Course Conclusion

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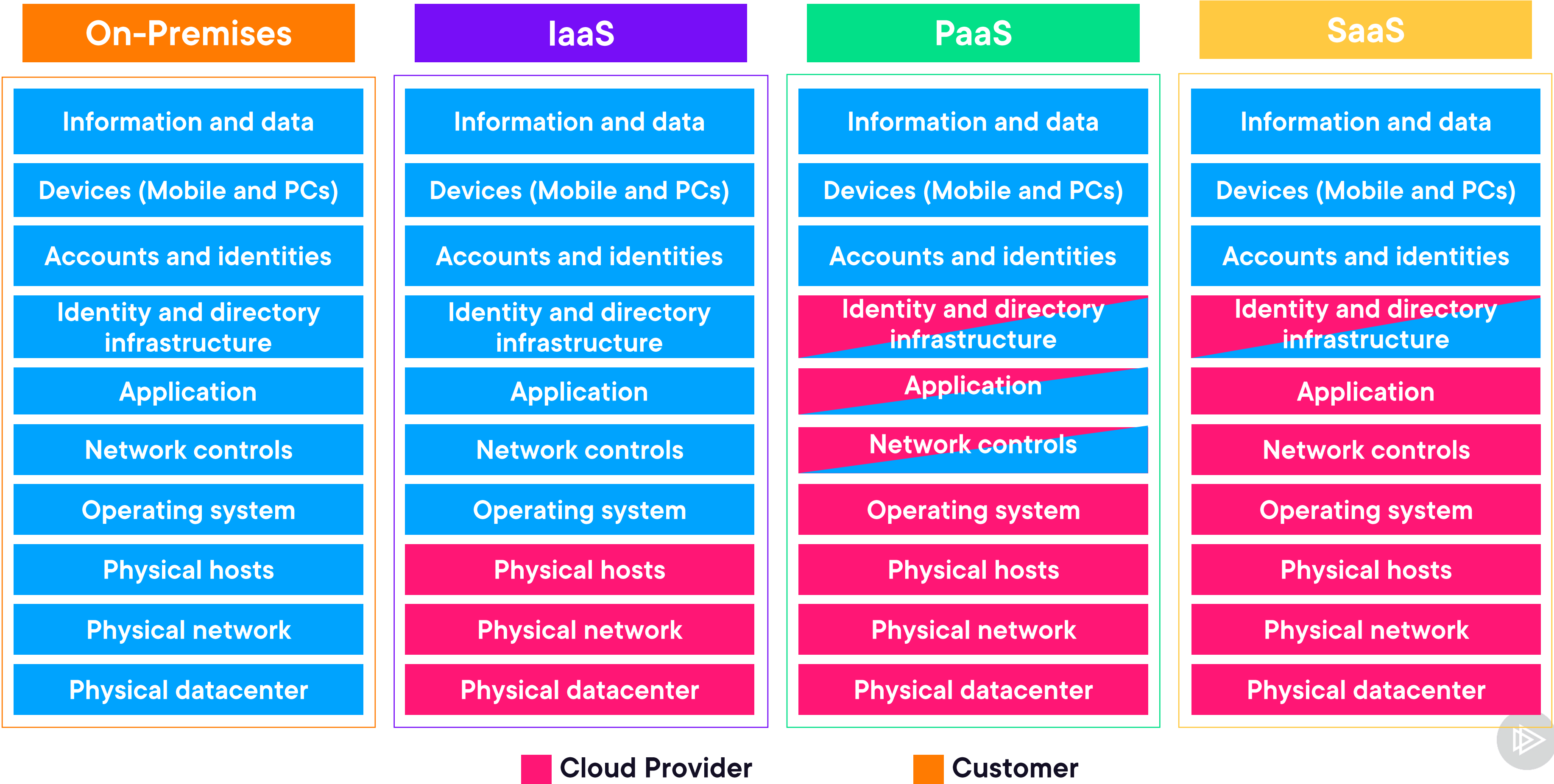# Types of Cloud Computing Services

Infrastructure as a Service (IaaS)

Platform as a Service (PaaS)

Software as a Service (SaaS)

# Who Secures What? – The Shared Responsibility Model

On-Premises	IaaS	PaaS	SaaS
Information and data	Information and data	Information and data	Information and data
Devices (Mobile and PCs)	Devices (Mobile and PCs)	Devices (Mobile and PCs)	Devices (Mobile and PCs)
Accounts and identities	Accounts and identities	Accounts and identities	Accounts and identities
Identity and directory infrastructure	Identity and directory infrastructure	Identity and directory infrastructure	Identity and directory infrastructure
Application	Application	Application	Application
Network controls	Network controls	Network controls	Network controls
Operating system	Operating system	Operating system	Operating system
Physical hosts	Physical hosts	Physical hosts	Physical hosts
Physical network	Physical network	Physical network	Physical network
Physical datacenter	Physical datacenter	Physical datacenter	Physical datacenter

■ Cloud Provider   ■ Customer

It's your duty to know what your security responsibilities are for each type of workload you leverage in the cloud
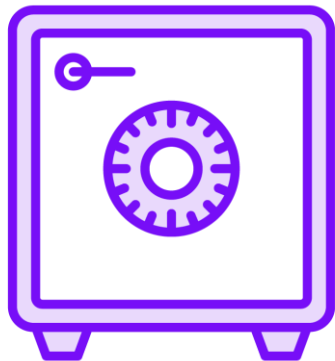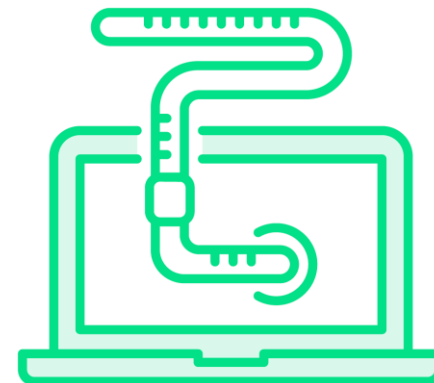
Common Security Threats

Data breach
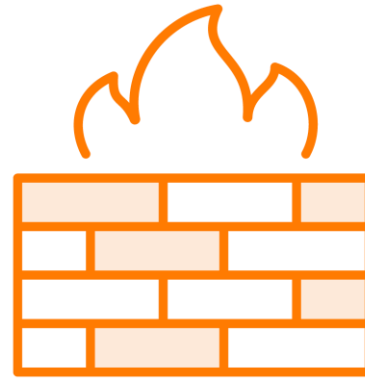
Disruptive attacks

Dictionary attack
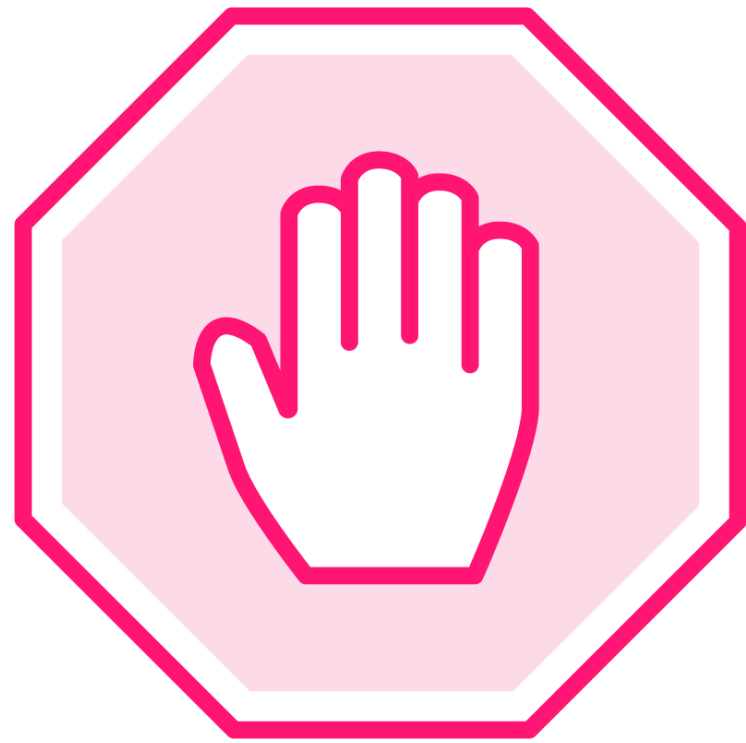*aka Brute Force Attack*

Ransomware

Worms

Coin miners
aka Cryptojacking

Zero trust assumes there is no implicit trust granted to assets or user accounts based solely on their physical or network location (i.e., local area networks versus the internet) or based on asset ownership (enterprise or personally owned).

Zero Trust Guiding Principles

Verify Explicitly

Least Privileged Access

Assume Breach

Defense in Depth

Use a layered approach, rather than relying on a single perimeter

If one layer is breached – a subsequent layer will prevent an attacker getting access to the data
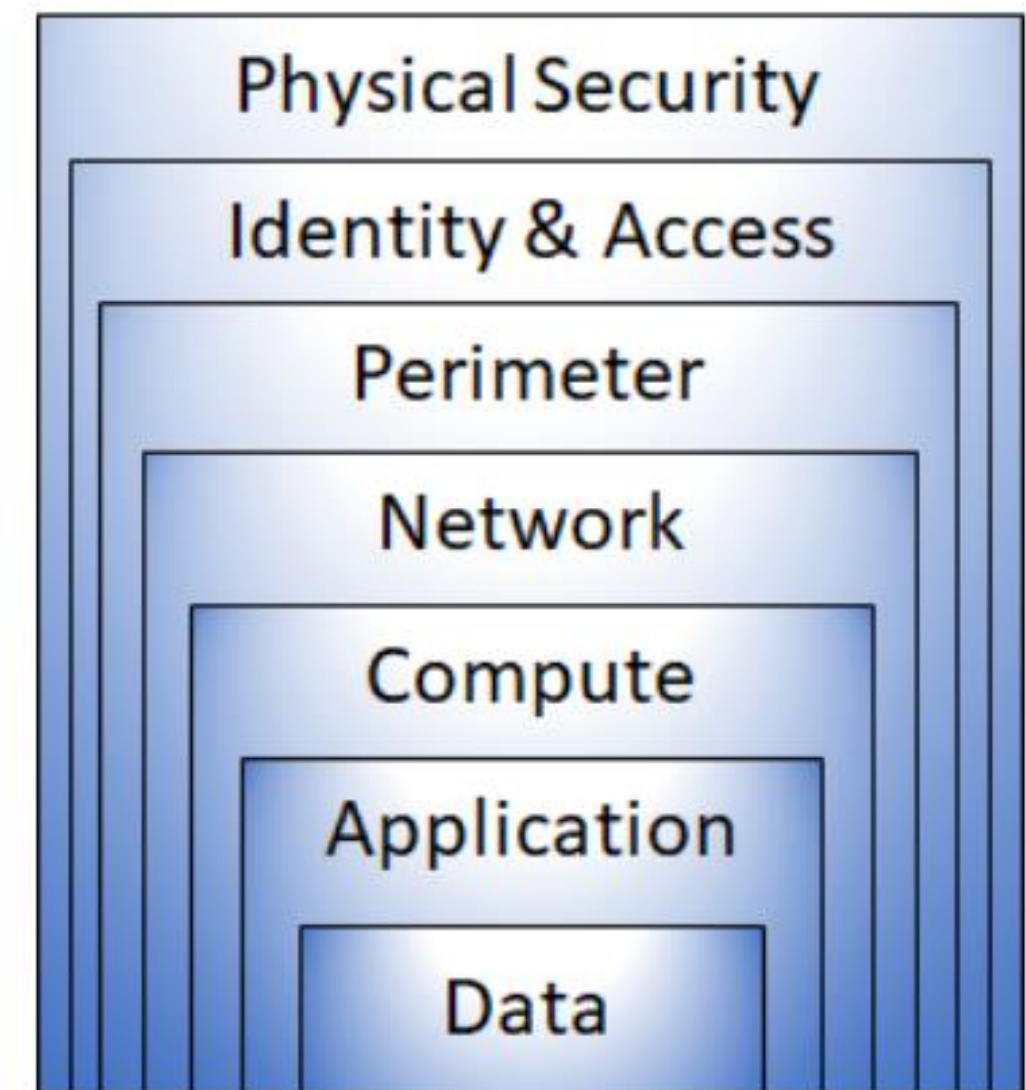
Image Source: Microsoft©

Encryption Basics
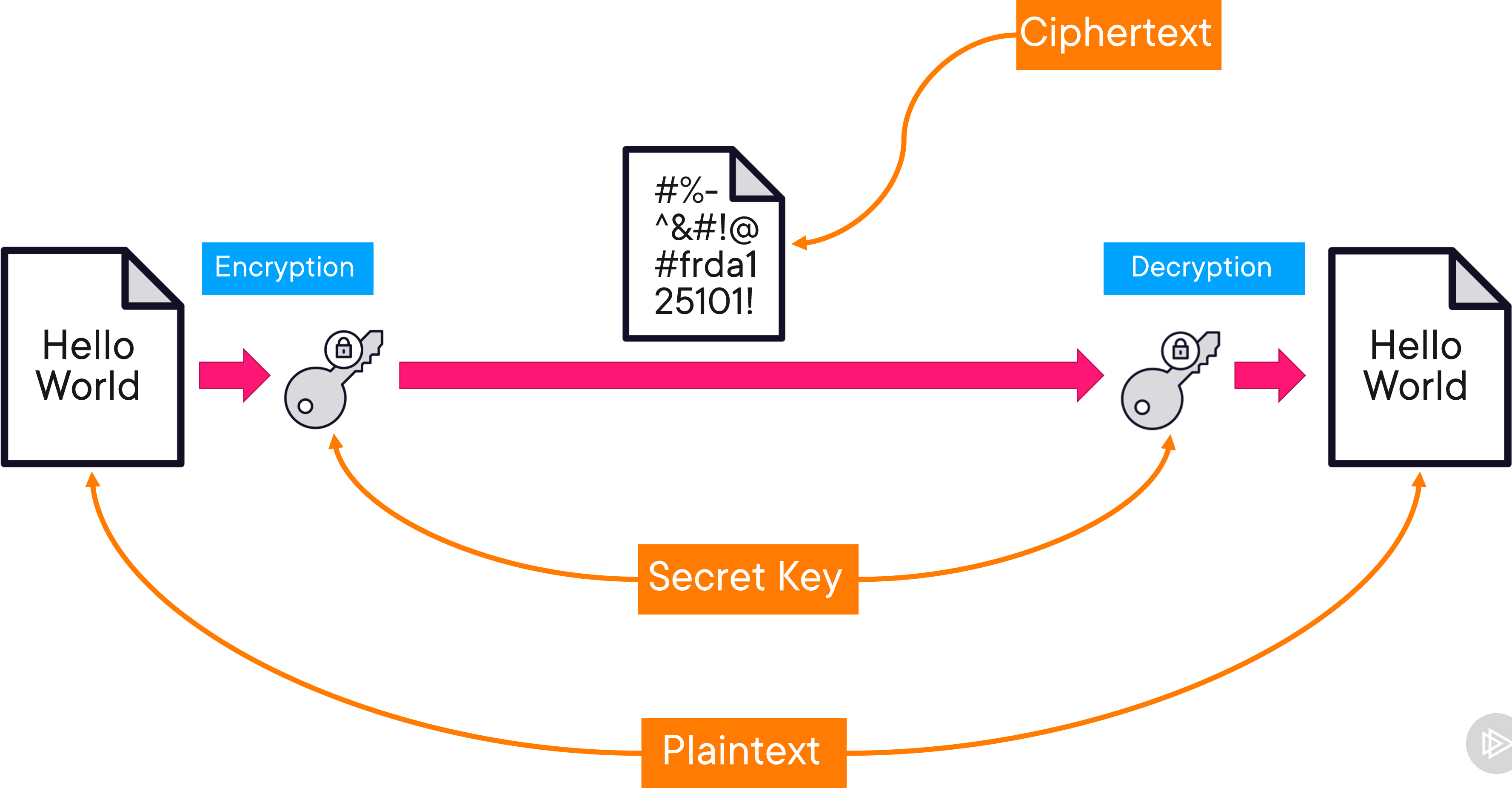
Hashing
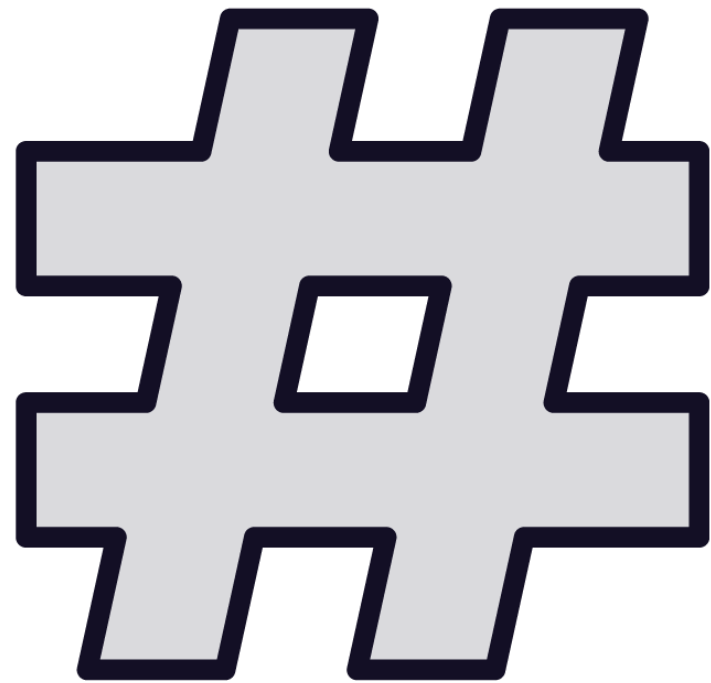
Using an algorithm to map data of any size to a *unique* fixed length value

The hash can be used as a unique identifier of its associated data

Hashing is deterministic

- Same input produces the same output
- Changing anything in the input will produce a different hash

Digital Signatures

Signer → Hello World → Hash algorithm → **1001011010101** Hash → Encryption with the private key → Hello World **1001011010101** Digitally signed document

Network

Digitally signed document — Hello World **1001011010101**

Hash algorithm → **1001011010101** Hash

Decryption with the public key → **1001011010101** Hash

Signature is valid when hash values are equal

Verifier
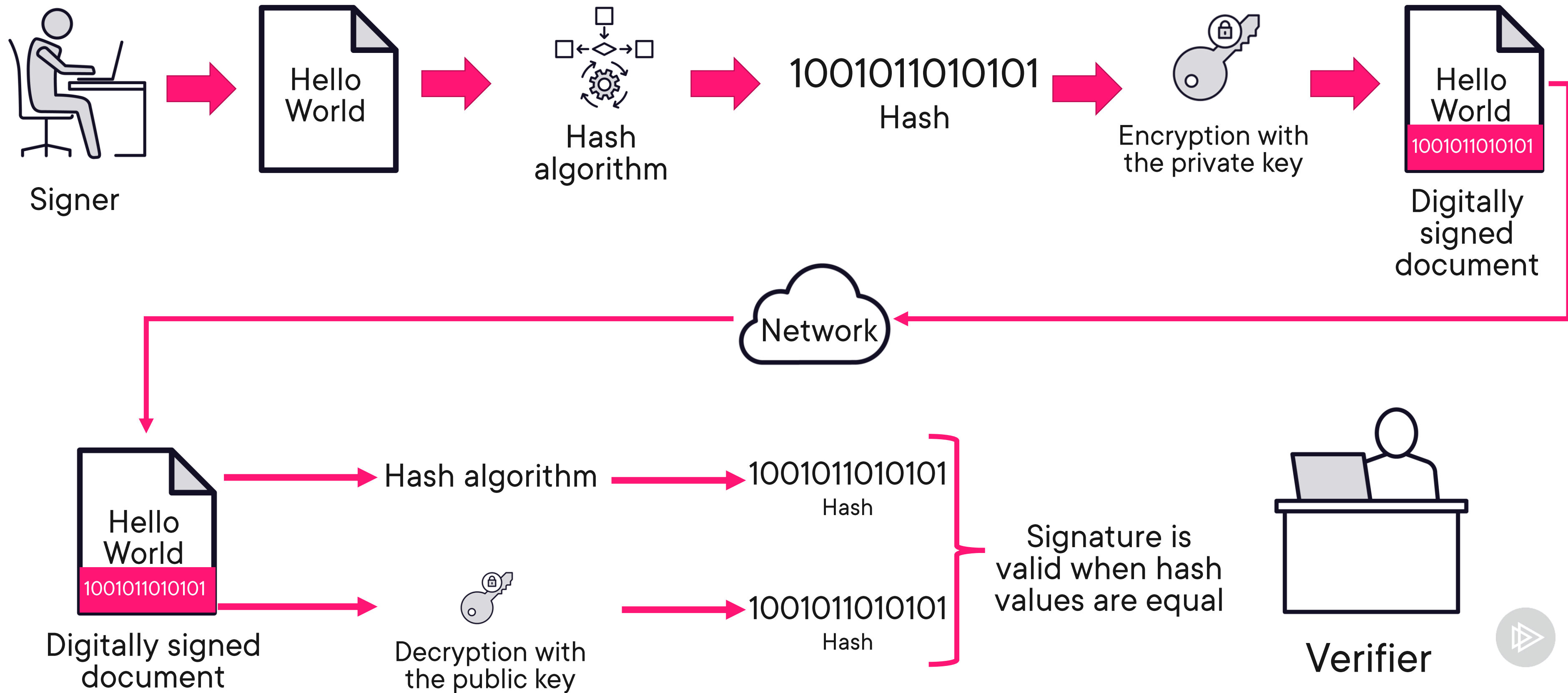
Authentication and Authorization

Authentication
Confirms users are who
they say they are

Authorization
Checks if users are
allowed to access a
resource

Modern Authentication
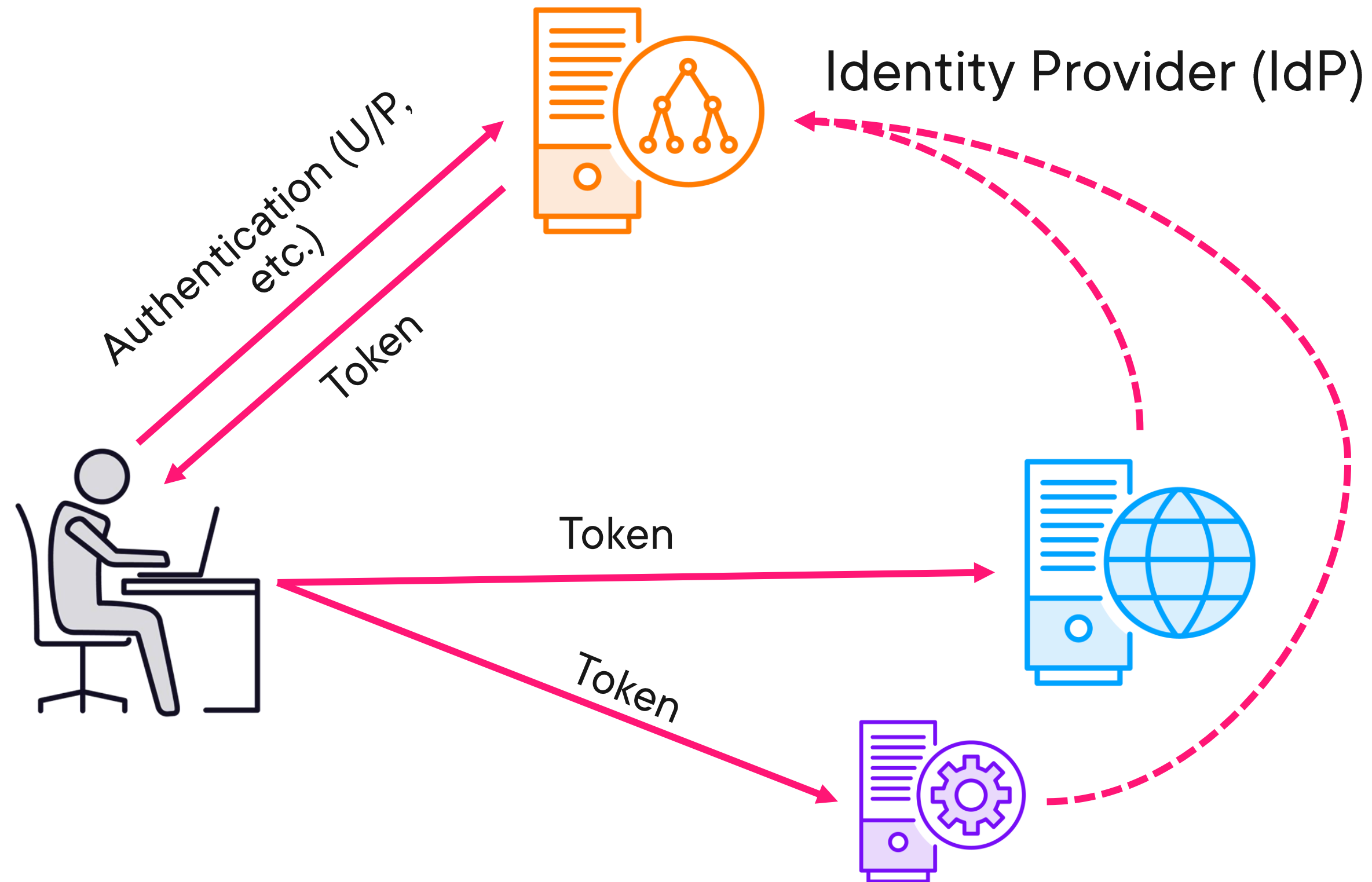
Identity Provider (IdP)

Authentication (U/P, etc.)

Token

Token

Token

Federation

Introduction to Directory Services

Customizable information store

Functions as a single point where users can locate resources across the network

Users and groups

Devices

Printers

And more

Single point for administrators to manage all those resources

Regulatory Compliance for IT Professionals

GDPR

Set of digital security requirements and practices

Ensure that a company's business processes are secure

Usually done to satisfy a third party

- Government
- Security framework
- Client

Helps organizations establish policies and practices to minimize compliance risk

It's a way to get everyone aligned on business objectives

Senior executives

Legal teams

Finance and HR managers

IT departments

Microsoft has many tools that can be part of your GRC policies

Image Source: Microsoft
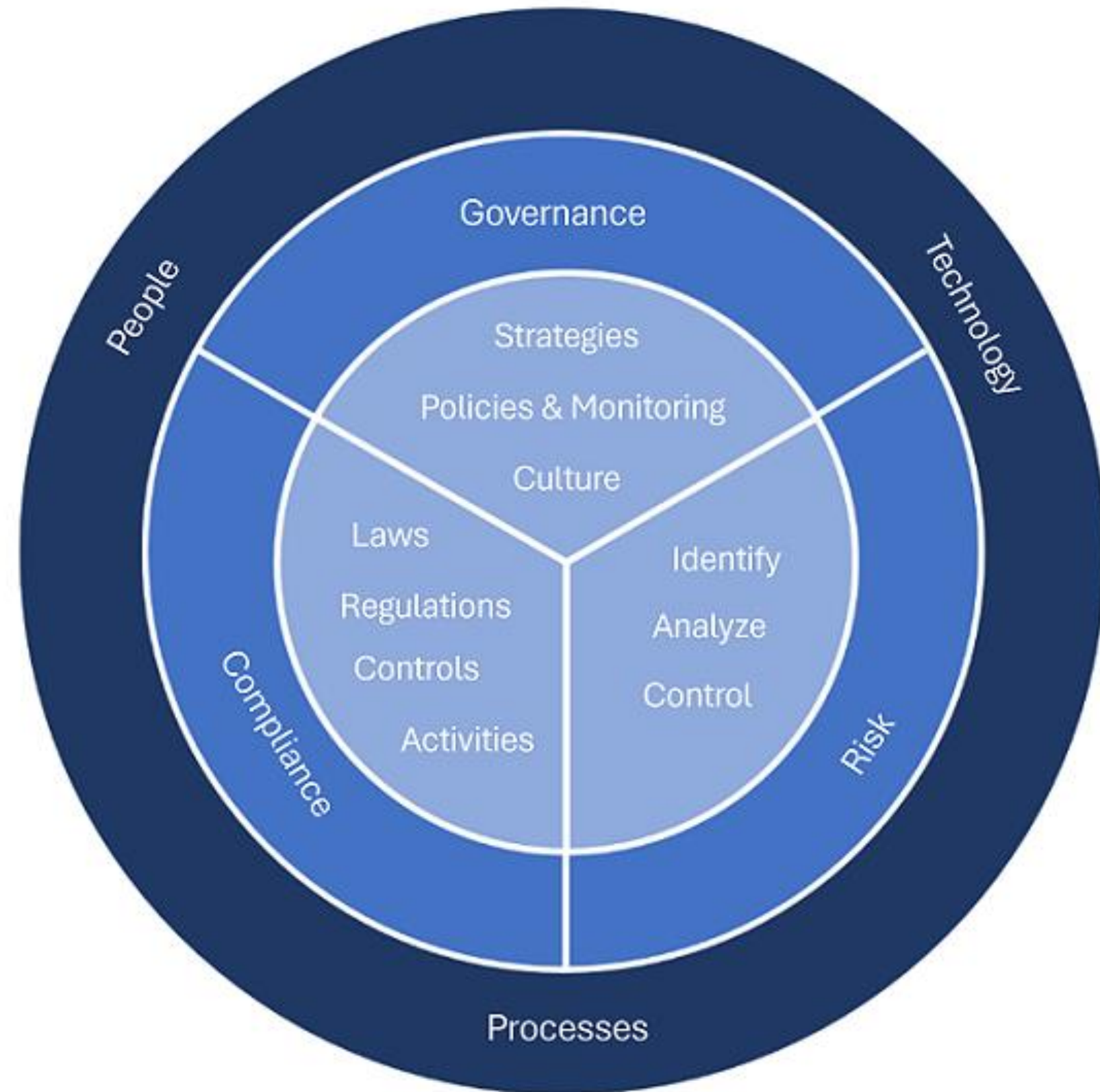
Learn More About Microsoft Security, Compliance, and Identity

This course is part of the SC-900 Microsoft Certification path on Pluralsight

- All the fundamentals of Security, Compliance, and Identity in the Microsoft cloud

Deep dive in specific concepts we talked about in this course

- Zero Trust Architecture path

- Governance, Risk, and Compliance (GRC) path

SC-900 Certification Path on Pluralsight

✓ Microsoft Security, Compliance, and Identity Fundamentals: Concepts
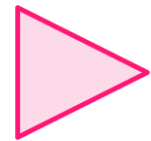
▷ Microsoft Security, Compliance, and Identity Fundamentals: Identity and Access Management Solutions
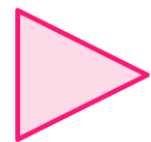
▷ Microsoft Security, Compliance, and Identity Fundamentals: Security Solutions
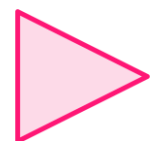
▷ Microsoft Security, Compliance, and Identity Fundamentals: Compliance Solutions
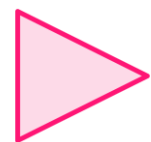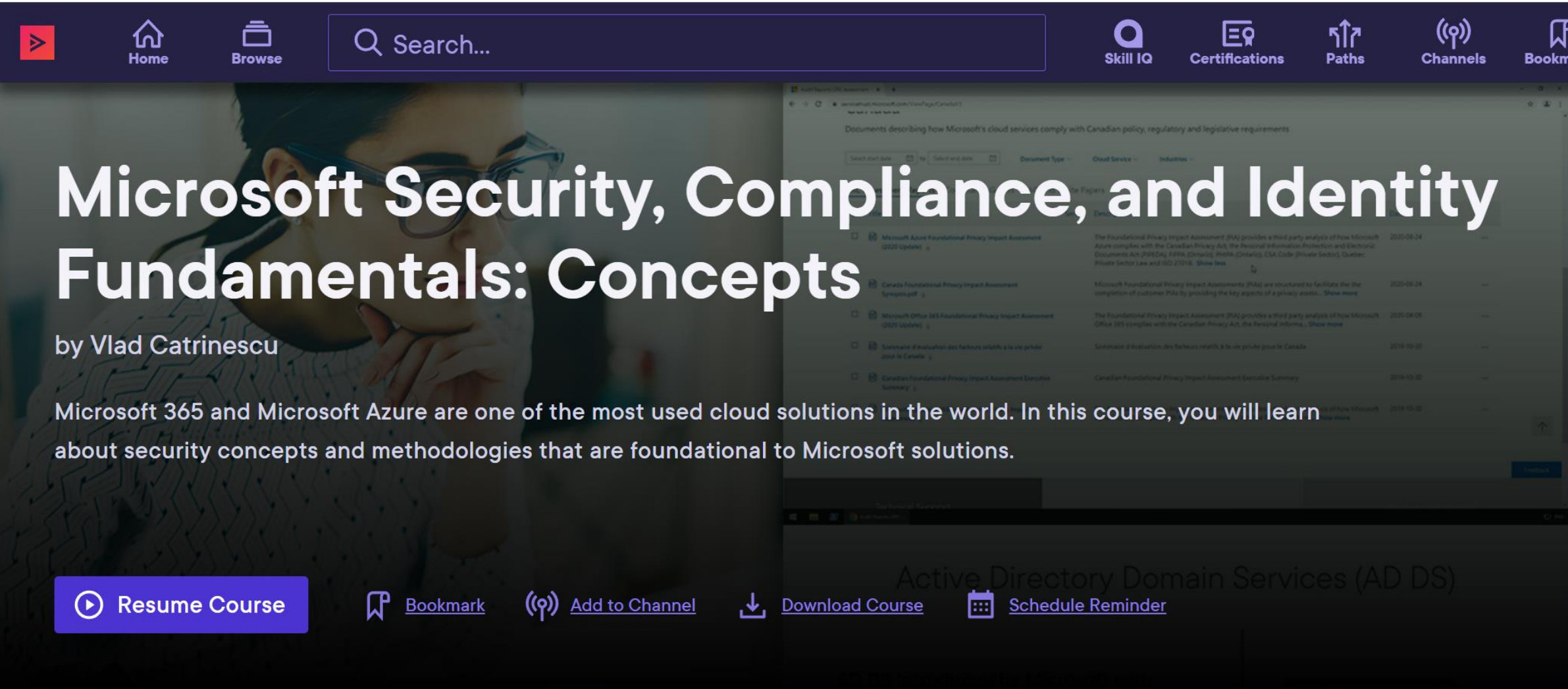
▷ Microsoft Security, Compliance, and Identity Fundamentals (SC-900): Exam Prep

Tip: Download the Slides

Available under the Exercise files tab on the course page

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