Labs

During the Red Hat exams, the tasks will be presented electronically. Therefore, this book presents most of the labs electronically as well. For more information, see the "Lab Questions" section toward the end of Chapter 6.

If you've run the exercises while reading the chapter, it's best to use a different virtual machine. If one is not available, the first thing you should do is delete any logical volumes, volume groups, and physical volumes previously created during the chapter. To that end, the **lvremove**, **vgremove**, and **pvremove** commands should prove helpful.

Next, delete any partitions created during the chapter. If you used the spare hard drives created for the virtual machines specified in Chapter 2, those would be in the /dev/vdb and /dev/vdc hard drive device files.

Lab 1

This lab assumes you have a new hard disk (or at least empty space on a current hard drive where you can add a new partition). You can simulate a new hard disk by adding appropriate settings to a KVM virtual machine. In this lab, you'll create one new partition using **parted**, format it to the xfs filesystem, and configure it on the /test1 directory in /etc/fstab so that the new partition is properly mounted the next time you boot Linux. You'll also create a second new partition using **fdisk**, format it, and configure it as additional swap space in /etc/fstab so that space is also used the next time you boot Linux. Additionally, use UUIDs in /etc/fstab.

Lab 2

In this lab, you'll set up a formatted logical volume, based on partitions appropriately configured. If you use the partitions created in Lab 1, don't forget to delete or at least comment out any associated settings in the /etc/fstab file.

Once you create a VG, don't use it all. For example, if you've set up a VG of 1000MB, configure 900MB as a LV. Mount the resulting logical volume on the /test2 directory, and confirm the result with the **mount** and **df** commands. Name the VG volgroup1 and the LV logvol1.

Set the LV up on the /test2 directory in the /etc/fstab file, formatted to the XFS filesystem. Use the UUID for the associated logical volume device in /etc/fstab.

Lab 3

In this lab, you'll continue the work done in Lab 2, expanding the space available to the formatted LV closer to the capacity of the VG. For example, if you were able to follow the size guidelines in Lab 2, use appropriate commands to increase the space available to the LV from 900MB to 950MB. Don't delete any of the contents of the filesystem during the resize operation.

Just one hint: it's far too easy to skip steps during the process.

Lab 4

Before starting this lab, remove any existing volumes created on the /dev/vdb and /dev/vdc disk drives. Then, set up two PVs on two disks (or virtual disks), such as /dev/vdb and /dev/vdc, respectively, using the entire size of the drives. Set up a new VG named "vg01" using the PVs that you have just created, with a PE size of 2MB.

Configure a new LV named "lv01" whose size should be 800 logical extents. (How many MB do they correspond to?) Format the LV to the ext4 filesystem and set it up on the /test4 directory in the /etc/fstab file. Use the LV device name in /etc/fstab.

Lab 5

In this lab, you'll configure the automounter to automatically read an installed CD/DVD. While NFS services are covered in Chapter 16, the Red Hat RHCSA prep course does suggest that you need to know how to use the automounter to connect to a shared NFS directory. So the steps included in this lab are designed to help you set up a simple shared NFS directory on one system, with connections allowed from a second system. If you've set up the systems described in Chapter 2, the first system would be server1.example.com, and the second system would be tester1.example.com.

1. On the first system, back up your current /etc/auto.master and /etc/auto.net configuration files.
2. Install NFS server configuration files with the following command:

```
# yum install nfs-utils
```

3. If you're working with the baseline virtual system configured in Chapter 2, this NFS and related packages should already be installed.
4. Share the /tmp directory by adding the following line to /etc/exports. Be careful not to include extra spaces:

```
/tmp *(ro)
```

5. Activate the NFS service, and set a rule on the zone-based firewall with the following commands. (Firewalls are described in Chapter 4.)

```
# systemctl restart nfs-server
# firewall-cmd --permanent --add-service=nfs --add-service=rpc-bind --add-
service=mountd
# firewall-cmd --reload
```

6. Record the IP address of the local system, as shown by the **ip addr show** command. If it's the server1.example.com system described in Chapter 2, it should be 192.168.122.50; but another IP address is okay too.
7. Go to another RHEL 7 system, such as the tester1.example.com system described in Chapter 2. The following command should confirm a good connection to the remote NFS server; substitute the IP address of the remote system for remote_ipaddr.

```
# showmount -e remote_ipaddr
```

8. Now you can configure the local automounter for both a connection to a CD/DVD and a shared NFS directory, using the techniques described in the chapter.