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CYBER SKYLINE

The National Cyber League
A Community Where Cybersecurity Is a Passion

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NCL Fall 2024 Individual Game Scouting Report

Dear Eli Johnson,

Thank you for participating in the National Cyber League (NCL) Fall 2024 Season! Our goal is to prepare the next generation of cybersecurity professionals, and your participation is helping achieve that goal.

The NCL was founded in May 2011 to provide an ongoing virtual training ground for collegiate students to develop, practice, and validate their cybersecurity skills in preparation for further learning, industry certifications, and career readiness. The NCL scenario-based challenges were designed around performance-based exam objectives of CompTIA certifications and are aligned to the National Initiative for Cybersecurity Education (NICE) Cybersecurity Workforce Framework published by the National Institute of Standards and Technology (NIST).

As you look to a future career in cybersecurity, we hope you find this report to be valuable in both validating skills and identifying areas for improvement across the nine NCL skills categories. You can use this NCL Scouting Report to:

- Validate your skills to employers in any job application or professional portfolio;
- Show case your achievements and strengths by including the Score Card view of your performance as part of your résumé or simply sharing the validation link so that others may view the detailed version of this report.

The NCL Fall 2024 Season had 9,260 students/players and 573 faculty/coaches from more than 540 two- and four-year schools & 230 high schools across all 50 U.S. states registered to play. The Individual Game Capture the Flag (CTF) event took place from October 25 through October 27. The Team Game CTF event took place from November 8 through November 10. The games were conducted in real-time for students across the country.

NCL is powered by Cyber Skyline's cloud-based skills evaluation platform. Cyber Skyline hosted the scenario-driven cybersecurity challenges for players to compete and track their progress in real-time.



To validate this report, please access: cyberskyline.com/report/PWFB7D8Q9QH



Based on the performance detailed in this NCL Scouting Report, you have earned **12 hours** of Continuing Education Units (CEUs) as approved by CompTIA. You can learn more about the NCL - CompTIA alignment via nationalcyberleague.org/partners.

Congratulations for your participation in the NCL Fall 2024 Individual Game! We hope you will continue to develop your knowledge and skills and make meaningful contributions as part of the Information Security workforce!

Dr. David Zeichick
NCL Commissioner



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NATIONAL CYBER LEAGUE SCORE CARD

NCL FALL 2024 INDIVIDUAL GAME

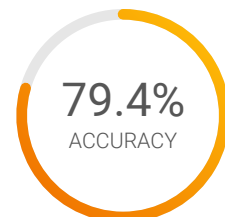
YOUR TOP CATEGORIES

LOG ANALYSIS
98TH PERCENTILE

ENUMERATION &
EXPLOITATION
98TH PERCENTILE

NETWORK TRAFFIC
ANALYSIS
95TH PERCENTILE

NATIONAL RANK
757TH PLACE
OUT OF 8484
PERCENTILE
92ND



Average: 67.8%

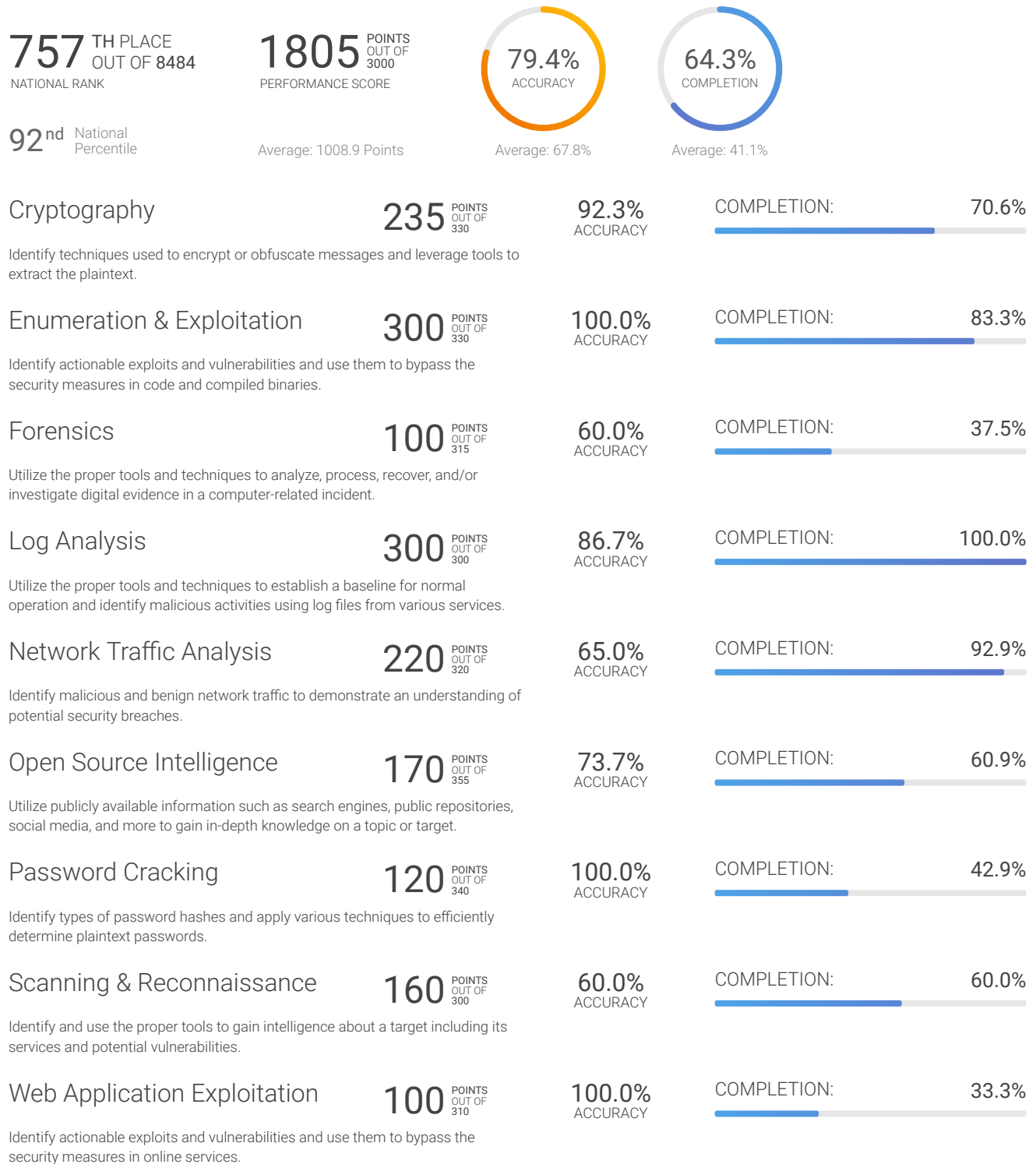
cyberskyline.com/report
ID: PWFB7D8Q9QH

Learn more at nationalcyberleague.org



NCL Fall 2024 Individual Game

The NCL Individual Game is designed for student players nationwide to compete in realtime in the categories listed below. The Individual Game evaluates the technical cybersecurity skills of the individual, without the assistance of others.



Note: Survey module (100 points) was excluded from this report.



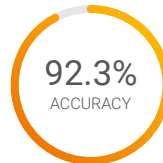


Cryptography Module

Identify techniques used to encrypt or obfuscate messages and leverage tools to extract the plaintext.

1406 TH PLACE
OUT OF 8484
NATIONAL RANK

235 POINTS
OUT OF 330
PERFORMANCE SCORE



Average: 72.6%



Average: 64.6%

84th National
Percentile

Average: 209.0 Points

Bases (Easy)

30 POINTS
OUT OF 30

100.0%
ACCURACY

COMPLETION: **100.0%**

Analyze and obtain the plaintext from messages encoded with common number bases.

Shift (Easy)

40 POINTS
OUT OF 40

100.0%
ACCURACY

COMPLETION: **100.0%**

Analyze and obtain the plaintext for a message encrypted with a shift cipher.

Number Codes (Easy)

40 POINTS
OUT OF 40

100.0%
ACCURACY

COMPLETION: **100.0%**

Analyze and obtain the plaintext for a message encoded using ASCII codes.

NATO (Easy)

40 POINTS
OUT OF 40

100.0%
ACCURACY

COMPLETION: **100.0%**

Analyze and obtain the plaintext for a message encoded using the NATO alphabet.

Message Signature (Medium)

35 POINTS
OUT OF 60

66.7%
ACCURACY

COMPLETION: **66.7%**

Identify tampered emails by using PGP signatures.

Beep Beep (Medium)

50 POINTS
OUT OF 60

100.0%
ACCURACY

COMPLETION: **66.7%**

Decoded a message that is spelled out using dial tone sounds.

Tampered (Hard)

0 POINTS
OUT OF 60

0.0%
ACCURACY

COMPLETION: **0.0%**

Use CRC checksums to identify a tampered message.





Enumeration & Exploitation Module

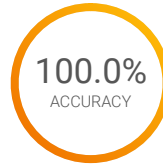
Identify actionable exploits and vulnerabilities and use them to bypass the security measures in code and compiled binaries.

224TH PLACE
OUT OF 8484
NATIONAL RANK

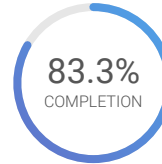
300 POINTS
OUT OF 330
PERFORMANCE SCORE

98th National
Percentile

Average: 145.2 Points



Average: 72.5%



Average: 52.0%

Source (Easy)

110 POINTS
OUT OF 110

100.0%
ACCURACY

COMPLETION: **100.0%**

Reverse engineer the source code of a Rust program to bypass a simple password authentication.

Speedy (Medium)

110 POINTS
OUT OF 110

100.0%
ACCURACY

COMPLETION: **100.0%**

Reverse engineer the source code of a Golang program.

Passphrase (Hard)

80 POINTS
OUT OF 110

100.0%
ACCURACY

COMPLETION: **50.0%**

Reverse engineer an ELF binary to break XOR encryption on a password.

Forensics Module

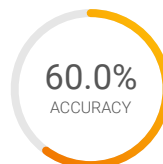
Utilize the proper tools and techniques to analyze, process, recover, and/or investigate digital evidence in a computer-related incident.

1357TH PLACE
OUT OF 8484
NATIONAL RANK

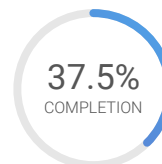
100 POINTS
OUT OF 315
PERFORMANCE SCORE

85th National
Percentile

Average: 111.2 Points



Average: 50.5%



Average: 41.1%

Table (Easy)

100 POINTS
OUT OF 100

60.0%
ACCURACY

COMPLETION: **100.0%**

Analyze an ARP table to investigate an ARP spoofing attack.

Plant (Medium)

0 POINTS
OUT OF 100

0.0%
ACCURACY

COMPLETION: **0.0%**

Extract a Linux installer and cpio file to investigate a filesystem.

Incident Response (Hard)

0 POINTS
OUT OF 115

0.0%
ACCURACY

COMPLETION: **0.0%**

Inspect and repair a live system that was tampered with to recover data.



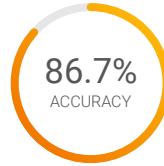


Log Analysis Module

Utilize the proper tools and techniques to establish a baseline for normal operation and identify malicious activities using log files from various services.

178 TH PLACE
OUT OF 8484
NATIONAL RANK

300 POINTS
OUT OF 300
PERFORMANCE SCORE



Average: 53.9%



Average: 60.1%

98th National
Percentile

Average: 160.2 Points

Audit (Easy)

100 POINTS
OUT OF 100

100.0%
ACCURACY

COMPLETION: **100.0%**

Analyze a system auth log file to investigate the behavior of users with elevated privileges.

Packet Log (Medium)

100 POINTS
OUT OF 100

77.8%
ACCURACY

COMPLETION: **100.0%**

Identify traffic patterns from a log file of network traffic.

\$TICKER (Hard)

100 POINTS
OUT OF 100

100.0%
ACCURACY

COMPLETION: **100.0%**

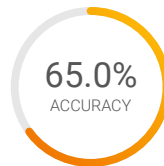
Parse a stock price log to identify a stock price that was manipulated.

Network Traffic Analysis Module

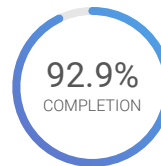
Identify malicious and benign network traffic to demonstrate an understanding of potential security breaches.

436 TH PLACE
OUT OF 8484
NATIONAL RANK

220 POINTS
OUT OF 320
PERFORMANCE SCORE



Average: 63.2%



Average: 65.5%

95th National
Percentile

Average: 148.9 Points

Address (Easy)

100 POINTS
OUT OF 100

100.0%
ACCURACY

COMPLETION: **100.0%**

Analyze the behavior of DHCP traffic from a client connecting to a network.

Home (Medium)

110 POINTS
OUT OF 110

45.5%
ACCURACY

COMPLETION: **100.0%**

Analyze a packet capture and decode traffic from TP-Link smart switches.

Spec (Hard)

10 POINTS
OUT OF 110

50.0%
ACCURACY

COMPLETION: **50.0%**

Implement a custom specification to decode raw packets.





Open Source Intelligence Module

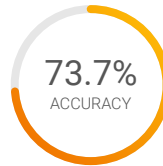
Utilize publicly available information such as search engines, public repositories, social media, and more to gain in-depth knowledge on a topic or target.

2627 TH PLACE
OUT OF 8484
NATIONAL RANK

170 POINTS
OUT OF 355
PERFORMANCE SCORE

70th National
Percentile

Average: 200.2 Points



Average: 73.0%



Average: 65.9%

Rules of Conduct (Easy)

25 POINTS
OUT OF 25

100.0%
ACCURACY

COMPLETION: **100.0%**

Introductory challenge on acceptable conduct during NCL.

Vinyl (Easy)

40 POINTS
OUT OF 40

100.0%
ACCURACY

COMPLETION: **100.0%**

Analyze an image using metadata and file properties.

Coordinates (Easy)

60 POINTS
OUT OF 60

100.0%
ACCURACY

COMPLETION: **100.0%**

Geolocate the physical location of a server using an IP address.

NFT (Medium)

30 POINTS
OUT OF 60

66.7%
ACCURACY

COMPLETION: **50.0%**

Conduct blockchain analysis to attribute the ownership of a NFT.

Git (Medium)

0 POINTS
OUT OF 75

0.0%
ACCURACY

COMPLETION: **0.0%**

Obtain private company information that was posted on social media.

Password (Hard)

15 POINTS
OUT OF 95

20.0%
ACCURACY

COMPLETION: **33.3%**

Use coordinates and a SSID to search for a location and find information from public images.



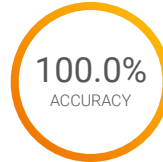


Password Cracking Module

Identify types of password hashes and apply various techniques to efficiently determine plaintext passwords.

1438 TH PLACE
OUT OF 8484
NATIONAL RANK

120 POINTS
OUT OF 340
PERFORMANCE SCORE



Average: 87.6%



Average: 36.6%

84th National
Percentile

Average: 101.6 Points

Hashing (Easy)

15 POINTS
OUT OF 15

100.0%
ACCURACY

COMPLETION: **100.0%**

Generate password hashes for MD5, SHA1, and SHA256.

Rockyou (Easy)

30 POINTS
OUT OF 30

100.0%
ACCURACY

COMPLETION: **100.0%**

Crack MD5 password hashes for password found in the rockyou breach.

Windows (Easy)

30 POINTS
OUT OF 30

100.0%
ACCURACY

COMPLETION: **100.0%**

Crack Windows NTLM password hashes using rainbow tables.

Pattern (Medium)

45 POINTS
OUT OF 45

100.0%
ACCURACY

COMPLETION: **100.0%**

Build a wordlist or pattern rule to crack password hashes of a known pattern.

ZIP (Medium)

0 POINTS
OUT OF 50

0.0%
ACCURACY

COMPLETION: **0.0%**

Crack the insecure password for a protected zip file.

Wordlist (Hard)

0 POINTS
OUT OF 65

0.0%
ACCURACY

COMPLETION: **0.0%**

Build a wordlist to crack passwords not found in common wordlists.

Complexity (Hard)

0 POINTS
OUT OF 105

0.0%
ACCURACY

COMPLETION: **0.0%**

Build a custom wordlist to crack passwords by augmenting permutation rules using known password complexity requirements.



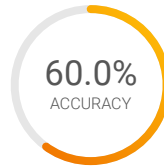


Scanning & Reconnaissance Module

Identify and use the proper tools to gain intelligence about a target including its services and potential vulnerabilities.

990 TH PLACE
OUT OF 8484
NATIONAL RANK

160 POINTS
OUT OF 300
PERFORMANCE SCORE



89th National
Percentile

Average: 138.6 Points

Average: 56.8%

Average: 50.0%

Scan (Easy)

Use nmap to scan a machine and discover open ports.

100 POINTS
OUT OF 100

57.1%
ACCURACY

COMPLETION: **100.0%**

Domains (Medium)

Perform reconnaissance on a domain's DNS records to gain information about its assets.

60 POINTS
OUT OF 100

66.7%
ACCURACY

COMPLETION: **66.7%**

ICS (Hard)

Perform reconnaissance on an ICS system by using the Modbus protocol.

0 POINTS
OUT OF 100

0.0%
ACCURACY

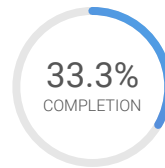
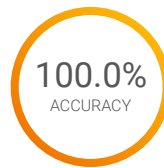
COMPLETION: **0.0%**

Web Application Exploitation Module

Identify actionable exploits and vulnerabilities and use them to bypass the security measures in online services.

1230 TH PLACE
OUT OF 8484
NATIONAL RANK

100 POINTS
OUT OF 310
PERFORMANCE SCORE



86th National
Percentile

Average: 102.7 Points

Average: 56.0%

Average: 43.1%

Candy Store (Easy)

Find and exploit a client side authentication vulnerability in a web application.

100 POINTS
OUT OF 100

100.0%
ACCURACY

COMPLETION: **100.0%**

Shopping v2 (Medium)

Exploit a type coercion bug in a Node.js application.

0 POINTS
OUT OF 100

0.0%
ACCURACY

COMPLETION: **0.0%**

Indie Metro (Hard)

Perform a NoSQL injection attack on a website.

0 POINTS
OUT OF 110

0.0%
ACCURACY

COMPLETION: **0.0%**

