

Building Reality & Rigor Into Skills-First Initiatives

Presented By:

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The CompTIA logo is displayed in white text on a red square background.The logo for GIAC CERTIFICATIONS features the word "GIAC" in large, bold, yellow capital letters, with the word "CERTIFICATIONS" in smaller, white, bold, capital letters directly below it.The FITSI logo consists of a stylized graphic above the text "FITSI". The graphic is composed of a blue shape on the left and a red shape on the right, both curving upwards and meeting at a point, resembling a stylized 'F' or a shield. The text "FITSI" is in bold, blue, capital letters.

What Is the C3

- Coalition of Cybersecurity Certification Bodies
 - Purpose: Why Certification Matters
 - Advocate for Cybersecurity – Capitol Hill / Directives
 - Mapping of Certifications to Frameworks
 - Presentations
 - Research Projects / Content
 - One Means to Reach Out to Cyber Cert Bodies

■ Members

- CertNexus
- CompTIA
- FITSI
- IAPP

- ISACA
- ISC2
- SANS | GIAC



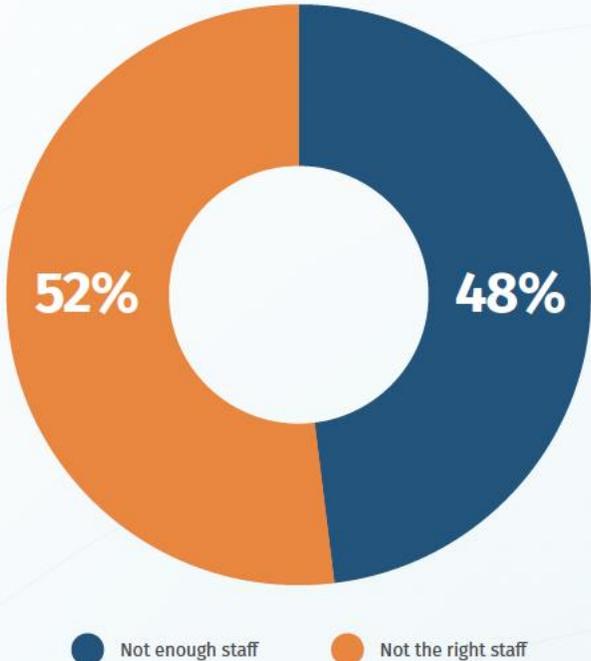
Skills Based Hiring in Cyber

- Why Are We Seeing This Movement
 - Misalignment with Job Requirements & Skills
 - Past Requirements Focused on Knowledge and Not on Skills
 - Industry is Becoming More Work Role Focused
 - No One Person is a Cybersecurity Expert
 - Why We Are Here This Week @ NICE
 - Industry is Becoming More Standardized / Mature
 - Directives, Audit, Cyber Insurance are Driving This Direction
- What We Are Seeing Out of Our Workforce Study – Just Released
 - Built for Cyber Talent Manager – Security Team Leads & HR Managers
 - Focused on Hiring & Retainment of the Workforce

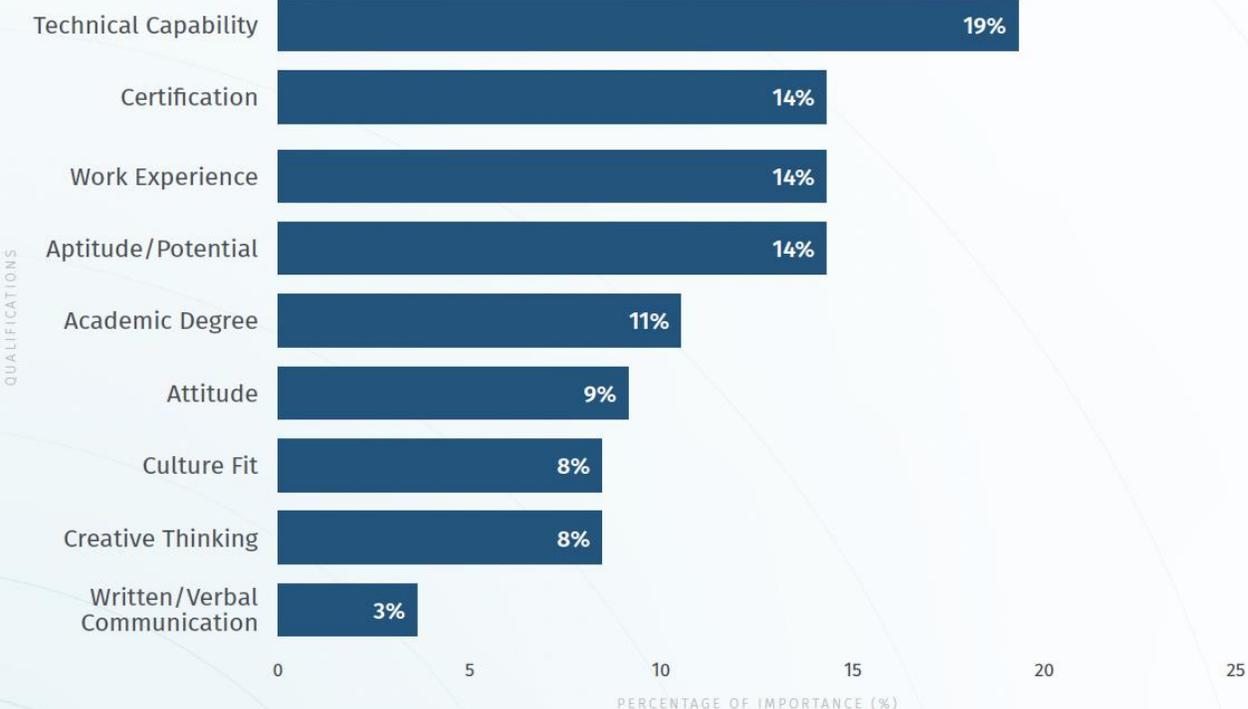


Data from the Workforce Study

Biggest Staffing Concern: Quantity vs. Fit

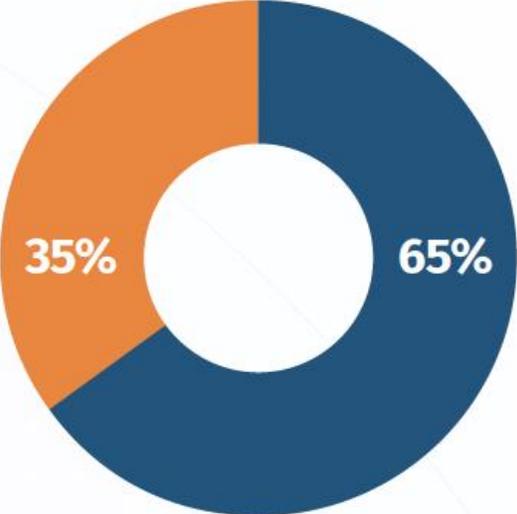


Ranking Hiring Qualifications: All Regions



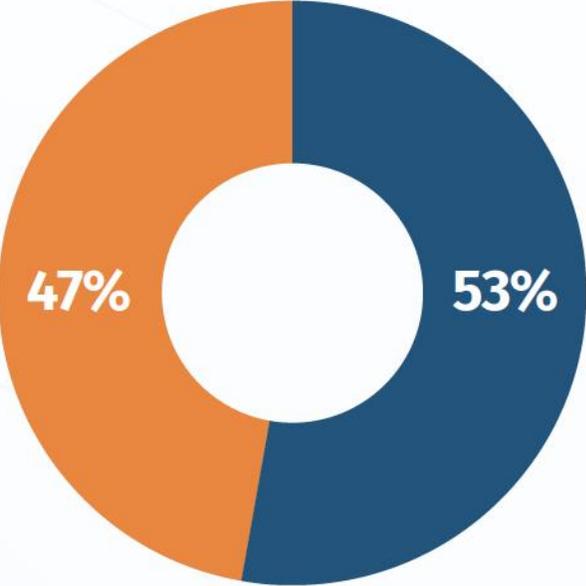
Data from the Workforce Study

Do You Need Skills Validation for Client Requirements?



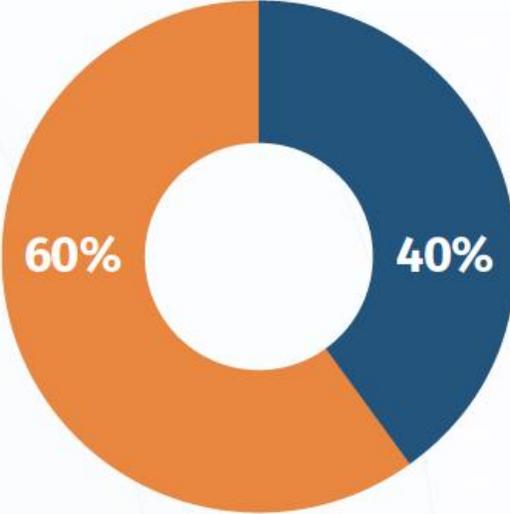
● Yes ● No

Do You Use the NICE or ECSF Framework for Developing Job Requirements?



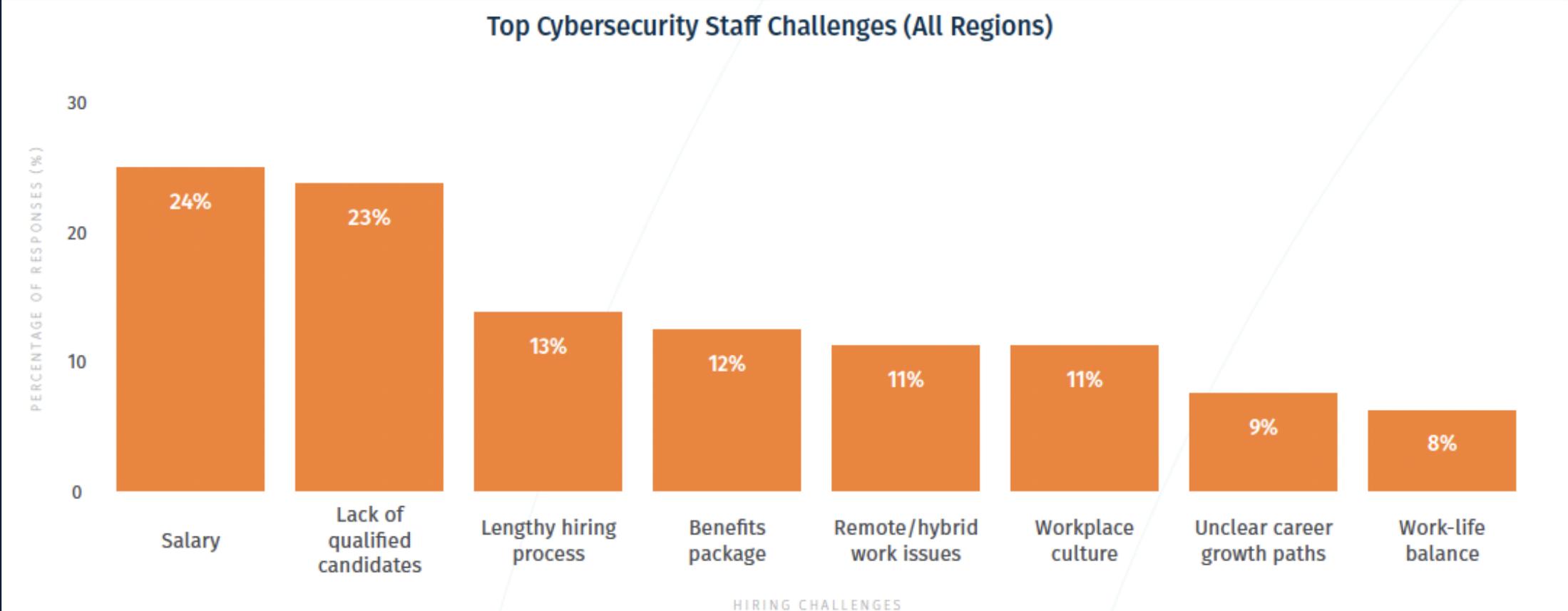
● Yes ● No

Are Privacy, Compliance, and Risk Directives Affecting Hiring?

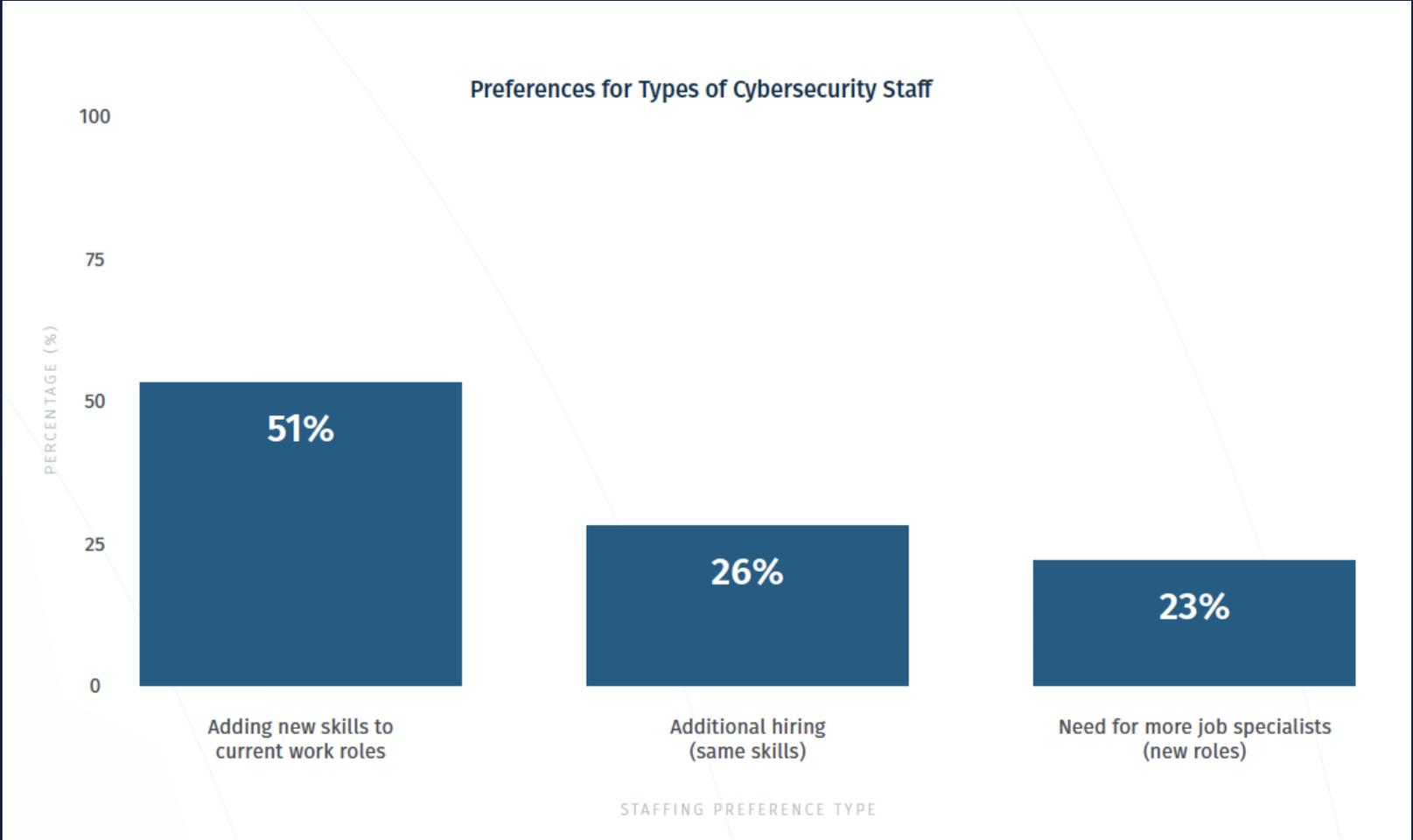


● Yes ● No

Data from the Workforce Study



Data from the Workforce Study



SANS Workforce Suggestions

- Embrace Skills Based Hiring
- Adopt Workforce Frameworks
- Prioritize Skill Development over Headcount Expansion
- Develop Internal Talent Pathways
- Refine Job Requirements
- Expand Talent Sources
- Invest in Recognized Training & Certification Programs
- Secure Executive Buy-In / Sponsorship



Skills Validation Solutions

- Using Real World Practitioners to Develop Content / Examinations
 - Takes a Village to Build a Certification
- Updating Material on a Constant Basis
- Lab Based Testing Scenarios
 - More Than One Answer – VM Ware Box
- Certification Is Only One Piece to Solution
 - Work Experience
 - Internal Training / Mentorship
- Content Free Resources on Building the Workforce
 - Providing Solutions on What Others Are Doing
- Continuous Education to Maintain Skills
- Market Drives Our Business – Die Otherwise

The logo for CompTIA, featuring the word "CompTIA" in white text on a red rectangular background.



About us

CompTIA plays a critical role in the global technology ecosystem. We are the largest vendor-neutral credentialing organization for technology workers. With technology a driving force across every industry sector and business function in the world, CompTIA also stands at the forefront of supporting tech-adjacent job roles with digital fluency training and certification.

- #1 Vendor neutral tech certifications
- #2 IT certifying body in the world

4 million
Certifications
Awarded

▪ 230+
countries

- With CompTIA certification holders

- Communities, Committees, Interest Groups and Advisory Councils

C-level executives, HR professionals, managers, and techs have questions

- How do I keep pace with rapidly-changing tech?
- What are the best ways to validate knowledge?
- How do I align skillsets to essential job roles?
- How do I keep my people current?

Degrees

**Validated
experience**

Training

Certification

Interviews



URL: <https://www.comptia.org/content/research/workforce-and-learning-trends-2025>

Trends



1

Pace of technological change leads to new wave of skill shortages and gaps

2

Validating knowledge, skill and task (KST) grows in importance

3

Staff empowered to make own training decisions, for better or worse

4

Human-AI interactions challenge legacy approaches to learning and development

5

Essential digital fluency skills shape the future of work

<https://www.comptia.org/content/research/workforce-and-learning-trends-2025>



Validating knowledge, skill and task (KST)

97%

Net importance¹ of validating technical learning and skills attainment through industry-recognized certification assessments

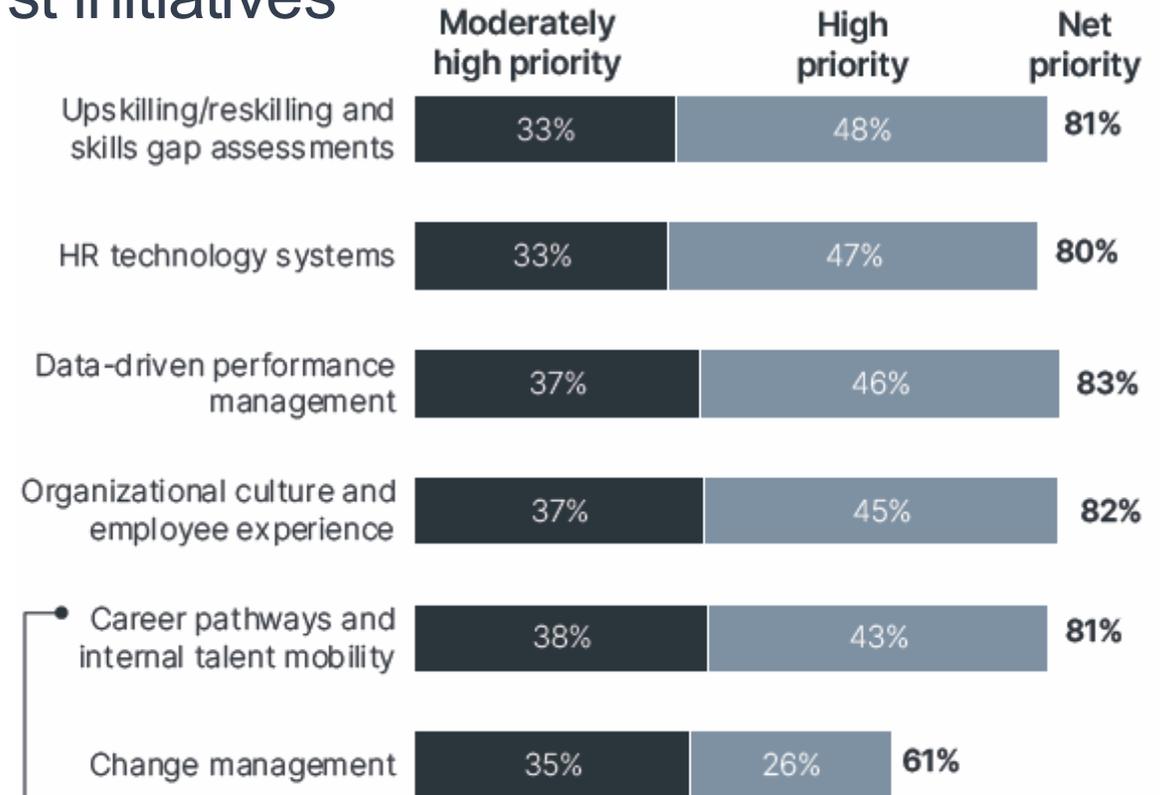
93% Net rating of industry-recognized certifications factoring into the hiring process for tech job candidates

Top reasons HR reports use of industry-recognized certifications

- #1** Alignment to specific job roles, along with associated knowledge, skill and task (KST)
- #2** Meet regulatory requirements or compliance needs
- #3** Helps to expand candidate pool beyond traditional 4-yr degrees
- #4** Industry-recognized certifications signal “stamp of approval” to employees and customers **[#1 among firms with a high skills dev. prioritization]**
- #5** Time savings in skills-based hiring evaluations of candidates

Intended and un-intended effects of skills-first initiatives

- Greater focus on education pathways
- Need for scalable education
 - Cost-efficient
 - Data-driven
 - Adaptive
- Leaders and educators are asking the following questions:
 - How do you prove achievement?
 - What are the indicators of achievement?



It follows that companies placing the highest priority on skills development have higher rates of prioritization in leveraging career pathways for internal talent mobility, and are investing more heavily in upskilling and reskilling:

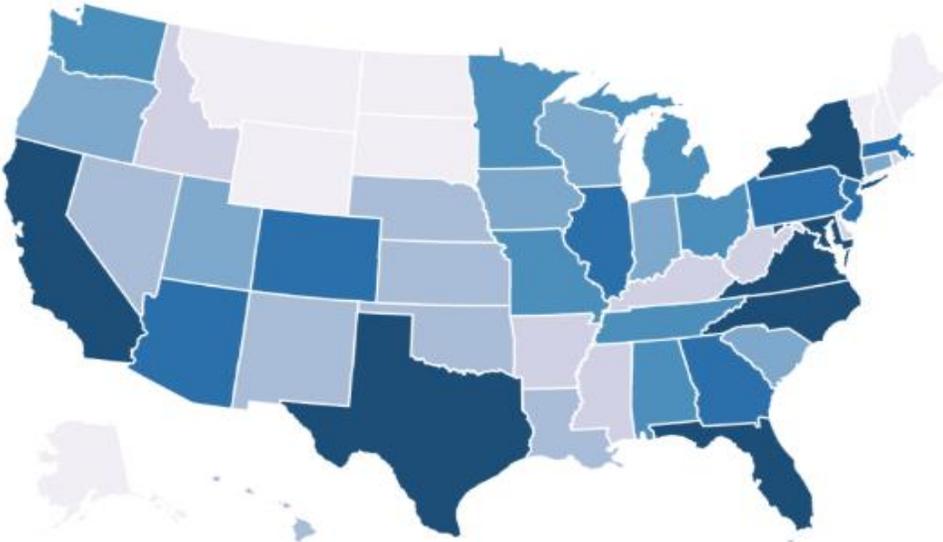
91% Career pathways and internal talent mobility
87% Upskilling/reskilling and skills gap assessments

<https://www.comptia.org/content/research/workforce-and-learning-trends-2025>

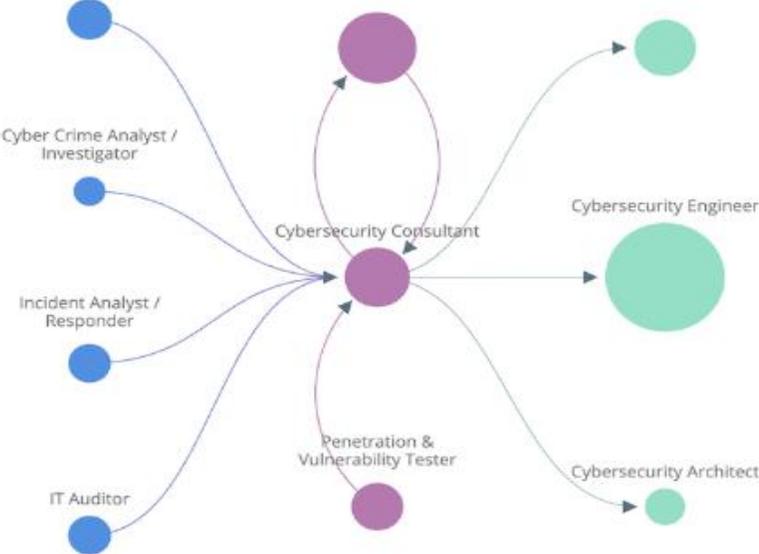
Visualizing Skills-First

To help close the cybersecurity skills gap, CyberSeek provides detailed, actionable data about supply and demand in the cybersecurity job market.

Interactive Map



Career Pathway



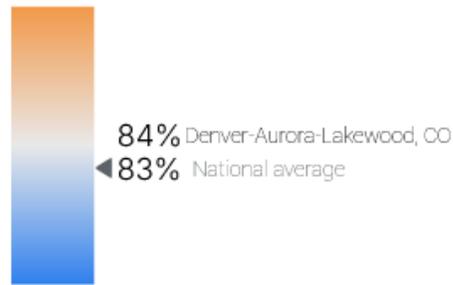
<https://www.cyberseek.org>

Cyberseek – Metro Heat Map

Denver-Aurora-Lakewood, CO

SUPPLY/DEMAND RATIO ⓘ

DENVER-AURORA-LAKEWOOD, CO, 2025



TOTAL CYBERSECURITY JOB OPENINGS ⓘ

DENVER-AURORA-LAKEWOOD, CO, 2025

9,286



TOTAL EMPLOYED CYBERSECURITY WORKFORCE ⓘ

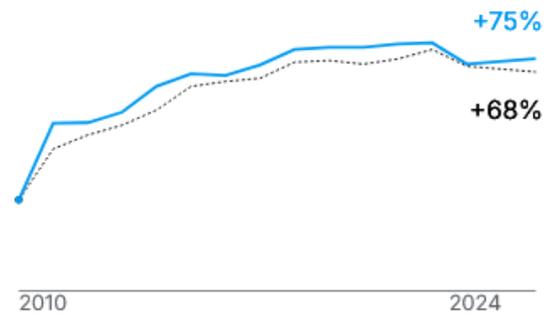
DENVER-AURORA-LAKEWOOD, CO, 2025

41,787



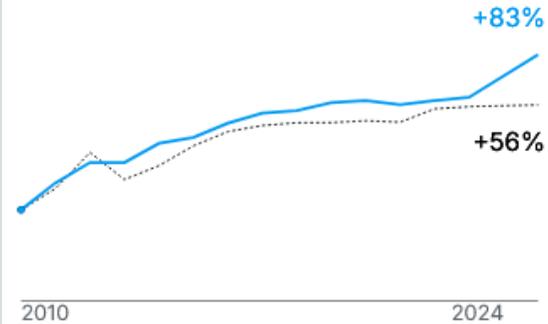
HISTORICAL CYBERSECURITY JOB OPENINGS ⓘ

NATIONAL AVG
DENVER-AURORA-LAKEWOOD, CO



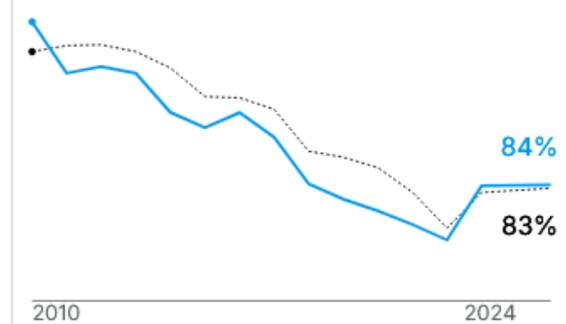
HISTORICAL EMPLOYED CYBERSECURITY WORKFORCE ⓘ

NATIONAL AVG
DENVER-AURORA-LAKEWOOD, CO



HISTORICAL SUPPLY/DEMAND FOR CYBERSECURITY [BETA] ⓘ

NATIONAL AVG
DENVER-AURORA-LAKEWOOD, CO



Cyberseek – Metro Heat Map

JOB OPENINGS BY NICE CYBERSECURITY WORKFORCE FRAMEWORK CATEGORY ⓘ



Notes: The NICE Workforce Categories are not mutually exclusive- one job could perform multiple roles within the framework. The data shown here are not intended to be aggregated.

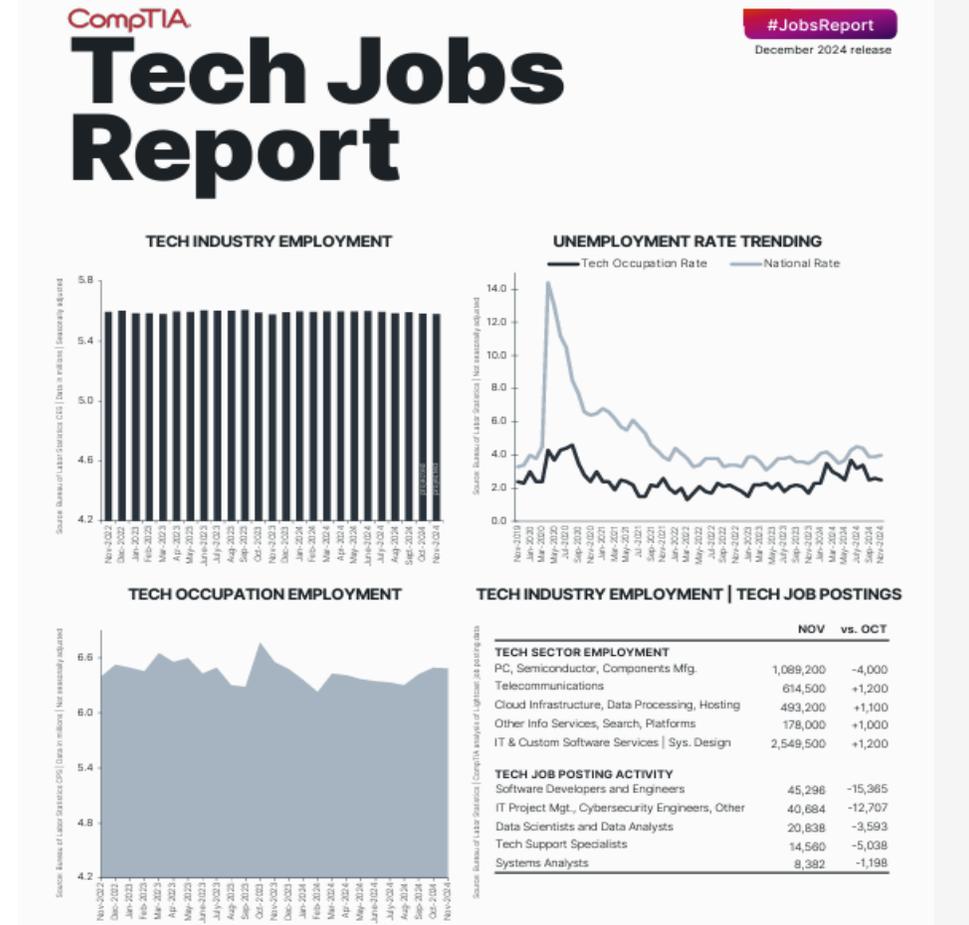
CERTIFICATION HOLDERS / OPENINGS REQUESTING CERTIFICATION ⓘ



Visualizing Skills-First

CompTIA's Tech Jobs Report provides a monthly snapshot of information technology (IT) employment trending at the occupation and industry levels. CompTIA's report coincides with the U.S. Bureau of Labor Statistics Employment Situation (#JobsReport) monthly labor market release. Analysis includes historical trending, employer hiring activity at the state and metro area level, unemployment rates, employer demand for emerging tech skills and more.

CompTIA's Tech Jobs Report is published the first Friday of each month.

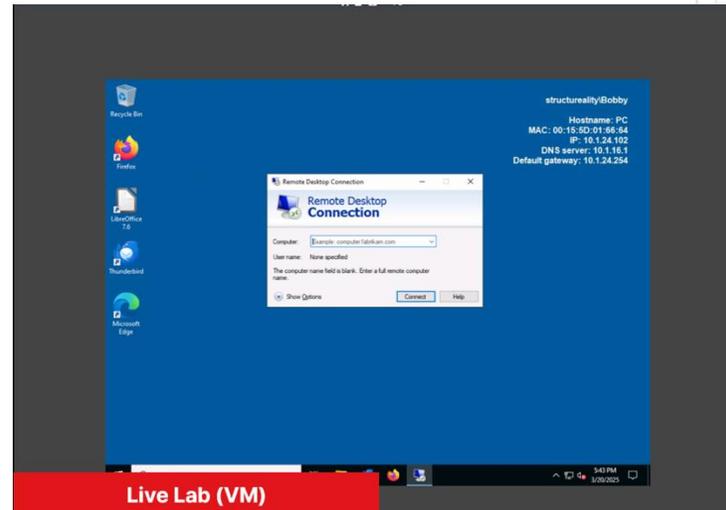


<https://www.comptia.org/content/tech-jobs-report>

Practicing knowledge, skill and task (KST)

CompTIA CertMaster content features various tools to help students practice skills they will need in various job roles.

- Instructional Content
 - Text
 - Images
 - Video
 - Interactive Examples
- Interactive Activities
- Labs (Simulations)
- Live Labs (VM Labs)
- Assessments



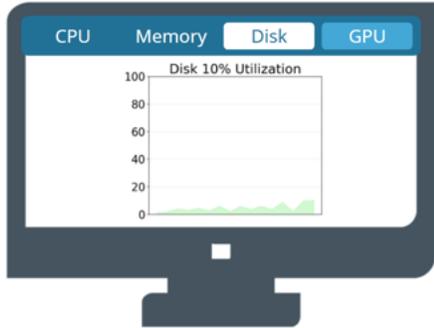
Task Manager Process Monitoring

Use the toggle switches to turn processes "on" or "off." Observe the changes in CPU, Memory, and Disk usage on the graph by using the buttons.

Notepad
 On Off

Browser
 On Off

Video Editing Software
 On Off



with negligible CPU, memory, and disk usage.
memory usage, increasing with open tabs or heavy content like videos.
k, memory, and GPU usage during rendering or exporting.
memory resources unless syncing large files.

This block shows a 'Task Manager Process Monitoring' interface. It features three toggle switches for 'Notepad', 'Browser', and 'Video Editing Software', all currently set to 'On'. To the right is a monitor displaying a graph titled 'Disk 10% Utilization' with a y-axis from 0 to 100. The graph shows a small green area at the bottom, indicating low disk usage. Below the monitor, there is a text box explaining that processes like Notepad, Browser, and Video Editing Software have negligible CPU, memory, and disk usage, while tasks like rendering or exporting videos increase memory and GPU usage.

CompTIA

Instructions Resources

achieve the maximum score if you keep hints hidden.

Show hints

Check your work

Verify that you have completed the required tasks:

1. On the ADMIN machine, verify that you have established a Windows Remote Assistance - Helping Start session window, showing the LAPTOP desktop.
2. Optionally, practise using the chat feature of Remote Assistance, and operating the user desktop.

When you have checked your work, select the Evaluate button to access and score the task.

Outline

Showing All Resource Types (Default)

- 4.3.9 Lab: Troubleshoot GPU
- 4.3.10 Lesson Review
- 4.4 Lab: Resolve PC Hardware Support Tickets
- 4.5 Lab: Troubleshoot a Malfunctioning Computer
- 4.6 Additional Resources
 - 4.6.1 BIOS and UEFI
 - 4.6.2 Troubleshooting Example: Video Issues
 - 4.7 Module Quiz
 - 4.8 Checkpoint Review
- 5.0 Comparing Local Networking Hardware
- 6.0 Configuring Network Addressing and Internet Connections
- 7.0 Supporting Network Services
- 8.0 Summarizing Virtualization and Cloud Concepts
- 9.0 Supporting Mobile Devices
- 10.0 Supporting Print Devices
- 11.0 Managing Support Procedures
- 12.0 Configuring Windows

Checkpoint Review

4.8

How: resources/exams/cp_checkpoint_review_core1_4_exam.xml
Demo: MTTMQW3D3D-NC44

Information

- No time limit
- 20 questions
- 80% passing score

Features

- Questions are presented in original order.
- You can skip questions and return to previous questions.

After Finishing

- You can view your score in the score report.
- You can receive feedback for all questions by clicking "View results by: Individual Responses" on the score report screen.
- If you did not feel comfortable with the concepts and tasks in the test, consider re-studying the prerequisite material.

Multilevel Assessments

This block shows a 'CompTIA' interface for a 'Checkpoint Review'. It includes an 'Outline' section with a list of resources, where '4.8 Checkpoint Review' is highlighted with a red arrow. To the right is a 'Checkpoint Review' section with a score of 4.8 and a 'How' link. Below this are sections for 'Information', 'Features', and 'After Finishing', each with a list of details. A red banner at the bottom reads 'Multilevel Assessments'.

Why Accreditation Matters

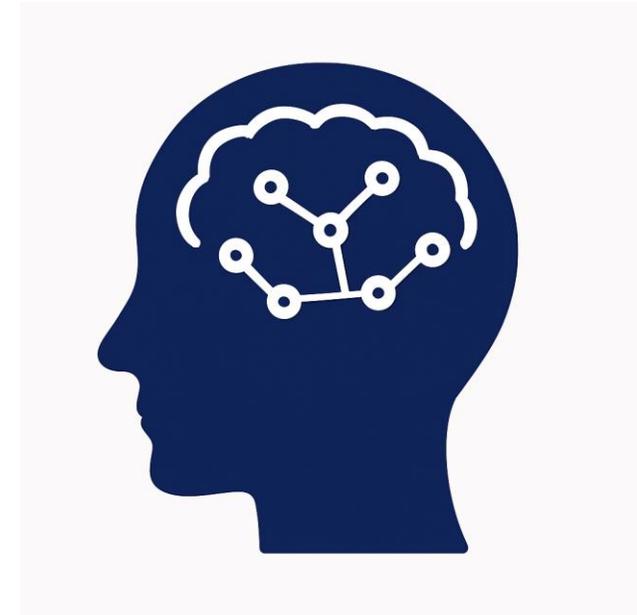
- Best practices of certification in all industries
 - Adheres to testing standards for educational and psychological testing
 - ISO/IEC 1702:2012 international standards on accreditation
 - ANSI / ANAB Accredited
 - American National Standards Institute
 - ANSI National Accreditation Board
- What Does Certification Accreditation Do?
 - Is built to show validity, reliability and fairness in the testing process
 - Validity – Does it map to the actual thing being measured?
 - Reliability – Would the exam taker get roughly the same results if they took the exam the same two distinct times
 - Fairness – Is everyone treated the same way in terms of the certification processes?



Why Certifications Matter

■ Student Retention

- Studies note certified holders retain at least 50% more material
- Difference of 10-30% retention vs. over 70% on average
- Back-up data from New York Times / Science.com
- Testing Effect – testing retention different than studying
- Testing requires memorization on-demand
- Skills/Knowledge remains long term
- Brain builds connections



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INSTITUTE

HELPING SECURE THE NATION'S FEDERAL INFORMATION SYSTEMS

How Exams Are Built

- At a High Level
 - Scheme Committee
 - Defines Domains and Objectives
 - Job Task Analysis
 - Survey of Subject Matter Experts on Importance, Criticality, and Frequency of Domains and Objectives
 - Cut Score Studies
 - Uses Subject Matter Experts to determine passing score of minimally qualified candidate (or certification holder)



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HELPING SECURE THE NATION'S FEDERAL INFORMATION SYSTEMS

How Exams Are Built

- At a More Detailed Level

- Types of questions:

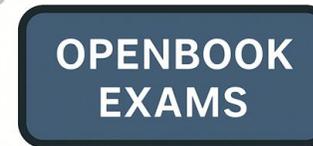
- Recall – Definition, facts, memorization, lookup
- Application – of knowledge... using a tool to solve a problem
- Analysis – Higher cognitive level... more in-depth problem solving

- Openbook Exams

- A little more real world
- A little more in-depth vs memorization

- Who develops the content?

- Technical Subject Matter Experts who are also seasoned in exam development.



Content



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How Exams Are Built

■ Goals of a Great Certification

- Content based upon certification objectives
- Relevant content
- Seasoned practitioners avoid trivia and keep it relevant
- We avoid “trick questions”
- Minimize word walls where we can
- We don’t want anyone to miss a question because they don’t understand what they were asked.
- Make sure it follows best practices of certifications
 - ISO 17024



Q&A



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