

# Core Challenges in the Market for Cybersecurity Jobs

**BHEF National Cybersecurity Workforce Summit**

**Matt Sigelman, CEO Burning Glass Technologies**



## Core Challenges for the Cybersecurity Job Market

**Our training systems – both from institutions and employers – are not well set up to provide the cybersecurity talent employers and government need.**

- > **There are significant skill gaps in the cybersecurity job market.**
- > The level of experience and specialized knowledge required in cybersecurity jobs is resulting in supply chain bottlenecks.
- > Ensuring sufficient supply of talent to the market requires the development of better aligned education and training pipelines.

# The Cyber Market: Heavy Demand, Insufficient Supply

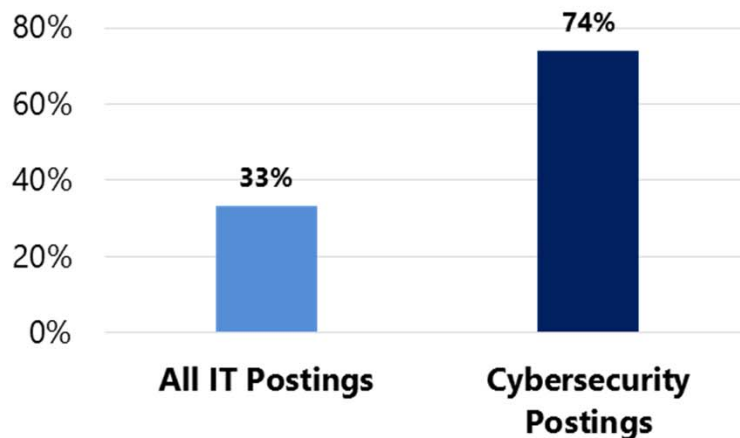
## The Market for Cybersecurity Jobs Is Large and Growing

- In 2013, there were **209,749** postings for cybersecurity-related jobs nationally. **Cybersecurity jobs account for nearly 10% of all IT jobs.**
- Cybersecurity postings have **grown 74%** from 2007-2013. This growth rate is over **2x faster than all IT jobs.**

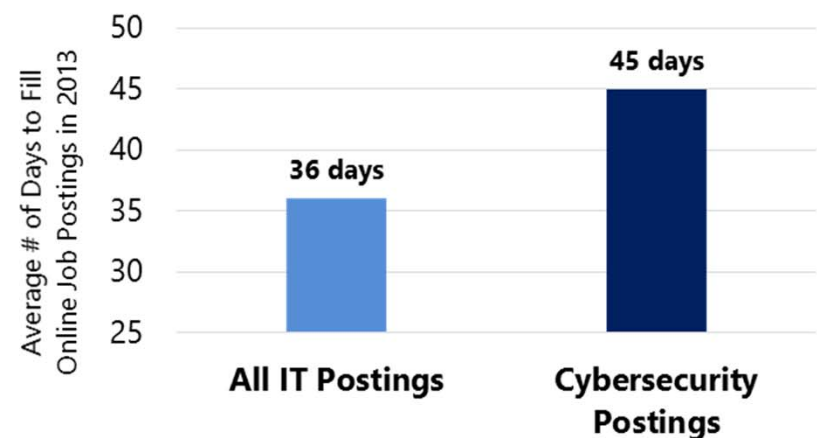
## Demand for Cybersecurity Talent Is Outstripping Supply

- Cybersecurity job postings took **24% longer to fill than all IT job postings and 36% longer than all job postings.**
- The demand for cybersecurity talent appears to be outstripping supply. In the US, employers posted 50,000 jobs requesting CISSP, recruiting from a pool of only 60,000 CISSP holders.

**Growth in Job Postings (2007-2013)**



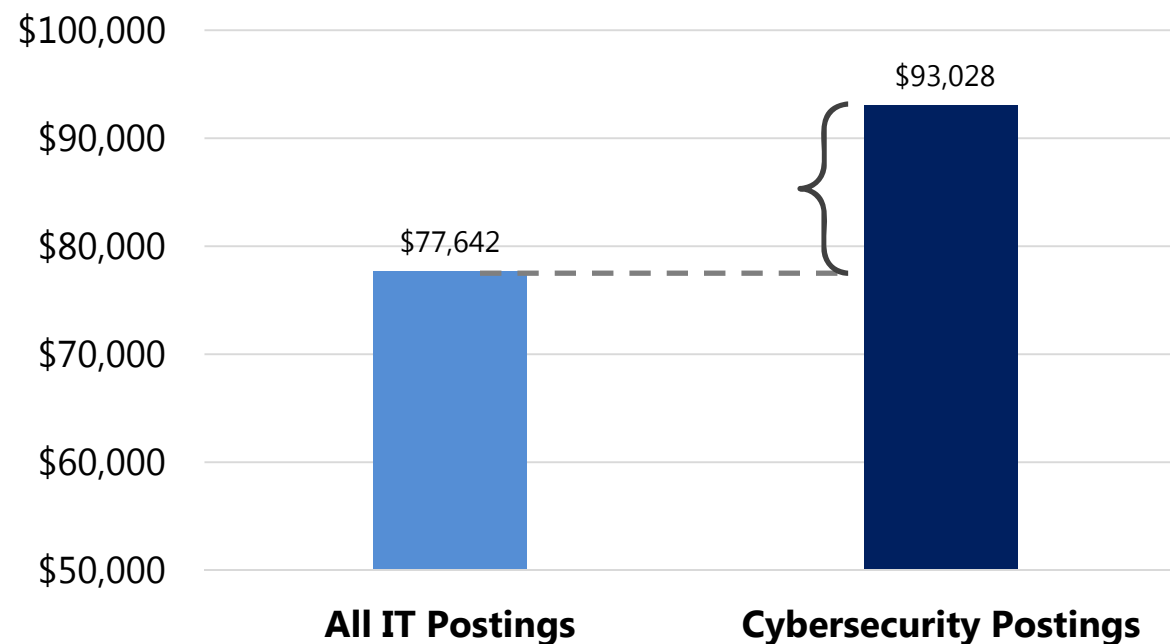
**Posting Duration (2013)**



# Filling Cybersecurity Jobs Requires High Salaries

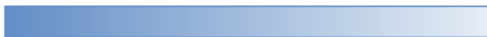







## Cybersecurity Jobs Pay a Premium

On average, cybersecurity salaries offer a premium of over \$15,000 over the salaries for IT jobs overall.



# A Growing Span of Industries Demand Cyber Talent

- Professional Services, Manufacturing, and Finance are the leading industries for cybersecurity professionals.
- The share of cybersecurity jobs coming from the Manufacturing & Defense, Public Administration, and Retail Trade industries is increasing over time compared to other industries.

Industry Sector	% of Cybersecurity Postings	Number of Cybersecurity Postings (2013)	2010-2013 Postings Growth
Professional Services	38%	80,446 	29%
Manufacturing & Defense*	14%	28,331 	16%
Finance and Insurance	12%	24,145 	89%
Information	8%	15,820 	36%
Health Care	6%	12,257 	73%
Public Administration	5%	11,204 	N/A**
Retail Trade	5%	10,203 	94%
Other	13%	27,384 	N/A**

\*Manufacturing Sector includes services divisions of a number of defense contractors (e.g. Raytheon) and computer manufacturers (e.g. Hewlett Packard).

\*\* Industry growth rates are suppressed for the Public Administration and Other industry sectors because a significant portion of labor market demand in these industries exists offline.

# MA Cybersecurity: Top Employers

## Top Employers by Industry Sector

(Min 10 postings in 2013)

### Professional, Scientific and Technical Services

- Lincoln Laboratory
- PricewaterhouseCoopers
- Deloitte
- Jacobs Engineering Group
- Ernest & Young
- McGladrey
- Accenture
- Mitre Corporation
- Sapient

### Manufacturing

- Raytheon
- General Dynamics
- Hewlett-Packard
- Danaher (Arbor Networks)

### Finance and Insurance

- State Street Bank
- Citizens Financial

### Information

- EMC
- Time Warner
- Verizon
- AT&T

### Retail

- TJX Companies
- Staples

### Government

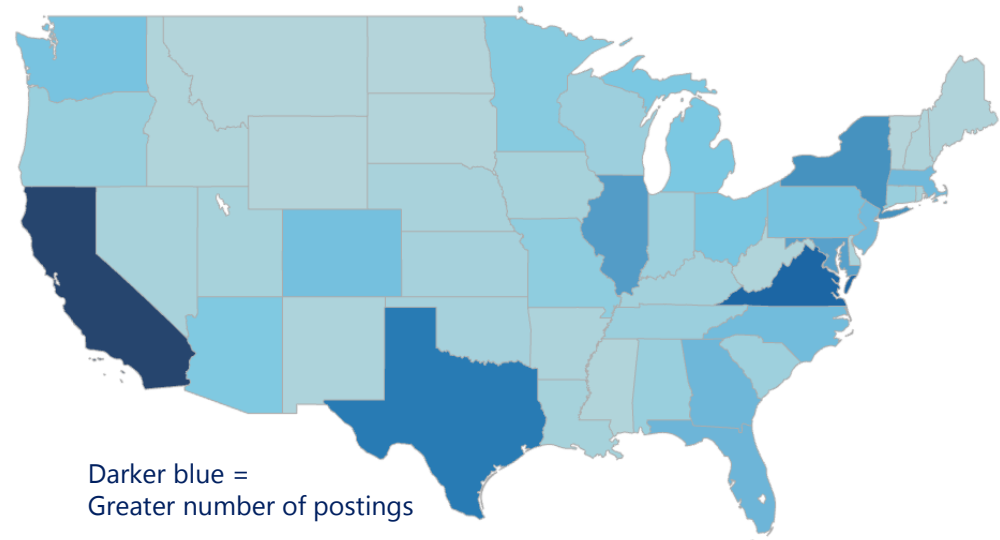
- Commonwealth Of Massachusetts

# Driving The Gap Is Widening Demand for Cyber Talent

## Top States by Total Postings\*

	State	Total Postings	Postings/10,000 Residents	% Growth (2007-2013)
1	California	27,084	7.1	64%
2	Virginia	20,507	25.1	53%
3	Texas	16,376	6.3	97%
4	New York	12,405	6.3	59%
5	Illinois	11,136	8.6	116%
6	Maryland	10,627	18.1	94%
7	Florida	7,923	4.1	46%
8	Georgia	7,539	7.6	214%
9	Massachusetts	7,107	10.7	76%
10	New Jersey	6,814	7.7	12%
11	North Carolina	6,676	6.8	129%
12	Colorado	6,039	11.6	158%
13	Pennsylvania	5,630	4.4	22%
14	Washington	5,444	7.9	76%
15	Ohio	5,086	4.4	34%

## Cybersecurity Job Postings in 2013 By State



\*See Appendix 1 for state-level data tables on total postings and postings growth.

## Core Challenges for the Cybersecurity Job Market

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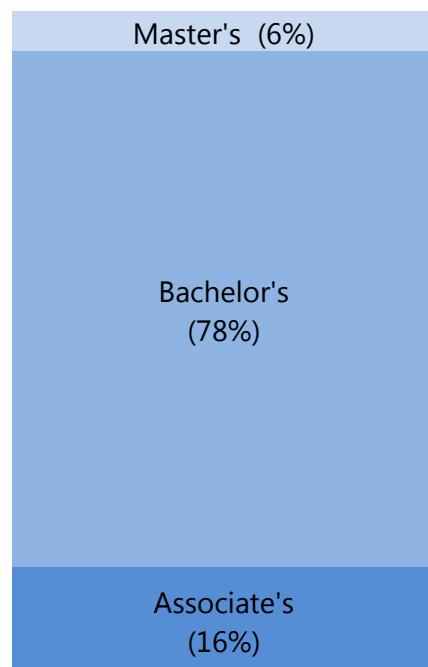
- > There are significant skill gaps in the cybersecurity job market.
- > **The level of experience and specialized knowledge required in cybersecurity jobs is resulting in supply chain bottlenecks.**
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# Cyber Jobs Require Significant Education & Experience

- 84% of cybersecurity postings specify at least a Bachelor's.
- 2/3 of cybersecurity postings require at least 4 years of experience.

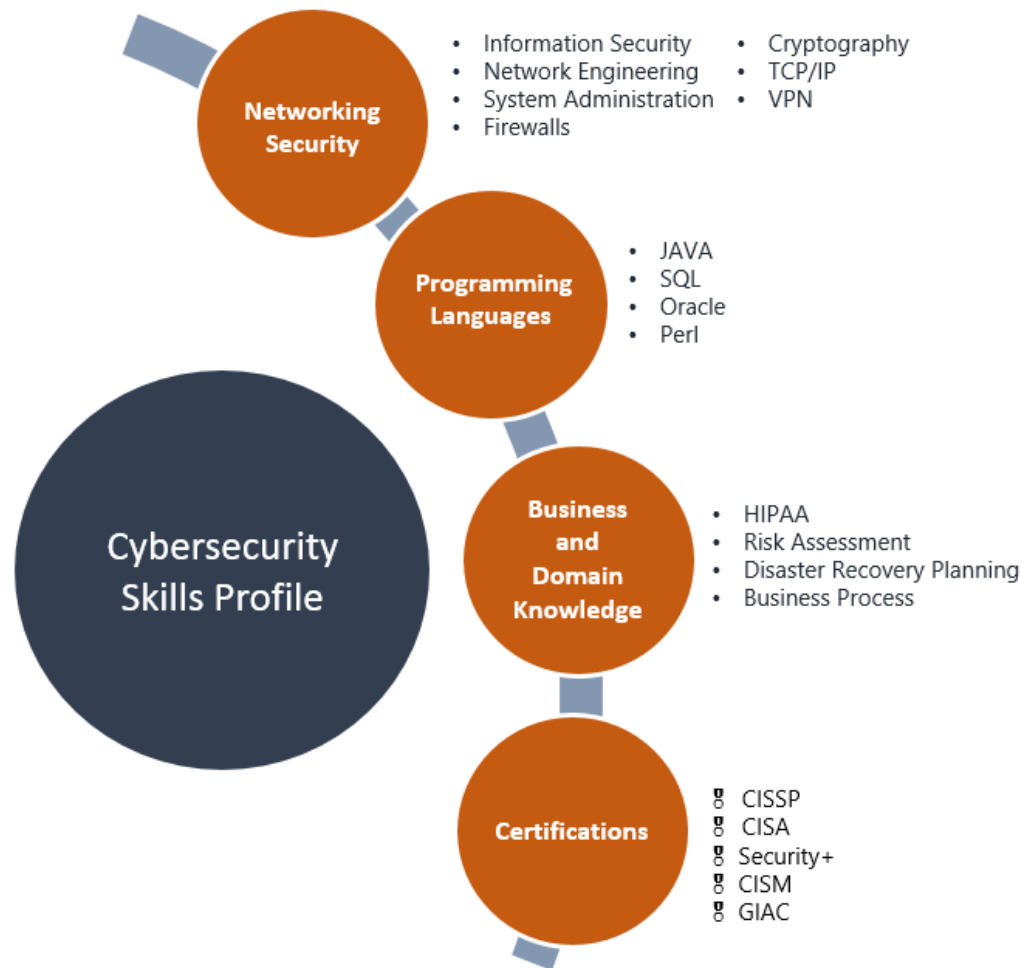
### Minimum Education Level



### Minimum Experience











# Cyber Roles Require Advanced Skills Across Domains



# Cyber Jobs Are Heavily Certificated

**Certification requirements are more common in cybersecurity roles than in IT generally.**

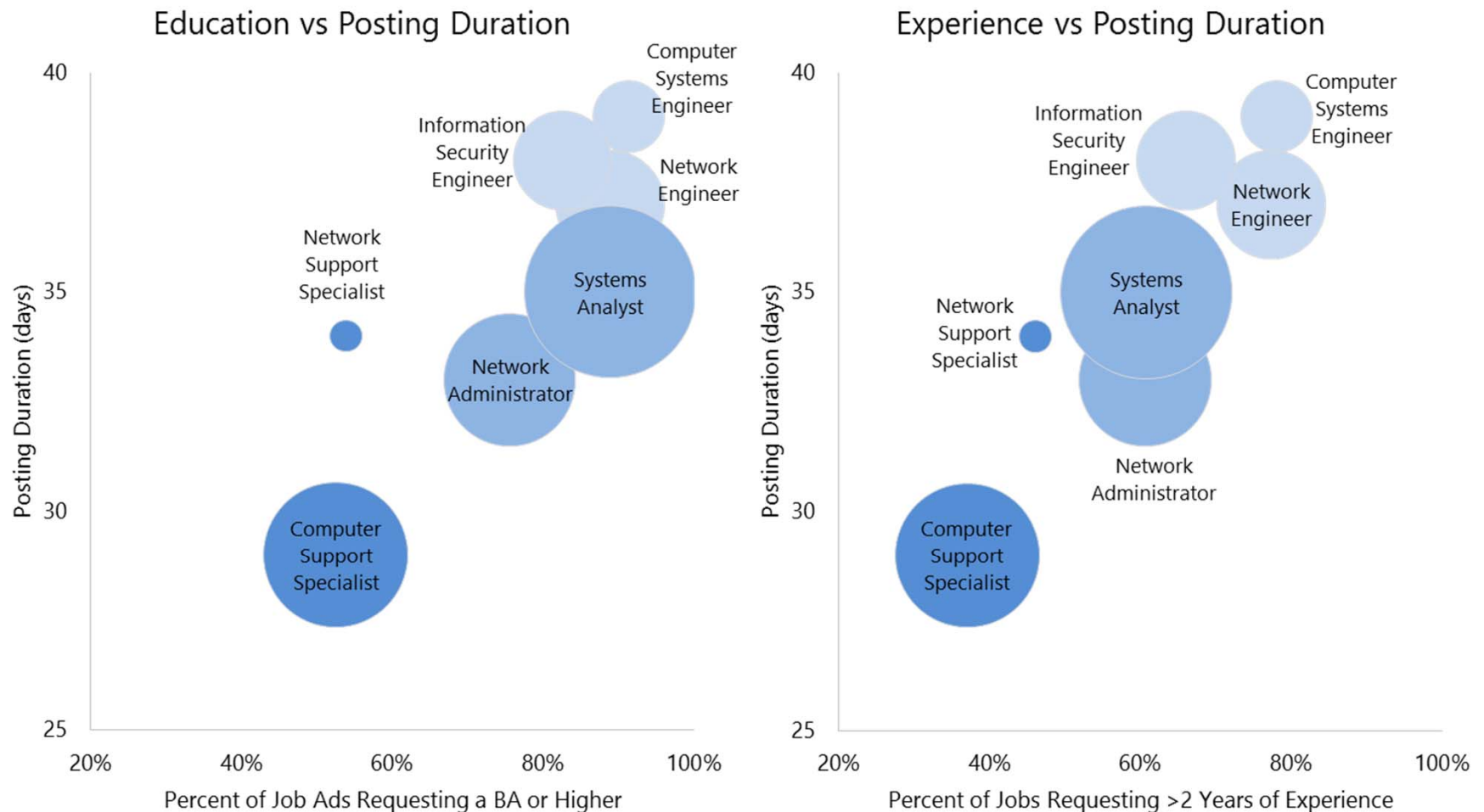
- 51% of all cybersecurity positions request at least one of the certifications listed below.
- 14% of all IT positions request a certification of any kind.

Certification*	% of Cybersecurity Postings	Number of Cybersecurity Postings (2013)
<b>CISSP</b> Certified Information System Security Professional	24%	49,522 
<b>CISA</b> Certified Information Systems Auditor	16%	33,290 
<b>Security+</b> Certified Information Security Manager	8%	17,019 
<b>CISM</b> Certified Information Security Manager	7%	15,083 
<b>GIAC Security Essentials</b>	3%	5,639 
<b>CIPP</b> Certified Information Privacy Professional	2%	4,168 
<b>SSCP</b> Systems Security Certified Practitioner	2%	4,039 
<b>GIAC GCIH</b> GIAC Certified Incident Handler	2%	3,163 

\*Certification requirements are not mutually exclusive

# Hefty Requirements Make These Jobs Hard-to-Fill

High skill occupations – those that have high education and experience requirements – are harder for employers to fill.



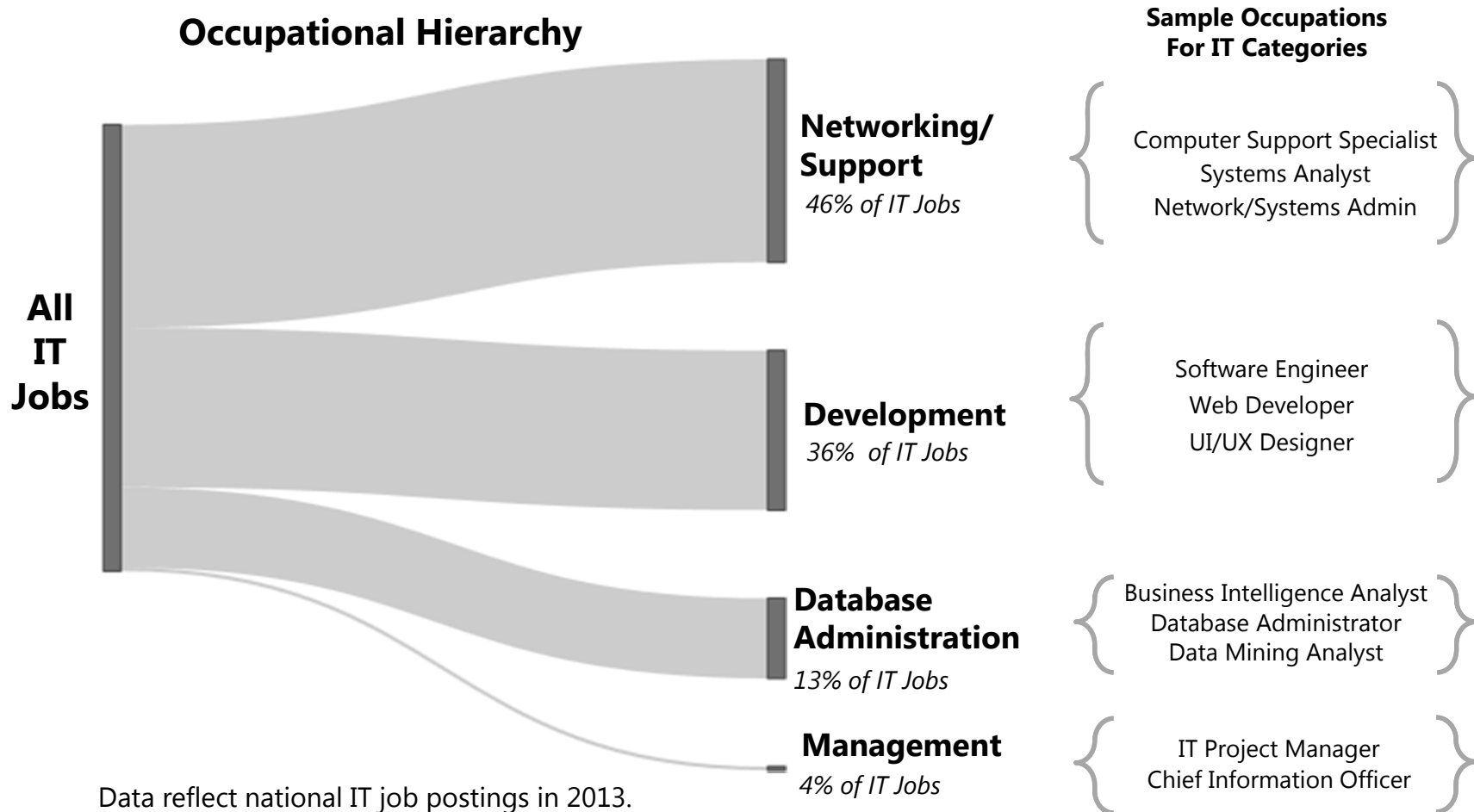
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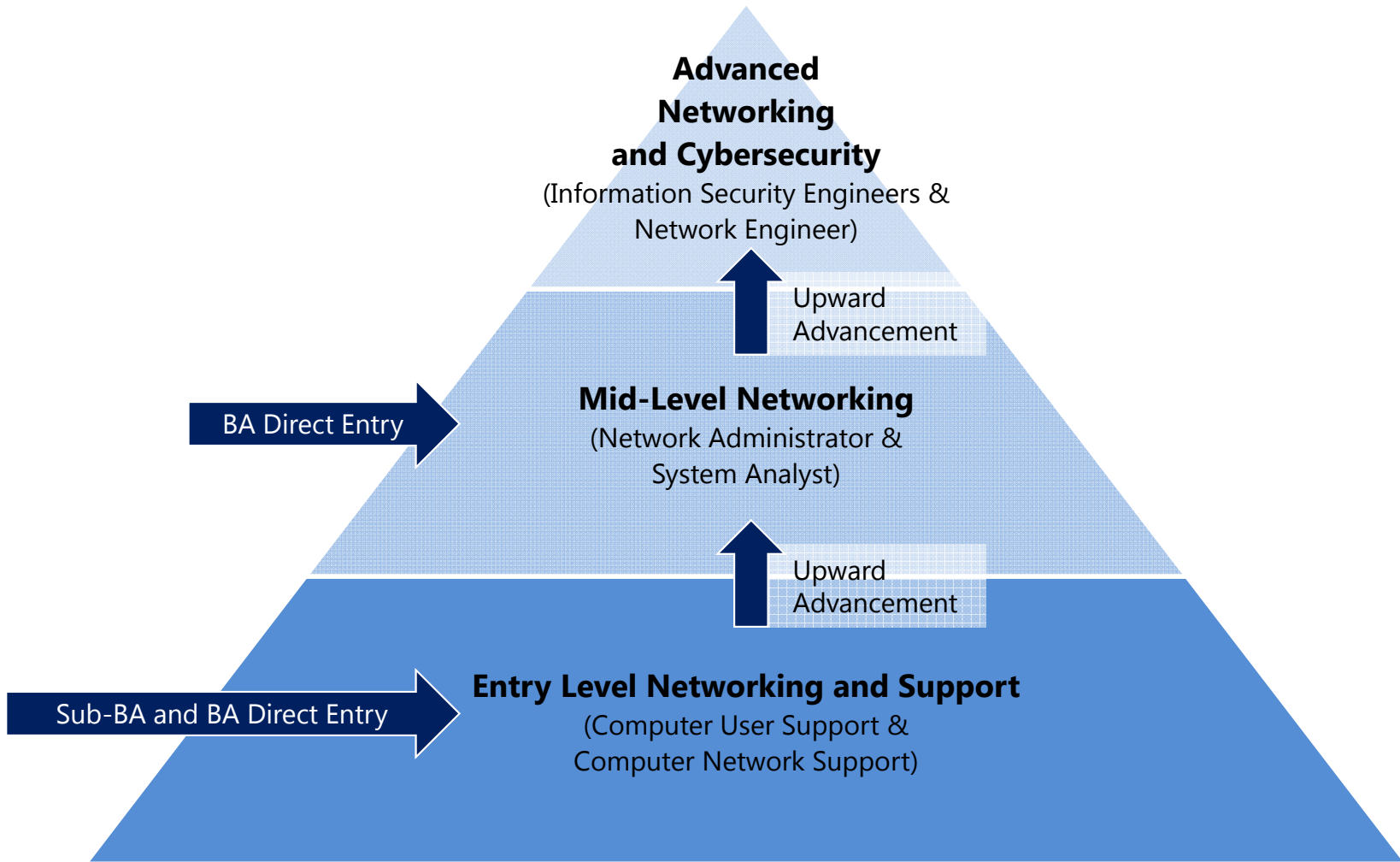
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# IT Functional Occupation Groups

70% of IT jobs are in networking and database occupations – but there’s little correspondence with higher education programs of study.

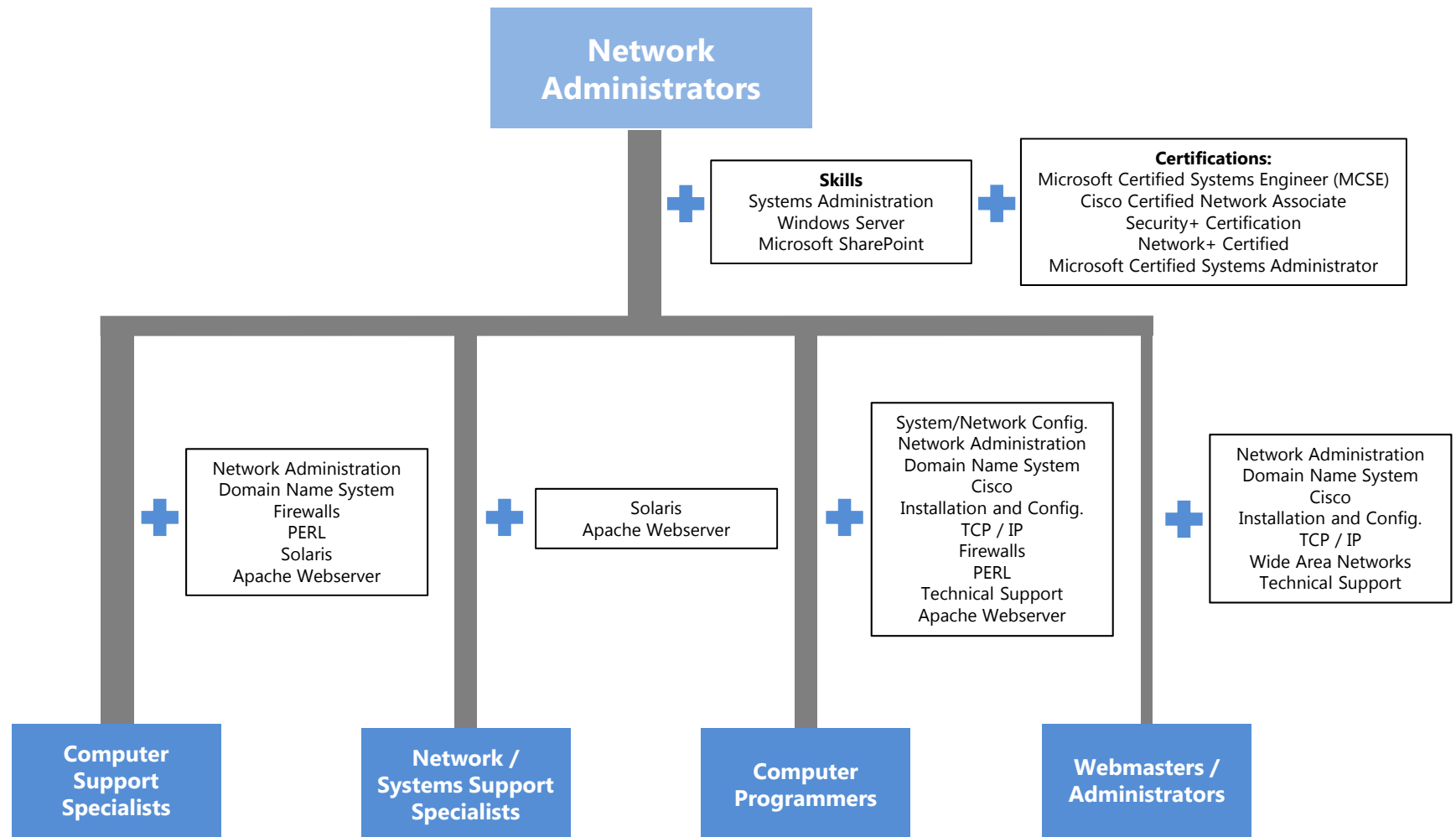


# Cybersecurity & Networking Career Ecosystem



# Driving Supply into Cyber Career Entry Points

## Career Pathways for Network Administration





## About Burning Glass Real-Time Data

All jobs data in this report are drawn from Burning Glass's database of online job postings, which includes over 100M worldwide postings collected since 2007. Each day, Burning Glass visits close to 40,000 online jobs sites to collect postings. Using advanced text analytics, over 70 data fields are extracted from each posting including job title, occupation, employer, industry, required skills and credentials and salary. Postings are then deduplicated and placed in a database for further analysis.

## About Burning Glass

Burning Glass's tools and data are playing a growing role in informing the global conversation on education and the workforce by providing researchers, policy makers, educators, and employers with detailed real-time awareness into skill gaps and labor market demand. Burning Glass's job seeker applications power several government workforce systems and have been shown to have substantive impact on reemployment outcomes and on labor market literacy.

With headquarters in Boston's historic North End, Burning Glass is proud to serve a client base that spans six continents, including education institutions, government workforce agencies, academic research centers, global recruitment and staffing agencies, major employers, and leading job boards.

## For More Information

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