

Using the Cloudlab Java VM (v2019.7)

by Jnaapti

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Accessing the VNC environment

You can then access the VNC environment at: <https://yourid-6080.cloudlab.jnaapti.io/>

The trainer would have shared your id, username and password (if any). If not, contact the trainer for the same.

Here is a screenshot of the desktop that you should see:



Figure 1: Landing Screen

NOTE: There might be some warnings/messages. Confirm them to continue using the desktop.

Accessing Browsers

There are 2 browsers installed by default - Chromium (open source version of Chrome) and Firefox.

- Chrome can be accessed from the Desktop Shortcut.
- Firefox can be accessed from Main Menu -> Internet -> Firefox.

Working with the Terminal

You can access the terminal by double-clicking the Desktop Shortcut called "Terminal"

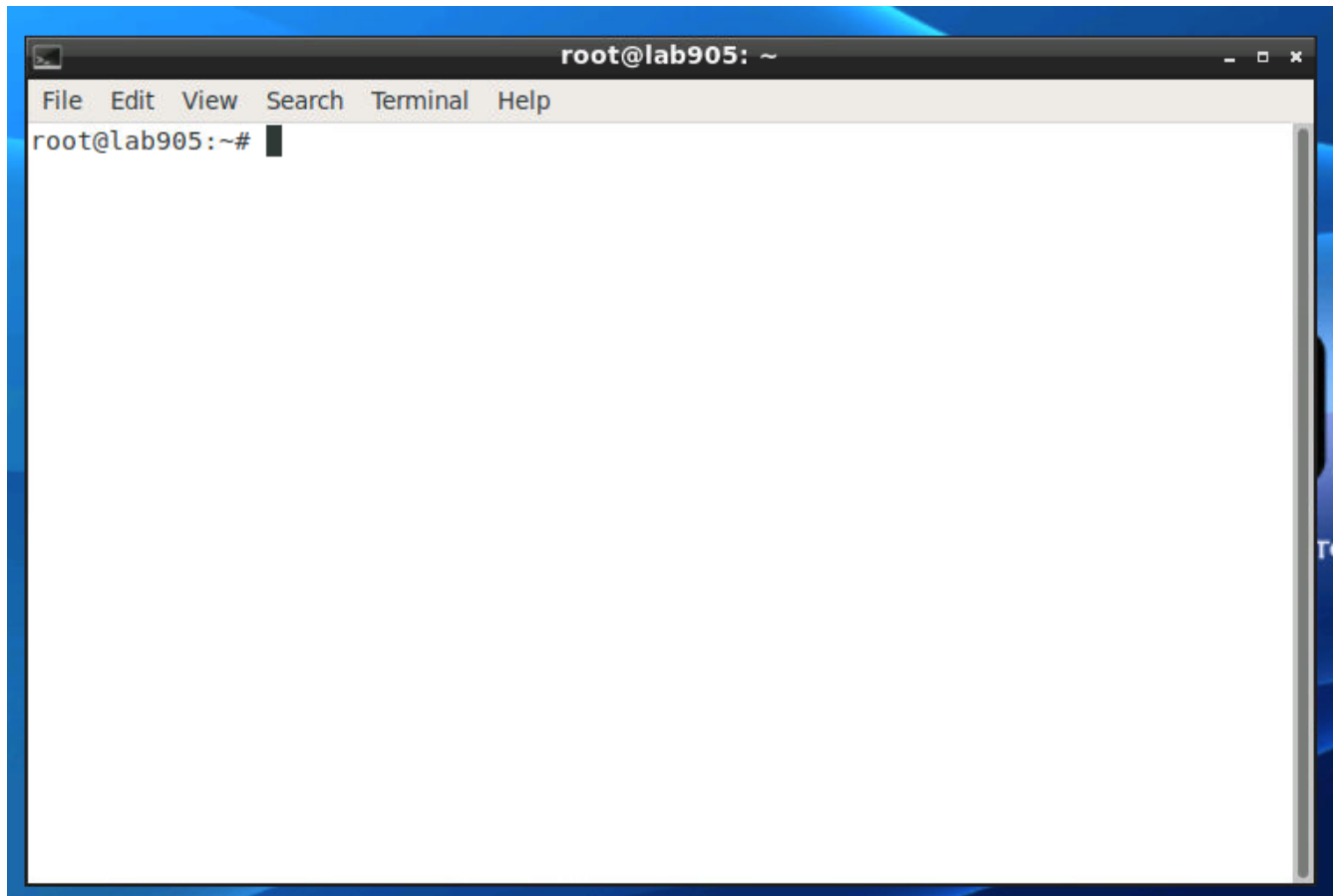


Figure 2: Terminal

By default, the terminal opens to the home directory of the root user, i.e. /root (represented by ~).

Use Ctrl+D to quit the shell and close the terminal.

Working with the Filesystem

You can access the File Manager at: Main Menu -> System Tools -> File Manager PCManFM. Refer to Jnaapti's guide on Linux basics if you need help navigating the Linux filesystem.

Creating directories from the File Manager

1. In the File Manager click on "Home Folder".
2. Right click and select Create New -> Folder.
3. Give the folder a name and click OK.

You can also follow this process to create folders on the desktop. Right click in an empty space on the Desktop and follow the same process from Step 2.

Creating files from the File Manager

1. Select the folder where you want to create the file.
2. Right click and select Create New -> Empty File.
3. Give the file a name with the required extension (eg: HelloWorld.java) and click OK.

Delete a file or folder from the File Manager

1. Select the folder or file that you want to delete.
2. Press Shift+Delete on your keyboard.
3. Choose Yes to confirm.

Creating files and folders from the Terminal

1. Open the Terminal as described in the section above.
2. Use the Linux commands `cd`, `touch`, `cat`, `mkdir`, `rm` etc to interact with files and folders.

Refer to Jnaapti's guide on Linux basics if you need help navigating the Linux filesystem.

Accessing Eclipse

The Eclipse version installed in this version of the Cloudlab Java VM is 2019-06 and the edition is Eclipse Java EE IDE for Web Developers.

Access Eclipse via the Desktop Shortcut

Just double-click the Desktop Shortcut to open

Access Eclipse from the command line

1. Open the Terminal as described above.
2. Type:

```
/opt/eclipse/eclipse
```

Select the workspace directory (you can go with the default, i.e. `/root/eclipse-workspace`) and click Launch.

Running Java

In Eclipse

Eclipse is pre-configured to use Java 8. You can verify the same at Window -> Preferences -> Java -> Installed JREs.

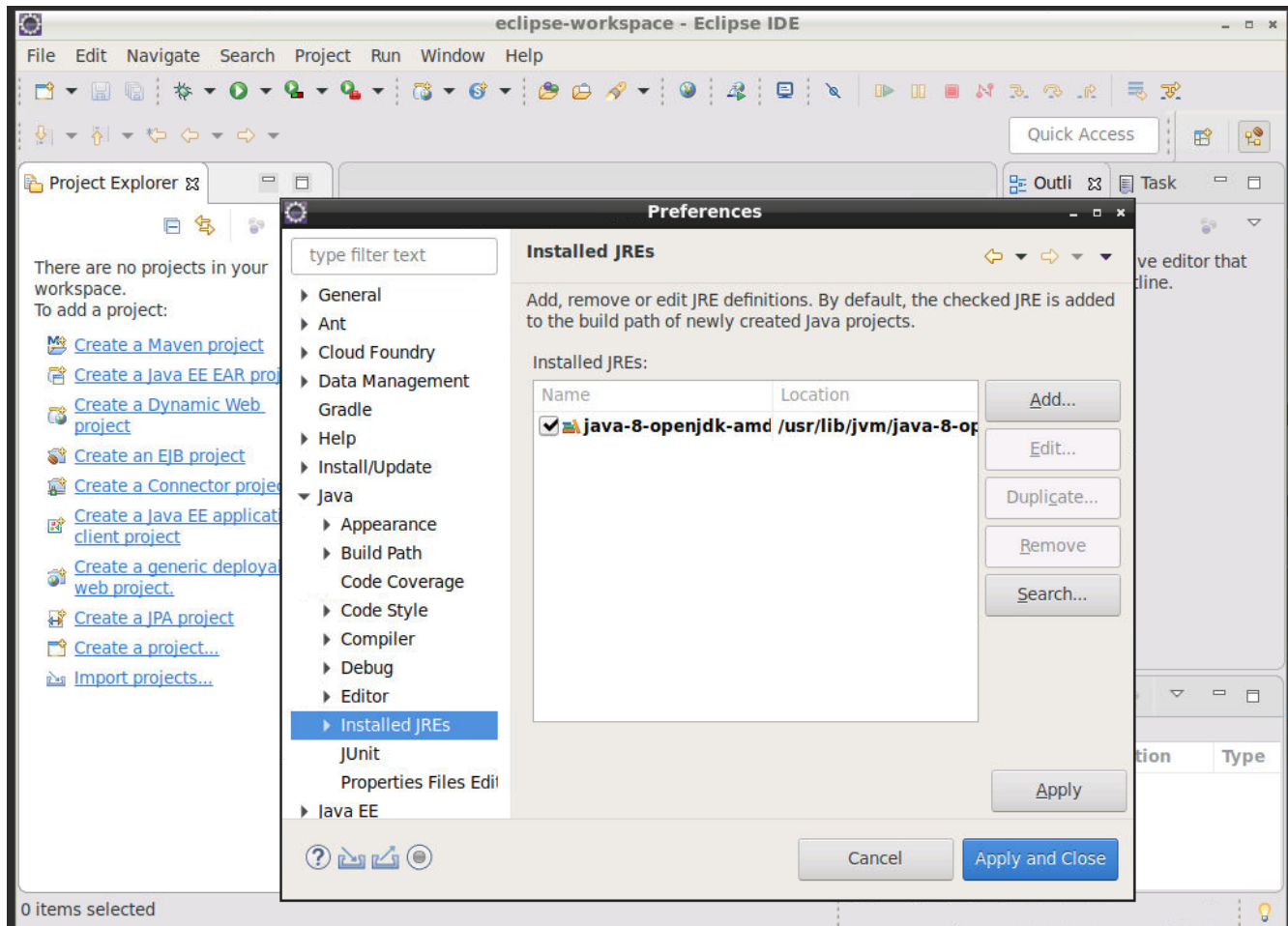


Figure 3: Installed JREs

From the command line

javac and java are already in the PATH. So you can directly type these in the terminal.

```
root@lab905:~# java -version
openjdk version "1.8.0_212"
OpenJDK Runtime Environment (build 1.8.0_212-8u212-b03-0ubuntu1.18.04.1-b03)
OpenJDK 64-Bit Server VM (build 25.212-b03, mixed mode)
root@lab905:~# javac -version
javac 1.8.0_212
root@lab905:~#
```

Running Maven

mvn is already present in the PATH. So you can directly type it in the terminal.

```
root@lab905:~# mvn --version
Apache Maven 3.6.0
Maven home: /usr/share/maven
Java version: 1.8.0_212, vendor: Oracle Corporation, runtime: /usr/lib/jvm/java-8-openjdk-amd64/jre
Default locale: en, platform encoding: UTF-8
OS name: "linux", version: "4.15.0-52-generic", arch: "amd64", family: "unix"
root@lab905:~#
```

Working with MySQL

Starting/Stopping the Server

The MySQL server will already be running when the Operating System boots. So you don't need to start it. In case you need to start/stop the service you can use the following commands:

- To start:

```
systemctl start mysql
```

- To stop:

```
systemctl stop mysql
```

- To check the status

```
systemctl status mysql
```

(Use q to quit the status)

Connecting to MySQL with the client

mysql client is already present in PATH. So you can access the database server as follows:

```
root@lab905:~# mysql -uroot -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 2
Server version: 5.7.26-0ubuntu0.18.04.1 (Ubuntu)
```

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Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

```
mysql>
```

Use Ctrl+D to quit the mysql shell.

Your trainer will share the root password with you.

Working with Git

git is already present in PATH. So you can clone and work with Git repositories by typing git:

```
root@lab905:~# git --version
git version 2.17.1
root@lab905:~# git clone https://github.com/buzypi/spring-boot-hello
Cloning into 'spring-boot-hello'...
remote: Enumerating objects: 49, done.
remote: Total 49 (delta 0), reused 0 (delta 0), pack-reused 49
Unpacking objects: 100% (49/49), done.
root@lab905:~#
```

Keyboard Shortcuts

Since Alt-Tab and Alt-Shift-Tab switch the windows on your laptop, we have remapped the keyboard shortcuts to switch windows in the VNC environment. To switch windows, use Alt-q or Alt-Shift-q.

Getting help from the trainer

Your trainer has real-time access to your VNC environment. So in case you are facing an issue, you can share your id with the trainer, and the trainer can access your VNC environment and fix the issues for you.

Troubleshooting

In case the VNC environment becomes unresponsive follow these steps to fix the issue.

Step 1 - Refresh the browser

Since the VNC session stays across browser refreshes, refreshing the browser can solve some network connection issues, while restoring your session.

Step 2 - Restart the VNC service

If your VNC environment has become unresponsive and you are sure that it's not a network issue in your organization, you can restart the VNC service.

To restart the VNC service, open the jnaapti terminal at: <https://yourid.cloudlab.jnaapti.io/>.

Login with the username and password provided to you. Then run this command:

```
systemctl restart jnaaptivnc
```

If the VNC environment seems to be misbehaving for any reason, but you are able to access the terminal in the VNC environment, you can run the above command from the terminal in the VNC environment itself. This will momentarily disconnect you from the VNC session. Refresh the page and the VNC environment should load back up.

NOTE: Restarting the VNC service will close all open applications.

Step 3 - Contact your trainer

In case the above 2 steps don't work, contact your trainer to get help.

Privacy and Security

NOTE: For security reasons, we will be monitoring resource usage and activity in your VNC session. So ensure that your VMs are not misused. Any such activities will be reported to the organization and your environment shall be terminated.