HAYSTACK SOLUTIONS

CyberGEN.IQ

CYBER APTITUDE AND TALENT ASSESSMENT

Revolutionizing Cybersecurity Talent Identification & Development

Visit Our Website

www.haystacksolutions.com

AGENDA & PRESENTERS

Company Overview

Capabilities Overview

Demo: Assessment Experience

Demo: Manager Dashboard

Q&A and Discussion

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We welcome questions throughout the session. Please don't hesitate to raise your hand during the presentation if you'd like to ask something or request clarification.

OUR STORY

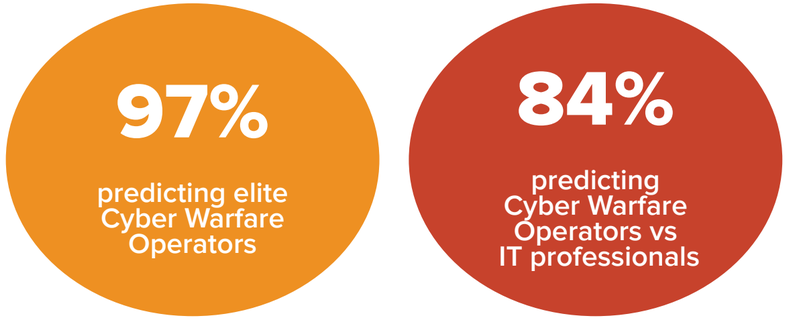
The Need: A Growing Cyber Talent Gap

- The **DoD urgently needed to identify and retain Cyber Warfare Operators** to protect critical infrastructure and enterprises.
- Traditional hiring methods failed to keep pace with the **intensifying demand for cybersecurity professionals**.
- **Knowledge-based assessments overlooked high-potential candidates** who lacked formal cybersecurity education but had the right cognitive skills.

The Solution: CyberGEN.IQ

- Developed in **2016** by **Haystack Solutions & the University of Maryland**, **CyberGEN.IQ** became the **first and only cyber aptitude and talent assessment**.
- **Beyond General Intelligence** – The assessment classifies cybersecurity jobs based on:
  - ✔ **Real-Time vs. Deliberate Decision-Making**
  - ✔ **Proactive vs. Reactive Thinking**

Case Study:
USAF conducted an extensive study of the ability to use CyberGEN.IQ as a filter for students coming into Cyber Warfare Operator training.



HAYSTACK SOLUTIONS

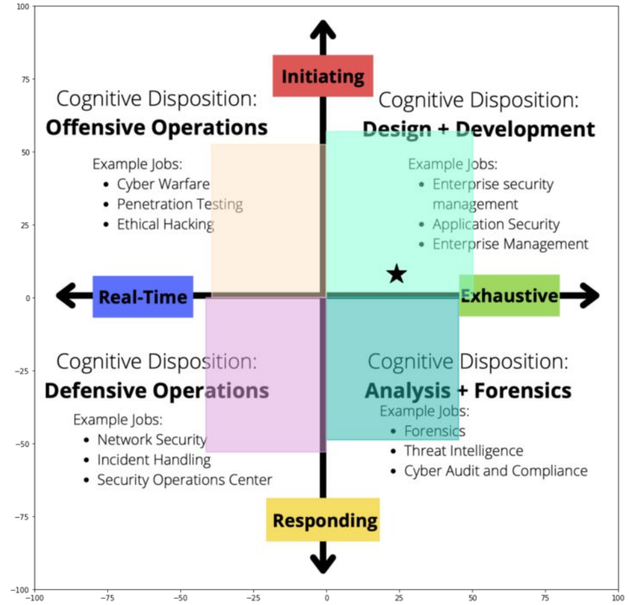
CyberGEN.IQ Case Studies

USAF Cyber Warfare Operators

- **97% Accuracy:** Predicting elite Cyber Warfare Operators (score of 90% or higher).
- **84% Accuracy:** Distinguishing Cyber Warfare Operators from other IT roles.

US Special Operations Command (SOCOM)

- **77% Accuracy:** Predicting pass/fail in SOCOM selection event.
- **Cognitive Clusters:** Building diverse teams that encompassed Mentally Tough, Creative Thinkers, Critical Thinkers.



University of North Georgia

- **Increased Team Size:** No prior cybersecurity knowledge grew team size by 4x.
- **Expanded Diversity:** Women participation grew from 10% to 20%.
- **National Competitiveness:** Team won NSA Codebreaker Challenge in 2019 and 2020.

Forge Institute - Workforce Development

- **Improved Graduation Rates:** From 65% to 93%.
- **Optimized Training ROI:** Effective use of training resources, increased final scores.
- **High Performers Identified:** Streamlined path to employment.

Formerly known as CATA (Cyber Aptitude and Talent Assessment)

CyberGEN.IQ Overview

No Experience Needed. Science-Backed. Resume-Independent.

- Identifies untapped talent through cognitive science and problem-solving analysis—no technical background required.

Aligned with NICE/NIST Work Roles

- Maps innate strengths to specific cybersecurity roles using the NICE/NIST framework.

Assesses Five Key Cerebral Areas

- Critical Thinking
- Exhaustive (Deliberate action)
- Real Time (Real-time action)
- Initiating (Proactive thinking)
- Responding (Reactive thinking)

Mapped to Four Cyber Domains

- Offensive Operations
- Defensive Operations
- Analytics and Forensics
- Design and Development

CyberGEN.IQ and the NICE Framework

CyberGEN.IQ aligns with the NICE Framework's KSAs to support strategic hiring, upskilling, and workforce development

Cognitive demands from the assessment were mapped to NICE work role functions through network and cluster analysis

NICE categories were grouped into four cognitive profiles based on shared task traits and quadrant alignment

These domains are mapped as follows:

- **Offensive Operations (Proactive, Real-Time):** Red team, penetration testing, ethical hacking
- **Defensive Operations (Reactive, Real-Time):** SOC analysts, threat hunters, incident responders
- **Design & Development (Proactive, Strategic):** Security engineers, architects, tool developers
  Analysis & Forensics (Reactive, Strategic): Cyber intel analysts, forensic investigators, malware analysts

CyberGEN.IQ empowers organizations to **identify and develop talent** not solely based on experience or credentials, but by scientifically matching individuals' innate cognitive abilities to NICE-defined work roles

Key Cognitive Dimensions Measured

Cognitive Analysis

Critical Thinking

spans all the dimensions, exploring visuospatial working memory, rule induction, complex problem-solving, spatial visualization, and attentional capacity

Initiating

thinking requires creative problem-solving and the ability to model program execution

Responding

thinking requires the ability to detect anomalies and to monitor a continuously running information stream, when doing so is mentally taxing

Real-Time

requires the ability to scan and interpret information, to respond quickly to events during online processing, and to inhibit the intrusion of distracting or irrelevant information

Exhaustive

requires the ability to delay closure in resolving a task or problem, considering other inputs, while balancing risk and reward

COGNITIVE ASSESSMENT`	SHORT NAME	DIMENSION
Need for Cognition	NFC	Critical Thinking
Dynamic Systems Control	DSC	Critical Thinking
Matrix Reasoning	MR	Critical Thinking
Paper Folding	PF	Critical Thinking
Remember and Count	RAC	Critical Thinking
Remote Associates	RAT	Initiating
Spatial Integration	SRI	Initiating
Coding Speed	CS	Responding
Pattern Vigilance	PV	Responding
Anomaly Detection Rule Based	ADR	Responding
Statistical Learning	SL	Responding
Recent Probes	RP	Real-Time
Need for Cognitive Closure	NFCC	Exhaustive
Number Picker	NP	Exhaustive

Dynamic Systems Control

Cognitive Dimension: Critical Thinking

Jobs that utilize this cognitive capability:

- **Incident Response** – Once systems have been compromised, there will be nuanced differences in behavior. One must quickly divine how this new system works to find the issues.
- **Ethical Hacking** – One must be able to predict a complex system's response to unauthorized or unintended inputs

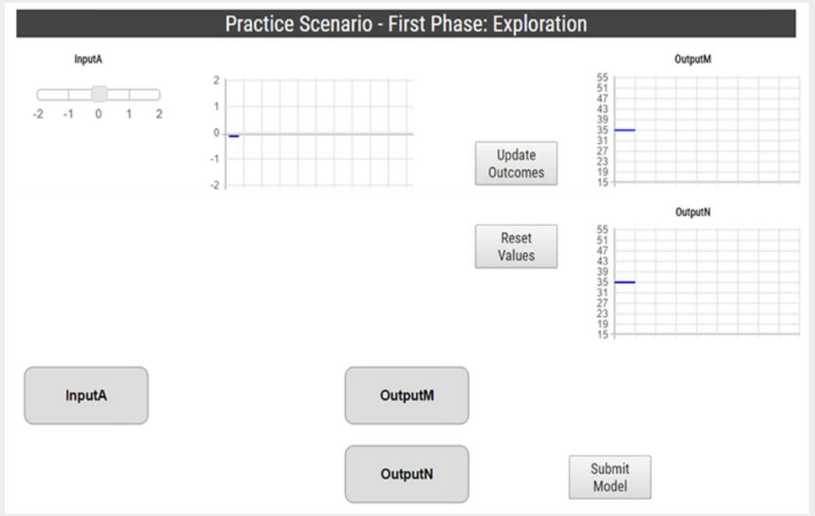
Scientific Background – Draws from Cognitive Psychology and Dörner's Theory of Operational Intelligence (1986), DSC tests three areas of problem solving: Intransparency, Connectedness, and Dynamics.

The Dynamic Systems Control (DSC) task measures the construct of complex problem solving, in the Critical Thinking construct category. Complex problem solving represents the ability to learn and effectively manipulate systems which are complex, opaque, and dynamic. DSC specifically assesses this ability by having examinees learn the rules of a complex, dynamic system, and then use these rules to manipulate the system into a specific state.

Sample Problem

In the exploration phase, you will manipulate several input variables and observe their impact on several output variables. For example, imagine you are interested in understanding how InputA is related to OutputM and OutputN.

Below is an example of the display that you will see in the task.



Recent Probes

Cognitive Dimension: Real-time Thinking

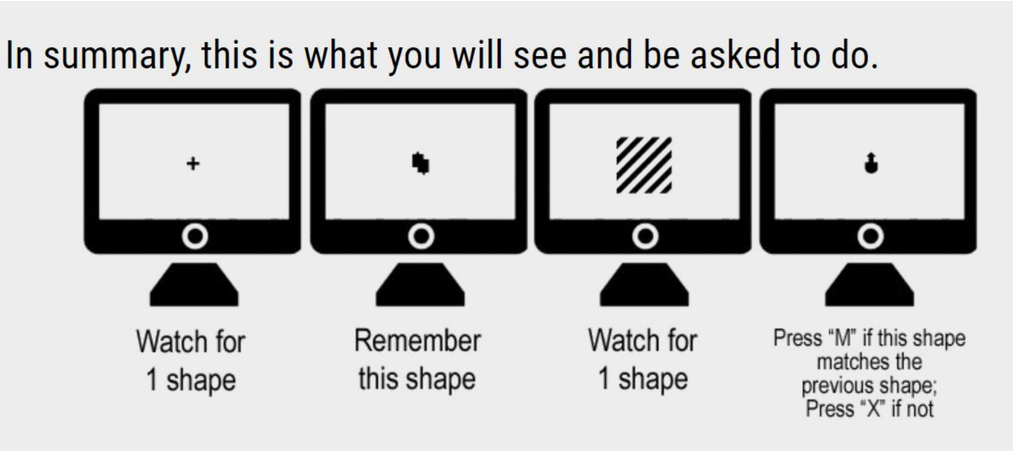
Jobs that utilize this cognitive capability:

- **Penetration Testing** – The pen tester must be able to separate “signal” from “noise” in real-time.
- **Defense Operations Security Management** – Attackers will present numerous false flags, that defensive operations

Scientific Background –The Recent Probes task assesses working memory, particularly the susceptibility to proactive interference (i.e., when prior learning impairs current processing). Prime and probe images are presented with a delay in between, and participants are asked to decide whether the images match or not. The task specifically measures the ability to resist proactive interference, since participants may experience difficulty rejecting incorrect probes that were presented as primes recently (i.e., in the item immediately before).

The Recent Probes 1-shape (RP1) task measures the construct of psychomotor speed, in the Real-Time Action construct category. Psychomotor speed represents the ability to respond quickly and to control the speeded motor response in the face of interference. RP1 specifically assesses this ability by having examinees monitor a sequence of images for a single target.

Sample Problem



The CyberGEN.IQ test results align with the four career domains within cybersecurity today

Aptitude Mapped to Cyber Domains

Offensive Operations

Requires initiative and creative problem-solving skills using partial data in real-time.

Example Jobs:
- ➔ Cyber Warfare
- ➔ Penetration Testing
- ➔ Ethical Hacking

Design & Development

Requires the ability to programatize creative problem solving and build model programs for execution.

Example Jobs;
- ➔ Enterprise security management
- ➔ Application Security
- ➔ Enterprise Management

Initiating

Real-Time

Exhaustive

Responding

Defensive Operations

Requires the ability to detect anomalies with scans and real-time, partial data while screening out distractions.

Example Jobs:
- ➔ Network Security
- ➔ Incident Handling
- ➔ Security Operations Center

Analysis & Forensics

Requires the ability to interpret and reconcile exhaustive amounts of often conflicting data

Example Jobs :
- ➔ Forensics
- ➔ Threat Intelligence
- ➔ Cyber Audit & Compliance

Applying Cognitive Data to Strengthen Team Alignment, Cyber Defense, and Talent Deployment

CyberGEN.IQ Capabilities

Optimizing Workforce Structure & Strategic Readiness

How CyberGEN.IQ Supports Strategic Operations

- Delivers **scientifically validated cognitive insights** to evaluate workforce readiness and guide individuals into cybersecurity roles aligned with their innate strengths
- Enables **data-driven decisions across hiring, training, and workforce development** by mapping cognitive aptitude to mission-critical work roles
- Identifies natural **real-time decision makers, anomaly detectors, and exhaustive problem-solvers** to align personnel with operational and defensive cyber functions
- Aligns **human capability with cyber mission requirements**, supporting enterprise-level readiness and operational integrity
- Supports **strategic talent identification for high-trust, high-impact roles** requiring decision integrity and sustained cognitive focus

Result

- **Strategic talent deployment** that improves mission alignment and operational credibility
- **Increased cyber resilience** across enterprise systems, threat environments, and security operations
- **Improved mission assurance** by ensuring the right individuals are placed in roles where elite-level cognitive performance is required

Enabling Scalable Talent Alignment Across Modernization, Interoperability, and Real-Time Operations

CyberGEN.IQ Capabilities

Precision Role Matching Across Evolving Cyber Environments

How CyberGEN.IQ Supports Complex Cyber Landscapes

- Provides cognitive insights to optimize team structures supporting **enterprise modernization, zero trust architecture, and cyber engineering** initiatives
- Ensures cognitive alignment for roles requiring **cross-domain collaboration**, system-level thinking, and agile response
- Enables targeted role matching for specialized and emerging mission areas such as **cyber acquisition, architecture design, and system testing**
- Helps determine who to hire, who to train, and where gaps exist as teams evolve to meet **interoperability and readiness demands**
- Identifies individuals with the capacity for **real-time triage, 24/7 operations**, and adaptive incident response
- Builds cognitively diverse teams by blending **real-time decision makers** and **exhaustive problem-solvers**, supporting mission agility and coverage

Operational Outcomes

- Human capital evolves in alignment with **cyber infrastructure transformation**
- Training and workforce investments are **strategically allocated**, improving both efficiency and measurable outcomes
- **Cognitive diversity** improves system handoffs, collaborative performance, and mission sustainability in fast-paced environments

Aligning, Upskilling, and Deploying Cyber Talent

Operational Use Cases Across the Talent Lifecycle

Enhance Retention & Workforce Alignment

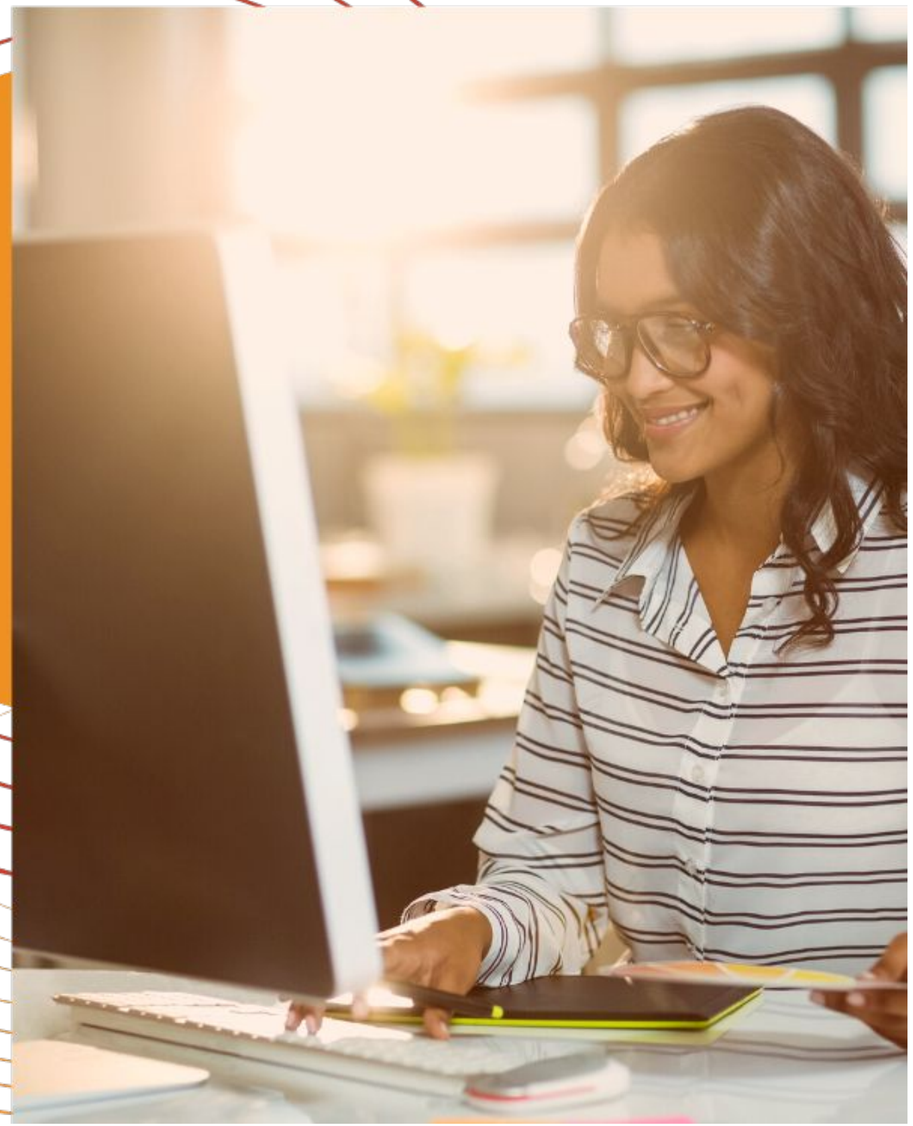
- Establish an internal benchmark of cognitive strengths to inform talent deployment and internal mobility strategies
- Improve workforce alignment and long-term team stability
- Reduce inefficiencies caused by role mismatch

Accelerate & Optimize Upskilling

- Target individuals with the highest potential for success in specific cyber domains
- Align training pathways to natural cognitive abilities
- Shorten training time and improve ROI
- Structured in accordance with the NICE/NIST Work Role Framework

Streamline & Strengthen Hiring

- Screen candidates for role-based aptitude before investing in training
- Accelerate onboarding and hiring timelines
- Maximize limited hiring and workforce development resources
- Uncover hidden talent by identifying individuals with strong cognitive potential who may have been previously overlooked



CyberGEN.IQ Demonstration

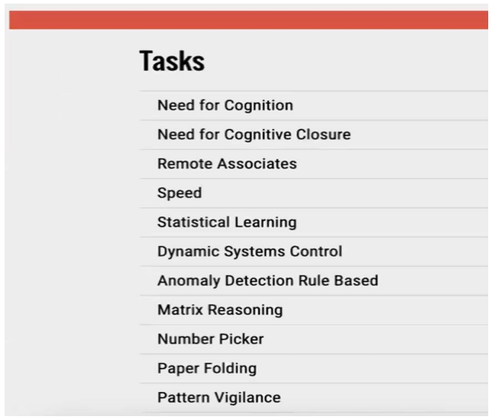
Assessment Experience – Test-Taker Perspective

Assessment Experience Overview

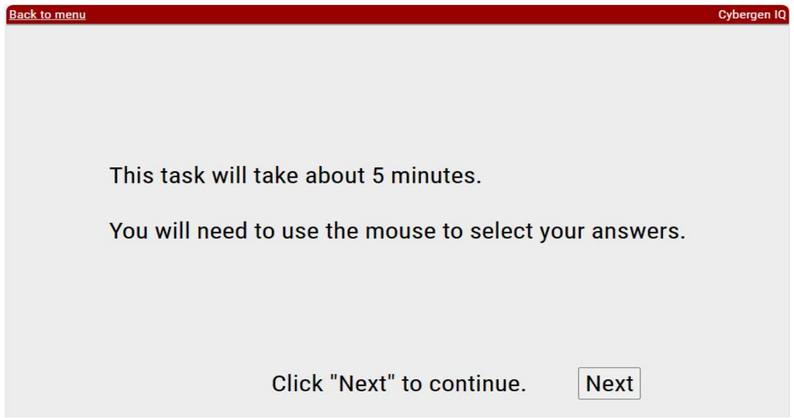
- Computer-based assessment featuring 14 unique cognitive tasks
- Each task takes between 3–15 minutes; the full assessment takes approximately 90 minutes to complete
- Flexible completion: participants may take breaks between tasks
- Tasks are submitted as final once completed—no opportunity to revisit or revise
- No right or wrong answers; the focus is on how you think, not what you know
- Results are scored using a percentile-based system to benchmark performance
- Recommended for use on a laptop or desktop computer; mobile and tablet devices are not supported

Assessment Taker Experience

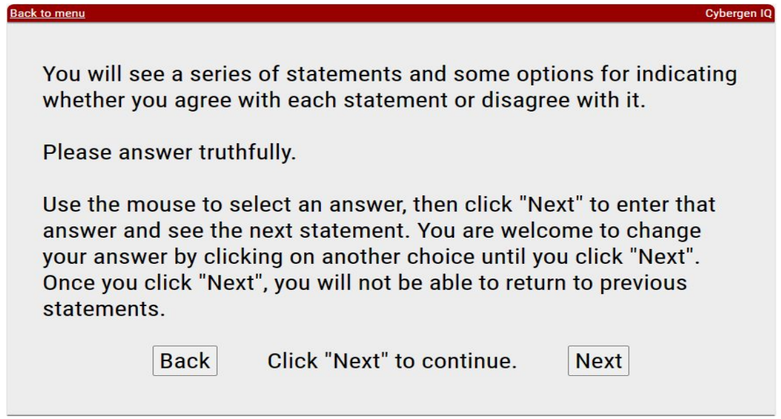
Main Task Page



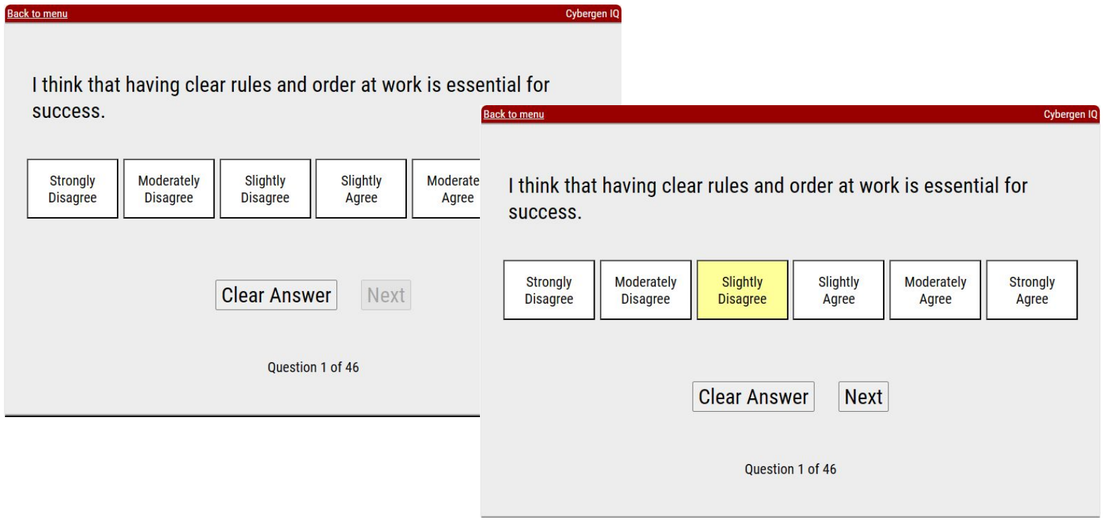
Duration & Requirements



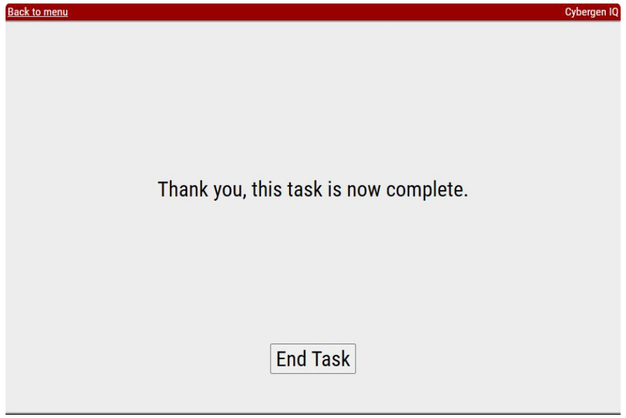
Task Instructions and Practice



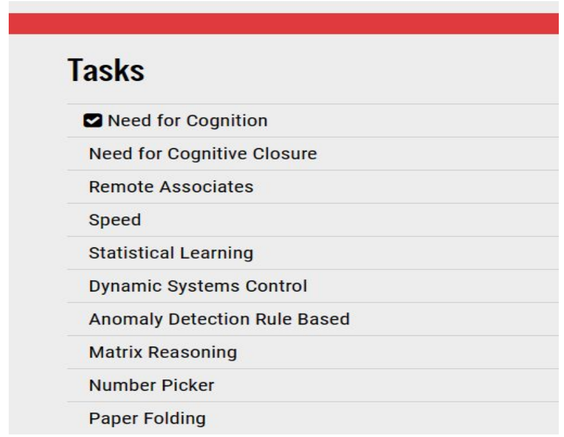
Question Page with Response Highlighted



Task Completed Confirmation



Main Page with Task Completed



Assessment Takers Results Report

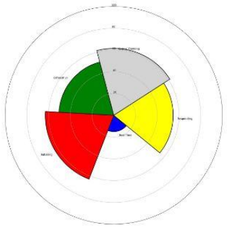
Once all 14 tasks have been completed, both the assessment taker and administering organization will be able to access their results report

Each task relates to a different cognitive construct. The five constructs we tested were:

- Exhaustive
  - Deliberate carefully and weigh up many options
- Critical Thinking
  - Infer and learn rules or logic from a system
- Initiating
  - Make connections to generate novel solutions
- Real Time
  - Capture information and react quickly
- Responding
  - Internalize and reproduce learned patterns and information

We also can extract data across four main cyber quadrants. These are:

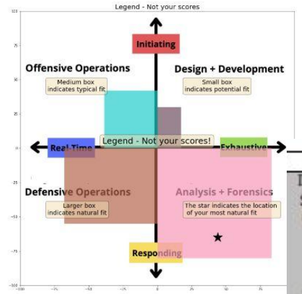
- Offensive Operations
  - Examples: cyber warfare, penetration testing, ethical hacking
- Defensive Operations
  - Examples: network security, incident handling, security operations center
- Design and Development
  - Examples: enterprise security management, application security
- Analysis and Forensics
  - Examples: forensics, threat intelligence, cyber audit and compliance

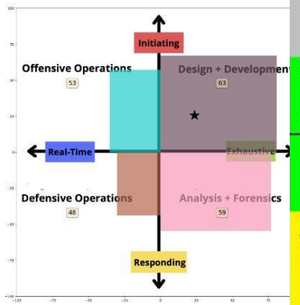


You scored better on initiating than responding, so a more natural fit for you would most likely be on the top half of our job quadrants.

You scored better on exhaustive than real-time, so a more natural fit for you would most likely be on the right half of our job quadrants.

Critical thinking spans all job roles, and will be vital regardless of which area you pursue.





Task	Percentile	Construct	Measures	Insights	Relation to Cyber
Dynamic Systems Control	58	Critical Thinking	Complex problem solving	You are self reflective and use this to analyze problems and your solutions. You often can think outside the box to develop clever solutions.	You can analyze and debug complex functions. You understand how entangled systems work and looking for areas of weakness are skills are tasks they would likely enjoy.
Matrix Reasoning	26	Critical Thinking	Rule induction	You work well in situations where the rules are clearly laid out ahead of time and can find optimal solutions.	You work best with systems that are well documented.
Remember and Count	98	Critical Thinking	Visuospatial working memory	You're able to focus in the midst of distractions. You did well in school and generally have strong reading skills. You might also have a future as a plate spinner!	Your strong working memory gives you an ability to juggle a large numer of factors in your head at once. This could take the form of juggling multiple 16-digit hex addresses, debugging symbols, or forensic artifacts.
Need for Cognitive Closure	31	Exhaustive	The need to arrive at a solution during problem solving.	You don't like to commit to answers too soon. You thrive in ambiguity and love the freedom it provides. You hate predictability.	Exhaustive search problems and open ended monitoring are strong suits of these individuals.
Number Picker	90	Exhaustive	Tolerance for risk	You're open to risk and love the thrill and excitement that come along with it. Maybe you are interested in the stock market, playing cards, or gambling.	Your ability to make risk-based decisions helps juggle many competing factors in determining the most successful course of action.
Pattern Vigilance	71	Responding	Vigilance	You are vigilant and can maintain concentration for long periods of time. You don't mind long hours of work that requires focus.	You can monitor information or data for long periods of time while remaining vigilant. This would be required for monitoring large volumes of security alerts, understanding which matter, without being lulled to boredom by those that don't.
Remote Associates	**42**	**Initiating**	**Creative thinking**	**You like linear problems that have a clear path. Seeing a goal and the steps needed to achieve that goal help you succeed.**	**It may take more effort to see relationships between loosely affiliated data points. This might require more time for testing connections between indicators of attack.**
Paper Folding	10	Critical Thinking	Spatial visualization	You work well with problems where the entire task is right in front of you.	To increase this capability, try to learn and master games like Go that require complex, multi-move visualization.

Relation to Cyber
here are many tools that can help late binary data, debugging data, or work trace data into other formats. ploying those tools may speed your onse times to unusually encoded data or artifacts.
sponding to the real-time issues that e up during a penetration test, you ay need extra time and space for concentration.
can detect anomalies buried within ta. Cyber security and other fields re strong patterns emerge suit these individuals.
er response circumstances that don't low you to review results, data, or nputs may be very stressful. For mple, it might be hard to decide on tting off a network connection now, en though the data to support the don won't be available for another 30 minutes.
ess in cybersecurity requires extreme sistence. Increasing your willingness keep at those thonry challenges will increase your ability to tackle the hardest problems.

CyberGEN.IQ Demonstration

Administrator/Manager Dashboard – role-matching, clustering, quadrant scores

All assessment scores will populate in one spreadsheet as individual's complete all 14 tasks

Administrator/Manager Dashboard

Quadrant Scores

Cognitive Constructs with Corresponding Tasks Analyzed

Dimensions Averages

C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
Cyber Quadrant	Cyber Quadrant	Cyber Quadrant	Cyber Quadrant	Critical Thinking	Critical Thinking	Critical Thinking	Critical Thinking	Critical Thinking	Exhaustive	Exhaustive	Initiating	Intitiating	Real-Time	Responding	Responding	Responding	Responding					
Offensive	Defensive	Forensic	Design	Dynamic Systems Control	Matrix Reasoning	Need for Cognition	Paper Folding	Remember and Count	Need for Cognitive Closure	Number Picker	Remote Associates	Spatial Integration	Recent Probes	Anomaly Detection Rule Based	Coding Speed	Pattern Vigilance	Statistical Learning	Critical Thinking Average	Exhaustive Average	Initiating Average	Real Time Average	Responding Average
49.00	65.00	59.00	40.00	49	41	75	10	21	5	58	81	15	87	59	14	83	91	39.20	31.50	48.00	50.50	77.67
69.00	65.00	77.00	80.00	84	58	31	84	91	80	58	74	67	52	59	5	36	88	69.60	69.00	70.50	28.50	61.00
22.00	37.00	55.00	46.00	3	26	18	0	5	37	77	14	48	5	38	2	88	32	10.40	57.00	31.00	3.50	52.67
30.00	24.00	61.00	64.00	2	1	40	0	83	84	77	78	6	6	82	14	5	10	25.20	80.50	42.00	10.00	32.33
17.00	45.00	51.00	30.00	5	7	83	18	29	69	3	18	29	15	45	1	64	81	28.40	36.00	23.50	8.00	63.33
25.00	34.00	36.00	27.00	38	58	78	0	5	4	48	56	2	30	82	10	16	36	35.80	26.00	29.00	20.00	44.67
37.00	45.00	46.00	38.00	7	7	83	2	25	39	48	33	29	83	72	1	23	51	24.80	43.50	31.00	42.00	48.67
32.00	45.00	44.00	30.00	9	58	82	0	11	1	20	1	83	27	45	8	54	85	32.00	10.50	42.00	17.50	61.33
11.00	04.00	46.00	47.00	2	7	31	0	7	34	96	25	6		0	0	2	17	9.40	65.00	15.50	0.00	6.33
69.00	79.00	78.00	68.00	85	26	89	84	95	35	13	13	83	57	72	3	81	81	75.80	24.00	48.00	30.00	78.00
72.00	29.00	37.00	76.00	2	41	14	0	89	48	37	100	97	54	4	3	59	26	29.20	42.50	98.50	28.50	29.67
85.00	74.00	73.00	84.00	55	58	97	10	100	2	37	100	99	47	82	4	84	45					
40.00	56.00	48.00	28.00	63	86	29	18	16	13	48	1	48	98	82	5	75	26	42.40	30.50	24.50	51.50	61.00
25.00	48.00	59.00	43.00	71	86	60	5	18	46	58	33	29	32	82	0	58	58	48.00	52.00	31.00	16.00	66.00
26.00	24.00	32.00	34.00	2	41	8	0	8	76	3	6	48	41	8	9	23	36	11.80	39.50	27.00	25.00	22.33
84.00	64.00	61.00	82.00	2	7	17	0	100	66	58	100	97	99	0	37	85	95	25.20	62.00	98.50	68.00	60.00
56.00	63.00	63.00	55.00	49	86	64	5	85	43	58	89	15	84	39	19	85	79	57.80	50.50	52.00	51.50	67.67
62.00	59.00	59.00	62.00	84	41	18	73	94	24	58	36	83	57	41	23	81	36	62.00	41.00	59.50	40.00	52.67
45.00	59.00	61.00	48.00	78	74	75	18	85	19	28	25	48	6	82	11	83	30	66.00	23.50	36.50	8.50	65.00
18.00	24.00	47.00	44.00	35	26	37	1	34	56	58	33	15	15	82	0	5	13	26.60	57.00	24.00	7.50	33.33
66.00	67.00	70.00	70.00	84	58	0	10	85	91	28	61	97	84	77	17	73	91	47.40	59.50	79.00	50.50	80.33
26.00	50.00	56.00	37.00	55	26	34	18	86	57	37	1	48	28	72	0	81	42	43.80	47.00	24.50	28.00	65.00
39.00	44.00	44.00	40.00	80	58	68	18	25	6	48	70	29	43	56	5	73	42	49.80	27.00	49.50	24.00	57.00
52.00	60.00	51.00	40.00	80	14	70	44	63	31	28	78	6	97	66	13	81	36	54.20	29.50	42.00	55.00	61.00
33.00	29.00	31.00	34.00	15	26	64	18	21	52	9	61	15	34	59	21	32	2	28.80	30.50	38.00	27.50	31.00

Identifying Top Candidates for Specific Work Roles

Score Analysis - Placement

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1			Cyber Quadrant	Cyber Quadrant	Cyber Quadrant	Cyber Quadrant	Critical Thinking	Critical Thinking	Critical Thinking	Critical Thinking	Critical Thinking	Exhaustive	Exhaustive	Initiating	Intitiating	Real-Time	Responding	Respondi
2	Idividual Identifier	Composite (Passing = 150+)	Offensive	Defensive	Forensic	Design	Dynamic Systems Control	Matrix Reasoning	Need for Cognition	Paper Folding	Remember and Count	Need for Cognitive Closure	Number Picker	Remote Associates	Spatial Integration	Recent Probes	Anomaly Detection Rule Based	Coding Speed
3	Assessment_001	213.00	49.00	65.00	59.00	40.00	49	41	75	10	21	5	58	81	15	87	59	14
4	Assessment_002	291.00	69.00	65.00	77.00	80.00	84	58	31	84	91	80	58	74	67	52	59	5
5	Assessment_003	160.00	22.00	37.00	55.00	46.00	3	26	18	0	5	37	77	14	48	5	38	2
			30.00	24.00	61.00	64.00	2	1	40	0	83	84	77	78	6	6	82	14
			17.00	45.00	51.00	30.00	5	7	83	18	29	69	3	18	29	15	45	1
			25.00	34.00	36.00	27.00	38	58	78	0	5	4	48	56	2	30	82	10
			07.00	45.00	46.00	38.00	7	7	83	2	25	39	48	33	29	83	72	1
			52.00	45.00	44.00	30.00	9	58	82	0	11	1	20	1	83	27	45	8
11	Assessment_009	108.00	11.00	04.00	46.00	47.00	2	7	31	0	7	34	96	25	6		0	0
12	Assessment_010	294.00	69.00	79.00	78.00	68.00	85	26	89	84	95	35	13	13	83	57	72	3
13	Assessment_011	214.00	72.00	29.00	37.00	76.00	2	41	14	0	89	48	37	100	97	54	4	3
14	Assessment_012	316.00	85.00	74.00	73.00	84.00	55	58	97	10	100	2	37	100	99	47	82	4
15	Assessment_013	172.00	40.00	50	48.00	28.00	63	86	29	18	16	13	48	1	48	98	82	5
16	Assessment_014	175.00	25.00	48.00	00	43.00	71	86	60	5	18	46	58	33	29	32	82	0
17	Assessment_015	116.00	26.00	24.00		34.00	2	41	8	0	8	76	3	6	48	41	8	9
18	Assessment_016	291.00	84.00	64.00	61.00		2	7	17	0	100	66	58	100	97	99	0	37
19	Assessment_017	237.00	56.00	63.00	63.00		49	86	64	5	85	43	58	89	15	84	39	19
20	Assessment_018	242.00	62.00	59.00	5					73	94	24	58	36	83	57	41	23
21	Assessment_019	213.00	45.00	59.00	6					18	85	19	28	25	48	6	82	11
22	Assessment_020	133.00	18.00	24.00	4					1	34	56	58	33	15	15	82	0
23	Assessment_021	273.00	66.00	67.00	7					10	85	91	28	61	97	84	77	17
24	Assessment_022	169.00	26.00	50.00	5					18	86	57	37	1	48	28	72	0
25	Assessment_023	167.00	39.00	44.00	4					18	25	6	48	70	29	43	56	5
26	Assessment_024	203.00	52.00	60.00	5					44	63	31	28	78	6	97	66	13
27	Assessment_025	127.00	33.00	29.00	3					18	21	52	9	61	15	34	59	21
28	Assessment_026	118.00	29.00	30.00	30.00	29.00	71	86	46	29	29	21	5	18	48	23	82	4
29	Assessment_027	183.00	43.00	28.00	51.00	61.00	2	3	50	1	15	54	68	25	97	3	27	0
30	Assessment_028	138.00	29.00	37.00	40.00	32.00	17	3	44	0	9	7	84	1	6	78	59	5
31	Assessment_029	136.00	45.00	25.00	22.00	44.00	2	41	42	0	6	26	13	52	67	46	0	4
32	Assessment_030	158.00	30.00	42.00	48.00	38.00	17	26	13	29	72	48	58	1	15	79	36	5
33	Assessment_031	251.00	60.00	71.00	66.00	54.00	85	7	75	29	95	41	13	52	67	33	82	60

- Scale: 0-100
- Strength of scores in that quadrant

For Placement:

- Determine the job's quadrant
- Sort to maximize the scores for the related quadrant

Identifying Probability of Success in Specific Training Program/Course

Score Analysis - Selection

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1			Cyber Quadrant	Cyber Quadrant	Cyber Quadrant	Cyber Quadrant	Critical Thinking	Critical Thinking	Critical Thinking	Critical Thinking	Critical Thinking	Exhaustive	Exhaustive	Initiating	Intitiating	Real-Time	Responding	Respondi
2	Idividual Identifier	Composite (Passing = 150+)	Offensive	Defensive	Forensic	Design	Dynamic Systems Control	Matrix Reasoning	Need for Cognition	Paper Folding	Remember and Count	Need for Cognitive Closure	Number Picker	Remote Associates	Spatial Integration	Recent Probes	Anomaly Detection Rule Based	Coding Speed
3	Assessment_001	213.00		65.00	59.00	40.00	49	41	75	10	21	5	58	81	15	87	59	14
4	Assessment_002	291.00	69.00		77.00	80.00	84	58	31	84	91	80	58	74	67	52	59	5
5	Assessment_003	160.00	22.00	37		46.00	3	26	18	0	5	37	77	14	48	5	38	2
6	Assessment_004	179.00	30.00	24.00			2	1	40	0	83	84	77	78	6	6	82	14
7	Assessment_005	143.00	17.00						83	18	29	69	3	18	29	15	45	1
8	Assessment_006	122.00	25.00						78	0	5	4	48	56	2	30	82	10
9	Assessment_007	166.00	37.00						83	2	25	39	48	33	29	83	72	1
10	Assessment_008	151.00	32.00						82	0	11	1	20	1	83	27	45	8
11	Assessment_009	108.00	11.00						31	0	7	34	96	25	6		0	0
12	Assessment_010	294.00	69.00	79.00	78.00	68.00	85	26	89	84	95	35	13	13	83	57	72	3
13	Assessment_011	214.00	72.00	29.00	37.00	76.00	2	41	14	0	89	48	37	100	97	54	4	3
14	Assessment_012	316.00	85.00	74.00	73.00	84.00	55	58	97	10	100	2	37	100	99	47	82	4
15	Assessment_013	172.00	40.00	56.00	48.00	28.00	63	86	29	18	16	13	48	1	48	98	82	5
16	Assessment_014	175.00	25.00	48.00	59.00	43.00	71	86	60	5	18	46	58	33	29	32	82	0
17	Assessment_015	116.00	26.00	24.00	32.00	34.00	2	41	8	0	8	76	3	6	48	41	8	9
18						0	2	7	17	0	100	66	58	100	97	99	0	37
19						0	49	86	64	5	85	43	58	89	15	84	39	19
20						0	84	41	18	73	94	24	58	36	83	57	41	23
21						0	78	74	75	18	85	19	28	25	48	6	82	11
22						0	35	26	37	1	34	56	58	33	15	15	82	0
23						0	84	58	0	10	85	91	28	61	97	84	77	17
24	Assessment_022	169.00	26.00	50.00	56.00	37.00	55	26	34	18	86	57	37	1	48	28	72	0
25	Assessment_023	167.00	39.00	44.00	44.00	40.00	80	58	68	18	25	6	48	70	29	43	56	5
26	Assessment_024	203.00	52.00	60.00	51.00	40.00	80	14	70	44	63	31	28	78	6	97	66	13
27	Assessment_025	127.00	33.00	29.00	31.00	34.00	15	26	64	18	21	52	9	61	15	34	59	21
28	Assessment_026	118.00	29.00	30.00	30.00	29.00	71	86	46	29	29	21	5	18	48	23	82	4
29	Assessment_027	183.00	43.00	28.00	51.00	61.00	2	3	50	1	15	54	68	25	97	3	27	0
30	Assessment_028	138.00	29.00	37.00	40.00	32.00	17	3	44	0	9	7	84	1	6	78	59	5
31	Assessment_029	136.00	45.00	25.00	22.00	44.00	2	41	42	0	6	26	13	52	67	46	0	4
32	Assessment_030	158.00	30.00	42.00	48.00	38.00	17	26	13	29	72	48	58	1	15	79	36	5
33	Assessment_031	251.00	60.00	71.00	66.00	54.00	85	7	75	29	95	41	13	52	67	33	82	60

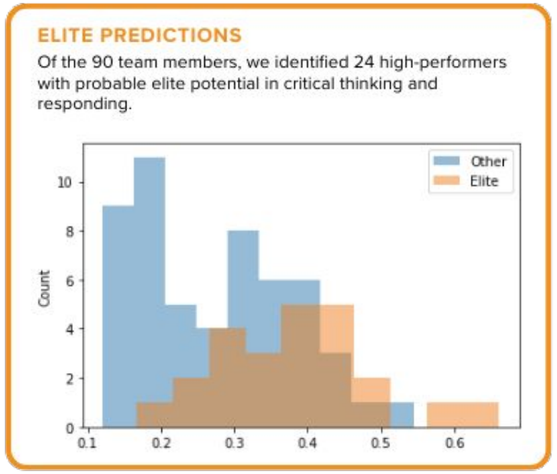
How likely is someone to succeed in the training

For Selection:

- Maximizes the probabilities that people excel in the training

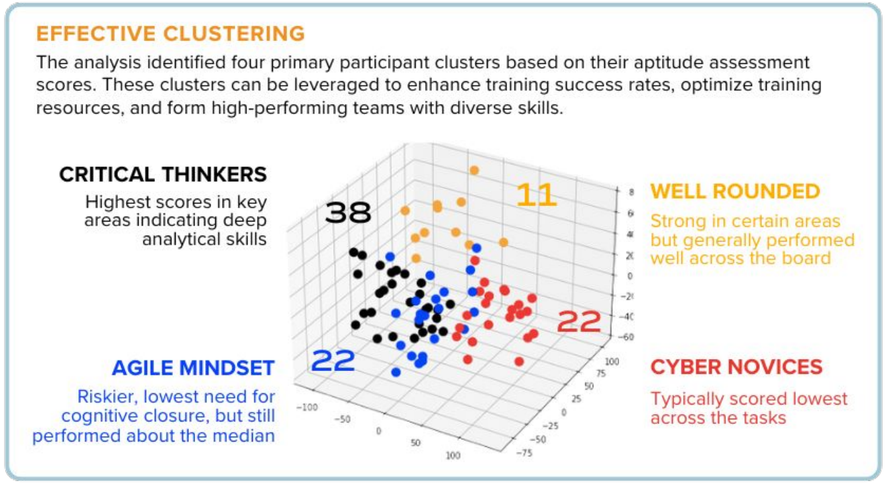
Additional Analysis

Score Analysis - Data Driven Insights



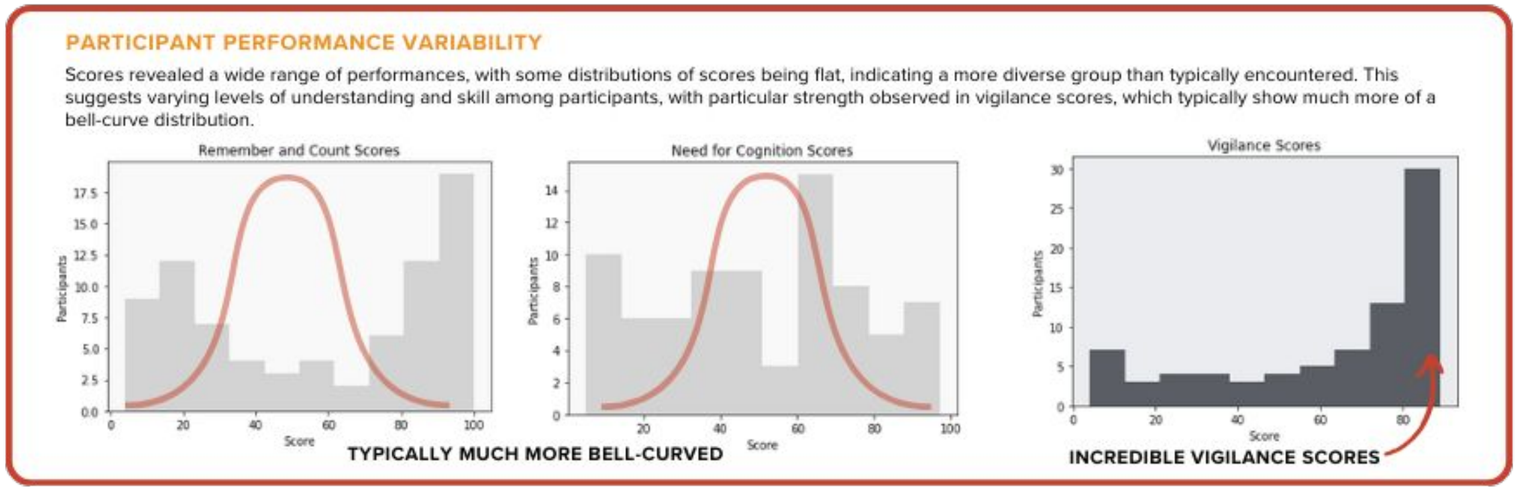
Elite Predictions
Identifies individuals with high potential in critical thinking and rapid response—key traits for mission-critical cyber roles.

Why it matters:
Supports early identification of elite performers, enabling better workforce allocation, succession planning, and reduced training time for high-impact roles.



Effective Clustering
Groups individuals into four distinct cognitive clusters based on problem-solving style and decision-making tendencies.

Why it matters:
Enables strategic team composition and talent alignment across Offensive, Defensive, and Analytical mission areas—building cognitively diverse and high-performing units.

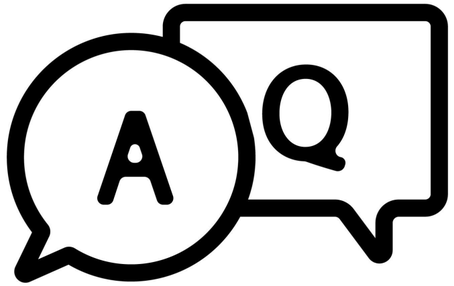


Team Member *(Participant)* **Performance Variability**
Reveals wide variability in vigilance, memory, and cognitive drive—surfacing strengths and developmental gaps across a cohort.

Why it matters:
Provides insight into readiness gaps and outlier strengths, informing targeted upskilling and helping avoid misaligned assignments that compromise mission effectiveness.

HAYSTACK SOLUTIONS
Pinpoint Cyber Genius

Thank you for the opportunity to present today.



Questions & Discussion

We welcome your insights, questions, and feedback.

Advancing Mission Readiness Through Cognitive-Based Workforce Solutions

YOUR PARTNER IN STRENGTHENING THE NATIONAL CYBER WORKFORCE

Crystal Hartman, CEO

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crystal@haystacksolutions.com

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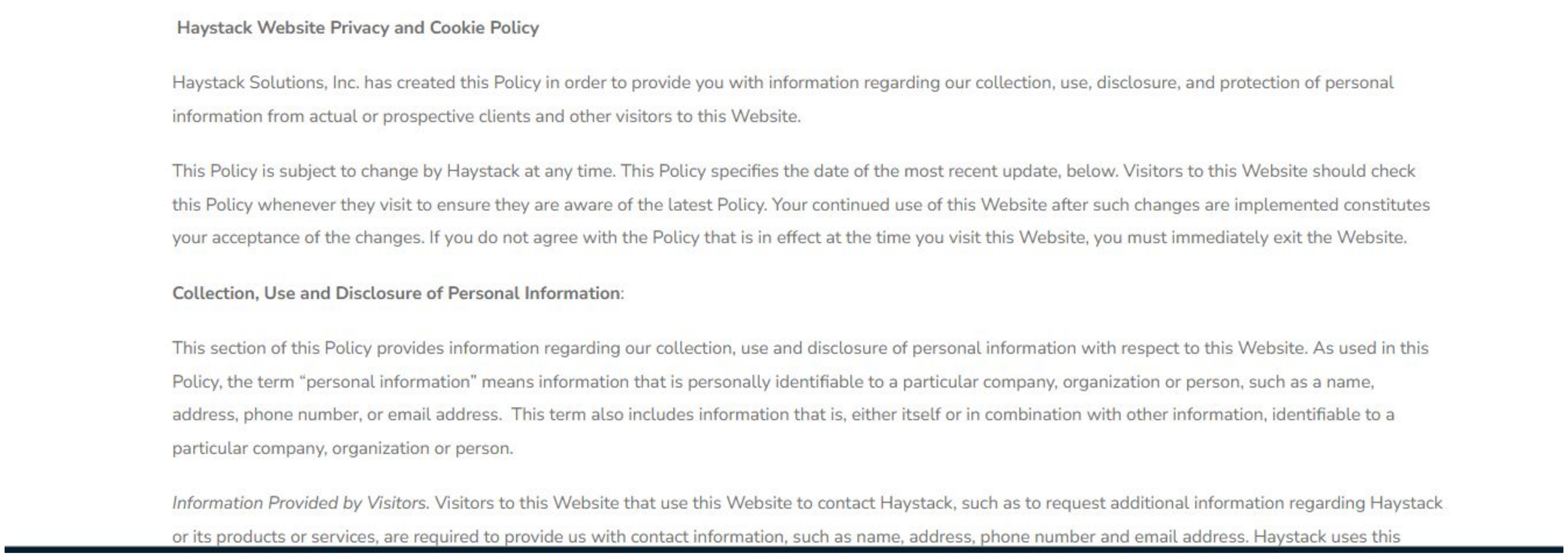

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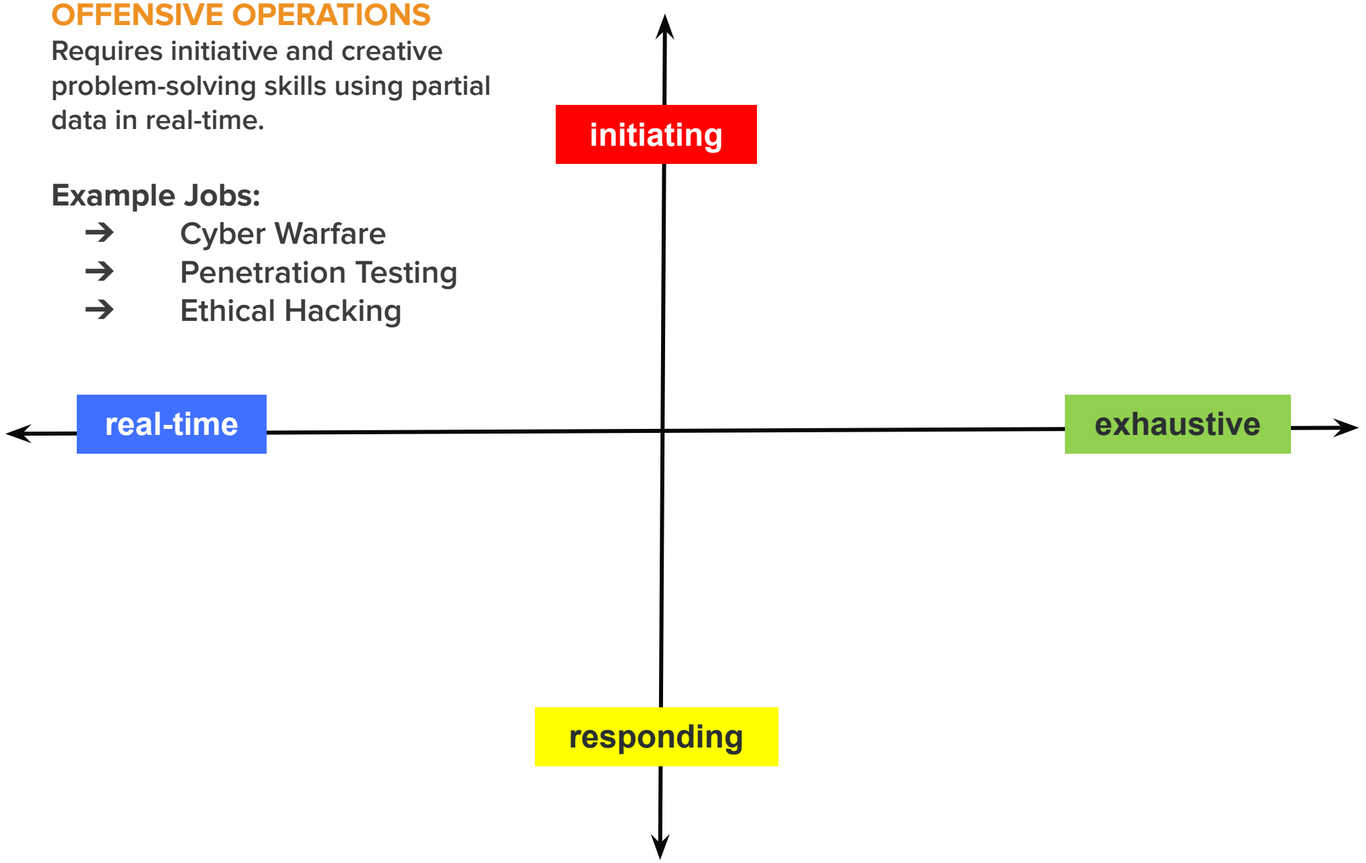
OFFENSIVE OPERATIONS

Cognitive Disposition:
OFFENSIVE OPERATIONS
Requires initiative and creative problem-solving skills using partial data in real-time.

Example Jobs:

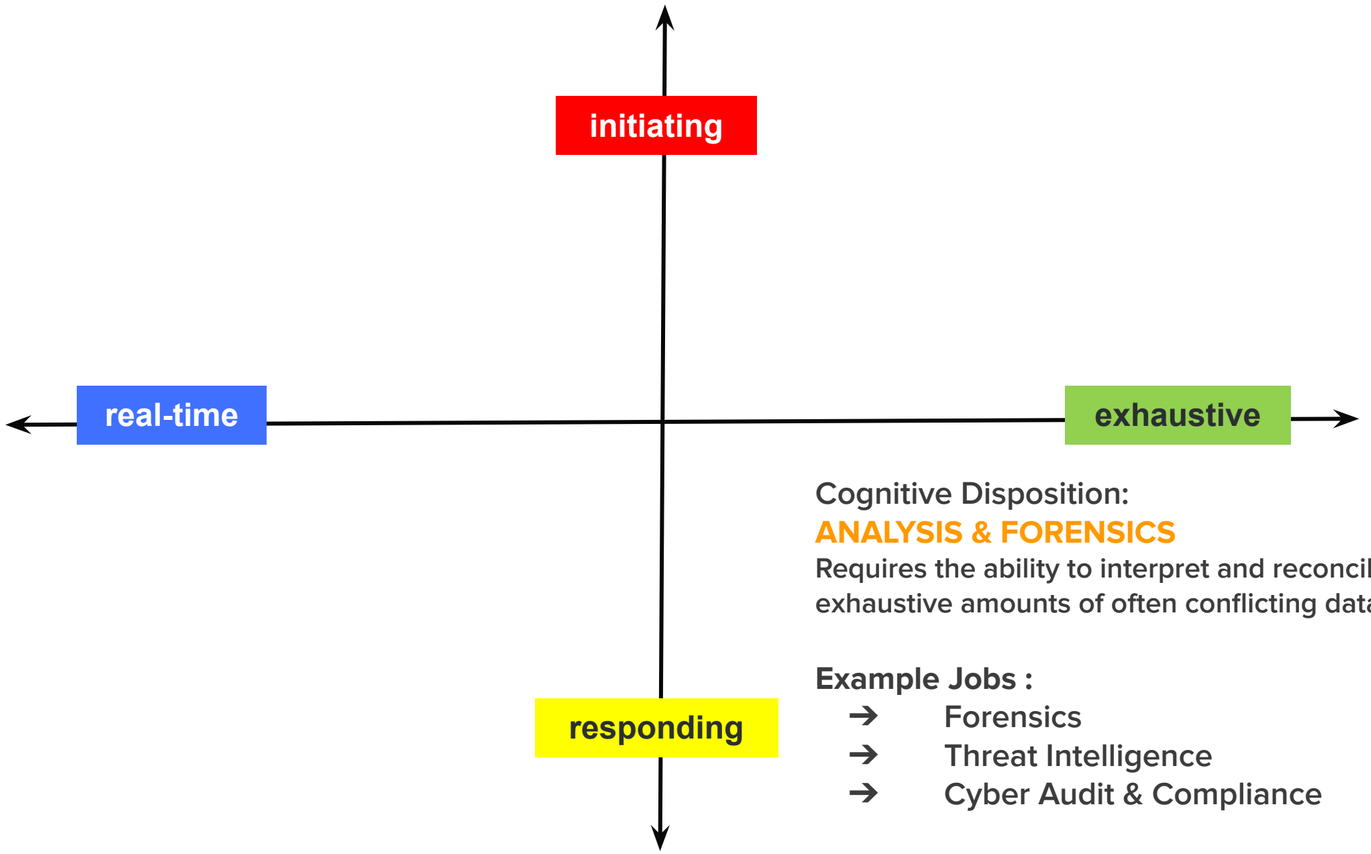
- ➔ Cyber Warfare
- ➔ Penetration Testing
- ➔ Ethical Hacking



Click on any of the below links to visit the NICE Framework Work Role Page:

All-Source Collection Management
All-Source Collection Requirements Management
Partner Integration Planning
Cyberspace Operations
Cyber Operations Planning

FORENSICS & ANALYSIS



Cognitive Disposition:
ANALYSIS & FORENSICS
Requires the ability to interpret and reconcile exhaustive amounts of often conflicting data

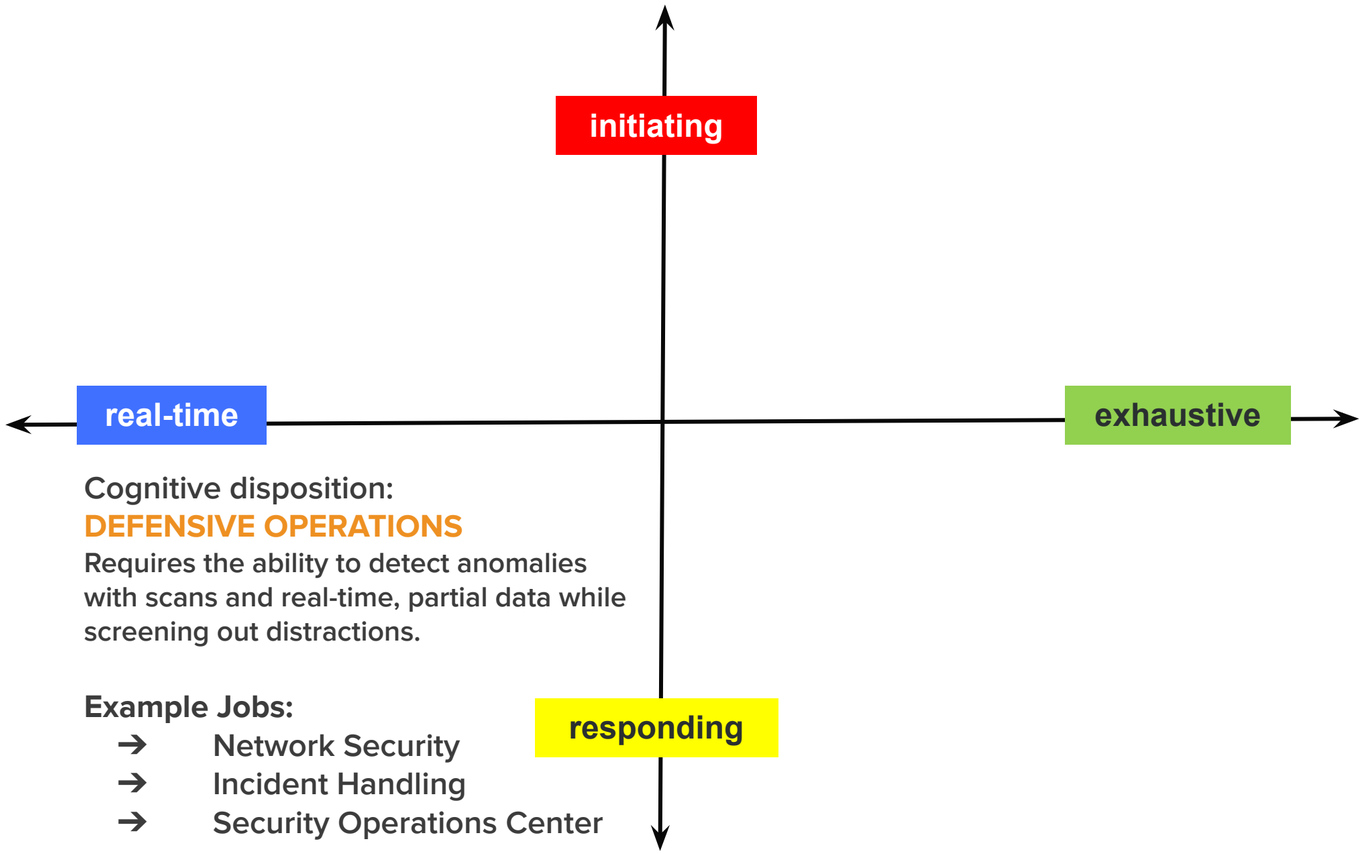
Example Jobs :

- ➔ Forensics
- ➔ Threat Intelligence
- ➔ Cyber Audit & Compliance

Click on any of the below links to visit the NICE Framework Work Role Page:

All-Source Analysis
Program Manager
Infrastructure Support
Exploitation Analyst
Multi-Disciplined Language Analyst
Vulnerability Analysis
Target Network Analyst
Threat Analyst
Data Analysis
Systems Security Analysis
Insider Threat Analysis
Product Support Manager
Cybercrime Investigation
Cyber Intelligence Planning

DEFENSIVE OPERATIONS



Cognitive disposition:
DEFENSIVE OPERATIONS
Requires the ability to detect anomalies with scans and real-time, partial data while screening out distractions.

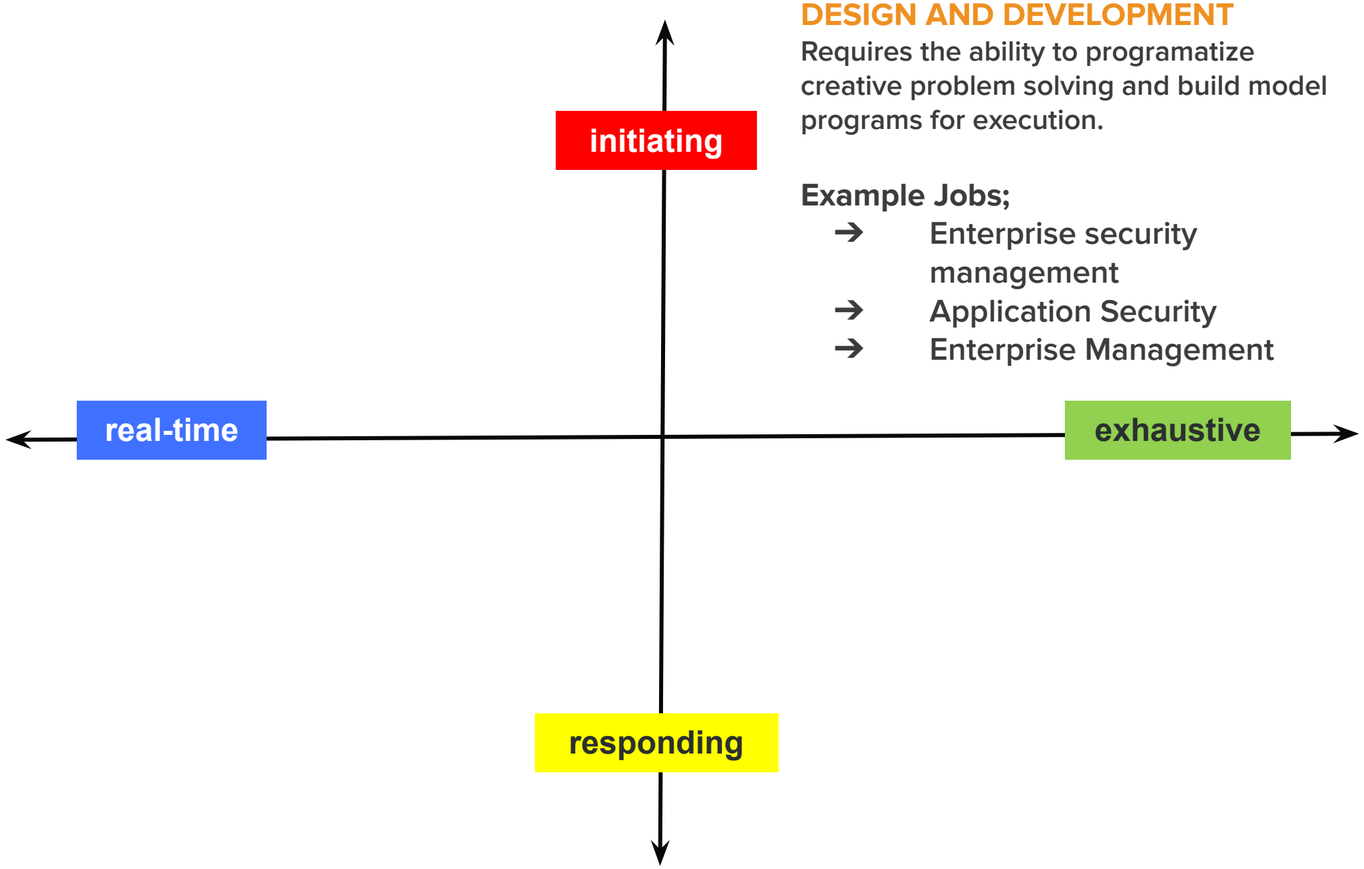
Example Jobs:

- ➔ Network Security
- ➔ Incident Handling
- ➔ Security Operations Center

Click on any of the below links to visit the NICE Framework Work Role Page:

Network Operations
Technical Support
Digital Forensics
Vulnerability Assessment Analyst
Defensive Cybersecurity
Incident Response
Infrastructure Support
Digital Evidence Analysis

DESIGN & DEVELOPMENT



Cognitive Disposition:
DESIGN AND DEVELOPMENT
Requires the ability to programatize creative problem solving and build model programs for execution.

Example Jobs;

- ➔ Enterprise security management
- ➔ Application Security
- ➔ Enterprise Management

Click on any of the below links to visit the NICE Framework Work Role Page:

Technology Portfolio Management
Security Control Assessment
Cybersecurity Workforce Management
Cybersecurity Policy and Planning
System Authorization
Secure Project Management
Systems Security Management
Technology Program Auditing
Cybersecurity Architecture
Executive Cyber Leadership
Cyber Legal Advisor
Enterprise Architecture
Secure Software Development
Communications Security (COMSEC) Manager
Secure Systems Development
Software Security Assessment
Cybersecurity Curriculum Developer
Cyber Instructor
Systems Requirements Planning
Systems Testing and Evaluation
Technology Research and Development
Systems Administration
Knowledge Management
Database Administration