



# CyberCenturion VII Round 3 Download Instructions



**NOTE: The CCS Connection Test has been updated. All previous Connection Tests will FAIL.**

Please read the following checklist and detailed instructions carefully and completely before opening the competition images. It is important that the steps are followed in sequential order.

## CHECKLIST

### 1. Host Machine Set-Up

- **Enable Virtual Technology on the host computer BIOS if it is disabled**
- **Ensure Internet Connectivity** – The images must connect to the Internet to report scores.

### 2. Software Installation

- **Download and Install 7-Zip** – [Instructions Here](#)
- **Download and Extract WinMD5** – [Instructions Here](#)
- **Download and Install VMware Workstation Player 15.1.0 (64-bit host)** – [Instructions Here](#)

### 3. Virtual Machine Download Instructions

- **Download the Images** – Use the links provided in the Round 3 images email.
- **Verify the Image Checksums** – [Instructions Here](#) – Checksums may be found in the Round 3 images email.
- **Verify the Host System Time** – The host system time (clock) must be correct.
- **Unzip the Images** – Password to extract the images found in Round 3 email.
- **Open Images in VMware Workstation Player** – [Instructions Here](#)

#### *...How to compete on the images*

- **Agree to the Competitor Agreement**
- **Enter Unique Identifier** – The Team Leaders should provide your team with a 12-character unique identifier (UID). The assigned Unique ID should be used for both the Windows and Ubuntu competition images.
- **Read the ReadMe File and Forensic Question Files** – These files can be found on the desktop of the virtual image and tell you the image scenario.
- **Find and fix vulnerabilities (and answer forensic questions) to gain points.**
- **Check your progress by viewing the Scoring Report** – The Scoring Report icon can be found on the desktop of the virtual image. As long as you are connected to the internet/sever, scores update every 1-2 minutes.
- **DO NOT modify original VMware Player image settings**
  - o This includes memory, # of cores, network adapter, etc. Changes may cause image instability.



- **Shut down the Image** – Once you are done competing, shut down the image. Scoring and time will stop when the image is closed. You may click the CyberCenturion Stop Scoring icon on the desktop or alternatively, shutdown using the procedure to close an operating system. If this does not work, please see the “Shutdown and Stop Scoring Button Issues” under the *Malfunctioning Image* section.

#### 4. After the Round 3

- **Delete All Images** – All images are the intellectual property of the Air Force Association and MUST be removed from computers after a competition round has ended. Retaining images after a round is over is NOT authorized.

#### 5. Download Round 3 Images via the links below:



### **Senior and Junior Images – ALL TEAMS PLAY ALL IMAGES**

#### **Images**

Windows 10: [https://cpxiii.s3.amazonaws.com/ccvii/round\\_3/ccvii\\_r3\\_sj\\_vnc\\_win10.zip](https://cpxiii.s3.amazonaws.com/ccvii/round_3/ccvii_r3_sj_vnc_win10.zip)

Server 2019: [https://cpxiii.s3.amazonaws.com/ccvii/round\\_3/ccvii\\_r3\\_sj\\_vnc\\_server2019.zip](https://cpxiii.s3.amazonaws.com/ccvii/round_3/ccvii_r3_sj_vnc_server2019.zip)

Ubuntu 18: [https://cpxiii.s3.amazonaws.com/ccvii/round\\_3/ccvii\\_r3\\_sj\\_h\\_vnc\\_ubu18.zip](https://cpxiii.s3.amazonaws.com/ccvii/round_3/ccvii_r3_sj_h_vnc_ubu18.zip)

#### **Verify Image Checksum**

After downloading, use WinMD5 to calculate the image checksum (Instructions [here](#)). If the checksum matches the one below, you have successfully downloaded the image. If it does not, re-download the image.

If the checksum does not match after several attempts, try using a different browser, computer, or network.

Windows 10: **6223e78fd0724d3e99132e690b0464d5**

Server 2019: **d2a81f75c6c5c90ad047d8b3da51ad92**

Ubuntu 18: **4251c20c2c904c71dc1f6b33a4c108d6**



# DETAILED INSTRUCTIONS

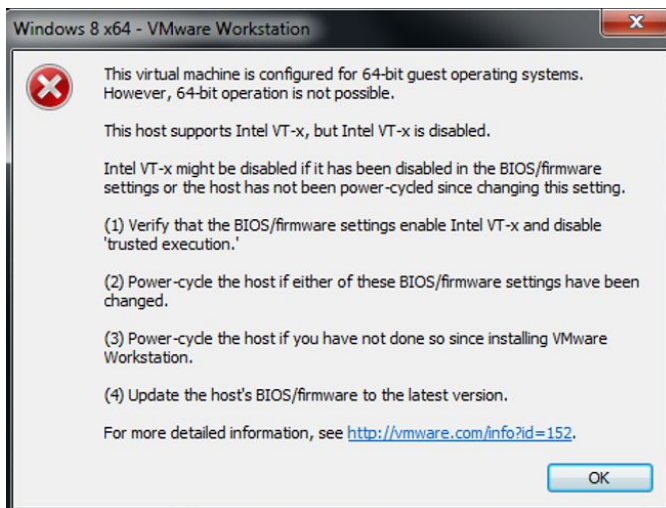
## 1. Host Machine Set-Up

We recommend your “host” system (your physical computer) has these specifications:

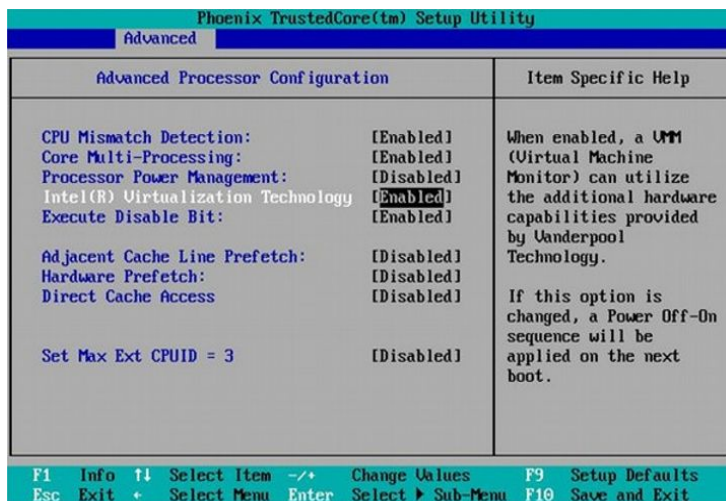
- 64-bit i3 processor of the generation “Sandy Bridge” or better OR AMD 64-bit processor of the generation “Bulldozer” or better (built in 2011 or later)
- **Virtualization Technology / Extensions (e.g., VT-x, Vx) must be ENABLED in the BIOS**
- 8 GB of RAM / 4 GB may cause performance issues that will not receive special consideration
- 40 GB of free disk space
- XGA (1024x768) or higher display / 1280x1024 recommended

Click link for more detailed information – [Full technical specifications](#)

- **Enable Virtual Technology on the host computer BIOS if it is disabled.**



You will receive an error in VMware Workstation Player if your Virtual Technology is disabled, as shown in the screenshot to the left.



is

Please check with your computer manufacturer for the exact steps to change the BIOS. Normally, the BIOS can only be accessed in the few seconds of black or blue screen that appears at the beginning of the boot-up or re-starting process. A note to press a key such as Esc or F1 is to enter **Setup** or the **BIOS** normally shown at the bottom of the screen. It may take several attempts because it is a short period of time before the Windows screen appears. Below is a screen capture of a BIOS screen with Virtual Technology enabled.



- **Ensure Internet Connectivity**  
Your image MUST connect to the Internet during the competition.

## 2. Software Installation

In order to open the competition images, the following software must be installed on your host machine:

- [7-Zip](#) – This software will extract the virtual machine images after they are downloaded. The images are compressed in .zip format.
- [VMware Workstation Player 15.1.0](#) – The images run in this software. Other virtualization software may work, but technical support is only provided for the VMware program listed above. VMware Fusion or newer versions of VMware Workstation Player or Workstation Player may be used, but at the risk of the team.
- [WinMD5](#) – This software verifies that your images were not corrupted during the download process by using a checksum. If the checksum of your downloaded image does not match the checksum provided in this document, you need to re-download that image.

## 3. Virtual Machine Download Instructions

- **Download Virtual Machine Images** – Use the links provided in the session specific email to download the images. The image files are large and may take several hours to download. Please download them as soon as possible.
- **Unzip the Image** – Use the 7-Zip software to extract each image. Please do not modify, delete, copy, or move any of the files in the folders created during extraction.
- **Open the Image in VMware Workstation Player** – Once an image has been extracted, launch it using VMWare Workstation Player.
  - Open VMware  selecting “Open a Virtual Machine” from the main menu  Select the unzipped image file  click Play
  - 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.” You do not need to download VMware Tools. If an image needs to be restarted, the current version must be closed and deleted, and a new version may be extracted from the .zip file.

### *...How to compete on the images*

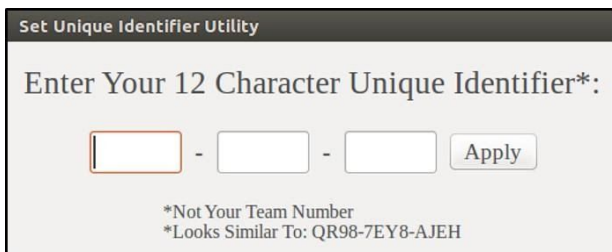
#### Agree to the competitor agreement

CyberPatriot Competitor Agreement
While competing in CyberPatriot:
I will consider the ethical and legal implications of all of my actions. I will not conduct, nor will I condone, any actions that attack, hack, penetrate, or interfere with another team's or individual's computer system.
I will not keep or download any instances of competition images outside their specified dates of use.
I will comply with the rules in the CyberPatriot Rules Book.
I will enter my team's Unique Identifier immediately.

Cyber ethics is a major component of the CyberCenturion program. The teams must agree to act ethically before starting work on the image. If Competitors do not check this box, which pops up when the image starts, they will be unable to compete.



- **Enter Unique Identifier**



Your Unique Identifier is 12-character “code” and is NOT your team number (i.e., ABCD-XXXX-XXXX). 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 left).



When you start the image, the desktop may be obscured, leaving only the CyberCenturion 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.

Now click Apply and OK.

If you receive a message that your Unique Identifier is invalid, verify and re-enter it. When you have entered it correctly, you will receive a message indicating that it has been saved.

- **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. It will also contain any account passwords necessary for the image.

- **Find and fix vulnerabilities (and answer forensic questions) to gain points.**



Your team can increase its score during the competition round in two ways. First, you can find and fix the problems and misconfigurations on an image. While not all of the issues are scored, the README may point you in the right direction. For help with some basic vulnerabilities, visit the Training Materials on our website. These materials are designed only to be a starting point in your training.

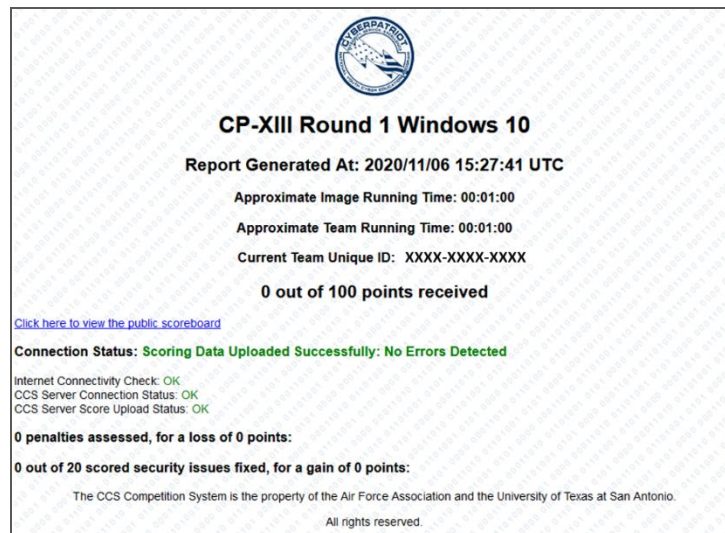
Second, you can score points by answering questions about image problems. Questions can be answered in the “Scored Questions” or “Forensics Questions” file(s) on the desktop. Spelling your answers correctly counts!

- **Check your progress by viewing the Scoring Report**

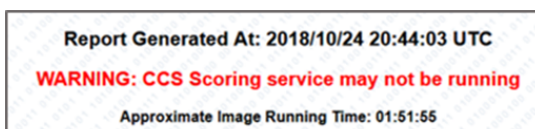


To check your score, use the “Scoring Report” shortcut on the desktop. The Scoring Report page may take 1-2 minutes to update after the first time the image is started.

It will look like this:



Your Scoring Report provides information about the status of your system and your progress in fixing vulnerabilities. It will update roughly every minute. If it does not appear to refresh for a few minutes, hold down the Ctrl + R key.



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 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**.**

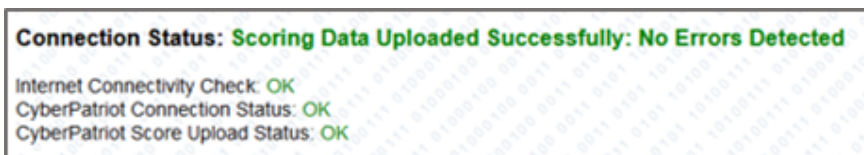
**NOTE:** Javascript is required for this error message to appear correctly. To ensure that you only receive correct error messages, do not disable Javascript.

The next section of the Scoring Report deals with an image’s network connection status.

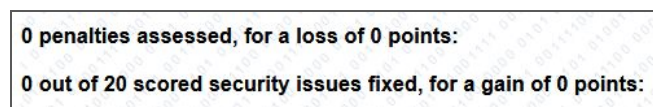
If you see “No Errors Detected” after “Connection Status,” then you have no problems connecting to our server.

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

- o 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.
- o CyberPatriot Scoring Server Connection Status: Checks an image’s ability to connect to the scoring server. If it fails, you will need to troubleshoot your network connection.
- o 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:** **Only your Internet Connectivity Check will be green.** The image will score properly if you maintain a network connection to the Internet.



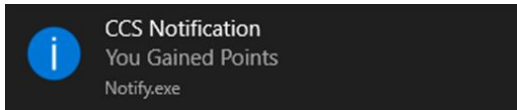
The next line shows how many points the team has scored. Some scored vulnerabilities are worth more points than others. Additionally, reintroducing a

vulnerability that was previously fixed can result in the loss of points.

The last section of the Scoring Report contains a list of scored vulnerabilities and possible penalties found in the image. This section of the Scoring Report will tell you how many issues are being scored and notify 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.

- **Shut down the Image** – Once you are done competing, shut down the image. Scoring and time will stop when the image is closed. You may click the CyberCenturion Stop Scoring icon on the desktop or alternatively, shutdown using the procedure to close an operating system. If this does not work, please see the “Shutdown and Stop Scoring Button Issues” under the *Malfunctioning Image* section.

## 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:

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

### Frozen Image

If an image appears frozen, doesn't score, or otherwise does not function properly, a team has three choices:

1. Go back through your notes and reverse what may have caused the issue.
2. Stop working on the image and accept the current score.
3. Shutdown the image, remove it from the library in VMware Workstation Player 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 Player, 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 suspend the image using the following steps below:

- Click the **Player** drop-down
- Click **Power**
- Click **Suspend Guest**, then **Yes** on the pop up





Please ensure the images are deleted at the end of each round.

