AWSOME DAY
ONLINE CONFERENCE

Module 4:
Secure your cloud applications

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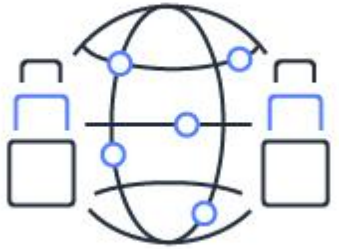
Secure your infrastructure

Security is our top priority

Designed for security

Constantly monitored

Highly automated



Highly available

Highly accredited

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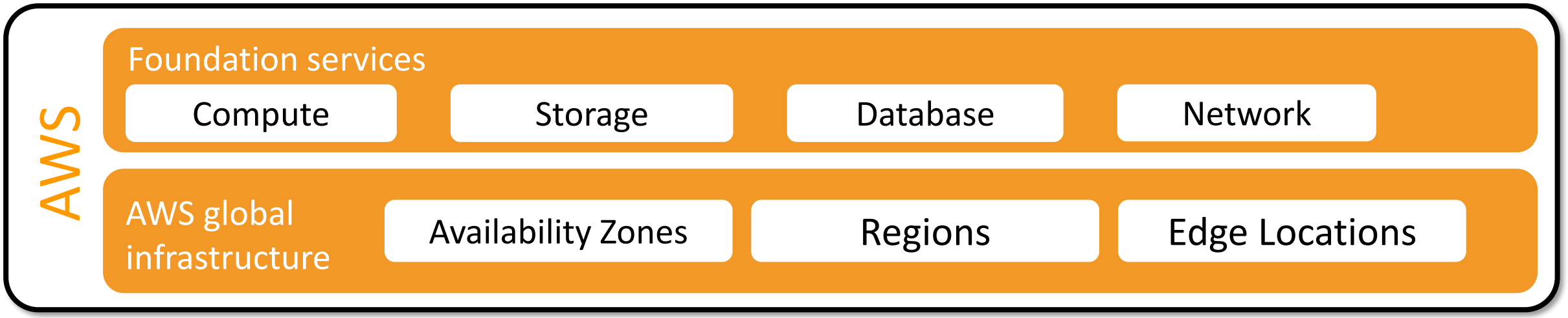
Security of the cloud

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



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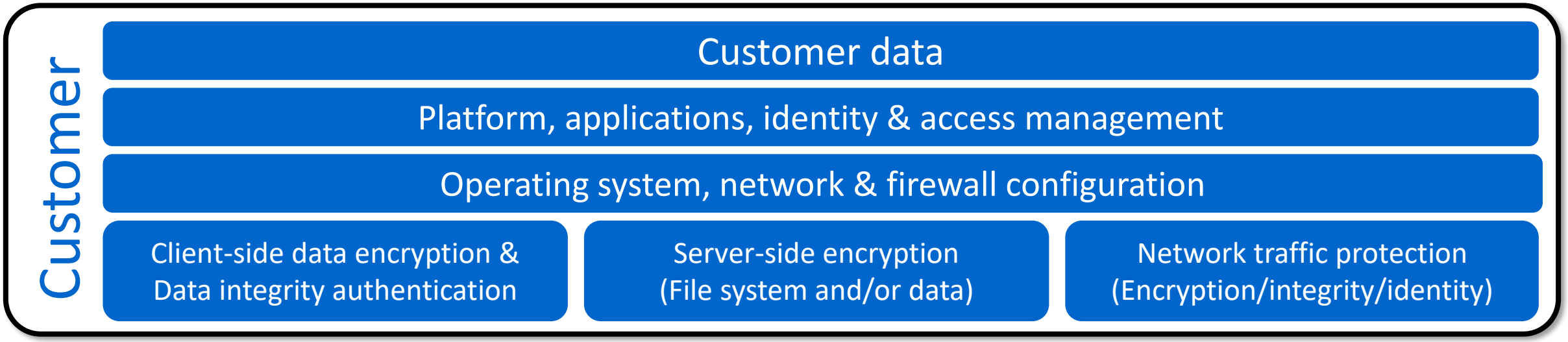
Security in the cloud



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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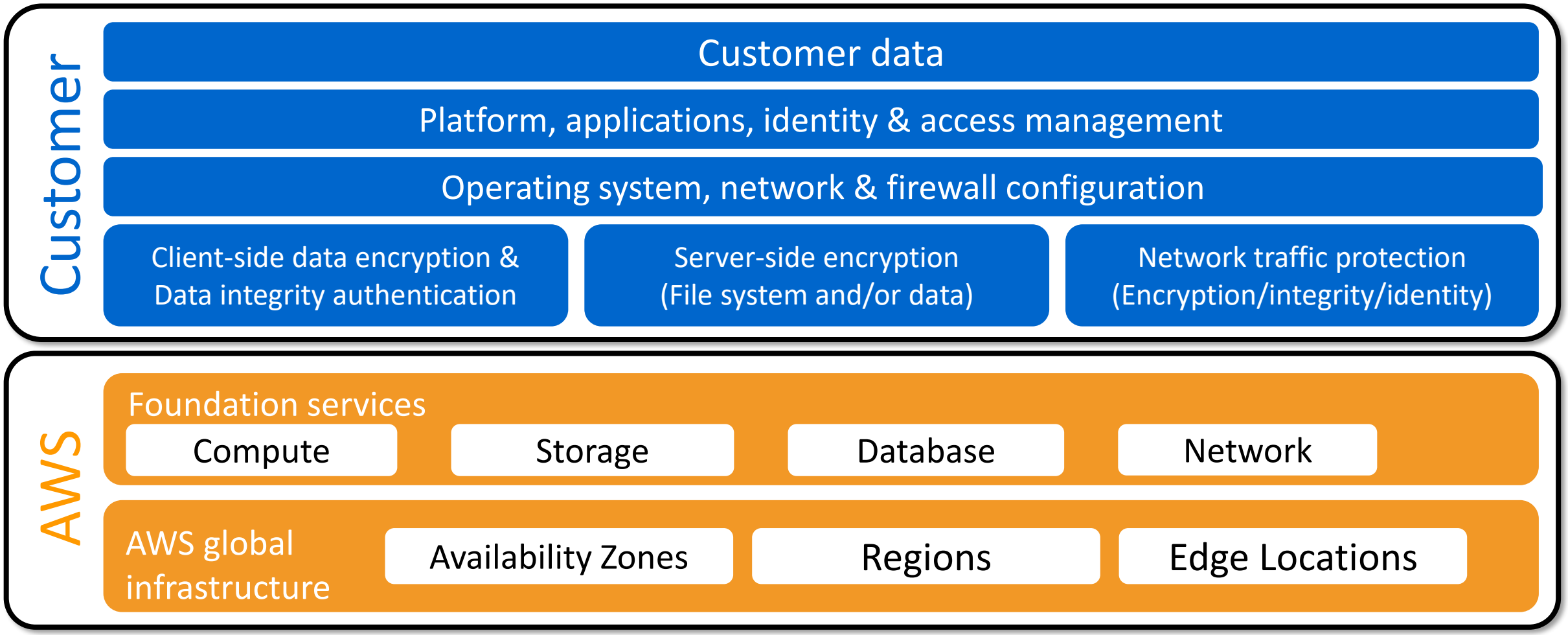
AWS shared responsibility model



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Discussion: Who's responsible for what?

Unmanaged services

- Amazon EC2
- Amazon EBS

Managed services

- Amazon RDS
- Amazon S3
- Amazon DynamoDB

Operations

- Guest OS patching
- Database patching
- Firewall configuration
- Disaster recovery
- User data

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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

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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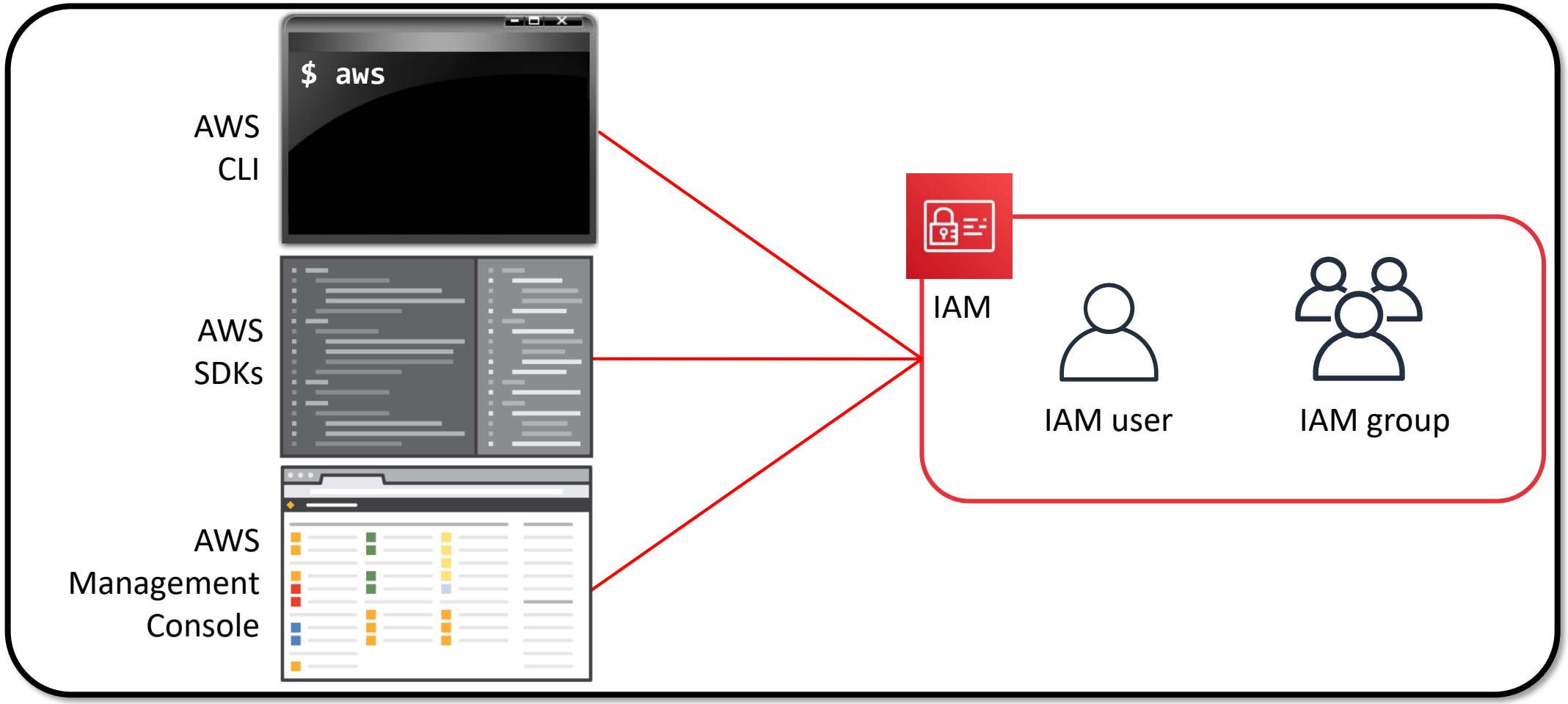
Authentication: Who are you?



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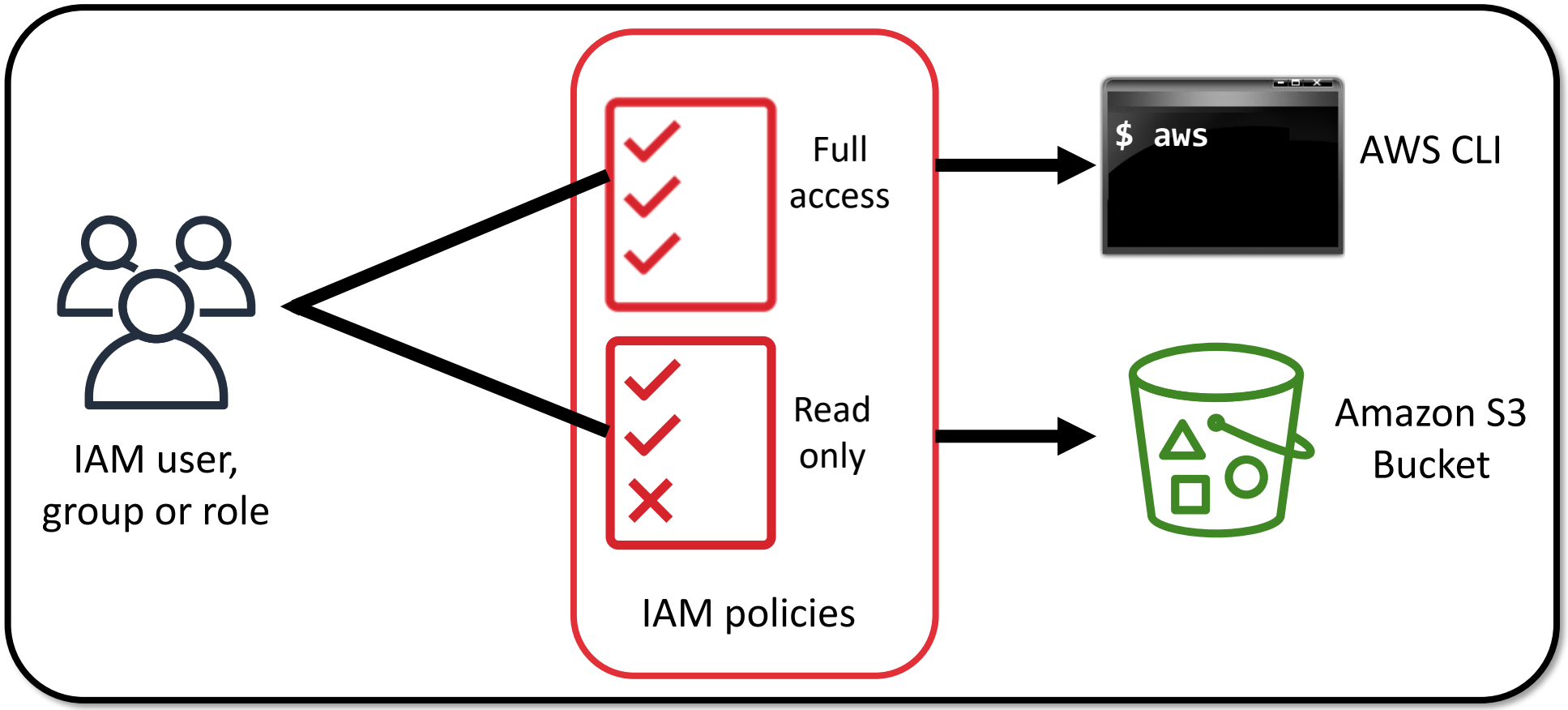
Authorization: What can you do?



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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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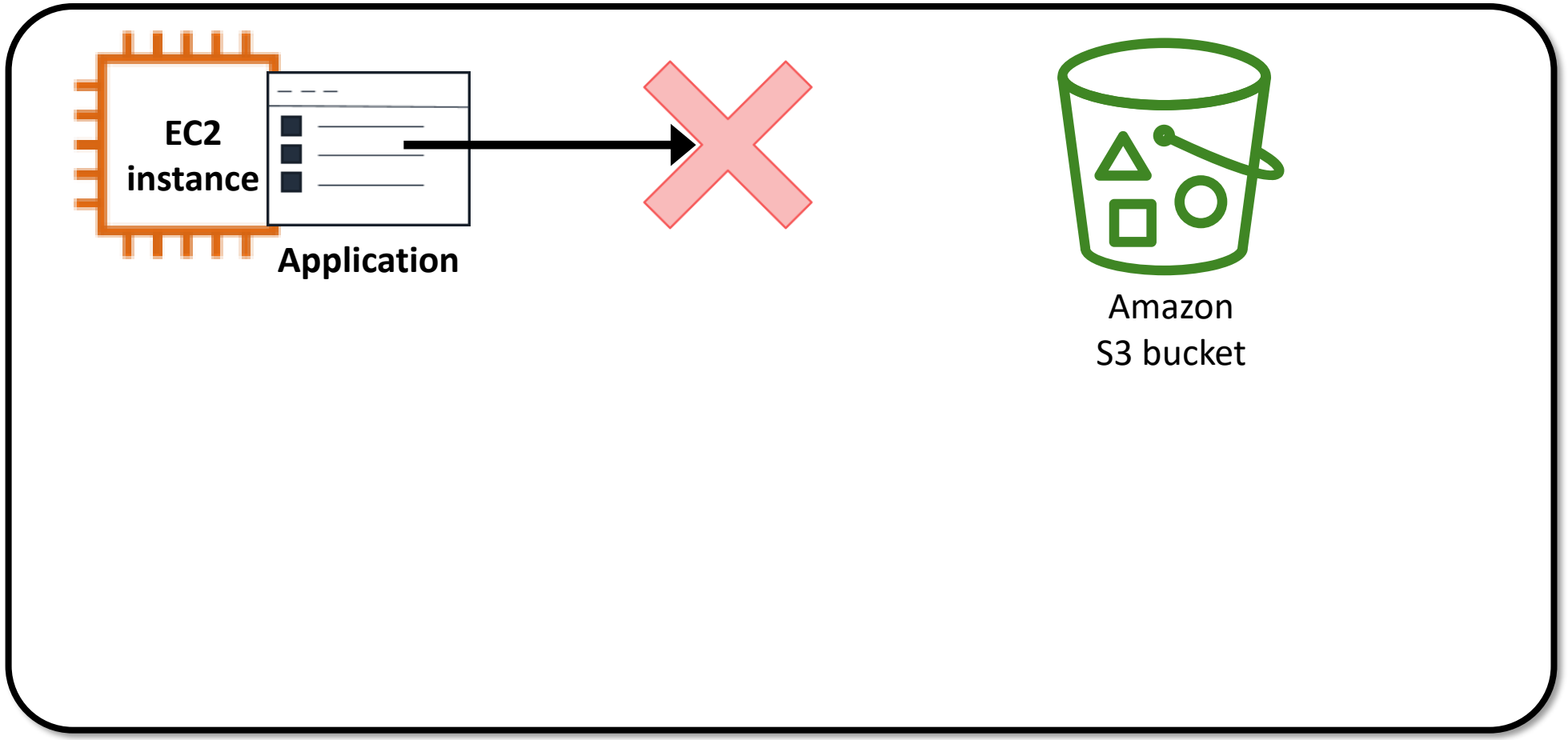
Using roles for temporary security credentials



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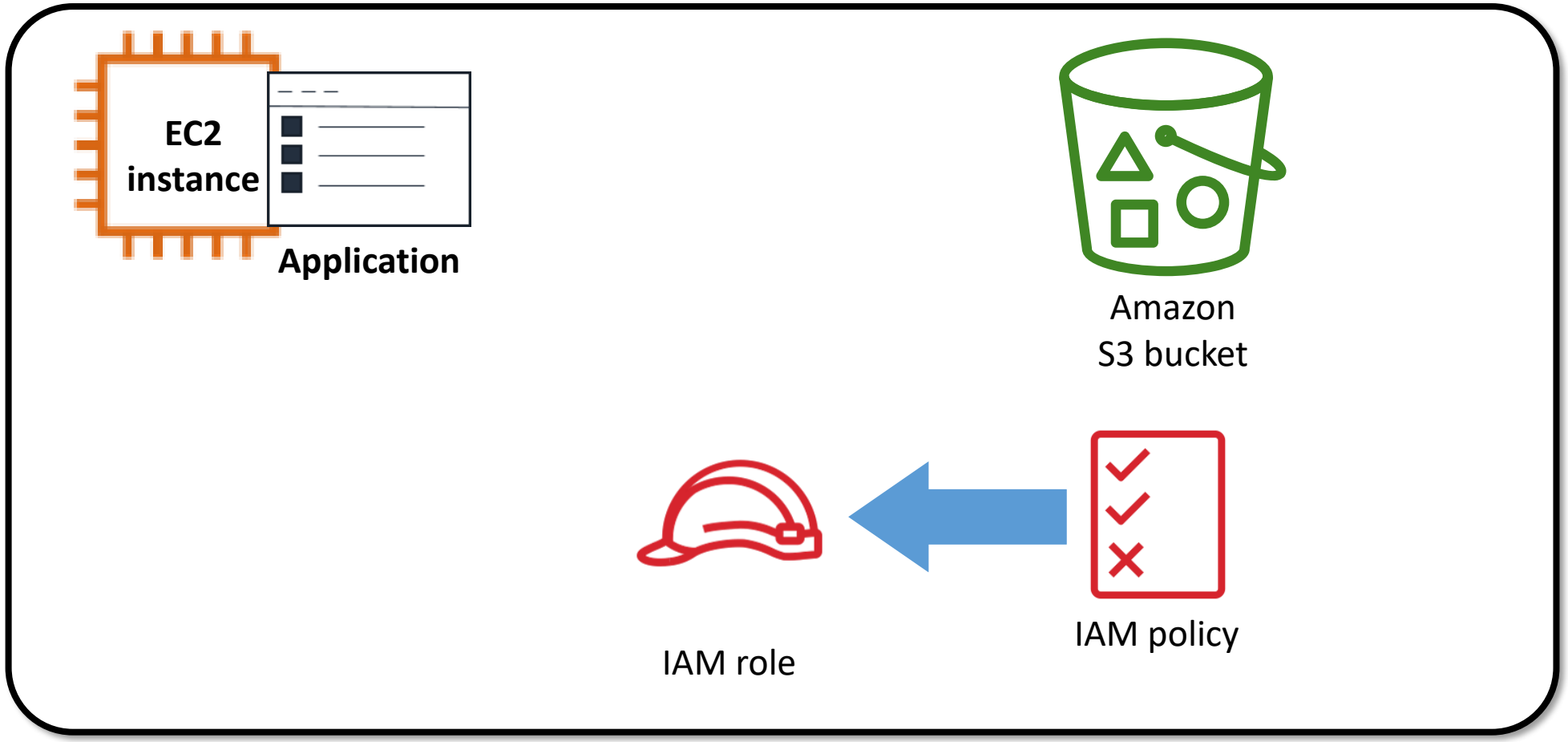
Using roles for temporary security credentials



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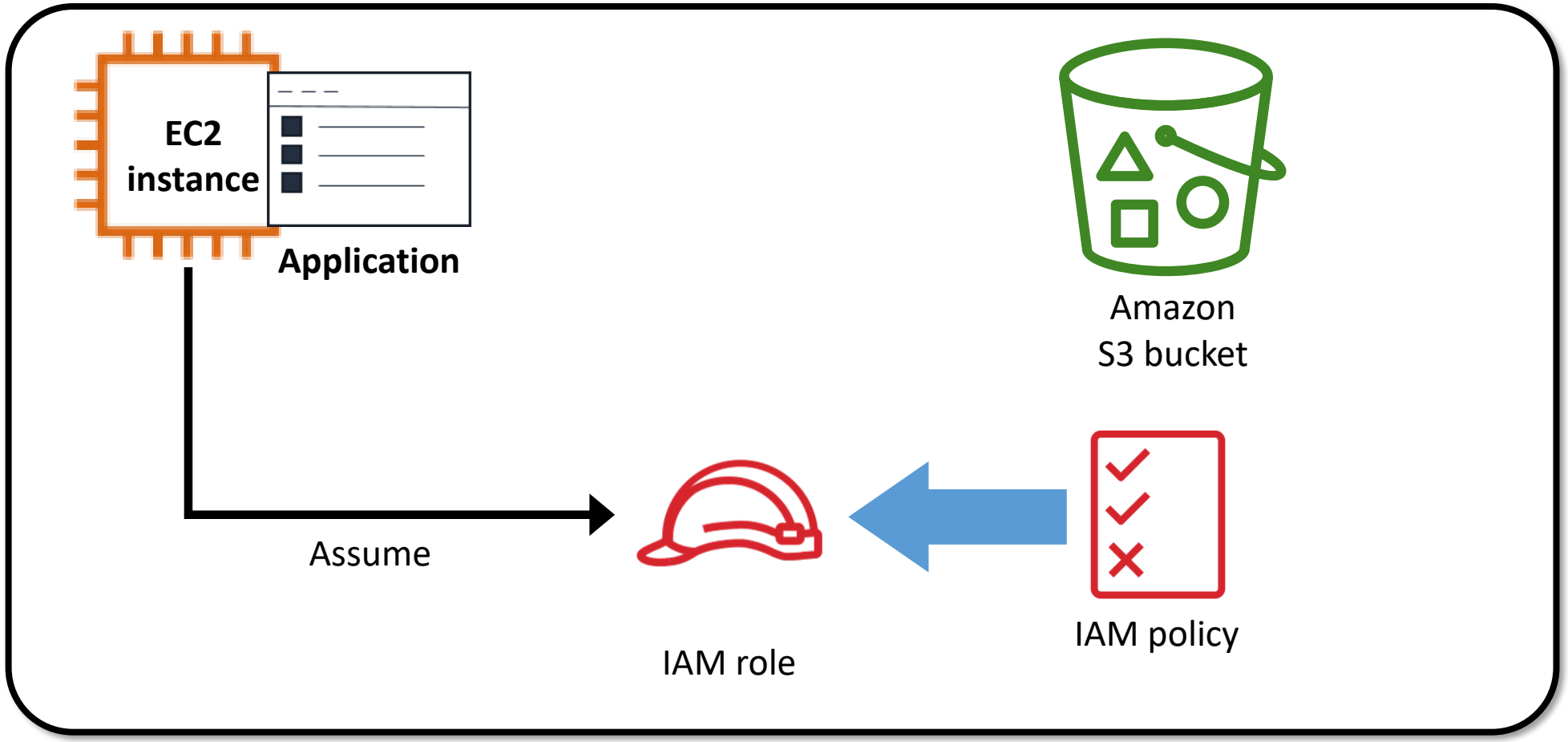
Using roles for temporary security credentials



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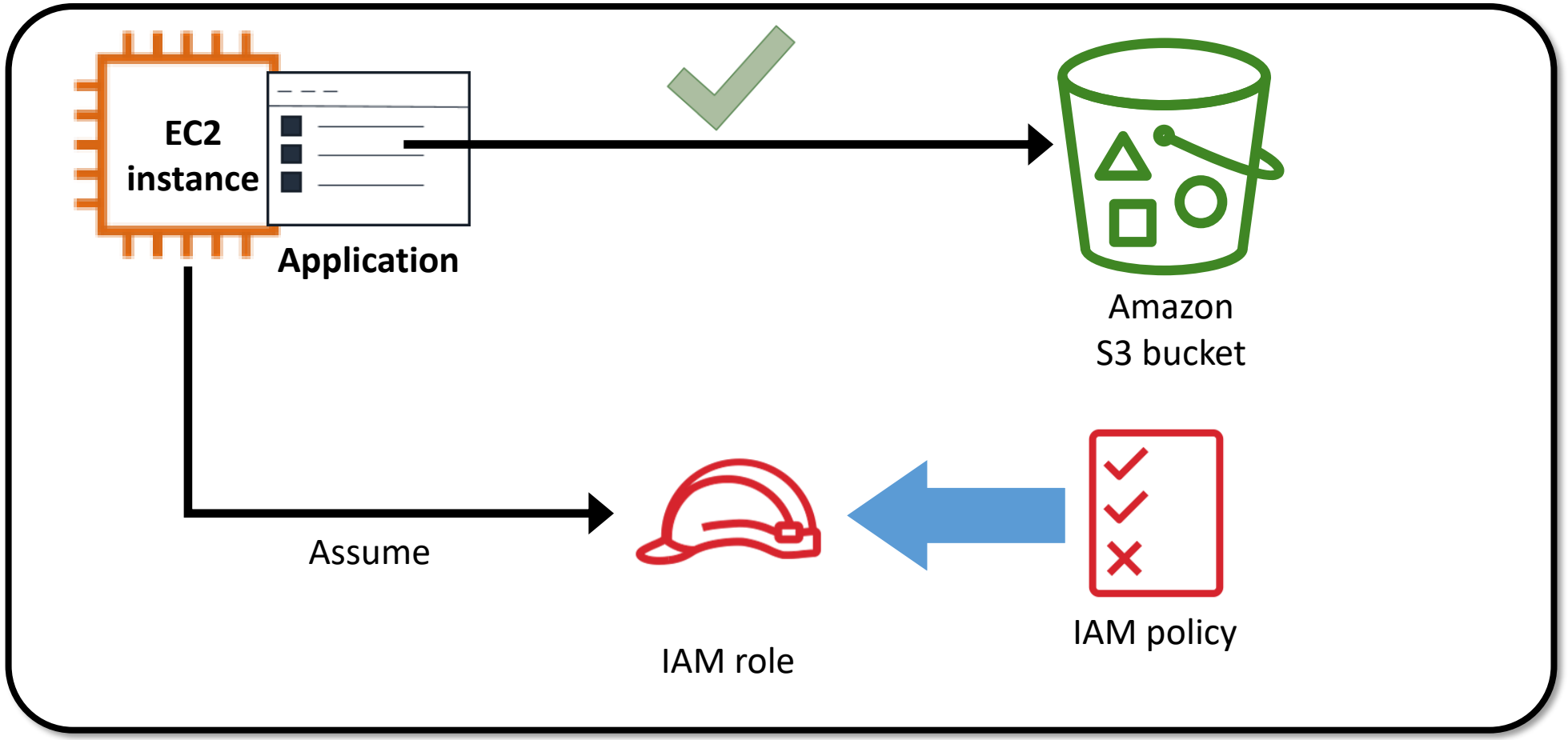
Using roles for temporary security credentials



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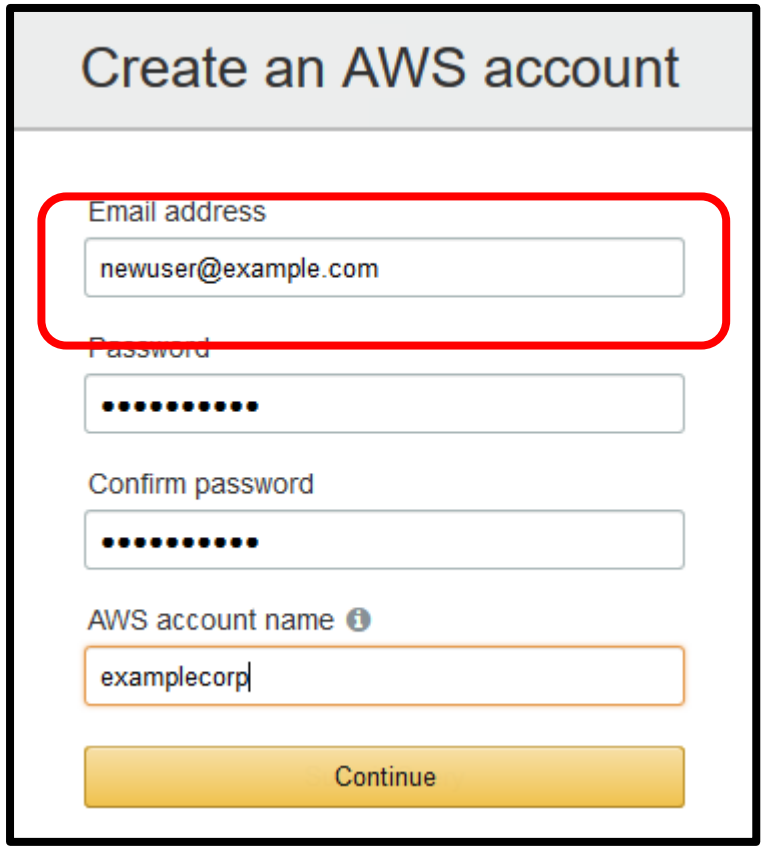
AWS account root user

Account root user has complete access to all AWS services



Recommendations

- Delete root user access keys
- Create an IAM user
- Grant administrator access
- Use IAM credentials to interact with AWS
- Enable MFA

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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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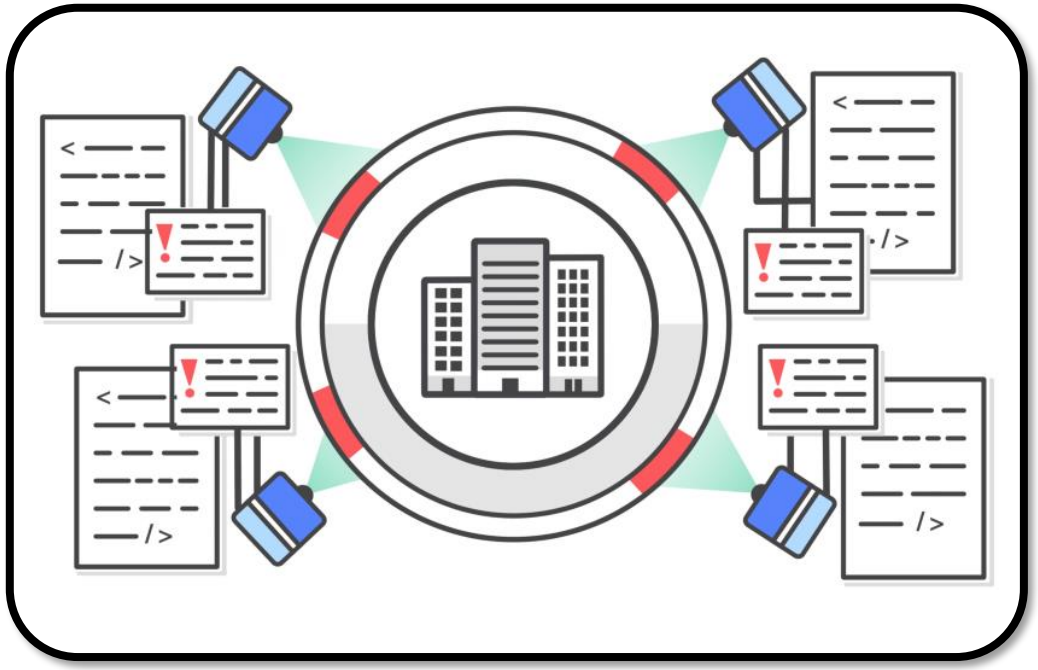
Access your security and compliance

Challenges of threat assessment



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

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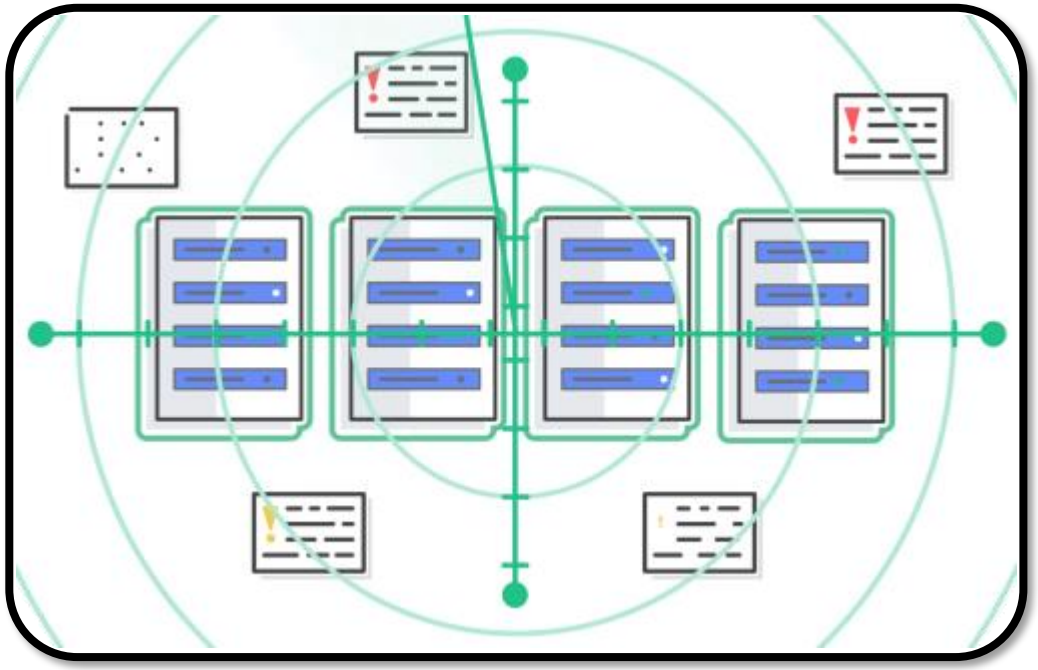
What is Amazon Inspector?

Automated security assessment as a service



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

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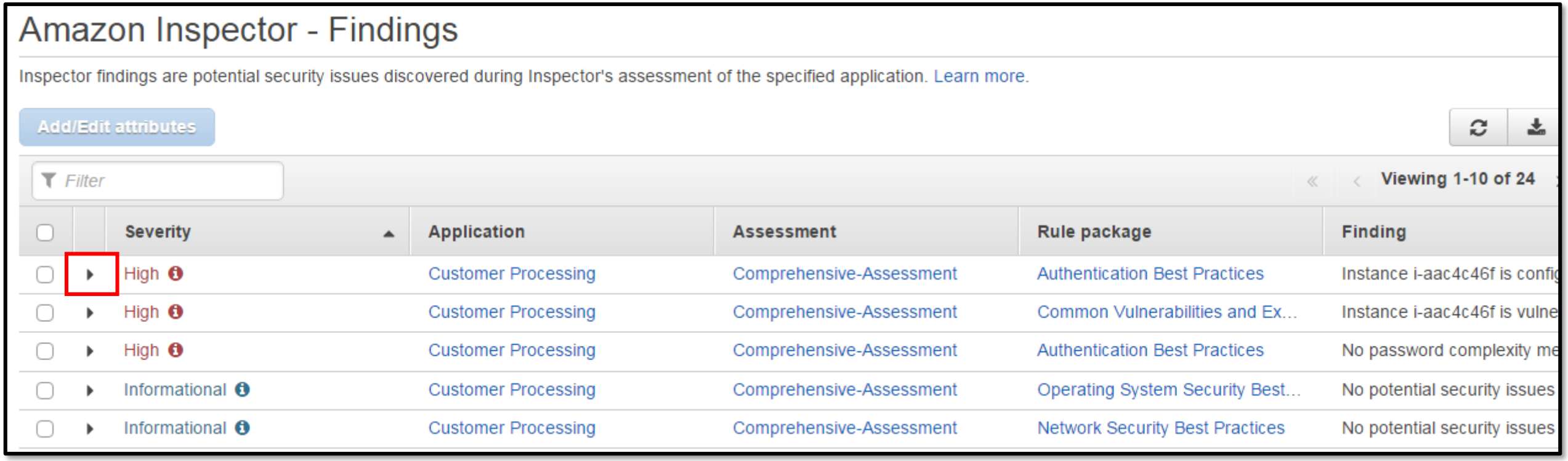
Amazon Inspector findings



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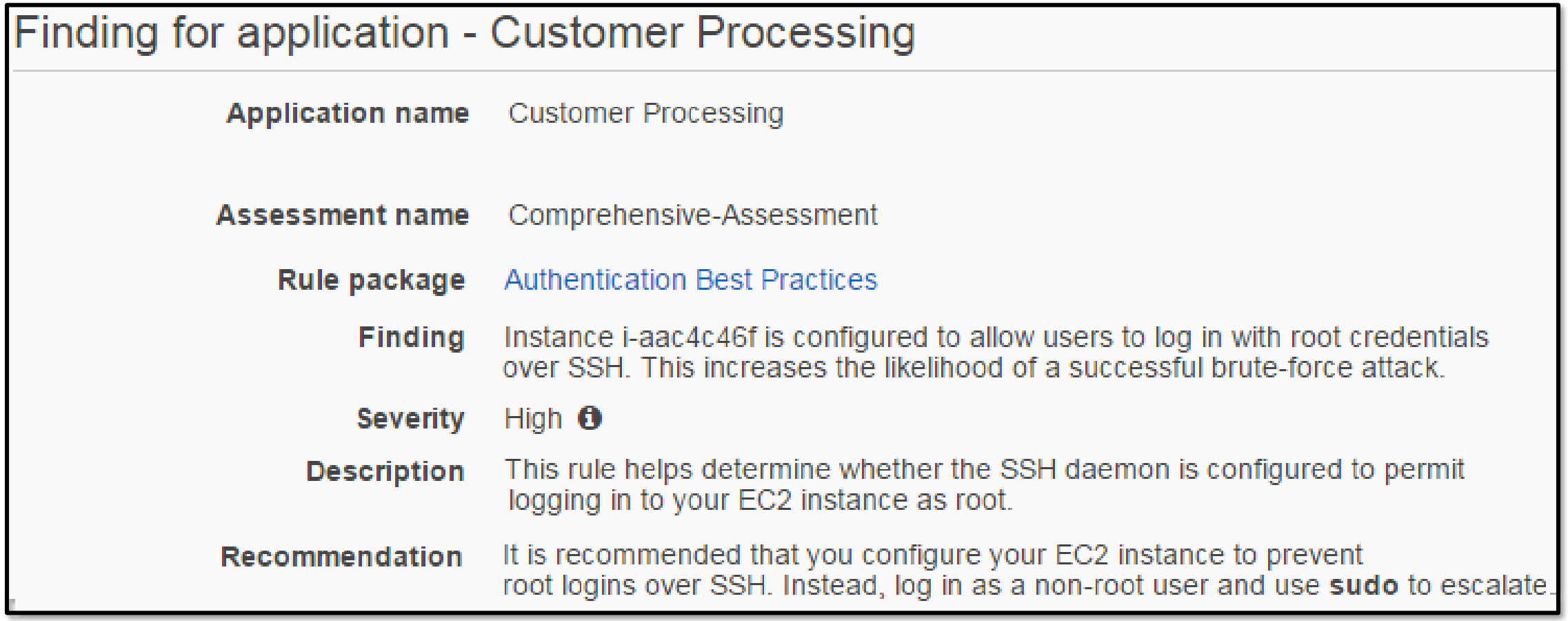
Remediation recommendation



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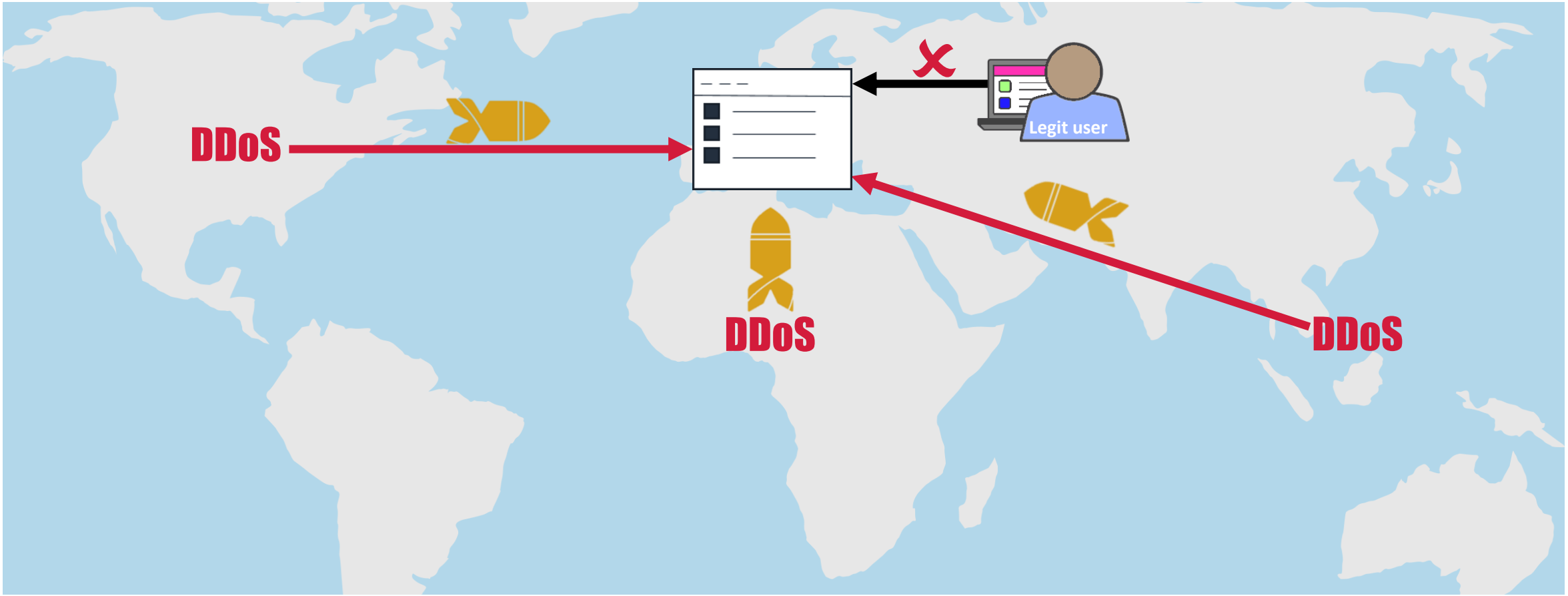
Protect your infrastructure from Distributed Denial of Service (DDoS) attacks

What is DDoS?



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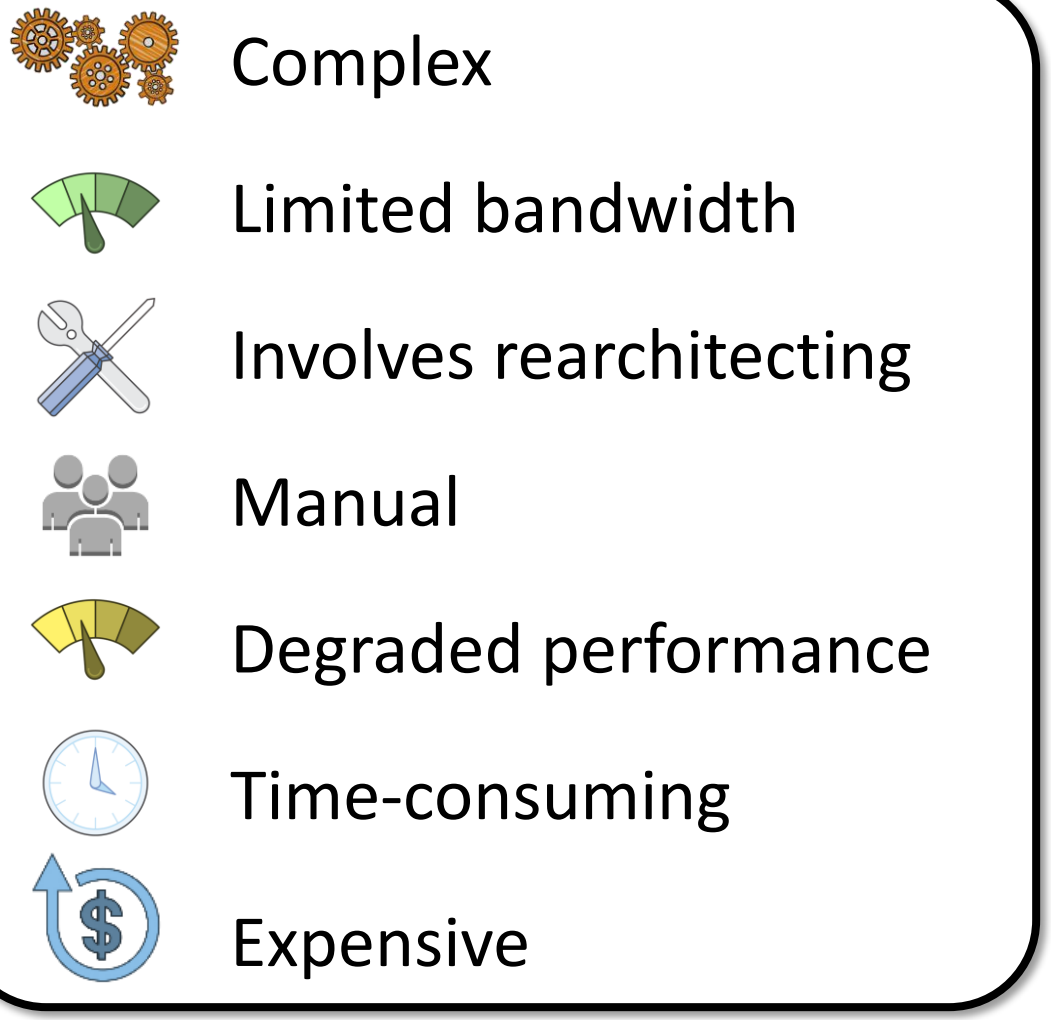
DDoS mitigation challenges



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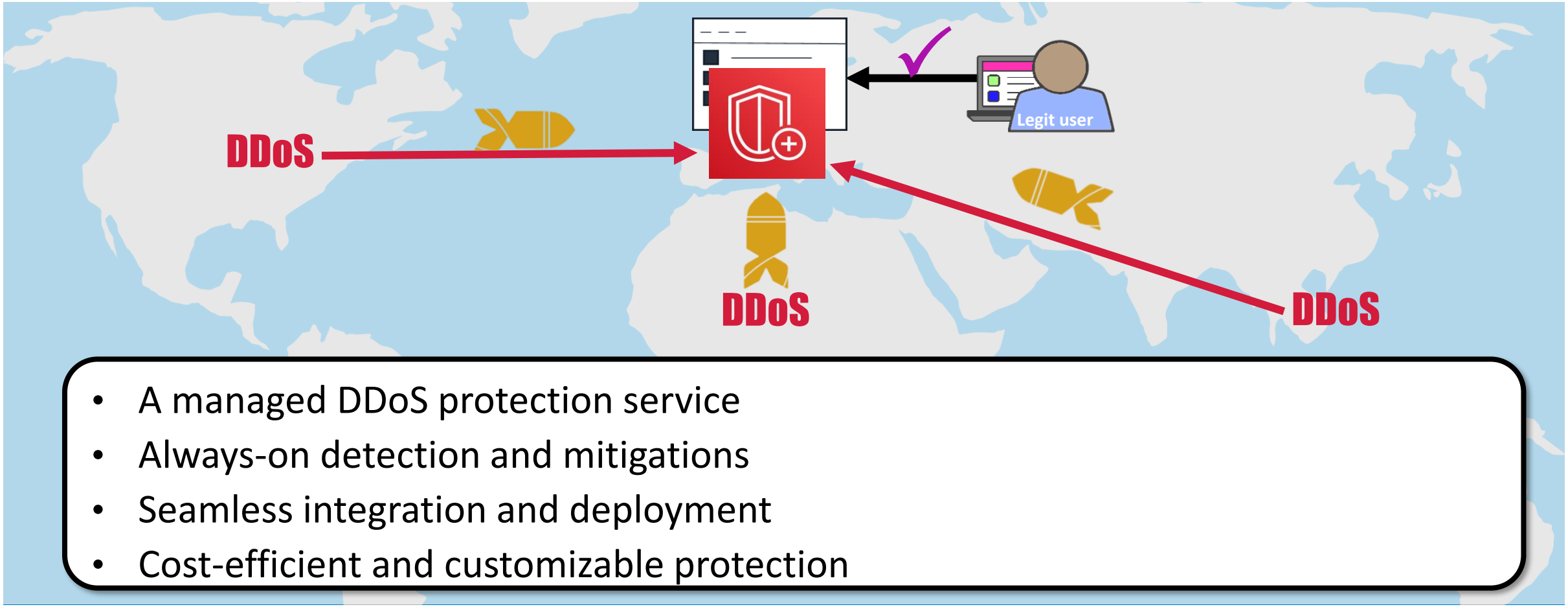
What is AWS Shield?



- 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

Assurance programs

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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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Thank you!

 #AWSomeDay

Alejandra Quetzalli
AWS Developer Advocate

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