Common Lab Tasks

In each lab, you will follow a series of step-by-step instructions designed to help you explore the environment and gather the information you need to successfully complete the deliverables. In each lab, you will perform identical steps, such as opening the virtual lab, logging in to another server, taking screen captures, and transferring files to your local computer. To avoid repeating steps in the lab itself, those common steps have been collected in this file. You may refer to this document at any time during your lab session.

Though you may not be required to perform each of these steps in every lab, the Common Lab Steps are listed in the order that you are most likely to encounter them. As you review this list, you should pay attention to the logic and flow of the lab. This will help you to perform the lab procedures more quickly and more accurately.

> ▶**Note:**
> The other virtual machines used in this environment may require as long as 10 minutes to complete their initialization processes (wake-up sequences) and load all required software. If you receive a connection error message, wait at least one minute before clicking on the Remote Desktop Connection icon to retry the connection.

Virtual Lab Environment

You will use the virtual lab environment to complete the learning activities in this lab manual.

> ▶**Note:**
> The virtual lab environment, also called the Virtual Security Cloud Lab (VSCL) requires Java, Adobe Flash, and a compatible Web browser. The list of compatible browsers and required version numbers for Java and Flash is available on the VSCL Web site (*http://campus.toolwire.com/b4ubegin/start.asp*). The Technical Support Help Desk will *not* be able to assist you in the use of unsupported Web browsers. If you use an unsupported browser, you may not be able to complete the labs as directed in the lab procedures.
>
> You will need to download and install the Citrix® ICA Web client *before* you access the VSCL for the first time. This download package is also available from the Working with Virtual Labs link on the Course Dashboard. Without installing this package, you may find an issue in several courses using the Shift key to type mixed-case passwords. If you are unable to install the Citrix client, you can use the onscreen keyboard or Caps Lock key to type passwords. Close the keyboard when you are done using it.
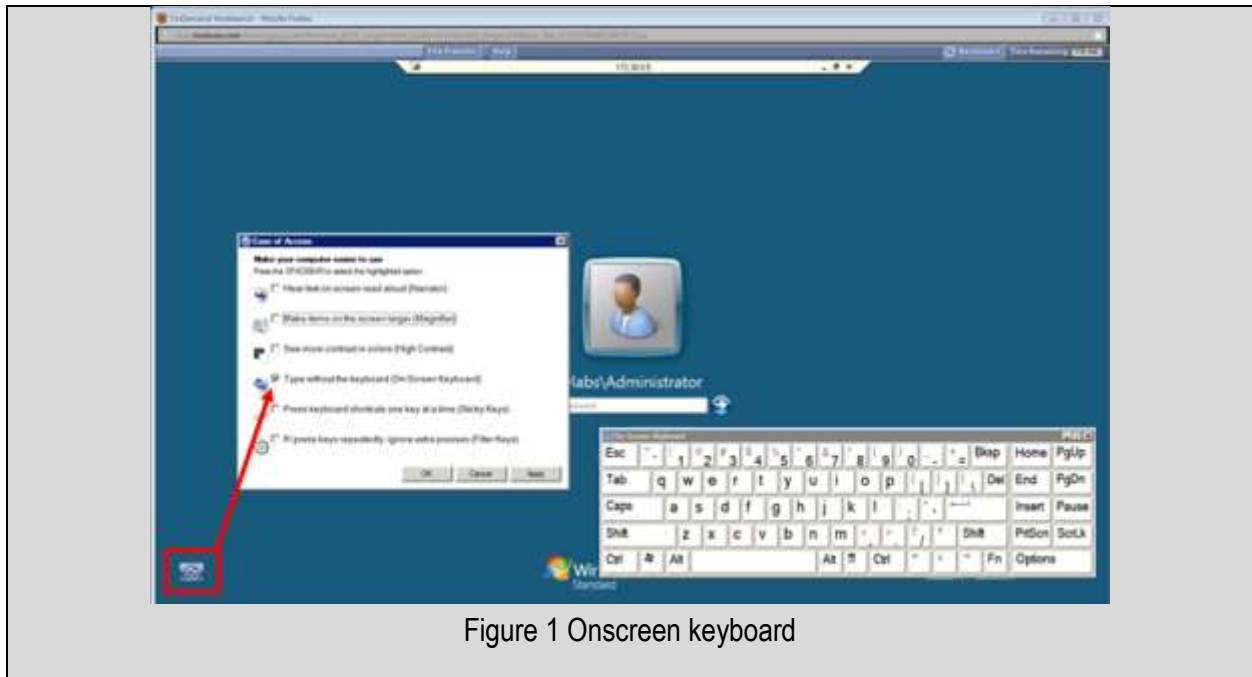
Figure 1 Onscreen keyboard

Create Lab Deliverable Files

You will create two deliverable files for each lab:

- *Lab Report file* (including screen captures taken at specific steps in the lab)
- *Lab Assessment file* (including answers to questions posed at the end of each lab)

If assigned by your instructor, you also will create an additional deliverable file for the challenge questions:

- *Challenge Questions file* (including answers to the challenge questions)

▶**Note:**

You also may be required to include files created by the software in the lab. You will need to use the File Transfer function to download these files to your local computer. Instructions for that function are included later in this document.

For specific information on the contents of the deliverables, refer to the Deliverables section in each lab.

Lab Report File

As you work through each lab, you will be instructed to record specific information or take a screen captures to document the results you obtained by performing specific actions. The

deliverables are designed to test your understanding of the information, and your successful completion of the steps and functions of the lab. All of these documentation tasks should be pasted into a single file (MS Word .doc, .docx, or other compatible format) and submitted for grading by your instructor.

Lab Assessment File

At the end of each lab, there are a set of questions which are to be answered and submitted for grading in the Lab Assessment file. (Your instructor may provide alternate instructions for this deliverable.) For some questions, you may need to refer to your Lab Report file to obtain information from the lab. For other questions, you may need to consult a textbook or other authoritative source to obtain more information.

Challenge Questions File

At the end of each lab, there are optional challenge questions which are provided to allow independent, unguided work, similar to what you will encounter in a real situation. Instructors also may choose to assign one or all of these questions as part of the lab, or as an online or in-class discussion activity. In any event, you should aim to improve your skills by getting the correct answer in as few steps as possible.

Make a Screen Capture

▶**Note:**
As you proceed through the lab steps, you may be directed to make a screen capture documenting your progress. All screen captures should be pasted into the Lab Report file and submitted to your instructor with your lab deliverables.

Windows

▶**Note:**
You may use a utility program, such as SnagIt, to capture all or part of your screen display. In addition, Microsoft Windows includes the Snipping Tool (Start >All Programs > Accessories > Snipping Tool) that generates a .PNG format image file. Save the image to your personal computer and select Insert > Picture from the MS Word menu to insert the contents of the file into your Lab Reports file. You may also use Word's Insert > Screenshot command to insert an image directly into your Word document.

Most standard PC computer keyboards have a *print screen* key that can be used to snapshot all or a portion of your display. Your key may be labeled as: PRTSCR, PRNT SCRN, or some variation thereof. You may need to also press and hold one or more of the following keys in combination with your print screen key to activate the *print screen* function: ALT, CTRL, CTL,

FUNC, FN, and SHIFT. Refer to your user manual or Help function to determine which key combinations are required and what their specific behaviors are.

On a Windows PC, your snapshot will be stored in the Windows Clipboard and, from there, may be pasted into a document file using CTRL+V or the Paste function within your word processing application (e.g., MS Word).

Apple

If you are using an Apple keyboard (Macintosh) and OS X variant, the *print screen* function is activated holding the Command and Shift keys and pressing a number (3, 4, 5), or holding the Command and Control keys and pressing 3, 4, or 5. The number key activates a specific print screen function (See: http://www.apple.com/findouthow/mac/#capturescreen). Depending upon the key-combinations used, your snapshot will be stored in the Apple Clipboard or will be saved to a file on the desktop.

Navigate the Virtual Lab

> ►**Note:**
> The figures in this document are representative of the virtual lab environment and may not reflect every lab situation. The vWorkstation desktop for most labs will be a Windows 2012 machine, but some labs will use a Windows 2003 or Windows 2008 machine as the desktop. Always follow the steps specified within an individual lab.

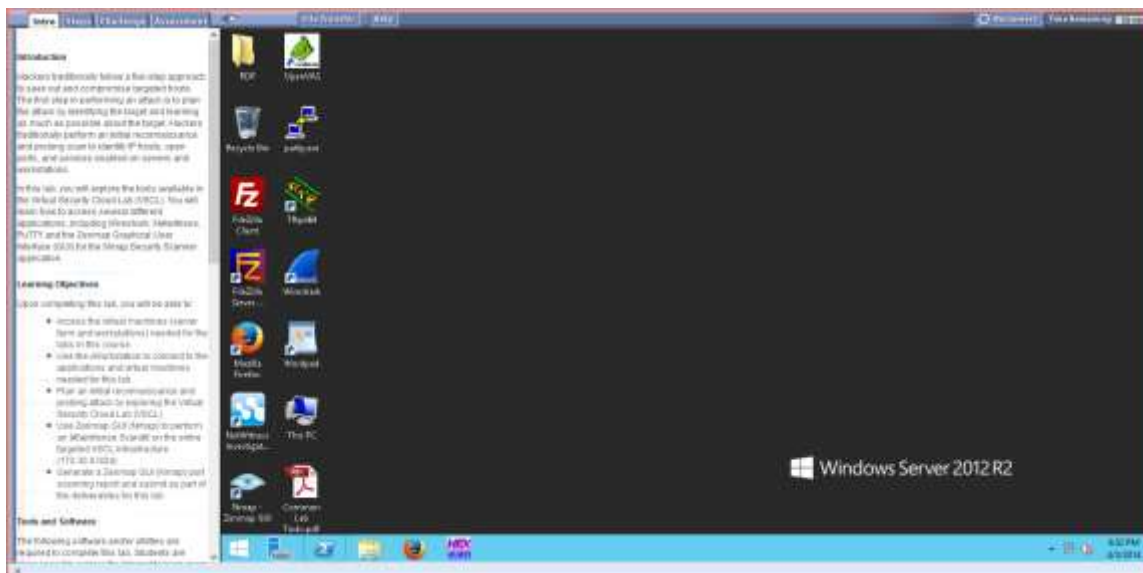The virtual lab environment appears in two panes.

Figure 2 "Student Landing" vWorkstation

- The right pane is the vWorkstation desktop. It includes links to the applications, files, and remote machines that you will use as you perform the step-by-step instructions.
- The left pane is the Lab Navigator. The following table describes the content provided in each section of the virtual lab environment.

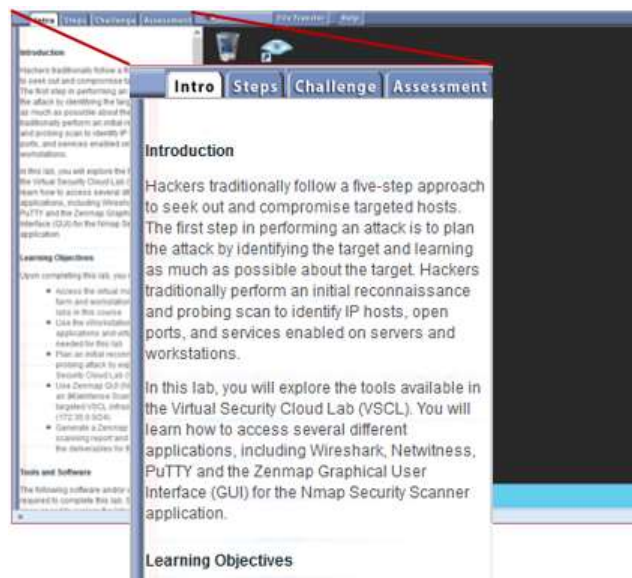| Lab Navigator Tabs	
Tabs	**Description of Content**
Intro	The content in this tab describes the purpose, learning objectives, and deliverables for the current lab.
Steps	The content in this tab includes the step-by-step instructions for completing the lab objectives.
Challenge	The content in this tab includes the optional challenge questions. Even if not assigned by your instructor, it is recommended that you review these questions. They are an extension of the lab and allow independent, unguided work, similar to what you will encounter in a real situation.
Assessment	The content in this tab includes the assessment questions for this lab. They are included as a deliverable for every lab. It is recommended that you review these questions prior to performing the hands-on steps.

Figure 3 Lab Navigator

1. In the left pane, **click each tab** to familiarize yourself with the content of the lab before proceeding with the Hands-on Steps.

2. **Click** the **Intro tab** to begin the virtual lab.

Open a Remote Connection to Another Server

1. **Double-click** the **RDP** (Remote Desktop Protocol) **folder** on the vWorkstation desktop. This folder contains links to the virtual servers in this lab environment.
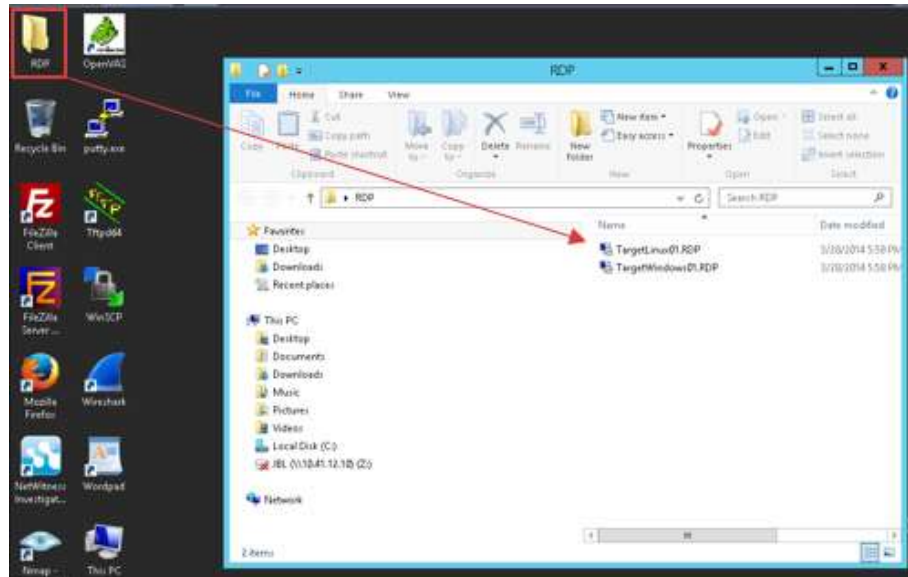

Figure 4 Remote desktop connections

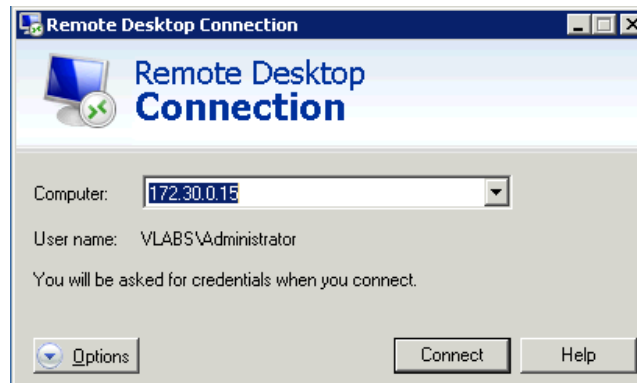2. If necessary, **select the IP address** provided by the lab steps and **click Connect**.

Figure 5 Selecting a remote computer

▶**Note:**
You may see one of the following error messages when you first attempt a remote desktop connection. This will occur if you attempt to connect before the remote server has finished "waking up" from its sleep state. Wait an additional two to three minutes for the remote computer system to complete its initialization processes and then try again.
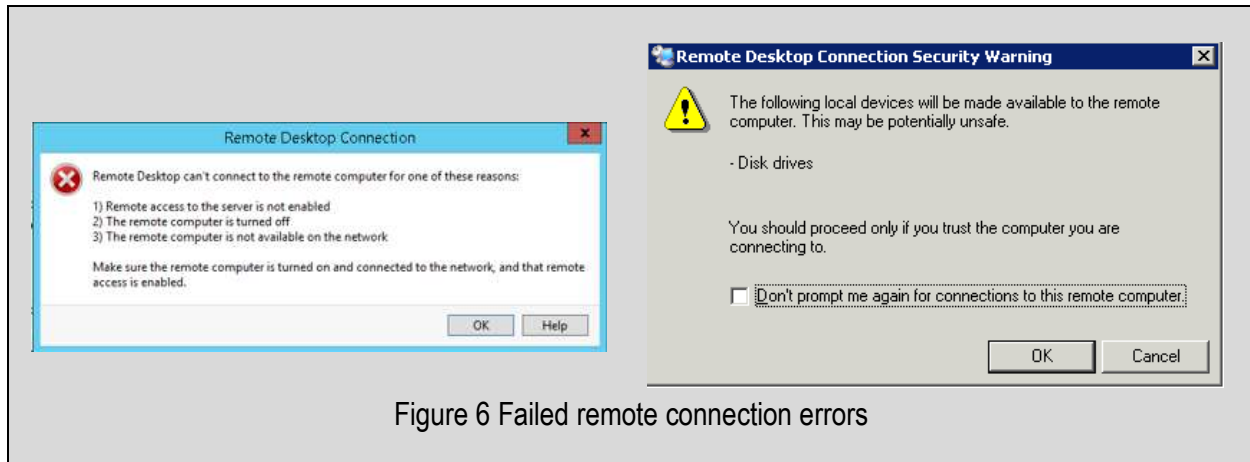
Figure 6 Failed remote connection errors

3. If prompted for a password, **logon** to the remote servers with the credentials provided in the lab steps.

   If you are not prompted for a password, the remote desktop and its icons will replace the vWorkstation desktop immediately.

Working with Remote Connections

At times, you will be required to work on two different virtual computers and transfer files between the two. The desktop icons are different on each machine. The remote desktop will replace the vWorkstation desktop and include the IP address in a bright blue title bar at the center top of the screen.
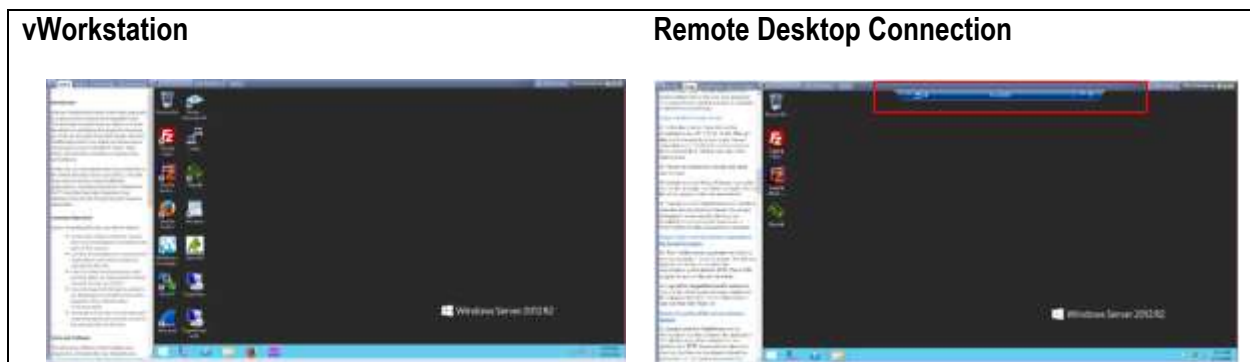

Figure 7 Virtual desktop appearance

- To **switch from a remote server back to vWorkstation**, click the minimize icon in the remote desktop title bar at the top of the desktop.
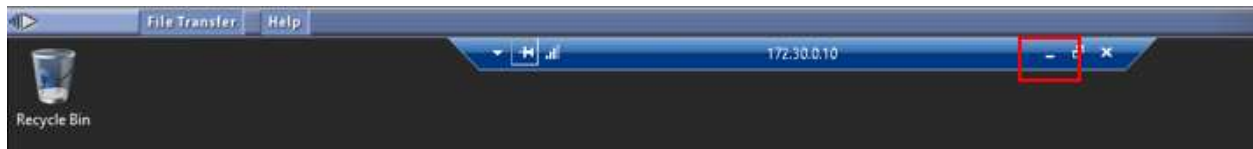
Figure 8 Minimize a remote connection

- To **switch from vWorkstation back to a remote server**, click the Remote Desktop Connection icon on the taskbar at the bottom of vWorkstation desktop.
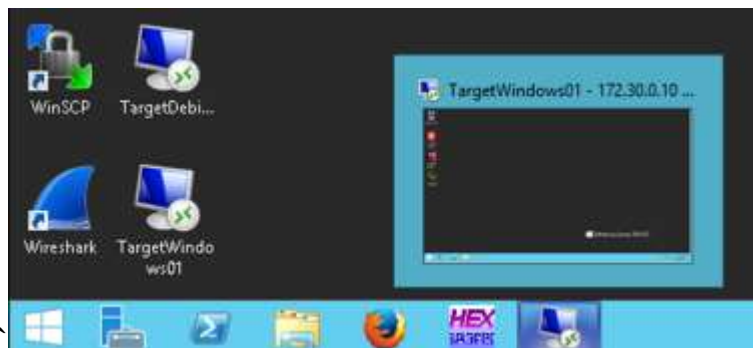

Figure 9 Maximize a remote connection

Close a Remote Connection to Another Server

The process to close a remote connection depends on the operating system of the remote machine.

- To close a Linux machine:

    1. At the upper right corner of the Linux desktop, **click student** and **select Log Out** from the menu.

Figure 10 Logging off the remote Linux desktop

    2. If prompted, **click Log Out** to confirm your wish to disconnect the session.
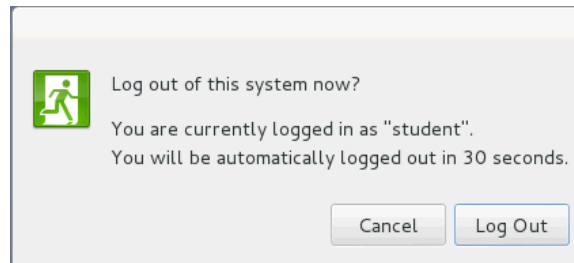
Figure 11 Disconnect a remote Linux connection

- To close a Windows machine:

    1. **Right-click** the **Windows Start icon** to open a context menu.

    2. **Click Shut down or sign out** and **select Sign Out** on the menu.

▶**Note:**
On older operating systems, **click Start > Log Off administrator**.

Figure 12 Logging off the remote Windows desktops

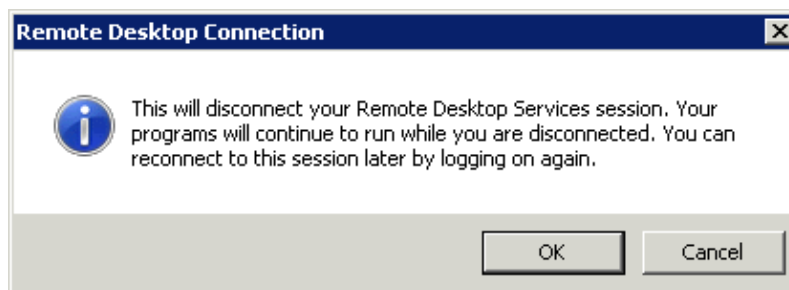   3. If prompted, **Click OK** to confirm your intention to disconnect the remote session.

Figure 13 Disconnect a remote Windows connection

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Use the File Transfer Process

At times, you may be asked to transfer to another computer files you have created while performing lab steps in the VSCL. This can be performed using the File Transfer function built in to the vWorkstation desktop of the VSCL.

> ▶**Note:**
> Use of File Transfer to download software distribution packages from vWorkstation is strictly prohibited. If you wish to obtain a personal copy of an open source software tool or demo version of an application, you must obtain it directly from the vendor (developer) or from an authorized Internet downloads Web site.

1. **Click** the **File Transfer button** on the vWorkstation desktop to open a browser window on your local computer for the File Transfer window.

Figure 14 Opening the File Transfer window

2. In the File Transfer window, **click the directory names** to navigate to the path where your desired file resides. To find the desktop in most cases, click Users > Administrator > Desktop.
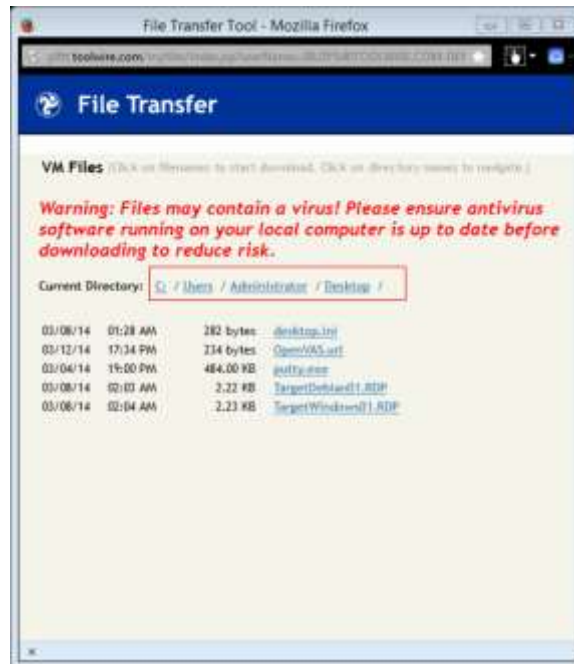
Figure 15 Selecting the file path

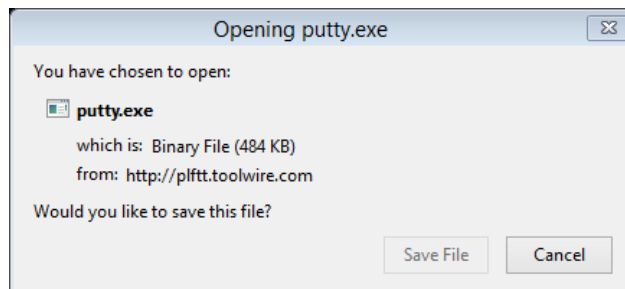3. **Click** the **filename** to start the download process.

Figure 16 Downloading the selected file

4. **Click OK** to save the file to your local computer.

Extend the Lab Time

Most virtual lab sessions are scheduled to time-out after 120 minutes. However, you can extend that time if you find that you need additional time to complete the lab. **Click OK** when prompted to add an additional 30 minutes to the remaining time in the virtual lab.

Figure 17 Extending the lab

Close the Virtual Lab

At the end of each lab, use the following steps to ensure that the lab is closed properly.

1. **Close** any **open windows**.

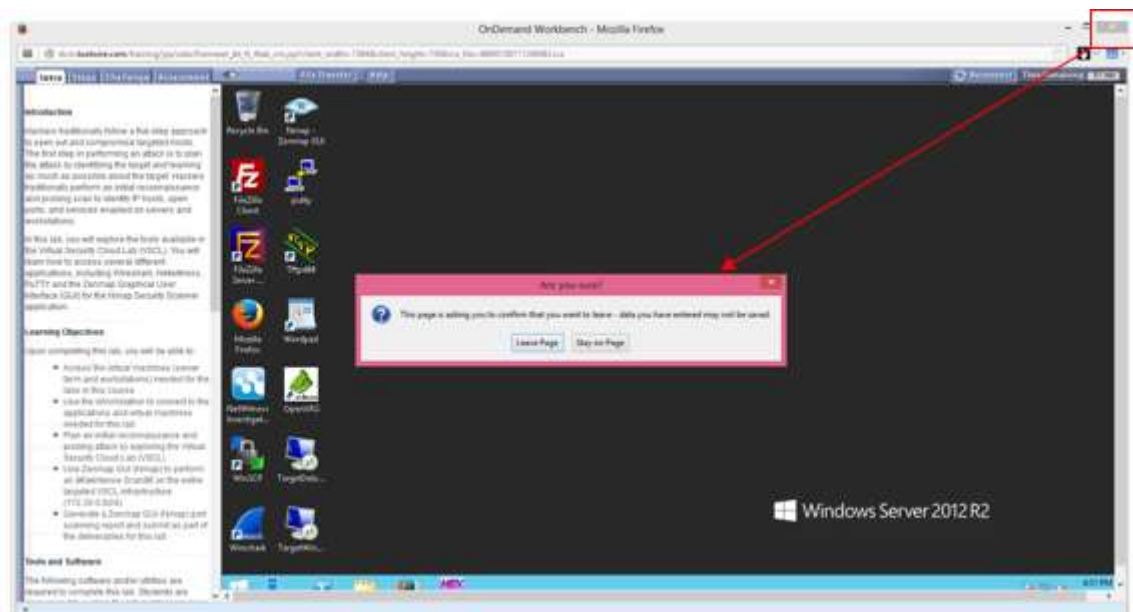2. **Close** the **OnDemand Workbench window**

Figure 18 Logging out

3. **Click Leave Page** when prompted to confirm this action.