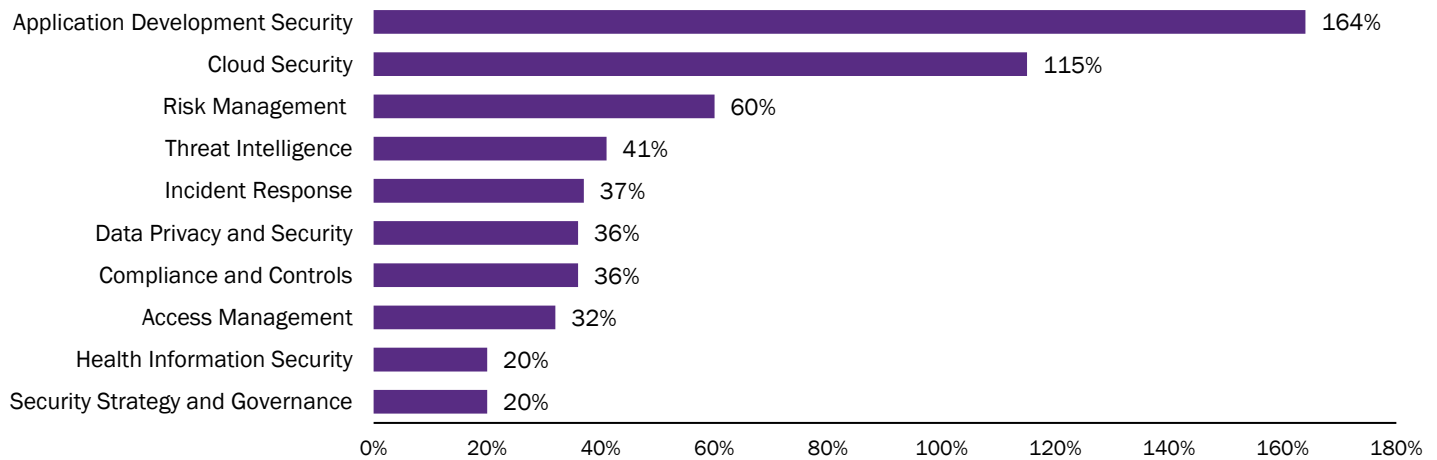


## Protecting Digital Infrastructure: Securing Talent in Cybersecurity

There is an unprecedented demand for cybersecurity professionals across all industries. Frequent threats to digital infrastructure highlight a critical need for proactive strategies to protect that infrastructure. Between October 2019 and September 2020, there were more than 520,000 cybersecurity job openings in the United States.<sup>1</sup> Many of these jobs remain unfilled as employers struggle to find workers with the skills they need to address today's cybersecurity challenges.

### Five-Year Projected Growth in Cybersecurity Skill Areas<sup>2</sup>



Application development security and cloud security are projected to be the fastest-growing skill areas in cybersecurity and are integral components of a job related to building a secure digital infrastructure. The most common occupations that integrate these skills include Software Developer, Cybersecurity Engineer, Systems Engineers, and Cloud Architect.

Risk management and threat intelligence skills are also critical to securing digital infrastructure, and are projected to grow by 60% and 41% over the next five years respectively. These skills are important for roles such as Cybersecurity Analyst, Security Intelligence Analyst, and Vulnerability Analyst.<sup>3</sup> These occupations often do not require advanced college degrees or extensive experience, which makes registered apprenticeships a great solution to train workers in these skills.

Roles that employ incident response, data privacy and security, compliance and controls, access management, health information security, and security strategy and governance skills include Cybersecurity Analyst, Vulnerability Analyst, Cybersecurity Consultant, Cybersecurity Manager, and Medical Records Technician.

<sup>1</sup> CyberSeek. (n.d.). Cybersecurity Supply and Demand Heat Map. Retrieved January 20, 2021, from: [cyberseek.org/heatmap.html](https://cyberseek.org/heatmap.html).

<sup>2</sup> Protecting the Future: The Fastest Growing Cybersecurity Skills. (2020, November). Burning Glass Technologies. Retrieved from [burning-glass.com/wp-content/uploads/2020/10/Fastest\\_Growing\\_Cybersecurity\\_Skills\\_Report.pdf](https://burning-glass.com/wp-content/uploads/2020/10/Fastest_Growing_Cybersecurity_Skills_Report.pdf)

<sup>3</sup> Ibid.



## Youth Registered Apprenticeship Can Fill the Skills Gap

Registered apprenticeship connects the learning needs of workers to the business needs of employers. Registered apprenticeship integrates on-the-job training and classroom learning to provide apprentices with a stable, well-paying job with opportunities to grow and receive mentorship. Concurrently, employers develop a robust talent pipeline while also filling roles in their workforce. Registered apprenticeship is an ideal solution for entry-level occupations such as Cybersecurity Analyst, Security Intelligence Analyst, and Vulnerability Analyst.

## Registered Apprenticeships Programs Yield a Significant Return on Investment

Employers that sponsor registered apprenticeships can realize significant returns on their investment.

### High employee productivity<sup>4</sup>

Workers are highly skilled in their unique roles from the registered apprenticeship program.

### High employee retention<sup>5</sup>

Nine months after program completion, 91% of apprentices retained employment.

### Reduced recruiting costs<sup>6</sup>

Attrition rates are lower for apprentices compared to employees recruited through other channels.

## Ways to Get Started

The Cybersecurity Youth Apprenticeship Initiative (CYAI) is funded by the U.S. Department of Labor's (DOL) Employment and Training Administration (ETA) Office of Apprenticeship (OA). CYAI promotes sustainable development of cybersecurity apprenticeship programs for youth aged 16–21. The goal of the initiative is to create at least 900 new cybersecurity apprenticeships for youth by 2024.

### INCENTIVE FUNDS

CYAI can provide incentive funds to support your apprentices. There are no restrictions on how to use the funds to improve your program and results.

### CONVENINGS

CYAI can co-sponsor Workforce Solutions Meetings and convene employers and other stakeholders to identify workforce challenges, workforce needs, skill needs, and training needs.

### PRODUCTS

CYAI can develop occupational profiles that detail the knowledge, skills, abilities, and competencies required for entry-level through advanced cybersecurity employment.

### EVENTS

CYAI can sponsor or co-sponsor cybersecurity showcases that bring together teams of technicians, students, mentors, learners, and information technology professionals.

Pursuant to the National Apprenticeship Act, the Department of Labor works to expand opportunities related to apprenticeship programs. This project has been funded, either wholly or in part, with Federal funds from the Department of Labor, Employment & Training Administration under the contract number/work order DOL-OPS-16-A-0012/1605DC-18-F-00060. The contents of this publication do not necessarily reflect the views or policies of the Department of Labor, nor does mention of trade names, commercial products, or organizations imply endorsement of same by the U.S. Government.

<sup>4</sup> Reed, D., Yung-Hsu Liu, A., & Kleinman, K. (2012, July 25). An effectiveness assessment and cost-benefit analysis of Registered apprenticeship in 10 states. Retrieved from [mathematica.org/our-publications-and-findings/publications/an-effectiveness-assessment-and-costbenefit-analysis-of-registered-apprenticeship-in-10-states](http://mathematica.org/our-publications-and-findings/publications/an-effectiveness-assessment-and-costbenefit-analysis-of-registered-apprenticeship-in-10-states).

<sup>5</sup> Business Benefits. (2021). Discover Apprenticeship, U.S. Department of Labor. Retrieved on February 12, 2021 from [nationalapprenticeship.org/business-benefits](http://nationalapprenticeship.org/business-benefits).

<sup>6</sup> Overview of Apprenticeship Program and Intermediaries. (2016, November). Economic and Statistics Administration, Office of the Chief Economist. Retrieved from [apprenticeship.gov/sites/default/files/2019-07/Blue%20Cross%20Blue%20Shield%20Case%20Study.pdf](http://apprenticeship.gov/sites/default/files/2019-07/Blue%20Cross%20Blue%20Shield%20Case%20Study.pdf)

