NCL Fall 2022 Individual Game Scouting Report

Dear Sean Dixon,

Thank you for participating in the National Cyber League (NCL) 2022 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 2022 Fall Season had 7,690 students/players and 475 faculty/coaches from more than 470 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 October 21 through October 23. The Team Game CTF event took place from November 4 through November 6. 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/N6JNQB6W630F

Based on the the performance detailed in this NCL Scouting Report, you have earned **5 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 2022 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!
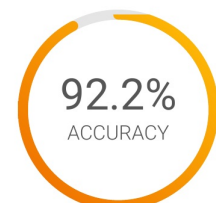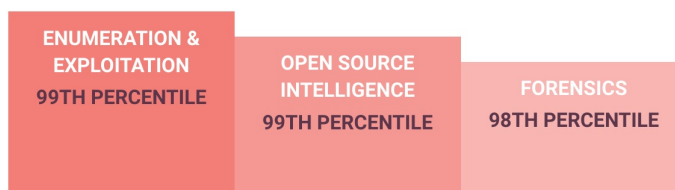
David Zeichick
NCL Commissioner

NATIONAL CYBER LEAGUE SCORE CARD

NCL 2022 FALL INDIVIDUAL GAME

92.2%
ACCURACY

Average: 68.2%

NATIONAL RANK

201ST PLACE OUT OF 6675

PERCENTILE
97TH

YOUR TOP CATEGORIES

ENUMERATION & EXPLOITATION	OPEN SOURCE INTELLIGENCE	FORENSICS
99TH PERCENTILE	99TH PERCENTILE	98TH PERCENTILE

cyberskyline.com/report
ID: N6JNQB6W630F

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NCL Fall 2022 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.

201 ST PLACE OUT OF **6675**
NATIONAL RANK

97th National Percentile

1945 POINTS OUT OF 3000
PERFORMANCE SCORE
Average: 816.7 Points
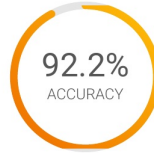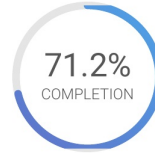
92.2% ACCURACY
Average: 68.2%

71.2% COMPLETION
Average: 35.0%

Cryptography
290 POINTS OUT OF 340 — **100.0%** ACCURACY — COMPLETION: **91.7%**

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

Enumeration & Exploitation
215 POINTS OUT OF 325 — **77.8%** ACCURACY — COMPLETION: **50.0%**

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

Forensics
200 POINTS OUT OF 300 — **75.0%** ACCURACY — COMPLETION: **50.0%**

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

Log Analysis
160 POINTS OUT OF 320 — **100.0%** ACCURACY — COMPLETION: **66.7%**

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
180 POINTS OUT OF 360 — **77.8%** ACCURACY — COMPLETION: **70.0%**

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

Open Source Intelligence
300 POINTS OUT OF 300 — **100.0%** 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
230 POINTS OUT OF 330 — **100.0%** ACCURACY — COMPLETION: **77.8%**

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

Scanning & Reconnaissance
160 POINTS OUT OF 300 — **85.7%** ACCURACY — COMPLETION: **46.2%**

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 325 — **100.0%** ACCURACY — COMPLETION: **57.1%**

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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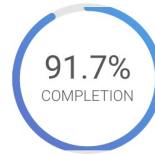
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Cryptography Module

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

274 TH PLACE OUT OF 6675
NATIONAL RANK

96th National Percentile

290 POINTS OUT OF 340
PERFORMANCE SCORE

Average: 177.8 Points

100.0% ACCURACY

Average: 77.5%

91.7% COMPLETION
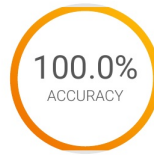
Average: 63.3%

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

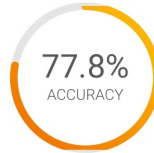|			
Decoding 1 (Easy)	**30** POINTS OUT OF 30	**100.0%** ACCURACY	COMPLETION: 100.0%
Identify the type of base encoding used and decode the data			
Decoding 2 (Easy)	**50** POINTS OUT OF 50	**100.0%** ACCURACY	COMPLETION: 100.0%
Identify the cipher scheme used and decrypt the data			
Decoding 3 (Easy)	**40** POINTS OUT OF 40	**100.0%** ACCURACY	COMPLETION: 100.0%
Identify the encoding scheme used and decode the data			
Decoding 4 (Medium)	**40** POINTS OUT OF 40	**100.0%** ACCURACY	COMPLETION: 100.0%
Identify the encoding scheme used and decode the data			
Decoding 5 (Hard)	**0** POINTS OUT OF 50	**0.0%** ACCURACY	COMPLETION: 0.0%
Identify the cipher scheme used and decrypt the data			
Decoding 6 (Hard)	**80** POINTS OUT OF 80	**100.0%** ACCURACY	COMPLETION: 100.0%
Break the encryption on a trivial RSA encryption without the secret key			
Steganography (Medium)	**50** POINTS OUT OF 50	**100.0%** ACCURACY	COMPLETION: 100.0%
Identify the steganography technique used and extract the hidden data			

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Enumeration & Exploitation Module

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

75 TH PLACE OUT OF 6675
NATIONAL RANK

99th National Percentile

215 POINTS OUT OF 325
PERFORMANCE SCORE

Average: 56.9 Points

77.8% ACCURACY

Average: 41.5%

50.0% COMPLETION

Average: 14.8%

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

Shell (Easy)

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

Analyze a shell script to identify its functionalities and vulnerabilities

Tracked (Medium)

90 POINTS OUT OF 100 | **75.0%** ACCURACY | COMPLETION: **75.0%**

Identify the keylogger installed on a remote Linux system and its configuration

NetCode (Hard)

**25** POINTS OUT OF 125 | **66.7%** ACCURACY | COMPLETION: **25.0%**

Decompile a binary malware to identify its target environment and reverse engineer the Domain Generation Algorithm (DGA) to find the Command and Control (C2) server
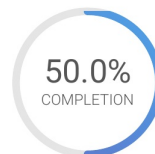
Forensics Module

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

136 TH PLACE OUT OF 6675
NATIONAL RANK

98th National Percentile

200 POINTS OUT OF 300
PERFORMANCE SCORE

Average: 100.0 Points

75.0% ACCURACY

Average: 42.2%

50.0% COMPLETION
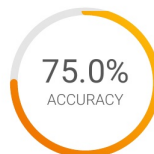
Average: 25.3%

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

Stacked (Easy)

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

Extract additional files hidden in a photograph file using tools such as binwalk

Paper Trail (Medium)

100 POINTS OUT OF 100 | **66.7%** ACCURACY | COMPLETION: **100.0%**

Analyze a "counterfeit" bill to find the hidden Printer Machine Identification Code and identify the machine that printed the "counterfeit" bill

USB (Hard)

0 POINTS OUT OF 100 | **0.0%** ACCURACY | COMPLETION: **0.0%**

Recover and extract files from a filesystem image using tools such as Autopsy
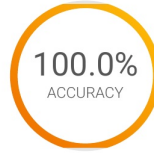
Log Analysis Module

Utilize the proper tools and techniques to establish a baseline for normal operation and identify malicious activities using log files from various services.
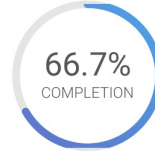
514 TH PLACE
OUT OF **6675**
NATIONAL RANK

93 rd National Percentile

160 POINTS OUT OF 320
PERFORMANCE SCORE

Average: 107.6 Points

100.0%
ACCURACY

Average: 41.6%

66.7%
COMPLETION

Average: 41.7%

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

Compromise (Easy)

100 POINTS OUT OF 100

100.0% ACCURACY

COMPLETION: 100.0%

Analyze a Linux kernel log to identify threat actor activity and backdoors

Access (Medium)

60 POINTS OUT OF 100

100.0% ACCURACY

COMPLETION: 62.5%

Analyze a SSH server log to identify compromise attempts from threat actors

Minimal (Hard)

0 POINTS OUT OF 120

0.0% ACCURACY

COMPLETION: 0.0%

Analyze a binary log format and calculate anomalies in the log
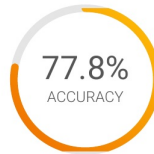
Network Traffic Analysis Module

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

431 ST PLACE
OUT OF **6675**
NATIONAL RANK

94 th National Percentile

180 POINTS OUT OF 360
PERFORMANCE SCORE

Average: 125.6 Points

77.8%
ACCURACY

Average: 62.3%

70.0%
COMPLETION

Average: 49.6%

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

Retriever (Easy)

90 POINTS OUT OF 90

100.0% ACCURACY

COMPLETION: 100.0%

Extract sensitive information from emails in an IMAP packet capture

WiFi Cracking (Medium)

60 POINTS OUT OF 70

66.7% ACCURACY

COMPLETION: 80.0%

Identify vulnerable WiFi encryption scheme and crack the WiFi password

Trip to the Movies (Medium)

30 POINTS OUT OF 90

60.0% ACCURACY

COMPLETION: 60.0%

Extract the video stream transferred in an RTP packet capture

Secret (Hard)

0 POINTS OUT OF 110

0.0% ACCURACY

COMPLETION: 0.0%

Analyze and extract sensitive information from a covert DNS-based tunneling protocol in a comprehensive packet capture
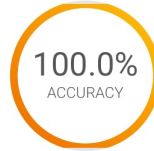
POWERED BY **CYBER SKYLINE**

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.

121 ST PLACE OUT OF **6675**
NATIONAL RANK

99th National Percentile

300 POINTS OUT OF 300
PERFORMANCE SCORE

Average: 204.2 Points

100.0% ACCURACY

Average: 79.4%

100.0% COMPLETION

Average: 77.7%

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

Bank Routes (Easy)
40 POINTS OUT OF 40   **100.0%** ACCURACY   COMPLETION: **100.0%**

Identify bank routing numbers using openly available information

Alley (Medium)
35 POINTS OUT OF 35   **100.0%** ACCURACY   COMPLETION: **100.0%**

Extract GPS coordinates from JPEG metadata to find where the photo was taken

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

Utilize Geographic Information System (GIS) to identify land plot and owner data

Colonial Crypto (Medium)
60 POINTS OUT OF 60   **100.0%** ACCURACY   COMPLETION: **100.0%**

Uncover the redacted Bitcoin wallets in the 2021 Colonial Ransomware Attack

Info (Hard)
100 POINTS OUT OF 100   **100.0%** ACCURACY   COMPLETION: **100.0%**

Analyze an unknown identifier scheme to find the media metadata
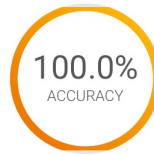
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Password Cracking Module

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

225 TH PLACE OUT OF 6675
NATIONAL RANK

97th National Percentile

230 POINTS OUT OF 330
PERFORMANCE SCORE

Average: 133.7 Points

100.0% ACCURACY

Average: 87.6%

77.8% COMPLETION

Average: 50.1%

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

Hashing (Easy)
Generate password hashes for MD5, SHA1, and SHA256

15 POINTS OUT OF 15   **100.0%** ACCURACY   COMPLETION: **100.0%**

Cracking 1 (Easy)
Crack MD5 password hashes

60 POINTS OUT OF 60   **100.0%** ACCURACY   COMPLETION: **100.0%**

Cracking 2 (Easy)
Crack Windows NTLM password hashes using rainbow tables

60 POINTS OUT OF 60   **100.0%** ACCURACY   COMPLETION: **100.0%**

Cracking 3 (Medium)
Build a wordlist or pattern config to crack password hashes of a known pattern

60 POINTS OUT OF 60   **100.0%** ACCURACY   COMPLETION: **100.0%**

Cracking 4 (Hard)
Build a wordlist to crack passwords not found in common wordlists

35 POINTS OUT OF 135   **100.0%** ACCURACY   COMPLETION: **33.3%**

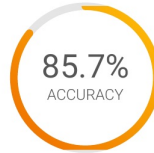**POWERED BY CYBER SKYLINE**

Scanning & Reconnaissance Module

Identify and use the proper tools to gain intelligence about a target including its services and potential vulnerabilities.
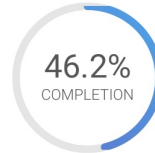
284 TH PLACE OUT OF **6675**
NATIONAL RANK

96th National Percentile

160 POINTS OUT OF 300
PERFORMANCE SCORE

Average: 115.0 Points

85.7% ACCURACY

Average: 70.6%

46.2% COMPLETION

Average: 31.3%

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

Looking Glass (Easy)
100 POINTS OUT OF 100 — **100.0%** ACCURACY — COMPLETION: **100.0%**

Scan a HTTP server to enumerate its contents and possible vulnerabilities

Net Track (Medium)
50 POINTS OUT OF 100 — **66.7%** ACCURACY — COMPLETION: **66.7%**

Communicate with a text-based service using netcat/telnet

Tracker (Hard)
10 POINTS OUT OF 100 — **100.0%** ACCURACY — COMPLETION: **14.3%**

Scan and analyze the results from an HTTP BitTorrent Tracker service
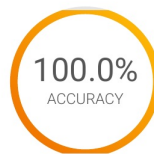
Web Application Exploitation Module

Identify actionable exploits and vulnerabilities and use them to bypass the security measures in online services.
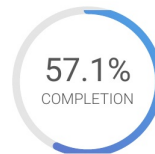
306 TH PLACE OUT OF **6675**
NATIONAL RANK

96th National Percentile

110 POINTS OUT OF 325
PERFORMANCE SCORE

Average: 74.9 Points

100.0% ACCURACY

Average: 82.6%

57.1% COMPLETION

Average: 40.2%

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

Tom's Fan Club (Easy)
100 POINTS OUT OF 100 — **100.0%** ACCURACY — COMPLETION: **100.0%**

Craft custom requests to a web server to uncover hidden pages

Setup (Medium)
10 POINTS OUT OF 100 — **100.0%** ACCURACY — COMPLETION: **33.3%**

Identify and exploit a directory traversal vulnerability in nginx to download sensitive files from the web server

Mystery (Hard)
0 POINTS OUT OF 125 — **0.0%** ACCURACY — COMPLETION: **0.0%**

Identify and exploit a SQL injection vulnerability to gain unauthorized access to a web server database