Virtual Containerized Lab Environment (VCLE) Setup Instructions

August 2018

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Hardware and Software Requirements

- Dual core 64-bit processor
- Minimum of 50 GB available disk space
- Minimum of 8 GB of RAM
- One of the following installed on your system:
    - VMWare Fusion 10.1.1 or higher
    - VMWare Workstation Player 14 or higher
    - VirtualBox 5.2.8 or higher

Install VCLE

Follow the instructions below, depending on which virtual machine software you are using the run the sandbox.

VirtualBox

1. Download the sandbox using the link provided in the lab guide that is specific to your course.
2. When the sandbox is downloaded, start VirtualBox.
3. Select **File > Import Appliance**.
4. Browse to the .ova file you downloaded and click **Continue**.
5. By default, the sandbox will use 8 GB of RAM; it is possible to run with as little as 6 GB of RAM, though it will affect performance. If you want to reduce the memory to 6 GB:
    - On the **Appliance Settings** screen, double-click RAM in the displayed list and change it to 6144 MB. T
6. Click **Import** and wait for the sandbox to load. This will take a few minutes.
7. Once the sandbox is imported, click **Start**. Give it a few minutes to boot up. It should automatically log you in to the lab environment.
8. Once the sandbox is running, refer to your lab guide for instructions on which VCLE environment to start for your course.

VMWare Fusion

1. Download the sandbox using the link provided in the lab guide that is specific to your course.
2. When the sandbox is downloaded, start VMWare Fusion.
3. Select **File > Import**.
4. Browse to the .ova file you downloaded and click **Continue**. Follow the instructions to import the sandbox.

5. By default, the sandbox will use 8 GB of RAM; it is possible to run with as little as 6 GB of RAM, though it will affect performance. If you want to reduce the memory to 6 GB:
    a. Right-click the sandbox in the list of virtual machines and select **Settings**.
    b. Click **Processors & Memory and** set the memory to 6144 MB. Close the settings window.
6. Right-click the sandbox in the list of virtual machines and select **Start Up**. Wait for the sandbox to power on; this will take a few minutes.
7. Once the sandbox is running, refer to your lab guide for instructions on which VCLE environment to start for your course.

VMWare Workstation Player

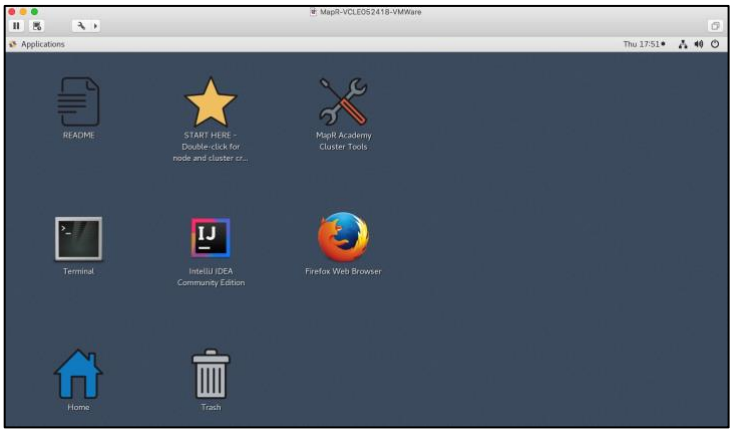
1. Download the sandbox using the link provided in the lab guide for your specific course.
2. When the sandbox is downloaded, start VMWare Workstation.
3. Select **Open a Virtual Machine**.
4. Browse to the .ova file you downloaded. Click **Import** and follow the instructions.
5. When the sandbox is loaded, highlight it and select **Play virtual machine**.
6. Once the sandbox is running, refer to your lab guide for instructions on which VCLE environment to start for your course.

Create a Cluster

Note: The VCLE sandbox can only run one cluster at a time. If you have finished with one cluster and want to create another, first delete the cluster you are no longer using.

1. Import and run the sandbox to bring up the lab enviroment. Be sure to use the link to the sandbox that is provided in the lab guide for your specific course.
2. The lab environment desktop log in screen appears. Log in as the user `root`, with the password `mapr`.

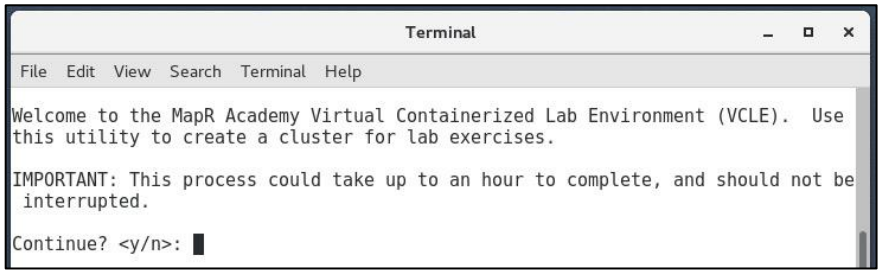
3. The desktop is displayed:



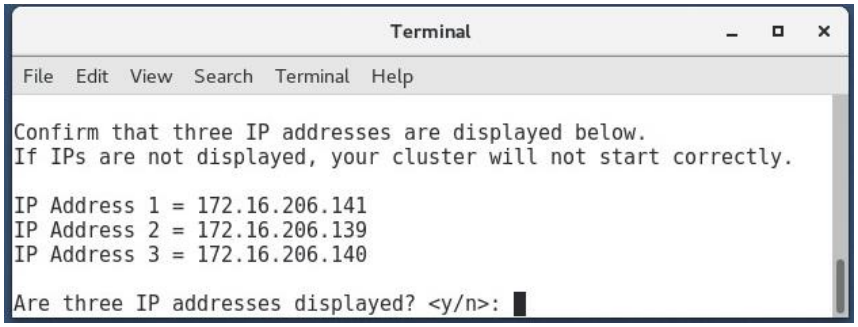
4. Double-click the START HERE icon on the desktop:

This starts a script that will create your cluster.

5. Respond `y` to the prompt asking if you want to continue:



6. Confirm that three IP addresses are displayed. Note that these are not the IP addresses your cluster nodes will ultimately have; this is just checking for proper network configuration.



7. A menu appears, asking which environment you want to start. Refer to your lab guide to determine which lab environment you should create and enter the appropriate environment number. It will take a few minutes to prepare the environment.
8. If you have selected an environment with MapR pre-installed, the script will ask you what version of MapR you want to install. Refer to your lab guide to determine which version of MapR you should install.

CAUTION: Make sure you install the version of MapR you are instructed to use in the lab guide. If you select a different version, the lab exercises may not work.

9. If you are prompted to enter a name for your cluster, provide a name that contains only letters and numbers (spaces and special characters are not permitted).
10. When you are notified that your environment is ready to use, make note of any login information provided (or refer to your lab guide). Press any key to close the script.

Connect to Your Cluster

To connect to a cluster that you have created:

1. Double-click the **Terminal** icon on the lab environment desktop. This connects you to the host the VCLE environment is running on.
2. At the prompt, SSH to your cluster node:

```
[root@MapR-VCLEhost ~]# ssh node1
[root@node1 ~]#
```

This will automatically log you in as `root`. To log in as a different user, specify the user name in the SSH command, and provide the password when requested. For example, to log in as the user `mapr`:

```
[root@MapR-VCLEhost ~]# ssh mapr@node1
mapr@node1's password:
Last login: Fri Jul  6 23:29:55  2018
[mapr@node1 ~]$
```

Most lab environments will have the users `root`, `mapr`, and `user01` configured. Passwords for those users, if they exist, will be `mapr`. Follow your lab guide instructions to determine which user you should be logged in as for each exercise.

3. On each node, use the `hostname -I` command to determine the IP address of the node.

```
[mapr@node1 ~]$ hostname -I
172.17.0.2
[mapr@node1 ~]$
```

Record the IP address(es). Exercises in some courses may use the IP address.

Manage a Cluster

You can manage your cluster with the following tools:

- **START HERE:** This icon on the desktop is used to create a new cluster. If you already have a cluster created, you must delete it before using START HERE to create another.
- **MapR Academy Cluster Tools:** There are four utilities in this folder:
    - **Stop Cluster** – use this to stop a running cluster. Any work you have done in your cluster is saved, and you can restart it any time to continue with lab work.
    - **Restart Cluster** – use this to restart a cluster that you have stopped. After restarting the cluster, wait about 5 minutes before accessing the cluster to give the services time to start up.
    - **Show Cluster** – use this to show you if there is a cluster already installed, and what type of cluster it is.
    - **Delete Cluster** – use this to delete an existing cluster, so you can create another one. This cannot be undone: once you delete a cluster, it is gone.

Use Copy and Paste

There may be times when you want to copy and paste content, either within the lab environment, or between your local system and the lab environment. To do this:

1. Highlight the text you want to copy.
2. Right-click to bring up the menu, and select **Copy**.
3. Position yourself where you want to paste the content.
4. Right-click to bring up the menu, and select **Paste**.

Avoid using CTRL+C and CTRL+V, which may not work as expected.