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CYBER SKYLINE

The National Cyber League
A Community Where Cybersecurity Is a Passion

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NCL Fall 2021 Individual Game Scouting Report

Dear Isaiah McLain,

Thank you for participating in the National Cyber League (NCL) 2021 Fall 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 2021 Fall Season had 7,130 students/players and 491 faculty/coaches from more than 500 two- and four-year schools & 70 high schools across all 50 U.S. states registered to play. The Individual Game Capture the Flag (CTF) event took place from October 22 through October 24. The Team Game CTF event took place from November 5 through November 7. 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/T6MCBEHPV18N

Congratulations for your participation in the NCL 2021 Fall Individual Game! We hope you will continue to develop your knowledge and skills and make meaningful contributions as part of the Information Security workforce!

David Zeichick
NCL Commissioner



POWERED BY
CYBER SKYLINE

NATIONAL CYBER LEAGUE SCORE CARD

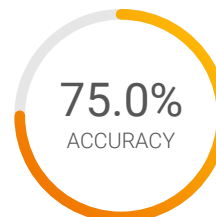
NCL 2021 FALL INDIVIDUAL GAME

YOUR TOP CATEGORIES

PASSWORD CRACKING
61ST PERCENTILE

OPEN SOURCE INTELLIGENCE
55TH PERCENTILE

NATIONAL RANK
3282TH PLACE
OUT OF 6478
PERCENTILE
50TH



Average: 65.3%

[cyberskyline.com/report](https://cyberskyline.com/report/T6MCBEHPV18N)
ID: T6MCBEHPV18N

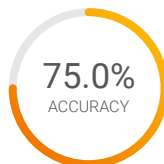


NCL Fall 2021 Individual Game

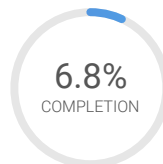
The NCL Individual Game is designed for student players nationwide to compete in realtime in the categories listed below. The Individual Game evaluates the technical cybersecurity skills of the individual, without the assistance of others.

3282 ND PLACE
OUT OF 6478
NATIONAL RANK

60 POINTS
OUT OF 3000
PERFORMANCE SCORE



Average: 65.3%



Average: 31.0%

50th National
Percentile

Average: 698.4 Points

Cryptography

0 POINTS
OUT OF 330

0.0%
ACCURACY

COMPLETION: **0.0%**

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

Enumeration & Exploitation

0 POINTS
OUT OF 320

0.0%
ACCURACY

COMPLETION: **0.0%**

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

Forensics

0 POINTS
OUT OF 300

0.0%
ACCURACY

COMPLETION: **0.0%**

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

Log Analysis

0 POINTS
OUT OF 340

0.0%
ACCURACY

COMPLETION: **0.0%**

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

0 POINTS
OUT OF 355

0.0%
ACCURACY

COMPLETION: **0.0%**

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

Open Source Intelligence

45 POINTS
OUT OF 300

75.0%
ACCURACY

COMPLETION: **33.3%**

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

15 POINTS
OUT OF 320

75.0%
ACCURACY

COMPLETION: **13.6%**

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

Scanning & Reconnaissance

0 POINTS
OUT OF 310

0.0%
ACCURACY

COMPLETION: **0.0%**

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

Web Application Exploitation

0 POINTS
OUT OF 325

0.0%
ACCURACY

COMPLETION: **0.0%**

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.





Cryptography Module

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

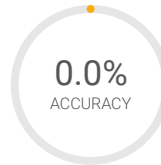
N/A

NATIONAL RANK

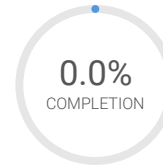
0 POINTS
OUT OF
330

PERFORMANCE SCORE

Average: 134.1 Points



Average: 85.2%



Average: 53.1%

TOP NICE WORKROLES

Security Control Assessor
Secure Software Assessor
Exploitation Analyst
Cyber Operator
Security Architect

Decoding 1 (Easy)

0 POINTS
OUT OF
45

0.0%
ACCURACY

COMPLETION: 0.0%

Identify the type of base encoding used and decode the data

Decoding 2 (Easy)

0 POINTS
OUT OF
30

0.0%
ACCURACY

COMPLETION: 0.0%

Identify the cipher scheme used and decrypt the data

Decoding 3 (Easy)

0 POINTS
OUT OF
20

0.0%
ACCURACY

COMPLETION: 0.0%

Identify the cipher scheme used and decrypt the data

Decoding 4 (Medium)

0 POINTS
OUT OF
35

0.0%
ACCURACY

COMPLETION: 0.0%

Identify the alphabet encoding used and decode the data

Decoding 5 (Hard)

0 POINTS
OUT OF
50

0.0%
ACCURACY

COMPLETION: 0.0%

Exploit an RSA implementation and extract the sensitive data that was encrypted

Steg (Easy)

0 POINTS
OUT OF
20

0.0%
ACCURACY

COMPLETION: 0.0%

Identify the steganography technique used and extract the hidden data

Cyber Cat (Easy)

0 POINTS
OUT OF
50

0.0%
ACCURACY

COMPLETION: 0.0%

Identify the metadata and encoding used to hide data in an image file

SSL (Hard)

0 POINTS
OUT OF
80

0.0%
ACCURACY

COMPLETION: 0.0%

Parse through hundreds of SSL certificates to identify any invalid or improperly signed SSL certificates





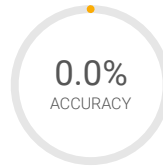
Enumeration & Exploitation Module

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

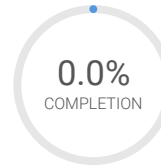
N/A
NATIONAL RANK

0 POINTS
OUT OF
320
PERFORMANCE SCORE

Average: 55.0 Points



Average: 43.1%



Average: 32.2%

TOP NICE WORKROLES

Cyber Operator
Target Developer
Exploitation Analyst
Software Developer
Systems Security Analyst

Micro (Easy)

Analyze a Lua script source code & reverse engineer its functionality

0 POINTS
OUT OF
100

0.0%
ACCURACY

COMPLETION: 0.0%

Shinny (Medium)

Analyze an obfuscated Python program & reverse engineer its functionality

0 POINTS
OUT OF
100

0.0%
ACCURACY

COMPLETION: 0.0%

Rock (Hard)

Decompile and analyze a C++ binary file & reverse engineer its functionality

0 POINTS
OUT OF
120

0.0%
ACCURACY

COMPLETION: 0.0%

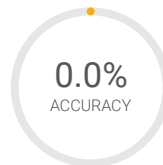
Forensics Module

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

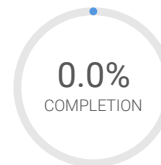
N/A
NATIONAL RANK

0 POINTS
OUT OF
300
PERFORMANCE SCORE

Average: 163.7 Points



Average: 73.5%



Average: 59.6%

TOP NICE WORKROLES

Cyber Defense Forensics
Analyst
Cyber Crime Investigator
Cyber Defense Incident
Responder
Cyber Defense Analyst

Archive (Easy)

Fix a corrupted rar file to recover the archive's original contents

0 POINTS
OUT OF
100

0.0%
ACCURACY

COMPLETION: 0.0%

Docter (Medium)

Identify and extract files hidden inside a Microsoft Word document file

0 POINTS
OUT OF
100

0.0%
ACCURACY

COMPLETION: 0.0%

Where in the World? (Hard)

Analyze the available information in a photograph to identify where the photo was taken

0 POINTS
OUT OF
100

0.0%
ACCURACY

COMPLETION: 0.0%





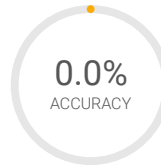
Log Analysis Module

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

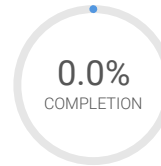
N/A
NATIONAL RANK

0 POINTS
OUT OF
340
PERFORMANCE SCORE

Average: 103.9 Points



Average: 42.9%



Average: 35.2%

TOP NICE WORKROLES

Cyber Defense Analyst
Systems Security Analyst
All-Source Analyst
Cyber Defense Forensics
Analyst
Data Analyst

Wild Web (Easy)

0 POINTS
OUT OF
110

0.0%
ACCURACY

COMPLETION: 0.0%

Analyze a web server's access logs to identify trends and suspicious access

Mountains (Medium)

0 POINTS
OUT OF
100

0.0%
ACCURACY

COMPLETION: 0.0%

Execute commands on an Alpine Linux server to identify installed packages

IDS (Hard)

0 POINTS
OUT OF
130

0.0%
ACCURACY

COMPLETION: 0.0%

Analyze an IDS log to identify indicators of compromise and attack signatures

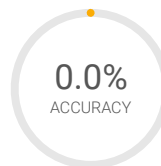
Network Traffic Analysis Module

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

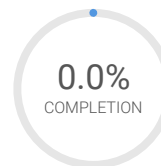
N/A
NATIONAL RANK

0 POINTS
OUT OF
355
PERFORMANCE SCORE

Average: 121.8 Points



Average: 65.0%



Average: 41.2%

TOP NICE WORKROLES

Cyber Defense Analyst
All-Source Analyst
Cyber Defense Incident
Responder
Target Network Analyst
Cyber Operator

FTP (Easy)

0 POINTS
OUT OF
80

0.0%
ACCURACY

COMPLETION: 0.0%

Analyze a capture of FTP traffic to identify user credentials and files accessed

Cracking (Medium)

0 POINTS
OUT OF
55

0.0%
ACCURACY

COMPLETION: 0.0%

Analyze and identify WiFi network metadata and crack the WiFi password

TV (Medium)

0 POINTS
OUT OF
100

0.0%
ACCURACY

COMPLETION: 0.0%

Analyze a websocket packet capture containing smart TV control commands

WiFi (Hard)

0 POINTS
OUT OF
120

0.0%
ACCURACY

COMPLETION: 0.0%

Identify the vulnerable data fields to exploit the 802.11 PMKID vulnerability and crack the WiFi network access password





Open Source Intelligence Module

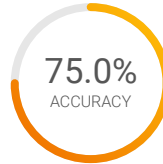
Utilize publicly available information such as search engines, public repositories, social media, and more to gain in-depth knowledge on a topic or target.

2932 ND PLACE
OUT OF 6478
NATIONAL RANK

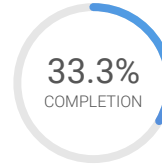
45 POINTS
OUT OF 300
PERFORMANCE SCORE

55th National
Percentile

Average: 134.2 Points



Average: 66.9%



Average: 58.3%

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

100.0%
ACCURACY

COMPLETION: **100.0%**

Introductory challenge on acceptable conduct during NCL

APTs (Easy)

30 POINTS
OUT OF 30

75.0%
ACCURACY

COMPLETION: **100.0%**

Identify attributes regarding popular Advanced Persistent Threats

Unknown Hash (Easy)

0 POINTS
OUT OF 45

0.0%
ACCURACY

COMPLETION: **0.0%**

Identify the protocol associated with a hash digest and its associated files

Hacker Location (Medium)

0 POINTS
OUT OF 50

0.0%
ACCURACY

COMPLETION: **0.0%**

Identify the location encoding scheme which uses only 3 words

Stolen Camera (Medium)

0 POINTS
OUT OF 70

0.0%
ACCURACY

COMPLETION: **0.0%**

Extract camera serial number from an image and identify stolen camera registries

Tom's Hotel (Hard)

0 POINTS
OUT OF 90

0.0%
ACCURACY

COMPLETION: **0.0%**

Identify attributes from a photo to pin point the location that the photo was taken



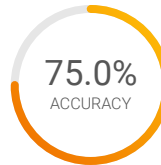


Password Cracking Module

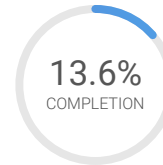
Identify types of password hashes and apply various techniques to efficiently determine plaintext passwords.

2536 TH PLACE
OUT OF 6478
NATIONAL RANK

15 POINTS
OUT OF 320
PERFORMANCE SCORE



Average: 86.8%



Average: 43.0%

TOP NICE WORKROLES

Cyber Operator
Exploitation Analyst
Systems Security Analyst
Cyber Defense Incident
Responder
Cyber Crime Investigator

61st National
Percentile

Average: 94.4 Points

Hashing (Easy)

15 POINTS
OUT OF 15

75.0%
ACCURACY

COMPLETION: **100.0%**

Generate password hashes for MD5, SHA1, and SHA256

Cracking 1 (Easy)

0 POINTS
OUT OF 30

0.0%
ACCURACY

COMPLETION: **0.0%**

Crack MD5 password hashes

Cracking 2 (Easy)

0 POINTS
OUT OF 30

0.0%
ACCURACY

COMPLETION: **0.0%**

Crack Windows NTLM password hashes

Cracking 3 (Medium)

0 POINTS
OUT OF 45

0.0%
ACCURACY

COMPLETION: **0.0%**

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

Cracking 4 (Hard)

0 POINTS
OUT OF 95

0.0%
ACCURACY

COMPLETION: **0.0%**

Build a wordlist to crack passwords not found in common wordlists

ZIP (Medium)

0 POINTS
OUT OF 30

0.0%
ACCURACY

COMPLETION: **0.0%**

Crack the password of a ZIP archive file

Kali Linux (Hard)

0 POINTS
OUT OF 75

0.0%
ACCURACY

COMPLETION: **0.0%**

Crack the new yescrypt password hashes included in Kali Linux





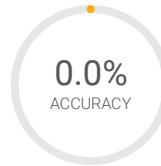
Scanning & Reconnaissance Module

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

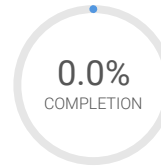
N/A
NATIONAL RANK

0 POINTS
OUT OF
310
PERFORMANCE SCORE

Average: 104.1 Points



Average: 52.9%



Average: 36.4%

TOP NICE WORKROLES

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

Port Scan (Easy)

0 POINTS
OUT OF
100

0.0%
ACCURACY

COMPLETION: 0.0%

Perform a port scan and identify services running on a remote host

Treasure Hunt (Medium)

0 POINTS
OUT OF
100

0.0%
ACCURACY

COMPLETION: 0.0%

Perform a directory scan and identify hidden files on a remote HTTP server

Mail (Hard)

0 POINTS
OUT OF
110

0.0%
ACCURACY

COMPLETION: 0.0%

Perform a targeted service scan of a SMTP server to identify the names of users in the server directory

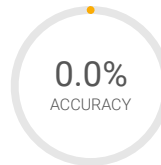
Web Application Exploitation Module

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

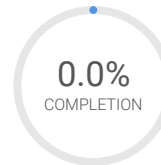
N/A
NATIONAL RANK

0 POINTS
OUT OF
325
PERFORMANCE SCORE

Average: 66.5 Points



Average: 59.1%



Average: 30.2%

TOP NICE WORKROLES

Cyber Operator
Software Developer
Exploitation Analyst
Systems Security Analyst
Database Administrator

Storage (Easy)

0 POINTS
OUT OF
100

0.0%
ACCURACY

COMPLETION: 0.0%

Analyze source code on a web page and exploit local authentication measures

Pasta (Medium)

0 POINTS
OUT OF
100

0.0%
ACCURACY

COMPLETION: 0.0%

Exploit the backdoor vulnerability present in a Node-RED IOT control server

Leek (Hard)

0 POINTS
OUT OF
125

0.0%
ACCURACY

COMPLETION: 0.0%

Exploit the web server to obtain uninitialized server buffer memory and extract sensitive server-side data such as encryption keys

