

Performing Lab Exercises

Run the `lab` command from `workstation` to prepare your environment before each hands-on exercise, and again to clean up after an exercise. Each hands-on exercise has a unique name within a course.

There are two types of exercises. The first type, a *guided exercise*, is a practice exercise that follows a course narrative. If a narrative is followed by a quiz, it usually indicates that the topic did not have an achievable practice exercise. The second type, an *end-of-chapter lab*, is a gradable exercise to help to verify your learning. When a course includes a comprehensive review, the review exercises are structured as gradable labs.

The syntax for running an exercise script is as follows:

```
[student@workstation ~]$ lab action exercise
```

The *action* is a choice of `start`, `grade`, or `finish`. All exercises support `start` and `finish`. Only end-of-chapter labs and comprehensive review labs support `grade`.

start

A script's start logic verifies the required resources to begin an exercise. It might include configuring settings, creating resources, checking prerequisite services, and verifying necessary outcomes from previous exercises. With exercise start logic, you can perform any exercise at any time, even if you did not perform prerequisite exercises.

grade

End-of-chapter labs help to verify what you learned, after practicing with earlier guided exercises. The grade action directs the `lab` command to display a list of grading criteria, with a PASS or FAIL status for each. To achieve a PASS status for all criteria, fix the failures and rerun the grade action.

finish

A script's finish logic deletes exercise resources that are no longer necessary. With cleanup logic, you can repeatedly perform an exercise, and it helps course performance by ensuring that unneeded objects release their resources.

To list the available exercises, use tab completion in the `lab` command with an action:

```
[student@workstation ~]$ lab start Tab Tab
  api-review      cluster-admin      comprehensive-review1
  api-s3           cluster-maint      comprehensive-review2
  api-swift        cluster-review     comprehensive-review3
  block-devices    component-auth     comprehensive-review4
  block-import     component-osd      comprehensive-review5
  block-review     component-pool     configure-monitor
  block-snapshot   component-review   configure-network
...output omitted...
```