
AWS
re:Invent
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COP378

New governance capabilities for multi-account environments

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Speakers

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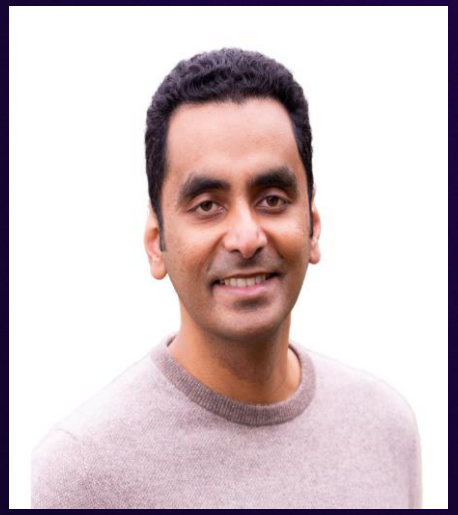

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Agenda

01 Cloud Governance defined

02 What’s new in Control Policies

03 Observability and governance

What is cloud governance?

AWS cloud governance helps you align your AWS cloud use with your business objectives.

AWS Cloud Governance Mission

- Move fast toward business objectives
- Security & Compliance
- Efficient operations

Why is governance challenging?

Balance: innovation & controls

Keep pace with regulations

Stay agile

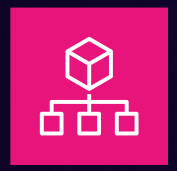
Cost consciousness

Operational efficiency

Customer success story

CLEARWATER ANALYTICS.

Rapid growth
Scale
Automation
Efficiency – lean team



AWS Organizations

AWS Control Tower

Policies

+200% management capacity
Independent developers
Safety net

What’s new in governance

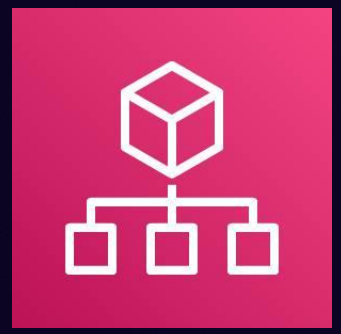
AWS Organizations & AWS Control Tower

AWS Control Tower

Offers an easy way to setup and govern a secure, multi-account AWS environment

500+ preconfigured, managed controls

AWS Organizations



Helps you centrally govern a multi-account AWS environment using policies

AWS Organization Policies

Authorization Policies

Manage access for principals and resources

- Service Control Policies
- Resource Control Policies (Nov, 2024)

Management Policies

Manage configuration of AWS services

- Backup Policies
- Tag Policies
- AI-Optout Policies
- Chatbot Policies (October 2024)
- Declarative Policies for Amazon EC2

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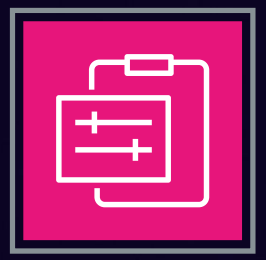
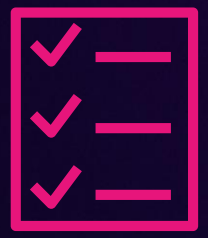
Customer need



Enforce uniform configuration



Peace of mind

Apply configuration at scale

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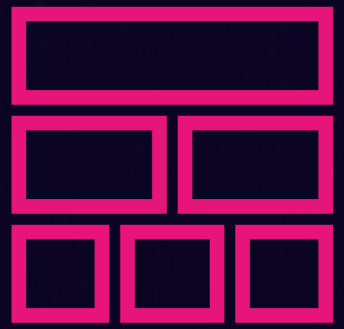
Example Configuration

I'm an enterprise admin

I have an AWS organization with 500 accounts

I want to block public access of VPCs

Service Configuration – Customer Challenges



Enforcing at scale

Running campaigns

Understanding current configurations

Service Configuration – Customer Challenges

Navigate complexity

VPCs

Internet Gateways

NAT Gateway

Subnets

Route tables

Security Groups

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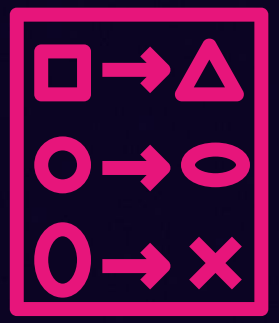
Service Configuration – Customer Challenges

Navigate complexity

Protect these configurations using an SCP

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Deny",
      "Action": [
        "ec2:AttachInternetGateway",
        "ec2:CreateInternetGateway",
        "ec2:CreateEgressOnlyInternetGateway",
        "ec2:CreateVpcPeeringConnection",
        "ec2:AcceptVpcPeeringConnection",
        "globalaccelerator:Create*",
        "globalaccelerator:Update*"
      ],
      "Resource": "*"
    }
  ]
}
```

Service Configuration – Customer Challenges



Continuously monitor
& update policies

Monitor every new feature, resource, principal, action and account

Update the policy to ensure the intent is maintained

Service Configuration – Customer Challenges

End user challenge

Decoding errors can be challenging

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Declarative Polices

Declare and enforce desired configuration for a given AWS service at scale across your organization

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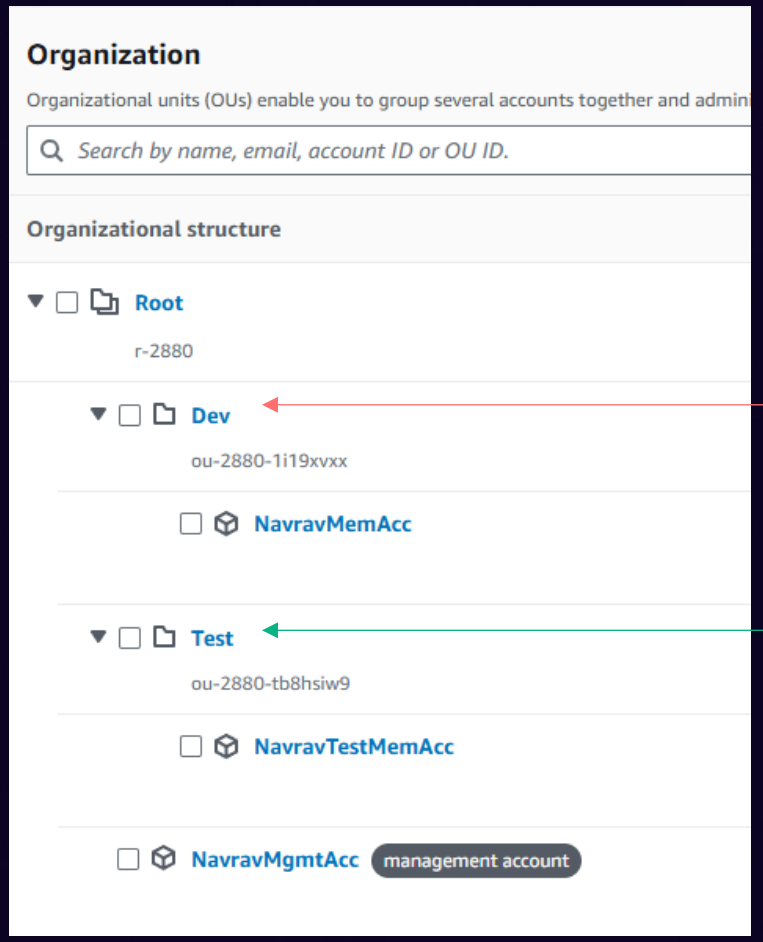
Declarative Polices - DEMO Set Up

Objective: Block public access to VPCs in a specific OU



Block Public Access to VPC in accounts under DEV OU

Do not Block Public Access to VPC in accounts under Test OU

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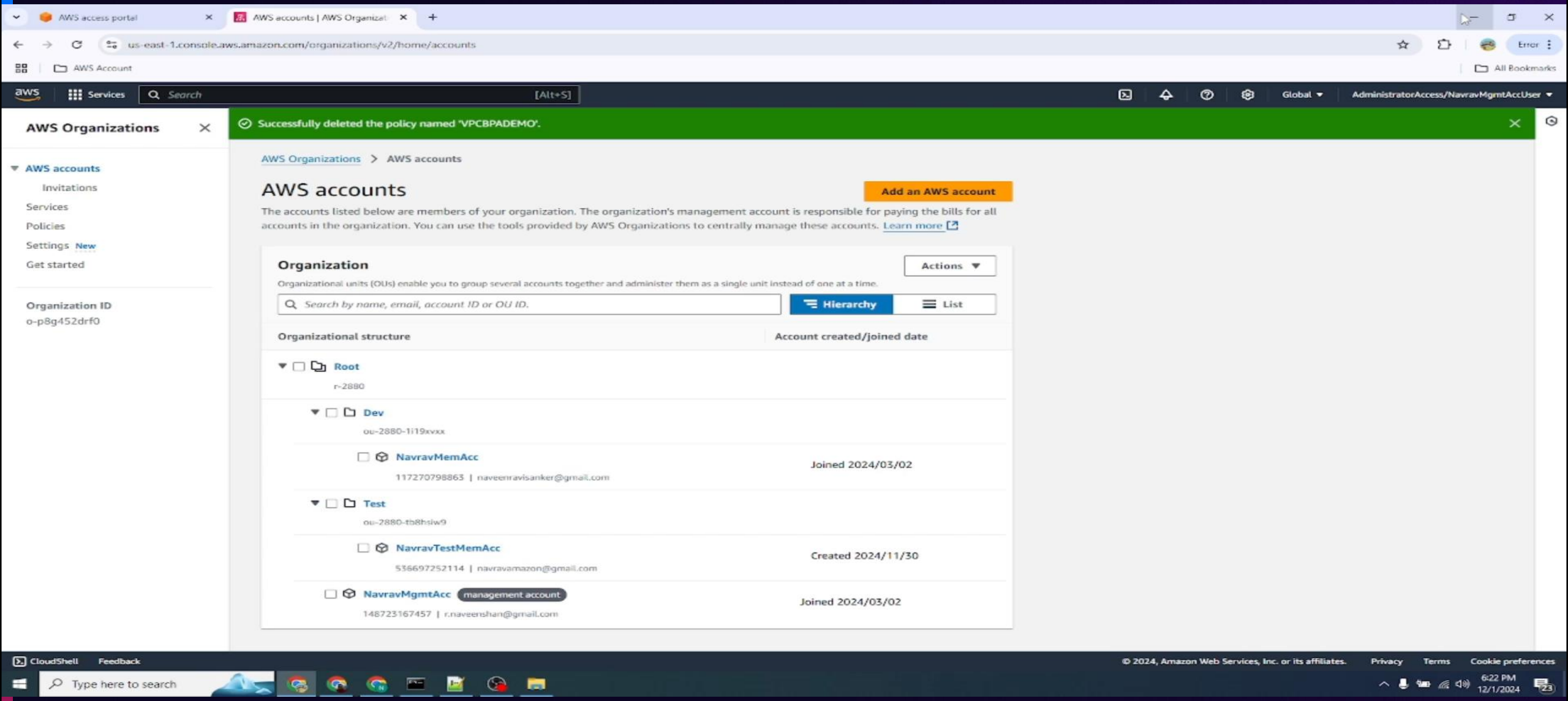
Declarative Policies - DEMO



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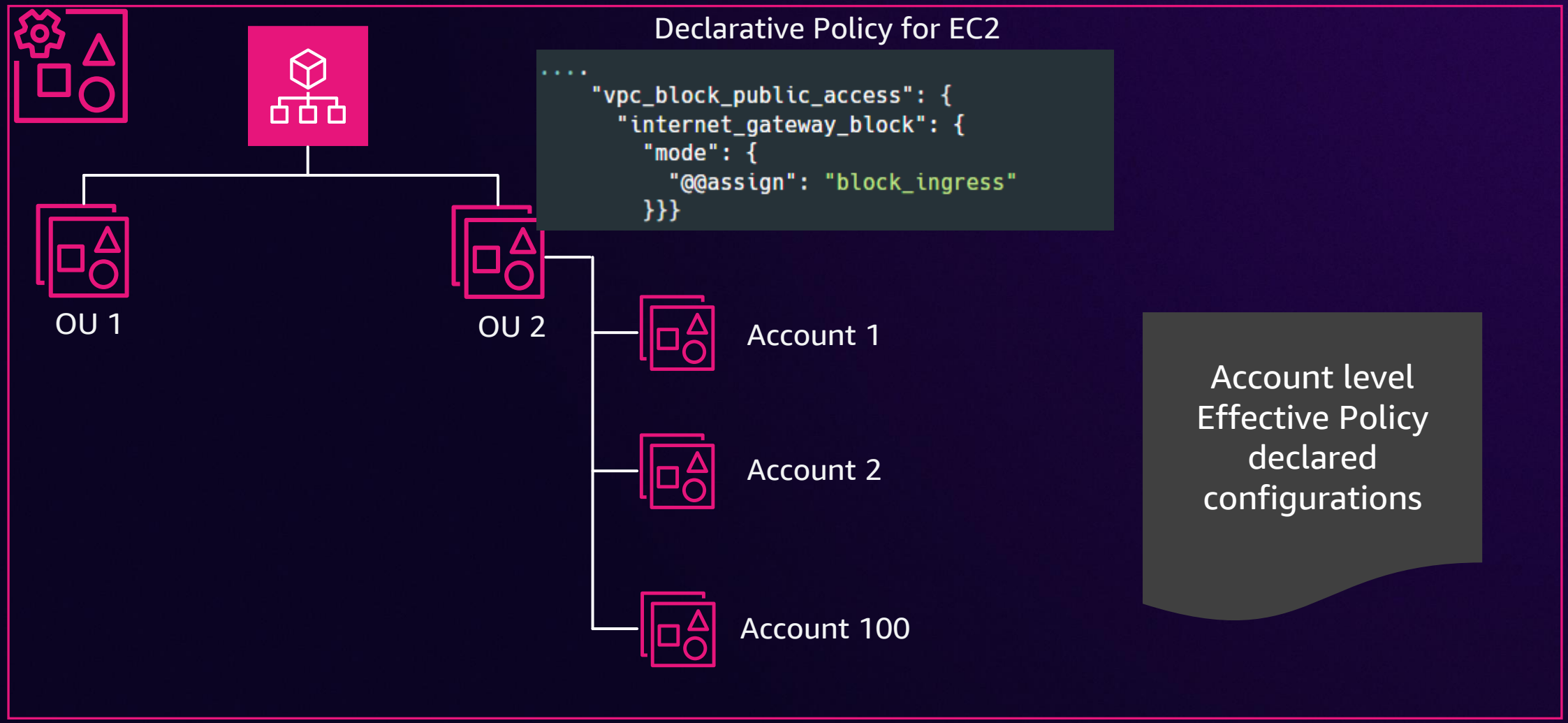
How does it work?



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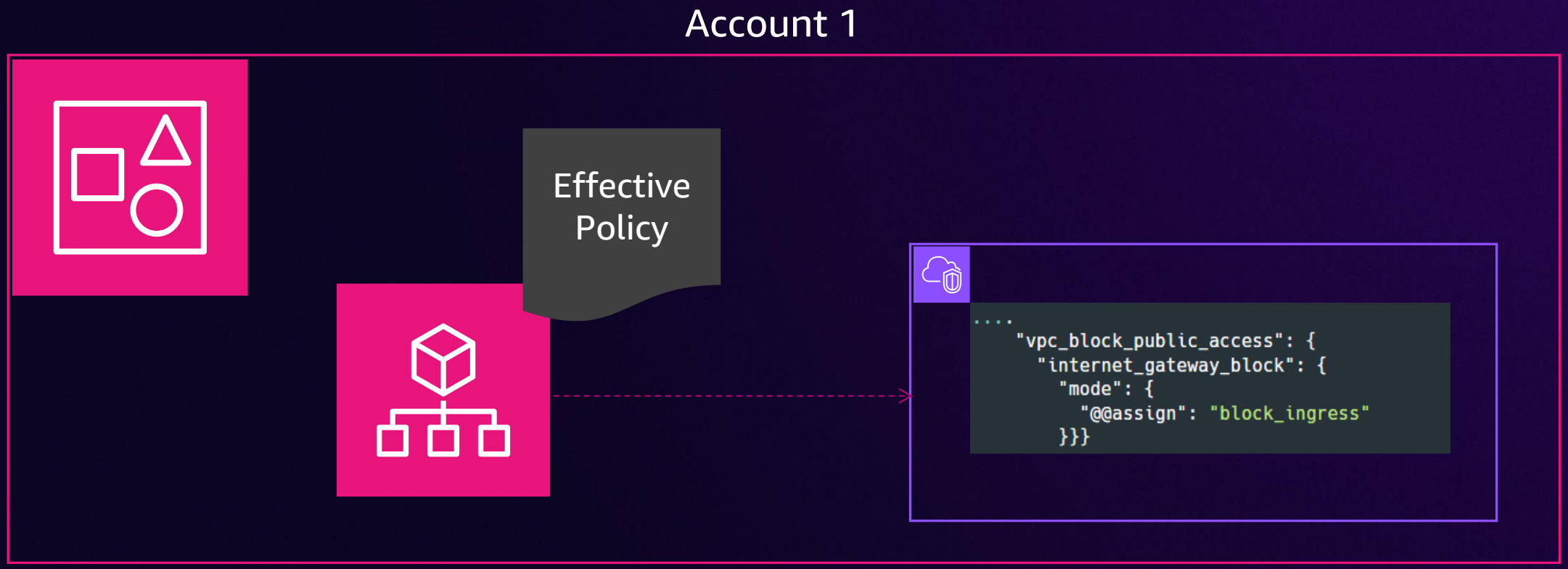

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When to use Declarative Policies?

Always use Declarative Policies when the configuration outcome is supported

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Declarative Policies – why?

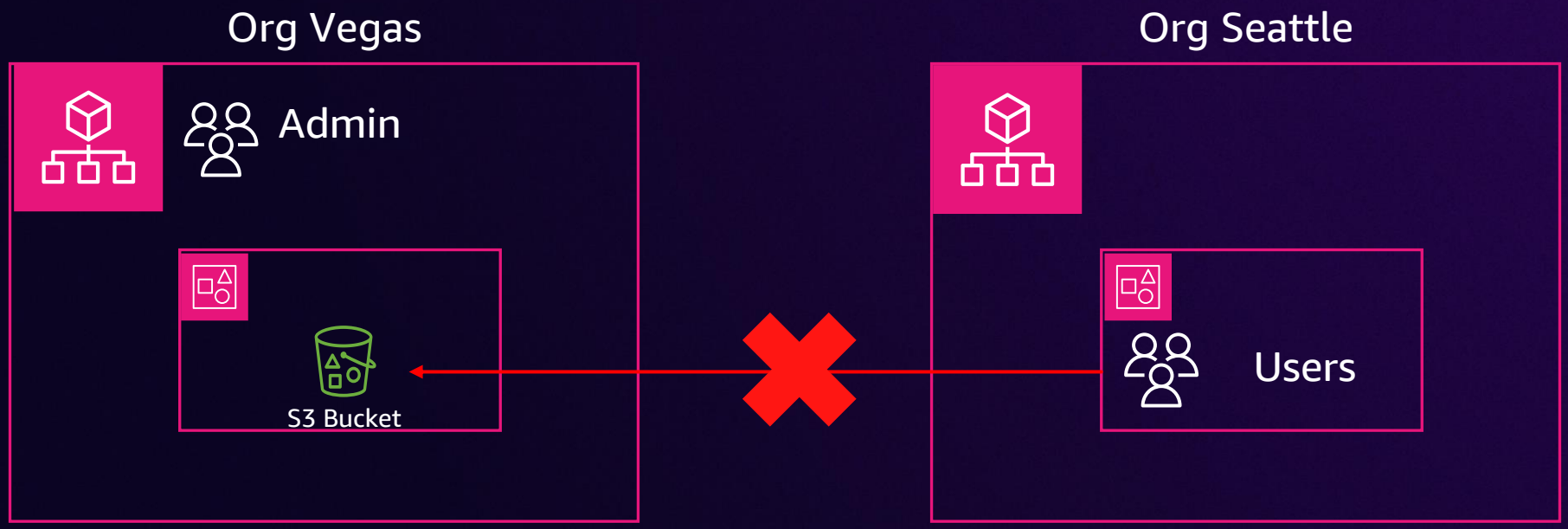
Declare and enforce desired configuration of a given AWS service in your AWS environment.

Set up is easy with a few simple clicks or commands

Set once and forget as it is always maintained and enforced regardless of authorization context

Transparent as it supports developer friendly custom error messages

Pop Quiz



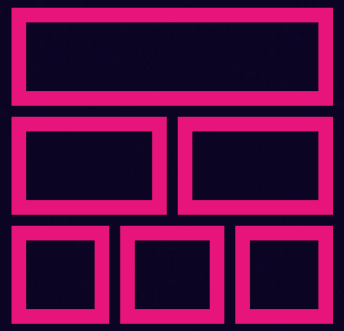
Can you use a SCP in Org Vegas to block a user from Org Seattle to access a S3 bucket in Org Vegas?

This is what you used to do!!

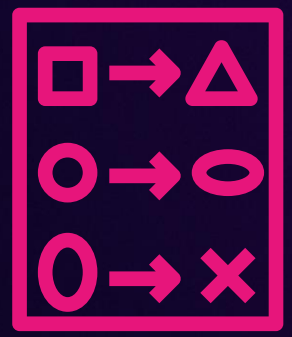
Use a Resource-based policy

```
...
{
  "Effect": "Deny",
  "Principal": "*",
  "Action": "s3:*",
  "Resource": "*"
  "Condition": {
    "StringNotEqualsIfExists": {
      "aws:PrincipalOrgID": "<my-org-id>"
    },
    "BoolIfExists": {
      "aws:PrincipalIsAWSService": "false"
    }
  }
}
...
```

Customer Challenges



No central mechanism



Continuously monitor

Pace of innovation

New in 2024

Resource Control Policies

Centrally define and enforce consistent access controls on resources at scale

New in 2024

Resource Control Policies - Benefits

Build a data perimeter around AWS resources at scale

Centrally define and enforce

Restrict access to your resources with preventive controls

Empower your teams to innovate faster while staying secure

Interested in diving deeper on RCPs?

SEC337 Scaling IAM: Advanced administration and delegation patterns – Dec 4th & 5th

SEC 307 Data Perimeter Challenge – Builder session – Dec 5th

SCPs, RCPs, and Declarative Policies

	Service Control Policies	Resource Control Policies	Declarative Policies
Why?	Enforce consistent access controls on principals at scale	Enforce consistent access controls on resources at scale	Enforce default service configuration at scale

SCPs, RCPs, and Declarative Policies

	Service Control Policies	Resource Control Policies	Declarative Policies
Why?	Enforce consistent access controls on principals at scale	Enforce consistent access controls on resources at scale	Enforce default service configuration at scale
How?	**By controlling permissions of principals at an API level**	**By controlling permissions for resources at an API level**	**By declaring the desired outcome (Not at an API level)**

SCPs, RCPs, and Declarative Policies

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How?	**By controlling permissions of principals at an API level**	**By controlling permissions for resources at an API level**	**By declaring the desired outcome (Not at an API level)**
Implementation	**IAM / Auth implementation**	**IAM / Auth implementation**	**Service control plane implementation**
Feedback	Auth access denied	Auth access denied	Configurable error per policy
Example	Deny access to unapproved regions	Only trusted identities can access my resource	Configure Block Public Access for AMIs

SCPs, RCPs, and Declarative Policies

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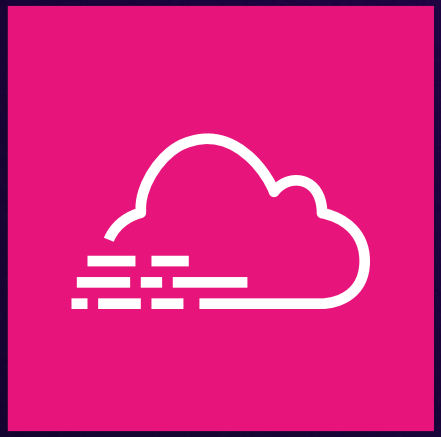
Observability and governance

What is AWS CloudTrail?

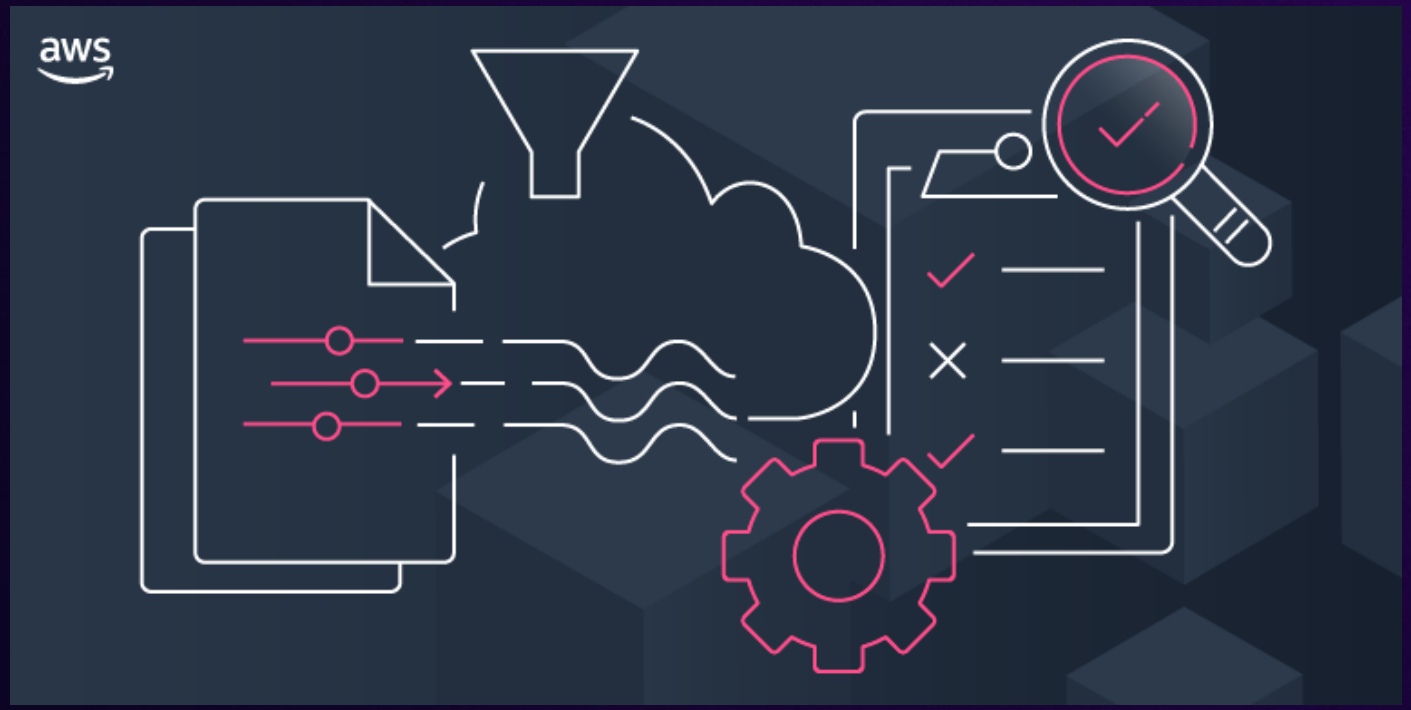
- Operational auditing
- Risk auditing
- Enable governance



AWS CloudTrail

Using CloudTrail in governance

- Log API calls
- Conduct audits
- Monitor user activity
- Detect suspicious behavior



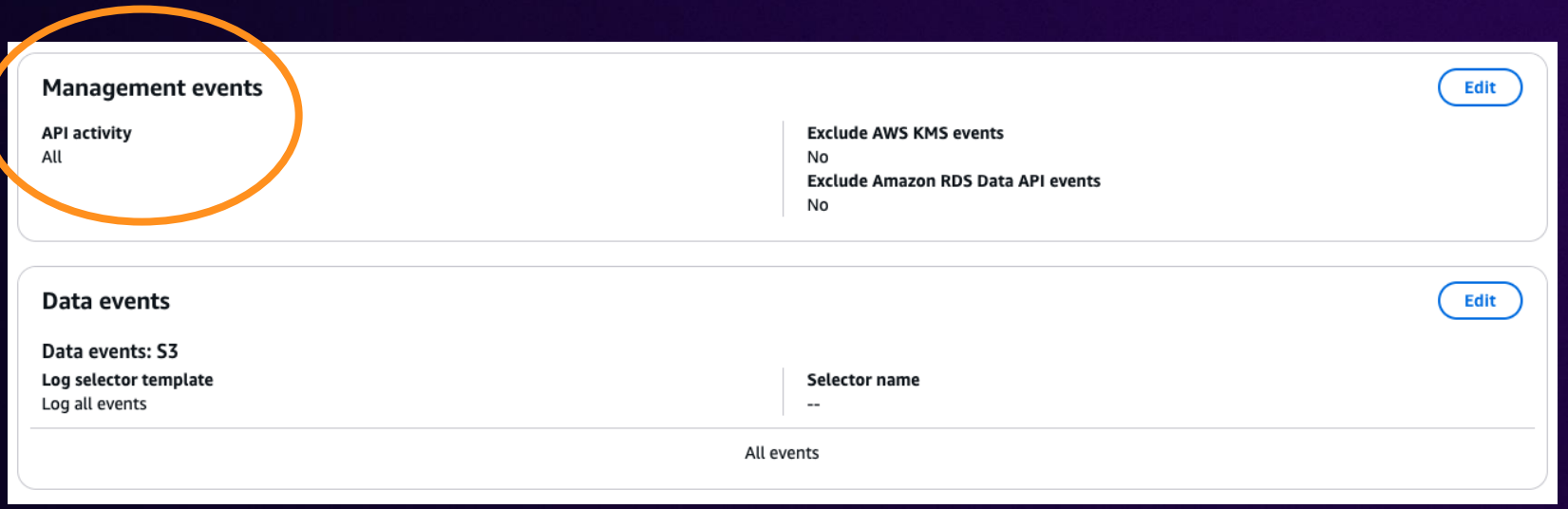
CloudTrail event types

Management Events in CloudTrail

Operations ON resources

“Control Plane Operations”

Default setting



Create Amazon S3 bucket

Register devices

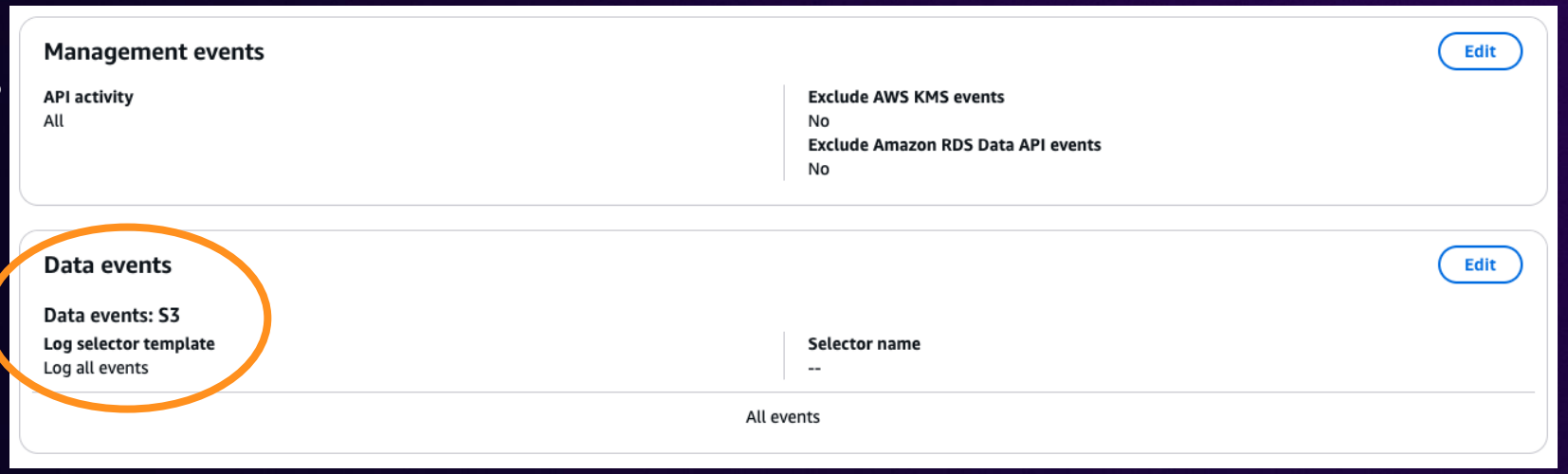
Configure rules

Data Events in CloudTrail

Data operations ON or IN resources

“Data plane operations”

Optional



Amazon S3 object-level activity

Amazon SNS Operations

AWS Lambda function execution activity

New in 2024

Introducing Network Activity events in Cloud Trail

Network activity events

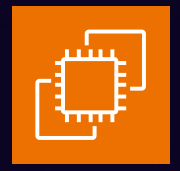
API calls traversing VPC endpoints

Optional

In Preview

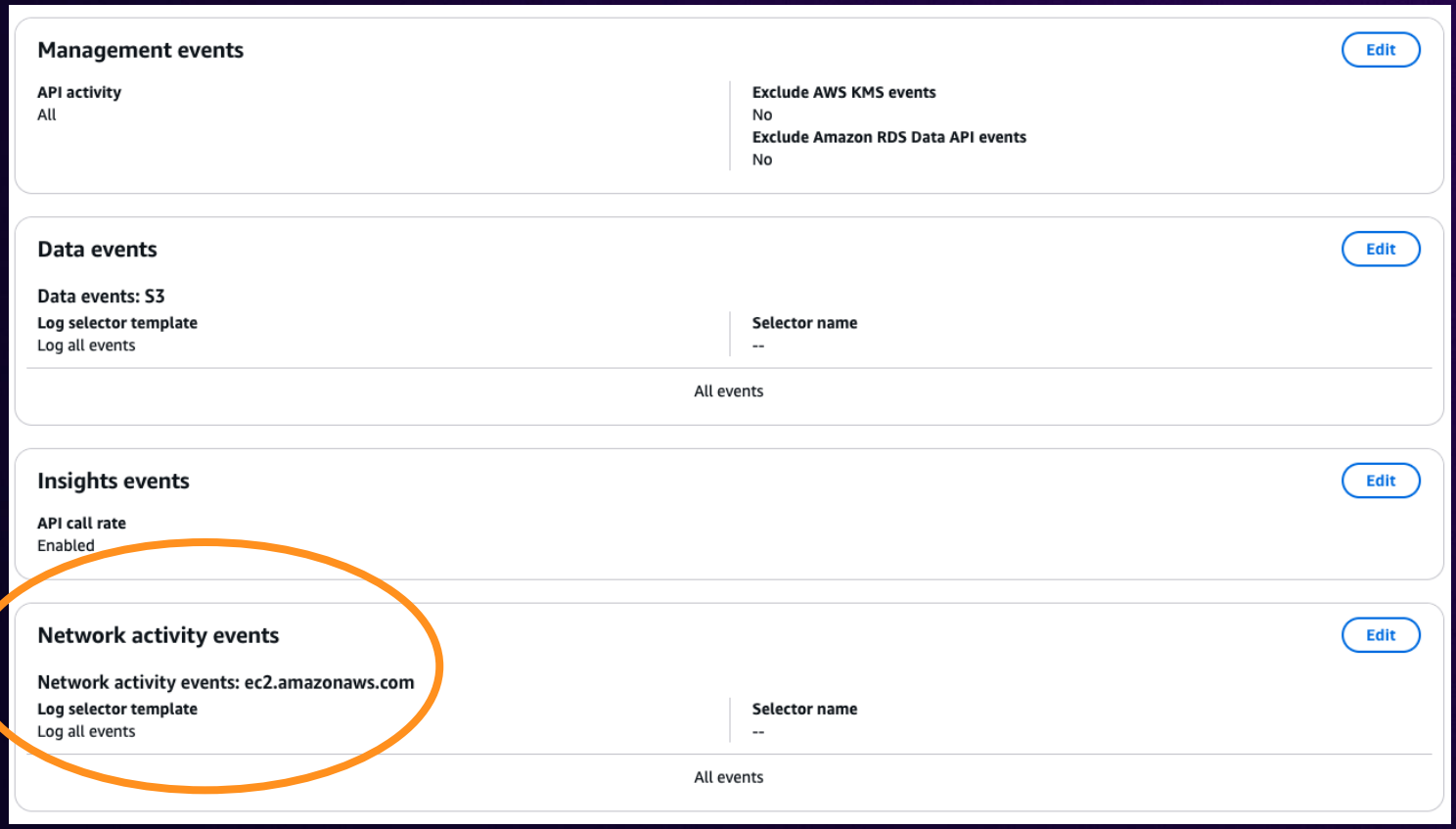
AWS CloudTrail

AWS Secrets Manager



Amazon EC2

AWS Key Management Service (AWS KMS)



What is a VPC endpoint?

Amazon Virtual Private Cloud (Amazon VPC)

Endpoints

Connect to AWS Services

Connect to VPC endpoint services

Within AWS network

No internet

VPC endpoint policies

- Resource based
- Principals access
- Cannot override other policies
- Not all services

Default policy: Full access

```
{
   "Statement": [
      {
         "Effect": "Allow",
         "Principal": "*",
         "Action": "*",
         "Resource": "*"
      }
   ]
}
```

VPC endpoint policy in place

Only trusted principals can make requests from VPCs that I own

```
{
        "Sid": "AllowRequestsByOrgsIdentitiesToOrgsResources",
        "Effect": "Allow",
        "Principal": "*",
        "Action": "*",
        "Resource": "*",
        "Condition": {
            "StringEquals": {
                "aws:PrincipalOrgID": "<my-org-id>",
                "aws:ResourceOrgID": "<my-org-id>"
            }
        }
    },
```

Full policy

Use VPC network activity events to improve VPC endpoint policies

Logging set up for all management and network activity events for multiple event sources

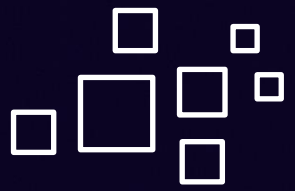
Security team finds valid requests that are denied by policy

Policy updated to allow certain exceptions

```
aws cloudtrail put-event-selectors \
--region region /
--trail-name TrailName /
--advanced-event-selectors '[
    {
        "Name": "Log all management events",
        "FieldSelectors": [
            {
                "Field": "eventCategory",
                "Equals": ["Management"]
            }
        ]
    },
    {
        "Name": "Log all network activity events for CloudTrail APIs",
        "FieldSelectors": [
            {
                "Field": "eventCategory",
                "Equals": ["NetworkActivity"]
            },
            {
                "Field": "eventSource",
                "Equals": ["cloudtrail.amazonaws.com"]
```

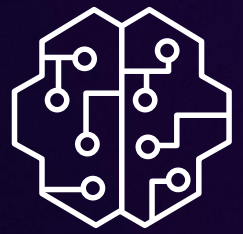
Final thoughts

Summary of the three launches



Declarative Policies

Declare and enforce desired configuration for a given AWS service at scale across your organization



Resource Control Policies

Centrally define and enforce consistent access controls on resources at scale

Network Activity Events

Use CloudTrail to have visibility of events within VPC endpoints

Related breakout sessions

- COP383 – Achieving governance at scale
- COP327 – Accelerating auditing and compliance for generative AI on AWS
- COP402 – Dive deep on AWS Cloud Governance
- COP335 – Unlock powerful insights with your logs
- COP338 – Architecting AWS accounts for scale
- COP343 – Best practices for cloud governance
- COP 342 – Top controls for a secure, well-architected environment

Try AWS Organizations & AWS Control Tower

Getting started with
AWS Organizations

Getting started with
AWS Control Tower

Try these new features

Declarative Policies

Resource Control Policies

Network Activity Events in CloudTrail

Thank you!

Please complete the session survey in the mobile app

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