

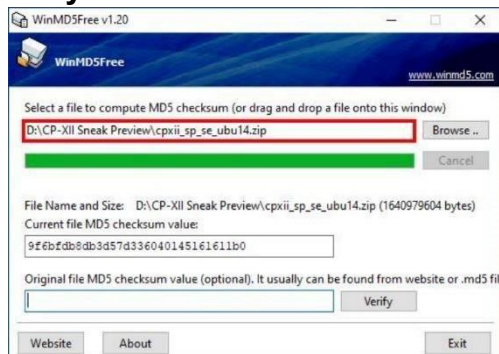
Virtual Image Download Instructions

Step 1: Download the Virtual Machine (Image)

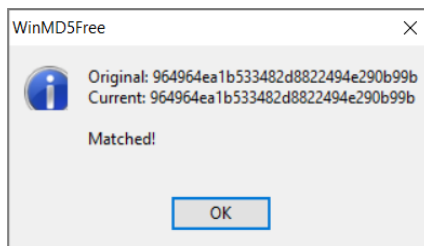
1. Use the links provided in your round specific email to download the images. Competition image download links are typically sent 5-7 days prior to the round start date.

NOTE: The image files are large and may take several hours to download. It is recommended that you download the image file(s) as far in advance as possible.

Step 2: Verify the Checksum



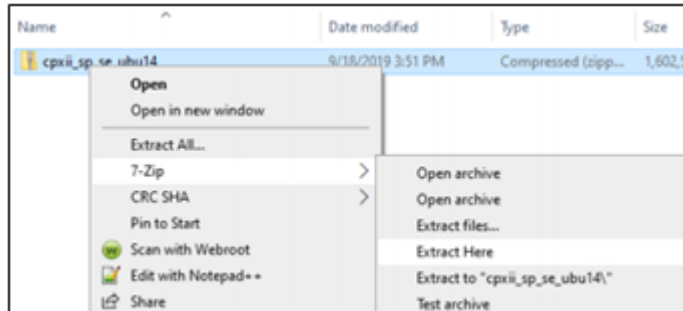
1. Open WinMD5 by double-clicking the application file.
2. Click “Browse” and select the .zip file you would like to verify the checksum of. (You should be selecting the zipped image file downloaded in the previous section.)
3. The checksum calculation process will begin immediately. After the green loading bar is complete, the file’s MD5 checksum will be displayed under “Current file MD5 checksum value.”



4. Copy and paste the original file MD5 checksum value in the bottom box. The original file checksum is provided in the image download email (the same email with the image download links).
5. Click “Verify”
6. If the checksum matches, the image has downloaded successfully. If the checksum does not match, the image download file is corrupt and must be redownloaded.
7. Click “OK” and exit WinMD5.

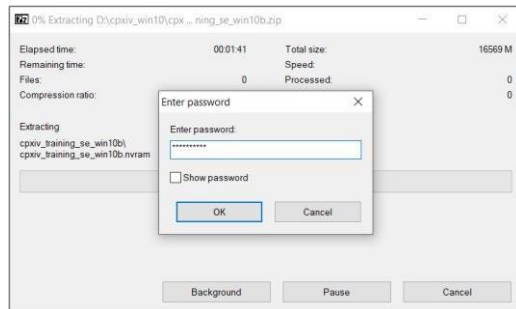
Step 3: Unzip the Image

You must use the 7-Zip software to extract the image file:



1. Right-click the zipped image download file.
2. Select “7-Zip” then select “Extract here.”

NOTE: *DO NOT modify, delete, copy, or move any of the files in the folders created during extraction.*



3. Enter the extraction password exactly as provided by the CyberPatriot Program Office.

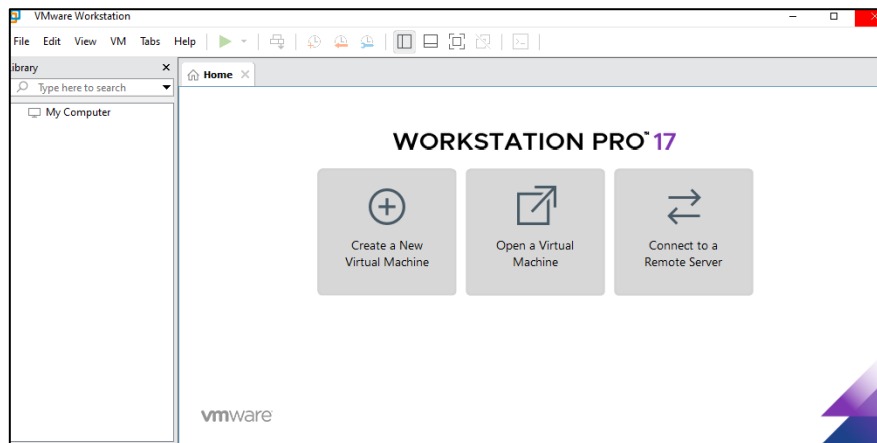
NOTE: *Passwords for practice images are included in the image download email. Passwords for competition images are sent in a separate email at the start time of the competition round*

NOTE: *The extraction process may take a minute or two. If it is finished in only a few seconds, the password may have been incorrectly entered and the extracted file folder will need to be deleted and re-extracted.*

Opening a Virtual Machine (Image)

Once the image file has been extracted from the original zipped download file, it can be opened in VMWare Workstation Pro– [Click here for step-by-step instructions with screenshots](#)

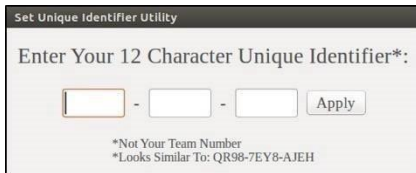
NOTE: *If opening a competition image for a live round, DO NOT open the image in VMware Workstation Pro until you are ready to compete. Opening an image early will corrupt the scoring.*



1. Open VMware Workstation Pro by double-clicking the application file or desktop shortcut.
2. Select “Open a Virtual Machine” from the main menu.
3. Find and select the unzipped image file folder. Click “Open.”
4. Select the extracted image file and click “Open.”
(look for VMware virtual machine configuration [.vmx] file type)
5. Click “Power on this virtual machine”

NOTE: When you launch an image, you may see a pop-up asking if you moved or copied the image – always click on “I Copied It.” If you are prompted with pop-ups regarding removable devices, click “OK.” If you are asked about software updates, click “Remind me later.”

1. Read and agree to the CyberPatriot Competition Agreement. Check box and click “Continue.”
2. Enter Unique Identifier – See details below:



- Your Unique Identifier (UID) is 12-character “code” (i.e., ABCD-1234-XXXX) located on the coach dashboard. Each team is assigned a UID. It must be entered immediately to receive scoring feedback and ensure your scores are recorded correctly. When you first start an image, a box will prompt you for your Unique Identifier (pictured to the right).



- When you start the image, the desktop may be obscured, leaving only the CyberPatriot Set Unique Identifier utility. If the Set Unique Identifier box does not appear after the Competitors Agreement, double-click the Set Unique Identifier icon on the desktop.
 - Click “Yes” to start the Set Unique Identifier utility and enter your Unique Identifier.
 - Click “Apply” and “OK.”
 - When you have entered it correctly, you will receive a message indicating that it has been saved. If you receive a message that your Unique Identifier is invalid, verify and re-enter it.
3. Read the ReadMe File - The README file contains a brief description of the scenario for that image and provides a few hints to help you get started finding and fixing vulnerabilities. It will also contain any account passwords necessary for the image.
 4. Find and Fix Vulnerabilities and answer the forensics question.
 5. Check your progress on the Scoring Report
 6. **Shut down the image once you are done competing.** Scoring and time will stop when the image is closed. You may click the CyberPatriot Stop Scoring icon on the desktop or alternatively, use the standard shutdown procedure to close an operating system.

Finding and Fixing Vulnerabilities

Once you have read the ReadMe file, you can start finding and fixing vulnerabilities (and answering forensic questions) to earn points. Your team can increase its score in two ways:

First, you can find and fix the problems and misconfigurations on an image. While not all the issues are scored, the README may point you in the right direction.

Second, you can score points by answering questions about image problems. Questions can be answered in the “Scored Questions” or “Forensics Questions” file(s) on the desktop. Spelling counts!

Understanding the Scoring Report



In the competition images, your Scoring Report provides information about the status of your system and your progress in fixing vulnerabilities. **To view your report, click the “CyberPatriot Scoring Report” shortcut on the image desktop.**

A screenshot of the CyberPatriot Scoring Report interface. At the top center is the CyberPatriot logo. Below it, the title "Exhibition Round Windows 10 Competition" is displayed. The report shows the following information: "Report Generated At: [redacted] UTC", "Approximate Image Running Time: [redacted]", "Approximate Team Running Time: [redacted]", and "Current Team ID: [redacted]". A summary line states "0 out of 100 points received". Under "Connection Status", it says "Scoring Data Uploaded Successfully: No Errors Detected". Below that, it lists "Internet Connectivity Check: OK", "CyberPatriot Connection Status: OK", and "CyberPatriot Score Upload Status: OK". Further down, it shows "0 penalties assessed, for a loss of 0 points:" and "0 out of 20 scored security issues fixed, for a gain of 0 points:". At the bottom, there is a footer: "The CyberPatriot Competition System is the property of the Air Force Association and the University of Texas at San Antonio. All rights reserved."

The Scoring Report page can take 1-2 minutes to update after the first time the image is started. After that, it will update approximately every minute.

NOTE: If it does not appear to refresh for a few minutes, press Ctrl + R to refresh the report.

Virtual Machine (Image) Time

Report Generated At: At the top of the page you see the words “Report Generated At” followed by a date/time stamp. This time is expressed in Coordinated Universal Time (UTC).



If this time has not changed for at least 10 minutes, refresh the page. If it still does not change, reboot your image. Tampering with the CCS Client service will stop local scoring feedback. If the local scoring client has been disrupted, stopped, or tampered with, you may see a warning message (pictured)

Rebooting your image should fix this issue. In the event the scoring client has been removed from the image or stopped, please see the “Frozen Image” instructions under the **Malfunctioning Image** section below. If your team opens a new copy of the image, the score for the image will be reverted to **zero**.

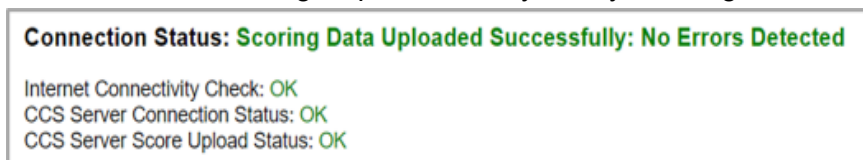
NOTE: JavaScript is required for this error message to appear correctly. To ensure that you only receive correct error messages, do not disable JavaScript.

Approximate Image Running Time: This refers to the time elapsed since the initial opening of the image by pushing play in VMware Workstation Pro. Note that the image time is started when the image is opened, not when the Unique Identifier (UID) is entered.

Approximate Team Running Time: This refers to the time elapsed since the team opened the first image (if working on more than one image). For example, If Windows 10 was opened before Ubuntu 16, the Team Running Time starts when the Windows 10 image was opened.

Connection Status

This section of the Scoring Report informs you of your image’s network connection status.



If you see “No Errors Detected” then you have no problems connecting to our server and scoring should function properly (pictures to the right).

If there is an error, then one or more of the following checks are failing (and will be highlighted in red). In most cases, these problems can only be fixed by talking to your IT administrator.

- **Internet Connectivity Check:** Checks an image’s ability to connect to Google. If it fails, there is a problem with the image’s connection or something on the network is blocking access.
- **CyberPatriot Connection Status:** Checks an image’s ability to connect to the scoring server. If it fails, you will need to troubleshoot your network connection.
- **CyberPatriot Score Upload Status:** This checks an image’s ability to upload scoring data to the scoring server. A failure is usually the result of a proxy server or other security measure.

IMPORTANT: The image will score properly if you maintain a network connection to the Internet.

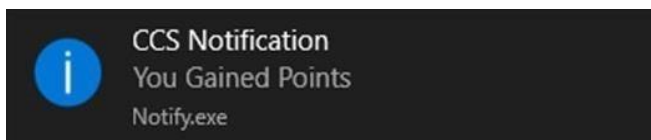
Points and Penalties

0 penalties assessed, for a loss of 0 points:

0 out of 20 scored security issues fixed, for a gain of 0 points:

Points are earned when you find a fix a scored vulnerability. Some scored vulnerabilities are worth more points than others. Penalties are incurred when a critical service stops functioning or a previously remediated vulnerability is reintroduced.

The bottom section of the Scoring Report contains a list of scored vulnerabilities and possible penalties found in the image. This section informs you of how many issues are being scored and notifies you when an issue that is being scored has been addressed. The scoring system will also assess penalties, which can result from actions that run contrary to the scenario outlined in the README file. Points lost due to penalties can be regained by correcting whatever action caused them to be assessed.



When scores change in either direction, teams will be notified with both a sound and a visual cue (left). These will only be played when a scoring report is generated, which is roughly every minute.

Troubleshooting for Malfunctioning Image

Image Will Not Open

If an image that has a correct MD5 checksum does not open, you may try the following:

- Verify the file name at the top of the VMware Workstation Pro is correct.
- Verify that the file is not a zipped file by opening the unzipped image from the VMware Workstation Pro. This is a common error.
- Ensure virtual extensions or Virtual Technology settings are enabled in the BIOS.
- Remove and re-install VMware Workstation Pro.
- Open the image on a different computer.

Frozen Image

If an image appears frozen, does not score, or otherwise does not function properly, the user has three options:

- Go back through your notes and reverse what may have caused the issue.
- Stop working on the image and accept the current score.
- Shutdown the image, remove it from the library in VMware Workstation Pro as well as the unzipped copy from the folder it was in, and reboot the host computer. Then unzip a new image, open the image in VMware Workstation Pro, and start with a score of zero.

Shutdown and Stop Scoring Button Issues

There are certain image security settings that will cause the *Stop Scoring Button* to malfunction. In the event your team receives an error using the *Stop Scoring Button*, please shut down the image using the following steps below:

1. Click the drop-down located at the top ribbon next to "Help".
2. Click **Power**
3. Click **Shut Down Guest**
4. Click **"Yes" on the pop-up**

Shutdown or restart the host computer and **do not** re-open the image or you may incur an overtime penalty. Please ensure the images are deleted at the end of each camp.

Restart a Virtual Machine (Image)

If an image needs to be restarted (restored to the way it was before any changes were made):

- Shut down image in VMware Workstation Pro
- Delete the image .vxn folder (the current version of the unzipped image folder)
- Extract a new copy of the image from the .zip file (the original image file download)

NOTE: If you open a new copy of the image, the score for the image will be reverted to zero. It is important to keep notes of changes that have been made to earn back easily and quickly the lost points.