The National Cyber League - Where Cybersecurity is a Passion

NCL 2018 Fall Postseason Scouting Report

Dear Bohan Zhang (Team "Team L33T"),

Congratulations on a great NCL 2018 Fall Postseason!

National Cyber League (NCL)

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. Using challenges designed around industry-recognized performance-based exam objectives and aligned with individual and team games, the NCL is a first-of-its-kind ongoing experiment in learning and gaming using next-generation high-fidelity simulation environments. Learn more about the NCL at www.nationalcyberleague.org. If you have any questions regarding the information in this report please inquire at info@nationalcyberleague.org.

NCL 2018 Fall Season

The NCL 2018 Fall Season was designed to develop and validate player knowledge and skills in preparation for further learning, career readiness, industry certifications, and other cybersecurity competitions. Hosted challenges in the NCL Gymnasiums were made available to all players and coaches and aligned to the games. The games were designed around performance-based exam objectives of the CompTIA Security+™ and EC-Council Certified Ethical Hacker (CEH) certifications.

The NCL 2018 Fall Season began with the Preseason round to group players into one of three competition brackets based on skill level: Gold (top 15% of all players nationally - 472 players), Silver (the next 35% of all players nationally - 1,175 players) or Bronze (the next 50% of all players nationally - 1,680 players). Players who did not participate in the Preseason were not bracketed or ranked. This made the Regular Season more engaging by grouping players with similar knowledge and skill levels.

At the beginning of the NCL 2018 Fall Season, 4,730 students/players (up from 3,449 in Spring 2018) and 336 faculty/coaches from more than 350 two- and four-year schools across 49 U.S. states registered to play.

The NCL 2018 Fall Season was powered by Cyber Skyline's cloud-based skills evaluation platform. Cyber Skyline hosted the scenario-driven cybersecurity challenges for all players to compete and track their progress in real-time.

To validate the contents of this report, please access:
cyberskyline.com/report/W5EFMEE3H3XH

The Regular Season Capture the Flag (CTF) game, optimized for individuals, took place from November 2 through November 4. The Postseason CTF game, optimized for organized team play, took place from November 16 through November 18. The games were conducted in real-time for students across the country.

NCL Scouting Report

What follows is a customized NCL Scouting Report of your performance in the NCL 2018 Fall Postseason. We hope you find it to be valuable in both confirming the skills you demonstrated competencies in, as well as identifying areas for improvement. In addition, the NCL Scouting Report can be used as part of any job application, as it provides an external validation of skills as demonstrated in competitive game play based on industry-recognized certification performance-based exam objectives.

The following definitions apply to your performance across a range of games, optimized for individuals:

- **Bracket Rank:** overall place within the Bracket
- **National Rank:** overall place with respect to all players, across all Brackets
- **Score:** total combined flag points; the higher the score, the higher the ranking
- **Flag Captures:** the combined number of successful flag captures/submissions
- **Flag Attempts:** the combined number of flags submitted to the Cyber Skyline Platform
- **Accuracy:** percentage of flag submissions that were correct. Formula: Total Flag Captures divided by Total Flag Attempts

Based on the average performance of all team members in the Regular Season game, Bohan Zhang's team **"Team L33T"** was placed into the **Silver Bracket** for the Postseason game.

NCL Fall 2018 Postseason

130 flags (3,000 points)

The top team for NCL Fall 2018 Postseason captured 127 flags out of 130 total flags, scoring 2,900 points out of 3,000 total points, and had an accuracy of 81.94%.
On average, teams captured 76 flags, 1,439 points, and had an accuracy of 65.98%.

National Rank	Silver Bracket Rank	Score	Flag Captures	Flag Attempts	Accuracy
277	117	805	46	72	63.89%

Individual Competencies

The following tables show the team's rank Nationally and by Bracket, based on the following modules:

1. **Cryptography**
   Identify techniques used to encrypt or obfuscate messages and leverage tools to extract the plaintext.
2. **Enumeration and Exploitation**
   Identify actionable exploits and vulnerabilities and use them to bypass the security measures in code and compiled binaries.
3. **Log Analysis**
   Utilize the proper tools and techniques to establish a baseline for normal operation and identify malicious activities using log files from various services.
4. **Network Traffic Analysis**
   Identify malicious and benign network traffic to demonstrate an understanding of potential security breaches.
5. **Open Source Intelligence**
   Utilize publicly available information such as search engines, public repositories, social media, and more to gain in-depth knowledge on a topic or target.
6. **Password Cracking**
   Identify types of password hashes and apply various techniques to efficiently determine plaintext passwords.
7. **Scanning & Recon**
   Identify and use the proper tools to gain intelligence about a target including its services and potential vulnerabilities.
8. **Web Application Exploitation**
   Identify actionable exploits and vulnerabilities and use them to bypass the security measures in online services.
9. **Wireless Access Exploitation**
   Identify the security posture of wireless networks from network captures.

Cryptography

13 flags (380 points)

The top team in this module captured 13 flags and scored 380 points with an accuracy of 100.00%.
On average, teams in this module captured 9 flags and scored 260 points with an accuracy of 83.83%.

Silver Bracket teams on average captured 11 flag and scored 296 points with an accuracy of 86.02%.

National Rank	Silver Bracket Rank	Score	Flag Captures	Flag Attempts	Accuracy
320	121	90	4	5	80.00%

Enumeration and Exploitation

5 flags (300 points)

The top team in this module captured 5 flags and scored 300 points with an accuracy of 100.00%.
On average, teams in this module captured 3 flags and scored 109 points with an accuracy of 75.81%.

Silver Bracket teams on average captured 3 flag and scored 116 points with an accuracy of 78.85%.

National Rank	Silver Bracket Rank	Score	Flag Captures	Flag Attempts	Accuracy
221	98	50	2	8	25.00%

Log Analysis

23 flags (400 points)

The top team in this module captured 23 flags and scored 400 points with an accuracy of 100.00%.
On average, teams in this module captured 14 flags and scored 237 points with an accuracy of 52.94%.

Silver Bracket teams on average captured 16 flag and scored 267 points with an accuracy of 55.78%.

National Rank	Silver Bracket Rank	Score	Flag Captures	Flag Attempts	Accuracy
331	120	0	0	2	0.00%

Network Traffic Analysis

22 flags (460 points)

The top team in this module captured 22 flags and scored 460 points with an accuracy of 100.00%.
On average, teams in this module captured 15 flags and scored 260 points with an accuracy of 60.73%.

Silver Bracket teams on average captured 17 flag and scored 291 points with an accuracy of 61.62%.

National Rank	Silver Bracket Rank	Score	Flag Captures	Flag Attempts	Accuracy
317	120	65	5	7	71.43%

Open Source Intelligence

11 flags (215 points)

The top team in this module captured 11 flags and scored 215 points with an accuracy of 100.00%.
On average, teams in this module captured 9 flags and scored 122 points with an accuracy of 82.31%.

Silver Bracket teams on average captured 9 flag and scored 132 points with an accuracy of 84.26%.

National Rank	Silver Bracket Rank	Score	Flag Captures	Flag Attempts	Accuracy
199	82	115	9	11	81.82%

Password Cracking

17 flags (325 points)

The top team in this module captured 15 flags and scored 240 points with an accuracy of 100.00%.
On average, teams in this module captured 8 flags and scored 113 points with an accuracy of 90.79%.

Silver Bracket teams on average captured 9 flag and scored 126 points with an accuracy of 91.47%.

National Rank	Silver Bracket Rank	Score	Flag Captures	Flag Attempts	Accuracy
171	76	105	6	7	85.71%

Scanning & Recon

13 flags (250 points)

The top team in this module captured 13 flags and scored 250 points with an accuracy of 100.00%.
On average, teams in this module captured 8 flags and scored 155 points with an accuracy of 71.45%.

Silver Bracket teams on average captured 10 flag and scored 181 points with an accuracy of 78.83%.

National Rank	Silver Bracket Rank	Score	Flag Captures	Flag Attempts	Accuracy
216	103	100	6	10	60.00%

Web Application Exploitation

8 flags (300 points)

The top team in this module captured 8 flags and scored 300 points with an accuracy of 100.00%.
On average, teams in this module captured 4 flags and scored 75 points with an accuracy of 77.18%.

Silver Bracket teams on average captured 4 flag and scored 72 points with an accuracy of 85.39%.

National Rank	Silver Bracket Rank	Score	Flag Captures	Flag Attempts	Accuracy
N/A	N/A	0	0	0	0.00%

Wireless Access Exploitation

16 flags (270 points)

The top team in this module captured 16 flags and scored 270 points with an accuracy of 100.00%.
On average, teams in this module captured 11 flags and scored 161 points with an accuracy of 56.72%.

Silver Bracket teams on average captured 11 flag and scored 171 points with an accuracy of 57.91%.

National Rank	Silver Bracket Rank	Score	Flag Captures	Flag Attempts	Accuracy
150	66	180	12	20	60.00%

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Thank you for your participation in the NCL 2018 Fall Postseason! We hope you will continue to develop your knowledge and skills and make meaningful contributions as part of the Information Security workforce!

Dr. Dan Manson
NCL Commissioner