

# NICE Webinar Series

NATIONAL INITIATIVE FOR CYBERSECURITY EDUCATION



Advancing Skills-Based Education and Hiring Through the Open Skills Network

March 17, 2021

# NICE Framework News!



Visit the web page to view the draft documents and instructions on how to submit comments.

<https://www.nist.gov/news-events/news/2021/03/nice-framework-competencies-assessing-learners-cybersecurity-work>



# **NICE Webinar: Advancing Skills-Based Education and Hiring Through the Open Skills Network**

# Agenda

Topic	Presenter
• <b>Introductions</b>	Rodney Petersen, Director of the National Initiative for Cybersecurity Education (NICE), NIST
• <b>About the Open Skills Network</b>	Deborah Everhart, Chief Strategy Officer, Credential Engine
• <b>Business perspective</b>	Phil Komarny, Vice President of Innovation, Salesforce
• <b>Credential and skills transparency perspective</b>	Deborah Everhart, Chief Strategy Officer, Credential Engine
• <b>Education perspective</b>	Gwendolyn Britton, Academic Associate Vice President, Southern New Hampshire University
• <b>Questions and Answers</b>	All

# Questions and Answers

If you have questions about today's presentation or the future of skills-based learning and hiring, please add it to the **Q&A box**.

# The Open Skills Network (OSN)

# Why Do Skills Matter?

- Skills describe work in granular, modular, and flexible ways
- Education and career pathways can be modularly defined and adapted using skills
- Skills give us more transparency for connecting job descriptions, resumes, and educational credentials

# What are “Open Skills”?

- As people move between learning and jobs, they need to be able to communicate their skills in different contexts
- Employers and educators need to be able to understand skills that people bring from somewhere else
- Proprietary and siloed skills definitions don’t allow learning and hiring processes to flow through thriving ecosystems



# What is the Open Skills Network?

## Our Vision

- The Open Skills Network (OSN) is a coalition of employers, education providers, military, and other stakeholders dedicated to advancing skills-based education and hiring. The OSN envisions a world where individuals are trained for in-demand skills and hired for what they can do.

## Our Goals

- Create the foundation to advance a more equitable labor market.
- Empower learner-workers to understand and communicate the value of their skills, talent, and experiences.
- Eliminate barriers to implementing skill-based education and hiring practices across industry sectors at scale.

# What is the Open Skills Network Doing?

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## Building the Skills Ecosystem

- Implementing Rich Skills Descriptors (RSDs)
- Developing open toolsets (including the Open Skills Management Tool)
- Creating a national network of skills libraries
- Developing a skills community of practice

# What are “Rich Skill Descriptors” (RSDs)?

- RSDs enable us to explore the details of a skill and quickly get the contextual information needed to understand a particular skill, ensuring all users of skills are working from the *same definitions*
- Each RSD has a unique web address - anyone can create links between skills and other data - enabling the combination of data from multiple diverse sources
- RSDs are both humanly readable (like exploring information related to my own skills) and machine-actionable (like apps that recommend learning opportunities based on my skills)

# What is the Open Skills Management Tool (OSMT)?



- To help organizations develop and collaborate around skills libraries, the OSN is developing a free, open source tool to facilitate the production of RSD-based open skills libraries, called the Open Skills Management Tool (OSMT)
- Existing programs, curricula, and job descriptions can all use these open libraries as “Rosetta stones” for understanding skills in a portable, machine-actionable way

WGU Open Skills Management Tool RSD Library Collections

White labeled header

Simple and advanced search options

CREATE RSD CREATE COLLECTION BATCH IMPORT RSDs Advanced Search

Create RSDs and collections

# RSD Library

413 RSDs found based on and your filters. Viewing 1-50.

Draft  Published  Archived

CATEGORY RICH SKILL DESCRIPTOR SELECT

AWS Certified Security Specialty	<b>Infrastructure Component Security</b> Secure Amazon Web Services (AWS) infrastructure components, including Amazon Elastic Compute Cloud (Amazon EC2), Amazon Simple Storage Service (Amazon S3), and hosted database instances. <span>Published</span> Keywords: AWS Certified Security Specialty; AWS Cloud Security Detailed Occupations: Information Security Analysts	<input type="checkbox"/> ...
AWS Certified Security Specialty	<b>Fidelity and Utility Assessment</b> Assess the fidelity and utility of implemented Amazon Web Services (AWS) features. <span>Published</span> Keywords: AWS Certified Security Specialty; AWS Cloud Security Detailed Occupations: Information Security Analysts	<input type="checkbox"/> ...

Library organized by skill categories with truncated metadata for quick visibility

Act on one or more RSDs



## Required fields

# Infrastructure Component Security

### RICH SKILL DESCRIPTOR

## Infrastructure Component Security

Author: Western Governors University

Published Jan 26 2021

### SKILL STATEMENT

Secure Amazon Web Services (AWS) infrastructure components, including Amazon Elastic Compute Cloud (Amazon EC2), Amazon Simple Storage Service (Amazon S3), and hosted database instances.

### CATEGORY

AWS Certified Security Specialty

### KEYWORDS

AWS Certified Security Specialty; AWS Cloud Security

### STANDARDS

NICE: Protect and Defend

### CERTIFICATIONS

CCSP

### OCCUPATIONS

#### DETAILED OCCUPATIONS

**15-1212** Information Security Analysts

#### O\*NET JOB ROLES

**15-1122.00** Information Security Analysts

[View All Groups](#)

### EMPLOYERS

### ALIGNMENT

[AWS Certified Security Specialty](#)

### COLLECTIONS WITH THIS RSD

[Cybersecurity Collection](#)

## Supporting metadata

### CATEGORY

AWS Certified Security Specialty

### KEYWORDS

AWS Certified Security Specialty; AWS Cloud Security

### STANDARDS

NICE: Protect and Defend

### CERTIFICATIONS

CCSP

### OCCUPATIONS

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**15-1212** Information Security Analysts

#### O\*NET JOB ROLES

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[View All Groups](#)

### EMPLOYERS

### ALIGNMENT

[AWS Certified Security Specialty](#)

# OSN Progress to-date



- Officially launched September 2020
- 800+ network members, 350+ partnered organizations
- 4 Work Groups: Governance, Technical, Market Leadership, and Policy
- Skills sector pilots March-June 2021

# Skills Sector Pilots

**Goal:** Develop RSD collections with collaborative partners through pilots that result in RSDs that can be published within OSMT and released in June 2021. The published RSD collections will empower organizations to access and use open skills data for their own use cases.

## Pilot Objectives:

- Validate RSD data schema across multiple industries
- Develop Open Skills Libraries
- Create recommendations and practices for use of OSMT
- Allow early users to test OSMT functionality for their institutions and needs
- Identify opportunities for continuous improvement in process and tools



# Why this work is important

Equitable pathways in the global shift to skills-based learning and hiring: a business perspective

# The Salesforce Economy

Global Jobs

## 4.2M

New Salesforce economy jobs by 2025

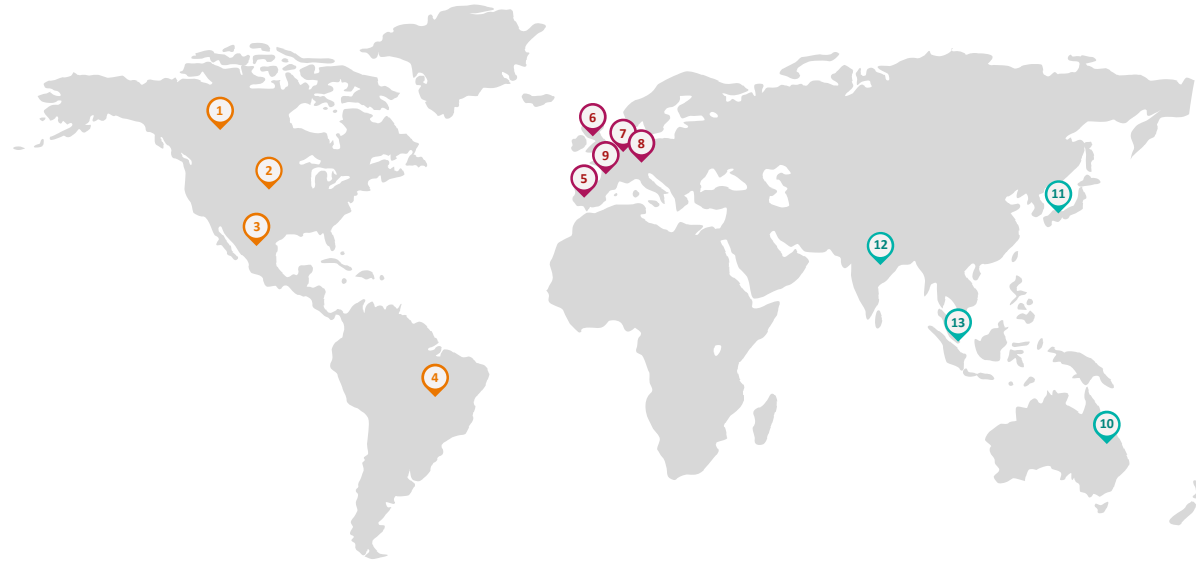
## Global Economic Impact

# \$1.2T

New business revenue by 2025



Source: IDC white paper sponsored by Salesforce, The Salesforce Economic Impact: 4.2 Million New Jobs, \$1.2 Trillion of New Business Revenues from 2019 to 2024, October 2019. The statements are based on the data from 2019 through 2024.



salesforce



### Americas

Jobs: **1.6M**  
Revenue: **\$634B**

- 1 **Canada**  
Jobs: 33K  
Revenue: \$20B
- 2 **United States**  
Jobs: 869K  
Revenue: \$514B
- 3 **Mexico**  
Jobs: 223K  
Revenue: \$38B
- 4 **Brazil**  
Jobs: 491K  
Revenue: \$62B

### Western Europe

Jobs: **492K**  
Revenue: **\$242B**

- 5 **Spain**  
Jobs: 49K  
Revenue: \$17B
- 6 **United Kingdom**  
Jobs: 144K  
Revenue: \$71B
- 7 **Netherlands**  
Jobs: 35K  
Revenue: \$23B
- 8 **Germany**  
Jobs: 62K  
Revenue: \$30B
- 9 **France**  
Jobs: 154K  
Revenue: \$79B

### Asia Pacific

Jobs: **799K**  
Revenue: **\$208B**

- 10 **Australia**  
Jobs: 42K  
Revenue: \$26B
- 11 **Japan**  
Jobs: 200K  
Revenue: \$110B
- 12 **India**  
Jobs: 548K  
Revenue: \$67B
- 13 **Singapore**  
Jobs: 9K  
Revenue: \$6B

**Rest of World** Jobs: **1.3M** Revenue: **\$98B**

# The Accelerated Digital Skills Gap



Bot Building

Machine Learning

Low Code

Remote Collaboration

Digital Processes

Online Engagement

Process Automation

**Companies**

**Job Seekers**





# C VID

**C**atalyst

**O**f

**V**erifiable

**I**ndividual

**D**ata

# Vaccine Cloud



## Scale | Speed | Agility | Compliance

<b>Experience</b>	Apps	Web	Channels	Bots
<b>Intelligence</b>	Automation	Workflow	Personalization	Low Code
<b>Single Source of Truth</b>	Data	Streams	Segments	Privacy

**Hyperforce**



# Skills are Powering the Digital Imperative



**Shift to Digital Channels**

**Importance of Digital Apps**



**Growth of Digital Communities**



**Support for Digital Employees**





# Trailhead

Learn on-demand at your own pace for free

## Trailhead Platform

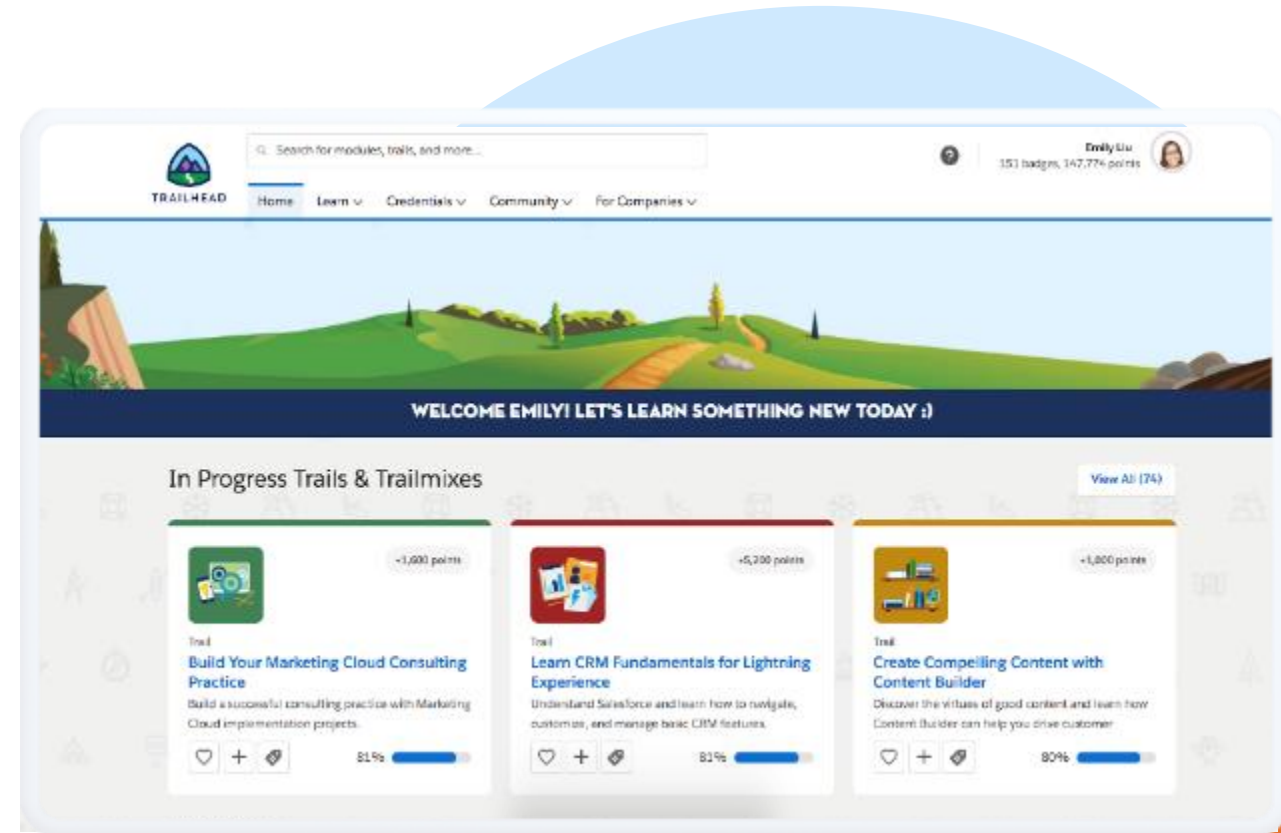
Free, gamified learning platform that empowers anyone to skill up for the future

## Trailhead GO

Learn marketable skills from anywhere on the Trailhead GO mobile app

## Trailhead LIVE

Reinvented classroom experience with live-streamed expert-led classes on today's most in-demand skills



# Trailblazers are Growing their Careers with Trailhead





# Earn Resume-Worthy Credentials

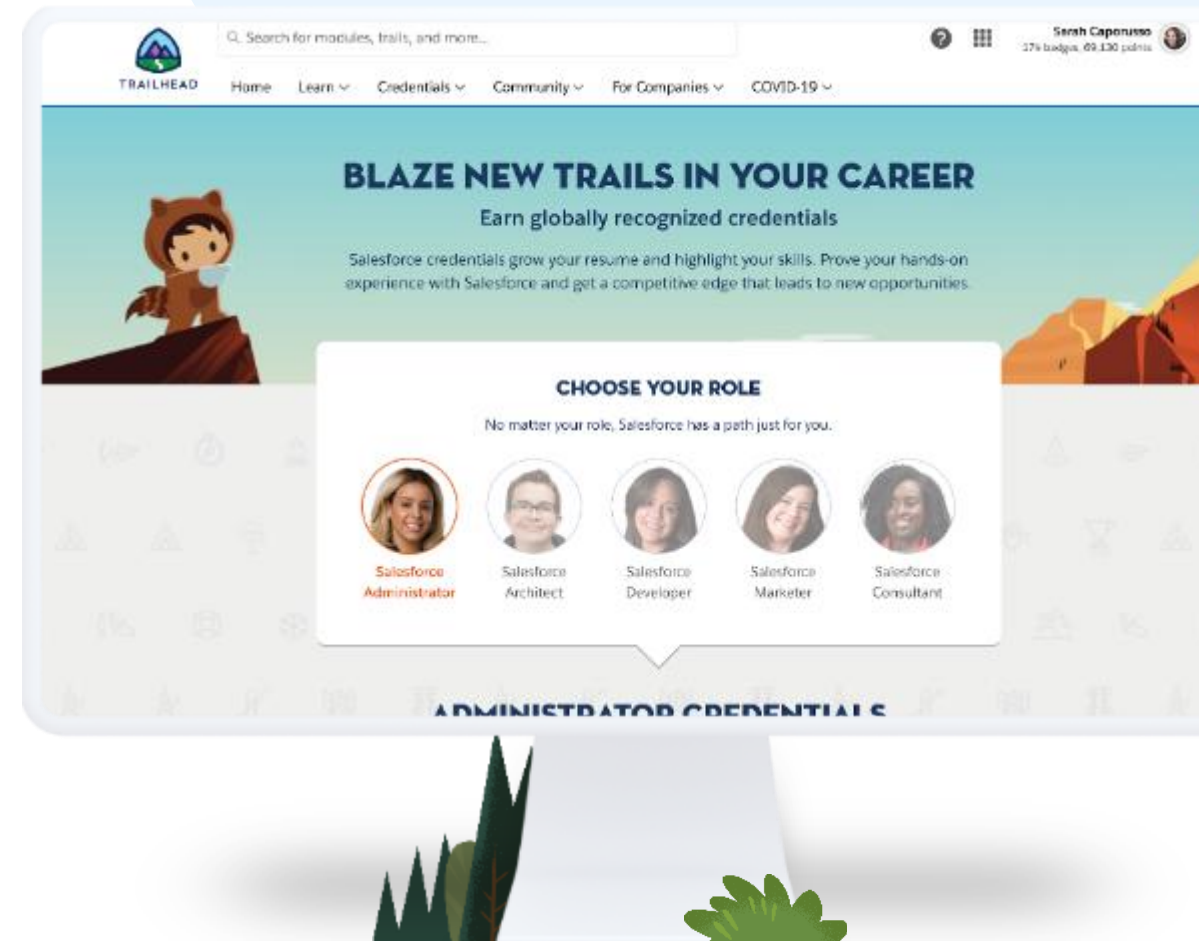
## Skill-based Badges

800+ badges that showcase your knowledge in a specific topic area

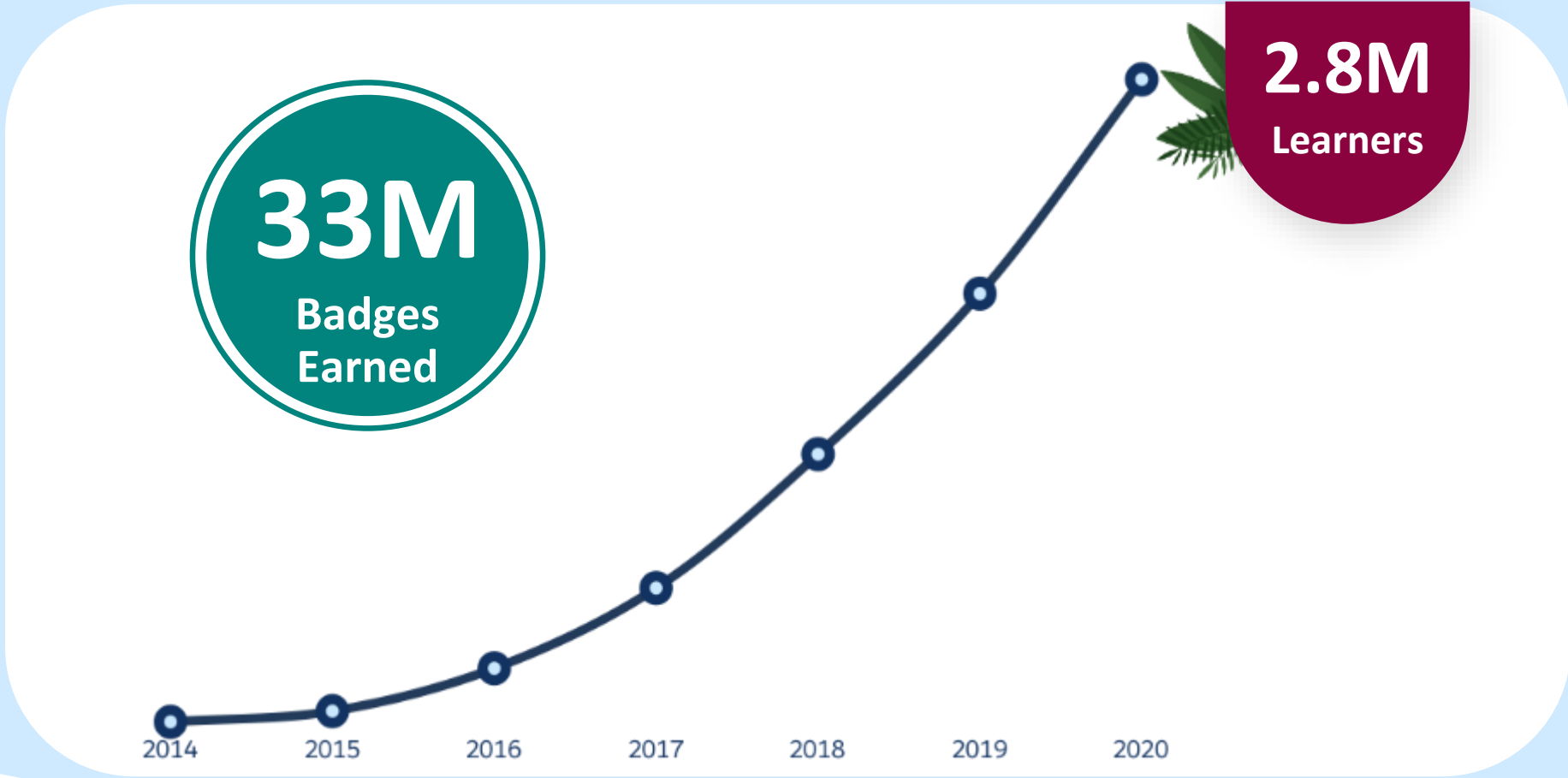
## Role-based Credentials

**Salesforce Certifications** - globally recognized credentials that give you a competitive edge

**Superbadges** - capstone projects that put your skills to the test in real-world business scenarios

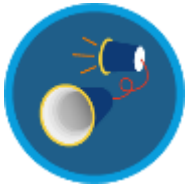


# Trailblazers are Reaching New Milestones



# Trailhead Skills Span the Salesforce Ecosystem

## People



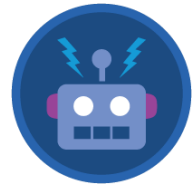
Virtual Collaboration  
Public Speaking Skills  
Fearless Teaming  
Equality Ally Strategies  
Storytelling & Communication

## Salesforce



Salesforce Platform  
Salesforce Customer 360  
CRM  
Sales Cloud  
Service Cloud

## Technologies



Flow Builder  
Einstein Pots  
Process Automation  
Digital Transformation  
Artificial Intelligence

**Learn**

your way to your next opportunity



# Trailblazer.me Profile

## Showcase your experience on your reinvented resume

### Unified Profile

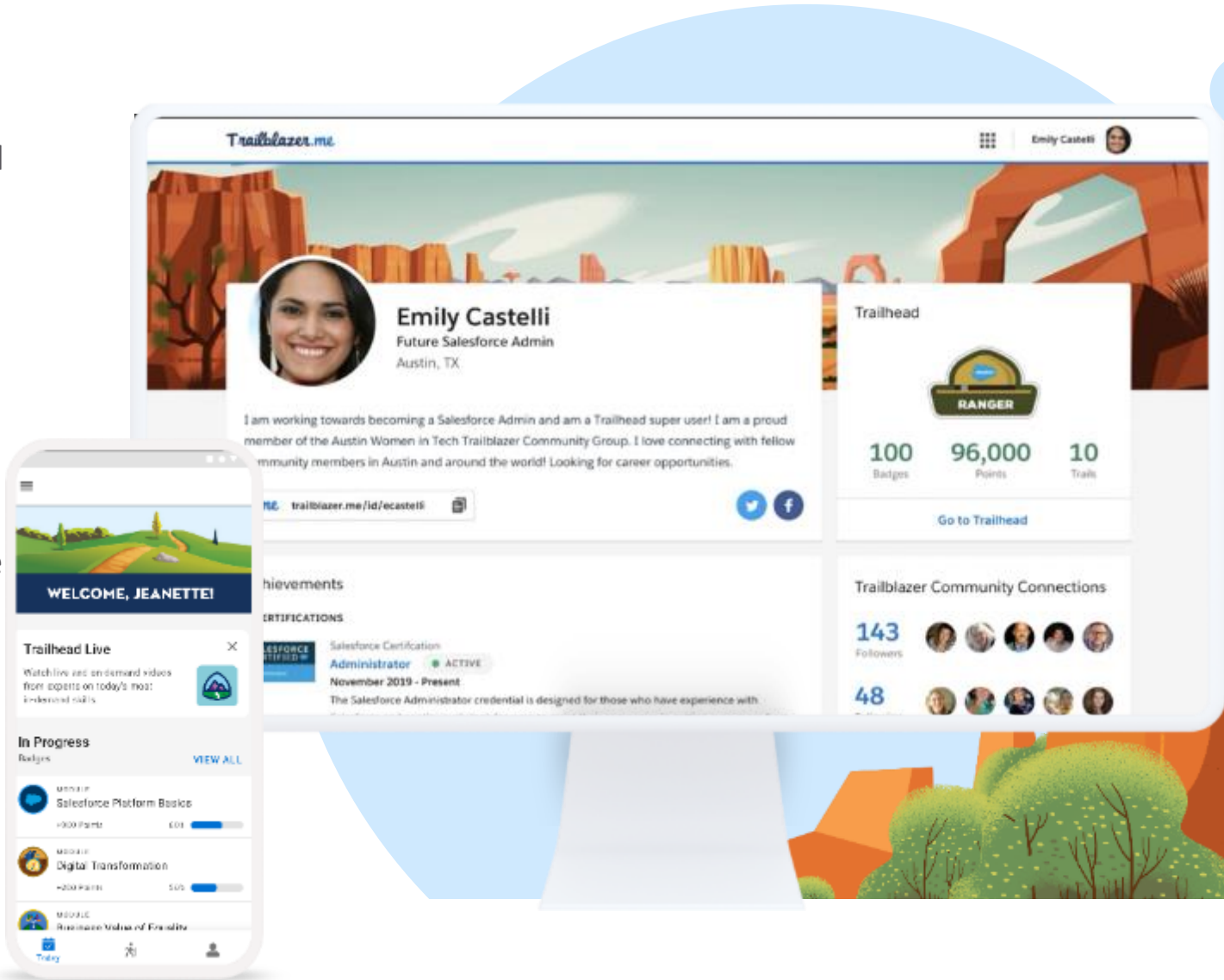
Single view of your expertise and experience across Trailhead, Trailblazer Community, AppExchange and more

### Skills Graph

Personalized graph that showcases all of a Trailblazer's abilities that badges represent

### Vanity URL


Custom short URL that links back to your Trailblazer.me profile and can be shared with future employers



# A Personal and Trusted Skills Profile




Capture, Evaluate and Validate



**Capture**  
*Open Badges*



**Evaluate**  
*Open Skills*



**Verify**  
*Verified Credentials*



# Chart Your Own Learning Journey

Trailhead provides learning for every stage of your career



Skill up for the future



# Credential Engine and the Credential Transparency Description Language (CTDL)

Linked Open Data infrastructure for credential and skills transparency

# Credential Engine: Our Mission and Vision

Credential Engine is a non-profit whose mission is to map the credential and skills landscape with clear and consistent information, fueling the creation of resources that empower people to find the pathways that are best for them.

We envision a future where millions of people worldwide have access to information about credentials and skills that opens their eyes to the full range of opportunities for learning, advancement, and meaningful careers.

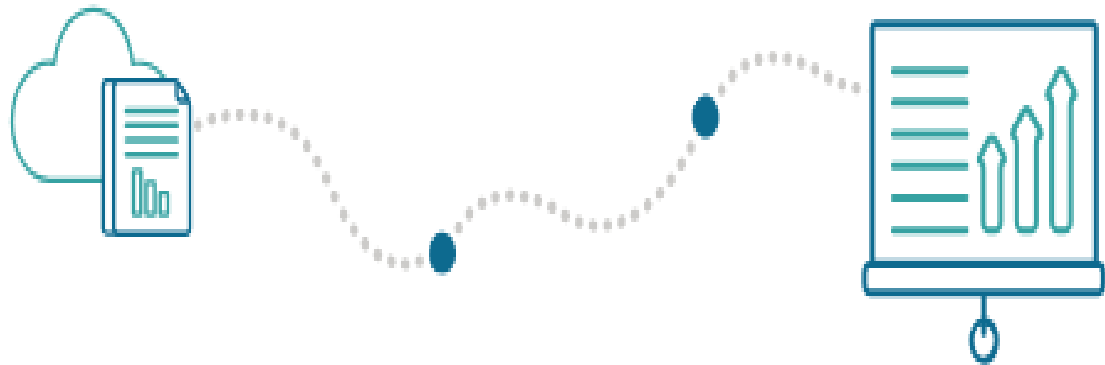






- **Who We Are**

- Non-profit
- Community built
- Vendor agnostic
- Data Driven
- Mission oriented around credential, skills, and pathways transparency



- **What We Do**

- Advocate for credential and skills transparency
- Develop and support linked open data schemas
- Provide open, interoperable infrastructure
- Build and mobilize partnerships
- Provide expertise and services

- **What We Do NOT Do**

- Collect or verify personally identifiable information
- Issue credentials
- Verify issued credentials



# Credential Transparency Illuminates Paths to a Better Future



There are 1 million credentials offered in the U.S. With so many to choose from—and without widespread adoption of standards for comparing and evaluating them—people get lost and lose out on opportunity. Together, we and our partners are working to build a linked open data network that everyone can access for timely and trusted information about credentials.

## CREREDENTIALS

Credentials include diplomas, badges, certificates, licenses, apprenticeships, certifications, and degrees of all types and levels that represent key competencies signaling what a person knows or can do.

## WHAT: TRANSPARENCY

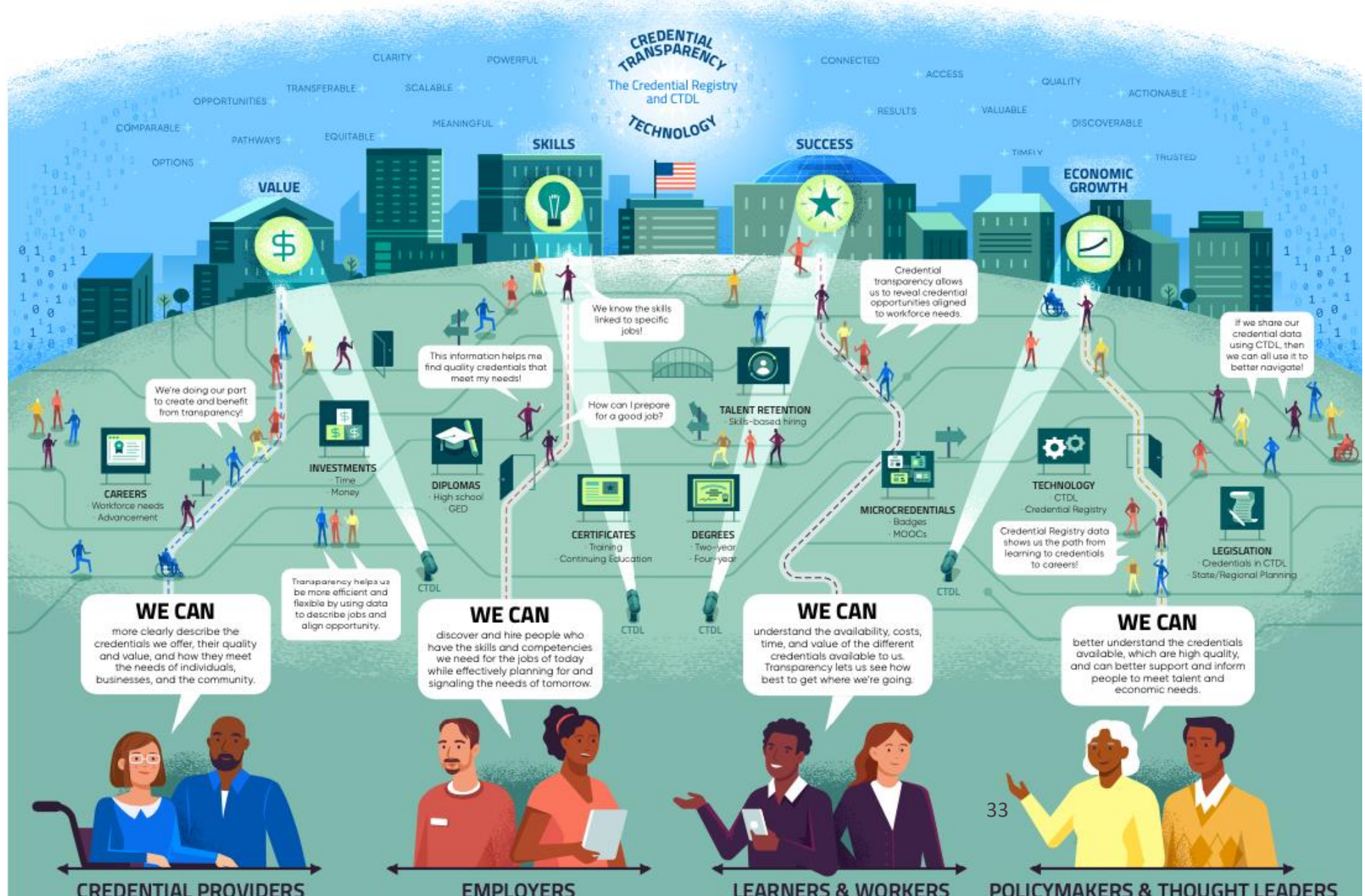
Credential transparency makes essential information about credentials and competencies public, easily accessible, and actionable so that credentials can be better understood and pursued based on what it takes to earn them, what they represent, and the jobs they can lead to.

## HOW: TECHNOLOGY

Credential transparency is made possible by technology. The **Credential Transparency Description Language (CTDL)** schema allows us to catalog, organize, and compare credentials and related information. Credential data from authoritative sources using CTDL is openly available in the **Credential Registry** for anyone, anytime, anywhere to search and compare credentials.

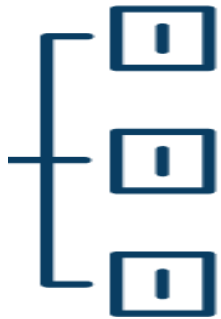
## WHY: PATHWAYS

The easier it is to access and use comparable information about credentials, the easier it is for people to find the most effective paths to learn the right skills and find the best jobs. Credential transparency ensures equitable information about quality pathways to opportunities, makes those pathways discoverable, and empowers individuals along the way.



# Credential Engine's Open Technologies

**Community** – A wide range of stakeholders provide and receive technical assistance and other services to both publish to the Registry and consume the data it houses. *Credentialing bodies, developers, and other users have access to resources such as do-it-yourself guides, best practices, and technical support.*



## Credential Transparency Description Language

Common language that describes key features of credentials and skills.



## Publishing Tools

After creating a user account, organizations use the API or any of the Publishing System tools to convert information to CTDL and publish to the Registry.



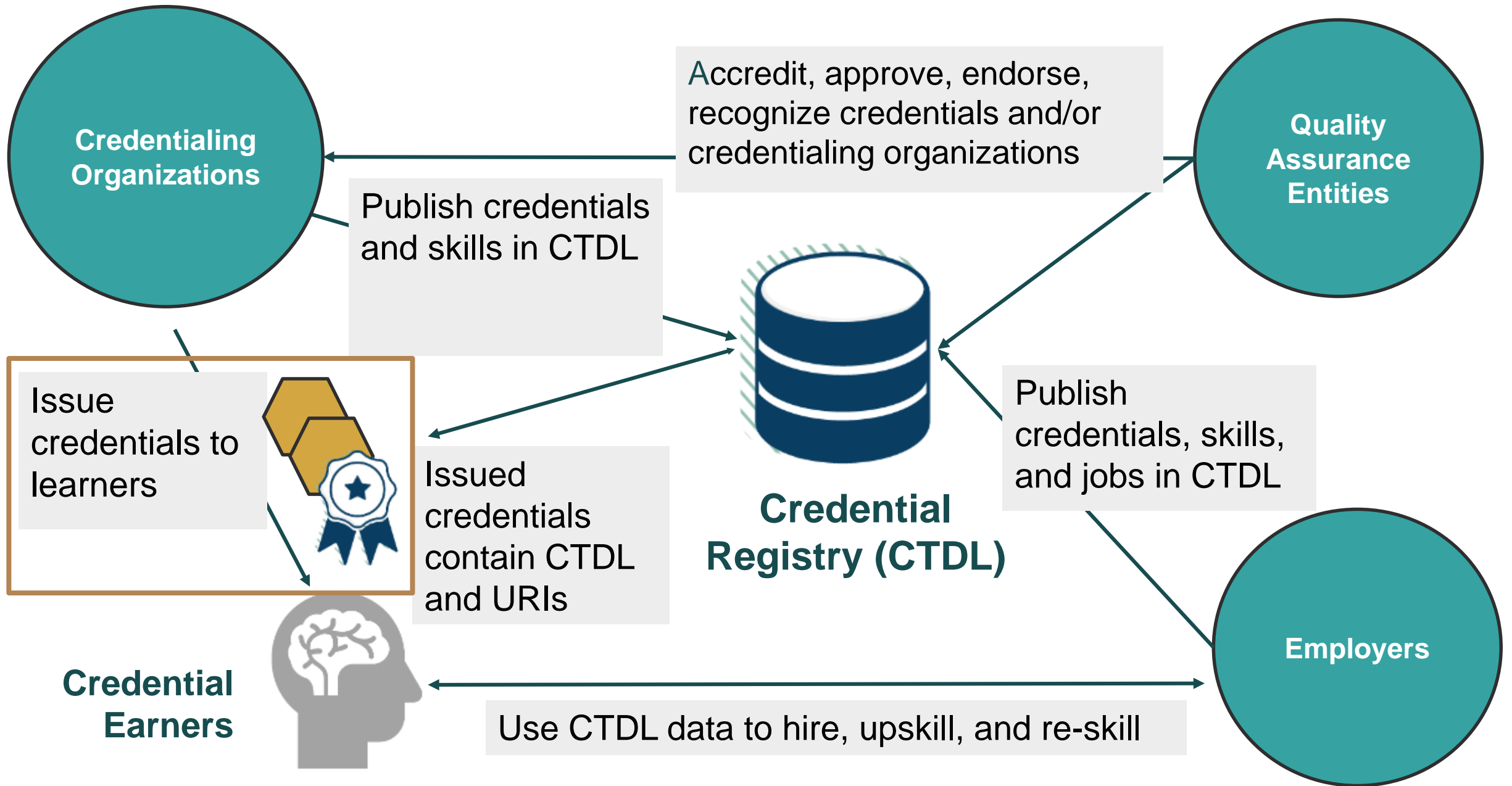
## Credential Registry

More than a database, the Registry collects and connects credential and skills data described with CTDL and supports an open applications marketplace.

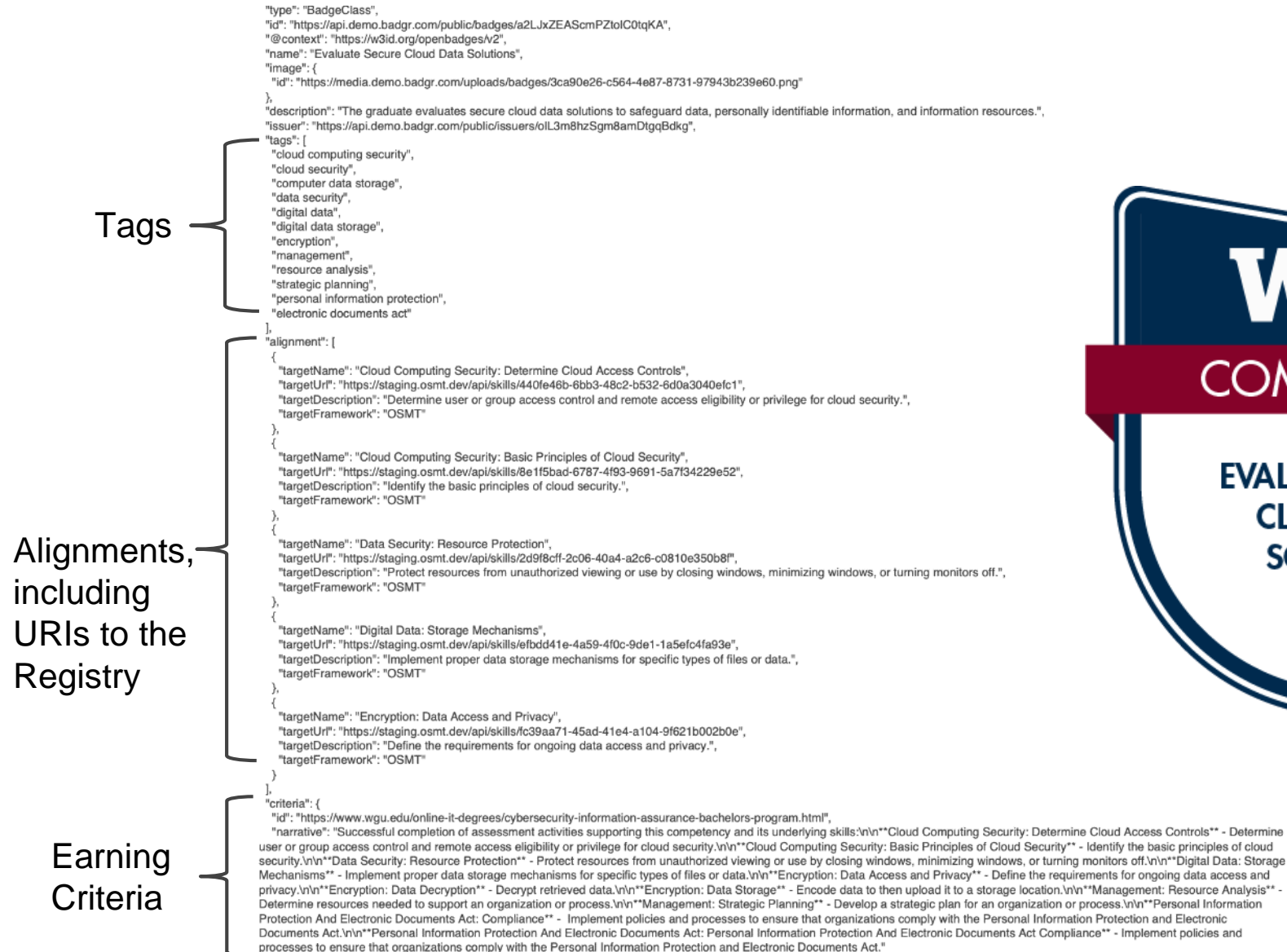
## CREDENTIAL FINDER

## Credential Finder

A tool to view and explore the information stored in the Registry.



# Digital Badges: Baked-in Linked Open Data



# Supporting Rich Descriptions of Credentials and Skills

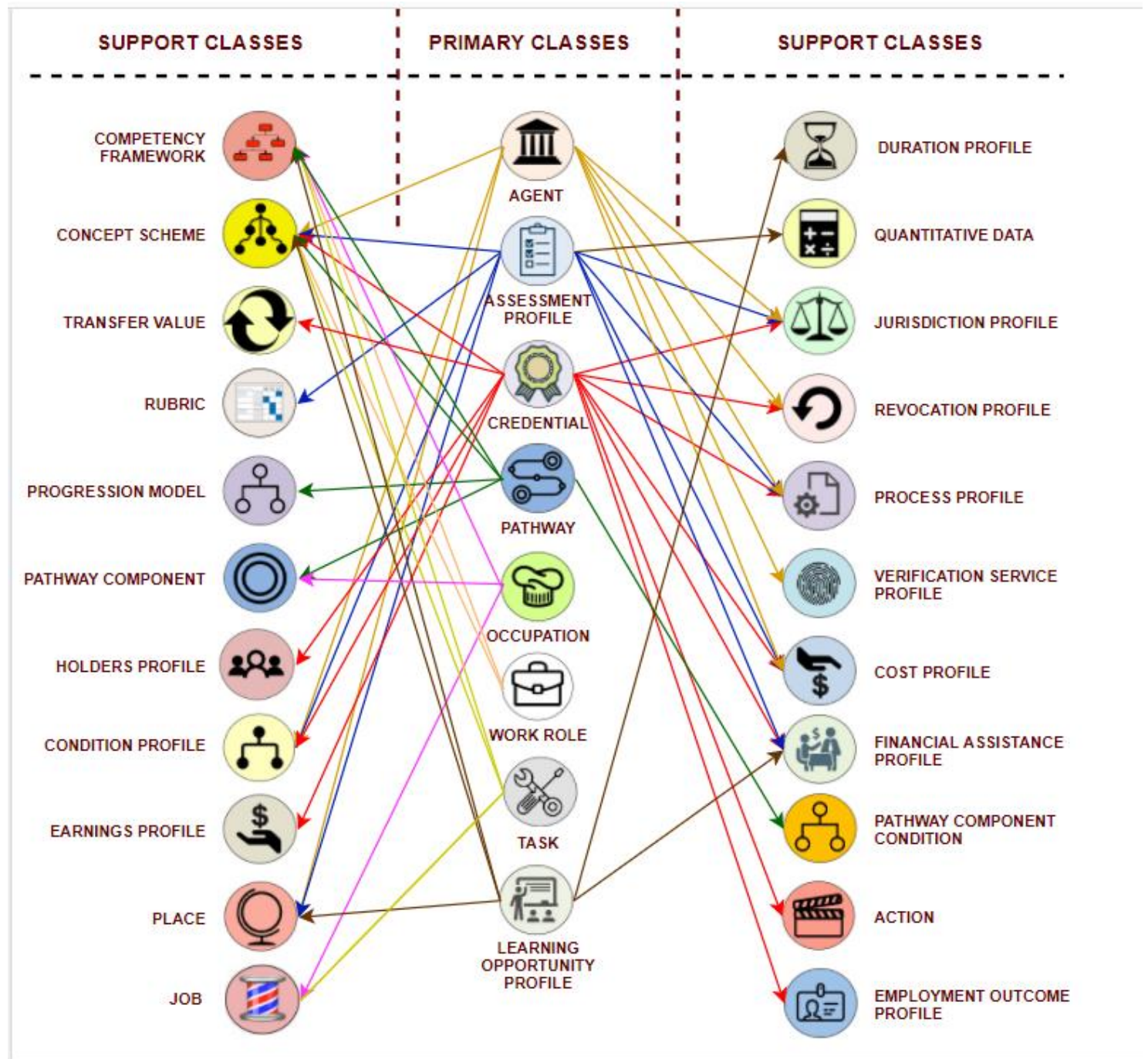


- Credential issuer information
- Learning opportunities and assessments
- Skills and competencies earned
- Alignments to quality assurance frameworks
- Connections, such as stacking of credentials and combining of skills
- Accreditation and other third-party quality recognitions
- Occupational alignment
- Prerequisites, requirements, cost, and time to earn
- Jurisdiction and revocation where applicable
- Transfer value to other institutions
- Components of education and career pathways
- Bridges to jobs, work roles, and tasks
- Aggregate outcome and labor market information

# Credential Transparency Description Language (CTDL)

A linked open data schema modeled on the semantic web for transparency and comparability of credential and skill information.

<https://credreg.net>



## NICE Cybersecurity Workforce Framework: Skills

*U.S. Department of Commerce National Institute of Standards and Technology (NIST)*

The National Initiative for Cybersecurity Education (NICE) Cybersecurity Workforce Framework components provide the means to identify work roles and related knowledge, skills, abilities and tasks of cybersecurity work. Skill is often defined as an observable competence to perform a learned psychomotor act. Skills in the psychomotor domain describe the ability to physically manipulate a tool or instrument like a hand or a

hammer. Skills needed for cybersecurity rely less on physical manipulation of tools and instruments and more on applying tools, frameworks, processes, and controls that have an impact on the cybersecurity posture of an organization or individual. Current version as of January 18, 2018.

 374 Competencies >

 1 Related Learning Opportunity >

 2 Framework Alignments >

 2 Competency Alignments >

Last Updated: 2020-04-27

## NICE Cybersecurity Workforce Framework: Abilities

*U.S. Department of Commerce National Institute of Standards and Technology (NIST)*

The National Initiative for Cybersecurity Education (NICE) Cybersecurity Workforce Framework components provide the means to identify work roles and related knowledge, skills, abilities and tasks of cybersecurity

work. Ability is defined as competence to perform an observable behavior or a behavior that results in an observable product. Current version as of January 18, 2018.

 176 Competencies >

 2 Framework Alignments >

 2 Competency Alignments >

Last Updated: 2020-04-27

## NICE Cybersecurity Workforce Framework: Tasks

*U.S. Department of Commerce National Institute of Standards and Technology (NIST)*

The National Initiative for Cybersecurity Education (NICE) Cybersecurity Workforce Framework components provide the means to identify work roles and related knowledge, skills, abilities and tasks of cybersecurity work. A Task in the Cybersecurity Workforce Framework is a specific defined piece of cybersecurity work

that, combined with other identified Tasks, compose the work in a specific specialty area or work role. Current version as of January 18, 2018.

 1006 Competencies >

 3 Framework Alignments >

 3 Competency Alignments >

Last Updated: 2020-04-27

## NICE Cybersecurity Workforce Framework: Knowledge

*U.S. Department of Commerce National Institute of Standards and Technology (NIST)*

The National Initiative for Cybersecurity Education (NICE) Cybersecurity Workforce Framework components provide the means to identify work roles and related knowledge, skills, abilities and tasks of cybersecurity

work. Knowledge is a body of information applied directly to the performance of a function. Current version as of January 18, 2018.





# Linked Open Data Connections in CTDL



The Credential Finder is a tool for exploring all of the information published to the Credential Registry.

Search

About

## NICE Cybersecurity Workforce Framework: Skills

U.S. Department of Commerce National Institute of Standards and Technology (NIST)

### Description

The National Initiative for Cybersecurity Education (NICE) Cybersecurity Workforce Framework components provide the means to identify work as an observable competence to perform a learned psychomotor act. Skills in the psychomotor domain describe the ability to physically manipulate physical manipulation of tools and instruments and more on applying tools, frameworks, processes, and controls that have an impact on the cy

### Explore this Framework

Details

Competencies

Connections

Concept Schemes

### Connections

#### Referenced By Learning Opportunities

##### IT-212 Introduction to Computer Networks

Students will learn the basics of interconnectivity of computing systems. With fundamental networking knowledge, students will design a basi

#### Related Competency Frameworks

##### Information Technologies (BS)

BS.ITE: Information Technologies (BS)

### NICE Cybersecurity Workforce Framework: Skills

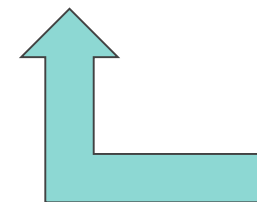
#### Registry Information

CTID ce-bf139ee2-cc1e-4ea5-97c6-6dea17ebeb

URI <https://credentialengine.org/resources/ce-bf139ee2-cc1e-4ea5-97c6-6dea17ebeb>

#### Raw Metadata

```
{
  "@id": "https://credentialengine.org/graph/ce-bf139ee2-cc1e-4ea5-97c6-6dea17ebeb",
  "@graph": [
    {
      "@context": "https://credreg.net/ctdlasn/schema/context/json",
      "@id": "https://credentialengine.org/resources/ce-bf139ee2-cc1e-4ea5-97c6-6dea17ebeb",
      "@type": "ceasn:CompetencyFramework",
      "ceasn:name": {
        "en-us": "NICE Cybersecurity Workforce Framework: Skills"
      },
      "ceasn:source": [
        "https://www.nist.gov/itl/applied-cybersecurity/nice/nice-cybersecurity-workforce-framework"
      ],
      "ceterms:ctid": "ce-bf139ee2-cc1e-4ea5-97c6-6dea17ebeb",
      "ceasn:publisher": [
        "https://credentialengine.org/resources/ce-e3ead9e0-c299-47fc-ab6a-54ca8ee47643"
      ]
    }
  ]
}
```



NICE Cybersecurity Workforce Framework: Skills

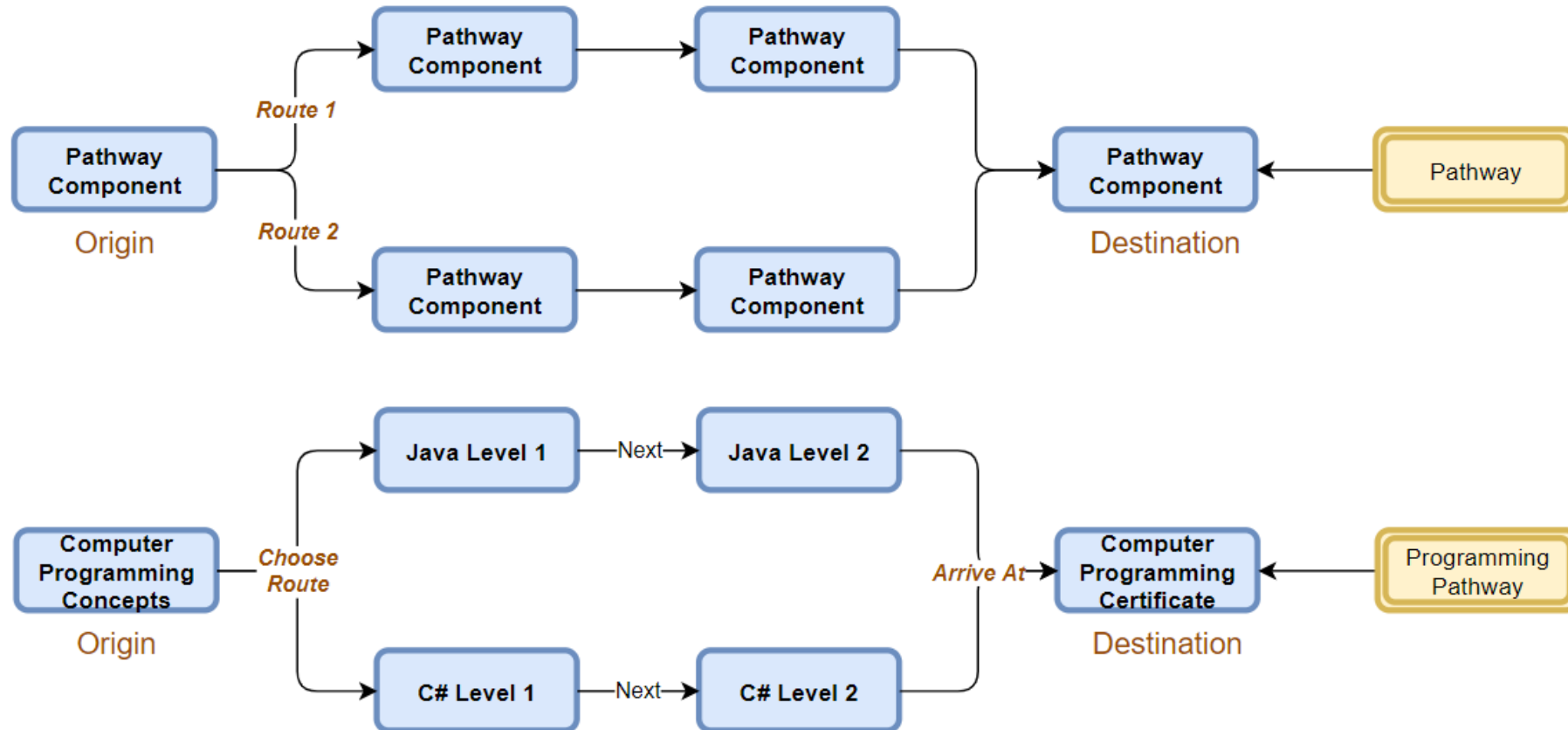
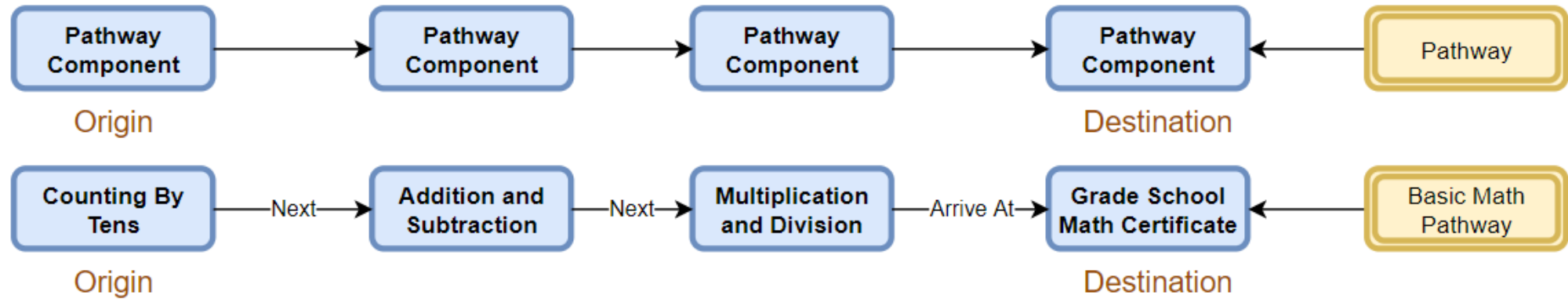
View JSON-LD and CTID

# Education and career pathways with CTDL and RSDs

Education and Career Pathway CTDL Components
Assessment
Basic
Co-curricular
Competency/Skill/RSD
Course
Credential
Extracurricular
Job
Work Experience

- Education and career pathways identify one or more starting points and various components along routes with options for arriving at a destination goal.
- Any pathway can have multiple options to help a person achieve their education and career goals.
- CTDL supports designing and publishing education and career pathways and related RSDs as linked open data.

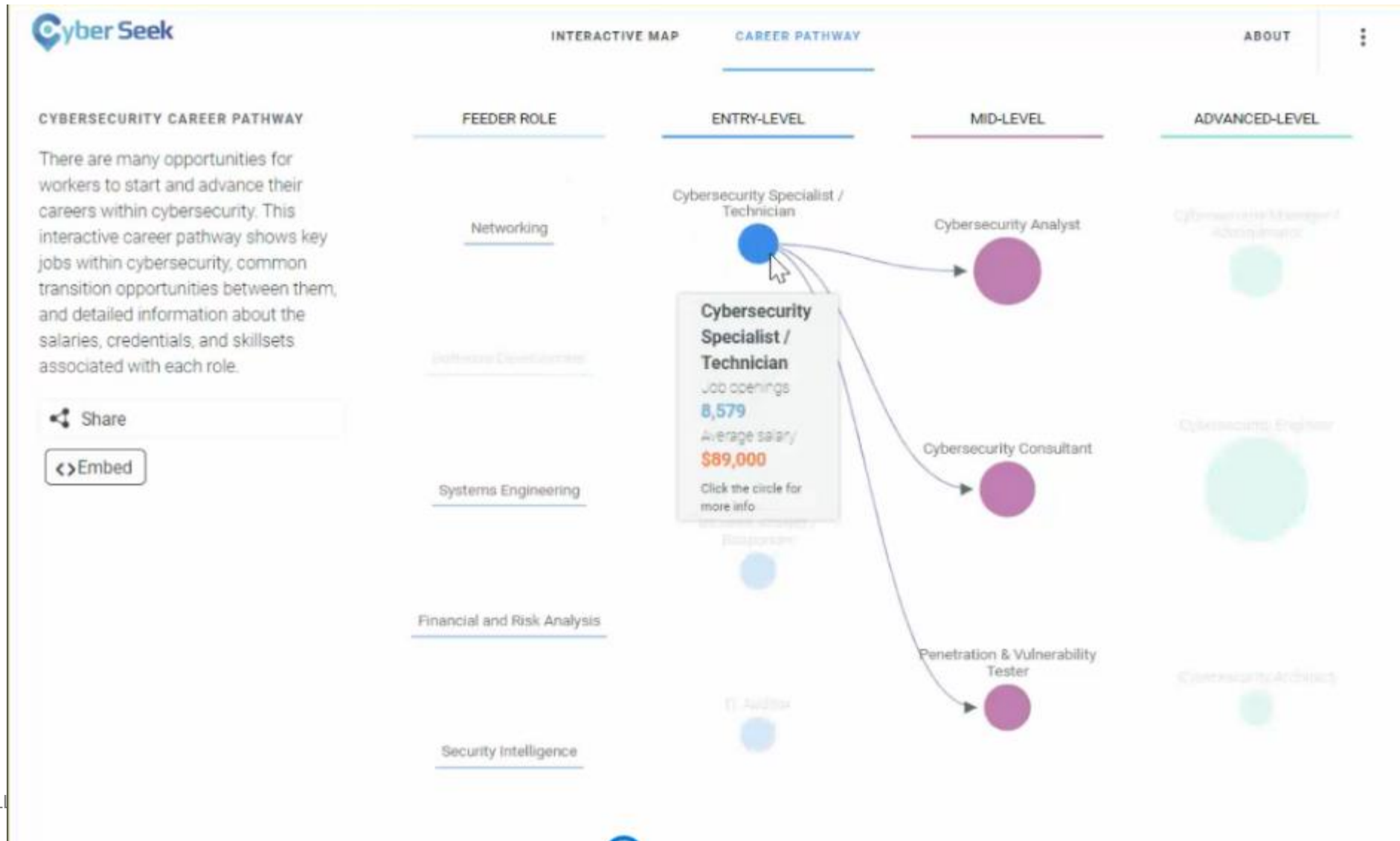




# RSDs and CTDL Pathways in Cybersecurity

Work in progress examples that will be widely available and shareable soon

# What kind of cyber jobs are there?



# What does that mean?

## Cybersecurity Specialist / Technician

### AVERAGE SALARY ⓘ

\$89,000

Cybersecurity Specialist / Technician



### COMMON JOB TITLES ⓘ

- Information Security Specialist
- It Security Specialist
- It Specialist Information Security
- Information Technology Specialist Information Security

### REQUESTED EDUCATION (%) ⓘ



### TOP SKILLS REQUESTED ⓘ

- 1 Information Security
- 2 Information Systems
- 3 Information Assurance
- 4 Network Security
- 5 Security Operations
- 6 Vulnerability assessment
- 7 Project Management
- 8 Linux
- 9 NIST Cybersecurity Framework

### TOTAL JOB OPENINGS ⓘ

8,579

Cybersecurity Specialist / Technician




### COMMON NICE CYBERSECURITY WORKFORCE FRAMEWORK CATEGORIES ⓘ

- Securely Provision
- Operate and Maintain
- Protect and Defend
- Analyze
- Investigate

### TOP CERTIFICATIONS REQUESTED ⓘ

- Certified Information Systems Security Professional (CISSP)
- SANS/GIAC Certification
- CompTIA Security+
- Certified Information Systems Auditor (CISA)
- Certified Information Security Manager (CISM)

# On-ramp to explore and discover



about 50 mins

**Topics**


- Learning Objectives
- What is a Cybersecurity Architect?
- Elements of a Security Architecture
- The Importance of Cybersecurity Architecture
- Knowledge Check
- Resources

Challenge [+390 mins](#)

[? Question, feedback or help](#)

# On-ramp to explore and discover

## IT-253 Computer Systems Security

Southern New Hampshire University   
Learning Opportunity

[Edit](#)  
[Finder](#)

Basic Info	Location Info	More Info
<a href="#">Connect to this Learning Opportunity</a>	<a href="#">Available Online</a>	<b>Competencies</b> 3 Teaches 3 Competencies
<b>About this Learning Opportunity</b>	<b>Owned By</b>	<b>Connections</b> 1 Required For 1 Credential 3 Condition Target For 3 Credentials 1 Preparation From 1 Credential

### Credentials

**Security Specialist Superbadge**

Salesforce

Superbadges in Trailhead show that you can take what you've learned and apply it to advanced, real-world business requirements. Concepts Tested in This Superbadge: Data Security User Authentication User Permissions What You'll be Doing to Earn This Superbadge: Create necessary user permissions Set record-level security settings Set appropriate password policies Track field-level changes Set up reporting Set up two-factor authentication Track changes to Salesforce settings


Digital Badge

### Conditions

**Description:**  
Superbadges in Trailhead show that you can take what you've learned and apply it to advanced, real-world business requirements.

Concepts Tested in This Superbadge:

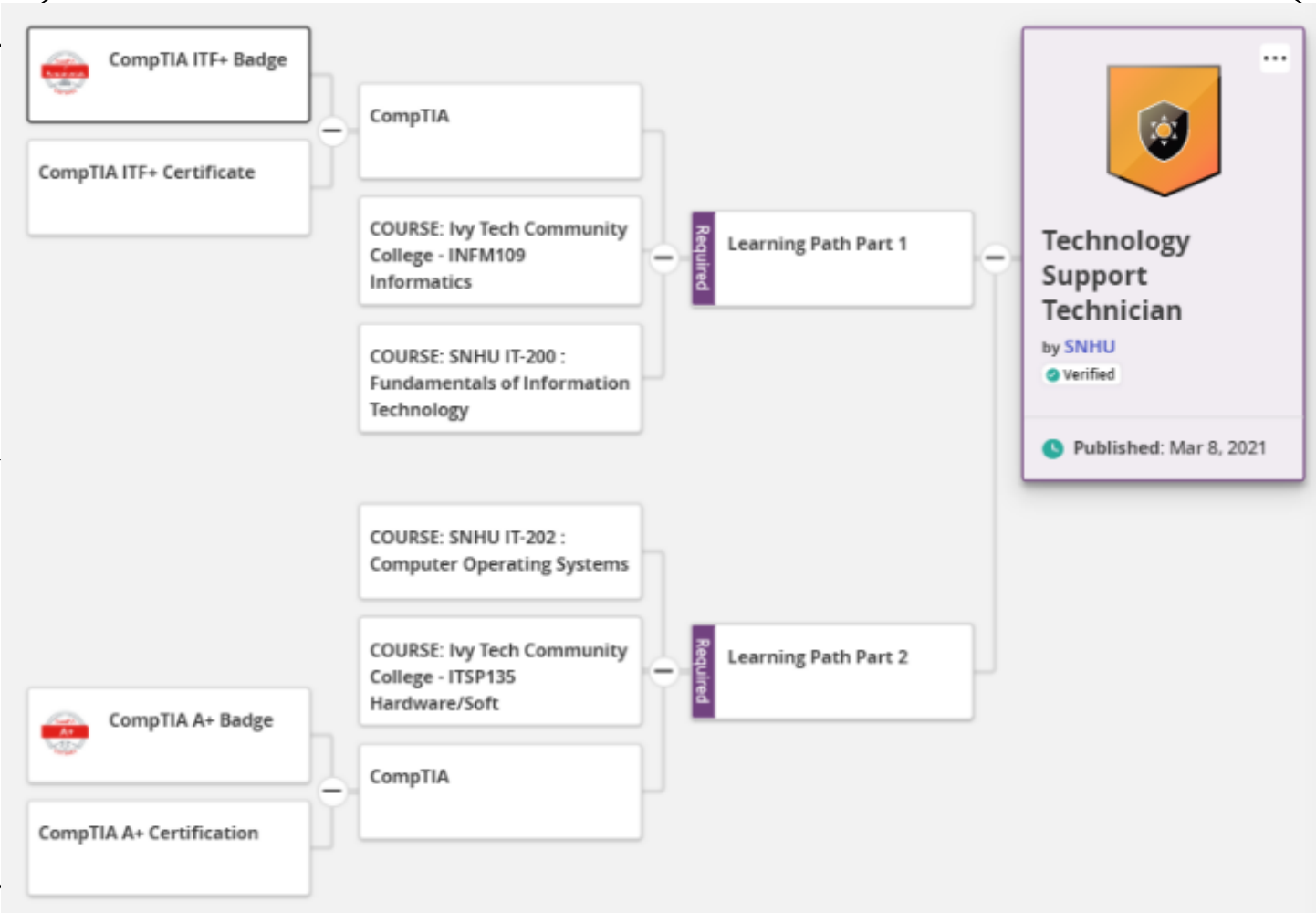
- Data Security
- User Authentication
- User Permissions



salesforce



# Foundational pathways (on-ramps)



# Alternative pathways

## Description

IT Networking Specialist analyze, troubleshoot and evaluate computer network problems. More advanced IT pros may be responsible for building and designing communication networks as well. They play an important role in maintaining an organization's network and keeping them safe and secure through both hardware configuration and end-user training. Network specialists and administrators are responsible for day-to-day operations and network architects and engineers design and build local area networks (LANs), wide area networks (WANs), and Intranets. Depending on the size of the company, these roles may be combined.

[Source](#)

## Occupations

IT Networking Specialist   Network and Computer Systems Administrators

## Progression Models

IT Networking Specialist Progression Model (Comp TIA)

## Pathway Components

List   Tree   Graph   Registered

Some components require one or more other components via conditions. Each condition has a button. Click the button to show the components that are referenced by the condition.

### Beginner

Name  
**CompTIA A+**


Type	Credential Type	Source Data	Subject Webpage
CredentialComponent	Certification	<a href="#">View Source</a>	<a href="#">View Source</a>

Description  
A+ is the starting point for a career in IT. The performance-based exams certify foundational IT skills across a variety of devices and operating systems

Name  
**CompTIA Network+**

Type	Credential Type	Source Data	Subject Webpage
CredentialComponent	Certification	<a href="#">View Source</a>	<a href="#">View Source</a>


Description  
Network+ certifies the essential skills needed to confidently design, configure, manage and troubleshoot wired and wireless networks.

 Requires 1 of 1

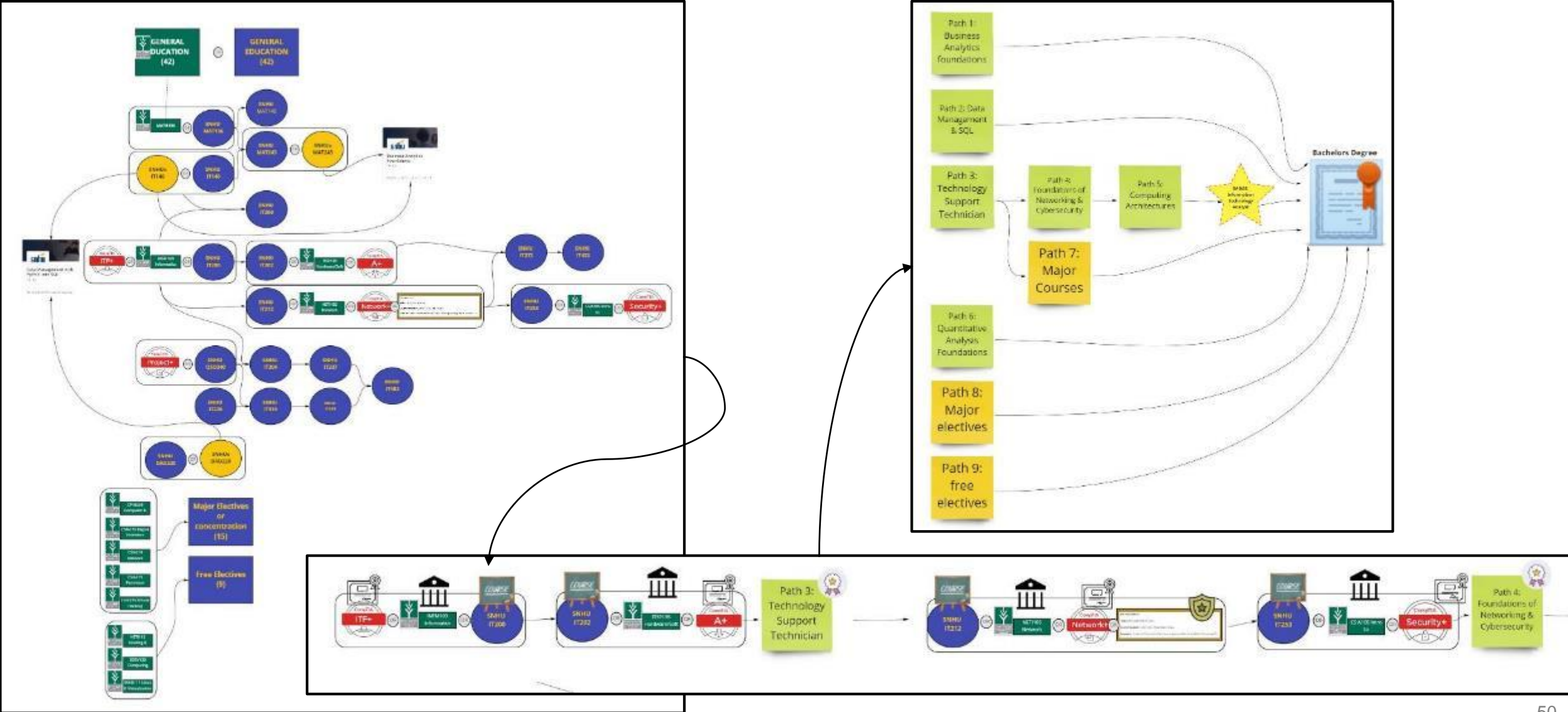
Name  
**CompTIA Security+**

Type	Credential Type	Source Data	Subject Webpage
CredentialComponent	Certification	<a href="#">View Source</a>	<a href="#">View Source</a>

Description  
Security+ provides a global benchmark for best practices in IT network and operational security, one of the fastest-growing fields in IT.

 Requires 1 of 1

# Stackable Pathways



# Behind the scenes - alignment magic

**CREDENTIAL FINDER™**  
The Credential Finder is a tool for exploring all of the information published to the Credential Registry.

## Information Technologies (BS)

Southern New Hampshire University

### Description

BS.ITE: Information Technologies (BS)

### Explore this Framework

Details Competencies Connections **Concept Schemes**

### Connections

#### Referenced By Credentials

##### Data Management and SQL Pathway Badge

Data management is a growing field that explores the many ways of using data within an organization to improve decision-making. Data management can better plan for the future by leveraging data organization, data management and automation tools. Through hands-on labs, learners will develop the skills necessary to create structured database environments using a relational database designed for individuals interested in data management.

##### B.S. in Information Technology

Information Technology has become increasingly important as organizations combine technical abilities, problem-solving skills, and their organizations for the rapid maintenance solutions. They need necessary skills that will allow them to stay competitive in the global market.

##### Computer Science (Certificate)

The certificate in Computer Science covers the Development Lifecycle, as well as the encapsulation of data and the design of algorithms.

##### BS in Information Technology

### Related Competency Frameworks

#### NICE Cybersecurity Workforce Framework: Skills

The National Initiative for Cybersecurity Education (NICE) Cybersecurity Workforce Framework components provide the skills in the psychomotor domain describe the ability to physically perform tasks that are necessary to support the cybersecurity posture of an organization or individual. Current version as of January 18, 2018.

#### NICE Cybersecurity Workforce Framework: Abilities

The National Initiative for Cybersecurity Education (NICE) Cybersecurity Workforce Framework components provide the abilities in an observable product. Current version as of January 18, 2018.

#### NICE Cybersecurity Workforce Framework: Tasks

The National Initiative for Cybersecurity Education (NICE) Cybersecurity Workforce Framework components provide the tasks that, combined with other identified Tasks, compose the work in a specific specialty area or work role. Current version as of January 18, 2018.

#### NICE Cybersecurity Workforce Framework: Knowledge

The National Initiative for Cybersecurity Education (NICE) Cybersecurity Workforce Framework components provide the knowledge version as of January 18, 2018.

IT-253: Computer Systems Security

CYB-20258

### Fundamentals of Cybersecurity

Describe the fundamentals of cybersecurity policies and procedures

Broad Alignment 1 with NICE Cybersecurity Workforce Framework: Skills | Skill to evaluate factors of the operational environment to objectives, and information requirements.

Exact Alignment 1 with NICE Cybersecurity Workforce Framework: Tasks | Provides cybersecurity recommendations to leadership based on significant threats and vulnerabilities.

Exact Alignment 1 with NICE Cybersecurity Workforce Framework: Abilities | Ability to share meaningful insights about the context of an organization's threat environment.

Exact Alignment 1 with NICE Cybersecurity Workforce Framework: Abilities | Ability to ensure that senior officials within the organization provide information security for the organization.

IT-253: Computer Systems Security

CYB-20259

### Information Protection

Explain how the protection of information impacts policies and practices within an organization.

Broad Alignment 1 with NICE Cybersecurity Workforce Framework: Tasks | Assess the effectiveness of security controls.

Broad Alignment 1 with NICE Cybersecurity Workforce Framework: Tasks | Evaluate the impact of changes to laws, regulations, policies, standards, or procedures.

Exact Alignment 1 with NICE Cybersecurity Workforce Framework: Skills | Skill in identifying gaps in technical capabilities.

IT-253: Computer Systems Security

CYB-30260

### Information Security Plans

Integrate industry best practices in an organizational information security plan

Broad Alignment 1 with NICE Cybersecurity Workforce Framework: Knowledge | Knowledge of principles and processes for conducting training and education needs analysis.

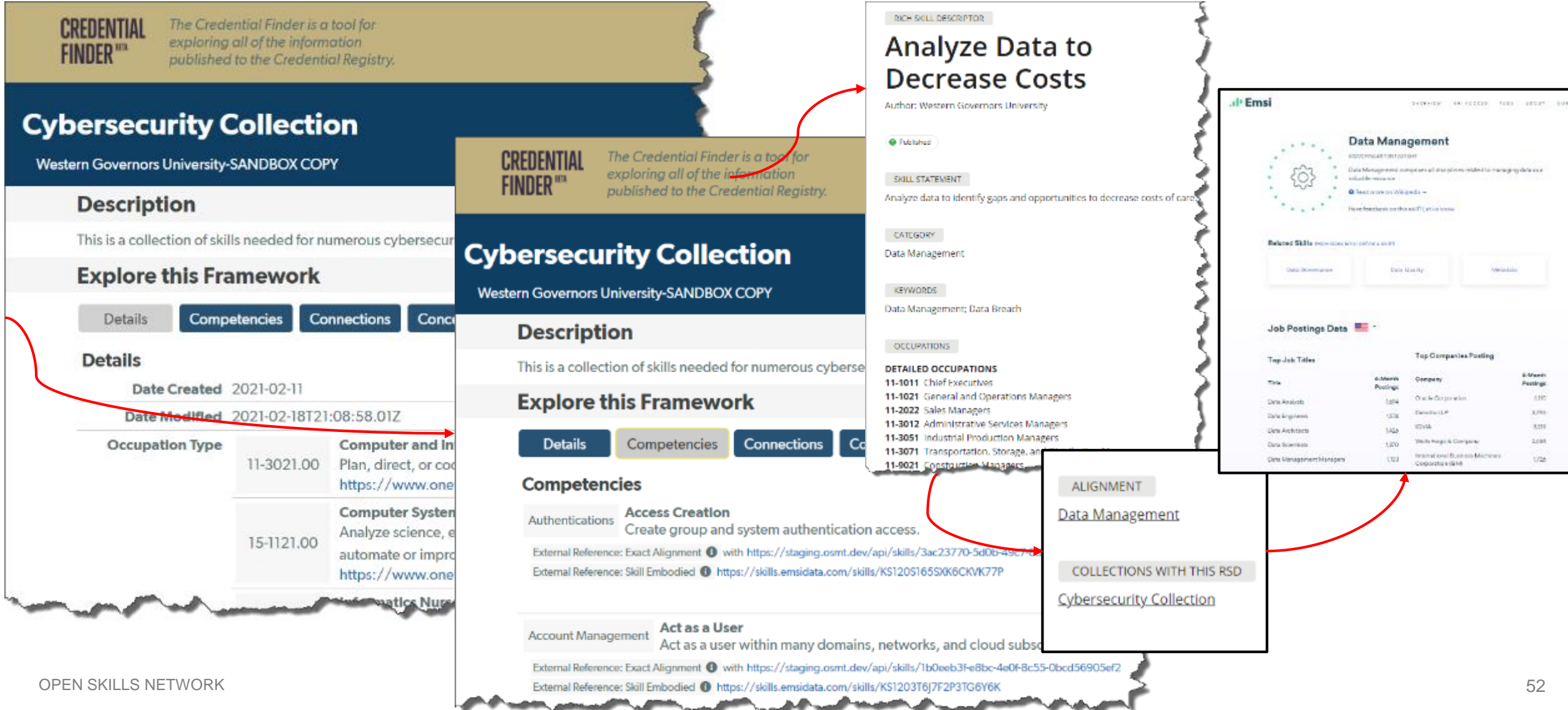
Broad Alignment 1 with NICE Cybersecurity Workforce Framework: Abilities | Ability to apply network security architecture concepts including topology, protocols, configuration, and security.

Narrow Alignment 1 with NICE Cybersecurity Workforce Framework: Tasks | Identify and assign individuals to specific roles associated with the execution of the Risk Management Plan.

Prerequisite Alignment 1 with NICE Cybersecurity Workforce Framework: Knowledge | Knowledge of data backup and recovery.

Prerequisite Alignment 1 with NICE Cybersecurity Workforce Framework: Knowledge | Knowledge of network security (e.g., encryption, firewalls, authentication, honeypots).

# Open shared libraries



The image displays a screenshot of the Credential Finder tool interface, showing a 'Cybersecurity Collection' and a 'Rich Skill Descriptor' for 'Analyze Data to Decrease Costs'.

**Cybersecurity Collection**  
Western Governors University-SANDBOX COPY

**Description**  
This is a collection of skills needed for numerous cybersecurity...

**Explore this Framework**  
Details Competencies Connections

**Details**  
Date Created: 2021-02-11  
Date Modified: 2021-02-18T21:08:58.01Z

Occupation Type	Computer and In
11-3021.00	Plan, direct, or cod <a href="https://www.one">https://www.one</a>
15-1121.00	Computer System Analyze science, e automate or impr <a href="https://www.one">https://www.one</a>

**Rich Skill Descriptor**  
**Analyze Data to Decrease Costs**  
Author: Western Governors University

**SKILL STATEMENT**  
Analyze data to identify gaps and opportunities to decrease costs of care.

**CATEGORY**  
Data Management

**KEYWORDS**  
Data Management; Data Breach

**OCCUPATIONS**  
**DETAILED OCCUPATIONS**  
11-1011 Chief Executives  
11-1021 General and Operations Managers  
11-2022 Sales Managers  
11-3012 Administrative Services Managers  
11-3051 Industrial Production Managers  
11-3071 Transportation, Storage, and  
11-9021 Construction Managers

**ALIGNMENT**  
Data Management

**COLLECTIONS WITH THIS RSD**  
Cybersecurity Collection

**Emsi Data Management**  
Data Management managers all also possess related to managing data and  
Data Management managers all also possess related to managing data and  
Data Management managers all also possess related to managing data and

Top Job Titles	6-Month Postings	Company	6-Month Postings
Data Analysts	1,014	Oracle Corporation	1,107
Data Engineers	1,018	Electronic LP	3,799
Data Architects	1,025	VMware	3,039
Data Scientists	1,020	Wells Fargo & Company	2,048
Data Management Managers	1,013	International Business Machines Corporation IBM	1,026

# Call to Action

An open skills infrastructure is critical to support the future of work and the development of agile and robust talent pathways where all individuals have equitable opportunities to achieve their career goals.

## **Join the Open Skills Network**

OSN membership starts with like-minded organizations and individuals like yourself who are working to build the skills ecosystem. As an open network, membership has no associated cost or fee.

## **Contribute your expertise and resources**

The OSN is committed to the democratization of skills as a sharable, interoperable currency through the practical application of open, accessible, machine-actionable skills data.

THANK YOU FOR  
JOINING US TODAY

[www.openskillsnetwork.org](http://www.openskillsnetwork.org)

# Q & A



# Thank You for Joining Us!

**Upcoming Webinar:** Getting Girls into STEM and Cybersecurity - Pathways to Progress

**When:** Wednesday, April 21, 2-3PM ET

**Register:** <https://nist-nice.adobeconnect.com/webinarapril2021/event/registration.html>

[nist.gov/nice/webinars](https://nist.gov/nice/webinars)