that the previously active Pilot is marked as STANDBY, run the **pilot -shutdown** command. When the shutdown operation completes, the Oracle FS System marks the active Pilot with a WARNING status and places the Pilot into a conservative mode.

OPTIONS

-pilot

Identifies the Pilot to shut down. Use the output of the **pilot -list -details** command to determine which Pilot is the standby Pilot. The system marks the standby Pilot as SECONDARY. Use the value of *pilot1* for Pilot_1 and the value of *pilot2* for Pilot_2.

EXAMPLE

Task	Before removing the standby Pilot from the Oracle FS System, the field support representative shuts down the standby Pilot.
Parameters	• The variable name that identifies the standby Pilot: pilot2

```
$ fscli pilot -shutdown -pilot pilot2
```

Related Links

pilot

pilot -forceFailover

pilot -list

profile

Manages Storage Profiles.

SYNOPSIS

```
profile {[-add | -delete | -list] | [-usage | -help]}
```

DESCRIPTION

The `profile` command can add, remove, or display a list of Storage Profiles, which are custom sets of QoS attributes for logical volumes. Typically, a Storage Profile is created to satisfy the needs of a specific application. An administrator can apply this profile to a volume that is intended specifically for the use of that application.

SUBCOMMANDS

-add	Creates a custom Storage Profile.
-delete	Removes a custom Storage Profile.
-list	Displays the names of the Storage Profiles.

EXAMPLE

Task	Creates a custom Storage Profile with a specified priority and storage class.
Parameters	• The name of the Quality of Service (QoS) profile: `profile_1` • The priority of the (QoS) profile: `medium` • The storage class of the (QoS) profile: `perfDisk`

```
$ fscli profile -add -name profile_1 -priority medium
-storageClass perfDisk
```

Related Links

profile -add
profile -delete
profile -list

profile -add

Creates a custom Storage Profile.

SYNOPSIS

```
profile -add
   -name profile-name
   -priority {premium | high | medium | low | archive}
   [-raidLevel {raid5 | raid10 | raid6 | default}]
   [-readAhead {default | normal | aggressive | conservative}]
   [-stripeWidth stripe-width]
   [-writeCache {writeThrough | writeBack | default}]
   [-storageClass {capDisk | perfDisk | perfSsd | capSsd}
                  [,{capDisk | perfDisk | perfSsd |
capSsd}]... ]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Storage Profiles can be used when creating a logical volume. Instead of selecting QoS properties individually, you can associate a Storage Profile that defines the properties that you want with the volume.

Note: Only administrators with primary administrator or admin1 roles are authorized to run the `profile -add` command.

OPTIONS

-name Specifies the name of the Quality of Service (QoS) profile that you are creating. The system uses this name to create the fully qualified name (FQN) of the Storage Profile. Use double quotation marks around names containing dashes.

-priority Identifies the priority that the system gives to various operational aspects of a logical volume, such as the Controller processing queue. The processing-queue priority defines the percentage of the Controller CPU cycles that are dedicated to the volume. Identifies as well where the data is striped on rotating drives. Valid priority levels:

Premium	Indicates the highest priority for responding to requests in the processing queue.
High	Indicates the next highest priority for responding to requests in the processing queue.

Medium	Indicates an intermediate priority for responding to requests in the processing queue.
Low	Indicates the next to lowest priority for responding to requests in the processing queue.
Archive	Indicates the lowest priority for responding to requests in the processing queue.

-raidLevel Specifies the level of RAID data protection to use for the logical volume. Valid values:

raid5	Indicates that, in addition to the actual data, one set of parity bits exists for the logical volume. This parity level protects against the loss of one drive.
raid6	Indicates that, in addition to the actual data, two sets of parity bits exist for the logical volume. This parity level protects against the loss of one or two drives with a slight cost to write performance.
raid10	Indicates that no parity bits exist for the volume. Instead, the system writes the data in two different locations. This RAID level protects against the loss of at least one drive and possibly more drives with an improvement of the performance of random write operations.
default	Indicates that the level of RAID protection is determined by the Storage Class. For large form factor (capacity) hard disk drives, RAID 6 is the default level of protection. For the other Storage Classes, RAID 5 is the default level of protection.

-readAhead Identifies the read-ahead policy to use for the logical volume for sequential read operations. The policy determines the amount of additional data, if any, that the system places into the Controller cache. Valid policies:

default and normal	Indicates that the input requests and the output requests are accessing the data mostly in a random manner or in a mixed sequential and random manner.

aggressive	Indicates that the input requests and the output requests are accessing the data mostly in a sequential manner and that the workload is biased toward read operations.
conservative	Indicates that the input requests and the output requests are mostly sequential and that the workload is biased toward write operations.

-storageClass

Identifies the type of physical media on which the data is stored. Valid media types (sorted from the highest performance priority to the lowest performance priority):

perfSsd	Specifies that the data is stored on solid state drives (SSDs) that are optimized for the performance of balanced read and write operations.
capSsd	Specifies that the data is stored on SSDs that are optimized for the performance of capacity and for read operations. The write performance for this Storage Class is sacrificed somewhat to achieve the optimizations for read performance and for capacity.
perfDisk	Specifies that the data is stored on high-speed hard disk drives (HDDs). This Storage Class sacrifices some capacity to reduce the access time and the latency of the read operations and of the write operations.
capDisk	Specifies that the data is stored on high-capacity, rotating HDDs. This Storage Class optimizes capacity at some sacrifice of speed. For a storage system that does not include tape storage as an option, this Storage Class always provides the lowest cost for each GB of capacity.

When creating a logical volume using a storage profile, the Oracle FS System uses the Storage Class with the highest performance that has enough capacity for the volume.

The -storageClass option is required if the system contains two or more Storage Classes.

-stripeWidth Identifies the number of drive groups over which the data is written.

Valid values are **1** through **64**, or **all**. A value of **all** specifies the maximum possible stripe width.

-writeCache Identifies the write-caching rules to use for the profile. Valid options:

writeThrough	Writes data to the Controller cache and to the storage arrays before the write request completes. This rule ensures that the data is safely written to the storage before the write request returns to the application. Write-through caching performs more slowly than does write-back caching because the data is being written to the storage arrays as well as to the cache.
writeBack	Writes data to the Controller cache, and the write request returns immediately without waiting for the write-to-disk to complete. During idle cycles, the system writes the data from the cache to the storage arrays. Write-back caching performs faster than does write-through because the data only needs to be written to the cache before the write request returns. **Important:** If the system goes down unexpectedly, the data in the cache that has not been written to the storage arrays could be lost.
default	Indicates that the Oracle FS System selects the appropriate write-caching rule based on the selected QoS settings.

EXAMPLE

Task	Creates a custom Storage Profile with a specified priority and storage class.

Parameters	• The name of the Quality of Service (QoS) profile: `profile_1` • The priority of the (QoS) profile: `medium` • The storage class of the (QoS) profile: `perfDisk`

```
$ fscli profile -add -name profile_1 -priority medium
-storageClass perfDisk
```

Related Links

profile

`profile -delete`

Removes a custom Storage Profile.

SYNOPSIS

```
profile -delete
   -profile profile-id-or-fqn [,profile-id-or-fqn]...

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

The `profile -delete` command removes one or more Storage Profiles that were previously created by an administrator.

Note: Only administrators with primary administrator or admin1 roles are authorized to run the `profile -delete` command.

OPTIONS

`-profile` — Specifies the fully qualified name (FQN) or unique identifier (ID) of the Storage Profiles to remove from the Oracle FS System.

EXAMPLE

Task	Remove a custom Storage Profile from theOracle FS System.
Parameters	• The FQN of the Quality of Service (QoS) profile: `profile_1`

```
$ fscli profile -delete -profile /profile_1
```

Related Links

profile

profile -list

Displays the names of the Storage Profiles.

SYNOPSIS

```
profile -list
   [-details]
   [-profile profile-id-or-fqn [, profile-id-or-fqn]... ]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Returns information for one or more of the Storage Profiles that exist on an Oracle FS System.

Note: Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run the `profile -list` command.

OPTIONS

-details	Displays all of the settings for the specified Storage Profiles. If the -details option is omitted, the system displays only the names of the Storage Profiles.
-profile	Specifies the fully qualified name (FQN) or unique identifier (ID) of the Storage Profiles to display. If the -profile option is omitted, all Storage Profiles are displayed.

EXAMPLE

Task	Display a list of all the Storage Profiles that exist on the Oracle FS System.
Parameters	• None

```
$ fscli profile -list
```

Related Links

profile

report

Generates reports that provide listings of configuration details, storage and performance information, and statistical information about the Oracle FS System that you can download to your client in various formats.

SYNOPSIS

```
report {[-delete | -download | -generate | -list] | [-usage | -help]}
```

DESCRIPTION

Use the `report` command to generate predefined statistical reports, download reports to your client, delete reports, or provide a listing of generated reports.

AutoTier	Provides information on auto-tier effectiveness for a Storage Domain. You must specify a Storage Domain using the storageDomain option when you generate an AutoTier report.
SAN Hosts	Provides detailed configuration information on the host servers and configured components currently included in your storage area network (SAN). The data includes the SAN Host operating system, Fibre Channel Initiator, Fibre Channel ports, load balancing settings, LUNs, and other information describing the SAN Hosts.
Storage Performance	Provides performance information about the LUNs on the Oracle FS System at the time the report was generated. The performance data includes: read operations per second, write operations per second, and total read and write operations per second; read MB per second, write MB per second, and total read and write MB per second for each LUN.
Storage Use	Provides capacity information on the storage currently available on the Oracle FS System. The data includes the total, allocated, free, and unavailable capacity for all available storage. The data for total, allocated, free, and unavailable capacity is also presented per storage class.
Storage Use per Volume	Provides capacity information for each logical volume on the Oracle FS System. The data includes the allocated, maximum, and used capacity per volume.
System Configuration	Provides detailed information on the configuration and current status of the Oracle FS System and all of its components, such as serial numbers, firmware versions, ports, and status, for the Pilot, Controllers, and Drive Enclosures. Note: You may want to generate and archive the *System Configuration* report as the report provides a record of your system configuration at the time the report was generated. A record of system changes would be useful for system planning and customer support.

System Configuration Summary	Provides a summary of the Pilot, Controllers, and Drive Enclosures information included in the detailed *System Configuration* report. The data includes the current status of the components listed above and system information.

SUBCOMMANDS

-delete	Deletes a report.
-download	Downloads a report.
-generate	Creates a report that can be downloaded for viewing.
-list	Displays a specified report or list of all generated reports.

EXAMPLE

Task	Remove the most recently created report from theOracle FS System.
Parameters	• None

```
$ fscli report -delete
```

Related Links

report -delete

report -download

report -generate

report -list

report -delete

Deletes a report.

SYNOPSIS

```
report -delete
   [-report report-id-or-fqn [, report-id-or-fqn]... ]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Deletes a report. If you do not specify a report, the `report -delete` command deletes the most recently generated report.

Note: Only administrators with primary administrator or admin1 roles are authorized to run the `report -delete` command.

OPTIONS

-report Specifies the name of the report to be deleted. If a report name is not specified, the most recently generated report is deleted.

EXAMPLE

Task	Remove the most recently created report from theOracle FS System.
Parameters	• None

```
$ fscli report -delete
```

Related Links

report

report -download

Downloads a report.

SYNOPSIS

```
report -download
   [-report report-id-or-fqn ]
   [-file download-file]
   [-format {pdf | xml | csv | excel | html}]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Downloads a report. If you do not specify a report, the `report -download` command downloads the most recently generated report. You can download the report to a specific directory and choose a format including CSV, Excel, HTML, PDF, or XML. If you do not specify a directory, the report is stored in the current directory.

Note: Only administrators with primary administrator, admin1, or support roles are authorized to run the `report -download` command.

OPTIONS

-file Specifies the name of the report file and the directory where the Oracle FS System stores the report. If you do not specify a file name or directory, the report is stored as `oracleFSexport.pdf` in the current directory.

-format	Specifies in which format the report is to be saved. Report formats are CSV, Excel, HTML, PDF, or XML. If no format is specified, then the report is saved as PDF.
-report	Specifies the name of the report to be downloaded. If a report name is not specified, the most recently generated report is downloaded.

EXAMPLE

Task	Download a specific report from theOracle FS System.
Parameters	• The FQN of the report: `/SystemConfiguration_1404923589230`

```
$ fscli report -download
-report /SystemConfiguration_1404923589230
```

Related Links

report

report -generate

Creates a report that can be downloaded for viewing.

SYNOPSIS

```
report -generate
   -type { system | storageUse | volumeUse | performance
         | sanHosts | systemSummary | quotas | autoTier
         }
   [-filesystem filesystem-id-or-fqn]
   [-storageDomain storage-domain-id-or-fqn]
   [-language locale-language]
   [-country locale-country]
   [-variant locale-variant]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

You can specify that the report contain configuration details, storage and performance information, or statistical information. The information generated in the report is based on the report type you select.

Note: Only administrators with primary administrator or admin1 roles are authorized to run the `report -generate` command.

OPTIONS

-country

Specifies the country locale (two uppercase letters that conform to ISO-3166) to use for generating the report. Use the country locale ISO code to specify the country locale when creating the report. For example, to request a report in Canadian French, you could use the variant *fr_CA* (language option combined with country option). You can find a copy of ISO-3166 at https://www.iso.org/obp/ui/.

-filesystem

Identifies a filesystem in the Oracle FS System.

-storageDomain

Specifies the Storage Domain you want to display data about to determine the auto-tier effectiveness for that Storage Domain.

-language

Specifies the language. The format is two lowercase letters that conform to ISO-639. Use the language ISO code to specify the language when creating the report. For example, to request a report in Canadian French, you could use the variant *fr_CA* (language option combined with country option). You can find a copy of ISO-639 at http://userpage.chemie.fu-berlin.de/diverse/doc/ISO_639.html.

-type

Specifies the type of report to generate. Valid types:

autoTier	Returns information about the effectiveness of auto-tiering for a Storage Domain. This option requires that the -storageDomain option be specified as well.
performance	Returns performance information about the Oracle FS System LUNs. This information includes, for example, the I/O operations per second and the I/O MB per second for each LUN.
quotas	Returns detailed information about the capacity controls that exist for a filesystem. This option requires that the -filesystem option be specified as well.
sanHosts	Returns detailed configuration information about the SAN hosts and about the components that are configured on those hosts.

system	Returns detailed information on the configuration and the current status of the Oracle FS System and of all of its components.
systemSummary	Returns a configuration summary of the Pilots, the Controllers, and the Drive Enclosures, including the status of each of those components.
volumeUse	Returns capacity information for each logical volume in the Oracle FS System.

-variant Specifies the locale variant to use for generating the report. Multiple variants can be connected with an underscore. For example, to request a report in Canadian French, use the variant *fr_CA*.

EXAMPLE

Task	Create a report that can be downloaded for viewing.
Parameters	• The type of report to generate: `system`

```
$ fscli report -generate -type system
```

Related Links

report

report -list

Displays a specified report or list of all generated reports.

SYNOPSIS

```
report -list
   [-details]
   [-report report-id-or-fqn [, report-id-or-fqn]... ]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Displays a specified report. If you do not specify a report, all generated reports are displayed.

Note: Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run the `report -list` command.

OPTIONS

`-details`	Returns detailed configuration and state information for the specified Oracle FS System components.
`-report`	Specifies the name of the report to be listed. If a report name is not specified, all reports are listed.

EXAMPLE

Task	Display a list of all reports that exist on the Oracle FS System.
Parameters	• None

```
$ fscli report -list
```

Related Links

report

rest

Manages support for the Representational State Transfer (REST) interface provided by the Oracle FS System on the Pilot.

SYNOPSIS

`rest {[-disable | -enable | -list] | [-usage | -help]}`

DESCRIPTION

The Oracle FS System provides a Representational State Transfer (REST) interface that runs on the web server interface on the Pilot. The REST interface allows you to access the Oracle FS CLI services using an HTTP format instead of the `fscli` command syntax. Use the **`rest`** command to enable and to disable support for the REST interface and to check the interface status. The REST interface runs on service port `8085`, which opens on the Pilot firewall when the REST interface is enabled and closes when the REST interface is disabled. By default, the REST interface is disabled when the system starts up.

SUBCOMMANDS

`-disable`	Stops the REST interface on the Pilot.
`-enable`	Starts the REST interface on the Pilot.
`-list`	Displays the status of the REST interface.

EXAMPLE

Task	Stop the REST interface on the Pilot.
Parameters	• None

```
$ fscli rest -disable
```

Related Links

rest -disable

rest -enable

rest -list

rest -disable

Stops the REST interface on the Pilot.

SYNOPSIS

```
rest -disable

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

If the Oracle FS System REST interface is running on the Pilot, use the **rest -disable** command to stop the interface. When you stop the interface, you also stop the corresponding HTTP process that is running on the Pilot. To obtain the status of the REST interface, use the **rest -list** command.

Note: Administrators with primary administrator, admin1 or support roles are authorized to run the `rest -disable` command.

EXAMPLE

Task	Stop the REST interface on the Pilot.
Parameters	• None

```
$ fscli rest -disable
```

Related Links

rest

rest -list

rest -enable

Starts the REST interface on the Pilot.

SYNOPSIS

```
rest -enable

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Use the **rest -enable** command to start the Oracle FS System REST interface on the Pilot. You can use the REST interface to create Oracle FS CLI processes that use the REST HTTP protocol instead of the `fscli` command syntax. Up to four concurrent REST sessions are supported for a given Oracle FS System.

Note: EXAMPLE – Administrators with primary administrator, admin1 or support roles are authorized to run the `rest -enable` command.

EXAMPLE

Task	Start the REST interface on the Pilot.
Parameters	• None

```
$ fscli rest -enable
```

Related Links

rest

rest -list

Displays the status of the REST interface.

SYNOPSIS

```
rest -list
   [-details]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Use the **rest -list** command to determine whether the Oracle FS System REST interface is running on the Pilot. The system returns `RestEnabled : true` when the REST interface is running or `RestEnabled : false` when the REST interface is not running.

Note: EXAMPLE – Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run the `rest -list` command.

OPTIONS

-details	Provides no additional information. This option is included for consistency across all subcommands.

EXAMPLE

Task	Display the status of the REST interface on the Pilot.
Parameters	• None

```
$ fscli rest -list
```

Related Links

rest

san

Lists the SAN storage as well as enables or disables the SAN panics.

SYNOPSIS

`san { [ -list | -panic ] | [ -usage | -help ] }`

DESCRIPTION

Administrators can run the **`san -list`** command to obtain storage usage information for the Oracle FS System SAN LUNs, Clone LUNs, and LUN copies.

Additionally, Oracle Customer Support can issue the **`san -panic`** command to enable or to disable the ability of the SAN protocol to respond to panic situations.

SUBCOMMANDS

-list	Provides SAN LUN usage and capacity information.
-panic	Toggles the ability of the SAN protocol to panic.

EXAMPLE

Task	Display a list of the SAN storage usage configuration that exists on the Oracle FS System.
Parameters	• None

```
$ fscli san -list
```

Related Links

san -list

san -panic

san -list

Provides SAN LUN usage and capacity information.

SYNOPSIS

```
san -list
   [-details]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Displays the following information:

- Total SAN capacity usage, in gigabytes
- Number of LUNs and the capacity used, in gigabytes
- Number of Clone LUNs and the capacity used, in gigabytes

Note: Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run the `san -list` command.

OPTIONS

-details	Provides no additional information. This option is included for consistency across all subcommands.

EXAMPLE

Task	Display a list of the SAN storage usage configuration that exists on the Oracle FS System.
Parameters	• None

```
$ fscli san -list
```

Related Links

san

san -panic

Toggles the ability of the SAN protocol to panic.

SYNOPSIS

```
san -panic
   {-enable | -disable}

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Note: Only Oracle Customer Support personnel are authorized to run the `san -panic` command.

OPTIONS

-disable	Used by an Oracle Customer Support technician to instruct the SAN protocol to ignore a vendor-unique SCSI command (`panic cdb`) and to return a good status or to reject the SCSI command as an illegal code.
-enable	Used by an Oracle Customer Support technician to instruct the SAN protocol to panic when it receives a vendor-unique SCSI command (`panic cdb`). The operating system sends a panic command when it detects data that does not compare or when other errors are detected.

EXAMPLE

Task	Disable the ability of the SAN protocol to panic.
Parameters	• None

```
$ fscli san -panic -disable
```

Related Links

san

san_host

Manages the SAN host entries on the Oracle FS System.

SYNOPSIS

`san_host { [ -add | -delete | -list | -modify ] | [ -usage | -usage | -help ] }`

DESCRIPTION

A SAN host entry is a record that represents a group of one or more *initiators*. An *initiator* is the World Wide Name (WWN) of an FC HBA port or the name of an iSCSI initiator. You create host entries manually using the `san_host -add` command or automatically using Oracle FS Path Manager (FSPM).

The Oracle FS System can contain the following types of SAN host entries:

Unassociated host	The Oracle FS System automatically creates unassociated SAN host entries when an initiator is discovered on the SAN. The name of the initiator and the unassociated SAN host entry are the same.
Associated host	A host entry that an administrator associates with one or more host initiators. Use the `san_host -add` command to manually associate the initiators for a SAN host as associated hosts. After associating the initiators to the host, the associated host is a host entry.
FSPM host	A host that FSPM associates with one or more host initiators after logging in to the Pilot. FSPM manages the association of the initiators on the FSPM host to the FSPM host name.

Using the `san_host` command, you can perform the following operations:

- Provide an alias for the SAN host initiator ports. An alias makes the ports easier to identify.
- Configure authentication between the iSCSI Controller ports and the hosts.
- Enable the HP-UX compatibility option that allows the system to use the HP-UX addressing scheme for LUNs.
- Configure the FSPM load balancing settings on some operating systems.
- Associate the host entry to a host group, which is a named, logical collection of hosts.

SUBCOMMANDS

`-add`	Creates a SAN host entry on the Oracle FS System.
`-delete`	Removes a SAN host entry from the Oracle FS System.
`-list`	Displays information about a SAN host entry.
`-modify`	Changes the properties of a SAN host entry.

EXAMPLE

Task	Create a SAN Host entry on the Oracle FS System.

Parameters	• The name of a SAN host entry: `sanhost_1` • The Fibre Channel (FC) HBA port on the SAN host that can connect to the Oracle FS System: `2001000B08000520/fcport-alias_1`

```
$ fscli san_host -add -name sanhost_1
-fcInitiatorPort 2001000B08000520/fcport-alias_1
```

Related Links

san_host -add

san_host -delete

san_host -list

san_host -modify

san_host -add

Creates a SAN host entry on the Oracle FS System.

SYNOPSIS

```
san_host -add
   -name sanhost-name
   [{-hpuxCompatibility | -noHpuxCompatibility}]
   [{-iscsiAccessControl | -noIscsiAccessControl}
    { -iscsiAuthentication
      -chapName chap-name
    | -noIscsiAuthentication
    }]
   [-fcInitiatorPort fcinitiatorport-wwn[/fcinitiatorport-alias]
                     [, fcinitiatorport-wwn[/
fcinitiatorport-alias] ]... ]
   [-iscsiInitiatorPort iscsi-initiator-name[/
iscsi-initiatorport-alias]
                     [, iscsi-initiator-name[/
iscsi-initiatorport-alias] ]...  ]
   [{-reconcileMappings | -noReconcileMappings}]
   [-associateGroup host-group-id-or-fqn]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Use the `san_host -add` command to create an associated host entry by associating one or more initiators on a host to a named host entry. An *initiator* is the World Wide Name (WWN) of an FC HBA port or the name of an iSCSI initiator. When you create a host entry, you can configure authentication between the iSCSI Controller ports and the hosts.

For systems that use the HP-UX operating system, you can set an option to use the HP-UX LUN numbering scheme. You can optionally specify that the system reconcile any future conflicts with existing host LUN mappings.

If the host is running Oracle FS Path Manager (FSPM) then FSPM automatically creates a host entry for the host when FSPM first connects to the Pilot on theOracle FS System. For host systems that use FSPM, you might not need to use the `san_host -add` command. Refer to the *Oracle FS Path Manager Installation Guide* for details on how to add FSPM host entries on the Oracle FS System.

Note: Only administrators with primary administrator, admin1, or admin2 roles are authorized to run the `san_host -add` command.

OPTIONS

`-associateGroup`
Specifies the ID or the fully qualified name (FQN) of the host group with which to associate the SAN host.

`-chapName`
Identifies the CHAP name to use during iSCSI authentication.

Note: The system prompts you twice for the CHAP secret. The second prompt ensures the correctness of the secret.

`-fcInitiatorPort`
Specifies the Fibre Channel (FC) HBA ports on the SAN host that can connect to the Oracle FS System. The system recognizes the following two formats for specifying HBA ports:

- Required: 16 hexadecimal digits that are separated by colons, as in *xx*:*xx*:*xx*:*xx*:*xx*:*xx*:*xx*:*xx*, where each *xx* is a hexadecimal number.

  Note: The colons are optional.
- Optional: an alias for the port consisting of a slash character (/) that is followed by the text of the alias.

`-hpuxCompatibility`
Identifies the host as using the HP-UX addressing mode for LUNs.

`-iscsiAccessControl`
Enables access control for an iSCSI session.

`-iscsiAuthentication`
Enables the Challenge Handshake Authentication Protocol (CHAP) authentication to restrict access to the Oracle FS System from the host.

- The -iscsiAuthentication option is valid only when the -iscsiAccessControl option is also specified.

- If the -iscsiAuthentication option is omitted and the -iscsiAccessControl option is specified, SAN hosts do not need to provide CHAP names and passwords when accessing the Oracle FS System.

-iscsiInitiatorPort — Specifies one or more iSCSI initiator names that are used by the SAN host. Each iSCSI initiator name should be specified as the name that is configured on the SAN host and optionally followed by a slash character (/) and an alias for the name.

-name — Specifies the name of a SAN host entry that you are creating on the Oracle FS System. After the Oracle FS System updates the internal host table, the name that you provide is used to create the fully qualified name (FQN). Use double quotation marks around names containing spaces or dashes to ensure that the Oracle FS CLI software that is running on the Pilot includes the spaces or dashes in the name; otherwise, the software will generate a parsing error.

-noHpuxCompatibility — Disables the HP-UX LUN addressing mode for the SAN host.

-noIscsiAccessControl — Disables access control for iSCSI. When you disable iSCSI access control, all of the required CHAP authentication options are also disabled. If you want to re-enable iSCSI access control in the future, you will need to specify a new CHAP name and password.

-noIscsiAuthentication — Disables authentication that is based on the Challenge Handshake Authentication Protocol (CHAP). This property applies to iSCSI hosts that attempt to access the Oracle FS System.

-noReconcileMappings — Disables the automatic fixing of any LUN mappings for this host that cause mapping conflicts.

-reconcileMappings — Specifies that any subsequent LUN mappings for this host that cause a conflict are automatically fixed. If this option is omitted, -noReconcileMappings is the default.

EXAMPLE

Task	Create a SAN Host entry on the Oracle FS System.
Parameters	• The name of a SAN host entry: `sanhost_1`

- The Fibre Channel (FC) HBA port on the SAN host that can connect to the Oracle FS System: `2001000B08000520/fcport-alias_1`

```
$ fscli san_host -add -name sanhost_1
-fcInitiatorPort 2001000B08000520/fcport-alias_1
```

Related Links

san_host

san_host -delete

Removes a SAN host entry from the Oracle FS System.

SYNOPSIS

```
san_host -delete
   -sanhost sanhost-id-or-fqn [, sanhost-id-or-fqn]...
   [-removeInitiatorsAndMappings]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

The `san_host -delete` command removes a specified SAN host entry, or removes a list of SAN host entries from the Oracle FS System. Use the `-sanhost` option to specify the SAN host or list of SAN hosts to delete.

When you remove the SAN Host entry, you can optionally retain the initiators and the LUN mappings. The host then, becomes an unassociated host and the LUNs retain the mappings to all of the initiators of the unassociated host.

You can use the `-removeInitiatorsAndMappings` option to delete all of the initiators and LUN mappings that are associated with the SAN host entry. Not using this option creates an unassociated host entry from each initiator. The mapped LUNs remain mapped to each unassociated host entry.

Note: Only administrators with primary administrator, admin1, or admin2 roles are authorized to run the `san_host -delete` command.

OPTIONS

`-removeInitiatorsAndMappings`	Deletes the initiators and the mappings that are associated with the specified SAN host.
`-sanhost`	Specifies the IDs or the fully qualified names (FQNs) of the SAN hosts to delete.

EXAMPLE

Task	Remove a SAN Host from theOracle FS System.
Parameters	• The FQNs of the SAN host to delete: `/sanhost_1`

```
$ fscli san_host -delete -sanhost /sanhost_1
```

Related Links

san_host

san_host -list

Displays information about a SAN host entry.

SYNOPSIS

```
san_host -list
   [-details]
   { -sanhost sanhost-id-or-fqn [, sanhost-id-or-fqn]...
   | -controller controller-id-or-fqn [, controller-id-or-fqn]...
   }
   [-forceDiscovery]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Use the `san_host -list` command to obtain a list of SAN host entries and available host initiators that are available on the Oracle FS System. The `-details` option lists detailed information about the SAN host. Two mutually exclusive options are available with the `san_host -list` command: `-sanhost` and `-controller`. Use the `-sanhost` option to obtain details about the specified SAN host. Use the `-controller` option to list details about the SAN hosts that have visibility to the list of specified Controllers.

To update the list of available SAN host initiators, use the `-forceDiscovery` option.

Note: Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run the `san_host -list` command.

OPTIONS

`-details`	For SAN hosts that are running Oracle FS Path Manager (FSPM), displays extensive information about the status of the host and of the host connection to the Oracle FS System.

	For SAN hosts that are not running FSPM, displays basic information about the host.
-forceDiscovery	Detects and discloses all SAN host initiators that are communicating with the Oracle FS System.
-sanhost	Specifies the IDs or the fully qualified names (FQNs) of the SAN hosts to display.
-controller	Specifies the fully qualified name (FQN) or the unique identifier (ID) of a Controller. Identifies the Controllers for which the specified SAN hosts have visibility. Only those hosts that have visibility to those Controllers are displayed.

EXAMPLE

Task	Display a detailed list of a SAN Host on the Oracle FS System.
Parameters	• The FQNs of the SAN host to list: `/sanhost_1`

```
$ fscli san_host -list -details -sanhost /sanhost_1
```

Related Links

san_host

san_host -modify

Changes the properties of a SAN host entry.

SYNOPSIS

```
san_host -modify
   -sanhost sanhost-id-or-fqn
   [-name new-sanhost-name]
   [{-hpuxCompatibility | -noHpuxCompatibility}]
   [{-iscsiAccessControl | -noIscsiAccessControl}
    { -iscsiAuthentication
      -chapName chap-name
    | -noIscsiAuthentication
    }]
   [-fcInitiatorPort [fcinitiator-wwn[/fcinitiatorport-alias]
                     [ ,fcinitiatorport-wwn[/
fcinitiatorport-alias] ]... ] ]
   [-iscsiInitiatorPort [iscsi-initiator-name[/
iscsi-initiatorport-alias]
                        [, iscsi-initiator-name[/
iscsi-initiatorport-alias] ]... ] ]
   [-lunSettings lun-id-or-fqn/load-balance-type
                 [, lun-id-or-fqn/load-balance-type]... ]
   [{-reconcileMappings | -noReconcileMappings}]
   [{ -associateGroup host-group-id-or-fqn
      [-suppressWarnings]
    | -unAssociateGroup
      {-removeMappings | -preserveMappings}
```

```
    }]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Use the `san_host -modify` command to change the attributes of the SAN host entry. You can also update the host group association of the SAN host entry. When removing a host group association you have the option to retain or remove the LUN mappings that are associated with the LUNs that are mapped to the host group.

Note: Only administrators with primary administrator, admin1, or admin2 roles are authorized to run the `san_host -modify` command.

OPTIONS

`-associateGroup`

Specifies the ID or the fully qualified name (FQN) of the host group with which to associate the SAN host.

The system updates all of the LUN mappings for the SAN host so that the mappings are associated with the specified group while retaining those mappings with LUNs that are not mapped by the host group.

- If the SAN host is mapped to a LUN that is already mapped by the host group, the host mapping is replaced by the host group mapping.
- If the association of the SAN host to the host group is removed, the host retains the host group mappings to the LUN until the host LUN mapping is changed.
- If LUN mappings exist that will be changed to that of the host group, the user is informed and prompted to confirm the association with the host group.

`-chapName`

Identifies the CHAP name to use during iSCSI authentication.

Note: The system prompts you twice for the CHAP secret. The second prompt ensures the correctness of the secret.

`-fcInitiatorPort`

Specifies the Fibre Channel (FC) HBA ports on the SAN host that can connect to the Oracle FS System. The system recognizes the following two formats for specifying HBA ports:

- Required: 16 hexadecimal digits that are separated by colons, as in *xx*:*xx*:*xx*:*xx*:*xx*:*xx*:*xx*:*xx*, where each *xx* is a hexadecimal number.

  Note: The colons are optional.

- Optional: an alias for the port consisting of a slash character (/) that is followed by the text of the alias.

Include all of the desired ports in the list. If you omit an existing port, that port is deleted from the host entry. If no FC ports are specified for the -fcInitiatorPort option, all of the FC ports are removed.

Note: The -fcInitiatorPort option should not be used for the host entries that are created and managed by Oracle FS Path Manager (FSPM), which is running on the SAN host.

-hpuxCompatibility Identifies the host as using the HP-UX addressing mode for LUNs.

-iscsiAccessControl Enables access control for an iSCSI session.

-iscsiAuthentication Enables the Challenge Handshake Authentication Protocol (CHAP) authentication to restrict access to the Oracle FS System from the host.

- The -iscsiAuthentication option is valid only when the -iscsiAccessControl option is also specified.
- If the -iscsiAuthentication option is omitted and the -iscsiAccessControl option is specified, SAN hosts do not need to provide CHAP names and passwords when accessing the Oracle FS System.

-iscsiInitiatorPort Specifies one or more iSCSI initiator names that are used by the SAN host. Each iSCSI initiator name should be specified as the name that is configured on the SAN host and optionally followed by a slash character (/) and an alias for the name.

Include all of the desired ports in the list. If you omit an existing port, that port is deleted from the host entry. If no ports are specified for the -iscsiInitiatorPort option, all of the iSCSI ports are removed.

Note: The -iscsiInitiatorPort option should not be used for the host entries that are created and

managed by Oracle FS Path Manager (FSPM), which is running on the SAN host.

-lunSettings Specifies, for the specified LUNs, the load balancing mechanism that is to be used by the Oracle FS Path Manager (FSPM) software that is running on the host to manage the paths from the host to the Controllers. If FSPM is not running on the host, or if the version of FSPM on the host does not allow load balancing to be set from the Oracle FS System, this option is ignored. Valid values:

static	Uses a single host-to-Controller path until the path becomes unavailable, then uses the next higher priority path, and so forth.
roundRobin	Rrotates among the host-to-Controller paths at the host, using the highest priority path group.

Note: The `-lunSettings` option has no impact on the behavior of hosts that are not using FSPM.

-name Specifies a new name for the SAN host. The name that you provide causes the system to replace the previously defined fully qualified name of the host as well. Use double quotation marks around names containing spaces or dashes; otherwise, the software generates a parsing error.

Note: The -name option should not be used for the host entries that are created and managed by Oracle FS Path Manager (FSPM), which is running on the SAN host.

-noHpuxCompatibility Disables the HP-UX LUN addressing mode for the SAN host.

-noIscsiAccessControl Disables access control for iSCSI. When you disable iSCSI access control, all of the required CHAP authentication options are also disabled. If you want to re-enable iSCSI access control in the future, you will need to specify a new CHAP name and password.

-noIscsiAuthentication Disables authentication that is based on the Challenge Handshake Authentication Protocol (CHAP). This property applies to iSCSI hosts that attempt to access the Oracle FS System.

-noReconcileMappings Disables the automatic fixing of any LUN mappings for this host that cause mapping conflicts.

-preserveMappings	Retains the host group LUN mappings after the SAN host is removed from the host group.
-reconcileMappings	Specifies that any subsequent LUN mappings for this host that cause a conflict are automatically fixed. If this option is omitted, -noReconcileMappings is the default.
-removeMappings	Removes the LUN mappings that were established for the SAN host while it was associated with the host group when the association between the host and host group is removed.
-sanhost	Specifies the ID or the fully qualified name (FQN) of the SAN host.
-suppressWarnings	Prevents the system from prompting for a confirmation that the LUN mappings for the SAN host will be changed to the mappings of the host group.
-unAssociateGroup	Removes the host from the specified host group.

EXAMPLE

Task	Change the properties of a SAN host entry to specify that any subsequent LUN mappings for this host that cause a conflict are automatically fixed.
Parameters	• The FQNs of the SAN host to modify: `/sanhost_1`

```
$ fscli san_host -modify -sanhost /sanhost_1
-reconcileMappings
```

Related Links

san_host

snmp_host

Configures the SNMP services that are available on the Oracle FS System. The Oracle FS System does not allow an SNMP host to write or change any configuration or setting on the system. Only SNMP queries defined in the Oracle FS System MIB are supported.

SYNOPSIS

`snmp_host {[-add | -delete | -list | -modify] | [-usage | -help]}`

DESCRIPTION

The **snmp_host** command defines a host as a trap host or a query host.

SNMP trap host	A host that receives SNMP traps that are asynchronously sent by the Oracle FS System when the severity of an event meets a specified threshold. Use the **snmp_host** command to specify how and where SNMP event traps are sent to one or more SNMP trap hosts. Any host that has a SNMP-based management application installed on it can be an SNMP trap host. The Oracle FS System SNMP MIB must be installed or imported into the SNMP management application on the trap host in order to interpret the traps.
SNMP host	A host that queries the Oracle FS System by issuing SNMP requests. For a host to query the Oracle FS System, you must download the Oracle FS System MIB and then install it on that SNMP Host using the instructions of the SNMP management software vendor for importing or installing a MIB.

To configure an SNMP host to be able to query the Oracle FS System, perform the following tasks:

- First, download the MIB for the Oracle FS System from the Oracle FS System Manager GUI. You can also download the MIB from the Oracle FS System home page using the hostname or IP address of the Oracle FS System.
- Next, install or import the MIB on your host machine according to the instructions for the SNMP management software on your SNMP host. Use port 161 to issue SNMP queries to the Oracle FS System.
- On the Oracle FS System, run the **snmp_host** command, perform the following tasks in any order:
    - Identify the SNMP host by an IP address or a DNS name.
    - Provide a unique name for the SNMP trap host on the Oracle FS System.
    - Specify the community string that the host uses to query the Oracle FS System.

      Note: Do not use the community strings **public** or **private**.
    - Specify the SNMP port number for the host to use to query the Oracle FS System. The standard port number is 161.
    - Install or import the Oracle FS System MIB on the SNMP management application on that host.

To configure an SNMP trap host to receive SNMP event traps, perform the following tasks in any order:

- Identify the SNMP trap host by an IP address or a DNS name.
- Enter the IP address or DNS name for the SNMP trap host on the Oracle FS System.

- Specify the community string that has been configured on the trap host that the Oracle FS System must use when sending traps to the trap host.

  Note: Do not use the community strings **`public`** or **`private`**.
- Specify the SNMP port number for the Oracle FS System to use to send the event traps. The standard port number is 162.
- Specify a severity threshold to filter event traps.
- Install or import the Oracle FS System MIB on the SNMP management application on that trap host.

The SNMP traps are asynchronous notifications of system events. The Oracle FS System filters system events based on the following severity levels:

- Informational
- Warning
- Critical

When selecting an event severity threshold, use the most specific level in which you are interested.

SUBCOMMANDS

`-add`	Creates a new SNMP query host or SNMP trap host entry on the Oracle FS System.
`-delete`	Deletes an SNMP trap host entry from the Oracle FS System.
`-list`	Displays information about the SNMP trap and query hosts.
`-modify`	Modifies the settings of an existing SNMP trap or query host.

EXAMPLE

Task	Create an SNMP trap host entry and specify the SNMP trap event severity.
Parameters	• The unique name of the SNMP trap host: **`snmp_trap_server_1`** • The IP address: **`192.168.10.5`** • The community string: **`IT-storage`** • The trap port: **`162`** • The trap event threshold: **`warning`**

```
$ fscli snmp_host -add -name snmp_trap_server_1 -ip
192.168.10.5 -community IT-storage -trapPort 162
-trapEvent warning
```

Task	Create an SNMP query host entry.
Parameters	• The unique name of the SNMP query host: **snmp_query_server_2** • The IP address: **192.168.10.10** • The community string: **IT-storage** • The query port: **161** • The trap event threshold: **warning**

```
$ fscli snmp_host -add -name snmp_trap_server_2 -ip
192.168.10.10 -community IT-storage -trapPort 161
```

Related Links

snmp_host -add

snmp_host -delete

snmp_host -list

snmp_host -modify

snmp_host -add

Creates a new SNMP query host or SNMP trap host entry on the Oracle FS System.

SYNOPSIS

```
snmp_host -add
   -name snmp-host-name
   -ip snmp-host-ip-or-dns
   -community snmp-community
   [ -trapPort port-number
     [-trapEvent {informational | warning | critical}]
   ]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Use the **snmp_host -add** command to configure the following types of SNMP hosts:

SNMP trap host	A host that asynchronously receives event traps sent from the Oracle FS System.

SNMP query host	A host that uses the Oracle FS System MIB to issue SNMP queries to the Oracle FS System.

To create an SNMP trap host entry, run the **snmp_host -add** command. When you construct this command, provide all of the following information:

- An IP address or a DNS name of the SNMP trap host.
- A unique name for the Oracle FS System to use to identify the host.
- The community string for the Oracle FS System to use when sending event traps to the host, or to authenticate SNMP queries from a query host.

  Note: Do not use the community strings **public** or **private**. This community string must match the string configured on the query or trap host.
- For SNMP trap hosts, the host port for the Oracle FS System to use for sending event traps. The standard port used by most SNMP trap hosts is 162.
- For SNMP query hosts, the port the host uses to query the Oracle FS System. The standard port used by most SNMP trap hosts is 161.
- The severity threshold of the desired event traps.

Note: To enable the SNMP service for a given host, you must provide an SNMP trap port number. If no port number is specified, no event traps are sent.

To set the severity threshold, specify the least severe level of events in which you are interested. For example, if you set a threshold of **warning**, the Oracle FS System sends warning and critical event traps, but it does not send event traps that are informational.

Note: Administrators with primary administrator or admin1 roles are authorized to run the snmp_host -add command.

OPTIONS

-community	Identifies the community string for the Oracle FS System to use when it sends an event trap to the SNMP trap host. The default is**public**. Use a community string that is specific and unique to your data center.
-ip	Specifies the IP address or domain name of a client to which the Oracle FS System sends SNMP trap information.
-name	Specifies a unique name that you provide to identify the SNMP trap host. The name that you provide can be any name and does not need to be the DNS name. Use double quotation marks around names that contain spaces or dashes.

-trapEvent	Identifies the severity threshold for events that are sent in event traps to the SNMP trap host. Event traps are sent when the specified and more severe level is reached.
-trapPort	Identifies the SNMP trap host port number to use for sending an event trap. The default universally defined port (UDP) is port 162. Do not specify another value unless your host is configured to receive traps on another port. If you do not provide this option, no traps are sent to the SNMP trap host.

EXAMPLE

Task	Create an SNMP trap host entry and specify the SNMP trap event severity.
Parameters	• The unique name of the SNMP trap host: **snmp_trap_server_1** • The IP address: **192.168.10.5** • The community string: **IT-storage** • The trap port: **162** • The trap event threshold: **warning**

```
$ fscli snmp_host -add -name snmp_trap_server_1 -ip
192.168.10.5 -community IT-storage -trapPort 162
-trapEvent warning
```

Task	Create an SNMP query host entry.
Parameters	• The unique name of the SNMP query host: **snmp_query_server_2** • The IP address: **192.168.10.10** • The community string: **IT-storage** • The query port: **161** • The trap event threshold: **warning**

```
$ fscli snmp_host -add -name snmp_trap_server_2 -ip
192.168.10.10 -community IT-storage -trapPort 161
```

Related Links

snmp_host

snmp_host -delete

Deletes an SNMP trap host entry from the Oracle FS System.

SYNOPSIS

```
snmp_host -delete
   -id snmp-host-id-or-fqn [,snmp-host-id-or-fqn]...

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

To stop sending SNMP traps to an SNMP trap host, or to disable the SNMP query host from issuing queries, run one of the following commands:

- Run the **snmp_host -modify -removeTrap -id *snmp-host-fqn*** command to prevent traps from being sent to the specified host.
- Run the **snmp_host -delete -id *snmp-host-fqn*** command to remove the host from the list of SNMP trap host entries.

To remove the host, provide the name of the SNMP trap or query host preceded by a forward slash (/) character. To obtain a list of SNMP host names, run the **snmp_host -list** command.

Note: Administrators with primary administrator or admin1 roles are authorized to run the snmp_host -delete command.

OPTIONS

-id	Specifies the unique ID or the name of an existing SNMP trap host. Include a forward slash (/) character before the name.

EXAMPLE

Task	Delete an SNMP trap or query host.
Parameters	• The name of the SNMP trap or query host preceded by a forward slash (/): **/snmp_trap_server_1**

```
$fscli snmp_host -delete -id /snmp_trap_server_1
```

Related Links

snmp_host

snmp_host -modify

snmp_host -list

snmp_host -list

Displays information about the SNMP trap and query hosts.

SYNOPSIS

```
snmp_host -list
   [-details]
   [-id snmp-host-id-or-fqn [,snmp-host-id-or-fqn]...  ]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

The **snmp_host -list** command without options lists the names of the SNMP trap or query hosts that are currently defined on the Oracle FS System. Specifying -the -details option displays additional information about each host. To display the details of a specific host, run the **snmp_host -list -id *snmp-host-id-or-fqn* -details** command. To specify an individual host, provide the name preceded by a forward slash (/) character.

Note: Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run the snmp_host -list command.

OPTIONS

-details	Returns detailed configuration and state information for the specified Oracle FS System components.
-id	Specifies the unique ID or the name of an existing SNMP trap host. Include a forward slash (/) character before the name.

EXAMPLE

Task	Display the names of the SNMP hosts that are defined on the Oracle FS System.
Parameters	• None

```
$ fscli snmp_host -list
```

Related Links

snmp_host

snmp_host -modify

Modifies the settings of an existing SNMP trap or query host.

SYNOPSIS

```
snmp_host -modify
   -id snmp-host-id-or-fqn
   [-name new-snmp-host-name]
   [-ip snmp-host-ip-or-dns]
   [-community snmp-community]
   [{ -newTrap -trapPort port-number
      [-trapEvent {informational | warning | critical}]
    | -removeTrap
    } ]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

To modify the settings for an existing SNMP trap host, identify the host by providing its name preceded by a forward slash (/) character, or its unique ID. Run the **snmp_host -list** command to display the names and IDs of all of the SNMP trap host entries.

To define a new event severity threshold, run the **snmp_host -modify -newTrap** command. If the SNMP trap host entry already has SNMP traps defined, the new trap definitions replace the previous definitions. For example, if you have previously set the event severity threshold to informational, your SNMP trap host currently receives informational, warning and critical events. If you now set the severity to critical, only the critical events are sent to the SNMP trap host.

To disable the SNMP service for a given host, run the **snmp_host -modify -removeTrap** command. This will still allow that host to send SNMP queries, but will no longer send traps to the specified host.

Note: Administrators with primary administrator or admin1 roles are authorized to run the snmp_host -modify command.

OPTIONS

-community

Identifies the community string for the Oracle FS System to use when it sends an event trap to the SNMP host.

Note: Do not use the community strings **public** or **private**. This community string must match the string configured on the query or trap host.

-id	Specifies the unique ID or the name of an existing SNMP trap host. Include a forward slash (/) character before the name.
-ip	Specifies the IP address or name of a host to which the Oracle FS System sends SNMP trap information.
-name	Specifies a unique name that you provide to identify the SNMP trap host. The name that you provide can be any name and does not need to be the hostname. Use double quotation marks around names that contain spaces or dashes.
-newTrap	Identifies a new trap setting for the SNMP trap host. The -newtrap option is followed by the -trapPort or the -trapEvent option.
-removeTrap	Instructs the Oracle FS System to stop sending event traps to the SNMP trap host.
-trapEvent	Identifies the severity threshold for events that are sent in event traps to the SNMP trap host. Event traps are sent when the specified and more severe level is reached.
-trapPort	Identifies the SNMP trap host port number to use for sending an event trap. The default universally defined port (UDP) is port 162. Do not specify another value unless your host is configured to receive traps on another port. If you do not provide this option, no traps are sent to the SNMP trap host.

EXAMPLE

Task	Set a new event trap for an SNMP trap host.
Parameters	• The name of the SNMP trap host preceded by a forward slash (/): **/snmp_trap_agent_1** • The new event trap category: **critical**

```
$ fscli snmp_host -modify -id /snmp_trap_agent_1
-trapEvent critical
```

Related Links

snmp_host

snmp_host -list

software_update

Manages system software updates.

SYNOPSIS

`software_update { [ -add | -install | -list | -validate ] | [ -usage | -help ] }`

DESCRIPTION

Use the `software_update` command to install and to update the software and the firmware of an Oracle FS System.

Note: Some system updates and some system update options might require the system to restart.

SUBCOMMANDS

-add	Uploads and stages a software update package for the Oracle FS System.
-install	Installs components from the staged software package.
-list	Displays the software and firmware packages that are staged and installed on the Oracle FS System.
-validate	Checks the validity of the components of the staged software update package.

EXAMPLE

Task	Upload and stage a software update package to the Oracle FS System.
Parameters	• The name of the software package to upload: `OracleFS-SW-060100-018500.x86_64.rpm` • The path where the software package is located: `/home/my_packages/OracleFS-SW-060100-018500.x86_64.rpm`

```
$ fscli software_update -add -package /home/
my_packages/OracleFS-SW-060100-018500.x86_64.rpm
```

Related Links

software_update -add
software_update -install
software_update -list
software_update -validate

software_update -add

Uploads and stages a software update package for the Oracle FS System.

SYNOPSIS

```
software_update -add
   -package package-file-name

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

The software package will contain all of following components:

- Operating system
- Controller software
- Pilot software
- Drive firmware
- Enclosure firmware

Note: The version numbers may be the same as the installed package. Only administrators with primary administrator, admin1, or support roles are authorized to run the `software_update -add` command.

OPTIONS

-package

Identifies the software package to upload to the Oracle FS System.

Note: Note: If the package is in the same directory as the FSCLI binary, enter `software_update -add -package package.rpm name`. However, if the package is not in the same directory as the FSCLI binary, specify the path to the package. For example, enter `fscli software_update -add -package /mydirectory/myfiles/OracleFS-SW-060100-023499.x86_64.rpm` for UNIX or `fscli software_update -add -package C:\mydirectory\myfiles\OracleFS-SW-060100-023499.x86_64.rpm` for Windows.

EXAMPLE

Task	Upload and stage a software update package to the Oracle FS System.
Parameters	• The name of the software package to upload: `OracleFS-SW-060100-018500.x86_64.rpm` • The path where the software package is located: `/home/my_packages/OracleFS-SW-060100-018500.x86_64.rpm`

```
$ fscli software_update -add -package /home/
my_packages/OracleFS-SW-060100-018500.x86_64.rpm
```

Related Links

software_update

software_update -install

Installs components from the staged software package.

SYNOPSIS

```
software_update -install
   { -drive drive-type [,drive-type]...
   | { -component component:instruction
[,component:instruction]...
     | -all {newerVersionOnly | alwaysInstall}
     }
     [{-disruptive | -noDisruptive}]
     [-ignoreCompatibilityChecking]
     [-forceControllerShutdown
      [-discardFbm]
     ]
     [-ignoreBadSystemState]
     [-ignoreOperationPoolDraining]
     [-overridePreviousFailedUpdate]
     [-ignoreExistingAlerts]
   }
   [-suppressWarnings]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

For an update operation to succeed smoothly, the following conditions must not exist during the update operation:

- Conflicts with the compatibility matrix
- Non-optimal system state

- Incomplete internal tasks
- Previously failed update operations
- Unresolved system alerts

By default, if any combination of the above conditions exists, the update operation fails. To override this default action, you can explicitly request to be prompted when one or more of these conditions are encountered. When prompted, you can choose whether to terminate the update operation or to proceed with the update operation.

If you use any of the override options in the `software_update -install` command and the corresponding condition is encountered during the update operation, the system displays the following prompt (unless the -suppressWarnings option is included in the command):

```
Warning: Contact the Support Center before proceeding!
Proceeding without their assistance could risk data loss.
Continue?
```

An affirmative response of **y** (or any value beginning with **y**, such as **yes**) instructs the system to proceed with the software update.

CAUTION: Responding affirmatively could result in data loss.

Note: Administrators with primary administrator, admin1, or support roles are authorized to run the `software_update -install` command. However, because data loss might well occur, only support roles are authorized to use the -suppressWarnings option.

OPTIONS

-all

Processes all of the staged modules except drive firmware in one operation. The selected operand applies to each staged module as it is processed. Choose from the following valid operands:

newerVersionOnly	Processes the staged software module only when it is newer than the existing module.
alwaysInstall	Processes the staged software module regardless of the version of the existing module. Only use this option if you have been instructed by the release notes, a My Oracle Support Knowledge article, or Oracle Customer Support.

-component

Specifies a comma-separated list that indicates the component version to install and the installation instruction for that component. Separate the *component* operand and the *instruction* operand with a colon (:).

- Express the *component* operand by one of the following methods:

As a regular expression	`[0-9]{4}-[0-9]{5}-[0-9]{6}-[0-9]{6}`
As a string	Valid components: • pilotSoftware • pilotOS • controllerSoftware • controllerOS • enclosureFirmware2U • enclosureFirmware4U **Note:** To get a list of components that are available for processing, run the **`software_update -list -staged`** command.

- Express the *instruction* operand by including one of the following values:

exclude	Prevents the software component from being installed.
newerVersionOnly	Installs the software component only if the staged component is more recent than the installed version.
alwaysInstall	Installs the software component regardless of its version.

-discardFbm

Clears the flash-backed memory in the Controllers.

To use the -discardFbm option, you must also specify the -forceControllerShutdown option.

	Note: Only use this option if you have been instructed by the release notes, a My Oracle Support Knowledge article, or Oracle Customer Support.
-disruptive	Takes all of the data paths offline and temporarily places the Oracle FS System in an inactive state.
-drive	Specifies the types of staged drive firmware to install. To get a list of the types of installed drive firmware, use the `-list` subcommand.
-forceControllerShutdown	Disregards all exceptions and stops all software modules that are running on the Controllers. **Note:** Using this option causes a disruptive update.
-ignoreBadSystemState	Instructs the software update process to proceed when hardware issues exist. If a hardware issue is encountered during the update operation, you are prompted to confirm that you want the system to ignore the condition. To ignore the condition and to proceed with the update, enter **y**. Both Pilots need to be online. If both Pilots are not online, the update fails. Any hardware that is not online at the time of the installation is not upgraded until it is back online.
-ignoreCompatibilityChecking	Instructs the software update process to proceed when a conflict with the settings in the compatibility matrix occurs. If a conflict is encountered during the update operation, you are prompted to confirm that you want the system to ignore the condition. To ignore the condition and to proceed with the update, enter **y**.
-ignoreExistingAlerts	Instructs the software update process to ignore any existing system alerts and to continue the update. If unresolved system alerts are encountered during the update operation, you are prompted to confirm that you want the system to ignore the condition. To ignore the condition and to proceed with the update, enter **y**.
-ignoreOperationPoolDraining	Instructs the software update process to proceed after waiting for a preset time period for internal tasks to complete, regardless of whether those tasks have completed within that period.

	If internal tasks cannot be completed in time during the update operation, you are prompted to confirm that you want the system to ignore the condition. To ignore the condition and to proceed with the update, enter **y**.
-noDisruptive	Performs the software update with the data paths and the Oracle FS System remaining active. User applications can continue accessing the storage arrays without interruption. **Note:** Only use this option if you have been instructed by the release notes, a My Oracle Support Knowledge article, or Oracle Customer Support.
-overridePreviousFailedUpdate	Instructs the software update process to ignore any failures from a previous update attempt and to continue the update. If a previous update failure is encountered during the update operation, you are prompted to confirm that you want the system to ignore the condition. To ignore the condition and to proceed with the update, enter **y**.
-suppressWarnings	Instructs the system not to display any confirmation prompts when non-optimum conditions are encountered and, instead, to continue the software update operation. **Note:** Only administrators with support roles are authorized to use the -suppressWarnings option.

EXAMPLE

Task	Install only newer components from the staged software package to the Oracle FS System.
Parameters	• None

```
$ fscli software_update -install -all
newerVersionOnly -noDisruptive
```

Related Links

software_update

software_update -list

software_update -list

Displays the software and firmware packages that are staged and installed on the Oracle FS System.

SYNOPSIS

```
software_update -list
   [-details]
   [{-staged | -installed}]
   [-upgradePath]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

The -`list` subcommand displays the software and firmware packages that are staged and installed on the Oracle FS System.

If neither the -staged option nor the -installed option is included, the system displays information for both types of software packages.

Note: Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run the `software_update -list` command.

OPTIONS

-details	Provides no additional information. This option is included for consistency across all subcommands.
-installed	Displays the information about the software update package that is installed. The displayed information includes the upgrade paths.
-staged	Displays the information about the software update package that has been uploaded to the Oracle FS System but has not yet been installed. The displayed information includes the upgrade paths.
-upgradePath	Display the upgrade paths for only the selected type of software package. If neither the -staged option nor the -installed option is used, the upgrade paths for both options are displayed.

EXAMPLE

Task	Displays the software and firmware packages that are staged and installed on the Oracle FS System.
Parameters	• None

```
$ fscli software_update -list
```

Related Links

software_update

software_update -validate

Checks the validity of the components of the staged software update package.

SYNOPSIS

```
software_update -validate
   { -component component:instruction [,component:instruction]...
   | -all {newerVersionOnly | alwaysInstall}
   }
   [{-disruptive | -noDisruptive}]
   [-ignoreCompatibilityChecking]
   [-forceControllerShutdown]
   [-ignoreBadSystemState]
   [-ignoreOperationPoolDraining]
   [-overridePreviousFailedUpdate]
   [-ignoreExistingAlerts]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

The validation process confirms that the specified staged software on the Oracle FS System can be installed successfully. The response from this command contains the validation results.

Note: Only administrators with primary administrator, admin1, or support roles are authorized to run the `software_update -validate` command.

OPTIONS

-all

Processes all of the staged modules except drive firmware in one operation. The selected operand applies to each staged module as it is processed. Choose from the following valid operands:

newerVersionOnly	Processes the staged software module only when it is newer than the existing module.
alwaysInstall	Processes the staged software module regardless of the version of the existing module. Only use this option if you have been instructed by the release notes, a My

Oracle Support Knowledge article, or Oracle Customer Support.

-component

Validates the requested components of the software update package that have been staged on the Oracle FS System. The validation process confirms that the specified staged software can be installed successfully on the system.

Separate the *component* operand and the *instruction* operand with a colon (:).

- Express the *component* operand by one of the following methods:

As a regular expression	`[0-9]{4}-[0-9]{5}-[0-9]{6}-[0-9]{6}`
As a string	Valid components: • pilotSoftware • pilotOS • controllerSoftware • controllerOS • enclosureFirmware2U • enclosureFirmware4U **Note:** To get a list of components that are available for processing, run the **`software_update -list -staged`** command.

- Express the *instruction* operand by including one of the following values:

exclude	Prevents the software component from being installed.
newerVersionOnly	Installs the software component only if the staged component is more recent than the installed version.
alwaysInstall	Installs the software component regardless of its version.

-disruptive	Takes all of the data paths offline and temporarily places the Oracle FS System in an inactive state.
-forceControllerShutdown	Disregards all exceptions and stops all software modules that are running on the Controllers. **Note:** Using this option causes a disruptive update.
-ignoreBadSystemState	Instructs the software update process to proceed when hardware issues exist.
-ignoreCompatibilityChecking	Instructs the software update process to proceed when a conflict with the settings in the compatibility matrix occurs.
-ignoreExistingAlerts	Instructs the software update process to ignore any existing system alerts and to continue the update.
-ignoreOperationPoolDraining	Instructs the software update process to proceed after waiting for a preset time period for internal tasks to complete, regardless of whether those tasks have completed within that period.
-noDisruptive	Performs the software update with the data paths and the Oracle FS System remaining active. User applications can continue accessing the storage arrays without interruption.
-overridePreviousFailedUpdate	Instructs the software update process to ignore any failures from a previous update attempt and to continue the update.

EXAMPLE

Task	Check the validity of the components of the staged software update package.
Parameters	• None

```
$ fscli software_update -validate -all
newerVersionOnly
```

Related Links

software_update

statistics

Displays performance statistics from an Oracle FS System

SYNOPSIS

`statistics {[-list | -delete] | [-usage | -help]}`

DESCRIPTION

Oracle FS System performance statistics from an Oracle FS System. The performance data can be real-time data which is updated every second or data that was collected in the last two minutes. When you request real-time data, a subscription is created and the real-time data is collected until you delete the subscription.

SUBCOMMANDS

-list	Displays data collected in the last two minutes for objects such as LUNs unless the -RealTime option is specified.
-delete	Deletes a real-time performance statistics subscription. You might delete a real-time performance statistics subscription if you believe there are too many subscriptions running or the data is no longer needed for analysis.

EXAMPLE

Task	Display real time CPU statistics for the specified Controller on the Oracle FS System. **Note:** To subscribe to real time statistics and then list or delete them, the -realtime option needs to be performed first.
Parameters	• The FQN of the Controller: `/CONTROLLER-01` • The FQN of the LUN: `/FCLUN01`

```
$ fscli statistics -list -realtime -
cpuCores /CONTROLLER-01
$ fscli statistics -list -realtime -lun /FCLUN0
$ fscli statistics -list -realTimeSubscriptions
```

Related Links

statistics -list

statistics -delete

statistics -list

Displays data collected in the last two minutes for objects such as LUNs unless the -RealTime option is specified.

SYNOPSIS

```
statistics -list
   [-details]
   { -realTime [duration-in-seconds]
     [-poll polling-interval-in-seconds
       [-duration duration-in-seconds]
     ]
     [-cifs          fileserver-id-or-fqn]
     [-cpuCores       controller-id-or-fqn]
     [-driveGroup    drive-group-id-or-fqn]
     [-ethernetPort    controller-port]
     [-fcPort          controller-port]
     [-filesystem    filesystem-id-or-fqn]
     [-iscsiPort       controller-port]
     [-lun             lun-id-or-fqn]
     [-nfs             fileserver-id-or-fqn]
   |
     [-realTimeSubscriptions [subscription-id-or-fqn
                        [, subscription-id-or-fqn]...] ]
|
  [-cifs [fileserver-id-or-fqn [, fileserver-id-or-fqn]...] ]
  [-cpuCores [controller-id-or-fqn [, controller-id-or-fqn]...] ]
  [-driveGroup [drive-group-id-or-fqn [, drive-group-id-or-fqn]...] ]
  [-ethernetPort [controller-port [,controller-port]...] ]
  [-fcPort [controller-port [,controller-port]...] ]
  [-filesystem [filesystem-id-or-fqn [,filesystem -id-or-fqn]...] ]
  [-iscsiPort [controller-port [,controller-port]...] ]
  [-lun [lun-or-clone-id-or-fqn [,lun-or-clone-id-or-fqn]...] ]
  [-nfs [fileserver-id-or-fqn [, fileserver-id-or-fqn]...] ]
}

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Displays performance statistics from an Oracle FS System when an option is added such as -lun. If you do not specify the -realTime, then data for the last two minutes is displayed. For example, if you enter `statistics -list -lun`, the last two minutes of data collected is displayed for all LUNs. If you specify the -realTime option with a specific LUN, then the last second of data collected is displayed.

Note: Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run the `statistics -list` command.

OPTIONS

-cifs	Returns CIFS statistics for the specified file server.
-cpuCores	Returns statistics for the CPU of the specified Controller.

-details	Provides no additional information. This option is included for consistency across all subcommands.
-driveGroup	Returns performance statistics for the specified drive group.
-duration	Specifies number of seconds that the console displays data for the specified statistics. To discontinue displaying statistics, enter Ctrl-C. This option requires that you also specify the -poll option.
-ethernetPort	Returns performance statistics for the specified Ethernet port on a Controller.
-fcPort	Returns performance statistics for the specified Fibre Channel port on a Controller.
-filesystem	Returns performance statistics for the specified filesystem.
-iscsiPort	Returns performance statistics for the specified iSCSI port on a Controller.
-lun	Returns performance statistics for the specified LUN.
-nfs	Returns performance NFS statistics for the specified file server.
-poll	Specifies the time interval in seconds between real time statistic displays.
-realTime	Creates real-time subscriptions for any statistic type specified with the option. Used with -poll and -duration options to determine how often and how long the statistical data is generated and displayed.
-realTimeSubscriptions	Displays any real-time statistics subscriptions.

EXAMPLE

Task	Display real time CPU statistics for the specified Controller on the Oracle FS System. **Note:** To subscribe to real time statistics and then list or delete them, the -realtime option needs to be performed first.
Parameters	• The FQN of the Controller: `/CONTROLLER-01` • The FQN of the LUN: `/FCLUN01`

```
$ fscli statistics -list -realtime -
cpuCores /CONTROLLER-01
$ fscli statistics -list -realtime -lun /FCLUN0
$ fscli statistics -list -realTimeSubscriptions
```

Related Links

statistics

statistics -delete

Deletes a real-time performance statistics subscription. You might delete a real-time performance statistics subscription if you believe there are too many subscriptions running or the data is no longer needed for analysis.

SYNOPSIS

```
statistics -delete
   -realTimeSubscriptions [subscription-id-or-fqn
                          [, subscription-id-or-fqn]...]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Specifies the real-time performance statistics subscription to delete. If a specific real-time performance statistic subscription is not specified, then all real-time performance statistics subscriptions are deleted. A maximum of 20 active subscriptions may be on the system at once. If 20 active subscriptions are being used on the system, and you want to start a new one, you must first delete at least one active subscription.

Note: The Oracle FS System deletes unused subscriptions automatically after five minutes.

Note: Only administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run the `statistics -delete` command.

OPTIONS

`-realTimeSubscriptions`	Deletes real-time statistics subscriptions. You can delete a specific real-time statistic subscription or all real-time statistics subscriptions.

EXAMPLE

Task	Delete a real-time performance statistics subscription.

Parameters	• The name of the real-time statistic subscription: 413939303037395AA15B80D1336EA629

```
$ fscli statistics -delete -realTimeSubscriptions
413939303037395AA15B80D1336EA629
```

Related Links

statistics

storage_allocation

Returns allocation details for an Oracle FS System.

SYNOPSIS

```
storage_allocation {[-list]|[-usage|-help]}
```

DESCRIPTION

The `storage_allocation` command can target a logical volume, a Drive Enclosure, or a Storage Domain. If no storage object is specified, the command targets the configuration database for the entire system.

SUBCOMMANDS

-list	Displays information about a storage object or the system metadata.

EXAMPLE

Task	Display information about a storage object or the system metadata.
Parameters	• None

```
$ fscli storage_allocation -list
```

Related Links

storage_allocation -list

storage_allocation -list

Displays information about a storage object or the system metadata.

SYNOPSIS

```
storage_allocation -list
   [-details]
   [-saveConfigFile saved-file-name]
   [{ -lun
      {-name lun-or-clone-name | -id lun-or-clone-id}
```

```
     | -filesystem
       {-name filesystem-or-clone-name | -id filesystem-or-clone-id}
     | -storageDomain
       [{-name storage-domain-name | -id storage-domain-id}]
     | -enclosure
       [{-name enclosure-name | -wwn enclosure-wwn }]
     }]
    [{-csv [csv-file-name]
     | -xml [xml-file-name]
     }]

    [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
    [{-outputformat | -o} { text | xml }]
    [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

The `storage_allocation -list` command summarizes the QoS properties of a logical volume, a Storage Domain, or a Drive Enclosure. Alternatively, this command returns the information that comprises the system configuration database. For both usages, you can store the query results in a local file.

Note: Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run the `storage_allocation -list` command.

OPTIONS

`-csv` Directs the output into the specified file as comma-separated values. If a file is not specified, the output is directed to `stdout`.

The -csv option is valid only for LUN output. This option is not valid when selecting output for filesystems, Storage Domains, or Drive Enclosures.

`-details` Provides no additional information. This option is included for consistency across all subcommands.

`-enclosure` Specifies an enclosure in the Oracle FS System.

Note: You specify an enclosure using either the -name or the -wwn option. You do not use the fully qualified name (FQN) or unique identifier (ID).

`-filesystem` Identifies a filesystem in the Oracle FS System.

`-id` Specifies the unique identifier (ID) of the storage object (a LUN, a filesystem, or a Storage Domain) for which information is displayed.

lun or **filesystem**	The QoS properties of the specified volume are returned.
storageDomain	If a particular Storage Domain is not specified, returns a summary of all Storage

		Domains. If a particular Storage Domain is specified, returns a summary of the QoS properties of the specified Storage Domain.
-lun	Requests that a summary of the QoS properties be displayed for the specified LUN or Clone LUN.	
-name	Identifies the name of the storage object (a LUN, a filesystem, a Storage Domain, or a Drive Enclosure) for which information is displayed. Use double quotation marks around names containing dashes.	
	lun or **filesystem**	The QoS properties of the specified volume are returned. If a particular LUN or Filesystem is not specified, returns a summary of all LUNs or Filesystems.
	storageDomain	If a particular Storage Domain is not specified, returns a summary of all Storage Domains. If a particular Storage Domain is specified, returns a summary of the QoS properties of the specified Storage Domain.
	enclosure	If a particular Drive Enclosure is not specified, returns a list of all of the logical volumes and all of the clone repositories for all Drive Enclosures. If a particular Drive Enclosure is specified, returns the logical volumes and the clone repositories for the specified Drive Enclosure.
-saveConfigFile	Preserves the system configuration database that was downloaded from the Oracle FS System. The information is saved as a file at the location that is specified by *saved-file-name*. If the -saveConfigFile option is omitted, the file is deleted when the command completes.	
-storageDomain	Specifies the fully qualified name (FQN) or the unique identifier (ID) of the Storage Domain with which one or more drive groups are associated.	

-wwn	Specifies the World Wide Name (WWN) of the Drive Enclosure for which information is displayed. If a particular Drive Enclosure is not specified, returns a list of all of the logical volumes and all of the clone repositories for all Drive Enclosures. If a particular Drive Enclosure is specified, returns the logical volumes and the clone repositories for the specified Drive Enclosure.
-xml	Directs the output into the specified file as an XML document. If a file is not specified, the output is directed to `stdout`. If neither -csv or -xml is specified, the default output format is XML.

EXAMPLE

Task	Display information about a storage object or the system metadata.
Parameters	• None

```
$ fscli storage_allocation -list
```

Related Links

storage_allocation

storage_domain

Manages the Storage Domains that exist in the Oracle FS System.

SYNOPSIS

`storage_domain` { [-`add` | -`list` | -`modify` | -`delete` | -`excludeDriveGroup` | -`includeDriveGroup` | -`modifyExcludeDriveGroup` | -`cancelExcludeDriveGroup` | -`compact` | -`verifyAutoTier`] | [-`usage` | -`help`] }

DESCRIPTION

A Storage Domain is a virtual storage pool that consists of an assortment of drive groups. By running the `storage_domain` command, you can manage those virtual storage pools, including the following:

- Create, modify, perform maintenance on (defragment), or delete a Storage Domain.
- Display the properties of an existing Storage Domain.
- Move drive groups into or out of a Storage Domain.

- Change the QoS Plus properties of a Storage Domain.
- Check the consistency of any QoS Plus storage tiers that exist within the Storage Domain.

SUBCOMMANDS

-add	Creates a Storage Domain.
-cancelExcludeDriveGroup	Terminates a task that is removing one or more drive groups from a specified Storage Domain.
-compact	Defragments the storage tiers that contain auto-tiered LUNs.
-delete	Removes Storage Domains from the Oracle FS System.
-excludeDriveGroup	Removes the specified drive groups from the containing Storage Domains.
-includeDriveGroup	Adds drive groups to a specified Storage Domain.
-list	Displays the existing Storage Domains.
-modify	Changes the properties of a Storage Domain.
-modifyExcludeDriveGroup	Changes the priority of the task that is removing a drive group from the Storage Domain.
-verifyAutoTier	Performs a consistency check of any QoS Plus storage tiers in a Storage Domain.

EXAMPLE

Task	Create a Storage Domain on the Oracle FS System.
Parameters	• The name of the Storage Domain: `domain_1`

```
$ fscli storage_domain -add -name domain_1
```

Related Links

storage_domain -add
storage_domain -cancelExcludeDriveGroup
storage_domain -compact
storage_domain -delete
storage_domain -excludeDriveGroup
storage_domain -includeDriveGroup
storage_domain -list
storage_domain -modify
storage_domain -modifyExcludeDriveGroup
storage_domain -verifyAutoTier

storage_domain -add

Creates a Storage Domain.

SYNOPSIS

```
storage_domain -add
   -name storage-domain-name
   [{-enableTierReallocation | -disableTierReallocation}]
   [{-enableTierReallocationStatistics |
-disableTierReallocationStatistics}]
   [{-enableAutomaticQosRebalancing |
-disableAutomaticQosRebalancing }]
   [-priority {default | maximumSpeed | minimumImpact}]
   [-performanceScanCycles scan-delay-in-hours]
   [-nHourScanCycles multiplier-for-scans-to-retain]
   [-autoTierMaximumCapacities
      {capDisk | perfDisk | perfSsd | capSsd}:capacity_percentage
         [, {capDisk | perfDisk | perfSsd |
capSsd}:capacity_percentage]...
   ]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

When creating a Storage Domain, you can set various properties of the Storage Domain to accommodate the special needs of a collection of LUNs and of the applications that use those LUNs. The properties that can be specialized for a Storage Domain include the following:

- The priority under which a background process runs
- The frequency of the scans that the system performs to determine whether data progression for any auto-tiered LUNs needs to occur
- For each Storage Class, the percentage of the drive capacity that can be used for the auto-tiered LUNs

Note: Administrators with primary administrator or admin1 roles are authorized to run the `storage_domain -add` command.

OPTIONS

`-autoTierMaximumCapacities`

Identifies, for each Storage Class in the Storage Domain, the maximum percentage of capacity that can be used for the QoS Plus storage tiers. The argument for `-autoTierMaximumCapacities` consists of one or more pairings of a Storage Class and the maximum percentage of its capacity that can be used for auto-tiered LUNs. For each pairing, the Storage Class and the corresponding percentage must be separated by a colon (:). Valid media types (sorted from the highest performance priority to the lowest performance priority):

perfSsd	Specifies that the data is stored on solid state drives (SSDs) that are optimized for the performance of balanced read and write operations.
capSsd	Specifies that the data is stored on SSDs that are optimized for the performance of capacity and for read operations. The write performance for this Storage Class is sacrificed somewhat to achieve the optimizations for read performance and for capacity.
perfDisk	Specifies that the data is stored on high-speed hard disk drives (HDDs). This Storage Class sacrifices some capacity to reduce the access time and the latency of the read operations and of the write operations.
capDisk	Specifies that the data is stored on high-capacity, rotating HDDs. This Storage Class optimizes capacity at some sacrifice of speed. For a storage system that does not include tape storage as an option, this Storage Class always provides the lowest cost for each GB of capacity.

-disableTierReallocation Turns off dynamic data progression for the LUN. The Oracle FS System does not migrate the LUN data to other Storage Classes.

The -`disableTierReallocation` option, when it is used on a Storage Domain, overrides the tier reallocation setting of individual LUNs.

-disableTierReallocationStatistics Specifies that the usage patterns of all of the LUNs in the Storage Domain are not collected. Disabling the collection of statistics prevents any data progression to occur that is based on LUN usage patterns. Re-enabling statistics collection resumes the collection of usage pattern statistics to determine when data progression is needed.

-enableTierReallocation Turns on dynamic data migration for the LUN. The Oracle FS System migrates the LUN data to the appropriate Storage Class based on the usage patterns of the data. By default, tier reallocation is enabled.

The -`enableTierReallocation` option, when it is used on a Storage Domain, does not override the tier

reallocation settings of individual LUNs that eventually reside in this Storage Domain.

-enableTierReallocationStatistics Specifies that the usage patterns for all of the LUNs in the Storage Domain are analyzed and used to determine the optimum Storage Classes for placing the LUN data.

-name Specifies the name of the Oracle FS System Storage Domain that you are defining on the Oracle FS System. The name that you provide is used to create the fully qualified name (FQN) after the Oracle FS System creates the Storage Domain. Use double quotation marks around names containing spaces or dashes to ensure that the Oracle FS CLI software that is running on the Pilot includes the spaces or dashes in the name; otherwise, the software generates a parsing error.

-nHourScanCycles Indicates the number of performance scan cycles that the Oracle FS System runs before the system runs a cost optimizing scan. A cost optimizing scan attempts to move the data that is less frequently accessed to the lower cost storage. For -`nHourScanCycles`, enter an integer that has a value in the range of 2 to 31.

-performanceScanCycles Specifies the delay in hours between the times that the Oracle FS System scans the auto-tiered storage structure to determine whether auto-tiered LUNs need to have data moved to a higher performance Storage Class. Valid values: 1 to 168. Default value: 24.

This value is set for the specified Storage Domain only; the value does not change the scan delay for any other Storage Domains.

-priority Specifies the priority of the background processes when compacting or integrity checking the tiered storage:

default	Balances the impact and the speed based on the data access activity.
maximumSpeed	Increases the priority of the background operations.
minimumImpact	Allows the background processes to run when the processes do not significantly impact I/O.

EXAMPLE

Task	Create a Storage Domain on the Oracle FS System.
Parameters	• The name of the Storage Domain: `domain_1`

```
$ fscli storage_domain -add -name domain_1
```

Related Links

storage_domain

storage_domain -cancelExcludeDriveGroup

Terminates a task that is removing one or more drive groups from a specified Storage Domain.

SYNOPSIS

```
storage_domain -cancelExcludeDriveGroup
   -storageDomain storage-domain-id-or-fqn

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

After you request that the Oracle FS System remove one or more drive groups from the Storage Domain, you can terminate the background task that is performing the removals. When the request to terminate the background task for the specified Storage Domain is run, the following actions occur:

- If the migration of the data in a drive group has not yet started, the data remains on the current drive group.
- If the data in a drive group has been successfully migrated to another location, the data remains at its new location.
- If the data in a drive group is currently being migrated to another location, the migration completes and the data remains at its new location.
- All of the specified drive groups remain in the Storage Domain, even though some or all of the data might have been moved to a new location.

Note: The first scenario might result in the drive group containing no data after the -cancelExcludeDriveGroup request completes. However, in the above scenarios, all of the drive groups remain assigned to the Storage Domain.

Note: Administrators with primary administrator or admin1 roles are authorized to run the `storage_domain -cancelExcludeDriveGroup` command.

OPTIONS

-storageDomain	Specifies the fully qualified name (FQN) or the unique identifier (ID) of the Storage Domain from which drive groups are being excluded.

EXAMPLE

Task	Terminate a task that is removing a drive group from a specified Storage Domain.
Parameters	• The FQN of the Storage Domain: `/domain_1`

```
$ fscli storage_domain -cancelExcludeDriveGroup
-storageDomain /domain_1
```

Related Links

storage_domain

storage_domain -compact

Defragments the storage tiers that contain auto-tiered LUNs.

SYNOPSIS

```
storage_domain -compact
   -storageDomain storage-domain-id-or-fqn
   {-start | -cancel}

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

The system suspends any data progression that might be in progress before starting the defragmentation process. As defragmentation proceeds, the system processes the storage being used by the auto-tiered LUNs and frees up and initializes as much capacity as it can from that storage.

During this process, the system might move data from one storage tier to another storage tier. For example, this action can occur when the Storage Domain is nearing capacity and data needs to be moved off of the RAID 10 storage tiers.

Note: Administrators with primary administrator or admin1 roles are authorized to run the `storage_domain -compact` command.

OPTIONS

-cancel	Terminates the user-initiated defragmentation process that is in progress for the specified Storage Domain.
-start	Begins the process of defragmenting the Storage Domain.
-storageDomain	Specifies the fully qualified name (FQN) or the unique identifier (ID) of the Storage Domain to be defragmented.

EXAMPLE

Task	Defragment the storage tiers that contain auto-tiered LUNs for a Storage Domain.
Parameters	• The FQN of the Storage Domain: `/domain_1` • The command to begin the process: `-start`

```
$fscli storage_domain -compact
-storageDomain /domain_1 -start
```

Related Links

storage_domain

storage_domain -delete

Removes Storage Domains from the Oracle FS System.

SYNOPSIS

```
storage_domain -delete
   -storageDomain storage-domain-id-or-fqn
[,storage-domain-id-or-fqn]...

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

You can remove a Storage Domain only when the Storage Domain has no drive groups assigned to it.

Note: Administrators with primary administrator or admin1 roles are authorized to run the `storage_domain -delete` command.

OPTIONS

-storageDomain	Specifies the fully qualified name (FQN) or the unique identifier (ID) of the Storage Domain that is to be removed from the Oracle FS System.

EXAMPLE

Task	Remove a Storage Domain from theOracle FS System.
Parameters	• The FQN of the Storage Domain: `/domain_1`

```
$ fscli storage_domain -delete
-storageDomain /domain_1
```

Related Links

storage_domain

storage_domain -excludeDriveGroup

Removes the specified drive groups from the containing Storage Domains.

SYNOPSIS

```
storage_domain -excludeDriveGroup
   -driveGroup driveGroup-id-or-fqn [,driveGroup-id-or-fqn]...
   [-priority {default | maximumSpeed | minimumImpact}]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

When drive groups are removed from a Storage Domain, the system migrates the data that currently exists on the drive groups to other drive groups of the same Storage Class. If no other drive groups of the same Storage Class exist in the Storage Domain, the request fails. To resolve, modify the Storage Class of the volume, which causes the system to migrate the data from the drive group. Then, submit the request again to exclude the drive group.

To minimize the amount of data migration, select all of the drive groups that you want to remove and remove them in a single operation.

CAUTION: After submitting an exclusion request, do not remove any drives from the drive groups that you identified in the request. Removing a drive prematurely can result in data loss.

After a drive group is removed from a Storage Domain, the drive group has the status of Unassigned. The drive group can then be assigned to another Storage Domain or deleted from the system.

Note: The Oracle FS System generates a system alert for each drive group that is successfully removed.

Note: Administrators with primary administrator or admin1 roles are authorized to run the `storage_domain -excludeDriveGroup` command.

OPTIONS

-driveGroup	Specifies the fully qualified name (FQN) or the unique identifier (ID) of the drive group to be removed from the Storage Domain. If multiple drive groups are to be removed, specify a comma-separated list of drive groups.
-priority	Specifies the priority of the background processes:

default	Balances the impact and the speed based on the data access activity.
maximumSpeed	Increases the priority of the background operations.
minimumImpact	Allows the background processes to run when the processes do not significantly impact I/O.

EXAMPLE

Task	Remove the specified drive groups from the containing Storage Domains.
Parameters	• The FQN of the drive group: `/DRIVE_GROUP-000`

```
$ fscli storage_domain -excludeDriveGroup
-driveGroup /DRIVE_GROUP-000
```

Related Links

storage_domain

storage_domain -includeDriveGroup

Adds drive groups to a specified Storage Domain.

SYNOPSIS

```
storage_domain -includeDriveGroup
   -driveGroup driveGroup-id-or-fqn [,driveGroup-id-or-fqn]...
   -storageDomain storage-domain-id-or-fqn
   [{-rebalanceVolumes | -noRebalanceVolumes}]
```

```
   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

When drive groups are added to a Storage Domain, the system by default does not migrate any data from the existing drive groups to the new drive group. If, however, you include the -rebalanceVolumes option, the system might migrate some of the data that exists on other drive groups to the new drive groups to enhance system performance. To minimize the amount of data migration, select all of the drive groups that you want to add and add them in a single operation.

Note: Administrators with primary administrator or admin1 roles are authorized to run the `storage_domain -includeDriveGroup` command.

OPTIONS

`-driveGroup`	Specifies the fully qualified name (FQN) or the unique identifier (ID) of the drive group to be added to the Storage Domain. If multiple drive groups are to be added, specify a comma-separated list of drive groups.
`-noRebalanceVolumes`	Specifies that the existing logical volumes are not rebalanced after one or more drive groups are added to a Storage Domain. This action is the default.
`-rebalanceVolumes`	Rebalances the existing volumes that reside on all of the drive groups in the Storage Domain after adding one or more drive groups to the Storage Domain. If the -includeDriveGroup option is not selected, the default action is not to rebalance the volumes.
`-storageDomain`	Specifies the fully qualified name (FQN) or the unique identifier (ID) of the Storage Domain to which the drive groups are to be added.

EXAMPLE

Task	Add a specified drive group to a specified Storage Domain.
Parameters	• The FQN of the Storage Domain: `/domain_1` • The FQN of the drive group: `/DRIVE_GROUP-000`

```
$ fscli storage_domain -includeDriveGroup
-storageDomain /domain_1 -driveGroup /DRIVE_GROUP-000
```

Related Links

storage_domain

storage_domain -list

Displays the existing Storage Domains.

SYNOPSIS

```
storage_domain -list
   [-details]
   [-storageDomain storage-domain-id-or-fqn
[,storage-domain-id-or-fqn]... ]
   [-driveGroup drive-group-id]
   [-autoTier [-allocation]]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

The output from the `-list` command displays only the existing Storage Domains. Instead of retrieving information for all Storage Domains, you can name specific Storage Domains, specific drive groups, or both.

Note: The output from the `-list -details` command includes the drive groups that are assigned to the Storage Domains.

Note: Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run the `storage_domain -list` command.

OPTIONS

-allocation	For each of the Storage Domains that contain QoS Plus storage tiers, displays a breakdown of the auto-tiered capacity by Storage Class and RAID level.
-autoTier	Limits the Storage Domains that are displayed to the Storage Domains that contain QoS Plus storage tiers.
-details	Returns all of the properties of each of the specified Storage Domains, including the priority of the process that is excluding drive groups. If -details is omitted, the display includes only the fully qualified names of the Storage Domains.
-driveGroup	Specifies the fully qualified name (FQN) or the unique identifier (ID) of the drive group for which the system is to return the Storage Domain that contains that drive group. If the drive group is currently being excluded from the Storage Domain, the system also returns the status of the drive group.

-storageDomain Specifies the fully qualified name (FQN) or the unique identifier (ID) of the Storage Domain for which a list of drive groups is to be displayed. If requesting the drive groups of multiple Storage Domains, provide a comma-separated list of Storage Domains.

EXAMPLE

Task	Display a detailed list of a Storage Domain that exists on the Oracle FS System.
Parameters	• The FQN of the Storage Domain: `/domain_1`

```
$ fscli storage_domain -list -details
-storageDomain /domain_1
```

Related Links

storage_domain

storage_domain -modify

Changes the properties of a Storage Domain.

SYNOPSIS

```
storage_domain -modify
   -storageDomain storage-domain-id-or-fqn
   [-name new-storage-domain-name]
   [{-enableTierReallocation | -disableTierReallocation}]
   [{-enableTierReallocationStatistics |
-disableTierReallocationStatistics}]
   [{-enableAutomaticQosRebalancing |
-disableAutomaticQosRebalancing }]   [-
priority {default | maximumSpeed | minimumImpact}]
   [-performanceScanCycles scan-delay-in-hours]
   [-nHourScanCycles multiplier-for-scans-to-retain]
   [-autoTierMaximumCapacities
      {capDisk | perfDisk | perfSsd | capSsd}:capacity_percentage
         [, {capDisk | perfDisk | perfSsd |
capSsd}:capacity_percentage]...
   ]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

You can set various properties of the Storage Domain to accommodate the special needs of a collection of LUNs and of the applications that use those LUNs. The properties that can be specialized for a Storage Domain include the following:

- The priority under which a background process runs
- The frequency of the scans that the system performs to determine whether data progression for any auto-tiered LUNs needs to occur
- For each Storage Class, the percentage of the drive capacity that can be used for the auto-tiered LUNs

Note: Administrators with primary administrator or admin1 roles are authorized to run the `storage_domain -modify` command.

OPTIONS

`-autoTierMaximumCapacities`

Identifies, for each Storage Class in the Storage Domain, the maximum percentage of capacity that can be used for the QoS Plus storage tiers. The argument for `-autoTierMaximumCapacities` consists of one or more pairings of a Storage Class and the maximum percentage of its capacity that can be used for auto-tiered LUNs. For each pairing, the Storage Class and the corresponding percentage must be separated by a colon (:). Valid media types (sorted from the highest performance priority to the lowest performance priority):

perfSsd	Specifies that the data is stored on solid state drives (SSDs) that are optimized for the performance of balanced read and write operations.
capSsd	Specifies that the data is stored on SSDs that are optimized for the performance of capacity and for read operations. The write performance for this Storage Class is sacrificed somewhat to achieve the optimizations for read performance and for capacity.
perfDisk	Specifies that the data is stored on high-speed hard disk drives (HDDs). This Storage Class sacrifices some capacity to reduce the access time and the latency of the read operations and of the write operations.
capDisk	Specifies that the data is stored on high-capacity, rotating HDDs. This Storage Class optimizes capacity at some sacrifice of speed. For a storage system that does not include tape storage as an option, this Storage Class always provides the lowest cost for each GB of capacity.

-disableTierReallocation	Turns off dynamic data progression for the LUN. The Oracle FS System does not migrate the LUN data to other Storage Classes. The -disableTierReallocation option, when it is used on a Storage Domain, overrides the tier reallocation setting of individual LUNs.
-disableTierReallocationStatistics	Specifies that the usage patterns of all of the LUNs in the Storage Domain are not collected. Disabling the collection of statistics prevents any data progression to occur that is based on LUN usage patterns. Re-enabling statistics collection resumes the collection of usage pattern statistics to determine when data progression is needed.
-enableTierReallocation	Turns on dynamic data migration for the LUN. The Oracle FS System migrates the LUN data to the appropriate Storage Class based on the usage patterns of the data. By default, tier reallocation is enabled. The -enableTierReallocation option, when it is used on a Storage Domain, does not override the tier reallocation settings of individual LUNs that eventually reside in this Storage Domain.
-enableTierReallocationStatistics	Specifies that the usage patterns for all of the LUNs in the Storage Domain are analyzed and used to determine the optimum Storage Classes for placing the LUN data.
-name	Specifies a new name for the Storage Domain. The name that you provide is used to create a new fully qualified name (FQN) for the Storage Domain. Use double quotation marks around names containing spaces or dashes to ensure that the Oracle FS CLI software that is running on the Pilot includes the spaces or dashes in the name; otherwise, the software generates a parsing error.
-nHourScanCycles	Indicates the number of performance scan cycles that the Oracle FS System runs before the system runs a cost optimizing scan. A cost optimizing scan attempts to move the data that is less frequently accessed to the lower cost storage. For -nHourScanCycles, enter an integer that has a value in the range of 2 to 31.
-performanceScanCycles	Specifies the delay in hours between the times that the Oracle FS System scans the auto-tiered storage structure to determine whether auto-tiered LUNs need to have data moved to a higher performance

Storage Class. Valid values: 1 to 168. Default value: 24.

This value is set for the specified Storage Domain only; the value does not change the scan delay for any other Storage Domains.

-priority

Specifies the priority of the background processes when compacting or integrity checking the tiered storage:

default	Balances the impact and the speed based on the data access activity.
maximumSpeed	Increases the priority of the background operations.
minimumImpact	Allows the background processes to run when the processes do not significantly impact I/O.

-storageDomain

Specifies the fully qualified name (FQN) or the unique identifier (ID) of the Storage Domain to modify.

EXAMPLE

Task	Change the priority of a Storage Domain.
Parameters	• The FQN of the Storage Domain: `/domain_1` • The new priority of the background processes for the Storage Domain: `maximumSpeed`

```
$ fscli storage_domain -modify
-storageDomain /domain_1 -priority maximumSpeed
```

Related Links

storage_domain

storage_domain -modifyExcludeDriveGroup

Changes the priority of the task that is removing a drive group from the Storage Domain.

SYNOPSIS

```
storage_domain -modifyExcludeDriveGroup
   -storageDomain storage-domain-id-or-fqn
   -priority {default | maximumSpeed | minimumImpact}

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

You can change the amount of system resources that the Oracle FS System uses to remove drive groups from a Storage Domain. Depending on the new priority, this change can improve overall system performance or enhance the speed with which the removal is performed.

Note: Administrators with primary administrator or admin1 roles are authorized to run the `storage_domain -modifyExcludeDriveGroup` command.

OPTIONS

-priority Specifies the priority of the background processes:

default	Balances the impact and the speed based on the data access activity.
maximumSpeed	Increases the priority of the background operations.
minimumImpact	Allows the background processes to run when the processes do not significantly impact I/O.

-storageDomain Specifies the fully qualified name (FQN) or the unique identifier (ID) of the Storage Domain from which the drive groups are being excluded.

EXAMPLE

Task	Change the priority of the task that is removing a drive group from the Storage Domain.
Parameters	• The FQN of the Storage Domain: `/domain_1`

- The new priority of the background processes for the Storage Domain: `minimumImpact`

```
$ fscli storage_domain -modifyExcludeDriveGroup
-storageDomain /domain_1 -priority minimumImpact
```

Related Links

storage_domain

storage_domain -verifyAutoTier

Performs a consistency check of any QoS Plus storage tiers in a Storage Domain.

SYNOPSIS

```
storage_domain -verifyAutoTier
   -storageDomain storage-domain-id-or-fqn
   {-start | -cancel}

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

The consistency check validates the integrity of all of the QoS Plus metadata in a Storage Domain.

While the system is performing a consistency check, the system prevents any new data progression and storage tier compaction operations from starting. If any data progression or compaction operations are currently in progress, the system temporarily suspends those operations until the consistency check completes.

If the background task that is performing a consistency check is cancelled, the task is terminated. Any changes that have been completed, however, remain in place.

Note: Administrators with primary administrator or admin1 roles are authorized to run the `storage_domain -verifyAutoTier` command.

OPTIONS

-cancel	Terminates the user-initiated consistency check that is in progress for the specified Storage Domain.
-start	Begins the process.
-storageDomain	Specifies the fully qualified name (FQN) or the unique identifier (ID) of the Storage Domain.

EXAMPLE

Task	Performs a consistency check of any QoS Plus storage tiers in a Storage Domain.
Parameters	• The FQN of the Storage Domain: `/domain_1` • The command to begin the process: `-start`

```
$fscli storage_domain -verifyAutoTier
-storageDomain /domain_1 -start
```

Related Links

storage_domain

system

Displays and modifies the Oracle FS System settings and performs maintenance procedures.

SYNOPSIS

`system { [ -clearLossOfSync | -clearLostData | -list | -modify | -network | -reset | -restart | -shutdown | -useBackupPersistence] | [ -usage | -help ] }`

DESCRIPTION

When configuring or administering an Oracle FS System, use one or more variations of the **`system`** command to perform the following tasks:

- Provide a name for your Oracle FS System by using the **`system -modify -name`** command.
- Identify the owner of the Oracle FS System by using the **`system -list`** command.
- Provide additional information to identify your Oracle FS System in your data center by using the **`system -modify`** command.
- Configure the management network by using the **`system -network`** command.
- Configure an email server for password recovery, and optionally enable the email notification service by using the **`system -modify`** command.
- Set the session timeout for all login sessions by using the **`system -modify`** command.

When troubleshooting a system, use the **`system`** command to perform the following recovery and maintenance tasks:

- Restart the Oracle FS System by using the **`system -restart`** command.
- Shut down the Oracle FS System by using the **`system -shutdown`** command.
- Enable secure shell (SSH) access to the Pilot for the Oracle FS System by using the **`system -modify -enableSsh`** command.
- Remove the clones that are no longer synchronized with their parent volumes by using the **`system -clearLossOfSync`** command.
- Clear all LUN and filesystem configurations and erase all user data by using the **`system -reset`** command.

SUBCOMMANDS

`-clearLossOfSync`	Deletes all clones that have lost synchronization with their parent volumes due to insufficient space. Once a clone has lost synchronization, data integrity cannot be guaranteed. The only option is to delete the clones.
`-clearLostData`	Clears the `Lost Data` flag for all logical volumes.
`-list`	Displays system information.
`-modify`	Changes various system properties, including those that provide password recovery capability.
`-network`	Specifies the system properties that define the management network.
`-reset`	Reinitializes the configuration of the entire Oracle FS System. *All logical volumes and user data are removed.*
`-restart`	Stops the data paths, writes the data from the Controller memory to permanent storage, and then returns the Oracle FS System to its normal operational state.
`-shutdown`	Stops the data paths, writes the data from the Controller memory to permanent storage, and then places the Oracle FS System in shutdown status. The system should always be placed in shutdown state before the system is powered down. The Oracle FS System will continue to monitor system status, and will issue alerts and call homes if needed. The system will not allow data access until it is restarted.
`-useBackupPersistence`	Directs the Oracle FS System to configure persistence from the most recently completed backup copy of persistence.

EXAMPLE

Task	Manually set the IP address, gateway, and the netmask for the Oracle FS System.
Parameters	• The IP address of the Oracle FS System: 10.50.4.50 • The IP address of **pilot1**: 10.50.4.51 • The IP address of **pilot2**: 10.50.4.52 • The netmask of the Oracle FS System: 255.255.255.0 • The gateway of the Oracle FS System: 10.50.4.1 • The default duplex setting: auto • The DHCP setting: disabled

```
$ fscli system -network -ip 10.50.4.50 -pilot1ip
10.50.4.51 -pilot2ip 10.50.4.52 -netmask
255.255.255.0 -gateway 10.50.4.1 -duplex auto -
disableDhcp
```

Related Links

system -clearLossOfSync
system -clearLostData
system -list
system -modify
system -network
system -reset
system -restart
system -shutdown

system -clearLossOfSync

Deletes all clones that have lost synchronization with their parent volumes due to insufficient space. Once a clone has lost synchronization, data integrity cannot be guaranteed. The only option is to delete the clones.

SYNOPSIS

```
system -clearLossOfSync

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

The Oracle FS System utilizes a copy-on-write mechanism to maintain integrity between the source logical volumes and their clones. Synchronization can be lost when the amount of data that is stored in the clone repository has reached the maximum capacity, and the changes that are made to the clones cannot be recorded. The Oracle FS System places the clones offline to prevent access and the Oracle FS System generates a system alert. The Oracle FS System also generates the following types of warnings when the clone repository is within 80% of the maximum allocated capacity:

- Sends email notifications to the subscribers of the Call-Home service.
- Displays system alerts and highlights the warning conditions in the Oracle FS System Manager GUI.
- Sends email notifications to the subscribers of the system event notification service.
- Posts system events to the system event log.

If you receive any of the above alerts or warnings, run one of the following commands to increase the repository size:

- For SAN LUNs: **lun -modify -lun *lun-id-or-fqn* -repositoryPercentage *capacity-percentage***
- For NAS filesystems: **filesystem -modify -filesystem *filesystem-id-or-fqn* -dataTier \(-tier *tier-id-or-fqn* -repositoryPercentage *capacity-percentage*\) -metaDataTier *meta-data-tier-id-or-fqn* -metaDataRepositoryPercentage *capacity-percentage***

Note: The Oracle FS System uses thin provisioning for clones. When creating a given source volume, allocate at least 200 percent of the source capacity for the repository if you expect the clones to be frequently updated by users or applications. If you observe that the clones of a specific volume are frequently losing synchronization, it is because the rate that the data changes combined with the amount of data that is changing causes the clone repository to run out of space faster than anticipated.

If any repository has reached the maximum capacity that has been allocated for the repository, run the **system -clearLossOfSync** command to delete any corrupted clones that might exist on the Oracle FS System. The source volumes are unaffected by running this command.

Note: Only administrators with primary administrator, admin1, and admin2 roles are authorized to run the `system -clearLossOfSync` command.

EXAMPLE

Task	Remove compromised clones from the Oracle FS System.
Parameters	• None

```
$ fscli system -clearLossOfSync
```

Related Links

system

lun -modify

system -clearLostData

Clears the `Lost Data` flag for all logical volumes.

SYNOPSIS

```
system -clearLostData

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

The `Lost Data` flag, when set, indicates that conditions have occurred for which the Oracle FS System can no longer guarantee the integrity of the data and cannot guarantee that data loss has not occurred. The primary reason for a *lost data* condition is the occurrence of multiple hardware failures, multiple software failures, or both. Multiple failures can lead to the loss of data integrity guarantees. Most often, a *lost data* condition arises from hardware failures or from data loss in the flash-backed memory of a Controller.

For the volumes that are affected by the *lost data* condition, the system places the volumes offline and creates a system alert for each volume. Each volume that is affected remains offline until the *lost data* condition is cleared. If the `Lost Data` flag is set, any possible data loss has already happened. Delaying the clearing of the `Lost Data` flag does not provide any protective action.

When this condition exists, the user must perform one of the following actions to clear the `Lost Data` flag:

- Acknowledge the possibility of lost data by running the **`system -clearLostData`** command. By clearing the `Lost Data` flag, you acknowledge that data loss might have occurred and that you have taken appropriate steps to verify the integrity of the volume data.

  Important: Validate the data integrity of the volume before allowing production operations to resume on the affected volume.

- Delete the affected volumes.

Restarting the system does not clear the *lost data* condition.

Note: Only administrators with primary administrator, administrator 1, and administrator 2 roles are authorized to run the `system -clearLostData` command.

EXAMPLE

Task	Bring a LUN back online by resetting the `Lost Data` flag.
Parameters	• None

```
$ fscli system -clearLostData
```

Related Links

system

system -list

Displays system information.

SYNOPSIS

```
system -list
   [-details]
   [-storage]
   [-productDetails ]
   [-ssh]
   [-status]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Running the **system -list** command with no options displays the following information:

- The operating status and software build number of the Oracle FS System
- The operating status and software build number of each component in the Oracle FS System
- The available and used storage capacity of the Oracle FS System
- The system properties that are set by the **system -modify** command and the **system -network** command.

Running the **system -list** command with options displays the following types of information:

- Storage information
- Product details

- Secure shell status
- Network availability status
- Password settings

Note: Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run the `system -list` command.

OPTIONS

`-details`	Returns detailed configuration and state information for the specified Oracle FS System components.
`-productDetails`	Displays the following Oracle FS System product information: • Software build number • Pilot operating system version • Model number
`-ssh`	Displays the SSH status of `true` if SSH is enabled, and `false` if SSH is disabled. Additionally displays the following SSH status information if SSH is enabled and the -details option is also specified: start time — Timestamp of when SSH began normal operations. duration — Amount of time that SSH had been running without disruption. enabled — Indicates whether SSH is enabled.
`-status`	Displays the name and status of the Oracle FS System. When the Oracle FS System is starting up, this option displays the software component that is currently being initialized in the STATUS field. If a non-zero code is returned when you issue a **`system -list -status`** command, it indicates that the Oracle FS System is offline and data services are unavailable.
`-storage`	Displays a summary of used, available, and reclaimed storage on the Oracle FS System.

EXAMPLE

Task	Display the operating status of the Oracle FS System, display system information, and display network information.

Parameters	• None

```
$ fscli system -list
```

Related Links

system

system -modify

system -network

system -modify

Changes various system properties, including those that provide password recovery capability.

SYNOPSIS

```
system -modify
    [-name system-name]
    [-description oracle-fs-system-description]
    [-location system-location]
    [-contactName contact-name]
    [-contactPhone contact-phone]
    [-assetNumber asset-number]
    [-sessionTimeout timeout-in-minutes]
    [-maximumFailedLogins maximum-failed-login-attempts]
    [-messageOfTheDay message-of-the-day]
    [{-enableEmail | -disableEmail}]
    [-smtpServerIp smtp-server-ip_or_dns]
    [-smtpServerPort smtp-server-port-number]
    [-emailDomain email-domain]
    [-emailFloodInterval flood-prevention-interval-seconds]
    [-enableSsh enable-duration-in-minutes]
    [{-conservativeMode | -performanceMode}]
    [-storageClassCost {capDisk | perfDisk | perfSsd | capSsd}
         [-perIop cost-per-iop]
         [-perGigabyte cost-per-gigabyte]
         [-relativeLatency relative-latency]
    ]
    [{-enableReloadModePages | -disableReloadModePages }]

    [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
    [{-outputformat | -o} { text | xml }]
    [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

The Oracle FS System is pre-configured with default property values. To customize the Oracle FS System to accommodate the needs of your data center, run the **system -modify** command to provide meaningful values for the following categories of system properties:

- Identifying information associated with the Oracle FS System such as asset number, system name, system owner, etc.
- Properties that manage administrator accounts and manage administrator sessions
- Simple Mail Transfer Protocol (SMTP) settings

- Flag to enable secure shell (SSH) access to the Pilot
- Performance optimization settings

To define the configuration of your network, run the **system -network** command. Run the **system -list** command to display the values for the system parameters that are set by running the **system -modify** command or by running the **system -network** command.

Note: Use the **system -modify** command to specify how the SMTP server sends emails to the event service subscribers. Use the **event_notification -add** command and the **event_notification -modify** command to define the behavior of the event service and to manage its subscribers.

Note: Only administrators with primary administrator, admin1, or support roles are authorized to run the system -modify command. Only administrators with support roles are authorized to run the enableReloadModePages and disableReloadModePages options of the system -modify command.

OPTIONS

-assetNumber	Specifies a asset number that is relevant in your inventory system. If not specified, the default is Unknown.
-conservativeMode	Disables all caching and flushes existing cached data to physical storage. The system continues to serve data, but performance is diminished.
-contactName	Specifies the primary contact who is responsible for the system. This name is not necessarily associated with any user accounts. If a contact name contains spaces, enclose the entire name in quotation marks. If not provided, the default is Unknown.
-contactPhone	Specifies the phone number of the system owner. The string is not validated as a true phone number. If not provided, the default is Unknown.
-description	Specifies a string of up to 256 characters as the description of the Oracle FS System. Enclose the system descriptions that contain more than one word in quotation marks. The default description is Unknown.
-disableEmail	Disables the Oracle FS System from sending event notification emails.
-disableReloadMode Pages	Specifies that the drive mode pages should not be reloaded during the next system restart operation. If not specified, reloading drive mode pages is disabled by default.

	Note: A drive mode page contains changeable values that are stored on a drive as part of the drive firmware. Do not reload or reset drive mode pages unless you are instructed to do so by Oracle Customer Support. Reloading or resetting drive mode pages increases the time that is needed to restart or to shut down the system. **Note:** Only administrators with support roles are authorized to run the `-disableReloadModePages` option of the `system -modify` command.
`-emailDomain`	Specifies the domain name for the email that is automatically generated by the Oracle FS System for email alert notifications. Default value: `orcalefsalerts`.
`-emailFloodInterval`	Specifies the interval, in seconds, that the Oracle FS System waits before sending event notification emails to the administrator for the same event.
`-enableEmail`	Enables the Oracle FS System to send emails to one or more subscribers of the event notification service.
`-enableReloadModePages`	Requests that the drive mode pages be reloaded during the next system restart operation. **Note:** A drive mode page contains changeable values that are stored on a drive as part of the drive firmware. Do not reload or reset drive mode pages unless you are instructed to do so by Oracle Customer Support. Reloading or resetting drive mode pages increases the time that is needed to restart or to shut down the system. **Note:** Only administrators with support roles are authorized to run the , `-enableReloadModePages`, option of the `system -modify` command.
`-enableSsh`	Enables SSH access to the Oracle FS System for the specified amount of time in minutes.
`-location`	Specifies the location of the Oracle FS System. Enclose location descriptions that contain spaces in quotation marks. If not provided, the default is `Unknown`.
`-maximumFailedLogins`	Specifies the number of failed login attempts allowed before the account is disabled. The default value is five login attempts.
`-messageOfTheDay`	Specifies up to 256 characters that are displayed as the message of the day before the administrator logs into the Oracle FS System GUI or CLI. Enclose the message in quotation marks.

-name Sets the name of the Oracle FS System. Enclose the system names that contain spaces in quotation marks. Example: “Flash_Store 01”. If not set, the default name is `Default Name`.

-performanceMode Removes the conservative mode and returns the Oracle FS System to normal caching.

-perGigabyte Specifies the cost per gigabyte for the Storage Class that is identified by the -`storageClassCost` option. This cost is reflected as USD (US $) in the auto-tiering effectiveness reports that are generated by Oracle FS System Manager (GUI).

-perIop Specifies the cost per I/O for the Storage Class that is identified by the -`storageClassCost` option. For example, if a drive costs 100 USD (US $) and the rating for the drive is 100,000 I/O operations per second, you can enter **`0.001`** for -`perIop`.

Note: This cost is reflected as USD (US $) in the auto-tiering effectiveness reports that are generated by Oracle FS System Manager (GUI).

-relativeLatency Specifies a relative latency value for the Storage Class that is identified by the -`storageClassCost` option. Typically, you first assign a value of **`1`** to a selected Storage Class that can act as a reference point for all other Storage Classes. Then, you can assign a specific latency value to each of the other Storage Classes, which allows you to compare the latency of any given Storage class to the latency of any other Storage Class.

-sessionTimeout Specifies that amount of time a session can be idle before the session is automatically logged off by the Oracle FS System. The default value is 20 minutes.

Note: The sessionTimeout option sets the time out value for all sessions, including the Oracle FS System Manager GUI sessions.

-smtpServerIp Specifies the IP address or DNS name of the Simple Mail Transfer Protocol (SMTP) relay host for the Oracle FS System to use for sending out password recovery tokens and event notification emails to subscribers.

-smtpServerPort Identifies the port number of the SMTP relay host used to send emails to registered users of the event notification service.

-storageClassCost Specifies the type of physical media (the Storage Class) with which the cost information is to be

associated. The cost information is used when creating the auto-tiering effectiveness reports that are generated by Oracle FS System Manager (GUI).

EXAMPLE

Task	Enable the Oracle FS System to send event notifications by email to the subscribers of the event notification service.
Parameters	• IP address: **192.23.110.2** • SMTP server port number: **25** • Domain name server:`flash_system_events` • Flood interval: **10** seconds

```
$ fscli system -modify -enablemail -smtpServerIp
192.23.110.2 -smtpServerPort 25 -emailDomain
flash_system_events -emailFloodInterval 10
```

Related Links

system

system -list

system -network

event_notification -add

event_notification -modify

system -network

Specifies the system properties that define the management network.

SYNOPSIS

```
system -network
   [-ip ip-address]
   [-netmask netmask]
   [-gateway gateway]
   [-nameServer dns-ip1 [, dns-ip2]... ]
   [{-enableDhcp | -disableDhcp}]
   [-duplex {auto | 100f | 1000f | 10fGig}]
   [-pilot1Ip pilot1-ip-address]
   [-pilot2Ip pilot2-ip-address]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

To enable the Oracle FS System clients, such as the Oracle FS CLI and the Oracle FS System Manager GUI, access to the system over a network, perform the following actions:

- Indicate whether the Oracle FS System uses DHCP to acquire a dynamic IP address.
- If a static IP address is used instead, assign a public IP address and a subnet mask to the Oracle FS System.
- If a DNS service is used, provide the IP addresses for the DNS server and, optionally, up to two backup DNS servers.
- Assign an IP address, a subnet mask, and a gateway route to the management interface of both Pilot nodes.

CAUTION: The duplex system variable sets the speed and duplex requirements for the Oracle FS System. Do not change the default value unless you are connecting to a switch that is known to have problems with auto-negotiation. Manually setting the duplex to an incompatible speed or duplex setting could cause the Oracle FS System to become unreachable on your network.

Note: Administrators with primary administrator or admin1 roles are authorized to run the `system -network` command.

OPTIONS

`-disableDhcp`

Disables the Dynamic Host Configuration Protocol (DHCP).

`-duplex`

Sets the speed requirements and the duplex requirements for the Oracle FS System. The default value is *auto*.

Important: Do not change the default value unless you are connecting to a switch that is known to have problems with auto-negotiation. Manually setting the duplex to an incompatible speed can cause the Oracle FS System to become unreachable on your network.

Valid options:

- auto – Determined by the Oracle FS System.
- 100f – Full 100 Mbps
- 1000f – Full 1000 Mbps
- 10fGig– Full 10 Gbps

`-enableDhcp`

Specifies whether the Dynamic Host Configuration Protocol (DHCP) is enabled. The DHCP protocol can be enabled for the public management interface only.

-gateway	Assigns the IP address of the gateway network node in the subnetwork of which the Oracle FS System (the Pilot) is a member.
-ip	Identifies the public or the shared IP address that is assigned to the Pilot. This IP address is what the administrator uses to access the Oracle FS System over the management interface.
-nameServer	Identifies the IP addresses of the Domain Name Servers (DNS) that are used by the Pilot to resolve the IP addresses in an ordered comma separated list, starting with the primary server.
-netmask	Assigns a subnetwork mask for the static IP address that is permanently assigned to the Oracle FS System.
-pilot1Ip	Specifies the static IP address that is assigned to Pilot 1.
-pilot2Ip	Specifies the static IP address that is assigned to Pilot 2.

EXAMPLE

Task	Manually set the IP address, gateway, and the netmask for the Oracle FS System.
Parameters	• The IP address of the Oracle FS System: 10.50.4.50 • The IP address of **pilot1**: 10.50.4.51 • The IP address of **pilot2**: 10.50.4.52 • The netmask of the Oracle FS System: 255.255.255.0 • The gateway of the Oracle FS System: 10.50.4.1 • The default duplex setting: auto • The DHCP setting: disabled

```
$ fscli system -network -ip 10.50.4.50 -pilot1ip
10.50.4.51 -pilot2ip 10.50.4.52 -netmask
255.255.255.0 -gateway 10.50.4.1 -duplex auto -
disableDhcp
```

Related Links

system

system -modify

time -modify

system -reset

Reinitializes the configuration of the entire Oracle FS System. *All logical volumes and user data are removed.*

SYNOPSIS

```
system -reset
   {-ssn system-serial-number | -file ssn-file}

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Resetting an Oracle FS System requires a system serial number or a reset file containing the system serial number.

CAUTION: Resetting the Oracle FS System deletes all user data. Be sure to back up any data that the Oracle FS System users want to keep before you reset an Oracle FS System.

Note: Only administrators with primary administrator, admin1, or support roles are authorized to run the `system -reset` command.

OPTIONS

-file	Specifies the path to the file that contains the system serial number (SSN) of the Oracle FS System to reset. If not provided, then you must use the -ssn to specify the SSN.
-ssn	Specifies the system serial number (SSN) that the Oracle FS System uses to validate that the reset request is sent to the correct Oracle FS System.

EXAMPLE

Task	Obtain an SSN key and reset the Oracle FS System leaving the hardware configuration properties intact.
Parameters	• The file that contains the SSN key: `FS_system_info`

```
$ fscli system -reset -file FS_system_info
```

Related Links

system

system -restart

Stops the data paths, writes the data from the Controller memory to permanent storage, and then returns the Oracle FS System to its normal operational state.

SYNOPSIS

```
system -restart
   { [-overridePinnedData]
     [-overrideDisabledControllers]
     [-overrideOperationPoolDraining]
     [-overrideStateCheck]
     [-serviceType {san | nas | sanBias | nasBias}]
     [-resetModePages]
   | [-emergencyClearFbm]
   | [-emergencyPreserveFbm]
   }

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Important: Before issuing a **restart** command, halt all I/O operations to avoid the possibility that data is written to cache but not to disk (pinned data) when the Oracle FS System shuts down and restarts. Run the `system -conservativeMode` command to flush all data to storage before issuing a **restart** command.

During a system restart, the Oracle FS System stops servicing protocols and proceeds to a shutdown state where it continues to monitor system status and issues system alerts, and performs Call-Home if required. As soon as the shutdown completes successfully, the system begins a complete system startup sequence.

If the shutdown portion of the restart process fails for any reason, the system is placed in a shutdown failed status and will not restart. Data access may be available depending on the failure. If assistance is required, contact Oracle Customer Support.

Note: The `system -restart -overridePinnedData` command may be used to restart a system that has a Pinned Data condition. However, running this command discards all Pinned Data, which may result in data integrity issues for LUNs. This option should not be used without first attempting to clear the Pinned Data condition. Unless the Pinned Data is on volumes where the data can be recreated quickly and easily, do not use this option before attempting to resolve the cause. If you have Pinned Data, you should attempt to resolve the internal PI fabric or storage subsystem condition before you ever use this override option. If the resolution of the PI/Storage is successful, the system will

flush the Pinned Data to storage and remove the related Alerts. If assistance is needed, contact Oracle Customer Support.

The **`system -restart -serviceType`** command may be used to change the service type of your system. The service type is specified on your Sales Order and System Information Documents. Do not attempt to change the Service type to one that is NOT specified on your System Information Documents.

If you have a disabled Controller, run the **`system -restart -overrideDisabledController`** command to force the Oracle FS System to restart in a single Controller configuration.

Note: Only administrators with primary administrator, admin1, or support roles are authorized to run the `system -restart` command. Only administrators with support roles are authorized to run the emergencyClearFbm or emergencyPreserveFbm options of the `system -restart` command.

OPTIONS

`-emergencyClearFbm`	Indicates that the Oracle FS System will restart without attempting to recover cached data. This option discards all data in the Flash Memory on the controller. Use only if instructed to do so by an Oracle Customer Support representative. Note: Only administrators with support roles are authorized to run the emergencyClearFbm option of the `system -restart` command.
`-emergencyPreserveFbm`	Specifies that the Oracle FS System retain all data and configuration information in the Flash Memory on the controllers, but will force an immediate shutdown and restart. Use only as instructed to do so by an Oracle Customer Support representative. Note: Only administrators with support roles are authorized to run the emergencyPreserveFbm option of the `system -restart` command.
`-overrideDisabledControllers`	If there is a disabled Controller the system does not perform a normal shutdown. This option allows the system to be restarted. The status of the disabled Controller may or may not change on the resulting restart.
`-overrideOperationPoolDraining`	Restarts the Oracle FS System without completing any pending management operations.
`-overridePinnedData`	If there is pinned data, it does not stop the process of restarting the system. The pinned data that cannot be written to physical storage is discarded.

	Important: Contact Oracle Customer Support to resolve any issues with the Backend SAS Interconnect, a storage condition, or both, which might be causing the pinned data. Clearing pinned data guarantees that host data is deleted permanently.
-overrideStateCheck	Ignore the state of the system and continue with the restart operation.
-resetModePages	Requests that the mode pages be reloaded on all of the drives. If an administrator has disabled the reload mode pages flag, the system ignores the `-resetModePages` option. **Note:** A drive mode page contains changeable values that are stored on a drive as part of the drive firmware. Do not reload or reset drive mode pages unless you are instructed to do so by Oracle Customer Support. Reloading or resetting drive mode pages increases the time that is needed to restart or to shut down the system.
-serviceType	Specifies the type of protocol support the Oracle FS System provides. Valid values: *san*, *nas*, *sanBias*, or *nasBias*. The correct Service Type for your system is specified on the Sales Order and the System Customer Information Documents and should not be changed. If the installed hardware in the Controllers does not allow the changed Service Type, the system will not boot. Modify the service type only as instructed by Oracle Customer Support.

EXAMPLE

Task	Restart the Oracle FS System.
Parameters	• None.

```
$ fscli system -restart
```

Related Links

system
lun -list

system -shutdown

Stops the data paths, writes the data from the Controller memory to permanent storage, and then places the Oracle FS System in shutdown status. The system should always be placed in shutdown state before the system is powered down. The Oracle FS System will continue to monitor system status, and will issue

alerts and call homes if needed. The system will not allow data access until it is restarted.

SYNOPSIS

```
system -shutdown
   { [-overridePinnedData]
     [-overrideDisabledControllers]
     [-overrideOperationPoolDraining]
     [-overrideStateCheck]
     [-serviceType {san | nas | sanBias | nasBias}]
     [-resetModePages]
   |
     [-ip ip-address]
     [-netmask netmask]
     [-gateway gateway]
     [-nameServer dns-ip1 [, dns-ip2]... ]
     [{-enableDhcp | -disableDhcp}]
     [-duplex {auto | 100f | 1000f | 10fGig}]
     [-pilot1Ip pilot1-ip-address]
     [-pilot2Ip pilot2-ip-address]
   }

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

During a system shutdown, the Oracle FS System writes to the storage arrays any data that is stored in cache. After this operation completes, the data is said to be *flushed*. Any data that was not written to the storage arrays is said to be *pinned*. The default behavior is for the Oracle FS System to cancel the **system -shutdown** command with an error when the Oracle FS System discovers any pinned data.

To identify the reason why data was not written to disk, inspect the output of the **lun -list -details -bs -volumeGroup *volume group id*** command in SAN environments, or the **filesystem -list -details -filesystem *filesystem-id-or-fqn* -includeDataTiers -bs** command in a NAS environment.

After addressing the cause of any detected pinned data, run the **system -shutdown** command. To restart without attempting to write any remaining pinned data to disk, run the **system -shutdown -overridePinnedData** command.

Note: Only administrators with primary administrator, or support roles are authorized to run the `system -shutdown` command. Only administrators with support roles are authorized to use the following options of the `system -shutdown` command:

- `-ip`
- `-netmask`
- `-gateway`

- -nameServer
- -enableDhcp
- -duplex
- -pilot1Ip
- -pilot2Ip

OPTIONS

-disableDhcp Disables the Dynamic Host Configuration Protocol (DHCP).

-duplex Sets the speed requirements and the duplex requirements for the Oracle FS System. The default value is *auto*.

Important: Do not change the default value unless you are connecting to a switch that is known to have problems with auto-negotiation. Manually setting the duplex to an incompatible speed can cause the Oracle FS System to become unreachable on your network.

Valid options:

- auto – Determined by the Oracle FS System.
- 100f – Full 100 Mbps
- 1000f – Full 1000 Mbps
- 10fGig– Full 10 Gbps

-enableDhcp Specifies whether the Dynamic Host Configuration Protocol (DHCP) is enabled. The DHCP protocol can be enabled for the public management interface only.

-gateway Assigns the IP address of the gateway network node in the subnetwork of which the Oracle FS System (the Pilot) is a member.

-ip Identifies the public or the shared IP address that is assigned to the Pilot. This IP address is what the administrator uses to access the Oracle FS System over the management interface.

-nameServer Identifies the IP addresses of the Domain Name Servers (DNS) that are used by the Pilot to resolve the IP addresses in an ordered comma separated list, starting with the primary server.

-netmask Assigns a subnetwork mask for the static IP address that is permanently assigned to the Oracle FS System.

-overrideDisabledControllers	If there is a disabled Controller the system does not perform a normal shutdown. This option allows the system to be restarted. The status of the disabled Controller may or may not change on the resulting restart.
-overrideOperationPoolDraining	Restarts the Oracle FS System without completing any pending management operations.
-overridePinnedData	If there is pinned data, it does not stop the process of restarting the system. The pinned data that cannot be written to physical storage is discarded. Important: Contact Oracle Customer Support to resolve any issues with the Backend SAS Interconnect, a storage condition, or both, which might be causing the pinned data. Clearing pinned data guarantees that host data is deleted permanently.
-overrideStateCheck	Ignore the state of the system and continue with the shutdown operation.
-pilot1Ip	Specifies the static IP address that is assigned to Pilot 1.
-pilot2Ip	Specifies the static IP address that is assigned to Pilot 2.
-resetModePages	Requests that the mode pages be reloaded on all of the drives. If an administrator has disabled the reload mode pages flag, the system ignores the `-resetModePages` option. Note: A drive mode page contains changeable values that are stored on a drive as part of the drive firmware. Do not reload or reset drive mode pages unless you are instructed to do so by Oracle Customer Support. Reloading or resetting drive mode pages increases the time that is needed to restart or to shut down the system.
-serviceType	Specifies the type of protocol support the Oracle FS System provides. Valid values: *san*, *nas*, *sanBias*, or *nasBias*. The correct Service Type for your system is specified on the Sales Order and the System Customer Information Documents and should not be changed. If the installed hardware in the Controllers does not allow the changed Service Type, the system will not boot. Modify the service type only as instructed by Oracle Customer Support.

EXAMPLE

Task	Shut down the Oracle FS System.
Parameters	• None

```
$ fscli system -shutdown
```

Related Links

system

lun -list

system -useBackupPersistence

Directs the Oracle FS System to configure persistence from the most recently completed backup copy of persistence.

SYNOPSIS

```
system -useBackupPersistence

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Use the `system -useBackupPersistence` command if the current copy of persistence contains errors or is problematic or the Primary Drive Group has an issue that cannot be recovered. Use `system -useBackupPersistence` after setting up a haltpoint using the `haltpoint -add` command.

Note: Only administrators with support roles are authorized to run the `system -useBackupPersistence` command.

EXAMPLE

Task	Direct the Oracle FS System to configure persistence from the most recently completed backup copy of persistence.
Parameters	• None

```
$ fscli system -useBackupPersistence
```

Related Links

system

system_alert

Manages administrator action alerts.

SYNOPSIS

```
system_alert {[-delete | -list | -threshold] | -help}
```

DESCRIPTION

The Oracle FS System generates system alerts to notify the administrator that action must be taken to correct the following conditions:

- The system encountered a faulty system configuration.
- The system is in a compromised operational state.

When you first log in to the system, run the **system_alert -list** command to list the outstanding system alerts. Unlike the Oracle FS System Manager, the Oracle FS CLI does not report system status or display alerts when you log in.

After issuing a **system_alert** command, identify the conditions that require action, and perform the specified action. If you require more background information about any of the alerts, run the event_log command to review events that have occurred before, during and after the time stamp that is recorded for the system alert.

Note: Do not delete the alert until the condition has been addressed. To delete the alert, run the **system_alert -delete -alert *system-alert-id-or-fqn*** command. Specify the fully qualified name (FQN) or unique identifier (ID) of the alert that you received from the **system_alert -list** command. After taking steps to resolve an alert, list the alerts again to determine whether the actions have been effective.

The Oracle FS System automatically deletes all system alerts when it detects that the cause or problematic condition has been addressed.

SUBCOMMANDS

-delete	Deletes system alerts.
-list	Displays information about the currently active system alerts.
-threshold	Sets the criteria for generating system alerts that notify you about the storage space usage levels.

EXAMPLE

Task	List the outstanding system alerts.
Parameters	• None

```
$ fscli system_alert -list
```

Related Links

system_alert -delete

system_alert -list

system_alert -threshold

system_alert -delete

Deletes system alerts.

SYNOPSIS

```
system_alert -delete
   { -all
   | -alert system-alert-id-or-fqn [, system-alert-id-or-fqn]...
   }

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

You can delete an alert by running the **system_alert -delete -alert *system-alert-id-or-fqn*** command. Obtain the fully qualified name (FQN) or unique identifier (ID) of the alert by running the **system_alert -list** command.

In addition to deleting single alerts, you can also clear groups of alerts, or all alerts. The Oracle FS System does not delete alerts that cannot be deleted by administrators, even if explicitly specified.

Note: Only administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run the system_alert -delete command.

OPTIONS

-alert	Specifies the fully qualified names or IDs of one or more system alerts. Use a comma separated list to specify multiple alerts.
-all	Removes all system alerts, including the alerts that are triggered when the storage usage exceeds the defined thresholds.

EXAMPLE

Task	Delete the temperature system alert when the machine room temperature returns to normal and you have verified that the air conditioner is working correctly.

Parameters	• The fully qualified name of the temperature alert: **/THERM_WARN**

```
$ fscli system_alert -delete -alert /THERM_WARN
```

Related Links

system_alert

system_alert -list

system_alert -list

Displays information about the currently active system alerts.

SYNOPSIS

```
system_alert -list
   [-details]
   [{   -alert system-alert-id-or-fqn [,system-alert-id-or-fqn]...
    | -thresholds
    }]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Run the **system_alert -list** command without additional options to display the following information about each alert:

- The name and ID of the alert.
- The date that the entry for the alert was created.

To obtain parameter names and value for each alert, run the **system_alert -list -details** command.

To display alert thresholds only, run the **system_alert -list -threshold** command.

Note: Only administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run the system_alert -list command.

OPTIONS

-alert	Specifies the fully qualified names or IDs of one or more system alerts. Use a comma separated list to specify multiple alerts.
-details	In addition to the default output, returns a description of the problem and the following details:

- The type of alert.
- The threshold values for the alert (if set).

-thresholds Returns the threshold parameters that are currently set for one or more alerts. The -threshold option cannot be used if the -alert option is specified.

EXAMPLE

Task	List the outstanding system alerts.
Parameters	• None

```
$ fscli system_alert -list
```

Related Links

system_alert

system_alert -threshold

Sets the criteria for generating system alerts that notify you about the storage space usage levels.

SYNOPSIS

```
system_alert -threshold
   {-lunRepository | -storagePool}
   -upperBoundUsed upper-bound-used-percentage
   -lowerBoundNearingLimit lower-bound-nearing-limit-percentage
   -reachedLimit reached-limit-percentage

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

The capacity for the clone repository is specified when you provision the source LUN. You can specify thresholds whereby the system generates a system alert when predefined storage usage thresholds are crossed. To specify the thresholds, run the **system_alert -threshold -lunRepository** command with any combination of options.

The storage pool is the capacity that is shared by all storage domains. Run the **system_alert -threshold -storagePool** command to set the conditions that, if met, the system generates storage pool usage alerts.

Note: Only administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run the system_alert -threshold command.

OPTIONS

-lowerBoundNearing Limit	Sets the storage usage capacity, that when reached, the Oracle FS System issues storage usage alerts. Allowed percentages: zero to 100.
-lunRepository	Indicates that you are setting a threshold for clone LUN repository usage.
-reachedLimit	Indicates that the Oracle FS System issues an alert indicating that the storage usage has reached the allocated limit. Specify as a percentage of allocated usage: zero to 100.
-storagePool	Indicates that you are setting a threshold for storage pool usage.
-upperBoundUsed	Indicates that the Oracle FS System automatically clears any system alerts that report usage concerns when the usage is below the specified percentage. Allowed percentages: zero to 100

EXAMPLE

Task	Generate system alerts when the Clone LUN repository usage exceeds 80%. Stop sending the alerts when the usage is less than 75%. If the maximum allocated limit reaches or exceeds 90%, send a more urgent alert to indicate that the integrity of the data is at risk. **Note:** The data volatility or usage patterns determine the appropriate values for you to set for your environment. To obtain statistics and trending reports run the following commands: • The **statistics -list -lun** command returns real time statistics for the given LUNs. • The **report -type *-storageUse*** command generates storage usage information that you can use for trending.
Parameters	• The percentage of the allocated Clone LUN storage

capacity that, when reached, triggers the system to send warning alerts: **80%**

- The percentage of the allocated Clone LUN storage capacity that triggers the system to stop generating clone capacity usage alerts: **75%**
- The percentage of the allocated Clone LUN storage capacity that, when reached, triggers the system to send warning alerts: **90%**

```
$ fscli system_alert -threshold -lunRepository -
upperBoundUsed 75 -lowerBoundNearingLimit 80 -
reachedLimit 90
```

Related Links

system_alert

system_log

Collects, downloads, transfers and clears system logs.

SYNOPSIS

`system_log { [ -clearLogs | -collect | -delete | -download | -list | -send | -uploadClientLogs ] | -help }`

DESCRIPTION

The Oracle FS System automatically collects and stores logs that capture the following types of information:

- The system event log.
- One or more sets of system statistics.
- The system configuration database.
- Pilot logs.
- One or more SAN host logs for hosts connected using FSPM.
- Diagnostic logs for the Controllers.
- Diagnostic logs for any attached replication appliance.
- One or more Oracle FS CLI client activity logs.
- Private interconnection logs (topology).

Note: The exact set of logs automatically collected depends on the triggering event for the log collection.

If enabled, the Call-Home service automatically sends the set of logs collected for a significant system event to the Call-Home server. You might be asked by your Oracle Customer Support representative to collect log bundles and send them to the Call-Home server or to Oracle Customer Support.

If Call-Home is not enabled, the Oracle FS System will not send the logs it collects to the Call-Home server. Your Oracle Customer Support representative might ask you to do the following:

- Collect specific logs as log bundles.
- Download existing log bundles or a new log bundles.
- Transfer the log bundles to Oracle Customer Support.

Use the commands and options that your Oracle Customer Support representative indicates.

Important: The Oracle FS System automatically clears older log bundles to maintain disk space quotas for storing log bundles. Under normal operating circumstances, clearing or deleting logs is not required. Do not delete log bundles without being instructed to do so by your Oracle Customer Support representative.

SUBCOMMANDS

-clearLogs	Clears the specified set of controller logs and log bundles from the Oracle FS System. Performed by administrators with support account privileges and by Oracle Customer Support representatives.
-collect	Collects system logs and stores them in a log bundle on the Oracle FS System.
-delete	Deletes one or more log bundles from the Oracle FS System.
-download	Downloads one or more log bundles in to a file in the directory you specify.
-list	Lists the fully qualified names (FQNs), and optionally, the contents of one or more log bundles.
-send	Sends one or more log bundles to the Call-Home server.
-uploadClientLogs	Uploads to the Pilot the log files for the current Oracle FS CLI session.

EXAMPLE

Task	After receiving instructions from Oracle Customer Support to do so, clear all of the logs on the Oracle FS System.
Parameters	• None

```
$ fscli system_log -clearLogs -all
```

Related Links

system_log -clearLogs
system_log -collect
system_log -delete
system_log -download
system_log -list
system_log -send
system_log -uploadClientLogs

system_log -clearLogs

Clears the specified set of controller logs and log bundles from the Oracle FS System. Performed by administrators with support account privileges and by Oracle Customer Support representatives.

SYNOPSIS

```
system_log -clearLogs
   { -all
   | [-controllerLogs]
     [-logBundles]
   }

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Do not clear logs unless instructed to do so by your Oracle Customer Support representative.

Note: If you are instructed by your Oracle Customer Support representative to delete a specific log bundle by name, then run the **system_log -delete** command. The **clearLogs** command deletes all of the specified log bundles or Controller logs. It does not delete individual logs.

Note: Only administrators with support roles are authorized to run the system_log -clearLogs command.

OPTIONS

-all	Clears all log bundles and all Controller logs from the Oracle FS System.
-controllerLogs	Clears the Controller logs that are backed up and stored in memory.
-logBundles	Clears all of the current log bundles from the Oracle FS System.

EXAMPLE

Task	After receiving instructions from Oracle Customer Support to do so, clear all of the logs on the Oracle FS System.
Parameters	• None

```
$ fscli system_log -clearLogs -all
```

Related Links

system_log

system_log -delete

system_log -collect

Collects system logs and stores them in a log bundle on the Oracle FS System.

SYNOPSIS

```
system_log -collect
      { -all
       |[-eventLog]
        [-statistics]
        [-systemConfig]
        [-pilot]
        [-sanhostLogs]
        [-controllerBackup]
        [-controllerInMemory]
        [-controllerLogs]
        [-replicationAppliance]
        [-client]
    }
      [-controller controller-id-or-fqn [,
controller-id-or-fqn ]... ]
      [-sanhost sanhost-id-or-fqn [, sanhost-id-or-fqn]... ]
      [-sendToCallHome
            [{ -logBundle log-bundle-id-or-fqn
[,log-bundle-id-or-fqn]...
            | -previousBundles time-frame {minutes | hours | days}
            }]
      ]
      [-withinLastHours number-of-hours ]
      [-collectionReason reason-description ]
      [-uploadClientLogsFirst]
```

```
   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Your Oracle Customer Support representative might ask you to collect logs and either send them to the Oracle Server or transfer them using My Oracle Support. If your Oracle Customer Support representative does not specify which logs to collect, assume that all are collected. Run the **`system_log -collect -all`** command when instructed to do so.

Note: The private interconnect management (topology) logs are not collected with system logs. The topology logs cannot be collected with any other logs.

Note: Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run the `system_log -collect` command.

OPTIONS

`-all`

Collects the following information and creates a log bundle:

- Event log
- System statistics
- System configuration database (Persistence)
- Pilot logs
- Controller backup data
- Controller logs that are stored in memory
- Controller logs
- Replication appliance logs
- Client logs for GUI clients that are currently logged in.

`-client`

Specifies that any Oracle FS System Manager (GUI) logs and Oracle FS CLI client logs that have already been uploaded to the Pilot to be included in the log bundle.

`-collectionReason`

Specifies a string to describe the reason for collecting the logs. If the string contains spaces, you do not need to enclose the string in double quotes.

Important: If you are collecting logs and transferring them to the Call-Home server, ensure that there is an existing My Oracle Support (MOS) service request (SR) and enter the number of the SR in this field. This field is required and must contain an SR number when sending logs to the Oracle Call-Home server so

	that those logs are properly attached to the MOS SR. Also, ensure that you have enabled Oracle Auto Service Request (ASR).
-controller	Specifies the fully qualified name (FQN) or the unique identifier (ID) of one or more Controllers for the Oracle FS System.
-controllerBackup	Collects data from the Controller backup logs.
-controllerInMemory	Collects the current Controller logs that are stored in memory.
-controllerLogs	Collects the Controller logs that are backed up and stored in memory.
-eventLog	Collects the log of all events that are generated and stored on the Pilot.
-logBundle	Specifies the fully qualified names or unique IDs of one or more log bundles that were previously collected. Multiple log bundles are specified by using a comma separated list of log bundles.
-pilot	Collects all logs that are maintained for the software components on the Pilot.
-previousBundles	Transfers all previously existing log bundles within the specified the -timeframe option. The previous bundles are transferred individually, but their sequence numbers are modified to indicate that they are part of a larger set of log transfers. To specify the time frame, provide a value followed by one of the following labels: • minutes • hours • days
-replicationAppliance	Collects information from all of the replication appliances that are configured to work with and are currently logged into the Oracle FS System.
-sanhost	Specifies the IDs or the fully qualified names (FQNs) of one to 10 SAN hosts. Used with the -sanhostLogs option.
-sanhostLogs	Collects logs from up to 10 SAN hosts that are running the Oracle FS Path Manager and are currently logged in to the Oracle FS System.
-sendToCallHome	Sends the log bundle to the Call-Home server immediately after collecting the logs.

	Important: If you are collecting logs and transferring them to the Call-Home server, ensure that there is an existing My Oracle Support (MOS) service request (SR) and enter the number of the SR in this field. This field is required and must contain an SR number when sending logs to the Oracle Call-Home server so that those logs are properly attached to the MOS SR. Also, ensure that you have enabled Oracle Auto Service Request (ASR).
-statistics	Requests that the log of system statistics be included in the log bundle.
-systemConfig	Collects the System Configuration Database and Storage Configuration (Persistence and COD) information.
-uploadClientLogsFirst	Specifies that FSCLI log files on the client's computer be first collected and sent to the Oracle FS System for inclusion in the specified set of collected logs using the -client option.
-withinLastHours	Restricts the log information to collect from the logs to the specified number of hours before the present time.

EXAMPLE

Task	Oracle Customer Support has instructed you to collect all of the system logs that the Oracle FS System captured within the last two hours.
Parameters	• Number of hours: **2**

```
$ fscli system_log -collect -withinLastHours 2
```

Related Links

system_log

system_log -uploadClientLogs

system_log -delete

Deletes one or more log bundles from the Oracle FS System.

SYNOPSIS

```
system_log -delete
   -logBundle log-bundle-id-or-fqn [,log-bundle-id-or-fqn]...

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
```

```
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Your Oracle Customer Support representative might instruct you to issue a **system_log -list** command to identify the current set of logs that are on the Oracle FS System. If your representative requests that you delete one or more logs or log bundles, specify the fully qualified name (FQN) or unique identifier (ID) of the bundle. Instead of deleting individual log bundles, your representative might request that you delete the Controller logs or all of the log bundles on the system. Run the **system_log -clearLogs** command to delete all the logs or the log bundles.

Note: Only administrators with support roles are authorized to run the system_log -delete command.

OPTIONS

-logBundle	Specifies the fully qualified names or unique IDs of one or more log bundles that were previously collected. Multiple log bundles are specified by using a comma separated list of log bundles.

EXAMPLE

Task	Your Oracle Customer Support representative has instructed you to delete a specific log bundle.
Parameters	• The fully qualified name (FQN) or unique identifier (ID) of the log bundle: **/OTCS-8-23-2013.2hrs**

```
$ fscli system_log -delete -
logBundle /OTCS-8-23-2013.2hrs
```

Related Links

system_log

system_log -list

system_log -clearLogs

system_log -download

Downloads one or more log bundles in to a file in the directory you specify.

SYNOPSIS

```
system_log -download
   [-logBundle log-bundle-id-or-fqn [,log-bundle-id-or-fqn]... ]
   -file download-file-name
```

```
   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

If you do not have Call-Home enabled, your Oracle Customer Support representative might ask you to collect system logs and send them to Oracle Customer Support. To send system logs, use the **`system_log -download`** command to download them as a log bundle to your local machine. You can then attach the log bundle to an email and send them to Oracle Customer Support.

Note: Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run the `system_log -download` command.

OPTIONS

`-file`

Specifies the download path and file name. In Windows environments, be sure to specify the full path. The full path includes the following:

- The drive letter
- A colon (:) separator
- One or more directory names separated by backslashes (\)
- A file name

If you do not provide a full path, the Oracle FS System downloads the file into the directory from which you are running the FSCLI.

`-logBundle`

Specifies the fully qualified names or unique IDs of one or more log bundles that were previously collected. Multiple log bundles are specified by using a comma separated list of log bundles.

EXAMPLE

Task	Download the log bundle that Oracle Customer Support requested that you collect and save the log bundle in a file in the directory from where the FSCLI is running.
Parameters	• The fully qualified name (FQN) or unique identifier (ID) of the log bundle: /OTCS-8-23-2013.2hrs

	• A file name: `LogBundle-Aug.2013`

```
$ fscli system_log -download
-logBundle /OTCS-8-23.2hrs -file LogBundle-Aug.2013
```

Related Links

system_log

system_log -list

Lists the fully qualified names (FQNs), and optionally, the contents of one or more log bundles.

SYNOPSIS

```
system_log -list
   [-details]
   [-logBundle log-bundle-id-or-fqn [,log-bundle-id-or-fqn]... ]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

The **system_log -list** command provides you with the FQNs of all of the log bundles on your Oracle FS System. If you specify the -details option, the command lists the contents of each log bundle.

Note: Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run the system_log -list command.

OPTIONS

-details	Returns detailed information about the contents of a log bundle that includes the reason it was collected, the name of the file, the file size, the time of the collection, and the set of logs in the file.
-logBundle	Specifies the fully qualified names or unique IDs of one or more log bundles that were previously collected. Multiple log bundles are specified by using a comma separated list of log bundles.

EXAMPLE

Task	List the fully qualified names (FQNs) of all of the log bundles that are on the Oracle FS System.
Parameters	• None.

```
$ fscli system_log -list
```

Related Links

system_log

system_log -send

Sends one or more log bundles to the Call-Home server.

SYNOPSIS

```
system_log -send
   { -logBundle log-bundle-id-or-fqn [,log-bundle-id-or-fqn]...
   | -previousBundles time-frame {minutes | hours | days}
   }

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Your Oracle Customer Support representative might request that you send one or more log bundles to the Call-Home server by issuing a **system_log** send command.

Note: Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run the system_log -send command.

OPTIONS

-logBundle

Specifies the fully qualified names or unique IDs of one or more log bundles that were previously collected. Multiple log bundles are specified by using a comma separated list of log bundles.

-previousBundles

Transfers all previously existing log bundles within the specified the -timeframe option. The previous bundles are transferred individually, but their sequence numbers are modified to indicate that they are part of a larger set of log transfers. To specify the time frame, provide a value followed by one of the following labels:

- minutes
- hours
- days

EXAMPLE

Task	At the request of Oracle Customer Support, send the log bundles that were collected in the last day to the call home server.
Parameters	• The time frame in days: 1

```
$ fscli system_log -send -previousBundles 1 days
```

Related Links

system_log
call_home -modify

system_log -uploadClientLogs

Uploads to the Pilot the log files for the current Oracle FS CLI session.

SYNOPSIS

```
system_log -uploadClientLogs

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Your Oracle Customer Support representative might request that you upload the Oracle FS CLI session log file from the system where an issue with an Oracle FS CLI session exists. After uploading the logs, run the `collect -client` command to create a log bundle including these files and send them to Oracle Customer Support as instructed.

Note: Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run the `system_log -uploadClientLogs` command.

EXAMPLE

Task	Oracle Customer Support has instructed you to upload client logs and send them to the Pilot for your Oracle FS System.
Parameters	• None

```
$ fscli system_log -uploadClientLogs
```

Related Links

system_log

task

Displays a list of the tasks that are currently running on the Oracle FS System.

SYNOPSIS

`task { [ -cancelRestartableTasks | -list ] | -usage | -help }`

DESCRIPTION

The task list provides a point-in-time snapshot of all tasks that are currently running on the Oracle FS System. Before making changes to the system, examine the operating environment and list the current tasks.

In addition to checking the operating environment, examine the task list to verify the status of long-running commands that were issued before you logged out or after the session timed out. For example, the following commands take several hours to complete:

drive_group -verifyDataConsistency	Verifies data consistency in a drive group.
filesystem -scan	Performs a data integrity check on a filesystem.

Note: If you suspect that a command is running after a session times out, log in again, and run the **task -list -details** command.

Locate the tasks that modify the system components that are associated with your command. The output displays the tasks that were running within the most recent 30 seconds at the time that the **task -list -details** command was executed on the Oracle FS System.

In the output, inspect the originating date and time fields to correlate the specific tasks with the command that you issued. The task list also returns the names of the initiating administrator accounts. The task list does not display the error messages that are listed in the output of the **errors -list** command.

If there are no tasks that are associated with your command listed in the output, run the **event_log -list -details -category audit** command. Inspect the output for a `SUCCESS` or `FAILURE` status.

Use the **task -cancelRestartableTasks** command to prevent restartable tasks from running during a restart. You might want to use the `-cancelRestartableTasks` option for diagnostic purposes.

SUBCOMMANDS

-cancelRestartable Tasks	Removes all restartable tasks from the system.

-list	Displays a list of the tasks that are currently running on the Oracle FS System.

EXAMPLE

Task	List the tasks that are actively running on the Oracle FS System.
Parameters	• None

```
$ fscli task -list
```

Related Links

task -cancelRestartableTasks

task -list

errors -list

event_log -list

task -cancelRestartableTasks

Removes all restartable tasks from the system.

SYNOPSIS

```
task -cancelRestartableTasks

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Use the **task -cancelRestartableTasks** command to prevent restartable tasks from running during a restart. If the Oracle FS System is having trouble starting these tasks, the -cancelRestartableTasks option allows you to skip the tasks during the next restart. You might want to use the -cancelRestartableTasks option for diagnostic purposes.

Only administrators with support roles are authorized to run the **task -cancelRestartableTasks** command.

EXAMPLE

Task	Remove all restartable tasks from the Oracle FS System.
Parameters	• None

```
$ fscli task -cancelRestartableTasks
```

Related Links

task

task -list

Displays a list of the tasks that are currently running on the Oracle FS System.

SYNOPSIS

```
task -list
   [-details]
   [-task task-id-or-fqn [, task-id-or-fqn]... ]
   [-internal]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

The **task -list** command lists tasks in 30-second snapshots. The snapshot starts when the **task -list** command begins executing on the Oracle FS System. If the tasks that are associated with a command that you initiated are not listed in the output, check for the following scenarios:

- The command completed successfully. To verify, examine the event log for a SUCCESS completion status.
- The command timed out. Examine the event log for an INCOMPLETE status.
- The command failed. Examine the event log for the error indicators that you can use for troubleshooting.

To capture the list into a log, use the facilities in your environment to periodically poll the Oracle FS System and direct the output into a file.

Run the **task -list** command with no options to return the fully qualified name (FQN), ID, and status of the active tasks. To display the name of the operation that is associated with each of the tasks, run the **task -list -details** command.

OPTIONS

-details

Displays the following information about each task:

- The FQN, name, and ID of the task.
- The status of the task.
- The percent of the task that is completed.
- The user name of the command that is associated with the task. For tasks that are initiated by the Oracle FS System, the user name is INTERNAL_OP.

- The time that the command was issued.
- The time the task was invoked.
- The completion time if the task had completed.

-internal	Displays internal system tasks.
-task	Specifies the fully qualified names (FQN) of one or more tasks in a comma separated list. You can also specify the unique ID for the tasks.

EXAMPLE

Task	List the tasks that are actively running on the Oracle FS System.
Parameters	• None

```
$ fscli task -list
```

Related Links

task

time

Updates and displays the system time, NTP time server settings, and NTP server status.

SYNOPSIS

`time { [ -list | -modify ] | -usage | -help }`

DESCRIPTION

When using an external time source to provide the Oracle FS System with the current date and time, specify up to three external Network Time Protocol (NTP) servers by their IP addresses. The Oracle FS System uses port 123 to communicate with the NTP servers.

The Oracle FS System selects a server from a list of NTP servers to be the primary NTP server. After synchronizing with the primary server, the Oracle FS System periodically polls the primary server. If the discrepancy between the internal clock and time that is provided by any of the NTP servers is greater than 1000 seconds, the Oracle FS System stops attempting to synchronize.

Important: Default Windows environments use the Simple Network Time Protocol (SNTP) to synchronize Windows clients to one or more domain controllers. The Oracle FS System uses the standard NTP implementation for UNIX environments. Because SNTP and NTP are known to be incompatible, do not attempt to use a Windows system as an NTP server without a third party NTP service installed that is compatible with UNIX.

Important: In mixed environments, configure the NTP service on a UNIX system. Synchronize the domain controllers that the Windows clients are using to the defined NTP service. Then, synchronize the UNIX-based clients to the NTP service. *Do not synchronize the Oracle FS System or the UNIX clients to a Windows domain controller*. When using NFS or CIFS file services, synchronize the Oracle FS System to the same time source that the clients are using to prevent loss of time synchronization.

Do not run the **`time -modify -dateTime`** command to set the internal hardware clock as the time source unless the Oracle FS System cannot reach any NTP servers or any file servers. If the management network becomes unavailable or access to the NTP service fails, disable the NTP service. Then, manually set the time. Run the following two commands separately.

```
time -modify -noNtpService
time -modify -dateTime date-and-time
```

Note: The GUI displays the time using the local time zone that is set on the GUI client. The CLI does not present any client-based information, including local times. All time information that is presented to you in the CLI is in Coordinated Universal Time (UTC).

SUBCOMMANDS

`-list`	Displays the current system time in UTC and provides information about the Network Time Protocol (NTP) servers if external time servers are being used. The status of each NTP server is displayed, including whether the server is being used by the Oracle FS System.
`-modify`	Configures the Oracle FS System to use the internal hardware clock or an external NTP service or configures the date and time on the Oracle FS System.

EXAMPLE

Task	List the NTP servers configured and their detailed status.
Parameters	• None

```
$ fscli time -list -ntpQuery
```

Related Links

time -list

time -modify

time -list

Displays the current system time in UTC and provides information about the Network Time Protocol (NTP) servers if external time servers are being used. The status of each NTP server is displayed, including whether the server is being used by the Oracle FS System.

SYNOPSIS

```
time -list
   [-details]
   [-ntpQuery]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Run the **time -list** command to return the following information:

- Current date and time in Coordinated Universal Time (UTC) (`2013-10-15T17:27:41.983+00:00`)
- A flag indicating whether the time can be reset (`ManagementState` must be `AVAILABLE`)
- An indicator as to whether NTP has been configured
- If NTP is being used, detailed information about the status of each configured NTP server

To determine why a particular time server was rejected by the Oracle FS System or was selected to be the primary server, review the output from the **time -list -ntpQuery** command. Use this information when configuring third party tools that manage NTP servers.

Note: Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run the `time -list` command.

OPTIONS

-details	Provides no additional information. This option is included for consistency across all subcommands.
-ntpQuery	Displays NTP Query information for the Pilot that is synchronized to the primary NTP server. The summary NTP Query information that the Oracle FS System returns is the same information that is returned by the **ntpq -pn** UNIX utility command, plus a text status for each configured NTP server.

EXAMPLE

Task	List the NTP servers configured and their detailed status.
Parameters	• None

```
$ fscli time -list -ntpQuery
```

Related Links

time

time -modify

Configures the Oracle FS System to use the internal hardware clock or an external NTP service or configures the date and time on the Oracle FS System.

SYNOPSIS

```
time -modify
   [-dateTime date-and-time]
   [{-ntpService | -noNtpService}]
   [-ntpServiceIp ntp-server-ip [, ntp-server-ip]... ]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

If you are using an external time source to provide the current date and time for the Oracle FS System, you can configure up to three servers. Each time you run the **time -modify -ntpServiceIp** command to change one or more servers, specify all of the servers that you are making available to the Oracle FS System , not just the ones you are changing.

Important: Do not attempt to use a Windows system as an NTP server unless that system has a third party NTP service such as Meinberg installed.

If the NTP service is enabled, and you want to use the internal hardware clock on the Oracle FS System as the time source, first disable the NTP service by running the **time -modify -noNtpService** command. Then, run the **time -modify -dateTime** command to reset the time.

Note: Only administrators with primary administrator or roles are authorized to run the `time -modify` command.

OPTIONS

-dateTime	Sets the internal hardware clock. Use Coordinated Universal Time (UTC). Specify a timestamp by using the YYYY-MM-DD[THH[:mm[:SS[.xxx]]]] format. The T character is a literal character that separates

	the date portion of the timestamp from the time portion. The SS characters indicate seconds and the xxx characters indicate milliseconds. The colon (:) and period (.) characters are required characters.
-noNtpService	Instructs the Oracle FS System to discontinue using the NTP service as a date and time reference.
-ntpService	Specifies that the Oracle FS System use the external NTP service as the time source.
-ntpServiceIp	Specifies the IP addresses of up to three servers as candidates for providing the NTP service. If you are providing more than one candidate, specify the candidates in a comma separated list. Each time you change one or more of these servers, provide the IP addresses of all NTP server candidates.

EXAMPLE

Task	Disable the NTP service and then manually set the current date and time for the internal hardware clock. **Note:** Dates and times are in Coordinated Universal Time (UTC).
Parameters	• Current date: 21 May 2013 • Current time: 12:30:00.000

```
$ fscli time -modify -noNtpService
$ fscli time -modify -dateTime 2013-05-21T12:30:00.000
```

Related Links

time

topology

Monitors and performs diagnostics on the topology of the Backend SAS Interconnect of an Oracle FS System.

SYNOPSIS

`topology { [-download | -generateTraffic | -list | -modify ] | [ -usage | -help ] }`

DESCRIPTION

The Controllers in the Oracle FS System are connected in a peer-to-peer clustered configuration. In the cluster, each Controller node connects to a partner Controller node and to Drive Enclosure strings. If there are three or less Drive

Enclosures in a string, the Controller connects to the first Drive Enclosure and to the last Drive Enclosure in the string. If there are more than three Drive Enclosures in the string, the Controller connects to the first Drive Enclosure and the third Drive Enclosure in the string. The **topology** command monitors and performs diagnostics on the following components that make up the Backend SAS Interconnect topology:

- The Serial Attached SCSI (SAS) connectors on the Drive Enclosures
- The SAS HBA cards on the Controllers
- The SAS ports on the SAS HBA cards
- The SAS cabling

Note: The topology of the Backend SAS Interconnect changes when a Controller fails over to its partner. The system sends system alerts and issues events to notify you of these changes. You can also run the **topology -list** command or run the **topology -download -topoMap** command to monitor the changes that the system makes to the topology.

SUBCOMMANDS

-download	Saves the topology configuration information and related logs to the designated location.
-generateTraffic	Generates SAS messages from the specified Controller to the partner Controller and from the specified Controller to the Drive Enclosures. This command is used for testing purposes.
-list	Returns the configuration information and statistics for the Backend SAS Interconnect and returns the results of any diagnostic tests that the system performed.
-modify	Changes the operational state of the topology of the Backend SAS Interconnect.

EXAMPLE

Task	For diagnostic purposes, Oracle Customer Support instructs you to generate a burst of traffic from a Controller to the partner Controller and to all of the Drive Enclosures that are connected to the Controller.
Parameters	• The fully qualified name of the Controller: `/CONTROLLER-01` • The number of bytes to generate: 32

```
$ fscli topology -generateTraffic
-controller /CONTROLLER-01 -numberBytes 32
```

Related Links

topology -download

topology -generateTraffic

topology -list

topology -modify

topology -download

Saves the topology configuration information and related logs to the designated location.

SYNOPSIS

```
topology -download
   -topoMap topomap-file-name

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

The topology configuration is stored in an internal database, along with other related log files. The database, which is located on the master Controller, stores the current topology and up to three previous topology states. Use the **topology -download** command to download and to save the information to a file and a location of your choice. The file format is human-readable ASCII text. The output can be specified by full path and file name or just file name. If only a file name is specified, the file is saved to the FSCLI directory.

If problems occur during the file creation, the system creates a second file that lists the errors that are associated with the download. The file name will be the same as the *db-logs-file-name* value with *Errors-* prepended to that name. If a path is specified for the *db-logs-file-name*, the errors file is placed in that path. If a path is not specified, the errors file is placed in the FSCLI directory with the *db-logs-file-name*.

Note: Only administrators with primary administrator, admin1, admin2, or support roles are authorized to run this command.

OPTIONS

-topoMap Returns the topology configuration information that is stored in an internal database. The database, which is located on the master Controller, stores the current topology and up to three previous topology states. The database also stores all of the issues that are related to the hardware components (including the

cabling) and all of the automated actions that were taken to resolve those issues.

Note: In cases where a topology change is at a very low level , the configuration information that is returned for one topology state can appear to be identical to another topology state.

The system empties and re-initializes the internal topology database when the master Controller is restarted or when a new master Controller is selected.

EXAMPLE

Task	To assist with a topology evaluation, Oracle Customer Support instructs you to download health and status information for the components that comprise the Backend SAS Interconnect.
Parameters	• None

```
$ fscli topology -download -topoMap topology0905.txt
```

Related Links

topology

topology -generateTraffic

Generates SAS messages from the specified Controller to the partner Controller and from the specified Controller to the Drive Enclosures. This command is used for testing purposes.

SYNOPSIS

```
topology -generateTraffic
   -controller controller-id-or-fqn
   -numberBytes number-of-bytes
   [{-iterations number-of-iterations | -seconds number-of-
seconds}]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Use the **topology -generateTraffic** command as instructed by Oracle Customer Support to test the connections and cabling. Before issuing the subcommand, the Oracle Customer Support representative might instruct you to disable the automatic management of the Backend SAS interconnect by using a

topology -modify -manualMode command. The Oracle Customer Support representative might also request that you issue a **controller -list -details** command to test the SAS HBAs before generating traffic.

Note: Only administrators with primary administrator, admin1, admin2, or support roles are authorized to run this command.

OPTIONS

-controller	Specifies the fully qualified name (FQN) or the unique identifier (ID) of a Controller from which the traffic is generated. The traffic is sent to the partner Controller.
-iterations	Identifies the number of times that the traffic generation repeats. The -iterations option is not allowed in conjunction with the -seconds option.
-numberBytes	Specifies the number of bytes to transfer from the Controller to all of the components to which the Controller is physically connected.
-seconds	Identifies the length of time, in seconds, that the traffic is generated. The -seconds option is not allowed in conjunction with the -iterations option.

EXAMPLE

Task	For diagnostic purposes, Oracle Customer Support instructs you to generate a burst of traffic from a Controller to the partner Controller and to all of the Drive Enclosures that are connected to the Controller.
Parameters	• The fully qualified name of the Controller: `/CONTROLLER-01` • The number of bytes to generate: 32

```
$ fscli topology -generateTraffic
-controller /CONTROLLER-01 -numberBytes 32
```

Related Links

topology

controller -list

topology -modify

topology -list

Returns the configuration information and statistics for the Backend SAS Interconnect and returns the results of any diagnostic tests that the system performed.

SYNOPSIS

```
topology -list
   [-details]
   [{ -violations
    | [ -statistics ]
      [ -enclosure ]
      [ -controllerPort controller-id-or-fqn
        -slot hba-slot-number
        -port port-number
      ]
    }]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Oracle Customer Support might request that you run the **topology -list** command to provide the following information:

- The Controller-to-Controller performance metrics and usage statistics
- The Controller-to-Drive Enclosures performance metrics and usage statistics
- The indications of any wrongly connected cables
- The indications of any loosely connected cables
- The indications of any faulty SAS connectors on the Drive Enclosures
- The status of the Controller SAS HBA cards and ports
- The contents of the database that manages the Backend SAS Interconnect

If no options are specified, information is displayed only for Drive Enclosure connectivity and for the Controller ports.

Note: Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run the `topology -list` command, except for the `-violations` option. Only administrators with primary administrator, admin1, admin2, or support roles are authorized to use the `-violations` option.

OPTIONS

-controllerPort — Limits the display to the current status of the specified Controller port. The HBA slot number and the port number are specified by the -slot option and by the -port option respectively.

-details	Provides no additional information. This option is included for consistency across all subcommands. If the -details option is specified with no other options, the information about the following objects is displayed: • Controller ports • Controller statistics • Drive Enclosure connectivity • Drive Enclosure statistics In this case, the topology violations are not displayed.
-enclosure	Returns information about the SAS ports on the Drive Enclosures that are connected to the SAS HBAs on the Controllers.
-port	Returns information about the specified Controller port. Values are zero, one, two, or three.
-slot	Returns information about the specified SAS HBA card. Use this option in combination with the -controllerPort and -port options.
-statistics	Returns the performance and usage statistics for the physical connections between the Controllers and the Drive Enclosures.
-violations	Returns a report of any SAS connections that are incorrectly cabled. This option cannot be used with other options. Also, this option cannot be used by administrators using the monitor role.

EXAMPLE

Task	To assist with a topology evaluation, Oracle Customer Support instructs you to obtain health and status information for the components that comprise the Backend SAS Interconnect.
Parameters	• None

```
$ fscli topology -list
```

Related Links

topology

topology -modify

Changes the operational state of the topology of the Backend SAS Interconnect.

SYNOPSIS

```
topology -modify
   [-disparityThreshold disparity-errors-per-hour]
   [{-manualMode | -noManualMode}]
   [ -clearStatistics
     [-controller controller-id-or-fqn [, controller-id-or-fqn]... ]
   ]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

To configure the topology for testing, Oracle Customer Support might request that you make one or more of the following topology changes:

- Increase or decrease the number of disparity errors that are allowed.
- Disable the diagnostics that automatically run on the topology so that Oracle Customer Support can run their tests.
- Clear the statistics that are already captured for one or both of the Controllers.

Note: Only administrators with primary administrator, admin1, admin2, or support roles are authorized to run this command.

OPTIONS

-disparityThreshold	Sets the number of disparity errors that are allowed each hour.When the threshold number is reached, the system generates system alerts and logs events.
-manualMode	Instructs the system to stop the automatic management of the Backend SAS Interconnect.
-noManualMode	Resumes the automatic management of the Backend SAS Interconnect.
-clearStatistics	Clears the topology performance and usage statistics for the specified Controller. If you do not specify a Controller, this option clears the statistics for both Controllers.
-controller	Specifies the fully qualified name (FQN) or the unique identifier (ID) of a Controller.

EXAMPLE

Task	To prepare for topology testing, Oracle Customer Support requests that you stop the automatic management of the Backend SAS Interconnect.
Parameters	• None

```
$ fscli topology -modify -manualMode
```

Related Links

topology

ups

Configures the Oracle FS System to query and receive SNMP traps from SNMP-enabled UPS devices.

SYNOPSIS

`ups { [ -add | -delete | -list | -modify ] | [ -usage | -help ] }`

DESCRIPTION

The Oracle FS System can be configured to monitor the health and condition of the uninterruptible power supply (UPS) devices from which it receives power in the following ways:

- The Oracle FS System can be configured to receive SNMP traps from one or more UPS devices.
- The Oracle FS System can query one or more SNMP-enabled UPS devices.

Note: The UPS devices that the Oracle FS System can monitor must implement the RFC 1628 MIB specification for SNMP-enabled UPS devices. The Oracle FS System can connect to any UPS device that has the ability to supply the system with power. Configuring the Oracle FS System to monitor a UPS device through SNMP is not a requirement for the Oracle FS System to receive power from the UPS device.

Before configuring the Oracle FS System to receive SNMP traps from an SNMP-enabled device, the Oracle FS System must be defined as an SNMP trap host. The **`ups -add -help`** command explains how to use the FSCLI to perform the following tasks:

- Configure the Oracle FS System to function as an SNMP trap host.
- Configure the authentication criteria and specify the IP addresses for each of the UPS devices that are configured to supply power to the Oracle FS System.

In addition to being defined as an SNMP trap host, the Oracle FS System must also be defined as an SNMP query host. The **`ups -list -help`** command explains how to use the FSCLI to perform the following tasks:

- Configure the Oracle FS System to function as an SNMP query host.
- Identify each UPS device and specify the authentication criteria that is required for the status and configuration of each device to be queried.

SUBCOMMANDS

`-add`	Configures the Oracle FS System to receive SNMP traps that are sent by SNMP-enabled UPS devices.
`-delete`	Removes one or more UPS devices as a source of SNMP traps.
`-list`	Displays information about SNMP-enabled UPS devices that the Oracle FS System is configured to query.
`-modify`	Changes the name, IP address, or SNMP community string for a given UPS device.

EXAMPLE

Task	Configure the Oracle FS System to receive SNMP traps from a battery-backed power source.
Parameters	• The name of the Oracle FS System as an SNMP trap host: **`UPS_trap_host`** • The name of the Oracle FS System as an SNMP query host: **`UPS_query_host`** • The shared IP address for the Oracle FS System: **`10.50.4.50`** • The SNMP host port number for trap hosts: **`162`** • The SNMP host port number for query hosts: **`161`** • The name of the UPS device: **`Bldg7UPS`** • The IP address of the UPS device: **`20.33.44.5`** • The community string: **`12269VmDC12`**

```
$ fscli snmp_host -add -name UPS_trap_host -ip
10.50.4.50 -community 12269VmDC12 -trapPort 162
```

```
$ fscli snmp_host -add -name UPS_query_host -ip
10.50.4.50 -community 12269VmDC12 -trapPort 161
$ fscli ups -add -name -Bldg7UPS -ip 20.33.44.5
-community 12269VmDC12
```

Related Links

ups -add

ups -delete

ups -list

ups -modify

ups -add

Configures the Oracle FS System to receive SNMP traps that are sent by SNMP-enabled UPS devices.

SYNOPSIS

```
ups -add
   -name ups-name
   -ip ip-address
   -community community

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Before the Oracle FS System can receive SNMP traps, it must be configured as an SNMP trap host. Issue the **snmp_host -add** command to create an SNMP trap host entry for the Oracle FS System. Provide the following information:

Name	Provide a name to identify the Oracle FS System as an SNMP trap host that receives UPS traps. Example: **UPS_trap_host**.
Public IP address	Enter the public IP address for the Oracle FS System.
Community	Enter the unique community string that the UPS device vendor provides.
Trap Port	Enter port 162 for SNMP trap hosts.

After creating an SNMP trap host entry for the Oracle FS System, run the **ups -add** command to configure the Oracle FS System to receive SNMP traps from the specified UPS device. Be sure to specify the same community string that you specified when you defined the Oracle FS System as an SNMP trap host.

Only administrators with primary administrator or admin1 roles are authorized to run this command.

Note: Only administrators with primary administrator or admin1 roles are authorized to run the ups -add command.

OPTIONS

-name

Specifies the name of the UPS that you are adding to the Oracle FS System. The name that you provide is used to create the fully qualified name (FQN) after you power up the UPS and the Oracle FS System discovers it. Use double quotation marks around names containing spaces or dashes. The following characters are invalid in a UPS name:

- Non-printable characters, including ASCII 0 through 31, decimal
- / (slash) and \ (backslash)
- . (dot) and .. (dot dot)
- Tabs

The Oracle FS System removes leading spaces and trailing spaces. Names are case sensitive.

-ip

Specifies the IP address of a UPS device that the Oracle FS System is monitoring on the management network.

-community

Identifies the community string for the Oracle FS System to authenticate the SNMP traps that are sent by UPS devices. Use the unique community string that is provided by the UPS vendor. The string you specify must match the community string that you specify when you configure the Oracle FS System to be an SNMP trap host.

EXAMPLE

Task	Configure the Oracle FS System to receive SNMP traps from a battery-backed power source.
Parameters	• The name of the Oracle FS System as an SNMP trap host: **UPS_trap_host** • The name of the Oracle FS System as an SNMP query host: **UPS_query_host** • The shared IP address for the Oracle FS System: **10.50.4.50** • The SNMP host port number for trap hosts: **162** • The SNMP host port number for query hosts: **161**

- The name of the UPS device: **Bldg7UPS**
- The IP address of the UPS device: **20.33.44.5**
- The community string: **12269VmDC12**

```
$ fscli snmp_host -add -name UPS_trap_host -ip
10.50.4.50 -community 12269VmDC12 -trapPort 162
$ fscli snmp_host -add -name UPS_query_host -ip
10.50.4.50 -community 12269VmDC12 -trapPort 161
$ fscli ups -add -name -Bldg7UPS -ip 20.33.44.5
-community 12269VmDC12
```

Related Links

ups

snmp_host -add

ups -delete

Removes one or more UPS devices as a source of SNMP traps.

SYNOPSIS

```
ups -delete
   -ups ups-id-or-fqn [, ups-id-or-fqn]...

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Run the **ups -delete** command to stop receiving SNMP traps from one or more UPS devices. Running the **ups -delete** command does not disable the UPS device as a supplier of power to the Oracle FS System.

Only administrators with primary administrator or admin1 roles are authorized to run this command.

Note: Only administrators with primary administrator or admin1 roles are authorized to run the ups -delete command.

OPTIONS

-ups — Specifies the name of the UPS device. UPS names are unique across the Oracle FS System. When specifying more than one device, provide the names in a comma separated list. The names must be preceded by a forward slash (/). and are 256 or fewer UTF-8 characters.

EXAMPLE

Task	Discontinue receiving SNMP traps from a given UPS device. **Note:** Issuing an **`ups -delete`** command does not indicate that the Oracle FS System does not receive power from the UPS device. The power cables for the Oracle FS System can be plugged into an UPS device without the Oracle FS System being able to monitor the status of the device.
Parameters	• The name of the UPS device: `/Bldg7UPS`

```
$ fscli ups -delete -ups /Bldg7UPS
```

Related Links

ups

ups -list

Displays information about SNMP-enabled UPS devices that the Oracle FS System is configured to query.

SYNOPSIS

```
ups -list
   [-details]
   [-ups ups-id-or-fqn [, ups-id-or-fqn]... ]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

The **`ups -list`** command returns SNMP MIB information from one or more SNMP-enabled UPS devices. Before issuing an **`ups -list`** command, define the Oracle FS System as an SNMP query host. Run the **`snmp_host -add`** command with the following information:

Name	A name to identify the Oracle FS System as an SNMP query host. Example: **`UPS_query_host`**
IP address	The shared IP address of the Oracle FS System.
community	Enter the unique community string that is provided by the UPS device vendor.
Trap Port	Enter port 161 for SNMP query hosts.

After the Oracle FS System is configured to be an SNMP query host, issue the **ups -list** command to display the fully qualified names (FQNs) of the UPS devices that the Oracle FS System is configured to query. Run the **ups -list -details** command to issue an SNMP **query** command.

Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run this command.

Note: Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run the `ups -list` command.

OPTIONS

-details

Issues an SNMP UPS MIB query command to obtain the following information about one or more UPS devices:

- The IP address of the UPS device
- The SNMP community string
- The model number
- The firmware version
- The serial number
- The source of power
- The status of the battery

-ups

Specifies the name of the UPS device. UPS names are unique across the Oracle FS System. When specifying more than one device, provide the names in a comma separated list. The names must be preceded by a forward slash (/). and are 256 or fewer UTF-8 characters.

EXAMPLE

Task	Issue an SNMP query command to return the status of all UPS devices that are configured to send SNMP traps to the Oracle FS System.
Parameters	• None

```
$ fscli ups -list -details
```

Related Links

ups

snmp_host -add

ups -modify

Changes the name, IP address, or SNMP community string for a given UPS device.

SYNOPSIS

```
ups -modify
   -ups ups-id-or-fqn
   [-name new-ups-name]
   [-ip ip-address]
   [-community community]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Run the **ups -modify** command to re-configure the SNMP settings for a given UPS device. If you are changing the community string, be sure that you also run the following commands to change the community strings for the SNMP trap host and query host definitions of the Oracle FS System:

snmp_host -modify -name / UPS_trap_host -community *new-vendor-string*	Changes the community string for the Oracle FS System to use to authenticate the SNMP traps that are sent by the UPS device.
snmp_host -modify -name / UPS_query_host -community *new-vendor-string*	Changes the community string for the Oracle FS System to send when querying the UPS device for information.

Note: As shown in the list above, when properly configured, there are two SNMP host entries for the Oracle FS System. Run the **snmp_host -list** command to obtain the unique identifiers for both entries.

Only administrators with primary administrator or admin1 roles are authorized to run this command.

Note: Only administrators with primary administrator or admin1 roles are authorized to run the ups -modify command.

OPTIONS

-ups	Specifies the fully qualified name (FQN) of the UPS device. The name must be preceded by a forward slash (/). You can also specify the unique ID for the UPS device.
-name	Specifies the name of the new UPS that you have installed. The name that you provide is used to create an fully qualified name (FQN) after you power up the UPS and the Oracle FS System software discovers it. Use double quotation marks around names

containing spaces or dashes. The following characters are invalid in a UPS name:

- Non-printable characters, including ASCII 0 through 31, decimal
- / (slash) and \ (backslash)
- . (dot) and .. (dot dot)
- Tabs

The Oracle FS System removes leading spaces and trailing spaces. Names are case sensitive.

-ip — Specifies the new IP address of a UPS device that the Oracle FS System is monitoring on the management network.

-community — Identifies the community string for the Oracle FS System to authenticate the SNMP traps that are sent by UPS devices. Use the unique community string that is provided by the UPS vendor. The string you specify must match the community string that you specify when you configure the Oracle FS System to be an SNMP trap host

EXAMPLE

Task	Change the SNMP community string that is used for authentication to a new string that was provided by the UPS vendor to support a recent firmware upgrade.
Parameters	• The name of the Oracle FS System as an SNMP trap host: **/UPS_trap_host** • The name of the Oracle FS System as an SNMP query host: **/UPS_query_host** • The name of the UPS device preceded by a forward slash (/) character: /Bldg7UPS • The new community string: **22269VmDC12**

```
$ fscli snmp_host -modify -id /UPS_trap_host
-community 22269VmDC12
$ fscli snmp_host -modify -id /UPS_query_host
-community 22269VmDC12
$ fscli ups -modify -name /Bldg7UPS -community
22269VmDC12
```

Related Links

ups

snmp_host -list

version

Displays the current version of the Oracle FS CLI executable and the version of the Oracle FS System software.

SYNOPSIS

`version {[-list]|[-usage|-help]}`

DESCRIPTION

You do not need to be logged in to an Oracle FS System to retrieve version information. However, if you are not logged in, you must specify the -oracleFS option to direct the request to a particular Oracle FS System. For example : `version -list -oraclefs oracle-fs-system`.

To update the FSCLI version, use an Internet browser to navigate to the Oracle FS System home page. Click on the appropriate download link to install the FSCLI client for your platform.

SUBCOMMANDS

`-list`	Displays the current version of the Oracle FS CLI executable and the version of the Oracle FS System software.

EXAMPLE

Task	Return the FSCLI version and the software version that is running on your Oracle FS System.
Parameters	• None

```
$ fscli version -list
```

Related Links

version -list

system -list

version -list

Displays the current version of the Oracle FS CLI executable and the version of the Oracle FS System software.

SYNOPSIS

```
version -list
   [-details]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

The **version -list** command displays the following information:

- The version number of the FSCLI executable.
- The version numbers of the software that is installed on the Pilots Drive Enclosures and Controllers.

Specifying the -details option does not return any additional information.

Note: Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run the `version -list` command.

OPTIONS

-details	Provides no additional information. This option is included for consistency across all subcommands.

EXAMPLE

Task	Return the FSCLI version and the software version that is running on your Oracle FS System.
Parameters	• None

```
$ fscli version -list
```

Related Links

version

volume_group

Manages the volume groups and the logical volumes that are configured on an Oracle FS System.

SYNOPSIS

```
volume_group { [ -add | -delete | -list | -modify ] | [ -usage | -help ] }
```

DESCRIPTION

Volume groups are organizational units that can contain any grouping of logical volumes and nested volume groups. By default, the Oracle FS1 Flash Storage System has a root volume group, represented by a single forward slash (/). This root volume group can contain additional volume groups that are set up in a broad, shallow hierarchy, or nested in a narrow, deep hierarchy. If you do not set up and specify parent volume groups, this default volume group contains any LUN or filesystem that you create.

SUBCOMMANDS

-add	Creates a new volume group and adds it to the Oracle FS System.
-delete	Removes a particular volume group from the Oracle FS System.
-list	Displays the volume groups that are defined on the Oracle FS System.
-modify	Changes the properties of a volume group on the Oracle FS System.

EXAMPLE

Task	Create a volume group in a parent volume group on the Oracle FS System.
Parameters	• The name of the volume group: `user1_vg` • The name of the parent volume group: `/all_users`

```
$ fscli volume_group -add -name user1_vg
-in /all_users
```

Related Links

volume_group -add
volume_group -delete
volume_group -list
volume_group -modify

volume_group -add

Creates a new volume group and adds it to the Oracle FS System.

SYNOPSIS

```
volume_group -add
   -name name
   [-in parent-id-or-fqn]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Use the **volume_group -add** command to create a volume group. Volume groups allow you to organize logical volumes into organizational units. You can create volume groups in the root volume group of the Oracle FS System to create a broad, shallow grouping of volume groups. Alternatively, you can create one or more volume groups within an existing volume group to create a nested hierarchy of volume groups.

Note: Only administrators with primary administrator or admin1 roles are authorized to run the `volume_group -add` command.

OPTIONS

-in

Specifies the ID or fully qualified name (FQN) of the parent volume group for the new volume group. If omitted, this command creates a volume group by default at the root level, which is designated by the forward slash (/) character. If you do not set a volume group, any LUN or file system would be created in this default volume group.

-name

Specifies the name of the volume group that you are defining on the Oracle FS System. The name that you provide must be between 1 and 40 characters. The name that you provide is used to create the fully qualified name (FQN) after the Oracle FS System creates the volume group. Use double quotation marks around names containing one or more spaces or dashes to ensure that the Pilot software handles the spaces or dashes correctly. The following characters are invalid in a volume group name:

- Non-printable characters, including ASCII 0 through 31, decimal
- / (slash) and \ (backslash)
- . (dot) and .. (dot-dot)
- Embedded tabs

Note: The `volume_group -add` command fails:

- If the Oracle FS System already contains a volume group with the specified name
- If you specify a parent that does not exist on the Oracle FS System.

EXAMPLE

Task	Create a volume group in a parent volume group on the Oracle FS System.
Parameters	• The name of the volume group: `user1_vg` • The name of the parent volume group: `/all_users`

```
$ fscli volume_group -add -name user1_vg
-in /all_users
```

Related Links

volume_group

`volume_group -delete`

Removes a particular volume group from the Oracle FS System.

SYNOPSIS

```
volume_group -delete
   -volumeGroup volume-group-id-or-fqn [,volume-group-id-or-fqn]...

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Before removing a volume group, you must delete all its logical volumes or assign them to other volume groups. After a volume group is empty, run the **`volume_group -delete`** command to remove the group.

Note: Only administrators with primary administrator or admin1 roles are authorized to run the `volume_group -delete` command.

OPTIONS

-volumeGroup Specifies the fully qualified name (FQN) or the ID of the volume group. If specifying two or more volume groups, provide a comma-separated list.

EXAMPLE

Task	Remove a volume group from the root volume group of theOracle FS System. **Note:** Move or delete all objects from the volume group before running this example.
Parameters	• The FQN of the volume group: `/user1_vg`

```
$ fscli volume_group -delete -volumeGroup /user1_vg
```

Related Links

volume_group

volume_group -list

Displays the volume groups that are defined on the Oracle FS System.

SYNOPSIS

```
volume_group -list
   [-details]
   [-volumeGroup volume-group-id-or-fqn [,volume-group-id-or-fqn]... ]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Run the **volume_group -list** command to obtain the fully qualified names (FQNs) of the existing volume groups. To obtain the unique identifiers (IDs) and the parent volume group, run the **volume_group -list -details** command.

Note: Administrators with primary administrator, admin1, admin2, monitor, or support roles are authorized to run the `volume_group -list` command.

OPTIONS

-details Returns the FQNs, the IDs, and the parent volume group for the specified volume groups.

-volumeGroup Specifies the FQN or the ID of the volume group to be listed. When you specify two or more volume groups, provide a comma-separated list. Returns the FQN, the ID, and the parent volume group for each specified volume group.

EXAMPLE

Task	Display a detailed list of all the volume groups that exist on the Oracle FS System.
Parameters	• None

```
$ fscli volume_group -list -details
```

Related Links

volume_group

volume_group -modify

Changes the properties of a volume group on the Oracle FS System.

SYNOPSIS

```
volume_group -modify
   -volumeGroup volume-group-id-or-fqn
   [-name new-volumeGroup-name]
   [-in parent-id-or-fqn]

   [{-sessionKey | -u admin-user -oracleFS oracle-fs-system}]
   [{-outputformat | -o} { text | xml }]
   [{-timeout timeout-in-seconds | -verify | -usage | -example |
-help}]
```

DESCRIPTION

Run the **volume_group -modify** command to rename a volume group or to reassign a volume group to a different volume group. You can use this command to nest one volume group within another volume group, and to move a nested volume group into a different parent volume group.

Note: Only administrators with primary administrator or admin1 roles are authorized to run the `volume_group -modify` command.

OPTIONS

-in Specifies the ID or fully qualified name (FQN) of the parent volume group to which you are moving the existing volume group. If this subcommand is omitted, the `volume_group -modify` command moves the existing volume group under the root

	filesystem, which is designated by the forward slash (/) character.
-name	Specifies a new name for the volume group. The name that you provide must be between 1 and 40 characters. The name that you provide is used to create the fully qualified name (FQN) after the Oracle FS System renames the volume group. Use double quotation marks around names containing one or more spaces or dashes to ensure that the Pilot software handles the spaces or dashes correctly. The following characters are invalid in a volume group name: • Tab • / (slash) and \ (backslash) • . (dot) and .. (dot-dot) • Embedded tabs **Note:** The `volume_group -modify` command fails if the Oracle FS System already contains a volume group with the specified name.
-volumeGroup	Specifies the FQN or the ID of the volume group that you are changing.

EXAMPLE

Task	Change the fully qualified name (FQN) of a volume group on the Oracle FS System and move the volume group under a different volume group.
Parameters	• The FQN of the volume group to rename: `/user1_vg` • The new name of the volume group: `user2_vg` • The FQN of the volume group destination: `/parent2_vg`

```
$ fscli volume_group -modify -volumegroup /user1_vg
-name user2_vg -in /parent2_vg
```

Related Links

volume_group

APPENDIX A

System Operating Limits

Operating Limits for an Oracle FS System

The following table lists the numbers of objects that can be configured for an Oracle FS System.

Table 3: System limits

Object	Quantity range
repositories[1]	Maximum: 1024
Storage Domains	Minimum: 1 Maximum: 64 per Oracle FS System
virtual LUNs (VLUNs)	Maximums:[2] • 8192 per Controller • 8192 per Oracle FS System
VLUN block snapshots, full (copies)	Maximum: 12 full snapshots per VLUN
VLUN block snapshots, partial (clones)	Maximum: 1024 partial snapshots of a single source volume active at a time
volume groups	Minimum: 1 Maximum: 5000 total
volume size	Minimum: • 1 GB and 50% of maximum capacity • Minimum growth increment: 1 GB Maximum: System capacity

[1] A repository is a VLUN and is associated with a logical volume. A repository holds metadata for the clones of that volume. A volume has at most one repository VLUN.

[2] Recommended maximums are 4096 per Controller and 4096 per system.

The following table lists the numbers of objects that are related to a Drive Enclosure that can be configured for an Oracle FS System.

Table 4: Drive Enclosure configuration limits

Object	Quantity range
Drive Enclosures (DE)	Minimum: 1 Maximums: • Per Oracle FS System: 30 • Per Storage Domain: 30 • Per SAS HBA: 10 • Per DE string: 5
drive groups	Minimum: 1 Maximums: • Per Oracle FS System: 1024 • Per Storage Domain: 1024
drives	Per DE • HDDs: 24 drives of the same type (in groups of 12) • Performance SSDs: 13 drives of the same type (in groups of 6, plus 1 as a hot spare) • Capacity SSDs: 19 drives of the same type (in groups of 6, plus 1 as a hot spare) Per drive group • HDDs: 12 • SSDs: 6

System Limits for SAN Objects

The following table lists the numbers of SAN-related objects that can be configured for an Oracle FS System.

Table 5: SAN operating limits

Object	Quantity range
LUN-to-host mappings	Maximum: 33,554,432 per Oracle FS System
SAN host connections (active)	Maximum: • 512 active connections per SAN CU port • 3072 per SAN CU (with 6 ports) • 6144 per Oracle FS System (with 12 ports)
SAN LUNs	Maximum[3]: • 4096 visible for any given SAN Controller • 4096 visible across all SAN Controllers in a given system • 4096 visible per SAN host
SAN LUN size	Minimum: • 1 GB and 50% of maximum capacity • Minimum growth increment: 1 GB Maximum: System capacity

The following table lists the numbers of SAN-related objects that can be configured for an Oracle FS Path Manager (FSPM) host. See the appropriate *Oracle FS Path Manager Installation Guide* for a complete list of operating limits.

Table 6: FSPM operating limits

Object	Quantity range
system connections	Maximum: 8 **Note:** The connections can be to any combination of Oracle FS Systems and Pillar Axiom systems.
LUN data paths	Maximum: 32 to each LUN
HBA ports	Maximum: 32

[3] A visible (active) SAN LUN requires one virtual LUN (VLUN) for user data and one VLUN for metadata. A clone of a SAN LUN requires one VLUN for the metadata and one VLUN for the data repository. If the clone is active, a third VLUN is required, making a total of five VLUNs for the SAN LUN and its clone.

Index

A

C

D

E

F

G

H

I

J

L

O

P

R

S

T

U

V