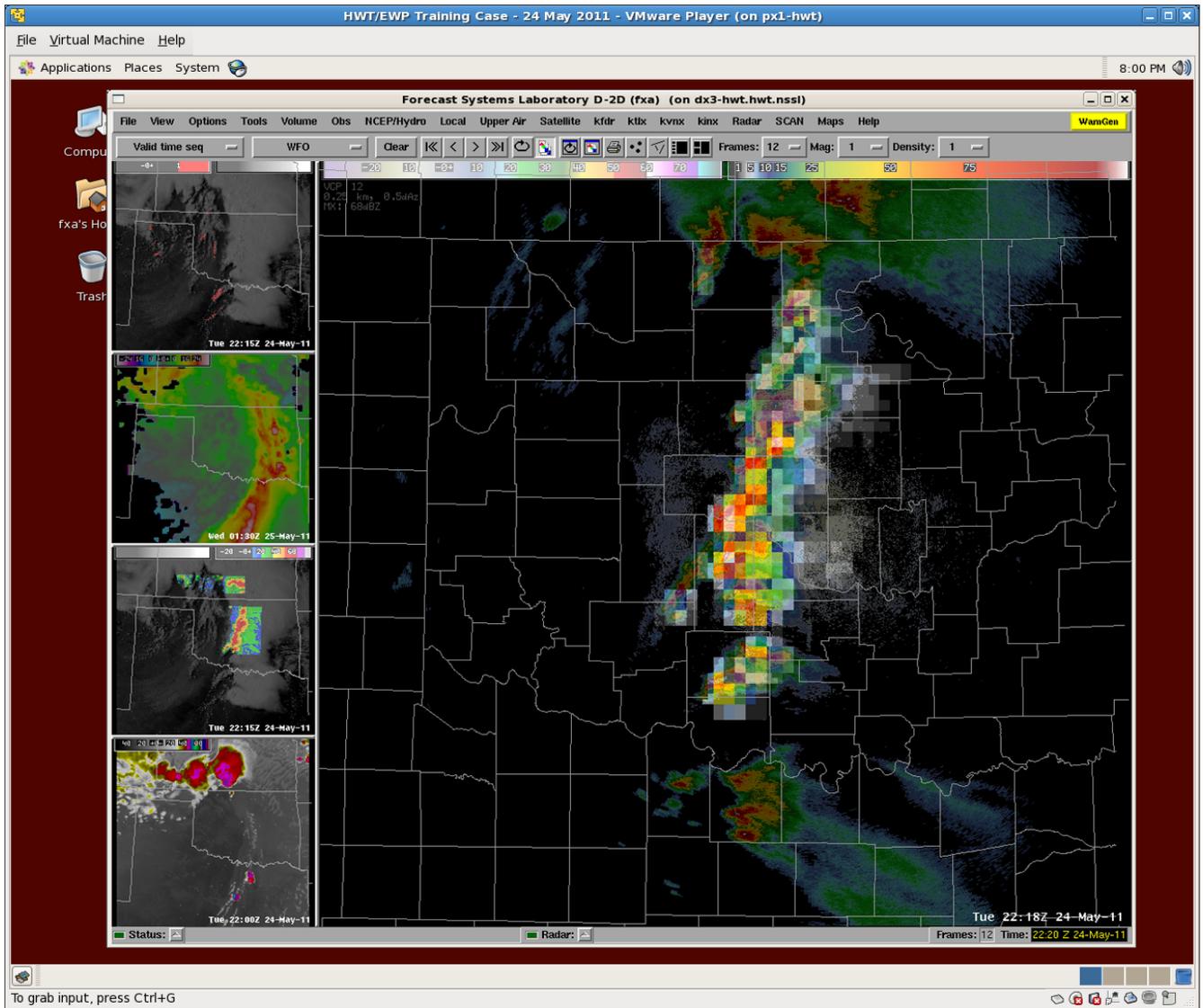


# The 2013 Experimental Warning Program (EWP) Virtual Weather Event Simulator (WES) Windows & Linux Installation Documentation



National Severe Storms Laboratory (NSSL)  
Norman, OK

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## Part I

# WINDOWS CONFIGURATION PROCEDURES

## 1 Installing the VMware Player Software

The 2013 Product Training DVD contains a `VMware-player-5.0.1-894247.exe` program. This file is used to install the VMware Player, a required component for the WES virtual machine to operate in a Microsoft Windows environment. This procedure outlines the steps to install this software bundle.

1. Log on to the Windows machine as a user with administrator privileges
2. Navigate to the `vm_installers` folder on the DVD and double-click on the `VMware-player-5.0.1-894247.exe` file
3. This will launch a Graphical User Interface (GUI) and you will be prompted with the following messages:
  - (a) Welcome to the installation wizard for VMware Player
    - i. Click on the Next button to go to the next screen
  - (b) Destination Folder, Click Next to install to this folder or click Change to install to a different folder
    - i. Click on the Next button to go to the next screen
  - (c) Software Updates, When would you like to check for updates of your software?
    - i. Uncheck the Check for product updates on startup box and click on the Next button to go to the next screen
  - (d) User Experience Improvement Program, Would you like to send feedback to VMware?
    - i. Uncheck the Help improve VMware Player box and check Next to go to the next screen
  - (e) Shortcuts, Select the shortcuts you wish to place on your system
    - i. Ensure the Desktop box is checked and customize the remaining options to your preferences before hitting the Next button to go to the next screen
  - (f) Ready to Perform the Requested Operations
    - i. Click the Continue button to begin installation of VMware Player
  - (g) Setup Wizard Complete
    - i. Click on the Finish button to complete the installation

## 2 Installing the WES Virtual Machine Environment

The 2013 Product Training DVD has a `vm_wes` folder containing the WES virtual operating system in a compressed state called `vmwes.zip`. Inside this zip file is a CentOS operating system, the Weather Event Simulator 9.7 software, and compressed AWIPS data from 24 May 2011. This procedure outlines the transfer and unpacking of this folder from the DVD to a local folder on the Windows machine.

1. Log on to the Windows machine
2. Insert the EWP 2013 Product Training DVD into the DVD-ROM drive (if not already in the drive)
3. Navigate to the DVD-ROM drive (e.g. via the `My Computer` icon)
4. Copy the `vm_wes` folder to a local drive where you want the virtual machine to be inflated (e.g. `C:\`). This process will take about 10 minutes (depending on DVD-ROM speed and system performance).
5. Go to the directory where the `vmwes` folder was copied (e.g. `C:\vm_wes`) and double-click on the `windows_vmwes_install.bat` file to inflate the `vmwes.zip` archive. This process will take 10-15 minutes to uncompress.
  - (a) NOTE: The unpackaged virtual machine will take up 12GB of space initially, but this will increase to 45GB once the virtual machine is run. Ensure this drive path where the virtual machine is being unpacked has at least 45GB of space free.
6. With the archive unpacked, proceed to the next section, “Operating the WES Virtual Machine”

## 3 Operating the WES Virtual Machine

### 3.1 Starting Up the Virtual Machine

1. Log on to the Windows machine
2. Launch the VMware Player application through either a Desktop or Start Menu shortcut

NOTE: You will receive a VMware Player End User License Agreement the first time this application launches. Read through the terms and conditions and select “Yes, I accept the terms in the license agreement” if you agree to the terms followed by the OK button.

- (a) This will open the VMware Player launcher menu (Figure 1)

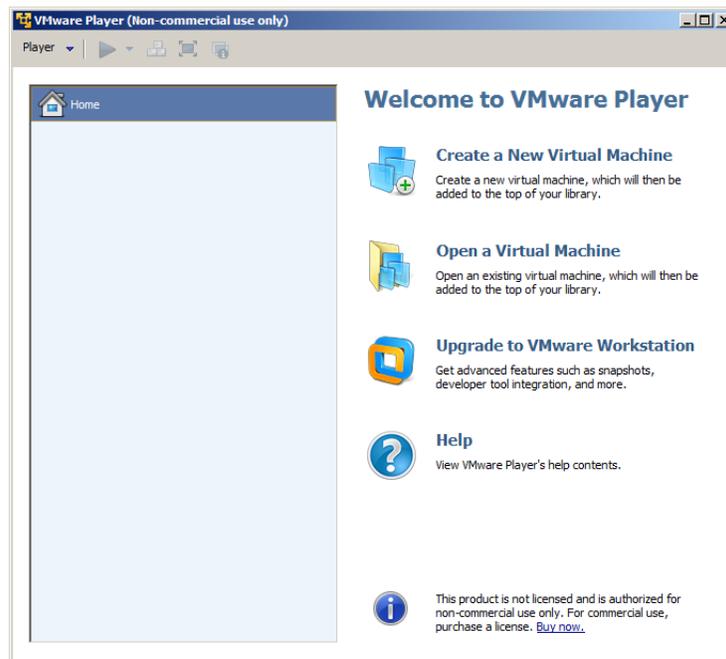


Figure 1: VMware Player Launcher Menu.

- (b) Select the **Open a Virtual Machine** button to launch the folder selector (Figure 2)

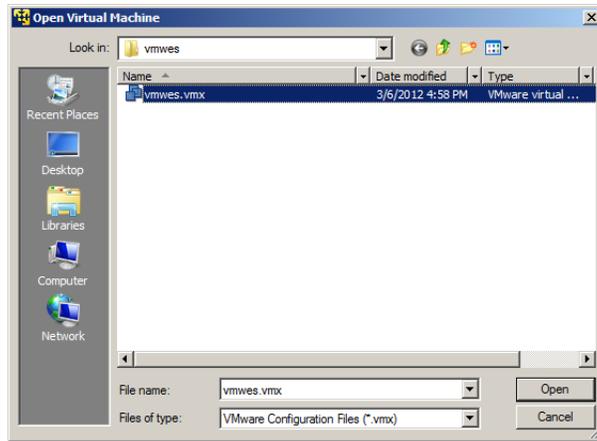


Figure 2: Virtual Machine Folder Selector

- i. Navigate to the directory path where the machine was uncompressed
  - ii. Find the `vmwes.vmx` file and select it
  - iii. Click the **Open** button
- (c) There will now be a virtual machine entry in the VMware Player launcher menu. Select this entry and click on the **Play virtual machine** button to launch the machine (Figure 3)

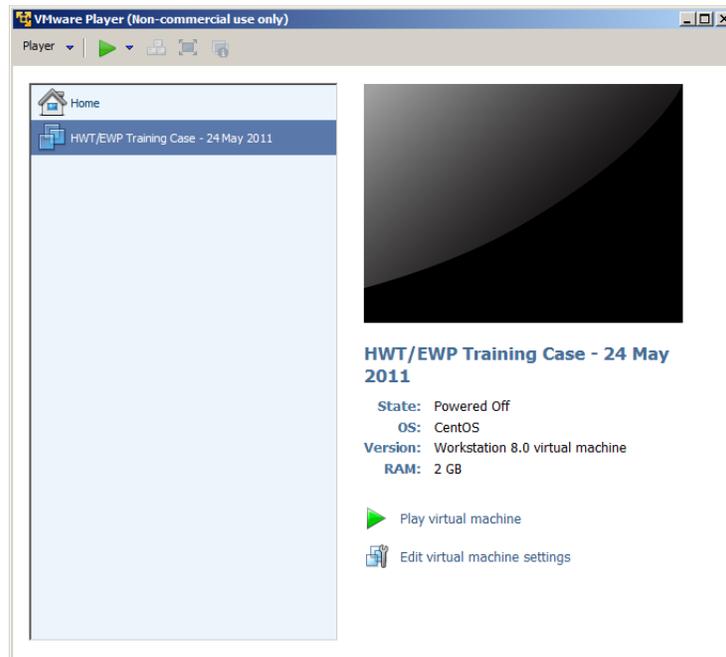


Figure 3: VMware Player Launcher Menu With WES Loaded

NOTE 1: If this is the first time the WES virtual machine is opened, you may receive the following prompt stating “This virtual machine may have been moved or copied...”. Click on the **I copied it** button. In addition, you may be prompted with VMware hints which can be disabled by selecting the **Never show this hint again** box and clicking the **OK** button.

NOTE 2: You may receive a message box that starts out with “The following software is available for download...”. If you receive this, click on the Remind Me Later button. It is recommended that you disable checking for software updates using the following steps:

- (a) In the VMware menu, select `Player`→`File` → `Player Preferences...`, this will open a Preferences window.
  - (b) In the Software updates section:
    - i. Uncheck the “Check for product updates on startup” box
    - ii. Uncheck the “Check for software components as needed” box
    - iii. Click on the OK button.
3. Wait for the virtual machine to boot up and use these credentials to log on to the machine:
- Username: `fxa`  
Password: `fxapass`
4. If this your first time logging into the virtual machine, you may see this message: `GDM could not write to your authorization file. This could mean that you are out of disk space or that your home directory could not be opened for writing. In any case, it is not possible to log in. Please contact your system administrator.` If this message appears, follow these steps below to remedy this problem:
- (a) Click OK on this window, you will be re-routed back to the login screen
  - (b) With the virtual machine window active (e.g. you can type in it), press the `CTRL+ALT+F1` keys together on your keyboard. Your screen will go black and you will be left with a command prompt that says: `vmwes login:`
  - (c) Type in the following credentials to log into the system
    - i. Username: `fxa`
    - ii. Password: `fxapass`
  - (d) You are now logged in as the `fxa` user. As the `fxa` user navigate to the `/data/awips` directory path and remove the `zero.file` located here.

```
$> cd /data/awips
$> rm -f zero.file
```
  - (e) With this file removed, you will now have enough free space to log in to the virtual machine. Pressing `CTRL+ALT+F7` together on your keyboard to log you out and return you to the `HWT/EWP Training Case - 24 May 2011` login screen.
  - (f) Log in with the credentials provided in step 3 (or 4d) of this section. Once logged in, move on the Section 3.2 of this manual.

## 3.2 Launching AWIPS D2D

1. Inside the virtual machine, look for a **Launch AWIPS D2D** icon on the desktop and double-click on it (Figure 4)



Figure 4: The “Launch AWIPS D2D” Icon

- (a) NOTE 1: If this is the first time the AWIPS D2D software is launched, there will be a message that says “**Removing compression file: /data/awips/zero.file**”. This was a file used to increase the compression rate of the virtual machine for DVD packaging. With the virtual machine on your local drive, this file is no longer necessary and will be removed. This process will only happen once.
  - (b) NOTE 2: If this is the first time the AWIPS D2D software is launched, the case data from the 24 May 2011 dataset will need to be uncompressed. If this is the case, you will be prompted with the message “**Would you like to install the 2011May24 AWIPS dataset?**”. Type **y** at the command prompt and hit the **Enter** key to kick off this process. The uncompressed dataset takes up ~32GB of space and the installation process will take 20-30 minutes to complete. This process will only happen once.
2. This will bring up a **Start D-2D** GUI. Ensure the following information is populated in the GUI (Figure 5) before hitting the **OK** button to launch D2D.

FXA\_DATA (i.e. case location): /data/awips/2011May24

FXA\_LOCAL\_SITE: OUN

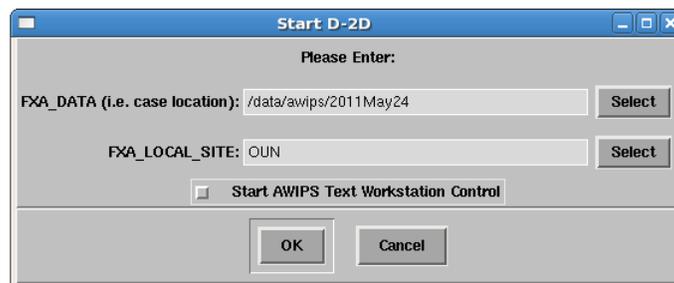


Figure 5: The “Start D-2D” window with the correct case information supplied

3. With D2D open, you are now ready to load and evaluate the experimental datasets using the product jobsheets

### 3.3 Closing Down the Virtual Machine

#### 3.3.1 Shutting down the Virtual Machine

1. Shutting down the WES virtual machine can be done by selecting **System** → **Shut Down...** from the operating system inside the virtual machine (Figure 6)

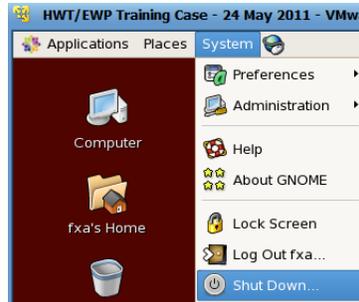


Figure 6: Shutting down the WES virtual machine

#### 3.3.2 Suspending the Virtual Machine

1. Suspending the virtual machine will save its current state (including the state of all applications and processes running within the virtual machine) to be restored later. This can be done by clicking the **X** button in the corner of the VMware Player window. The **X** button is located either in the upper-right hand corner of the VMware Player window if it is not maximized (Figure 7(a)) or at the top of the VMware Player window if it is maximized (Figure 7(b)).



(a)



(b)

Figure 7: Locations of Close Window (X) Button to Suspend the WES 9.2 Virtual Machine

## 4 Uninstalling the VMware Player Software

1. Log on to the Windows machine as a user with administrator privileges
2. Navigate to Control Panel Click on Start → Control Panel → Add or Remove Programs, find VMware Player in the list, and click on the Change/Remove button (Figure 8)

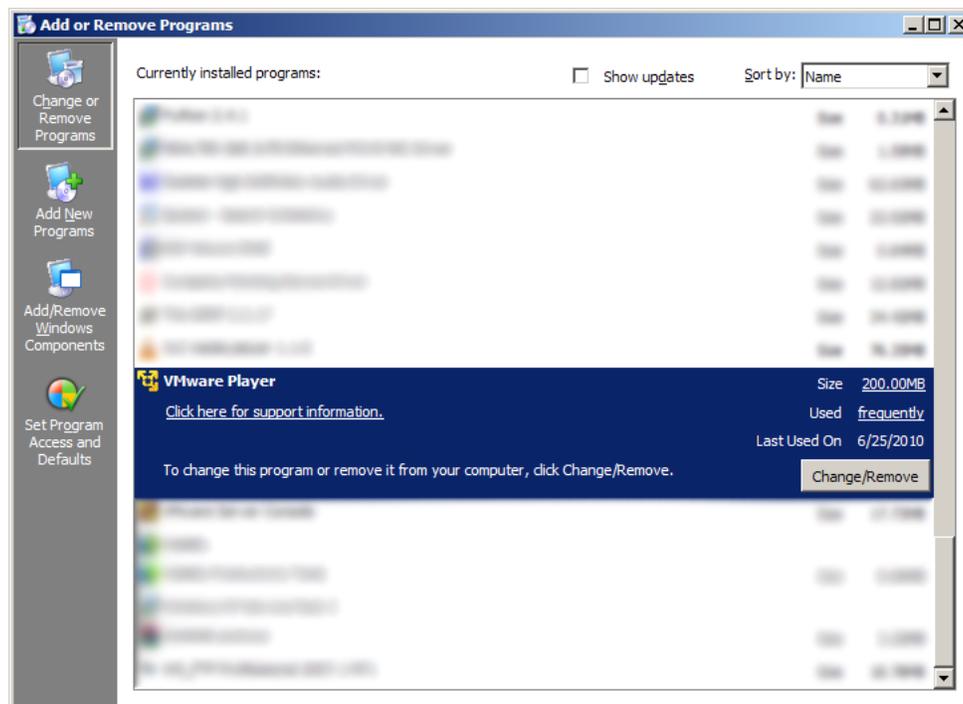


Figure 8: VMware Player in the Add or Remove Programs Window

3. This will launch a Graphical User Interface (GUI) and you will be prompted with the following messages:
  - (a) Welcome to the installation wizard for VMware Player
    - i. Click on the Next button to go to the next screen
  - (b) Program Maintenance, Repair or remove the program
    - i. Click on the Remove button to go to the next screen
  - (c) Preserve Player configurations, Select the configurations you wish to preserve on your system
    - i. Keep the VMware Player configuration box checked. Click on the Next button to go to the next screen
  - (d) Ready to Perform the Requested Operations
    - i. Click on the Continue button to begin the uninstall process
  - (e) Setup Wizard Complete
    - i. Click on the Finish button to complete the uninstallation

## 5 Uninstalling the WES Virtual Machine Environment

1. Log on to the Windows machine
2. Find the `vm_wes` directory and delete it. For example, if the virtual machine was installed in `C:\vm_wes`, then remove the entire `vm_wes` directory (e.g. send to the `Recycle Bin` and empty the `Recycle Bin`).

## Part II

# LINUX CONFIGURATION PROCEDURES

## 6 Installing the VMware Player Software

The 2013 Product Training DVD contains two installers, one for each type of memory architecture:

- `VMware-Player-5.0.1-894247.i386.bundle` - for 32-bit operating systems
- `VMware-Player-5.0.1-894247.x86_64.bundle` - for 64-bit operating systems

1. Log on to the Linux machine as the root user
2. Insert the 2013 Product Training DVD and mount it (or let the DVD auto-mount if that capability is turned on)
3. Launch a new terminal window
4. Type the following command to determine which architecture you have:  

```
$> uname -i
```

  - (a) If this returned `i386`, you will use the `VMware-Player-5.0.1-894247.i386.bundle`.
  - (b) If this returned `x86_64`, you will use the `VMware-Player-5.0.1-894247.x86_64.bundle`.
5. Change directory to the location of the DVD mount on the Linux box and look for the `vm_installers` folder. In the example below, the drive was mounted to `/media/CDROM`, your mount location may vary.  
**EXAMPLE:**

```
$> cd /media/CDROM/vm_installers
```
6. Execute the `VMware-Player-5.0.1-894247.i386.bundle` or the `VMware-Player-5.0.1-894247.x86_64.bundle` installer (depending on your operating system architecture):
  - (a) For 32-bit operating systems (`i386`), the command will be:  

```
$> sh VMware-Player-5.0.1-894247.i386.bundle
```
  - (b) For 64-bit operating systems (`x86_64`), the command will be:  

```
$> sh VMware-Player-5.0.1-894247.x86_64.bundle
```
7. This will launch a Graphical User Interface (GUI) and you will be prompted with the following messages:
  - (a) Welcome to the VMware Player installer. Please review the license terms.
    - i. Read through the licensing terms, select `I agree` and hit the `Next` button to go to the next screen
  - (b) Would you like to check for product updates on startup?
    - i. Select `No` and hit the `Next` button to go to the next screen
  - (c) Would you like to help make VMware software better by sending anonymous system data and usage statistics to VMware?
    - i. Select `No` and hit the `Next` button to go to the next screen
  - (d) The product is ready to be installed.
    - i. Click on the `Install` button to begin installation
  - (e) A successful installation will yield the following message: `"Installation was successful."` If the installation is unsuccessful, examine the output generated to further troubleshoot the issue and run steps 2-4 again
    - i. Click on the `Close` button to exit the GUI
8. Log out of the machine as the root user

## 7 Installing the WES Virtual Machine Environment

The 2013 Product Training DVD has a `vm_wes` folder containing the WES virtual operating system in a compressed state called `vmwes.zip`. Inside this zip file is a CentOS operating system, the Weather Event Simulator 9.7 software, and compressed AWIPS data from 24 May 2011. This procedure outlines the transfer and unpacking of this folder from the DVD to a local folder on the Linux machine.

1. Log on to the Linux machine as the root user
2. Insert the 2012 Product Training DVD and mount it (or let the DVD auto-mount if that capability is turned on)
3. Change directory to the DVD mount directory (e.g. `/media/CDROM`)  

```
$> cd /media/CDROM
```
4. Execute the `linux_vmwes_install.csh` script, providing both a path to the DVD-ROM drive and a path where the data will be unpacked. In the example below, the DVD was mounted to `/media/CDROM` and the installation path will be under `/usr/local` (your paths may differ).  

```
$> csh linux_vmwes_install.csh /media/CDROM /usr/local
```

  - (a) NOTE 1: The unpackaged virtual machine will take up 12GB of space initially, but this will increase to 45GB once the virtual machine is run. Ensure this local path where the virtual machine is being unpacked has at least 45GB of space free. In the example above, the `/usr/local` path is assumed to have sufficient space but this may not be the case on your machine. To see if the installation location has enough free space, run the `df -h <your_installation_directory>` command in a new terminal window. For example, to see if there is enough space in `/usr/local`, the command is:  

```
$> df -h /usr/local
```
  - (b) NOTE 2: The unpacked contents will be stored in a `vmwes` directory underneath the user-defined installation path. For example, if the installation path was `/usr/local`, the final path of the virtual machine will be under `/usr/local/vmwes`.
5. Log out of the machine as the root user, eject the 2013 Product Training DVD, and proceed to the next section “Operating the WES Virtual Machine”

## 8 Operating the WES Virtual Machine

### 8.1 Starting Up a Virtual Machine

1. Log on to the Linux machine as a local user
2. Open up a terminal window and type the following command:

```
$> vmplayer
```

**NOTE:** If this is the first time vmplayer is launched, you may receive a window with a End User License Agreement. Read through and press the **Accept** button if you agree to the terms.

- (a) This will open the VMware Player launcher menu (Figure 9)



Figure 9: VMware Player Launcher Menu.

- (b) Select the **Open a Virtual Machine** button to launch the folder selector GUI (Figure 10)

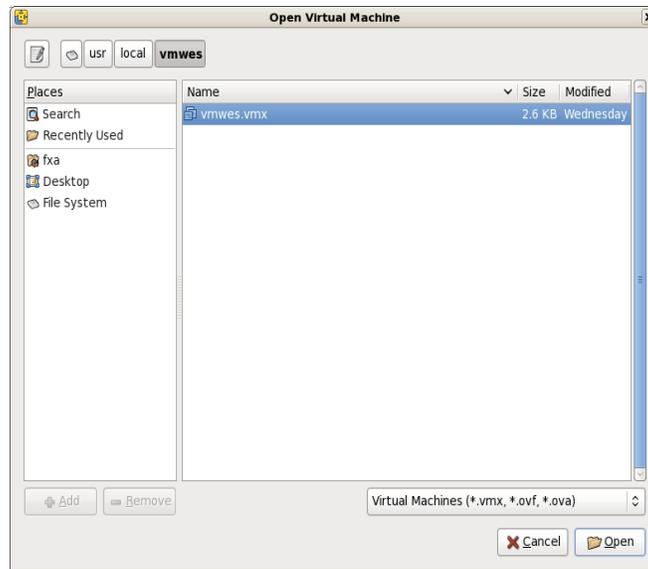


Figure 10: Virtual Machine Folder Selector

- i. Navigate to the directory path where the machine is located (e.g. /usr/local/vmwes)
  - ii. Find the `vmwes.vmx` file and select it
  - iii. Click the `Open` button
- (c) There will now be a virtual machine entry in the VMware Player launcher menu. Select this entry and click on the `Play virtual machine` button to launch the machine (Figure 11)

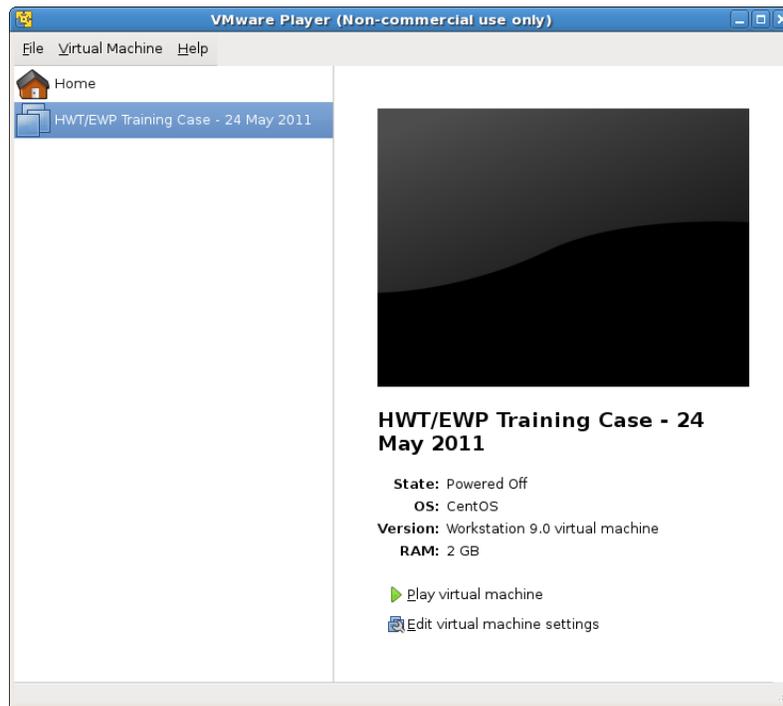


Figure 11: VMware Player Launcher Menu With A Virtual Machine Loaded

NOTE 1: If this is the first time the WES virtual machine is opened, you may receive the following prompt stating “This virtual machine may have been moved or copied...”. Click on the I copied it button. In addition, you may be prompted with VMware hints which can be disabled by selecting the Never show this hint again box and clicking the OK button.

NOTE 2: You may receive a message box that starts out with “The following software is available for download...”. If you receive this, click on the Remind Me Later button. It is recommended that you disable checking for software updates using the following steps:

- (a) In the VMware menu, select File → Player Preferences..., this will open a Preferences window.
- (b) In the Software updates section, uncheck the “Check for software components as needed” box and click on the OK button.

3. Wait for the virtual machine to boot up and use these credentials to log on to the machine:

Username: fxa

Password: fxapass

4. If this your first time logging into the virtual machine, you may see this message: GDM could not write to your authorization file. This could mean that you are out of disk space or that your home directory could not be opened for writing. In any case, it is not possible to log in. Please contact your system administrator. If this message appears, follow these steps below to remedy this problem:

- (a) Click OK on this window, you will be re-routed back to the login screen
- (b) With the virtual machine window active (e.g. you can type in it), press the CTRL+ALT+F1 keys together on your keyboard. Your screen will go black and you will be left with a command prompt that says: `vmwes login:`
- (c) Type in the following credentials to log into the system
  - i. Username: fxa
  - ii. Password: fxapass
- (d) You are now logged in as the fxa user. As the fxa user navigate to the `/data/awips` directory path and remove the `zero.file` located here.

```
$> cd /data/awips
$> rm -f zero.file
```
- (e) With this file removed, you will now have enough free space to log in to the virtual machine. Pressing CTRL+ALT+F7 together on your keyboard to log you out and return you to the HWT/EWP Training Case - 24 May 2011 login screen.
- (f) Log in with the credentials provided in step 3 (or 4d) of this section. Once logged in, move on the Section 8.2 of this manual.

## 8.2 Launching AWIPS D2D

1. Inside the virtual machine, look for a **Launch AWIPS D2D** icon on the desktop and double-click on it (Figure 12)



Figure 12: The “Launch AWIPS D2D” Icon

- (a) NOTE 1: If this is the first time the AWIPS D2D software is launched, there will be a message that says “**Removing compression file: /data/awips/zero.file**”. This was a file used to increase the compression rate of the virtual machine for DVD packaging. With the virtual machine on your local drive, this file is no longer necessary and will be removed. This process will only happen once.
  - (b) NOTE 2: If this is the first time the AWIPS D2D software is launched, the case data from the 24 May 2011 dataset will need to be uncompressed. If this is the case, you will be prompted with the message “**Would you like to install the 2011May24 AWIPS dataset?**”. Type **y** at the command prompt and hit the **Enter** key to kick off this process. The uncompressed dataset takes up ~32GB of space and the installation process will take 20-30 minutes to complete. This process will only happen once.
2. This will bring up a **Start D-2D** GUI. Ensure the following information is populated in the GUI (Figure 13) before hitting the **OK** button to launch D2D

FXA\_DATA (i.e. case location): /data/awips/2011May24

FXA\_LOCAL\_SITE: OUN

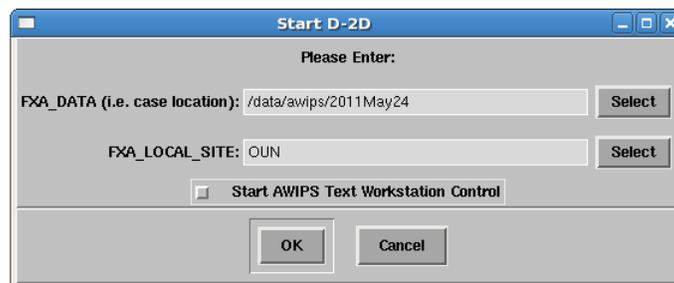


Figure 13: The “Start D-2D” window with the correct case information supplied

3. With D2D open, you are now ready to load and evaluate the experimental datasets using the product jobsheets

## 8.3 Closing Down a Virtual Machine

### 8.3.1 Shutting down the Virtual Machine

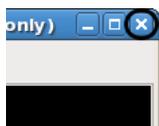
1. Shutting down the WES virtual machine can be done by selecting **System** → **Shut Down...** from the operating system inside the virtual machine (Figure 14)



Figure 14: Shutting down the WES virtual machine

### 8.3.2 Suspending the Virtual Machine

1. Suspending the virtual machine will save its current state (including the state of all applications and processes running within the virtual machine) to be restored later. This can be done by clicking the **X** button in the corner of the VMware Player window. The **X** button is located either in the upper-right hand corner of the VMware Player window if it is not maximized (Figure 15(a)) or at the top of the VMware Player window if it is maximized (Figure 15(b)).



(a)



(b)

Figure 15: Locations of Close Window (X) Button to Suspend the WES Virtual Machine

## 9 Uninstalling the VMware Player Software

1. Log on to the Linux machine as the `root` user
2. Launch a new terminal window and type the following:

```
$> vmware-installer -u vmware-player
```

3. This will launch a Graphical User Interface (GUI) and you will be prompted with the following messages:
  - (a) All configuration information is about to be removed. Do you wish to keep your configuration files?
    - i. Select `NO` and hit the `Next` button to begin the uninstall process
  - (b) A successful uninstallation will yield the following message: “Uninstallation was successful.”
    - i. Click on the `Close` button to exit the GUI

## 10 Uninstalling the WES Virtual Machine Environment

1. Log on to the Linux machine as the root user
2. Open up a new terminal window
3. Find the `vmwes` installation directory and delete it. For example, if the virtual machine was installed in `/usr/local/vmwes`:  

```
$> rm -Rf /usr/local/vmwes
```