

vClassroom Instructor Guide

vClassroom allows students access to real Cisco gear through a web interface. The steps of the lab are found embedded online instead of using a separate lab book. This allows the lab content to be optimized for online delivery.

Preparing the Site

Java and ActiveX

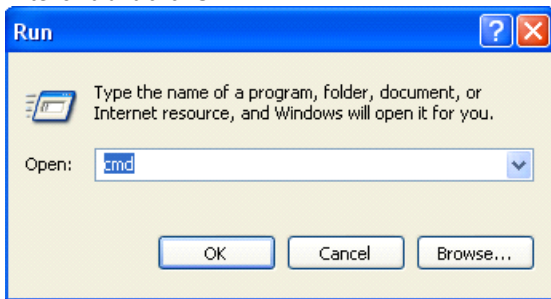
Prepare the student machines with the latest Java Runtime Environment. This can be found at <http://www.java.com>

The recommended browser is Internet Explorer with ActiveX and Java enabled.

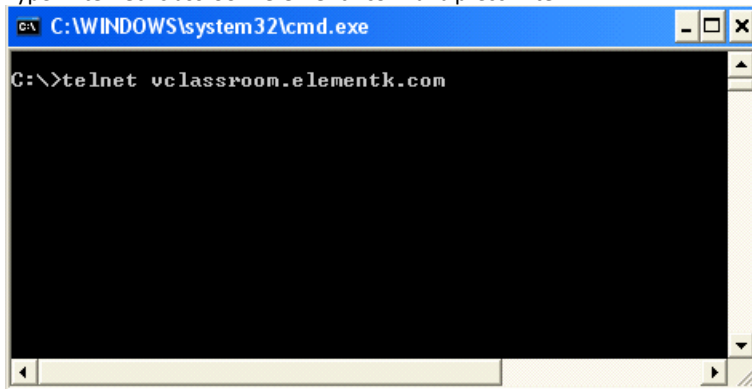
Test the Company Firewall

Do a test to make sure that port 23 is open on your company firewall. You only need to do this on one PC.

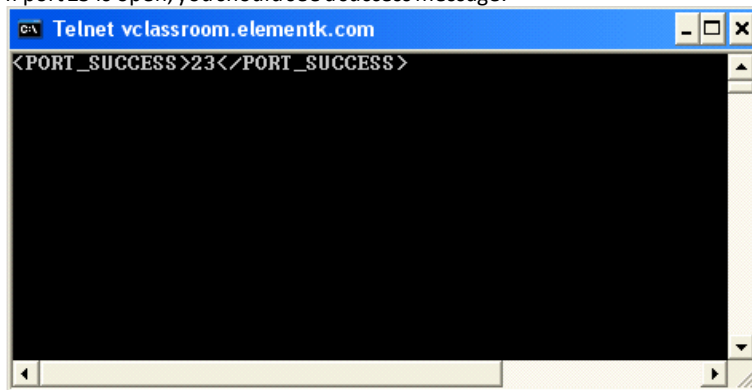
- 1) From Windows, click **Start** and then **Run**
- 2) Enter **cmd** and click **OK**



- 3) Type in **telnet vclassroom.elementk.com** and press **Enter**



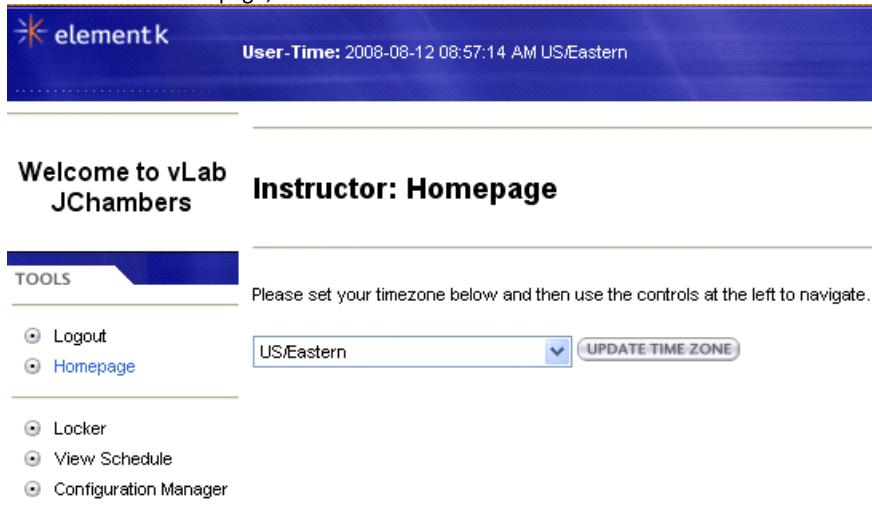
- 4) If port 23 is open, you should see a success message.



- 5) Even if you don't see a success message, it is still possible to connect to the vClassroom routers and switches. vClassroom will automatically attempt to form an HTTP tunnel. However, asking your site to make the firewall change to allow port 23 outbound will allow quicker connections for your students.

Getting Started With Labs

- 1) Login to <http://vclassroom.elementk.com> with your credentials.
- 2) On the left side of the page, click on the **Locker** link.



The screenshot shows the top navigation bar with the 'elementk' logo and 'User-Time: 2008-08-12 08:57:14 AM US/Eastern'. Below this, the main heading is 'Instructor: Homepage' and the user is identified as 'Welcome to vLab JChambers'. A 'TOOLS' sidebar on the left contains links for Logout, Homepage, Locker, View Schedule, and Configuration Manager. The main content area includes a message: 'Please set your timezone below and then use the controls at the left to navigate.' Below this message is a dropdown menu set to 'US/Eastern' and an 'UPDATE TIME ZONE' button.

- 3) If you are accessing the lab at your scheduled time, you will find one of the entries showing the state **In Progress**. Note the lines above it show the **Student Usernames**. These are the credentials to give your students. In this example, there are four students. The passwords for each are the same as the usernames.

Instructor: Locker

Rostername: TrainCorp Atlanta Aug 11
Description: TrainCorp Atlanta Aug 11
Students' Usernames: gkknbu gycdak mwtdtid ulxmes

Class Id	Lab Key	Title	State	Action
295412	000033682	BSCI vClassroom: 10 vLabs	In Progress	ENTER
295413	000033682	BSCI vClassroom: 10 vLabs	Scheduled	ENTER SET INIT CONFIG
295414	000033682	BSCI vClassroom: 10 vLabs	Scheduled	ENTER SET INIT CONFIG
295415	000033682	BSCI vClassroom: 10 vLabs	Scheduled	ENTER SET INIT CONFIG
295416	000033682	BSCI vClassroom: 10 vLabs	Scheduled	ENTER SET INIT CONFIG

- 4) On the same line that shows **In Progress**, click **Enter**.
- 5) You should see that the lab is initializing.

Your lab is Initializing. Please wait...



- 6) After it is finished initializing, a network diagram should appear. Depending on your lab, the diagram may be different from what you see here.

Lab: BSCI vClassroom: 10 vLabs
 Duration: 105 minutes
 User-Time: 2008-08-12 09:10:35 AM US/Eastern

Active Student Console
 gkbnbu

Network Diagram Click on a device to connect.

Click on the diagram to start your Virtual Lab experience.

Telnet Connection Type Selector
 AXT (Active X Telnet)

- 7) There are a few things to take note of here. At the top, you see the **Active Student Console** dropdown box. In this example, this indicates that you are looking at the diagram of user gkbnbu. If you were to click on any of the devices, you would be directly accessing the pod of user gkbnbu. To access the pod of another student, simply select that student from the same dropdown box.
- 8) Another thing to note is the **Telnet Connection Type Selector** dropdown box at the bottom. Currently, it is Set to use ActiveX, which is the default and the most straightforward means of access for your students. However, there are two other options. One is Java. If you are not using Internet Explorer, you won't have the ActiveX option, so Java is available instead. The only limitation with the Java option is that students cannot copy/paste configurations. If your students prefer to use their PC's default Telnet client like SecureCRT, TeraTerm, or Putty, they can select the third option, which is Menu Mode Telnet. The only drawback with this method is that they will need to use a different set of credentials for each device. When you select this method, the temporary credentials will appear above the diagram.
- 9) On the left side of the page, you will see several links. The steps of the lab can be accessed by clicking on the **Sample Solution** link.

STATUS

Your lab is **In Progress**

Time Remaining:
01:26:06

CONTENT

- Home
- Summary
- Scenario
- Suggested Approach
- Sample Solution
- Check Results
- Print All Content

- 10) Here you will find multiple labs. Have the students click on the **Task** link in blue to access the specific lab. Every lab will begin with the same baseline configuration on all of the student devices. This allows you to Let them take any lab in any order without any changes to core configurations. It also allows one student to take a lab, while another student takes a completely different lab at the same time if they wish.

Task Index

Task 1		BASIC CONFIGURATION: edge and internal routers
Task 2		CONFIGURING AND TUNING EIGRP
Task 3		CONFIGURING SINGLE AREA OSPF
Task 4		CONFIGURING OSPF FOR MULTI AREA FRAME RELAY NONBROADCAST
Task 5		CONFIGURING AND TUNING OSPF MULTI AREA FRAME RELAY SUBINTERFACES

- 11) The individual steps are in blue. The student will also see exactly how to perform the step and this is accompanied by explanations to help them better understand what is behind the steps.

CONFIGURING SINGLE AREA OSPF

Step 1 : Console into R1. Shut down interface s1/2, then configure OSPF area 55 using 10.55.0.0 in your network statement.

Action:



```
r1> enable
r1# config t
r1(config)# interface s1/2
r1(config-if)# shutdown
r1(config-if)# exit
r1(config)# router ospf 1
r1(config-router)# network 10.55.0.0 0.0.255.255 area 55
r1(config-router)#
```

Result:

Anytime you see a device blinking, it is a reminder to console into a new device.

Explanation:

By shutting down interface s1/2, the Frame Relay connection, you are preventing R1 from connecting to the core network. In the example configuration shown here, a process ID of 1 was used in defining the OSPF process. This number has only local significance, so any number could be used. For this and with subsequent OSPF activities, you could use the **ip ospf 1 area 55** interface configuration command to enable OSPF explicitly on an interface, instead of using the **network** command. Note that the examples shown here use the **network** command.

- 12) Have the student continue until they reach the end of that specific lab. Encourage them to take the lab a second time if they still have time left.

Step 22 : You have finished Lab 3.

Action:

You can: **A) Continue on to the next lab.** -or- **B) Take this lab again if time permits.**

Result:

To take any lab a second time or to continue to the next lab, you first need to reset the devices back to the baseline configurations that were present at the beginning of the lab. This can be done by clicking on the **Device Controls** link on the left bar, selecting all devices, and clicking the **Reload** button. Once the devices are all marked green, you can begin the lab. This process takes several minutes.

You can also test your mastery of the material when you take a lab for the second time. Instead of using the **Sample Solution** link which walks you through each step, you can use the **Suggested Approach** link. This provides the same steps, but without the walkthrough.

Task 4



CONFIGURING OSPF FOR MULTI AREA FRAME RELAY NONBROADCAST

- 13) To take the same lab again, instructions for resetting the gear are provided at the end of the lab as is shown above. Here is a walkthrough of those instructions. First, have the student click on the **Device Controls** link found on the left.

TOOLS

- Verify Connection
- Device Controls
- Configuration Manager

- 14) The student should then place checkmarks next to all of their devices.

Device Control			
	Device Name	Device Type	Status
<input checked="" type="checkbox"/>	1 - Sw1	cisco	Ready
<input checked="" type="checkbox"/>	2 - R1	cisco	Ready
<input checked="" type="checkbox"/>	3 - R2	cisco	Ready
<input checked="" type="checkbox"/>	4 - Sw2	cisco	Ready
<input checked="" type="checkbox"/>	5 - R3	cisco	Ready
<input checked="" type="checkbox"/>	6 - R4	cisco	Ready

Select All - Unselect All

Cisco Device Operations

RELOAD

CLEARLINE

- 15) To get the devices back to their baseline configurations, the student should then click the **Reload** button. This not only powers the devices off and on, but it then loads the configurations expected to be on the devices at the beginning of each lab. Notice here there is also a **Clearline** button. This is helpful if a student gets disconnected from their Telnet session and they get a message stating that they are already connected to the device, but can't access. The **Clearline** will end the Telnet session so that they can reconnect.
- 16) After the status goes back to Ready, the student is set to take the lab a second time. Encourage them to make the lab a bit more challenging by accessing the **Suggested Approach** link instead of the **Sample Solution**. The **Suggested Approach** contains exactly the same steps as the Sample Solution, but without showing the individual commands. If the student gets stuck, they can always check back with the **Sample Solution** for the answer.

Suggested Approach



The Suggested Approach steps are provided to test your mastery when taking a vLab for the second time. For your first attempt, follow the steps listed under Sample Solution.



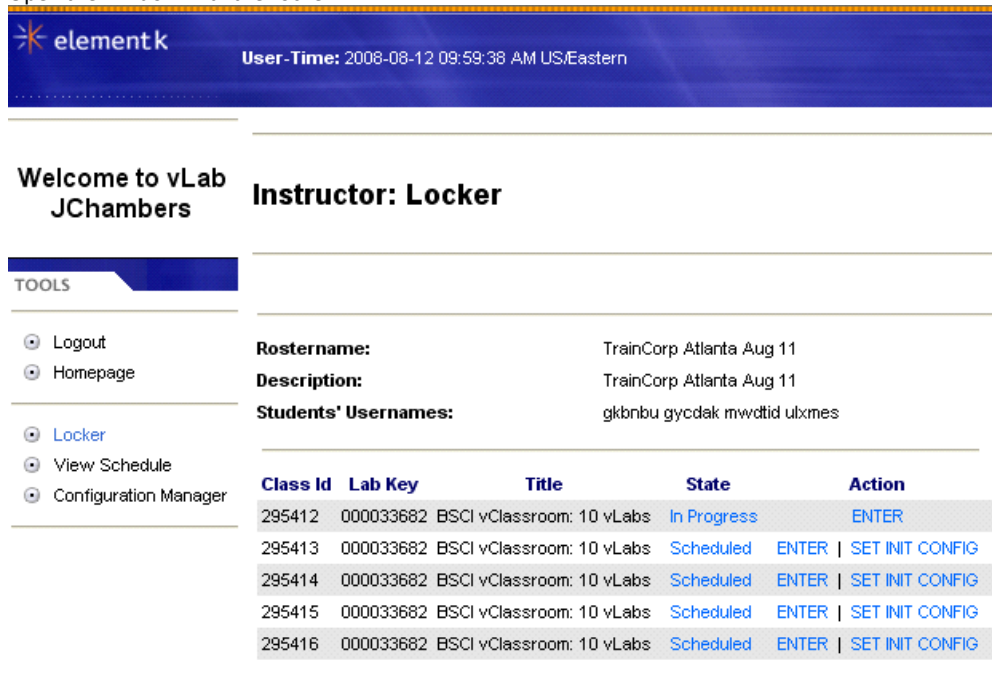
CONFIGURING SINGLE AREA OSPF

- 1) Console into R1. Shut down interface s1/2, then configure OSPF area 55 using 10.55.0.0 in your network statement.
- 2) Console into R2. Shut down interface s1/2, then configure OSPF area 55 using 10.55.0.0 in your network statement.
- 3) Console into R3. Configure OSPF area 55 using 10.55.0.0 in your network statement.
- 4) Console into R4. Configure OSPF area 55 using 10.55.0.0 in your network statement.
- 5) On R4, use a show command to verify the OSPF router ID. Write down R4's RID (router ID) to reference in later steps.
- 6) Console into R1. Use a show command to verify the OSPF router ID. Write down R1's RID (router ID) to reference in later steps.

Verifying Your Schedule

vClassroom labs have specific start and stop times. You should have been sent a schedule of when each segment will start, but just in case you lose that information, you can verify the times within vClassroom itself.

- 1) If you have a lab running now, you should see two windows open. One for the lab and the other which shows your Locker. Open the window with the Locker.



Welcome to vLab JChambers

Instructor: Locker

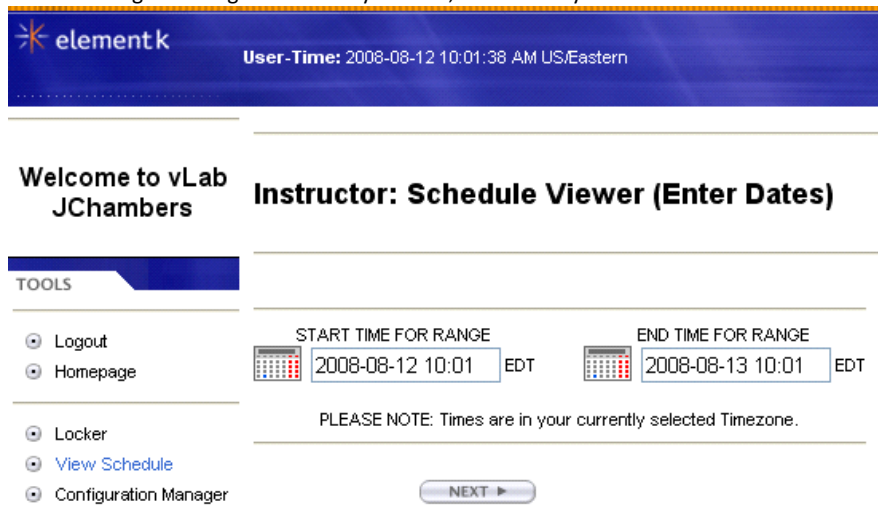
TOOLS

- Logout
- Homepage
- Locker**
- View Schedule
- Configuration Manager

Rostername: TrainCorp Atlanta Aug 11
Description: TrainCorp Atlanta Aug 11
Students' Usernames: gkbnbu gycdak mwdttid ulxmes

Class Id	Lab Key	Title	State	Action
295412	000033682	BSCI vClassroom: 10 vLabs	In Progress	ENTER
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295415	000033682	BSCI vClassroom: 10 vLabs	Scheduled	ENTER SET INIT CONFIG
295416	000033682	BSCI vClassroom: 10 vLabs	Scheduled	ENTER SET INIT CONFIG

- 2) Notice the **View Schedule** link on the left. Click on it.
- 3) You can change the range of dates. By default, it will show your schedule over the next 24 hours. Click **Next**.



Welcome to vLab JChambers

Instructor: Schedule Viewer (Enter Dates)

TOOLS

- Logout
- Homepage
- Locker
- View Schedule**
- Configuration Manager

START TIME FOR RANGE: 2008-08-12 10:01 EDT

END TIME FOR RANGE: 2008-08-13 10:01 EDT

PLEASE NOTE: Times are in your currently selected Timezone.

NEXT ►

- 4) The times when the gear will be active for your students are listed under the **Lab Start Time / Lab End Time** column. In this example, the lab that is **In Progress** is scheduled to end at 2008-08-12 10:49am. Under that, is another listing for 2008-08-12. This is a session that is set to start at 2:00pm and end at 3:45pm. At the top is a listing for a class for the next day, 2008-08-13. It starts at 10:00am and ends at 11:45am.

Instructor: Schedule Viewer (Display)

◀ PREVIOUS

[Open Printable Version](#)

Roster	Class Id	Lab Id	Lab Key	Lab Start Time Lab End Time	HW Start Time HW End Time	State	Type	Action
TrainCorp Atlanta Aug 11	295414	879050 879048 879047 879049	000033682	2008-08-13 10:00:00 AM 2008-08-13 11:45:00 AM	2008-08-13 09:51:00 AM 2008-08-13 11:55:00 AM	Scheduled	PRACTICE	ENTER CLASS
TrainCorp Atlanta Aug 11	295412	879042 879040 879039 879041	000033682	2008-08-12 09:04:00 AM 2008-08-12 10:49:00 AM	2008-08-12 08:55:00 AM 2008-08-12 10:59:00 AM	In Progress	PRACTICE	ENTER CLASS
TrainCorp Atlanta Aug 11	295413	879046 879044 879043 879045	000033682	2008-08-12 02:00:00 PM 2008-08-12 03:45:00 PM	2008-08-12 01:51:00 PM 2008-08-12 03:55:00 PM	Scheduled	PRACTICE	ENTER CLASS