

Accessing and Using the Cluster Manager CLI

This section details the different ways you can access and use the Cluster Manager CLI.

Starting the Cluster Manager CLI

To use the KumoScale Cluster Manager CLI, you must specify the Kubernetes configuration settings for your environment. This can be done using the **ks_cluster_manager** command. There are several options for specifying the settings when using **ks_cluster_manager** as shown in the examples below. After logging in, you will see the CLI> prompt:

If the Kubernetes configuration file is located in the default location (/usr/local/CLI_cluster_manager/kube.conf)

Start the Cluster Manager CLI with:

```
ks_cluster_manager
```

Returns

```
CLI>
```

If the configuration file is NOT in the default location, specify the full pathname with -K:

Start the Cluster Manager CLI with:

```
ks_cluster_manager -K/--kube-conf-file-path <full path of the configuration file>
```

Returns

```
CLI>
```

If the configuration file is NOT in the default location, and you do not specify a Kubernetes configuration file:

Start the Cluster Manager CLI with:

```
ks_cluster_manager
```

The system will prompt you for the file with:

```
Enter the Kubernetes configuration file:
```

Once you enter the full path for the configuration file, you will receive the CLI> prompt.

Access Rights

The majority of CLI commands are implemented in a REST API (REpresentational State Transfer Application Programming Interface), and the CLI serves as a simple abstraction over it. Access to the Cluster Manager CLI is based on access to the REST API.

In the absence of access rights to REST APIs, the CLI user receives the message:

```
You do not have access rights for these operations.
```

If there are no access rights to the REST APIs of the corresponding type, the user receives the message:

```
You are not authorized to perform this operation.
```

Once authorized, you can call one or more cluster commands using **ks_cluster_manager**.

Cluster Manager CLI Help

You can see available commands without initiating a session using **help**. You will be presented with a list and short description of the Cluster Manager CLI commands, but no session will be opened.

```
ks_cluster_manager --help | -h
```

You can also call the CLI Cluster Manager without opening a session with:

```
ks_cluster_manager --version | -V
```

where **version** is the current version of the CLI Cluster Manager. This is useful for automation purposes.

You can also query for the version of the CLI Cluster Manager without opening a session with:

```
ks_cluster_manager --version | -V
```

Closing the Cluster CLI

A session can be closed by any of the following:

- Enter the **exit** command
- Enter **ctrl + c**
- Enter **ctrl + d**
- Exceed allowed idle time

In each of the above, an appropriate message will be provided.

Command Mode

You can use KumoScale Cluster Manager CLI in command mode. In this case, any operation you specify will be performed in one CLI call. The operation should be defined after all configuration parameters as follows:

Command mode initiated with configuration parameters

```
ks_cluster_manager [<configuration parameters list>] <Cluster CLI command with parameters>
```

Command mode initiated with a default configuration file

```
ks_cluster_manager
```

Command mode initiated with your own configuration file

```
ks_cluster_manager -K <path to your configuration file>
```

For example, using the Cluster Manager CLI command **cluster-show**:

If you work with own configuration file /home/cli_cluster.conf:

```
ks_cluster_manager -K /home/cli_cluster.conf cluster-show
```

Or if you work with the default configuration file

```
ks_cluster_manager cluster-show
```

The following is returned in both cases

```
Provisioner Version: <major>.<minor>-<revision>
Operator Version: <major>.<minor>-<revision>
Authentication Mode: LOCAL
Number of Storage Nodes: n
Number of Master Storage Nodes: m
Total Capacity: N GiB
Total Free Space: Y GiB
Provisioner URL: https://<ip address>:<port number>
```

Command Specification

KumoScale Cluster Manager CLI commands have the form:

```
<command name> [option...] [parameter...]
```

Where:

- **Command Name** – Name of the command from the list of commands available to the corresponding user based on their access rights. A complete list of commands is provided in the [Cluster Manager CLI Command Reference](#).
- **Option** – Parameter name without value.
- **Parameter** – Key-value of the corresponding parameter. There are two types of parameters:
 - **Required** parameters: Required for the execution of the command. Executing the command without the parameter returns an error message.
 - **Optional** parameters: Executing the command without optional parameters causes the corresponding parameters to be assigned their default value.

Note: All KumoScale CLI commands must be entered in lowercase.

Additional Parameters for *Show* Operations

All operations with the prefix **show-**, referred to as "Show" operations, have the following additional parameters:

- **watch** - This parameter runs the CLI operation repeatedly by updating its output. By default, the update runs every 2 seconds and **watch** will run until interrupted. To interrupt and return to the CLI prompt, press the key combination Ctrl + d. The first two lines of the clock display contain the following:
 - First string
 - Screen refresh interval in seconds (For example, Every 2.0s).
 - A current CLI operation with parameters (For example, **show-targets --json-print --interval 2 --watch**).
 - Current date and time in format: <weekday> <month> <day> <time> <year> (For example, **Wed Dec 22 12:07:15 2021**) at the top right of the screen.

- Second string
 - Method for interruption.
- **interval** – the interval for output. This is an integer from 2 to 100 seconds; the default value is 2 seconds.
- **json-print** - shows the output as a JSON structure.
- **include** - a comma-delimited list of regular expressions with substrings to include. If at least one of the substrings contains a space, then the entire text must be enclosed in double quotes.
- **exclude** - a comma-delimited list of regular expressions with substrings to exclude. If at least one of the substrings contains a space, then the entire text must be enclosed in double quotes.

For example, the first two strings of the **watch** output every 2.0s:

```
Every 2.0s: storagenode show --detail --watch --interval 2 --json-print      Wed Dec 22 12:07:15 2021
Press Ctrl+d for exit from watch
```

To familiarize yourself with the syntax of regular expressions, you can refer to the official documentation: [Syntax for Regular Expressions](#)

Examples of using regular expressions in CLI

```
CLI>volume show --alias PROV1
Alias: dol002 UUID: 051b0fa2-ba26-4e93-8edf-#####
Alias: vol002 UUID: 3cdf406b-7c37-443e-858c-#####
Alias: vol000 UUID: 4ae61bef-ef48-4f1d-819c-#####
Alias: vol001 UUID: 7096aa23-e167-42ab-b770-#####

CLI>volume show --alias PROV1 --include v.*00.*
Alias: vol002 UUID: 3cdf406b-7c37-443e-858c-#####
Alias: vol000 UUID: 4ae61bef-ef48-4f1d-819c-#####
Alias: vol001 UUID: 7096aa23-e167-42ab-b770-#####

CLI>volume show -alias PROV1 --exclude v.*00.*
Alias: dol002 UUID: 051b0fa2-ba26-4e93-8edf-#####
```

Command Editing

While typing a command, the user may delete the typed input by using the backspace and delete keys.

Command Parsing

Typing an invalid command can result in the following error messages:

- **Unknown command:** The command name is not recognized or is unavailable. You will be presented with a list of available commands to help you determine the correct one.
- **Unknown parameter:** The parameter name is not recognized. You will be presented with help for the command.
- **Missing parameter:** A required parameter is missing. You will be presented with help for the command.
- **Invalid parameter value:** An invalid value for a parameter has been provided. You will be presented with help for the command.

Command Help

To obtain help information of individual commands, use the following syntax:

```
CLI> <command name> <-h | --help>
```

Command Autocomplete

The name of an available command can be entered using auto-complete support.

Examples:

```
CLI> h<TAB><TAB>
help history

CLI> hi<TAB>
history
```

History Navigation

To navigate all entered commands, use the following controls:

- **Up arrow:** Move up in the list of entered commands.
- **Down arrow:** Move down in the list of entered commands.
- **Ctrl + r:** Contextual search in the list of entered commands.

Password Requirements

Password requirements are defined according to the current Linux™ operating system password policy. Password characters do not appear on the screen. You will be prompted with corrective information if you enter a password that does not meet requirements.
