



#GlobalAzure
#GlobalAzureMilano

Proteggere workload in ambienti ibridi e multcloud con Microsoft Defender for Cloud

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#GlobalAzure
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Security Consultant @ Overnet in ambiti di Cloud Adoption, Security Posture e Remediation, Azure, Microsoft 365, Device Management, Microsoft Purview etc..

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Senior Consultant – Speaker – Trainer (26 anni)

Dal 2020 - Microsoft MVP – Enterprise Mobility / Security

Dipendente 50% su tecnologie Microsoft Dipartimento di Informatica – Università degli Studi di Milano

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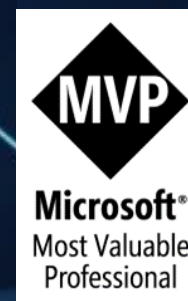
Responsabile e speaker di conferenze quali: WPC, WPC Days, BeConnectedDay (BCD) in ambito ITPRO e Security

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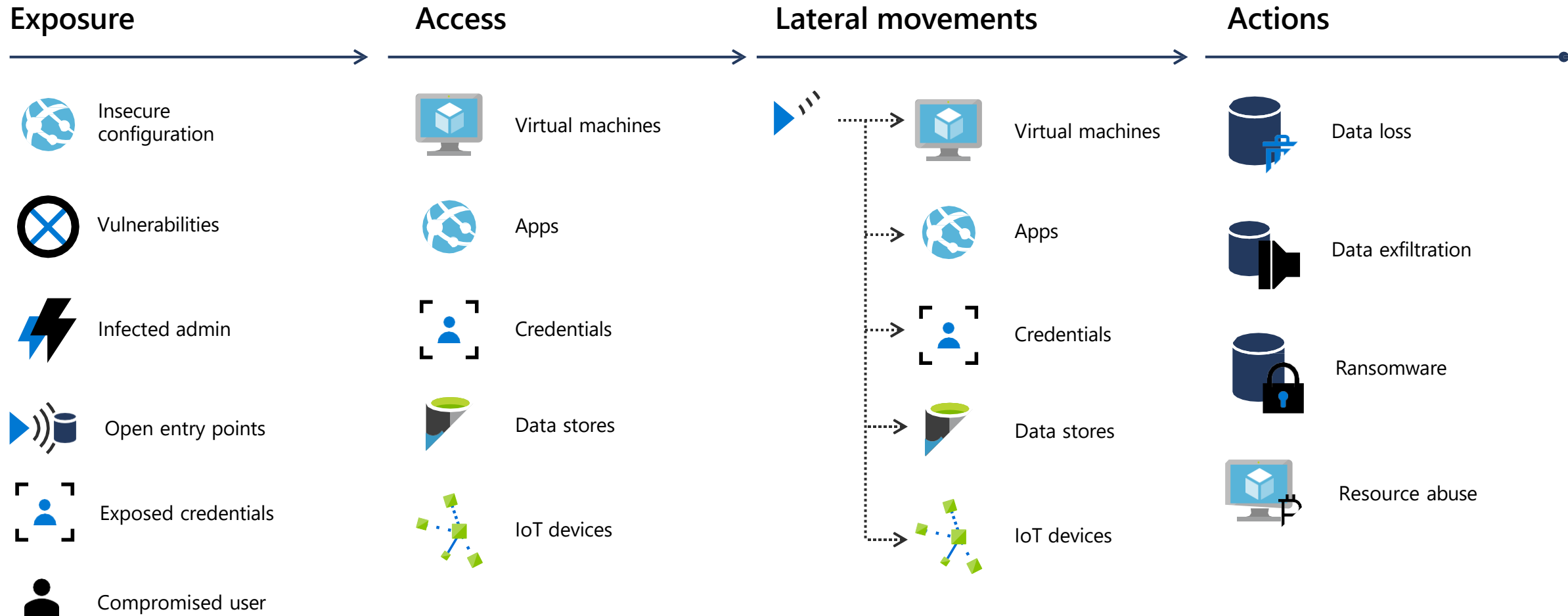


Agenda

1. Cloud Security
2. Microsoft Defender for Cloud
 1. Cloud Security Posture Management
 2. Cloud Workload Protection
3. Integration with other providers (AWS, GCP)
4. Hybrid Configuration (on-prem!)
5. Cloud-native application protection platform

...all with some DEMOS!

The cloud kill chain model



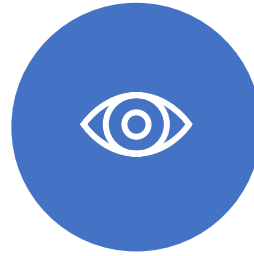
Applying Security to Multi-Cloud



Protection against sophisticated attacks

\$4.24M

It was the average cost of cyberattacks in 2021.³



Visibility for Security and Compliance

86%

of respondents believe that the security strategy adopted in their companies does not offer multi-cloud coverage²



IT Security Skills shortage worldwide

>40%

of respondents worldwide expected the biggest shortage regarding IT security skills to be for IT security administrators

1. Statista Research Department
2. Microsoft Cloud Security Priorities and Practices Research
3. Ponemon Institute, Cost of a Breach Report

AI allows for a paradigm shift



Continuously assess and improve posture with **hyperscale real-time visibility and context**



Investigate and respond to threats with unprecedented **speed and expertise**

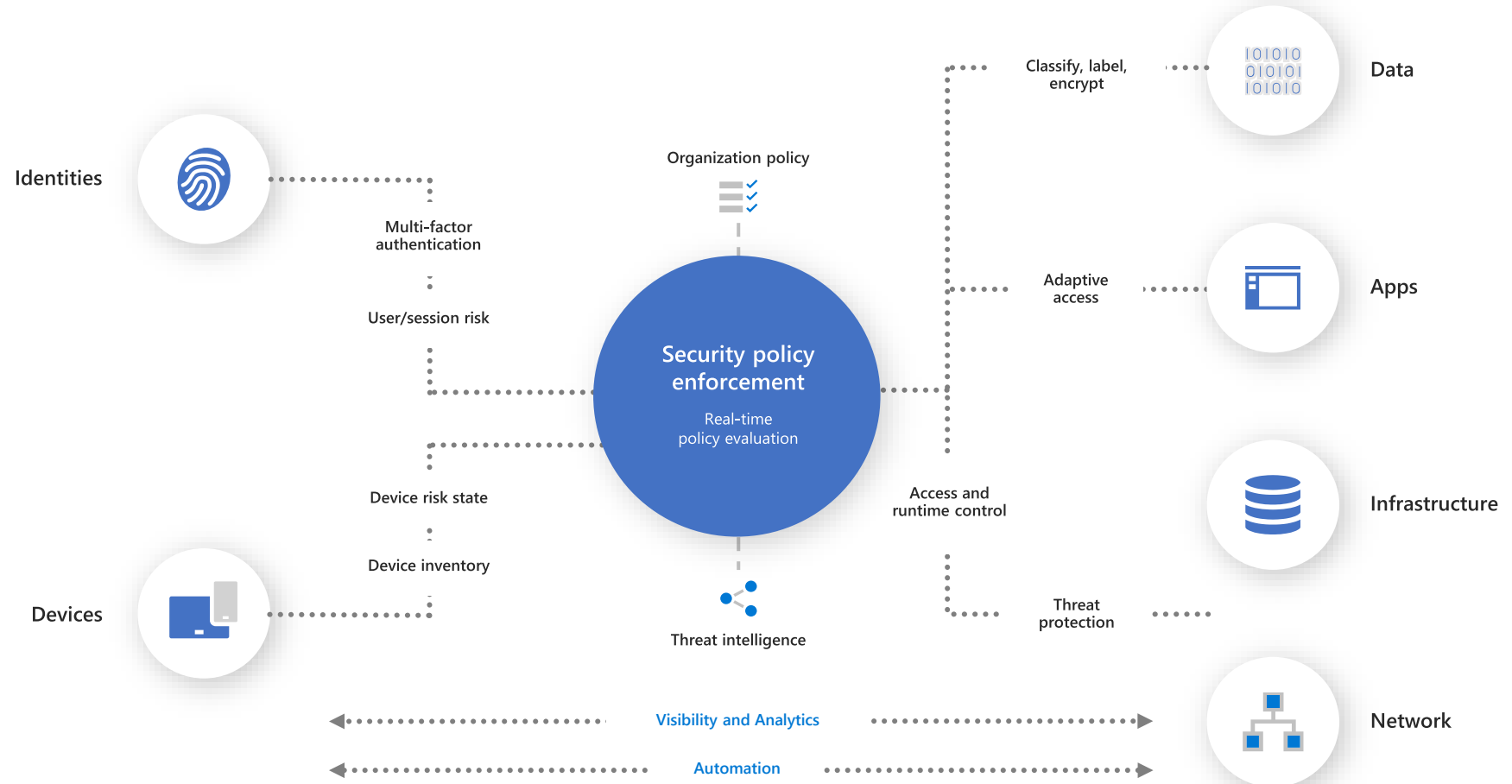


Improve productivity and collaboration with **streamlined natural language workflows**

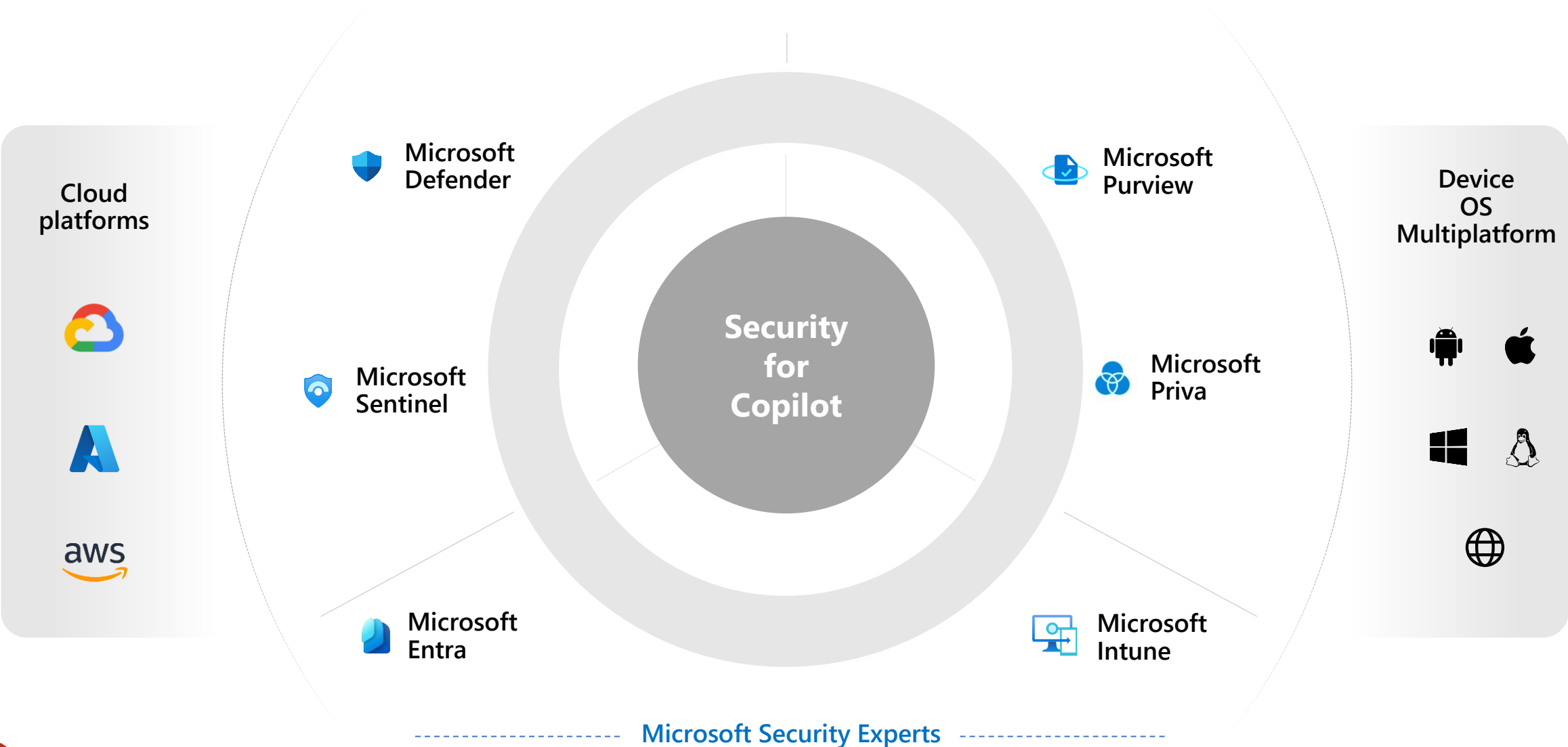
Microsoft Zero Trust architecture

Principles of Zero Trust

- ✓ **Verify explicitly** – Validate trust of users, devices, applications, and more using data/telemetry
- ✓ **Use least privileged access** – to limit the impact of any given compromise
- ✓ **Assume breach** – Assume that attackers will succeed (partially or fully) and design accordingly

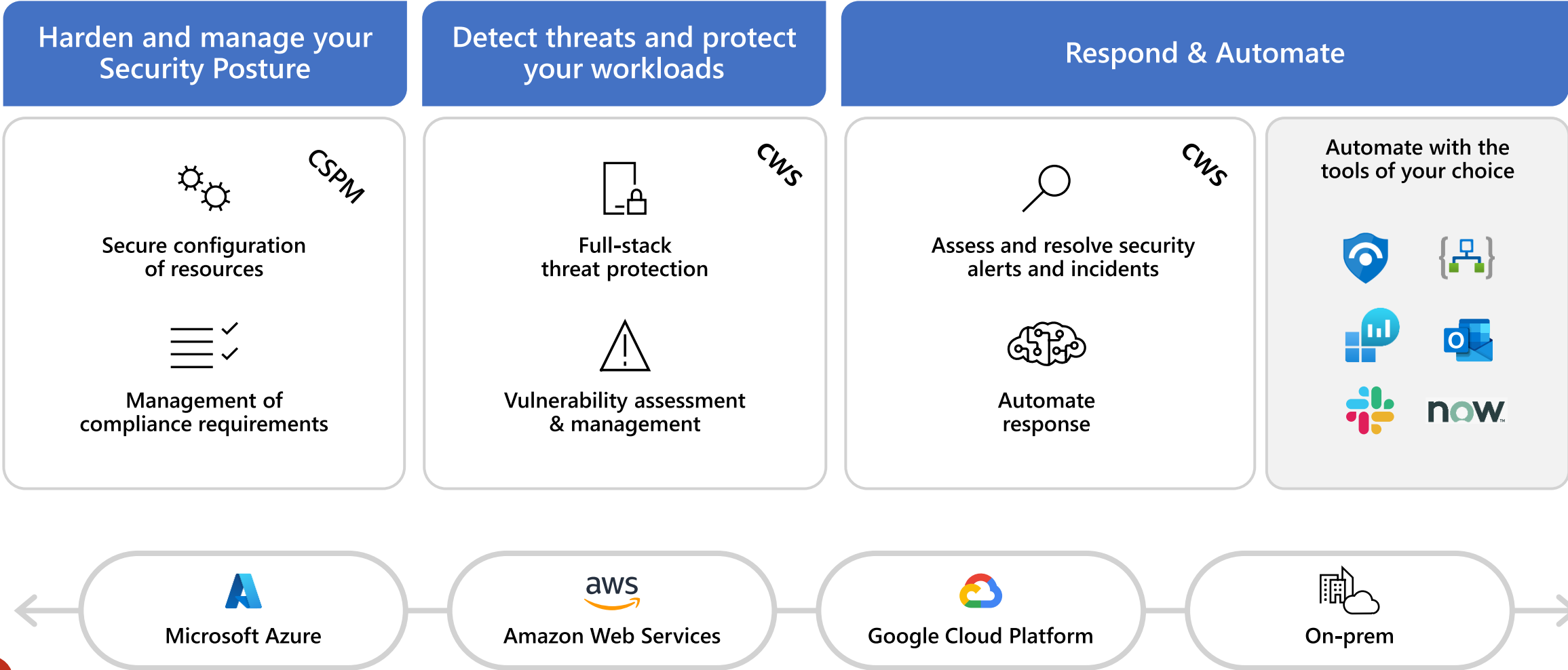


Microsoft Security Portfolio



Microsoft Defender For Cloud & DevOps

Microsoft Defender for Cloud enables comprehensive visibility, posture management, and threat protection across multicloud environments including Azure, AWS, GCP, and on-premises resources.



Key pillars



Built-in with Azure

- No deployment, just enable
- Built into the resource provisioning process
- Broadest protection coverage
- Remediate with a click



Multi-cloud and hybrid support

- Agentless onboarding for AWS and GCP posture management
- Auto provisioning for new resources
- Onboard on-prem resources with Azure Arc



Secure Score

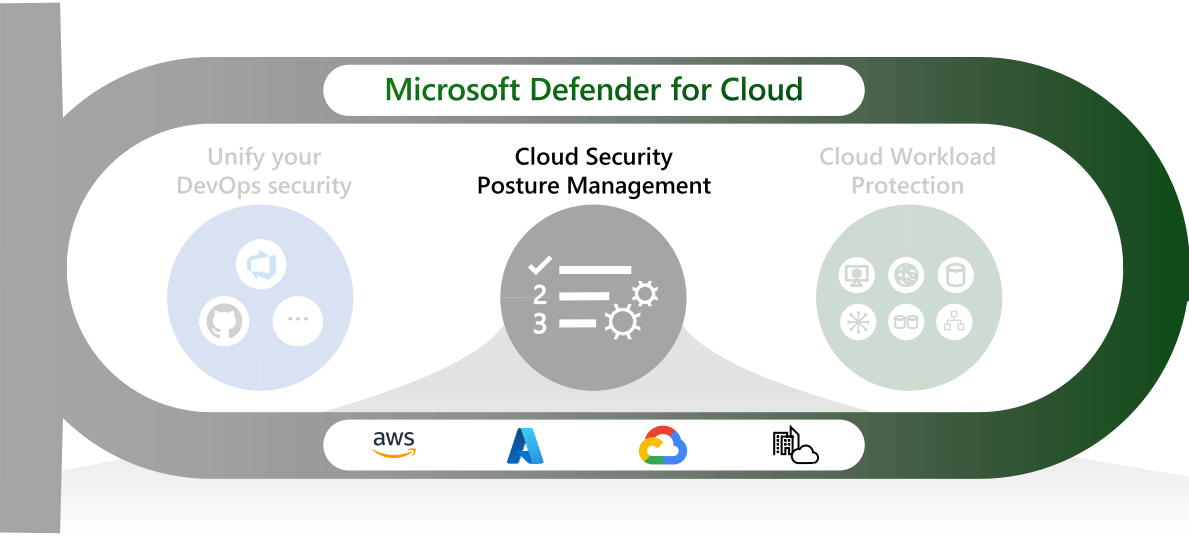
- Birds-eye view of the security posture of all your clouds
- Prioritized security recommendations
- Track and manage your security posture state over time



Advanced Threat Protection

- Workload-specific signals and threat alerts
- Deterministic, AI, and anomaly-based detection mechanisms
- Leverages the power of Microsoft Threat Intelligence with 24 trillion signals daily

Cloud security posture management CSPM



Foundational CSPM

Free



Asset inventory and secure score analysis

Frictionless onboarding | +450 built-in assessments | Custom capabilities | Policy management



Advanced remediation

Quick-fix remediation | Automated remediation using LogicApps | Enforcement policies



Data export and out-of-the-box reporting

Built in Azure Workbooks | At-scale data streaming and export | Integration with SIEM/SOAR solutions



Integrated workflows and automation

Out-of-the-box and custom automations triggered by security events

Defender CSPM



Agentless vulnerability scanning

Visibility on software and CVEs | Disc snapshots | Insecure secrets and keys



Integrated data and insights

Defender for DevOps | Defender External Attack Surface Management | Entra Permissions Management



Contextual cloud security and risk prioritization

Attack path analysis | Intelligent cloud security graph | Custom path queries on cloud security explorer | Risk-based prioritization



Regulatory compliance and industry benchmarks

Over 50 standards | Multicloud Microsoft security benchmark | Compliance dashboard and reporting | Integration with Microsoft Purview compliance manager



Governance management

Assign owners automatically | Drive accountability in the organization | Grace period | Reduce time to remediate



Data-aware security posture

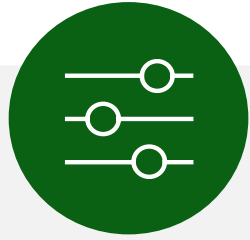
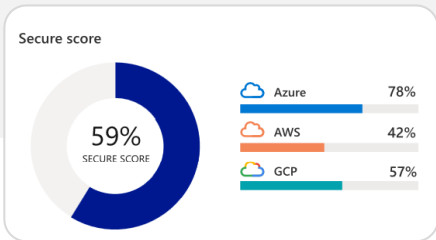
Multicloud data estate discovery | Identify data flows and resources containing sensitive and shadow data | Uncover potential sensitive data exposure and data breaches

Foundational CSPM



Secure Score and continuous assessments

Understand the bottom line of your security posture, implement recommendations, and monitor over time



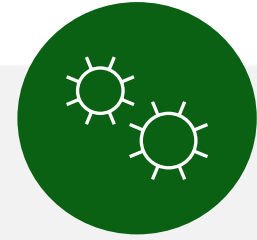
Cross-cloud resource inventory

Discover and govern your cloud resource in centralized security tool



Data visualization and reporting

Create dynamic reports for both sec teams and C level with Azure Workbooks integrated experience, complimented by continuous data streaming



Workflow automation and data exporting

Automate incident response with built in Logic App template gallery, streamline security events and integrate with SIEM



Multicloud and hybrid protection

- Automatic onboarding for Azure subscriptions
- Use API connectors to onboard AWS and GCP accounts to posture management capabilities
- Use the Azure Arc agent to onboard workloads outside of Azure and protect them against threats

Use API connectors for
agentless CSPM
enablement

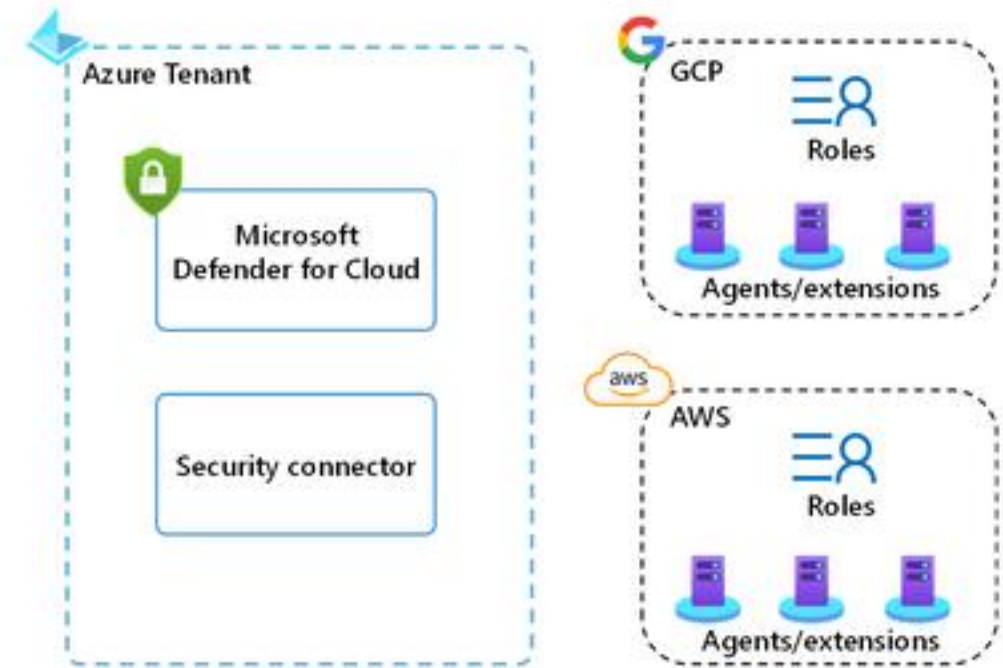


Deploy the Azure Arc agent to enable
workload protection

Built-in

Security Connectors

- ✓ To onboard AWS/GCP environment to Defender for Cloud, it is necessary to create a **security connector** in Defender for Cloud.
- ✓ Cloud Formation template in AWS or a cloud shell script in GCP creates the roles and resources that Defender for Cloud requires to provide security recommendations and alerts for your workloads.
- ✓ The resources and roles created in AWS/GCP depend on the Defender for Cloud plans you select on the security connector.



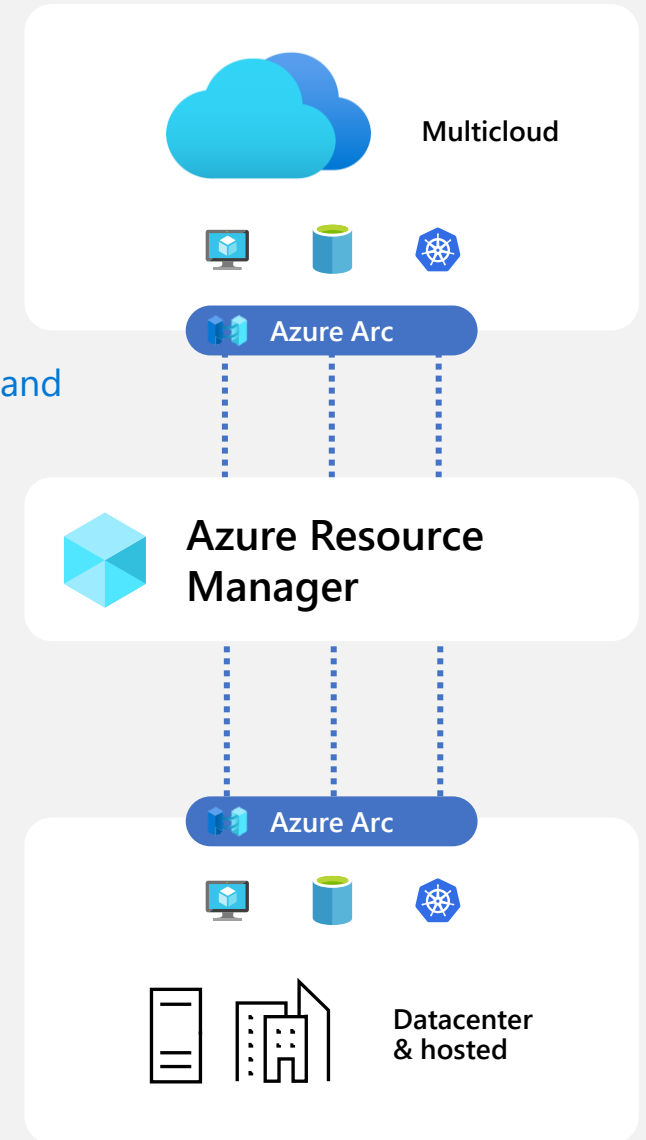
For AWS you can start at <https://learn.microsoft.com/en-us/azure/defender-for-cloud/quickstart-onboard-aws#prerequisites>
For GCP you can start at <https://learn.microsoft.com/en-us/azure/defender-for-cloud/quickstart-onboard-gcp#prerequisites>

Deploy Microsoft Defender for Cloud threat protection to your workloads anywhere with Azure Arc

- ✓ Azure Arc unlocks hybrid and multicloud scenarios so you can manage security for all your resources in a consistent way
- ✓ Extension installation, e.g. Microsoft Monitor Agent / Azure Monitor Agent
- ✓ Enforce compliance and simplify audit reporting
- ✓ Asset organization and inventory with a unified view in the Azure Portal—Azure Tags
- ✓ Server owners can view and remediate to meet their compliance—RBAC in Azure

Azure Arc enables cloud management and security protections

Single control plane for any resource, anywhere



Microsoft Defender CSPM

Cut through the noise and get in front of your most critical risks across your multicloud and hybrid environments with contextual security posture management.



**Continuous monitoring
and intelligent
prioritization from
attack path analysis**



**Prevent data
breaches and sensitive
data exposure**

Defender CSPM



Agentless vulnerability scanning

Visibility on software and CVEs | Disc snapshots | Insecure secrets and keys



Integrated data and insights

Defender for DevOps | Defender External Attack Surface Management | Entra Permissions Management



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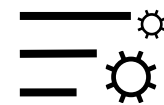


Data-aware security posture

Multicloud data estate discovery | Identify data flows and resources containing sensitive and shadow data | Uncover potential sensitive data exposure and data breaches



**Centralized visibility
with integrated
CNAPP insights**



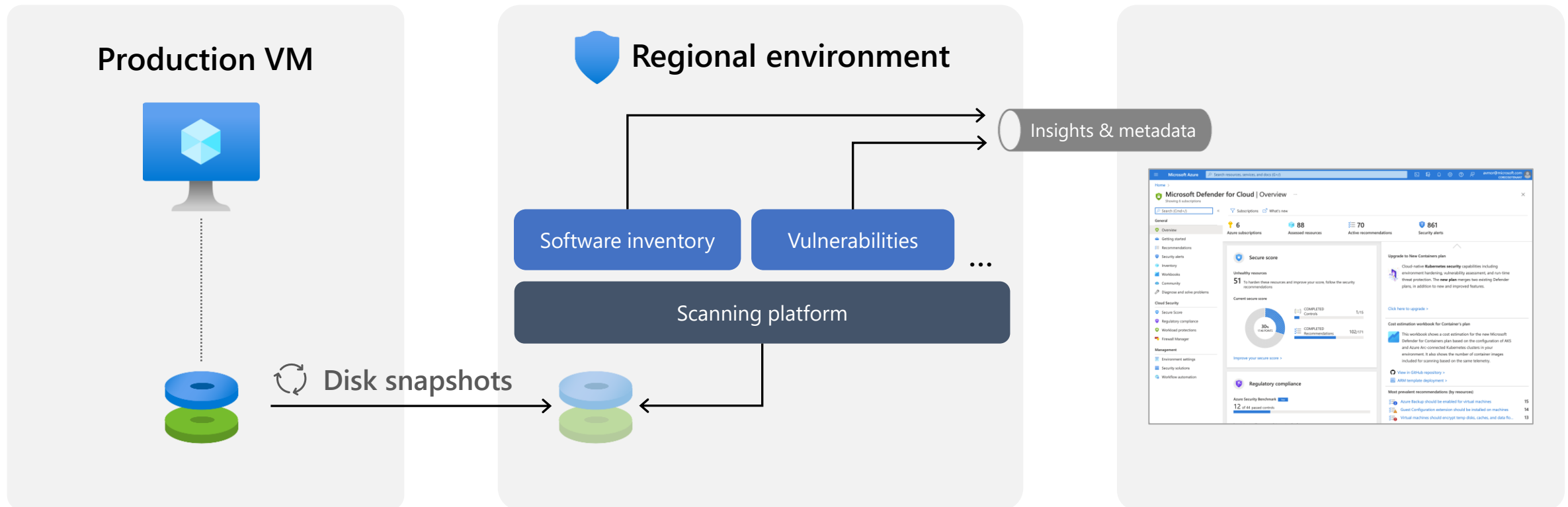
**Remediate
vulnerabilities and
misconfigurations
with governance rules
and remediation**

Agentless scanning for Machines

Customer account

Isolated scanning environment

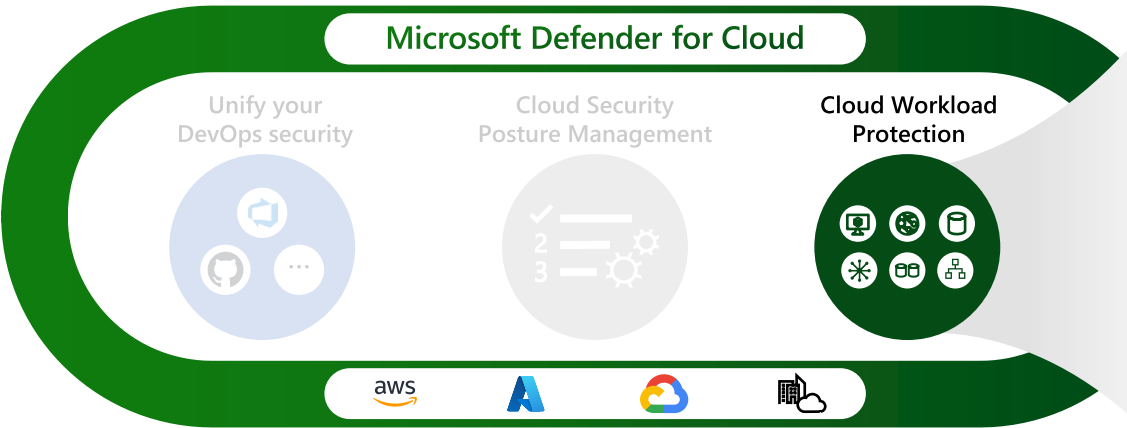
Defender for Cloud



Foundational CSPM vs Defender CSPM

Feature	Foundational CSPM (free)	Defender CSPM (billing applies)	Cloud coverage		
			Azure	AWS	GCP
Security recommendations (recommendations across infrastructure, i.e., Network, CIEM, etc.)	●	●	●	●	●
Asset inventory	●	●	●	●	●
Secure score	●	●	●	●	●
Data visualization and reporting with Azure Workbooks	●	●	●	●	●
Data exporting	●	●	●	●	●
Workflow automation	●	●	●	●	●
Remediation Tracking	●	●	●	●	●
Microsoft Cloud Security Benchmark	●	●	●	●	●
'Azure Policy' based recommendation customization	●	●	●		
Integration with Entra Permissions Managements	●	●	●	●	●
KQL based recommendation customization		●		●	●
Regulatory compliance assessments		●	●	●	●
Governance		●	●	●	●
Attack path analysis		●	●	●	●
Cloud security explorer		●	●	●	●
EASM insights in network exposure		●	●	●	●
Agentless vulnerability assessments for compute (using Microsoft Defender Vulnerability Management)		●	●	●	●
Agentless discovery for Kubernetes		●	●		
Agentless vulnerability assessments for container images, including registry scanning		●	●		
Sensitive data discovery		●	●	●	●
Data flows discovery		●	●	●	●

Cloud workload protection



Compute: Any server, Azure VMSS, Azure K8s, App Services, Unmanaged K8s

Service layer: Azure DNS, Key Vault, Network Layer V1, Resource Management

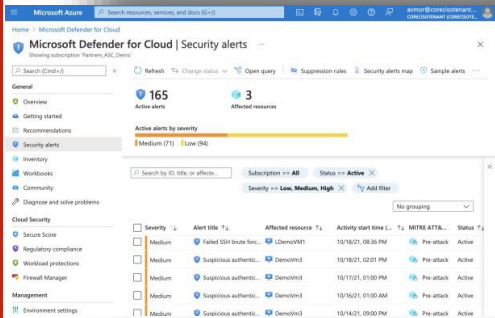
Databases and storage: Blob storage, File storage, Maria DB, Cosmos DB, Azure SQL, MySQL, Postgres SQL, SQL on VM

AWS workloads: Amazon EKS, Amazon EC2, SQL on VM, Unmanaged Kubernetes

GCP workloads: GKE clusters, Google Compute, SQL on VM, Unmanaged Kubernetes

On-premises workloads: Kubernetes, SQL on VM, Servers

Microsoft Defender for Server



Defender for Cloud portal

Native onboarding



Azure

Azure Arc



On-premise

Cloud connectors & Azure Arc



Multi-cloud

Component	Description
Log Analytics agent/Azure Monitor agent ⚠️ Agent is in deprecation path. Learn more >	Collects security-related configurations and event logs from the machine and stores the data in your Log Analytics workspace for analysis. Learn more
Vulnerability assessment for machines	Enables vulnerability assessment on your Azure and hybrid machines. Learn more
Endpoint protection	Enables protection powered by Microsoft Defender for Endpoint, including automatic agent deployment to your servers, and security data integration with Defender for Cloud. Learn more
Agentless scanning for machines	Scans your machines for installed software, vulnerabilities, and secret scanning without relying on agents or impacting machine performance. Learn more

Auto-provisioning configuration

To prevent, detect, and respond to threats, Microsoft Defender for Cloud collects security data and events from your machines. [Learn more](#)

Agentless scanning On
 Scan your EC2 instances for installed software and vulnerabilities without requiring agents, network connectivity or impacting machine performance. Results are powered by Microsoft Defender Vulnerability Management engine. [Learn more](#)

Azure Arc agent On
 Connects your servers to the Azure platform. When you enable the Arc agent, it'll be installed on new and existing instances with Systems Manager (SSM) agent enabled.

Note: Arc auto-provisioning registers your account to the Azure resource providers "Microsoft.HybridCompute" and "Microsoft.GuestConfiguration".

Additional extensions for Arc connected machines ⚠️ 2/3 enabled
 The selected extensions will be automatically provisioned on machines connected to Azure Arc.

Microsoft Defender for Endpoint extension On
 Provides comprehensive endpoint detection and response (EDR) capabilities. [Learn more](#)

Microsoft Defender XDR: MDC, MDS, MDE OVERNET.

Microsoft Defender for Server

Microsoft Defender for Cloud

Showing subscription: Microsoft Azure Sponsorship Current

Defender CSPM plan is now available. This plan provides enhanced posture capabilities and a new intelligent cloud security graph to help identify, prioritize and reduce risk. Upgrade →

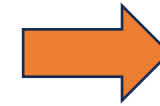
Filter by name

Subscriptions == All Resource Groups == All Resource types == All Monitoring agent == All Environment == GCP (61) Recommendations == All

Installed applications == All Add filter

Total resources: 61
Unhealthy resources: 49
Unmonitored resources: 0
Unregistered subscriptions: 0

Resource name	Resource type	Subscription	Defender for Cloud	Monitoring agent	Recommendations
carbon-airlock-407318	GCP Resource manager project	Microsoft Azure Sponsorship Current			
windows-server-2022-1	GCP compute instance	Microsoft Azure Sponsorship Current			



Additional extensions for Arc connected machines 2/3 enabled

The selected extensions will be automatically provisioned on machines connected to Azure Arc.

Microsoft Defender for Endpoint extension On
Provides comprehensive endpoint detection and response (EDR) capabilities. [Learn more](#)

Vulnerability assessment On

As outlined in the [unified vulnerability assessment solution strategy blog](#), we are unifying all vulnerability assessment solutions in Defender for Cloud to use Microsoft Defender vulnerability management. As part of this change, Effective May 1st, 2024, the built-in Qualys offering within the Defender for Servers plan will be retired. [Click here](#) for more information and transition guidelines.

Enable vulnerability discovery and management tools for your machines. [Learn more](#)

Vulnerability assessment solution

- Microsoft Defender vulnerability management
- Microsoft Defender for Cloud integrated Qualys scanner

Microsoft Defender for Endpoint

Device inventory > windows-server-2022-1

windows-server-2022-1

Overview Incidents and alerts Timeline Security recommendations Inventories Discovered vulnerabilities Missing KBs Security baselines Security policies

VMA details

Domain: Windows Server 2022 64-bit (Build 22H2.24H2) (Build 22H2.24H2)

SAM name: Asset group

Health state: Data sensitivity Active

IP addresses: 10.128.0.2, 10.14.0.2

Last seen: Apr 17, 2024 10:14:02 AM

Resources: Device id: 85920c954129c7b548207065446485046c2095148

Defender engine version: 1.1.240304

Defender Antivirus mode: Active

Active alerts (Last 180 days)

Risk level: Medium

Exposure level: Medium

1 logged on user

Full scan status is unknown

Type	Status	Date & time
Last full scan	No scan performed	
Last quick scan	Completed	Apr 17, 2024 4:51:08 AM
Security intelligence	Version 1.409.3330	Apr 16, 2024 11:37:51 PM
Engine	Version 1.1.240304	Apr 16, 2024 11:37:53 PM
Platform	Version 4.18.24030.9	Apr 16, 2024 12:40:42 AM

Microsoft Defender XDR

Incidents

Defender for Cloud alerts and incidents are now available in Microsoft Defender XDR. For non-admin users to view them, give unified RBAC permissions. [Learn more about permissions.](#)

Most recent incidents and alerts

Export Manage incidents

Filter set: Save

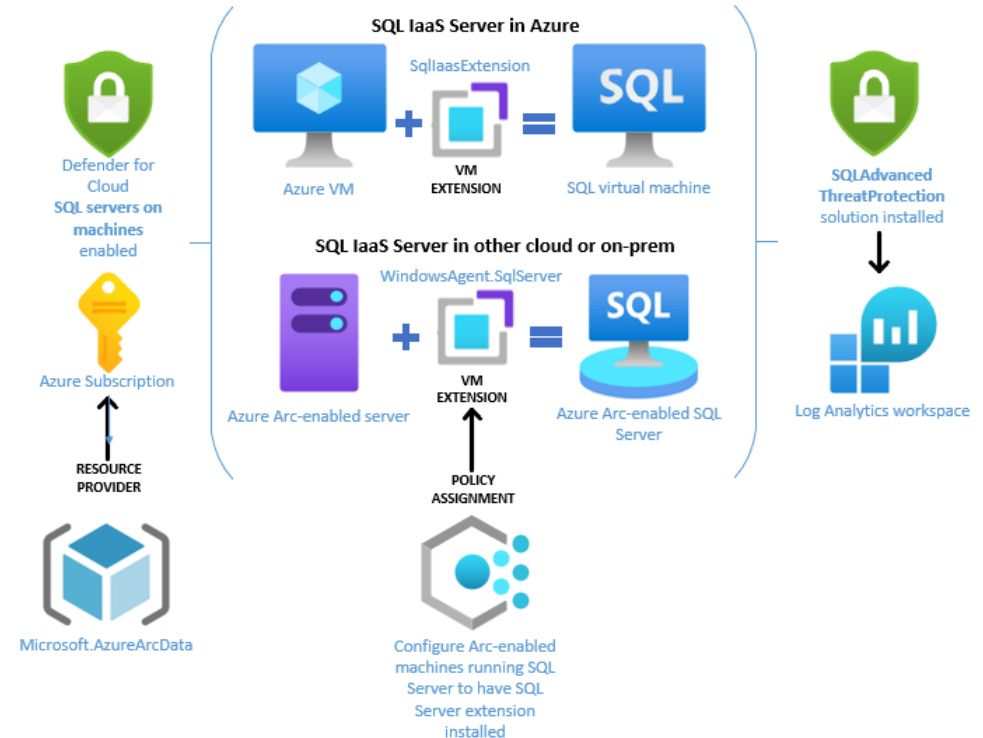
Alert severity: High, Medium, Low Add filter Reset all

Incident name	Severity	Investigation state	Categories	Impacted assets	Active alerts	Service sources	Detection sources	First activity	Last activity
Suspicious authentication activity on one endp... 682	Medium	Initial access		windows-server-2022-1 win-server-20 1/1	Microsoft Defender for Cloud	Microsoft Defender for Servers	Microsoft Defender for Servers	Apr 17, 2024 7:03 AM	Apr 17, 2024 7:04 AM
Suspicious authentication activity	Medium	Initial access		windows-server-2022-1 win-server-20			Microsoft Defender for Servers	Apr 17, 2024 7:03 AM	Apr 17, 2024 7:04 AM
Suspicious authentication activity on one endp... 680	Medium	Initial access		windows-server-2022-1 win-server-20 1/1		Microsoft Defender for Cloud	Microsoft Defender for Servers	Apr 15, 2024 3:52 PM	Apr 15, 2024 3:59 PM

Microsoft Defender for SQL on VM

Defender for SQL protects your IaaS SQL Servers by identifying and mitigating potential database vulnerabilities and detecting anomalous activities that could indicate threats to your databases.

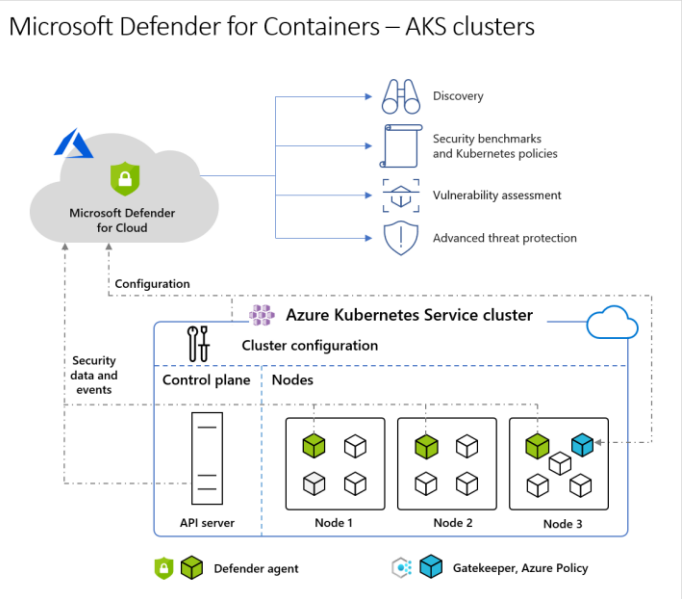
Defender for Cloud populates with alerts when it detects suspicious database activities, potentially harmful attempts to access or exploit SQL machines, SQL injection attacks, anomalous database access, and query patterns.



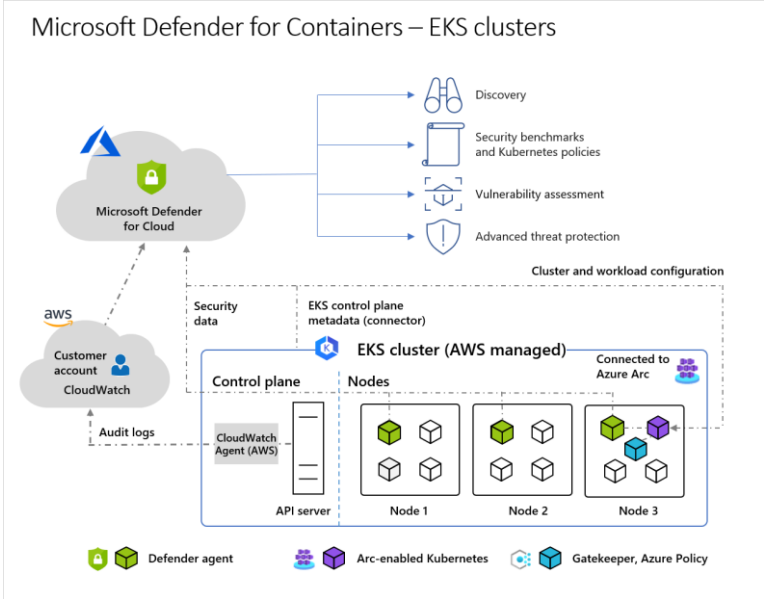
Microsoft Defender for Containers

Microsoft Defender for Containers is a cloud-native solution to improve, monitor, and maintain the security of your containerized assets (Kubernetes clusters, Kubernetes nodes, Kubernetes workloads, container registries, container images and more), and their applications, across multicloud and on-premises environments. Defender for Containers assists you with four core domains of container security:

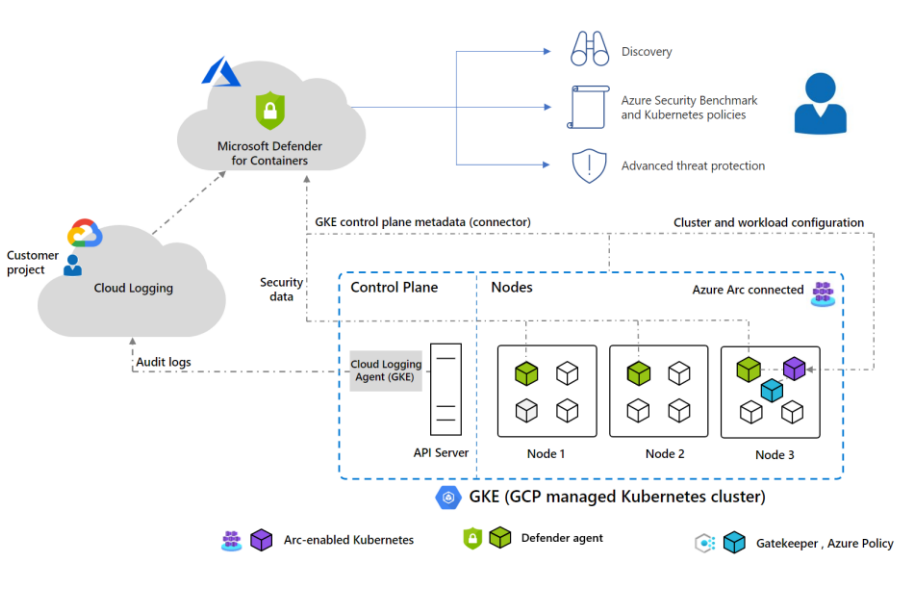
- Security posture management
- Vulnerability assessment
- Run-time threat protection
- Deployment & monitoring



Azure Kubernetes Service (AKS)
 Microsoft's managed service for developing, deploying, and managing containerized applications.



Amazon Elastic Kubernetes Service (EKS) in a connected Amazon Web Services (AWS) account
 Amazon's managed service for running Kubernetes on AWS without needing to install, operate, and maintain your own Kubernetes control plane or nodes.



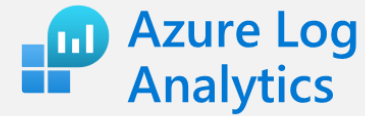
Google Kubernetes Engine (GKE) in a connected Google Cloud Platform (GCP) project
 Google's managed environment for deploying, managing, and scaling applications using GCP infrastructure.

To protect your Kubernetes containers, Defender for Containers receives and analyzes:

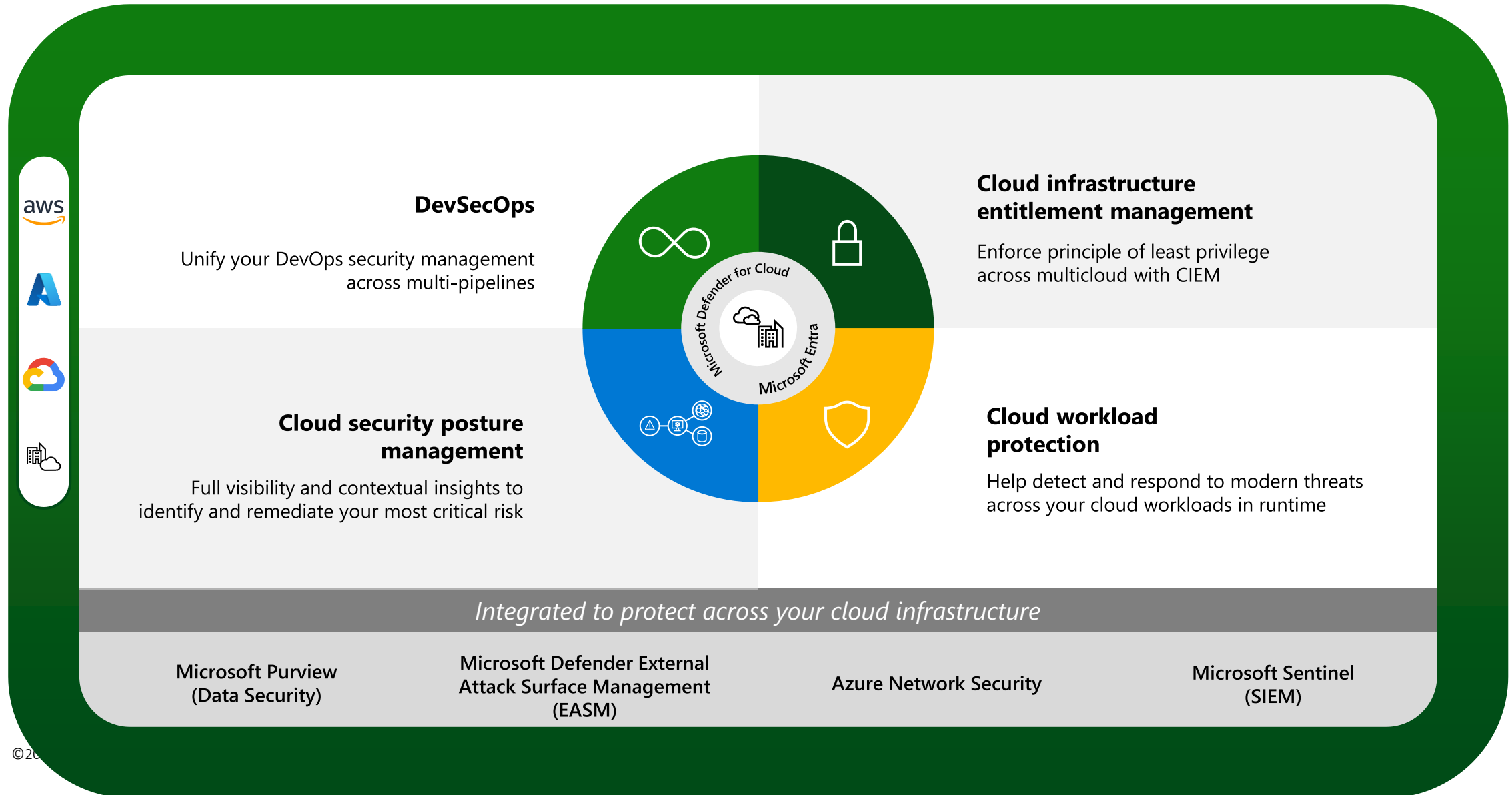
- Audit logs and security events from the API server
- Cluster configuration information from the control plane
- Workload configuration from Azure Policy
- Security signals and events from the node level

Respond and automate

- Leverage “Quick Fixes” for the fastest way to implement recommendations
- Automate threat alert responses with Azure Logic Apps and use the apps of your choice to create intelligent workflows
- Connect to Microsoft Sentinel and easily move between the portals when investigating and managing incidents



Cloud-native application protection platform **OVERNET.**



Unify your DevOps security

DevOps security within Defender for Cloud uses a central console to empower security teams with the ability to protect applications and resources from code to cloud across multi-pipeline environments, including Azure DevOps, GitHub, and GitLab.



DevOps posture visibility

Code | Dependencies | Secrets | Container images | Infrastructure-as-Code security insights



Infrastructure-as-Code security

ARM | Bicep | Terraform | CloudFormation | Many more



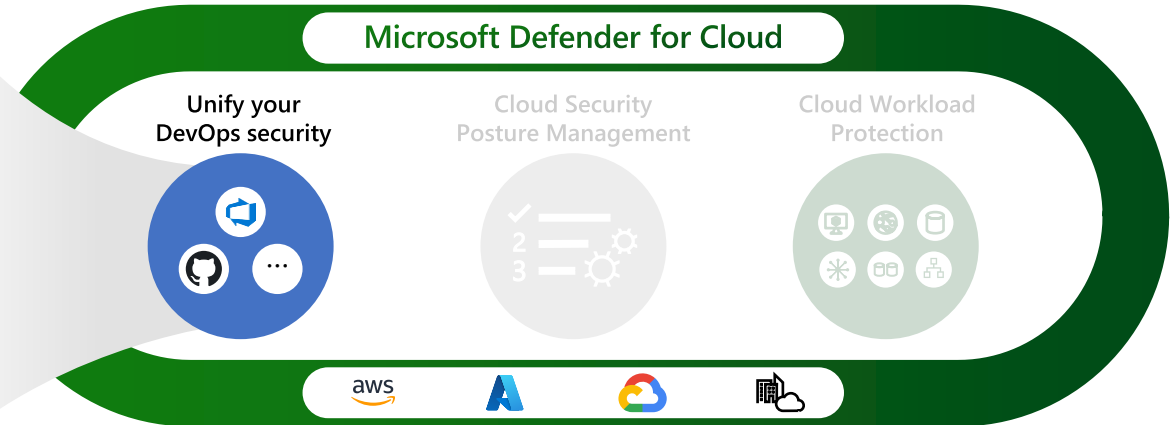
Code-to-cloud contextualization

Across multipipeline and multicloud environments



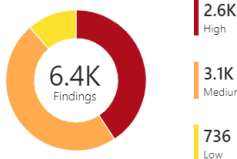
Integrated workflows

Pull request annotations | Developer ownership assignments



Security Overview

DevOps security findings



DevOps security results



DevOps posture management uses DevOps scanners to identify weaknesses in source code management and continuous integration/continuous delivery pipelines by running checks against the security configurations and access controls.

Resources

- ✓ [Microsoft Defender for Cloud Security Posture Management](#)
- ✓ [Defender for Cloud Blog](#)
- ✓ [Prioritize Risk remediation with Attack Path Analysis](#)
- ✓ [A Proactive Approach to Cloud Security Posture Management](#)
- ✓ [Proacting Hunting with Cloud Security Explorer](#)
- ✓ [One click to cover containers & Kubernetes in Defender CSPM](#)
- ✓ [Container Security in Microsoft Defender for Cloud](#)
- ✓ [Data security capabilities in Microsoft Defender for Cloud](#)
- ✓ [Defender for Cloud in the field video series](#)
- ✓ [Cloud security explorer and Attack path analysis](#)
- ✓ [Agentless Container Posture Management](#)



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THANK YOU!!!

Slides will be available on Global Azure 2024 page
on Azure Meetup Milano website