Cyber Range Evaluation Report

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IST 894-001: Capstone Experience

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January 26th, 2025

Introduction

This report evaluates three different cyber range platforms with the aim of aiding large enterprises in identifying one which suits their needs. Each platform is evaluated on five different criteria:

1) Realism: How faithfully the platform's simulations replicate real-world systems and threats.
2) Customizability: How adaptable the platform is to different use cases.
3) Quality of Exercises: How comprehensive and detailed the platform's exercises are.
4) Performance Monitoring and Metrics: The level of insight the platform provides into learner performance.
5) Cost and Accessibility: How accessible the platform is in terms of cost and deployment work.

The full evaluation rubric is available at the end of the report.

I. RangeForce

RangeForce is a cloud-based cyber range used by over 30,000 enterprises, including large corporations such as the BBC, Equifax, and Allianz.

On RangeForce, exercises are split into two categories: “Drills” and “Skills”. “Drill” exercises are team activities that take place in live environments with real-world cybersecurity tools. For instance, one type of drill exercise has one team of users attempt to keep critical services online as an opposing team tries to take them offline; another type of exercise has teams fight a variety of different security breaches. “Skill” exercises are meant to be done individually and focus more on theory than on practice. They include both written and hands-on labs as well as “solo ranges” where users can explore simulated cybersecurity incidents in faithfully-replicated environments at their own leisure. RangeForce combines both kinds of exercises into guided development plans that map to MITRE ATT&CK and other standardized frameworks.

RangeForce maps skills to various roles; their website names SOC analysts, penetration testers, threat hunters, forensics analysts, and security engineers, but indicates there are additional roles that are not listed. Each user of the platform is assigned one of these roles; their role determines the skill pathways they can access.

RangeForce provides in-depth metrics on user performance. Various skills are sorted into different categories, and administrators can see their team’s performance with respect to all skills in a particular category; for instance, if an administrator wanted to see their team’s performance with skills relevant to cybercrime ransomware, RangeForce would show how their team is doing with skills such as account monitoring, file hashing, and network traffic filtering. RangeForce also offers managed exercises in which a RangeForce employee will personally oversee and evaluate a team’s performance.

Evaluation

Criteria	5 points	4 points	3 points	2 points	1 point	0 points
Realism						
Customization						
Quality of Exercises						
Performance Monitoring and Metrics						
Cost and Accessibility						
						Total Points: 19/25*

* RangeForce does not publicly disclose pricing information.

II. Cyrin Cyber Range

The Cyrin Cyber Range is a cloud-based cyber range developed by Architecture Technology Corporation.

Cyrin's teaching methodology is strictly by-the-book. Users can opt for a learning experience modeled after the NIST NICE framework, the MITRE ATT&CK framework, or Cyrin's own framework. After choosing a framework, the user is given a list of categories pulled directly from that framework. Each category contains a list of job roles relevant to that category. Upon selecting a role, users are directed to Cyrin's course catalog, where the list of visible courses is filtered to ones relevant to the selected role.

Exercises take place in virtual environments that are provisioned on demand. Though Cyrin does not provide live environments, the virtual environments are equipped with real-world cybersecurity tools, and the exercises are practical and grounded in reality.

Cyrin allows administrators to create their own exercises and distribute to their teams through Cyrin's platform. Existing exercises can be modified as well. Administrators can set and change their own learning objectives and monitoring plans. Metrics for all courses, whether built-in or created by an administrator, are available on a dedicated performance monitoring site.

Cyrin training is sold on a four-to-twelve-month subscription basis. There is a range of plans, each of which allow access to a specific subset of Cyrin's course catalog. Per-user prices range from $375 to $6,395.

Evaluation

Criteria	5 points	4 points	3 points	2 points	1 point	0 points
Realism		■				
Customization	■					
Quality of Exercises		■				
Performance Monitoring and Metrics	■					
Cost and Accessibility			■			
						Total Points: 21/25

III. Cyberbit

Cyberbit aims to be a highly-customizable solution that can be adapted to fit the needs of any team. To that end, it largely eschews predefined skill paths in favor of customized training plans tailored towards a team's specific needs. Administrators can create training plans themselves or work with Cyberbit's customer success team to develop one.

Cyberbit's simulations are both highly realistic and modern. It offers attack simulations based not only on on-premises environments, but also on cloud and hybrid environments, and claims it is the only cyber range to do so. Simulations are "live-fire"; Cyberbit actually executes a cyberattack against a live machine reserved for this purpose, and users combat it with the same industry-standard tools they use in their jobs. Cyberbit partners with a wide range of commercial providers to integrate their tools into its platform, including IBM, Splunk, Palo Alto Networks, and Cisco. Users' performance during simulated incidents is assessed in real time. Post-simulation debriefs provide numerical measures of how close users came to achieving the required objectives.

In addition to live-fire simulations, Cyberbit also offers individual hands-on labs. These labs are intended to prepare users for the live-fire simulations and cover the specific tools and vulnerabilities that will be used in the simulations.

The MITRE ATT&CK framework is integrated into Cyberbit's platform. Additionally, all labs and exercises are mapped to NIST NICE Work Roles and KSATs.

Criteria	5 points	4 points	3 points	2 points	1 point	0 points
Realism						
Customization						
Quality of Exercises						
Performance Monitoring and Metrics						
Cost and Accessibility						
						Total Points: 20/25*

* Cyberbit does not publicly disclose pricing information.

Comparison Matrix

Criteria	RangeForce	Cyrin	Cyberbit
Realism	5	4	5
Customization	4	5	5
Quality of Exercises	5	4	5
Performance Monitoring and Metrics	5	5	5
Cost and Accessibility	0	3	0
Total Points	**25**	**21**	**20**

Criteria	5 points	4 points	3 points	2 points	1 point	0 points
Realism	Simulations faithfully replicate, to the greatest reasonable extent, real-world systems and threats.	Highly realistic simulations but with minor deficiencies in fidelity or comprehensiveness.	Basic simulations of common environments and threats.	Simplistic simulations severely lacking in variety or realistic detail.	Simulations only barely resemble real-world situations. Variety is minimal, if present.	Simulations are entirely disconnected from reality.
Customization	The platform is fully customizable for a wide range of use cases.	The platform can be customized to fit most use cases.	The platform can be customized to satisfy common use cases but is poorly suited for more specific or unique ones.	The platform is minimally customizable and poorly suited for even many common use cases.	No significant customization options exist.	The platform is not customizable.
Quality of Exercises	The platform provides comprehensive exercises that accommodate users from a wide range of backgrounds. Exercises are clearly guided and detailed	Exercises are largely substantial and comprehensive but minor gaps exist in the depth of material they cover or the feedback they provide.	Exercises are basic cover essential skills only.	Exercises are weak and lacking in depth.	Exercises are minimal and shallow. No feedback is provided.	No exercises exist.

	feedback is provided.					
Performance Monitoring and Metrics	Extensive and actionable performance metrics and insights are available for all exercises.	Strong performance metric and insights are provided but are somewhat lacking in detail or actionability.	Performance metrics and insights are basic and shallow.	Performance metrics and insights are highly limited and not actionable.	Performance metrics and insights are minimal.	No performance metrics or insights are provided.
Cost and Accessibility	The platform is affordable, easy to set up, and cloud-based.	The platform is affordable but minor challenges exist in getting it set up.	The platform is moderately expensive. Setup is challenging and unintuitive.	The platform is very expensive. Setup is highly challenging.	The platform is extremely expensive. Setup borders on being inaccessible.	The platform is entirely outside the realm of affordability, or no pricing information is provided.