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Module 4:
Secure your cloud applications

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AWS

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Secure your infrastructure

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Security is our top priority



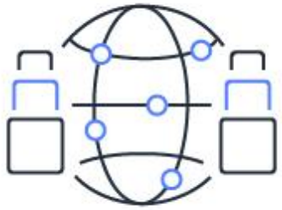
Designed for security



Constantly monitored



Highly automated



Highly available

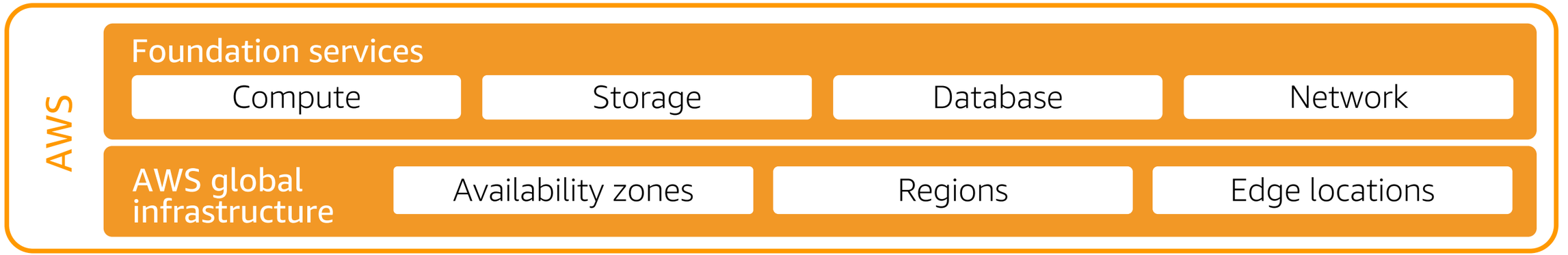


Highly accredited

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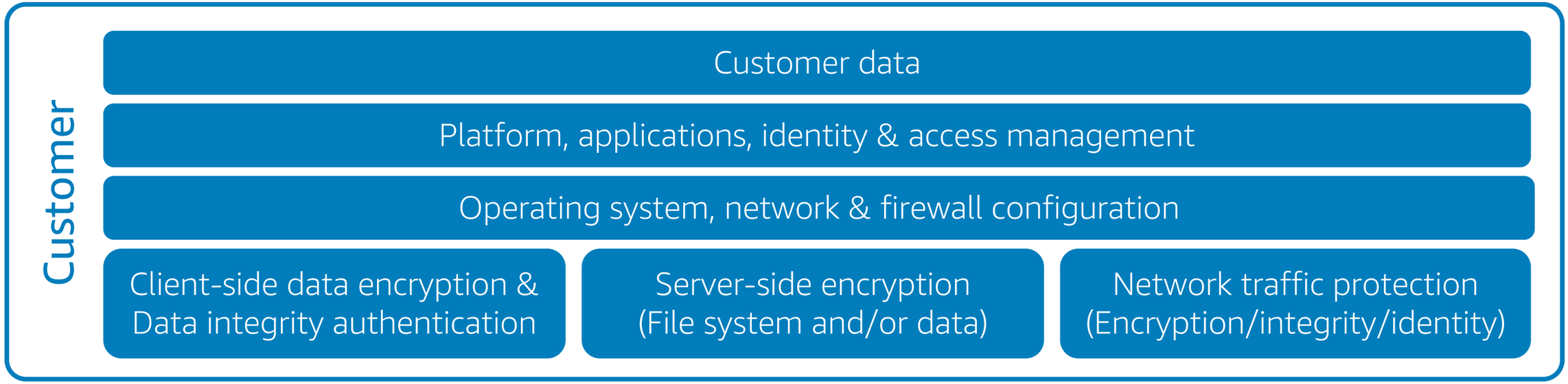
Security of the cloud

- Hosts, network, software, facilities
- Protection of the AWS global infrastructure is top priority
- Availability of third-party audit reports



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Security in the cloud

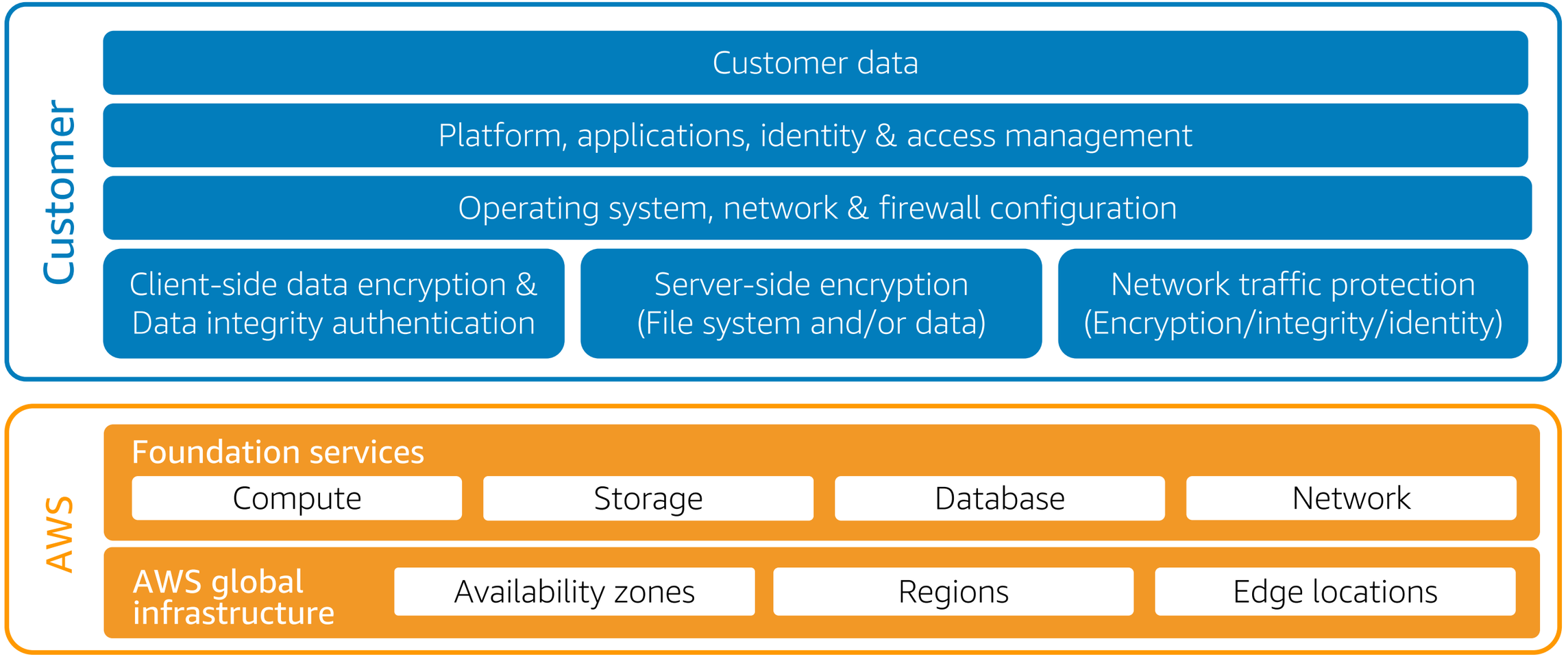


Considerations

- What you should store
- Which AWS services you should use
- Which region to store in
- In what content format and structure
- Who has access

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AWS shared responsibility model



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Security, identity, and compliance products

AWS Artifact
AWS Certificate Manager
Amazon Cloud Directory
AWS CloudHSM
Amazon Cognito
AWS Directory Service
AWS Firewall Manager
Amazon GuardDuty
AWS Identity and Access Management
Amazon Inspector
AWS Key Management Service
Amazon Macie
AWS Organizations
AWS Shield
AWS Secrets Manager
AWS Single Sign-On
AWS WAF

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Manage authentication and authorization

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AWS Identity and Access Management (IAM)

Securely control access to AWS resources



IAM USER

A person or application that interacts with AWS



GROUP

Collection of users with identical permissions



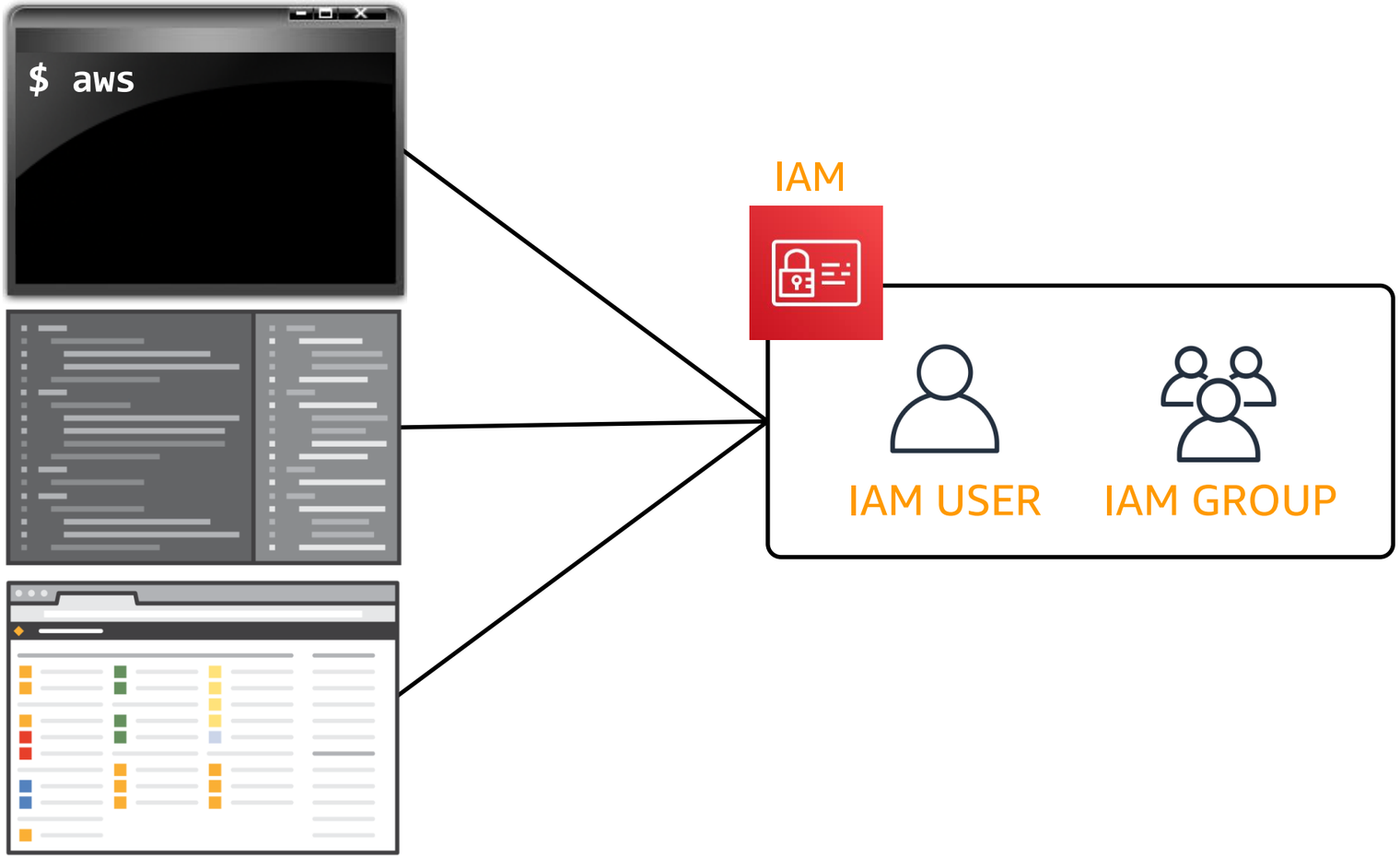
ROLE

Temporary privileges that an entity can assume

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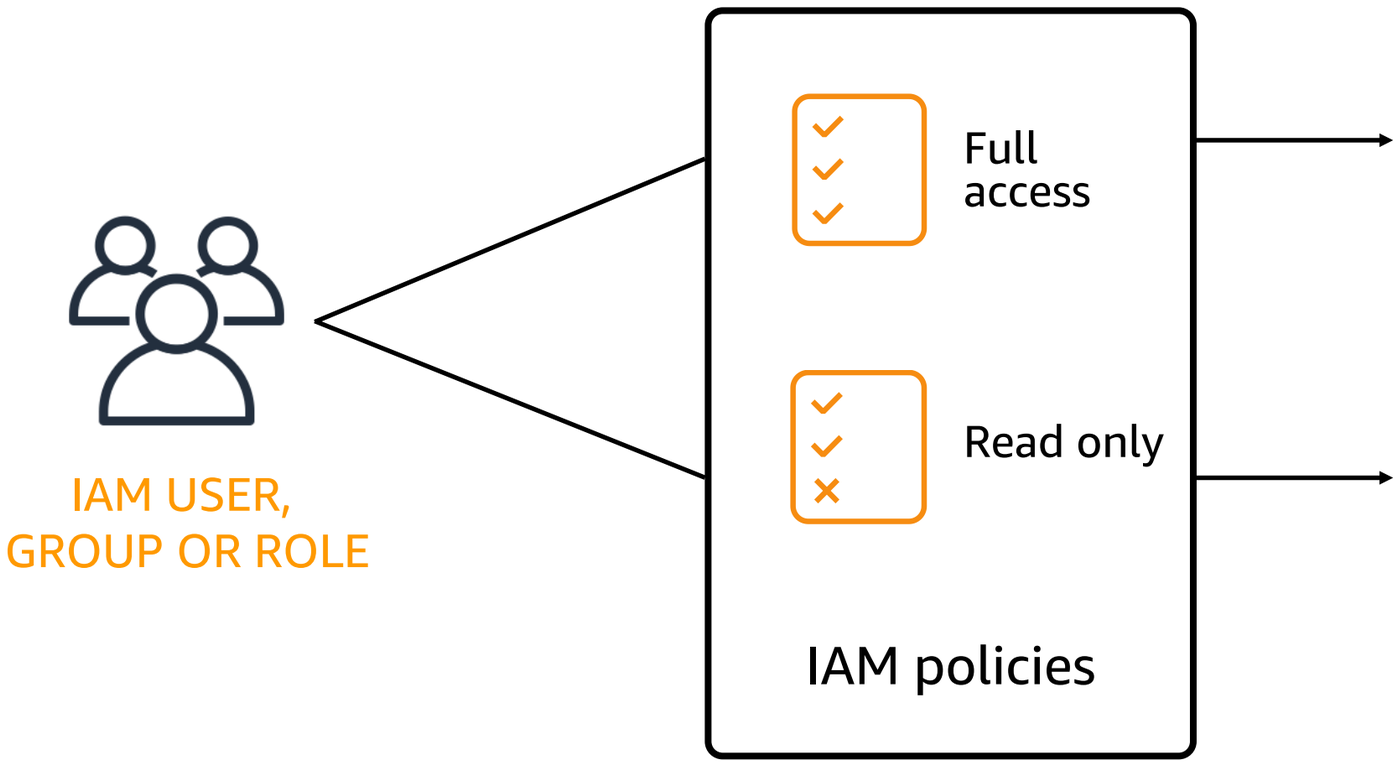
Authentication: Who are you?

- AWS CLI
- AWS SDKS
- AWS Management Console



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Authorization: What can you do?



- AWS CLI
- Amazon S3 Bucket

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IAM roles

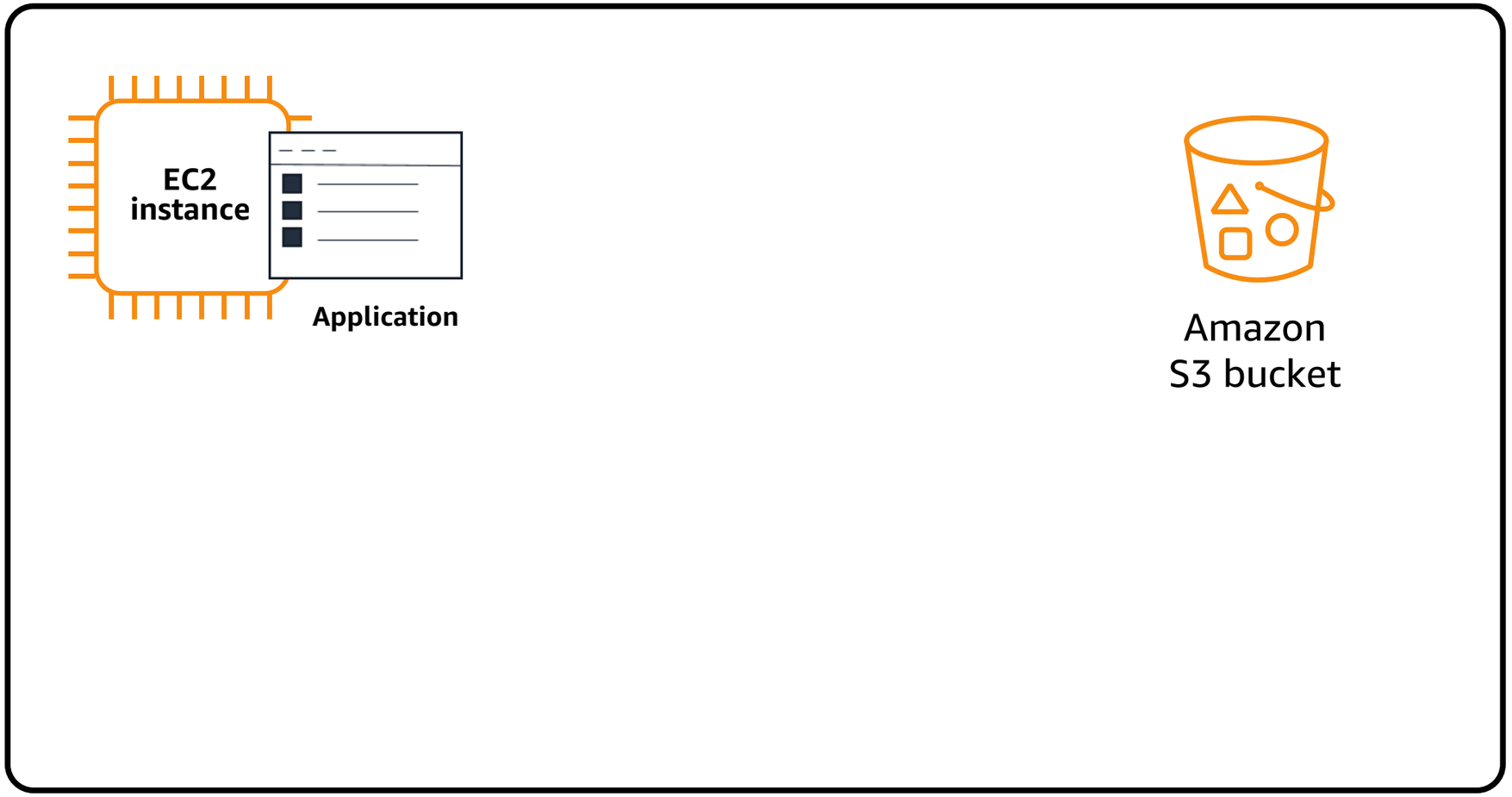


IAM ROLE

- IAM users, applications, and services may assume IAM roles
- Roles uses an IAM policy for permissions

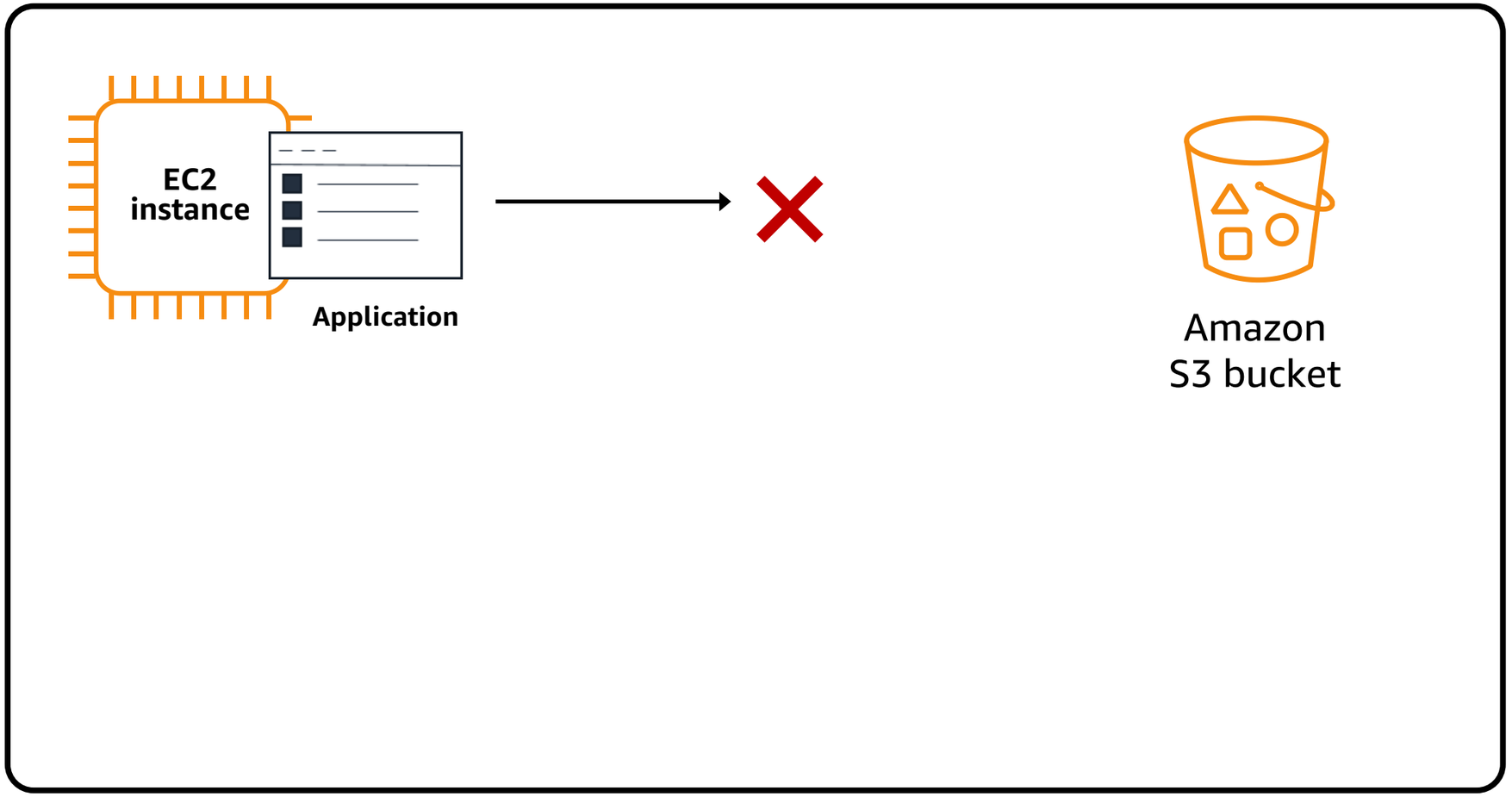
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Using roles for temporary security credentials



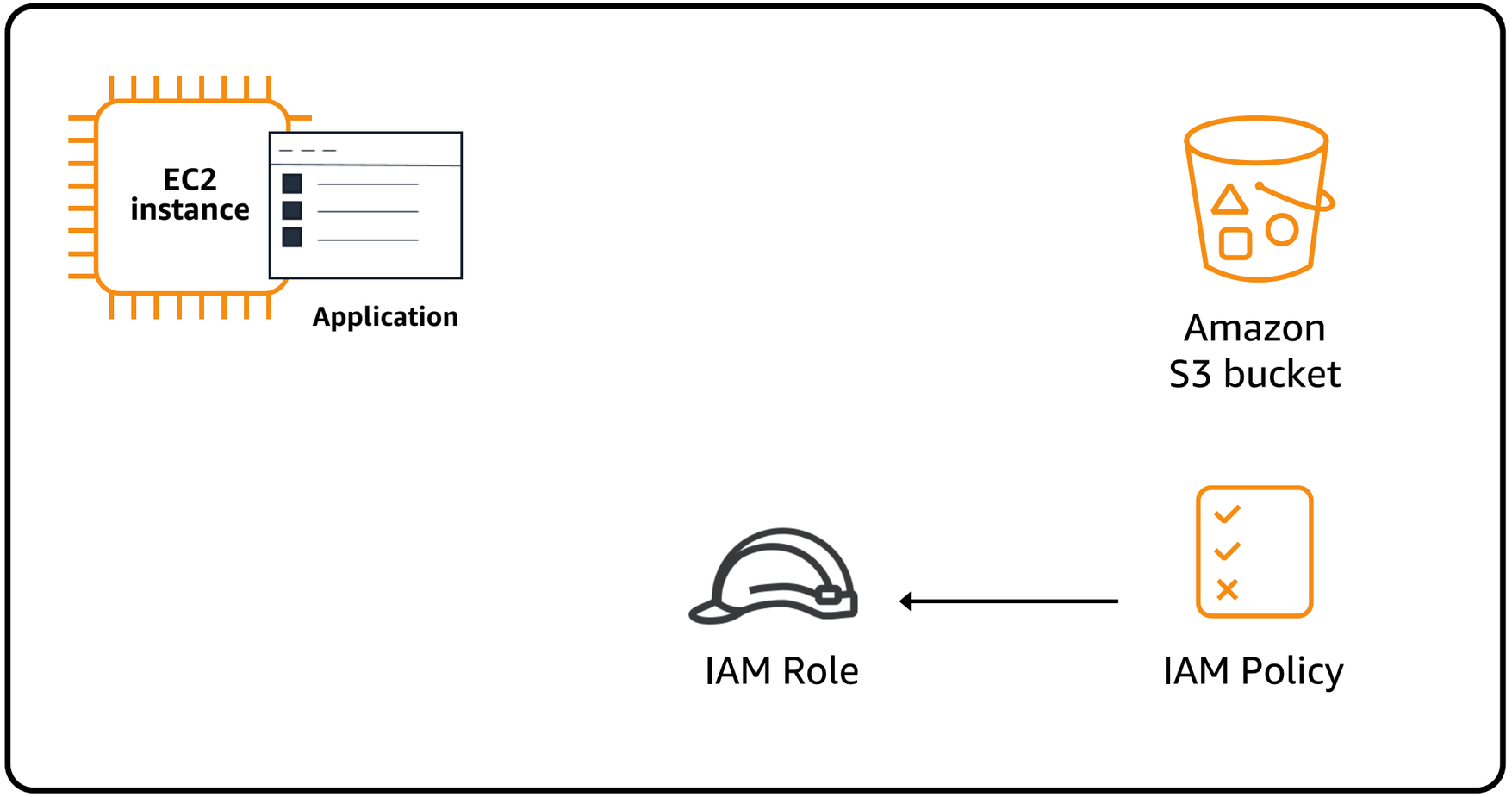
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Using roles for temporary security credentials



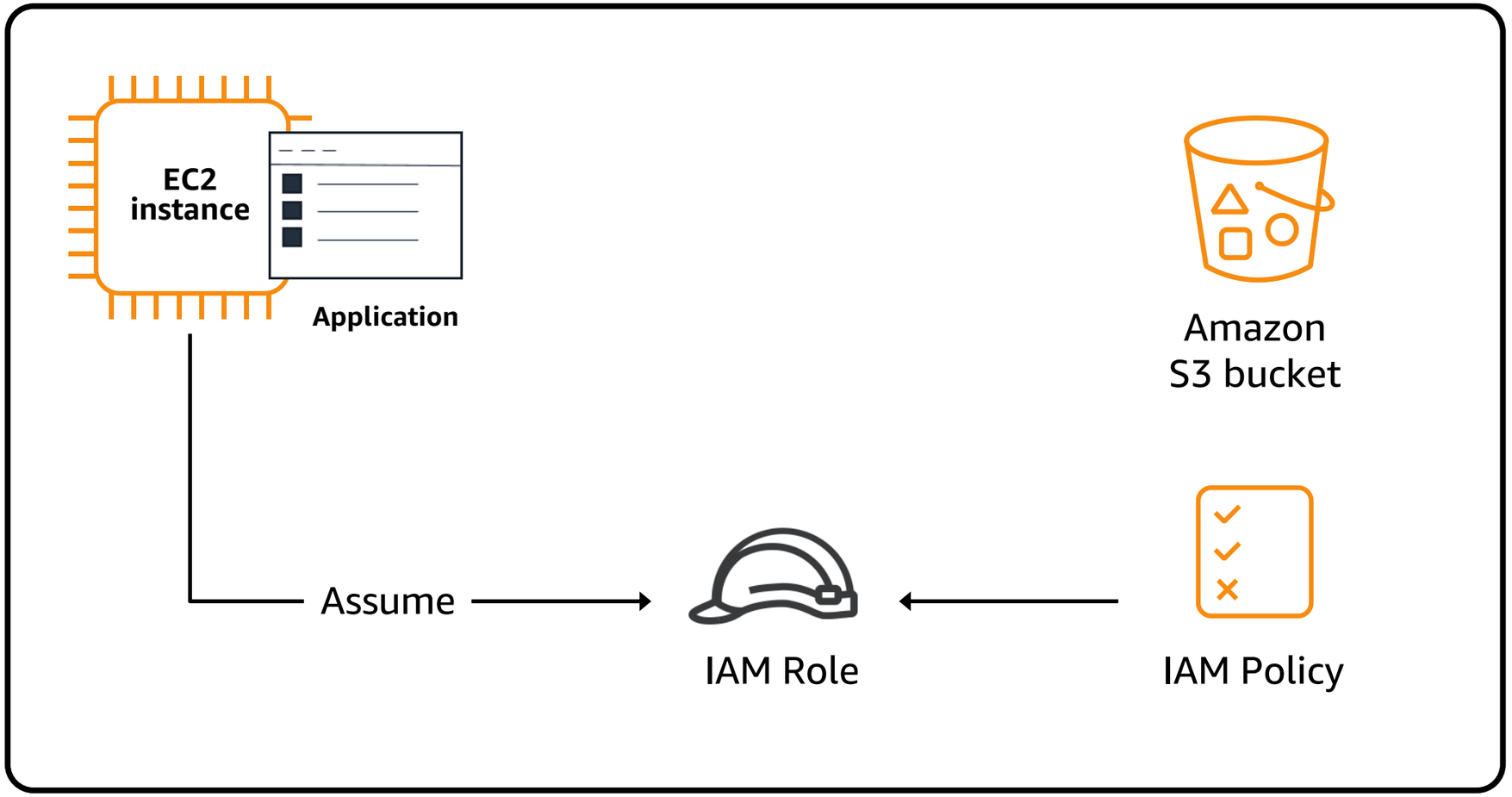
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Using roles for temporary security credentials



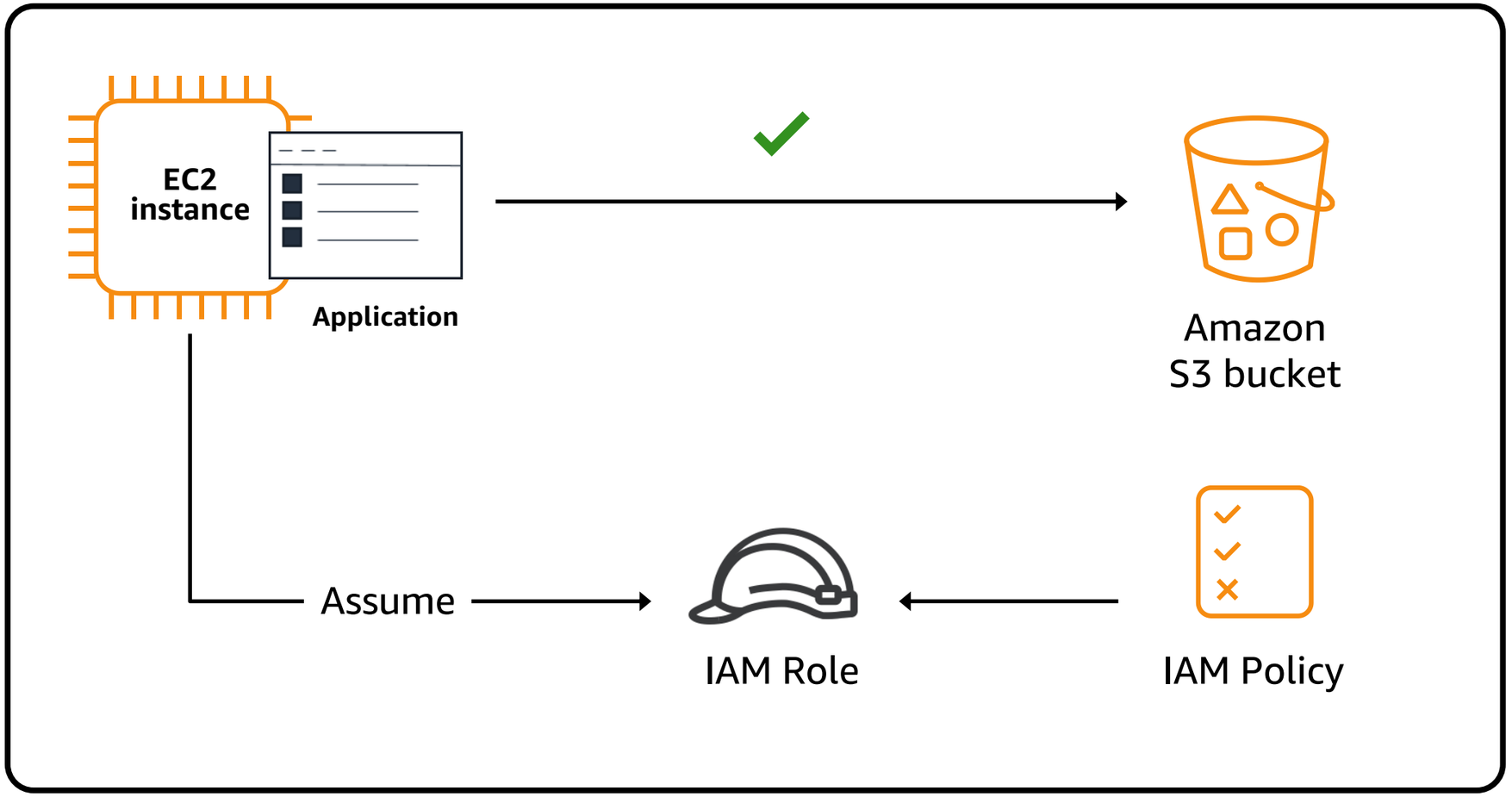
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Using roles for temporary security credentials



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Using roles for temporary security credentials



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Best practices

- Delete access keys for the AWS account root user
- Activate multi-factor authentication (MFA)
- Only give IAM users permissions they need
- Use roles for applications
- Rotate credentials regularly
- Remove unnecessary users and credentials
- Monitor activity in your AWS account

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Access your security and compliance

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Challenges of threat assessment



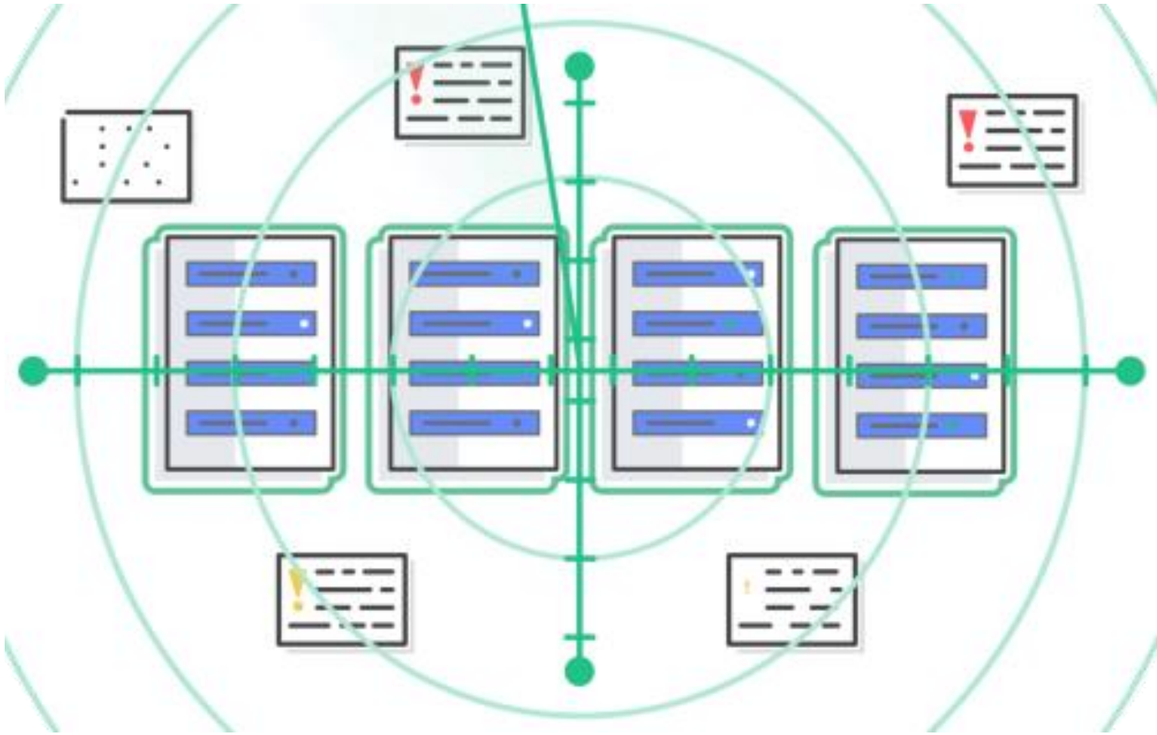
- Expensive
- Complex
- Time-consuming
- Difficult to track IT changes

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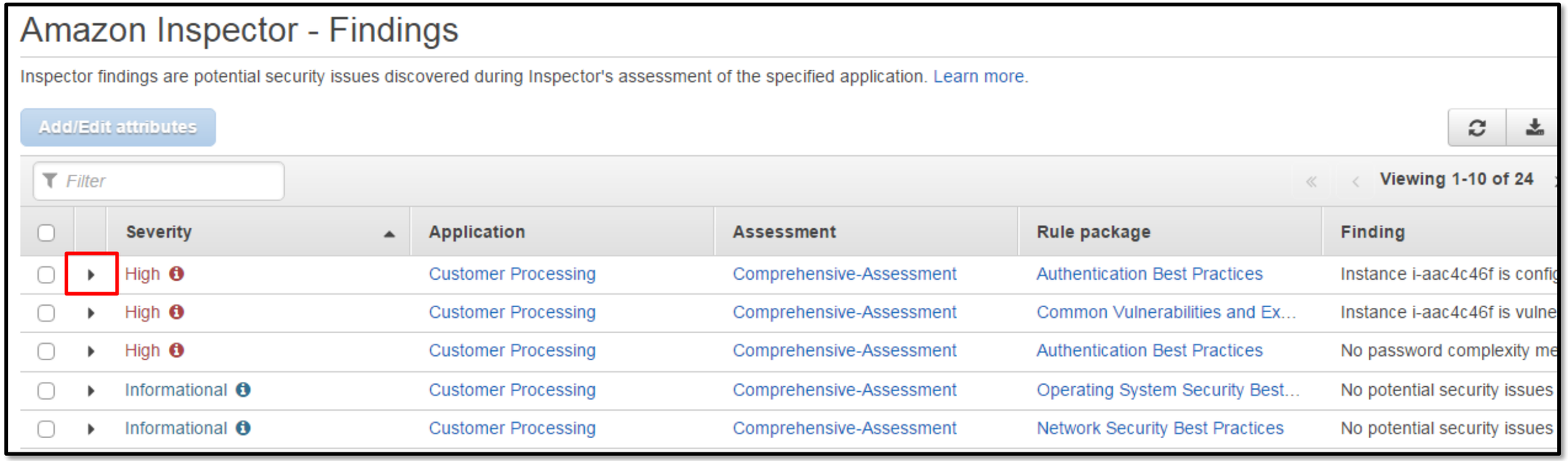
What is Amazon Inspector?

Automated security assessment as a service

- Assesses applications for vulnerabilities
- Produces a detailed list of security findings
- Leverages security best practices

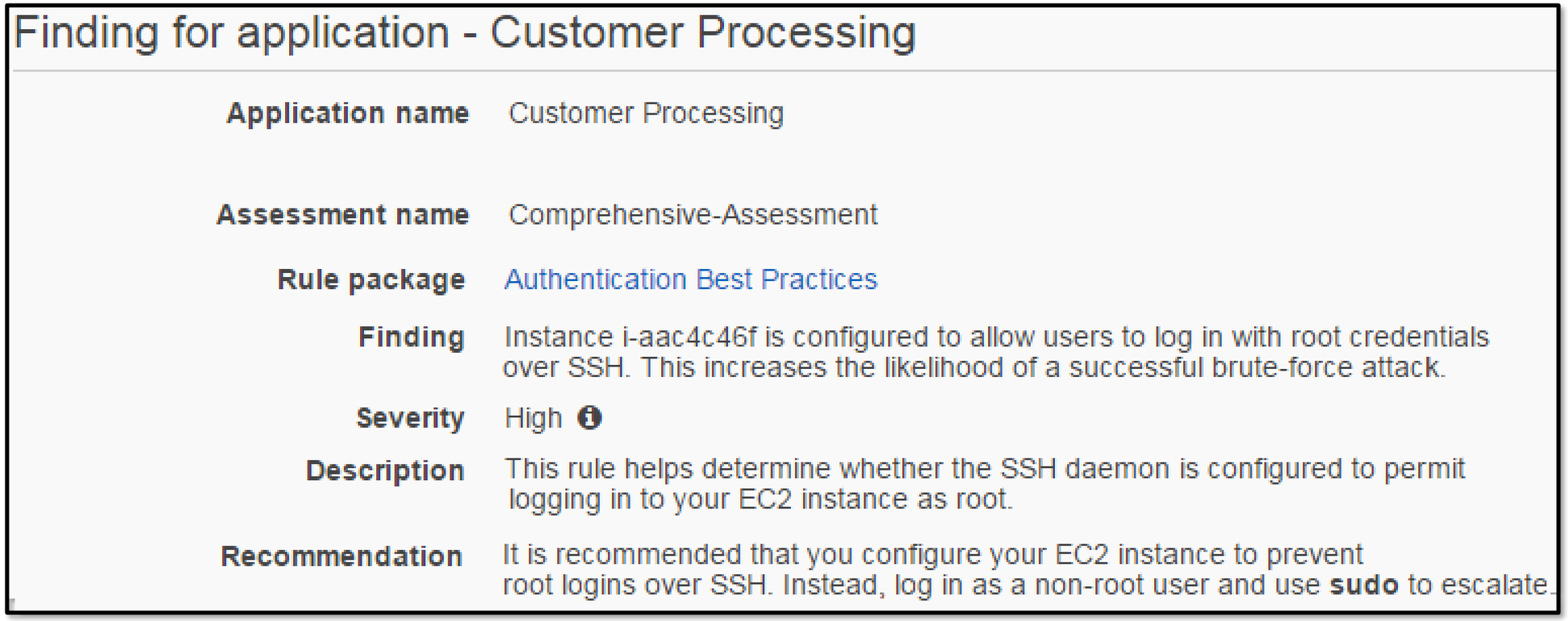


Amazon Inspector findings



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Remediation recommendation



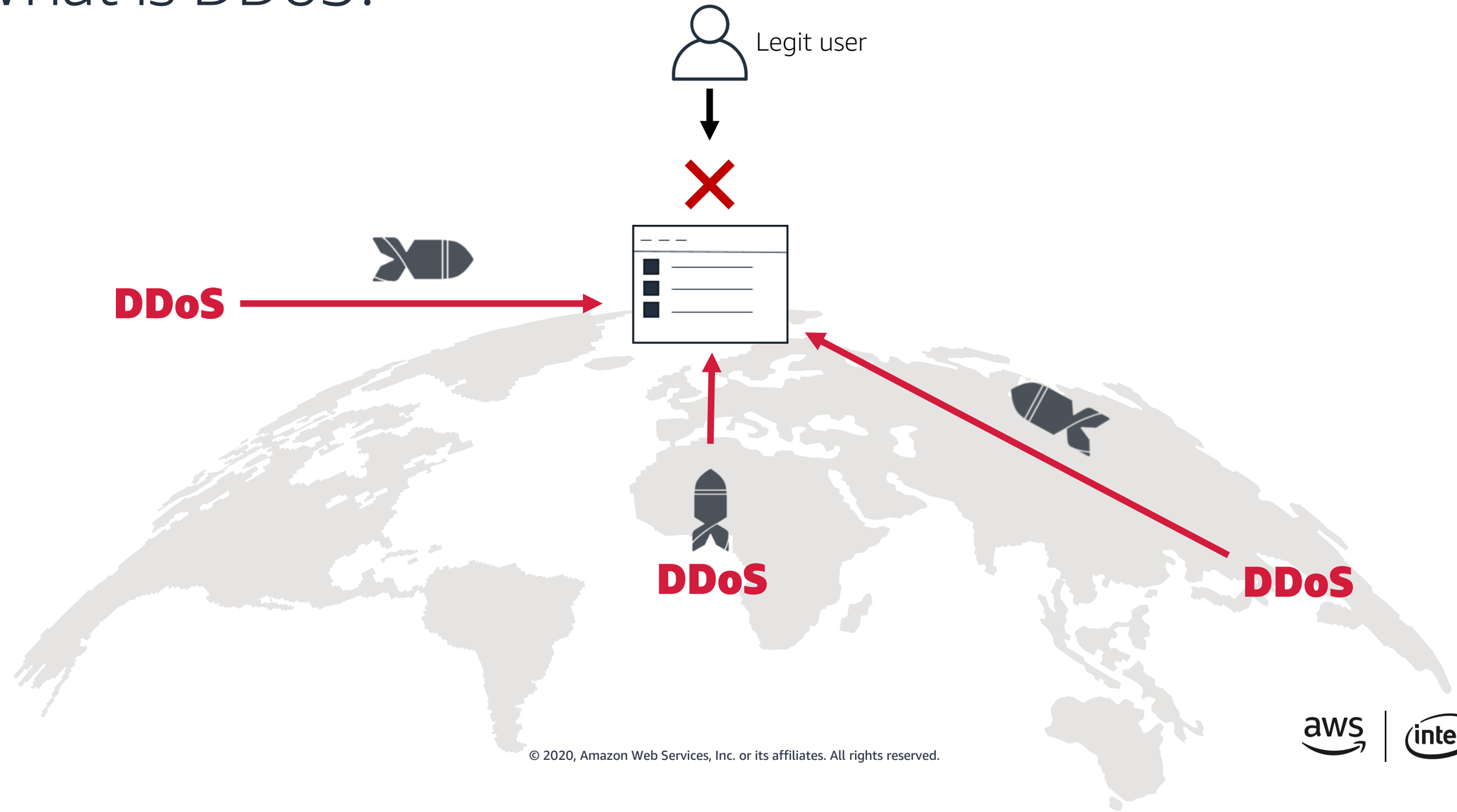
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Protect your infrastructure from Distributed Denial of Service (DDoS) attacks

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What is DDoS?



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DDoS mitigation challenges



Complex



Limited bandwidth



Involves rearchitecting



Manual



Time-consuming



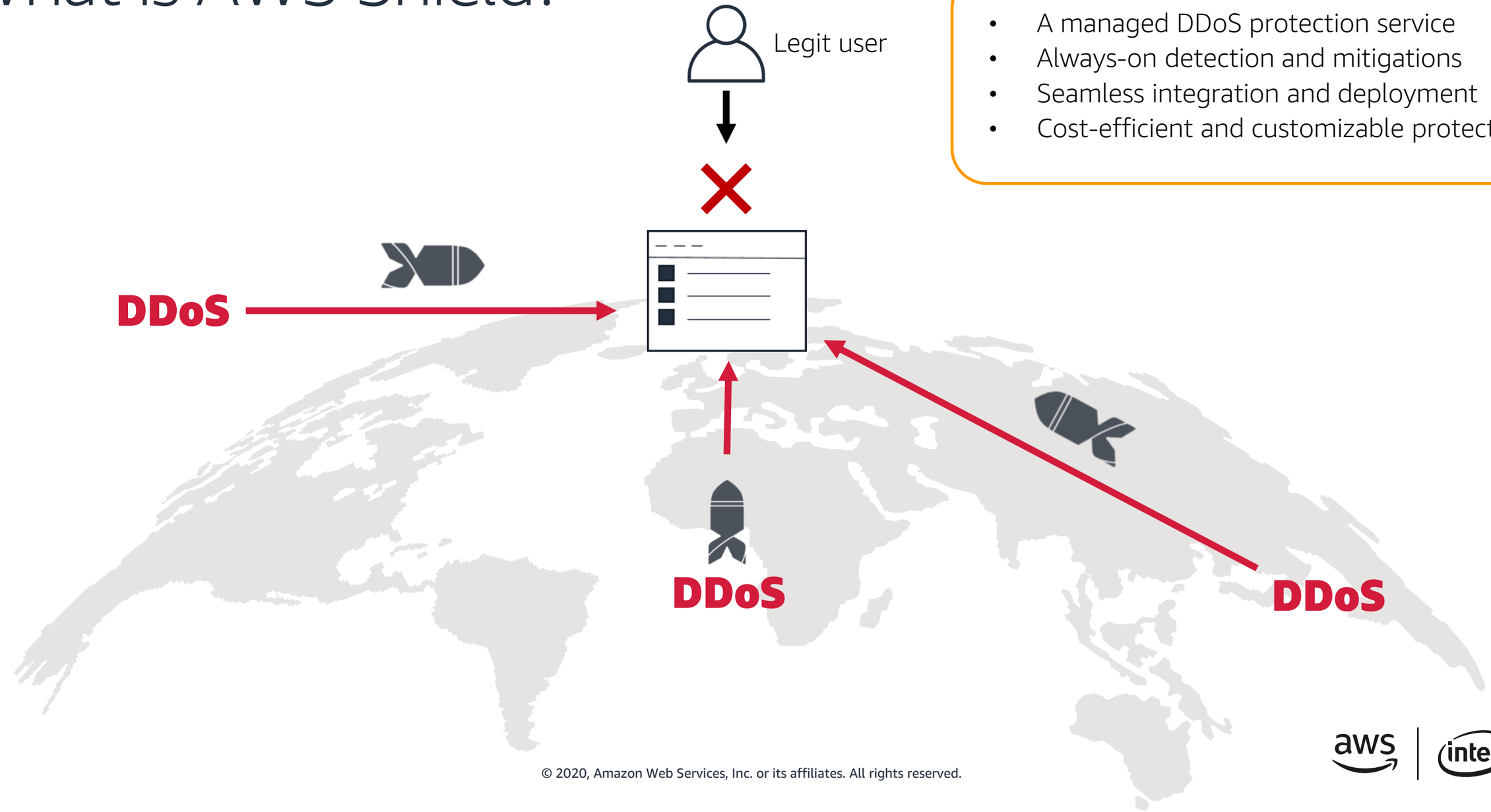
Degraded performance



Expensive

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What is AWS Shield?



- A managed DDoS protection service
- Always-on detection and mitigations
- Seamless integration and deployment
- Cost-efficient and customizable protection

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AWS Shield Standard and AWS Shield Advanced

AWS Shield Standard
(Included)

- Quick detection
- Inline attack mitigation

AWS Shield Advanced
(Optional)

- Enhanced detection
- Advanced attack mitigation
- Visibility and attack notification
- DDoS cost protection
- Specialized support

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AWS security compliance

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Assurance programs

Global



















USA





























Europe












Asia Pacific









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How AWS helps customers achieve compliance

Sharing information

- Industry certifications
- Security and control practices
- Compliance reports directly under NDA

Assurance program

- Certifications/attestations
- Laws, regulations, and privacy
- Alignments/frameworks

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Customer responsibility

You own your certification.

Review – Design – Identify – Verify

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End of Module 4

Test your knowledge

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