



# NCL Fall 2021 Team Game Scouting Report

Dear Ethan Brinks (Team "RedTeam02 @ MTU"),

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/U05TDX8HHCW1](https://cyberskyline.com/report/U05TDX8HHCW1)

**CompTIA.** Based on the the performance detailed in this NCL Scouting Report, you have earned **13 hours** of Continuing Education Units (CEUs) as approved by CompTIA. You can learn more about the NCL - CompTIA alignment via [nationalcyberleague.org/comptia](https://nationalcyberleague.org/comptia).

Congratulations for your participation in the NCL 2021 Fall Team 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

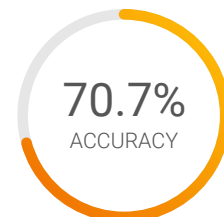
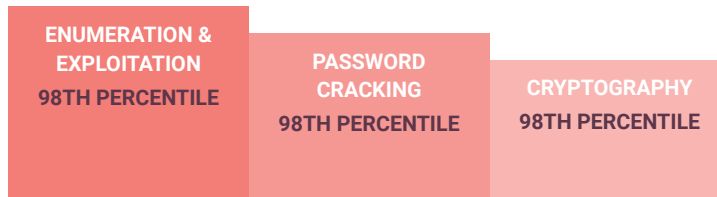


## NATIONAL CYBER LEAGUE SCORE CARD

NCL 2021 FALL TEAM GAME

### YOUR TOP CATEGORIES

**NATIONAL RANK**  
**133<sup>RD</sup> PLACE**  
**OUT OF 3910**  
**PERCENTILE**  
**97<sup>TH</sup>**



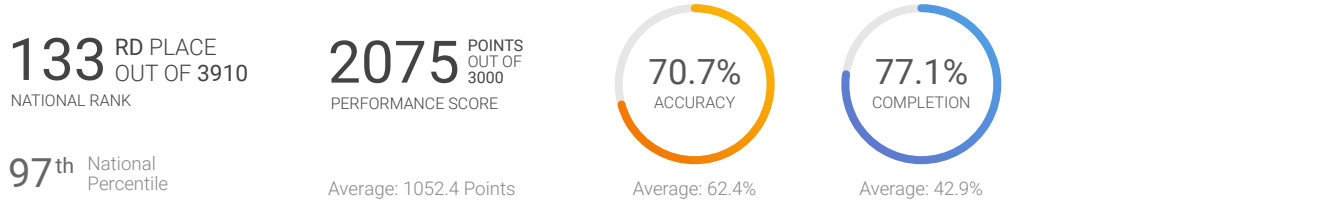
Average: 62.4%

[cyberskyline.com/report](https://cyberskyline.com/report)  
ID: U05TDX8HHCW1



# NCL Fall 2021 Team Game

The NCL Team Game is designed for student players nationwide to compete in realtime in the categories listed below. The Team Game promotes camaraderie and evaluates the collective technical cybersecurity skills of the team members.



<b>Cryptography</b> Identify techniques used to encrypt or obfuscate messages and leverage tools to extract the plaintext.	<b>220</b> POINTS OUT OF 300	<b>92.9%</b> ACCURACY	COMPLETION: <b>92.9%</b>
<b>Enumeration &amp; Exploitation</b> Identify actionable exploits and vulnerabilities and use them to bypass the security measures in code and compiled binaries.	<b>320</b> POINTS OUT OF 320	<b>53.8%</b> ACCURACY	COMPLETION: <b>100.0%</b>
<b>Forensics</b> Utilize the proper tools and techniques to analyze, process, recover, and/or investigate digital evidence in a computer-related incident.	<b>275</b> POINTS OUT OF 310	<b>68.8%</b> ACCURACY	COMPLETION: <b>78.6%</b>
<b>Log Analysis</b> Utilize the proper tools and techniques to establish a baseline for normal operation and identify malicious activities using log files from various services.	<b>220</b> POINTS OUT OF 320	<b>60.9%</b> ACCURACY	COMPLETION: <b>87.5%</b>
<b>Network Traffic Analysis</b> Identify malicious and benign network traffic to demonstrate an understanding of potential security breaches.	<b>215</b> POINTS OUT OF 360	<b>62.1%</b> ACCURACY	COMPLETION: <b>72.0%</b>
<b>Open Source Intelligence</b> Utilize publicly available information such as search engines, public repositories, social media, and more to gain in-depth knowledge on a topic or target.	<b>250</b> POINTS OUT OF 310	<b>71.4%</b> ACCURACY	COMPLETION: <b>90.9%</b>
<b>Password Cracking</b> Identify types of password hashes and apply various techniques to efficiently determine plaintext passwords.	<b>285</b> POINTS OUT OF 350	<b>90.9%</b> ACCURACY	COMPLETION: <b>83.3%</b>
<b>Scanning &amp; Reconnaissance</b> Identify and use the proper tools to gain intelligence about a target including its services and potential vulnerabilities.	<b>90</b> POINTS OUT OF 310	<b>62.5%</b> ACCURACY	COMPLETION: <b>33.3%</b>
<b>Web Application Exploitation</b> Identify actionable exploits and vulnerabilities and use them to bypass the security measures in online services.	<b>100</b> POINTS OUT OF 320	<b>66.7%</b> ACCURACY	COMPLETION: <b>33.3%</b>

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



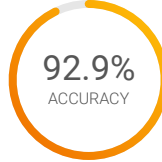


# Cryptography Module

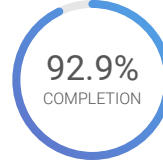
Identify techniques used to encrypt or obfuscate messages and leverage tools to extract the plaintext.

**102** ND PLACE  
OUT OF 3910  
NATIONAL RANK

**220** POINTS  
OUT OF 300  
PERFORMANCE SCORE



Average: 84.8%



Average: 58.5%

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

**98<sup>th</sup>** National  
Percentile

Average: 132.4 Points

## 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)

**20** POINTS  
OUT OF 20

**100.0%**  
ACCURACY

COMPLETION: **100.0%**

Identify the cipher scheme used and decrypt the data

## Decoding 3 (Medium)

**20** POINTS  
OUT OF 20

**100.0%**  
ACCURACY

COMPLETION: **100.0%**

Identify the cipher scheme used and decrypt the data

## Emojis (Medium)

**50** POINTS  
OUT OF 50

**83.3%**  
ACCURACY

COMPLETION: **100.0%**

Identify how emojis can be used to hide and store IP addresses

## Mixtape (Medium)

**60** POINTS  
OUT OF 60

**100.0%**  
ACCURACY

COMPLETION: **100.0%**

Identify the technique used to hide data in an audio file and extract it

## PEM (Hard)

**40** POINTS  
OUT OF 120

**100.0%**  
ACCURACY

COMPLETION: **66.7%**

Recover a redacted PEM key to its original version by exploiting the redundancies in PEM keys



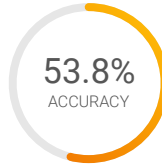


## Enumeration & Exploitation Module

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

**93** RD PLACE  
OUT OF 3910  
NATIONAL RANK

**320** POINTS  
OUT OF 320  
PERFORMANCE SCORE



Average: 37.3%



Average: 41.5%

Cyber Operator  
Target Developer  
Exploitation Analyst  
Software Developer  
Systems Security Analyst

**98**<sup>th</sup> National  
Percentile

Average: 108.4 Points

### Fancy (Easy)

**100** POINTS  
OUT OF 100

**40.0%**  
ACCURACY

COMPLETION: **100.0%**

Analyze a script source code & reverse engineer its functionality

### Cell (Medium)

**100** POINTS  
OUT OF 100

**50.0%**  
ACCURACY

COMPLETION: **100.0%**

Analyze a Haxe (Java runtime compatible) program & reverse engineer its functionality

### Moblin (Hard)

**120** POINTS  
OUT OF 120

**75.0%**  
ACCURACY

COMPLETION: **100.0%**

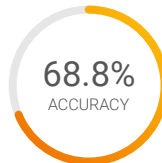
Decompile and analyze a C++ binary file for ARM & reverse engineer its functionality

## Forensics Module

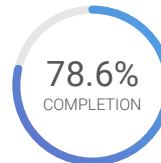
Utilize the proper tools and techniques to analyze, process, recover, and/or investigate digital evidence in a computer-related incident.

**184** TH PLACE  
OUT OF 3910  
NATIONAL RANK

**275** POINTS  
OUT OF 310  
PERFORMANCE SCORE



Average: 46.2%



Average: 43.3%

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

**96**<sup>th</sup> National  
Percentile

Average: 139.8 Points

### File Recovery (Easy)

**100** POINTS  
OUT OF 100

**100.0%**  
ACCURACY

COMPLETION: **100.0%**

Recover lost files from a NTFS filesystem

### RAID (Medium)

**85** POINTS  
OUT OF 100

**40.0%**  
ACCURACY

COMPLETION: **66.7%**

Recover data from a damaged RAID 5 disk array

### Game Data (Hard)

**90** POINTS  
OUT OF 110

**77.8%**  
ACCURACY

COMPLETION: **77.8%**

Analyze and carve the binary save data from a Game Boy videogame



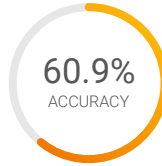


## Log Analysis Module

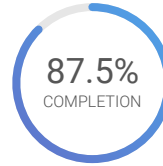
Utilize the proper tools and techniques to establish a baseline for normal operation and identify malicious activities using log files from various services.

**216** TH PLACE  
OUT OF 3910  
NATIONAL RANK

**220** POINTS  
OUT OF 320  
PERFORMANCE SCORE



Average: 54.9%



Average: 55.9%

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

**95**<sup>th</sup> National  
Percentile

Average: 144.3 Points

### Backup (Easy)

**80** POINTS  
OUT OF 100

**58.3%**  
ACCURACY

COMPLETION: **87.5%**

Analyze a SQL backup file to identify trends & locate sensitive information

### Toasty (Medium)

**100** POINTS  
OUT OF 100

**71.4%**  
ACCURACY

COMPLETION: **100.0%**

Parse the log file to recreate the sequence events & identify what happened

### IOT Sensors (Hard)

**40** POINTS  
OUT OF 120

**50.0%**  
ACCURACY

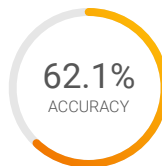
COMPLETION: **66.7%**

## Network Traffic Analysis Module

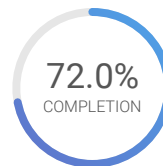
Identify malicious and benign network traffic to demonstrate an understanding of potential security breaches.

**222** ND PLACE  
OUT OF 3910  
NATIONAL RANK

**215** POINTS  
OUT OF 360  
PERFORMANCE SCORE



Average: 64.6%



Average: 52.2%

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

**95**<sup>th</sup> National  
Percentile

Average: 173.7 Points

### Scanning Activity (Easy)

**80** POINTS  
OUT OF 80

**71.4%**  
ACCURACY

COMPLETION: **100.0%**

Analyze a capture of SMTP traffic to identify access IPs and user credentials

### Cracking (Medium)

**35** POINTS  
OUT OF 70

**100.0%**  
ACCURACY

COMPLETION: **75.0%**

Analyze and identify WiFi network metadata and crack the WiFi password

### Jackbox (Medium)

**100** POINTS  
OUT OF 100

**52.6%**  
ACCURACY

COMPLETION: **100.0%**

Analyze the HAR capture of websocket traffic of a video game

### Remote Control (Hard)

**0** POINTS  
OUT OF 110

**0.0%**  
ACCURACY

COMPLETION: **0.0%**

Identify the protocol used for sending IR over IP and perform custom dissection on the network data fields



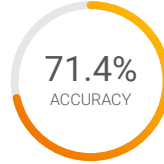


## Open Source Intelligence Module

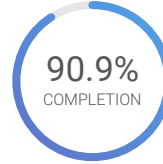
Utilize publicly available information such as search engines, public repositories, social media, and more to gain in-depth knowledge on a topic or target.

**300** TH PLACE  
OUT OF 3910  
NATIONAL RANK

**250** POINTS  
OUT OF 310  
PERFORMANCE SCORE



Average: 69.1%



Average: 77.1%

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

**93<sup>rd</sup>** National  
Percentile

Average: 212.7 Points

Rules of Conduct (Easy)

**25** POINTS  
OUT OF 25

**100.0%**  
ACCURACY

COMPLETION: **100.0%**

Router Spec (Easy)

**80** POINTS  
OUT OF 80

**100.0%**  
ACCURACY

COMPLETION: **100.0%**

Identify hardware specifications of a router device

Vessels Tracking (Easy)

**70** POINTS  
OUT OF 70

**62.5%**  
ACCURACY

COMPLETION: **100.0%**

Identify & locate a naval vessel using public data sources

Shopping List (Medium)

**45** POINTS  
OUT OF 45

**60.0%**  
ACCURACY

COMPLETION: **100.0%**

Find patterns in a set of item numbers to locate the target retailer

Satellite Tracking (Hard)

**30** POINTS  
OUT OF 90

**40.0%**  
ACCURACY

COMPLETION: **50.0%**

Calculate or look up the orbit of a weather satellite



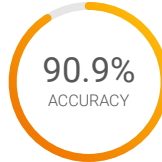


# Password Cracking Module

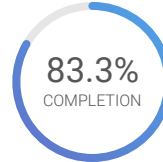
Identify types of password hashes and apply various techniques to efficiently determine plaintext passwords.

**98** TH PLACE  
OUT OF 3910  
NATIONAL RANK

**285** POINTS  
OUT OF 350  
PERFORMANCE SCORE



Average: 88.2%



Average: 43.3%

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

**98**<sup>th</sup> National  
Percentile

Average: 128.5 Points

## Cracking 1 (Easy)

Crack MD5 password hashes

**30** POINTS  
OUT OF 30

**100.0%**  
ACCURACY

COMPLETION: **100.0%**

## Cracking 2 (Easy)

Crack Windows NTLM password hashes

**30** POINTS  
OUT OF 30

**75.0%**  
ACCURACY

COMPLETION: **100.0%**

## Cracking 3 (Medium)

Identify patterns in the passwords and utilize a non-standard wordlist

**0** POINTS  
OUT OF 45

**0.0%**  
ACCURACY

COMPLETION: **0.0%**

## Cracking 4 (Hard)

Build a wordlist to crack passwords following a specific pattern

**95** POINTS  
OUT OF 95

**100.0%**  
ACCURACY

COMPLETION: **100.0%**

## Cracking 5 (Hard)

Build a wordlist to crack passwords not found in common wordlists

**80** POINTS  
OUT OF 80

**83.3%**  
ACCURACY

COMPLETION: **100.0%**

## PDF (Medium)

Crack the password of a PDF file

**30** POINTS  
OUT OF 30

**100.0%**  
ACCURACY

COMPLETION: **100.0%**

## Kali Linux (Hard)

Crack the new yescrypt password hashes included in Kali Linux

**20** POINTS  
OUT OF 40

**100.0%**  
ACCURACY

COMPLETION: **66.7%**



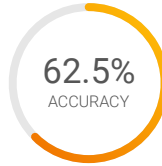


## Scanning & Reconnaissance Module

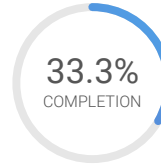
Identify and use the proper tools to gain intelligence about a target including its services and potential vulnerabilities.

206<sup>TH</sup> PLACE  
OUT OF 3910  
NATIONAL RANK

90 POINTS  
OUT OF 310  
PERFORMANCE SCORE



Average: 59.5%



Average: 36.5%

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

95<sup>th</sup> National  
Percentile

Average: 95.0 Points

### Treasure Hunt (Easy)

90 POINTS  
OUT OF 90

100.0%  
ACCURACY

COMPLETION: 100.0%

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

### DNS (Medium)

0 POINTS  
OUT OF 110

0.0%  
ACCURACY

COMPLETION: 0.0%

Perform a targeted service scan of a DNS server to identify the domain names that are blocked

### Database (Hard)

0 POINTS  
OUT OF 110

0.0%  
ACCURACY

COMPLETION: 0.0%

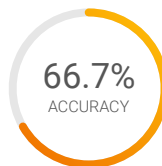
Perform a scan of a neo4j graph database server to identify the records stored on the database

## Web Application Exploitation Module

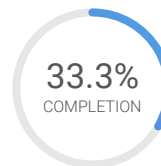
Identify actionable exploits and vulnerabilities and use them to bypass the security measures in online services.

269<sup>TH</sup> PLACE  
OUT OF 3910  
NATIONAL RANK

100 POINTS  
OUT OF 320  
PERFORMANCE SCORE



Average: 55.6%



Average: 35.8%

Cyber Operator  
Software Developer  
Exploitation Analyst  
Systems Security Analyst  
Database Administrator

94<sup>th</sup> National  
Percentile

Average: 104.0 Points

### Hyperdash (Easy)

100 POINTS  
OUT OF 100

100.0%  
ACCURACY

COMPLETION: 100.0%

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

### Tom's Login (Medium)

0 POINTS  
OUT OF 100

0.0%  
ACCURACY

COMPLETION: 0.0%

Perform online password cracking by exploiting noSQL database querying vulnerabilities

### Shipping (Hard)

0 POINTS  
OUT OF 120

0.0%  
ACCURACY

COMPLETION: 0.0%

Exploit the web server to exploit an object deserialization vulnerability in order to achieve arbitrary remote code execution

