Red Hat Enterprise Linux Automation with Ansible

Orientation to the Classroom Environment ☆

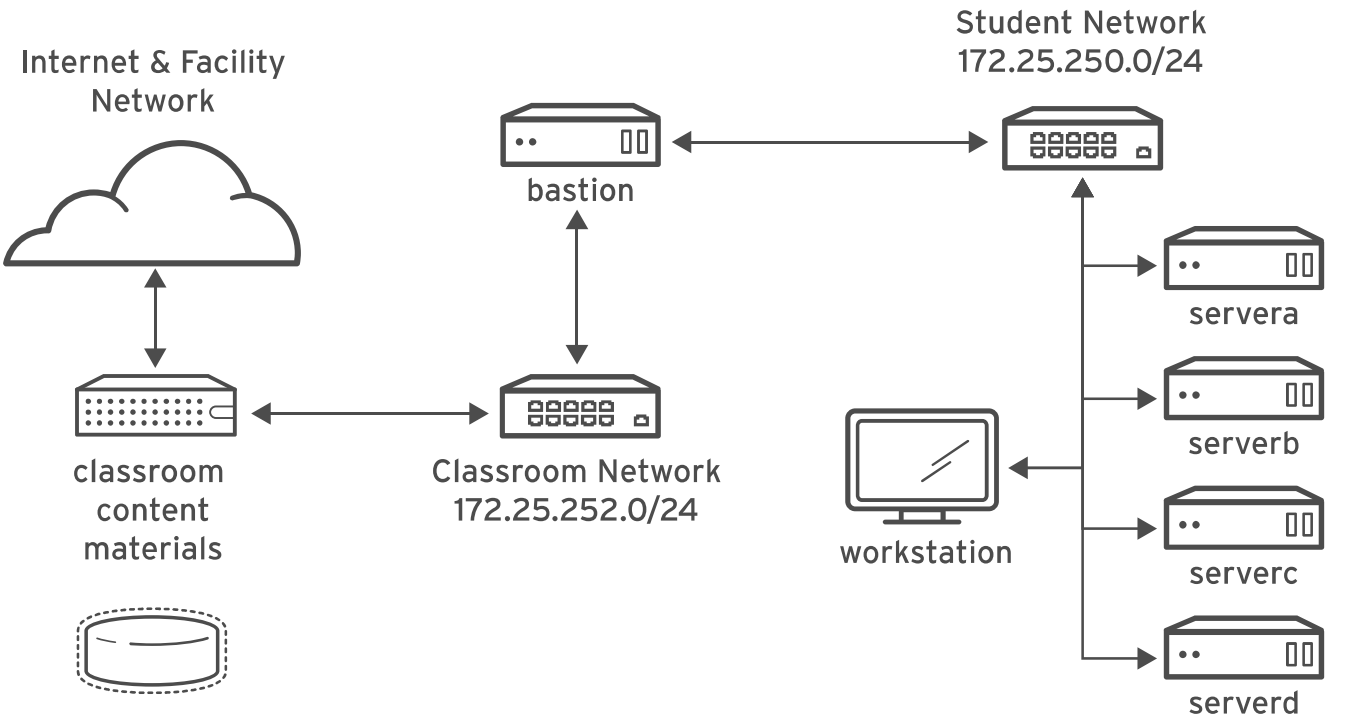

Figure 0.1: Classroom environment

In this course, the main computer system used for hands-on learning activities is `workstation`. Four other machines are also used by students for these activities: `servera`, `serverb`, `serverc`, and `serverd`. All these five systems are in the `lab.example.com` DNS domain.

All student computer systems have a standard user account, `student`, which has the password `student`. The `root` password on all student systems is `redhat`.

Table 1. Classroom Machines

Machine name	IP addresses	Role
bastion.lab.example.com	172.25.250.254	Gateway system to connect student private network to classroom server (must always be running)
workstation.lab.example.com	172.25.250.9	Graphical workstation used for system administration
servera.lab.example.com	172.25.250.10	Host managed with Ansible
serverb.lab.example.com	172.25.250.11	Host managed with Ansible
serverc.lab.example.com	172.25.250.12	Host managed with Ansible
serverd.lab.example.com	172.25.250.13	Host managed with Ansible

The primary function of `bastion` is that it acts as a router between the network that connects the student machines and the classroom network. If `bastion` is down, other student machines will only be able to access systems on the individual student network.

Several systems in the classroom provide supporting services. Two servers, `content.example.com` and `materials.example.com`, are sources for software and lab materials used in hands-on activities. Information on how to use these servers is provided in the instructions for those activities. These are provided by the `classroom.example.com` virtual machine. Both `classroom` and `bastion` should always be running for proper use of the lab environment.

Controlling Your Systems

Table 2. `rht-vmctl` Commands

Action	Command
Start `server` machine	`rht-vmctl start server`
View "physical console" to log in and work with the `server` machine	`rht-vmview view server`
Reset `server` machine to its previous state and restart the virtual machine	`rht-vmctl reset server`

Students are assigned remote computers in a Red Hat Online Learning classroom. They are accessed through a web application hosted at rol.redhat.com (http://rol.redhat.com). Students should log in to this site using their Red Hat Customer Portal user credentials.

Controlling the Virtual Machines

The virtual machines in your classroom environment are controlled through a web page. The state of each virtual machine in the classroom is displayed on the page under the **Online Lab** tab.

Table 3. Machine States

Virtual Machine State	Description
STARTING	The virtual machine is in the process of booting.
STARTED	The virtual machine is running and available (or, when booting, soon will be).
STOPPING	The virtual machine is in the process of shutting down.
STOPPED	The virtual machine is completely shut down. Upon starting, the virtual machine boots into the same state as when it was shut down (the disk will have been preserved).
PUBLISHING	The initial creation of the virtual machine is being performed.

Virtual Machine State	Description
WAITING_TO_START	The virtual machine is waiting for other virtual machines to start.

Depending on the state of a machine, a selection of the following actions is available.

Table 4. Classroom/Machine Actions

Button or Action	Description
PROVISION LAB	Create the ROL classroom. Creates all of the virtual machines needed for the classroom and starts them. Can take several minutes to complete.
DELETE LAB	Delete the ROL classroom. Destroys all virtual machines in the classroom. Caution: Any work generated on the disks is lost.
START LAB	Start all virtual machines in the classroom.
SHUTDOWN LAB	Stop all virtual machines in the classroom.
OPEN CONSOLE	Open a new tab in the browser and connect to the console of the virtual machine. Students can log in directly to the virtual machine and run commands. In most cases, students should log in to the workstation virtual machine and use ssh to connect to the other virtual machines.
ACTION → Start	Start (power on) the virtual machine.
ACTION → Shutdown	Gracefully shut down the virtual machine, preserving the contents of its disk.
ACTION → Power Off	Forcefully shut down the virtual machine, preserving the contents of its disk. This is equivalent to removing the power from a physical machine.
ACTION → Reset	Forcefully shut down the virtual machine and reset the disk to its initial state. Caution: Any work generated on the disk is lost.

At the start of an exercise, if instructed to reset a single virtual machine node, click **ACTION → Reset** for only the specific virtual machine.

At the start of an exercise, if instructed to reset all virtual machines, click **ACTION → Reset**

If you want to return the classroom environment to its original state at the start of the course, you can click **DELETE LAB** to remove the entire classroom environment. After the lab has been deleted, you can click **PROVISION LAB** to provision a new set of classroom systems.

> **WARNING**
>
> The **DELETE LAB** operation cannot be undone. Any work you have completed in the classroom environment up to that point will be lost.

The Autostop Timer

The Red Hat Online Learning enrollment entitles students to a certain amount of computer time. To help conserve allotted computer time, the ROL classroom has an associated countdown timer, which shuts down the classroom environment when the timer expires.

To adjust the timer, click **MODIFY** to display the **New Autostop Time** dialog box. Set the number of hours and minutes until the classroom should automatically stop.

Click **ADJUST TIME** to apply this change to the timer settings.

← PREVIOUS (/ROL/APP/COURSES/RH294-8.4/PAGES/PR01) → NEXT (/ROL/APP/COURSES/RH294-8.4/PAGES/CH01)