



Introduction to CyberPatriot and Cybersecurity

Unit 1

Learning Objectives

- Overview of CyberPatriot and the National Youth Cyber Defense Competition:
 - Team Structure
 - Training and Competing
 - Competition Timeline
 - National Finals Competition
- Introduction to cybersecurity





CyberPatriot – National Youth Cyber Defense Competition

Section 1

What is CyberPatriot?

CyberPatriot is the nation's largest national youth cyber education program.

- Excites, educates, and motivates participants to pursue STEM education and careers
- Instills in participants the importance of cyber ethics, cyber hygiene, and cybersecurity
- Actively creating the next generation of cyber defenders “digital workforce”



What is CyberPatriot?



NOT “Hacker” training

- Cyber ethics discussions are important (and early) component in our curriculum
- No teaching of “hacking” tools or techniques
- Offensive activity forbidden in cyber defense competition

Our focus is on building a strong national foundation for cyber skills throughout high schools and middle schools.

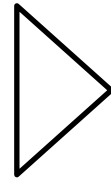


The National Youth Cyber Defense Competition



Nationwide competition that challenges teams of students to find and fix cybersecurity vulnerabilities within virtual operating systems

Grades 6-12



REGISTRATION

- Coach registers the team(s)
- Adds students to roster
 - 2-6 students per team
- Finds technical mentor or team assistant (optional)



TRAINING

- Training modules (online)
- 4 practice rounds (online)
- Access to Cisco Networking Academy



COMPETITION

- 3+ scored rounds (online)
- Earn points for securing system
- Top teams advance to National Finals



Team Structure

Team Roles

COACH

- Adult leader – teacher, parent, youth group advisor, etc.
- Verified by organization administrator
- Responsible for registering team and team safety

COMPETITOR

- Student in grades 6-12
- No prior cyber experience required
- 2-6 competitors per team

TECHNICAL MENTOR

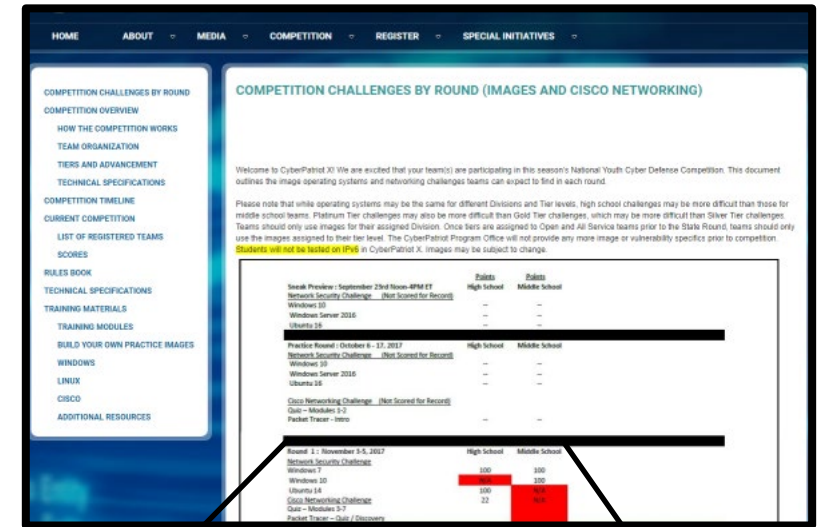
- Technical volunteer with knowledge of Windows, Linux, and Networking
- Flexible time commitment. Volunteers as much or a little as desired.
- Must complete background check

TEAM ASSISTANT

- Non-technical volunteer. Helps with administrative and logistical
- Flexible time commitment. Volunteers as much or a little as desired.
- Must complete background checks

Training and Preparing

- **Review** scheduled competition round challenges on CyberPatriot website
- **Utilize** training materials, operating systems, and cisco networking assignments prior to round
- **Participate** in the unscored rounds
 - Exhibition Round
 - Training Rounds (answer keys provided)
 - Practice Round
- **Prepare** hardware, software, and network for competition to technical specifications on CyberPatriot website
- **Download** password-protected competition images from links in the download instructions email once available



Round 1 :	High School	Middle School
<u>Network Security Challenge</u>		
Windows 7	100	100
Windows 10	N/A	100
Ubuntu 14	100	N/A
<u>Cisco Networking Challenge</u>	22	N/A
Quiz – Modules 3-7		
Packet Tracer – Quiz / Discovery		

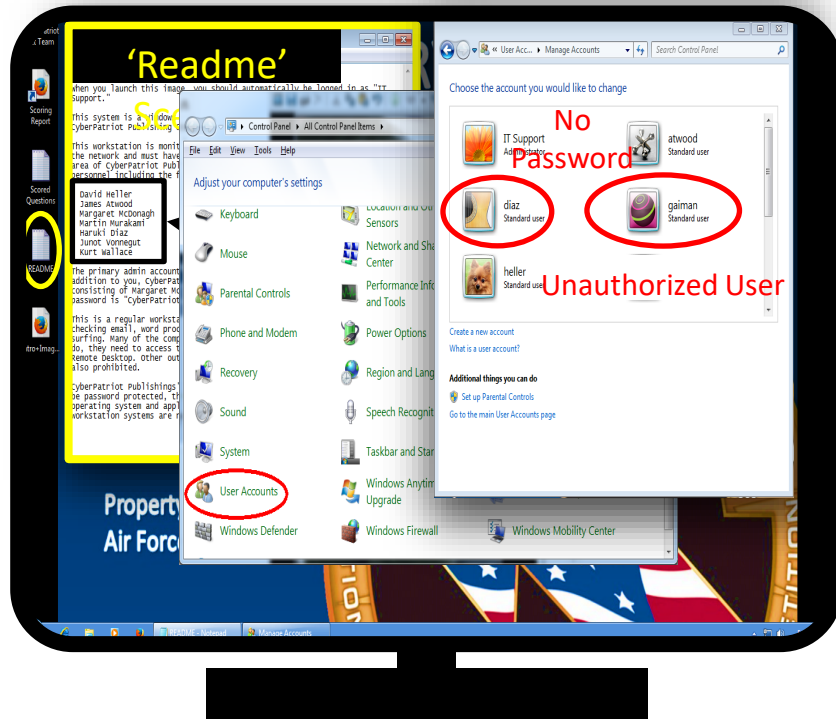
Competing

Competition “Image”

Virtual operating system purposely filled with cybersecurity vulnerabilities that teams must find and fix within an allotted time.

- Earn (or lose) points for changes
- Windows, Windows Server, Ubuntu, & Mint images
- Accompanied by Cisco NetAcad quizzes and packet tracer exercises

Host machine must meet minimum hardware and software requirements. Tech specifications can be found on the CyberPatriot website.



Competing

Each round teams will:

- **Extract** and open images with password provided in StartEx email
- **Identify** team by entering Unique ID
- **Find & Fix** vulnerabilities within the competition images
- **Answer** Cisco Networking Quiz and Forensics Questions
- **Build** and harden a simulated network
- The goal of the competition is to harden the system as completely as possible in the allotted period time
- Secure your system by starting with hints and the scenario in the ReadMe file on the desktop
 - Not all vulnerabilities are scored or hinted at in the ReadMe



CyberPatriot Competition System (CCS)

- The CyberPatriot Competition System (CCS) automatically transmits your team’s progress in the competition image (VM) to the CyberPatriot scoring server
- Use the **CyberPatriot Scoring Report** to check your score and your connection status during the round
- A chime will play when you gain points, and a buzzer will sound when you lose points
- Do not open, modify, or delete anything in the “CyberPatriot” folder of any image - doing so could cause you to lose your progress in the image.
- **Note: Server Time is the official competition time.**


CyberPatriot Round 0 Image
Report Generated At: 2013-Sep-09 18:32:31 UTC
Approximate Running Time: 00:33:26
Current Team ID: **046A926BB3**
20 out of 60 points received

Connection Status: No Errors Detected
Internet Connectivity Check: OK
CyberPatriot Connection Status: OK
CyberPatriot Score Upload Status: OK

0 penalties assessed, for a loss of 0 points:
2 out of 6 scored security issues fixed, for a gain of 20 points:

Competition Round Information Distribution

- **Download email sent Monday prior to competition**
 - Software download links and instructions
 - Image download links and instructions
 - Cisco Quiz and Packet Tracer information
 - Any additional information specific to the round
- **StartEx email sent at start of round (Thursday, 9:00 AM ET)**
 - Extraction Password

All competition periods are FOUR hours. All work must be completed in that time. Teams may compete during the following times on competition weekends. All times are US Eastern Time.

Thursday, 9:00 AM - 10:00 PM ET

Friday, 9:00 AM - 11:59 PM ET

Saturday, 8:00 AM - 11:59 PM ET

Sunday, 10:00 AM - 8:00 PM ET

CyberPatriot Competition Timeline

CyberPatriot 18 (2025-2026) Competition Timeline

REGISTRATION DATES

April 1

Registration Opens

20% discount for teams registered by July 1

October 1

Registration Deadline

Last day to add new teams

October 22

Roster Deadline

Last day to add new competitors

November 5

Payment Deadline

TRAINING ROUNDS

Exhibition Round

May 16 – August 25

Training Round (Basic)

September 4 – October 22

Sneak Preview

*(Optional Test)
TBD*

Practice Round

October 6–20

Training Round (Intermediate)

October 28 – January 20

MIDDLE SCHOOL DIVISION

Introductory Round

November 13–16

State Round

December 11–14

Semifinals

January 22–24

National Finals

*(In-Person event, Bethesda, MD)
March 20–24, 2026*

HIGH SCHOOL DIVISIONS

(Open / All Service Divisions)

Round 1

October 23–26

Round 2

November 13–16

State Round

December 11–14

Semifinals

January 22–24

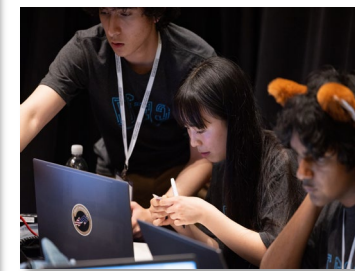
National Finals

*(In-Person event, Bethesda, MD)
March 20–24, 2026*

Only qualifying teams participate

The National Finals Competition

- Top teams earn all-expenses-paid trips to Washington D.C. area
- More than just competing in front of a computer
 - National Finals includes the Network Security Master Challenge and the Cisco Networking Challenge.
- Opportunity to win scholarships, network with industry leaders and enjoy media recognition





Introduction to Cybersecurity

Section 2

What is Cybersecurity?

All the tools we use and actions we take to keep computers, networks, and information **safe and available** for those who need it, and **unavailable** for those who should not have it.



That means protecting hardware and data from everything from hackers to earthquakes.

Source: www.UMUC.edu

Why is Cybersecurity Important?

Things that rely on computers:

- Banks
- Social Media
- Schools
- Airlines and Railroads
- Stores
- Police and fire departments
- Military and government systems
- Doctors' offices



Source: US Department of Homeland Security

7,200+ critical American industrial control systems are linked to the Internet, and therefore vulnerable to attack

**Cybersecurity isn't just about protecting computers.
Almost everything relies on or could be affected by a computer.**

Why is Cybersecurity Important?

- **2021:** The Colonial Pipeline Ransomware Attack shutdown gasoline pipelines in the southeastern United States. A \$4.4 million dollar ransom was paid to restore service. An employee likely re-used a password from a company VPN on another network that was compromised by hackers.
- **2022:** An intruder entered the Uber company network through social engineering. Once in the network, the attacker found PowerShell scripts, in which an employee had entered [hardcoded credentials](#) for an administrator's account. The credentials allowed a compromise of code repositories, communication channels, internal systems, and cloud storage.
- **2024:** National Public Data was hacked, and over 270 million Americans had their social security number leaked on the dark web.

People make mistakes.

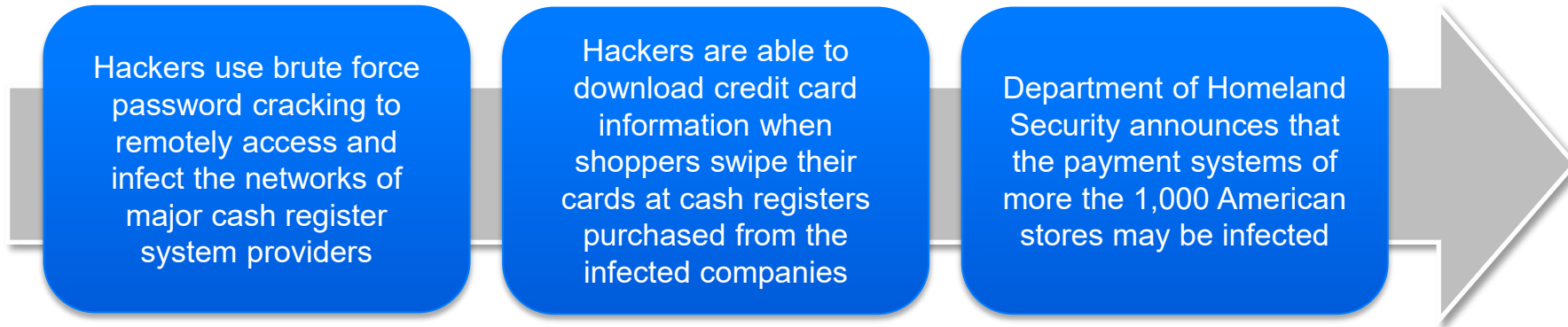
Cybersecurity is often about protecting organizations and individuals from themselves.

Sources: CSO magazine, www.csoonline.com, Bloomberg News, www.bloomberg.com, GCN Magazine, www.gcn.com

Why is Cybersecurity Important?

Case: Backoff Malware Attacks Targeted cash registers and payment systems sold by seven different companies

- Impacted major retail companies like Target, Dairy Queen, and UPS



We're all connected.

A weakness in one system can be exploited by attackers to target another system.

Source: New York Times, <http://bits.blogs.nytimes.com/2014/08/22/secret-service-warns-1000-businesses-on-hack-that-affected-target/>

Who's Hiring?

- Nearly every organization needs cybersecurity professionals
- In 2025 the average cybersecurity-specific jobs earned an average salary of \$132,962.



Source: Computer World, http://www.computerworld.com/s/article/9237394/Demand_for_IT_security_experts_outstrips_supply?pageNumber=2

Cyber Career Opportunities

- **Cyber workers**

- Employees that maintain day-to-day security and strengthen their organization's protection

- **Cyber defenders**

- Government or contractor employees that protect American networks and information from attacks

- **Cyber sleuths**

- Professionals that watch for espionage and insider threats and perform digital forensics for law enforcement

- **Cyber leaders**

- Industry veterans that decide company security policies, train new employees, and conduct R&D



Important Resources

These training materials are only intended to provide basic training for the competition. Coaches and Mentors can be great resources, but the below links may help as well:

- The CyberPatriot Rules Book
 - Click here: <http://www.uscyberpatriot.org/competition/rules-book>
- Additional Windows resources
 - Click here: <http://www.uscyberpatriot.org/competition/training-materials/windows>
- Additional Linux resources
 - Click here: <http://www.uscyberpatriot.org/competition/training-materials/linux>

