



A GLOBAL CALL TO ARMS: THE WORLDWIDE CYBERSECURITY SKILLS SHORTAGE

The ISACA 2015-16 Chapter Roadshow



My BIO

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Senior Mgr., Cybersecurity Practices & Cyber Evangelist

Globally Recognized Cyber Expert

Background:

- **Former commander Cyber Red Team—USAF**
- **Architect cyber training & exercise integration—USAF**
- **Chief, Cybersecurity Education & Awareness—DHS**
 - **Architect of National Cybersecurity Workforce Framework**
 - **Developed & Launched the NICCS Portal**
- **Senior Advisor/Lead, National Initiative for Cybersecurity Education (NICE)—White House**
- **Presenter, Author, Blogger—Cybersecurity SME**
- **Nation’s only Certified Workforce Development Professional—Specializing in Cybersecurity**



Cybersecurity Skills Crisis

Too Many Threats

 **62%**
INCREASE
IN BREACHES
IN 2013¹

1 IN 5 
ORGANIZATIONS
HAVE EXPERIENCED
AN APT ATTACK⁴

**US \$3
TRILLION**
TOTAL GLOBAL
IMPACT OF
CYBERCRIME³

 **7 1/2 MONTHS**
IS THE AVERAGE TIME
AN ADVANCED THREAT
GOES UNNOTICED ON
VICTIM'S NETWORK²

**2.5
BILLION** 
EXPOSED RECORDS AS
A RESULT OF A DATA BREACH
IN THE PAST 5 YEARS⁵

Too Few Professionals

 **62%**
OF ORGANIZATIONS
HAVE NOT INCREASED
SECURITY TRAINING
IN 2014⁶

 **1 OUT OF 3**
SECURITY PROS ARE
NOT FAMILIAR WITH
ADVANCED PERSISTENT
THREATS⁷

 **<2.4%**
GRADUATING STUDENTS
HOLD COMPUTER
SCIENCE DEGREES⁸


1 MILLION
UNFILLED SECURITY
JOBS WORLDWIDE⁹

83% 
OF ENTERPRISES CURRENTLY
LACK THE RIGHT SKILLS AND
HUMAN RESOURCES TO PROTECT
THEIR IT ASSETS¹⁰

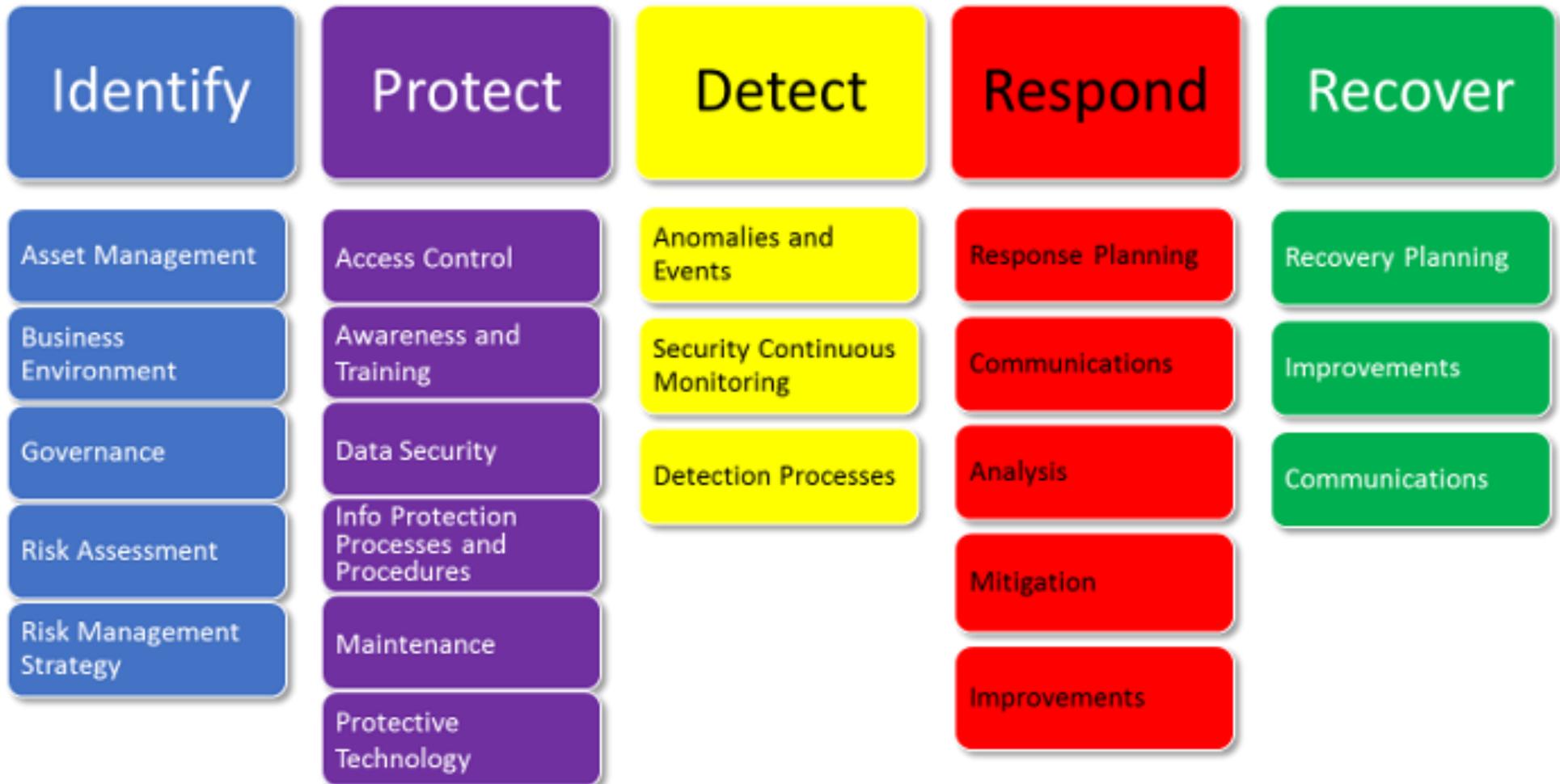
Enterprises are under siege from
a rising volume of cyberattacks.

At the same time, the global demand for skilled professionals sharply outpaces supply. Unless this gap is closed, organizations will continue to face major risk. Comprehensive educational and networking resources are required to meet the needs of everyone from entry-level practitioners to seasoned professionals.

SOURCES: 1. 2014 Internet Security Threat Report, Volume 19, Symantec, April 2014; 2. M-Trends 2014: Attack the Security Gap, Mandiant, April 2014; 3. Increased Cyber Security Can Save Global Economy Trillions, McKinsey/World Economic Forum, January 2014; 4. ISACA's 2014 APT Study, ISACA, April 2014; 5. An Executive's Guide to 2013 Data Breach Trends, Risk Based Security/Open Security Foundation, February 2014; 6. ISACA's 2014 APT Study, ISACA, April 2014; 7. ISACA's 2014 APT Study, ISACA, April 2014; 8. Code.org, February 2014; 9. 2014 Cisco Annual Security Report, Cisco, January 2014; 10. Cybersecurity Skills Haves and Have Nots, ESG, March 2014



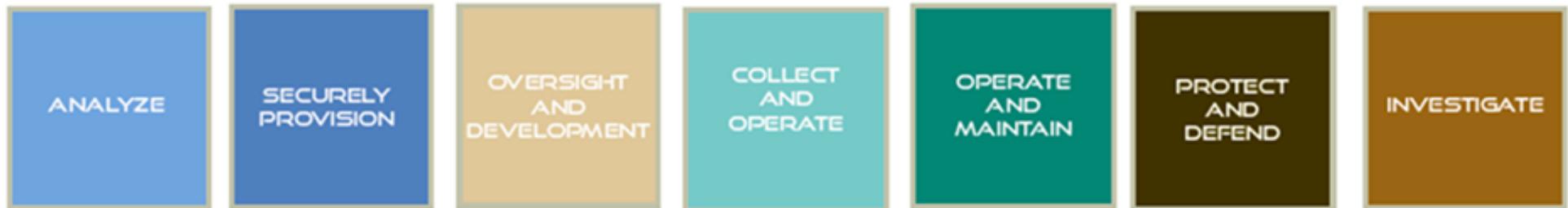
NIST CYBERSECURITY FRAMEWORK



A IMPERATIVE—NATIONAL INITIATIVE FOR CYBERSECURITY EDUCATION (NICE)

The National Cybersecurity Workforce Framework

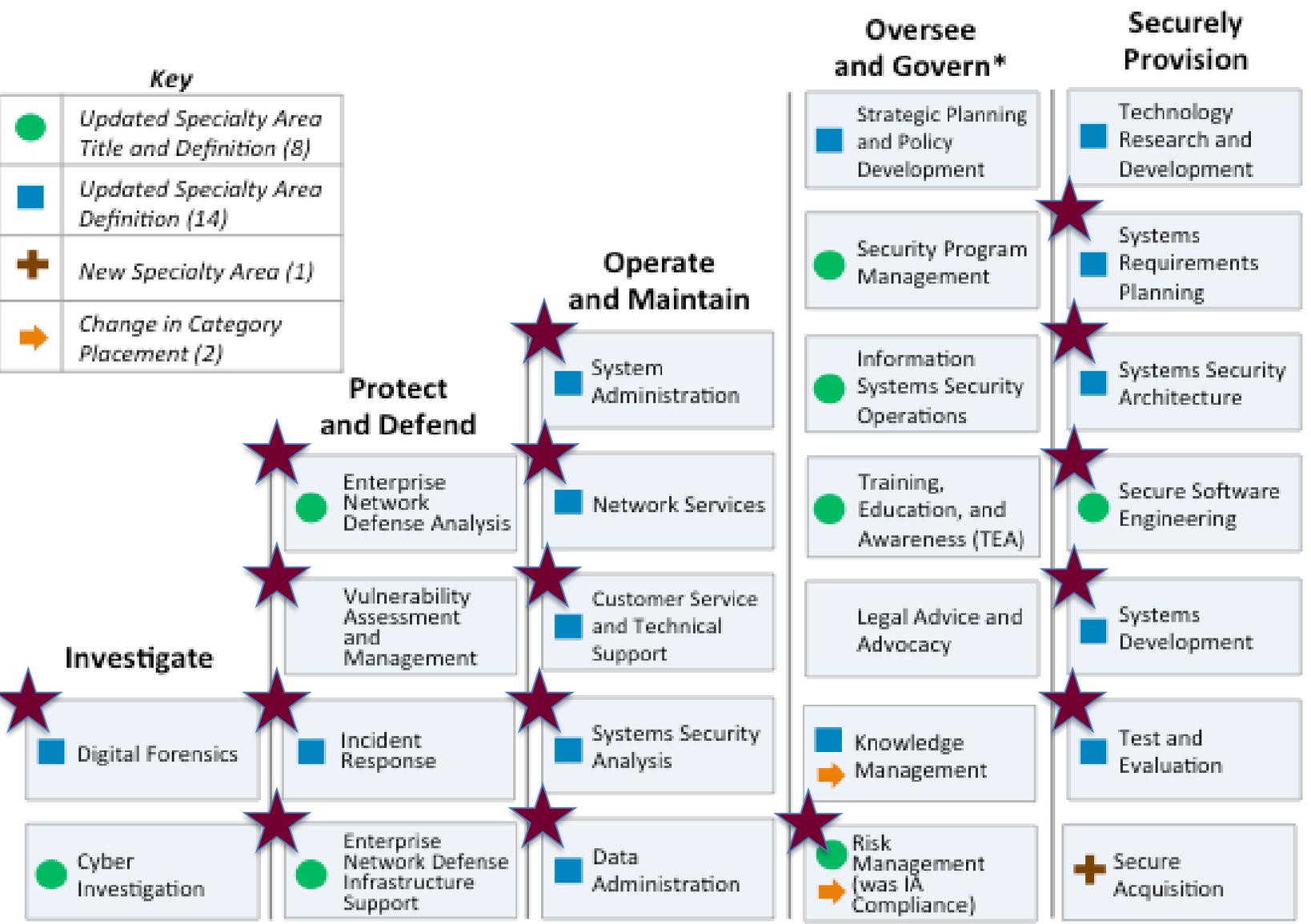
- ▶ 7 Categories and 32 Specialty Areas
- ▶ Baselines knowledge, skills, and abilities & tasks
- ▶ Support for strategic workforce development



SWEET 16—CRITICAL SKILLS

Key

	Updated Specialty Area Title and Definition (8)
	Updated Specialty Area Definition (14)
	New Specialty Area (1)
	Change in Category Placement (2)



CATEGORIES NOT UPDATED
(DUE TO SENSITIVE CONTENT)

Collect and Operate

- Cyber Operations Planning
- Cyber Operations
- Collection Operations

Analyze

- Cyber Threat Analysis
- All Source Intelligence
- Targets
- Exploitation Analysis

FIRST: CREATE A PLAN...START HERE

1. Go to niccs.us-cert.gov
2. Download user guide
3. Download and use communications toolkit

Official website of the Department of Homeland Security

NICCS™
NATIONAL INITIATIVE FOR CYBERSECURITY CAREERS AND STUDIES

About NICCS | A-Z Site Map

HOME AWARENESS EDUCATION TRAINING CAREERS NEWS & EVENTS COMMUNITY RESEARCH

NICE Conference & Expo

This year's theme is **Ready to Work: Equipping our Cybersecurity Workers with the Skills to Compete in a 21st-Century Economy.**

[Learn More](#)

1 2 3 4

Pause

NICCS™ is the One Stop Shop for Cybersecurity Careers and Studies!

Information For

- Federal Employees
- General Public
- Students
- Educators
- Parents
- Cybersecurity Professionals
- Human Capital Managers
- Cybersecurity Managers
- Policy Makers
- Veterans
- State, Local, Tribal and Territorial Governments (SLTT)
- Women & Minorities

UPCOMING EVENTS

[Framework Speciality Areas Page](#)
Orange County...

Dec 2 HCWG
Dec 2 to Dec 4
Arlington, VA

[VIEW CALENDAR](#)

STAY SAFE ONLINE

View our Cybersecurity How-To Guide to learn safe online strategies and find additional Awareness resources.

EXPLORE THE WORKFORCE FRAMEWORK

Explore the Cybersecurity Speciality Areas, Tasks, and KSAs defined in the Workforce Framework.

FIND COURSES

Find the education and training courses you need to keep up with changing threats.

LEARN ABOUT WORKFORCE PLANNING

Learn about skill gap analysis, training strategies, and other activities to keep your Cybersecurity workforce on top.

Education Resources

Information for Students and Educators, from P-12, Undergrad to Doctoral Candidate:

- Discover Innovative Programs
- Explore Degree Programs
- Find Cyber Competitions
- Find Scholarships

Training Resources

Tools to connect Cybersecurity Professionals and Training Opportunities:

- Find Training Opportunities
- Explore the Workforce Framework
- Explore Professional Certifications
- Map & Submit Training Opportunities

Talent Management

Career development and HR Resources for Cyber Professionals and HR Professionals:

- Understanding Professionalization
- Find Cybersecurity Careers

Research

Whitepapers, studies and other research promoting Cybersecurity education and the Profession.

- Search NICE Research
- Submit Research

I Want To..

- Become a Cybersecurity Professional
- Advance My Cybersecurity Career
- Explore the Workforce Framework
- Search for Training Courses
- Get My Child Involved
- Become a NICE Partner
- Become an Education and Training Catalog Vendor
- Learn about NICE

DHS & NICCS Partners

NICE
NATIONAL INITIATIVE FOR
CYBERSECURITY EDUCATION

NIST



EXECUTE THE PLAN—CSX

cybersecurity.isaca.org



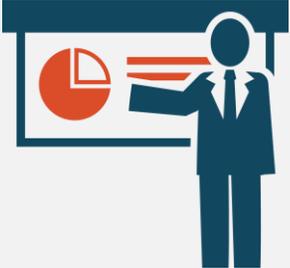
CYBERSECURITY: MARKET NEED

- **The research is clear. Cybersecurity has evolved from an IT function into a public safety issue.**
- **82% of enterprises expect to experience a cyber incident in 2015.**
- **More than 35% are unable to fill open cybersecurity positions**
- **69% say certification is required for cybersecurity jobs.**
- **Only 33% say qualified candidates have hands-on experience.**
- **46% say technical skills are needed.**
- **There is a cybersecurity skills crisis: 1 million unfilled jobs. (Cisco)**



OUR SOLUTION

CSX Is Providing a Single Source for Cybersecurity Professionals: our holistic program will be the first and only “one stop shop” providing a complete solution and covering the full career lifecycle.

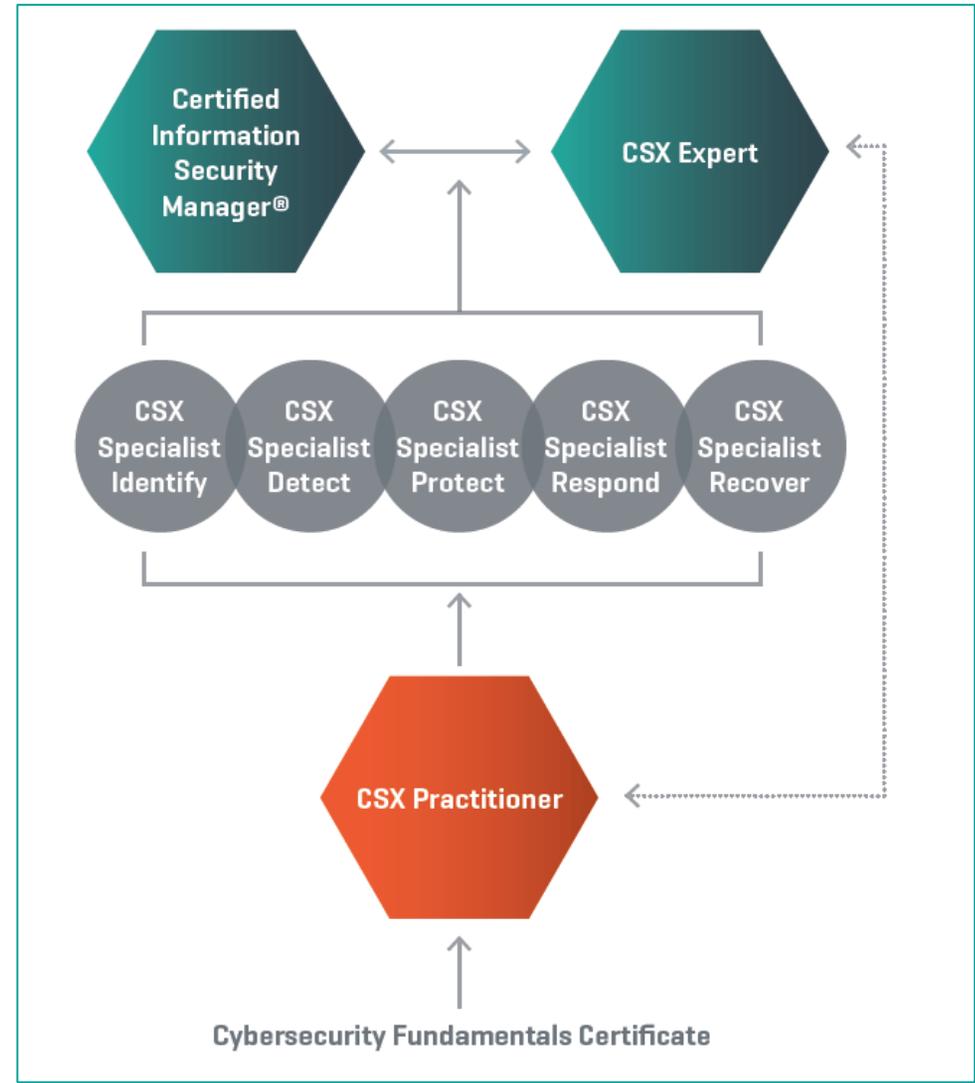
Credentialing and Training	Education/ Conferences	Membership	Resources/ Publications	Career Management
				

CYBERSECURITY TRAINING AND CERTIFICATIONS



CSX training and certifications offered for skill levels and specialties throughout a professional's career.

<https://cybersecurity.isaca.org/csx-certifications>



CYBERSECURITY TRAINING AND CERTIFICATIONS



CSX Practitioner—Demonstrates ability to serve as a first responder to a cybersecurity incident following established procedures and defined processes. (1 certification, 3 training courses; prerequisite for CSX Specialist)



CSX Specialist—Demonstrates effective skills and deep knowledge in one or more of the five areas based closely on the NIST Cybersecurity Framework: Identify, Detect, Protect, Respond and Recover. (5 certifications, 5 training courses; requires CSX Practitioner)



CSX Expert—Demonstrates ability of a master/expert-level cybersecurity professional who can identify, analyze, respond to, and mitigate complex cybersecurity incidents. (1 certification, 1 training course; no prerequisites required)



Certified Information Security Manager certification (26,000+ professionals certified since inception; named the second-highest-paying certification by Global Knowledge's 2015 IT Skills and Salary Survey; 5+ years experience required)



cybersecurity.isaca.org

Contact: csx@isaca.org

