NCL Spring 2023 Individual Game Scouting Report

Dear ██████,

Thank you for participating in the National Cyber League (NCL) 2023 Spring 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 2023 Spring Season had 7,820 students/players and 533 faculty/coaches from more than 450 two- and four-year schools & 250 high schools across all 50 U.S. states registered to play. The Individual Game Capture the Flag (CTF) event took place from March 31 through April 2. The Team Game CTF event took place from April 14 through April 16. 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/AW0F3MYABK3K

CompTIA. Based on the the performance detailed in this NCL Scouting Report, you have earned **15 hours** of Continuing Education Units (CEUs) as approved by CompTIA. You can learn more about the NCL - CompTIA alignment via nationalcyberleague.org/comptia.

Congratulations for your participation in the NCL 2023 Spring Individual Game! We hope you will continue to develop your knowledge and skills and make meaningful contributions as part of the Information Security workforce!
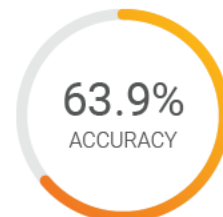
Dr. David Zeichick
NCL Commissioner

NATIONAL CYBER LEAGUE SCORE CARD

NCL 2023 SPRING INDIVIDUAL GAME

NATIONAL RANK

128TH PLACE OUT OF 6273

PERCENTILE
98TH

YOUR TOP CATEGORIES

LOG ANALYSIS
99TH PERCENTILE

CRYPTOGRAPHY
99TH PERCENTILE

WEB APPLICATION EXPLOITATION
99TH PERCENTILE

63.9%
ACCURACY

Average: 67.0%

cyberskyline.com/report
ID: AW0F3MYABK3K

NCL Spring 2023 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.

128 TH PLACE OUT OF 6273
NATIONAL RANK

98th National Percentile

2050 POINTS OUT OF 3000
PERFORMANCE SCORE
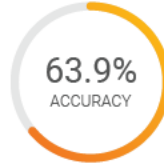
Average: 816.2 Points

63.9% ACCURACY

Average: 67.0%

79.3% COMPLETION

Average: 38.0%

Cryptography
285 POINTS OUT OF 360
64.7% ACCURACY
COMPLETION: **84.6%**

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

Enumeration & Exploitation
200 POINTS OUT OF 300
72.7% ACCURACY
COMPLETION: **88.9%**

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

Forensics
130 POINTS OUT OF 300
66.7% ACCURACY
COMPLETION: **44.4%**

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

Log Analysis
300 POINTS OUT OF 300
36.7% ACCURACY
COMPLETION: **100.0%**

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

Network Traffic Analysis
260 POINTS OUT OF 370
48.0% ACCURACY
COMPLETION: **85.7%**

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

Open Source Intelligence
310 POINTS OUT OF 310
79.2% ACCURACY
COMPLETION: **100.0%**

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

Password Cracking
255 POINTS OUT OF 360
81.8% ACCURACY
COMPLETION: **81.8%**

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

Scanning & Reconnaissance
100 POINTS OUT OF 300
100.0% ACCURACY
COMPLETION: **41.7%**

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

Web Application Exploitation
110 POINTS OUT OF 300
100.0% ACCURACY
COMPLETION: **50.0%**

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

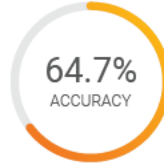Note: Survey module (100 points) was excluded from this report.

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Cryptography Module

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

100 TH PLACE OUT OF 6273
NATIONAL RANK

99th National Percentile

285 POINTS OUT OF 360
PERFORMANCE SCORE

Average: 115.0 Points

64.7% ACCURACY

Average: 77.2%

84.6% COMPLETION

Average: 52.7%

TOP NICE WORKROLES
Security Control Assessor
Secure Software Assessor
Exploitation Analyst
Cyber Operator
Security Architect

Decoding 1 (Easy)
30 POINTS OUT OF 30   **100.0%** ACCURACY   COMPLETION: **100.0%**

Obtain plaintext from messages encoded w th common number bases

Decoding 2 (Easy)
30 POINTS OUT OF 30   **100.0%** ACCURACY   COMPLETION: **100.0%**

Analyze and obtain the plaintext for a message encrypted w th a shift cipher

Decoding 3 (Medium)
25 POINTS OUT OF 25   **100.0%** ACCURACY   COMPLETION: **100.0%**

Obtain the plaintext of a message using charcode encoding

Rolling (Medium)
50 POINTS OUT OF 50   **42.9%** ACCURACY   COMPLETION: **100.0%**

Analyze the cryptographic weakness of a ECB encrypted image

PGP (Medium)
75 POINTS OUT OF 75   **100.0%** ACCURACY   COMPLETION: **100.0%**

Decrypt a PGP message and encrypt a PGP message using provided keys

AES (Hard)
0 POINTS OUT OF 75   **0.0%** ACCURACY   COMPLETION: **0.0%**

Decrypt an AES encrypted message by exploiting an insecure key generation

Steg (Hard)
75 POINTS OUT OF 75   **50.0%** ACCURACY   COMPLETION: **100.0%**

Recover the plaintext of a message that was hidden using LSB steganography
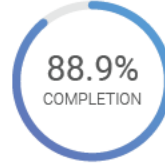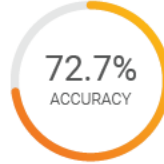
Enumeration & Exploitation Module

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

195 TH PLACE OUT OF 6273
NATIONAL RANK

97th National Percentile

200 POINTS OUT OF 300
PERFORMANCE SCORE

Average: 98.8 Points

72.7% ACCURACY

Average: 53.9%

88.9% COMPLETION

Average: 58.8%

TOP NICE WORKROLES
Cyber Operator
Target Developer
Exploitation Analyst
Software Developer
Systems Security Analyst

Dropper (Easy)
100 POINTS OUT OF 100   **75.0%** ACCURACY   COMPLETION: **100.0%**

Analyze the behavior of a PowerShell malware that schedules system events for persistence

Ground floor (Medium)
100 POINTS OUT OF 100   **66.7%** ACCURACY   COMPLETION: **100.0%**

Analyze raw x64 assembly instructions to find a vulnerability in a validation check function

Memfrob (Hard)
**0** POINTS OUT OF 100   **0.0%** ACCURACY   COMPLETION: **0.0%**

Analyze and exploit a compiled C binary by leveraging a buffer overflow and ROP chains

Forensics Module

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

766 TH PLACE OUT OF 6273
NATIONAL RANK

88th National Percentile

130 POINTS OUT OF 300
PERFORMANCE SCORE

Average: 128.7 Points

66.7% ACCURACY

Average: 57.4%

44.4% COMPLETION
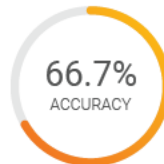
Average: 43.4%

TOP NICE WORKROLES
Cyber Defense Forensics Analyst
Cyber Crime Investigator
Cyber Defense Incident Responder
Cyber Defense Analyst

Lost (Easy)
100 POINTS OUT OF 100   **100.0%** ACCURACY   COMPLETION: **100.0%**

Recover files from the recycling bin of a Windows filesystem

Fruit (Medium)
30 POINTS OUT OF 100   **50.0%** ACCURACY   COMPLETION: **40.0%**

Recover configuration data from a macOS plist file

Headless (Hard)
0 POINTS OUT OF 100   **0.0%** ACCURACY   COMPLETION: **0.0%**

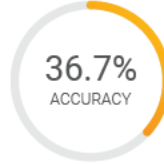Identify the file type of the corrupted file and repair its magic bytes

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.

73 RD PLACE
OUT OF 6273
NATIONAL RANK

99th National Percentile

300 POINTS OUT OF 300
PERFORMANCE SCORE

Average: 65.6 Points

36.7% ACCURACY

Average: 37.6%

100.0% COMPLETION

Average: 32.9%

TOP NICE WORKROLES
Cyber Defense Analyst
Systems Security Analyst
All-Source Analyst
Cyber Defense Forensics Analyst
Data Analyst

Web (Easy)

100 POINTS OUT OF 100   **55.6%** ACCURACY   COMPLETION: **100.0%**

Analyze a web server log and identify traffic patterns

Email Compromise (Medium)

100 POINTS OUT OF 100   **25.0%** ACCURACY   COMPLETION: **100.0%**

Analyze Office 365 & DNS logs to identify a phishing email compromise

Fraud (Hard)

100 POINTS OUT OF 100   **40.0%** ACCURACY   COMPLETION: **100.0%**

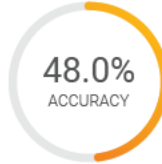Analyze a payment log to ident fy what account had fraudulent purchases

Network Traffic Analysis Module

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

261 ST PLACE OUT OF 6273
NATIONAL RANK

96th National Percentile

260 POINTS OUT OF 370
PERFORMANCE SCORE

Average: 133.0 Points

48.0% ACCURACY

Average: 52.4%

85.7% COMPLETION

Average: 46.9%

TOP NICE WORKROLES
Cyber Defense Analyst
All-Source Analyst
Cyber Defense Incident Responder
Target Network Analyst
Cyber Operator

Information (Easy)
100 POINTS OUT OF 100   **44.4%** ACCURACY

Analyze a network packet capture of WHOIS queries to obtain information on a domain

COMPLETION: 100.0%

Hidden (Medium)
20 POINTS OUT OF 70   **100.0%** ACCURACY

Analyze a vulnerable WPA-encrypted network and perform a wordlist attack on the password

COMPLETION: 66.7%

Scan (Medium)
100 POINTS OUT OF 100   **40.0%** ACCURACY

Analyze a network packet capture to identify open ports on the target server and the type of nmap scan

COMPLETION: 100.0%

Ponder (Hard)
40 POINTS OUT OF 100   **50.0%** ACCURACY

Analyze a network packet capture to extract data stolen through DNS based data exfitration

COMPLETION: 66.7%
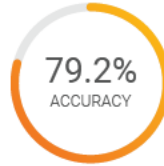

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Open Source Intelligence Module

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

624 TH PLACE OUT OF 6273
NATIONAL RANK

91 st National Percentile

310 POINTS OUT OF 310
PERFORMANCE SCORE

Average: 215.7 Points

79.2% ACCURACY

Average: 80.0%

100.0% COMPLETION

Average: 75.8%

TOP NICE WORKROLES
Systems Security Analyst
Target Developer
System Administrator
Research & Development Specialist
Cyber Intel Planner

Rules of Conduct (Easy)

15 POINTS OUT OF 15

75.0% ACCURACY

COMPLETION: **100.0%**

Introductory challenge on acceptable conduct during NCL

Waypoints (Easy)

50 POINTS OUT OF 50

100.0% ACCURACY

COMPLETION: **100.0%**

Identify openly available information on navigation waypoints

Document (Medium)

50 POINTS OUT OF 50

100.0% ACCURACY

COMPLETION: **100.0%**

Extract the fields from the machine-readable zone of a passport

Esoteric (Medium)

50 POINTS OUT OF 50

50.0% ACCURACY

COMPLETION: **100.0%**

Identify the esoteric alphabet used to hide a secret message

Greek (Medium)

70 POINTS OUT OF 70

33.3% ACCURACY

COMPLETION: **100.0%**

Identify the location of a photograph using reverse image search

Numbers (Hard)

75 POINTS OUT OF 75

100.0% ACCURACY

COMPLETION: **100.0%**

Identify the scheme of a set of numbers w thout a well known format

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The National Cyber League
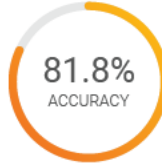A Community Where Cybersecurity Is a Passion
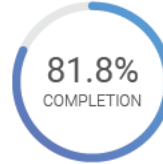
Password Cracking Module

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

232 ND PLACE OUT OF 6273
NATIONAL RANK

97th National Percentile

255 POINTS OUT OF 360
PERFORMANCE SCORE

Average: 133.2 Points

81.8% ACCURACY

Average: 87.3%

81.8% COMPLETION

Average: 45.5%

TOP NICE WORKROLES
Cyber Operator
Exploitation Analyst
Systems Security Analyst
Cyber Defense Incident Responder
Cyber Crime Investigator

Hashing (Easy)
30 POINTS OUT OF 30 — **75.0%** ACCURACY — COMPLETION: **100.0%**

Generate password hashes for MD5, SHA1, and SHA256

Cracking 1 (Easy)
45 POINTS OUT OF 45 — **100.0%** ACCURACY — COMPLETION: **100.0%**

Crack MD5 password hashes

Cracking 2 (Easy)
45 POINTS OUT OF 45 — **100.0%** ACCURACY — COMPLETION: **100.0%**

Crack Windows NTLM password hashes using rainbow tables

Cracking 3 (Medium)
45 POINTS OUT OF 45 — **100.0%** ACCURACY — COMPLETION: **100.0%**

Build a wordlist or pattern config to crack password hashes of a known pattern

Cracking 4 (Hard)
45 POINTS OUT OF 45 — **75.0%** ACCURACY — COMPLETION: **100.0%**

Build a wordlist or pattern config to crack password hashes of a known pattern

Cracking 5 (Hard)
45 POINTS OUT OF 100 — **60.0%** ACCURACY — COMPLETION: **60.0%**

Build a wordlist to crack passwords not found in common wordlists

PDF (Medium)
0 POINTS OUT OF 50 — **0.0%** ACCURACY — COMPLETION: **0.0%**

Crack the password for a protected PDF file

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Scanning & Reconnaissance Module

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

443 RD PLACE OUT OF 6273
NATIONAL RANK

93rd National Percentile

100 POINTS OUT OF 300
PERFORMANCE SCORE

Average: 111.6 Points

100.0% ACCURACY

Average: 70.1%

41.7% COMPLETION

Average: 43.7%

TOP NICE WORKROLES
Vulnerability Assessment Analyst
Target Network Analyst
Cyber Operations Planner
Target Developer
Security Control Assessor

Ports (Easy)
100 POINTS OUT OF 100   **100.0%** ACCURACY   COMPLETION: **100.0%**

Scan a remote host for open ports and ident fy running services

Who (Medium)
0 POINTS OUT OF 100   **0.0%** ACCURACY   COMPLETION: **0.0%**

Enumerate the possible domains on a WHOIS server to extract information

Metadata (Hard)
0 POINTS OUT OF 100   **0.0%** ACCURACY   COMPLETION: **0.0%**

Scan an AWS EC2 Metadata Service to extract information about the instance

Web Application Exploitation Module

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

122 ND PLACE OUT OF 6273
NATIONAL RANK

99th National Percentile

110 POINTS OUT OF 300
PERFORMANCE SCORE

Average: 33.0 Points

100.0% ACCURACY

Average: 39.7%

50.0% COMPLETION
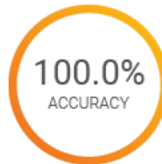
Average: 20.0%

TOP NICE WORKROLES
Cyber Operator
Software Developer
Exploitation Analyst
Systems Security Analyst
Database Administrator

Shopping (Easy)
10 POINTS OUT OF 100   **100.0%** ACCURACY   COMPLETION: **50.0%**

Explo t an implicit type conversion vulnerabil ty in an express application

Attack Portal (Medium)
100 POINTS OUT OF 100   **100.0%** ACCURACY   COMPLETION: **100.0%**

Manipulate a web form to inject extra JSON fields to override a server-side check

File Server (Hard)
0 POINTS OUT OF 100   **0.0%** ACCURACY   COMPLETION: **0.0%**

Explo t a race cond tion to download a restricted file during server operations

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