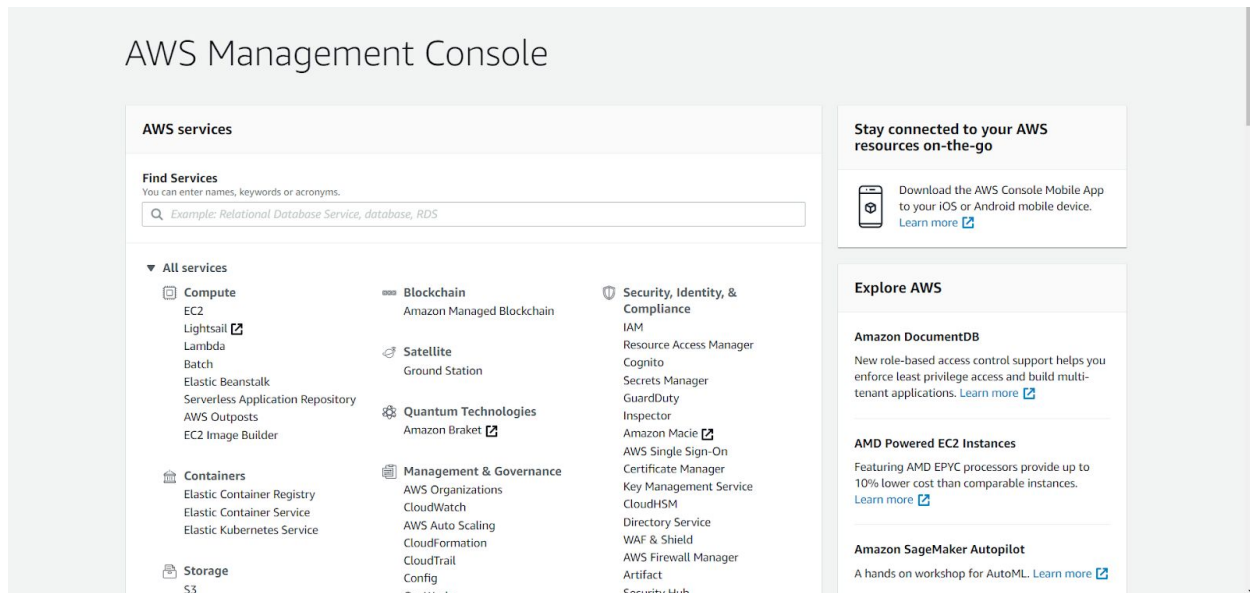
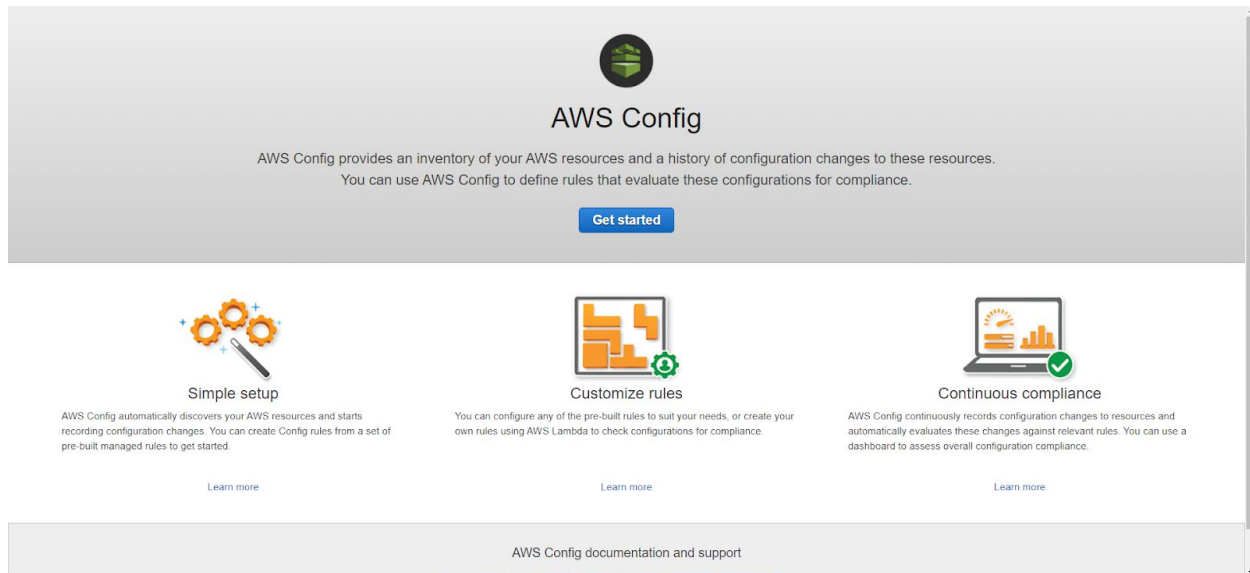


Module 2 Lab: AWS Config & S3 Rule

AWS Management Console

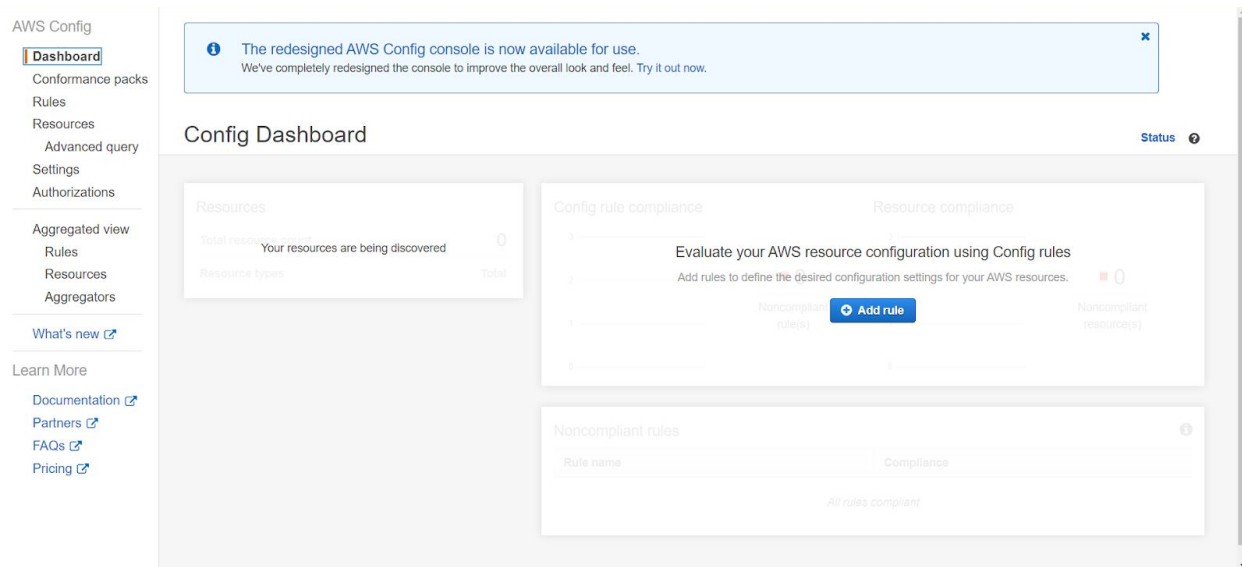


Starting from the AWS Management Console, select AWS Config



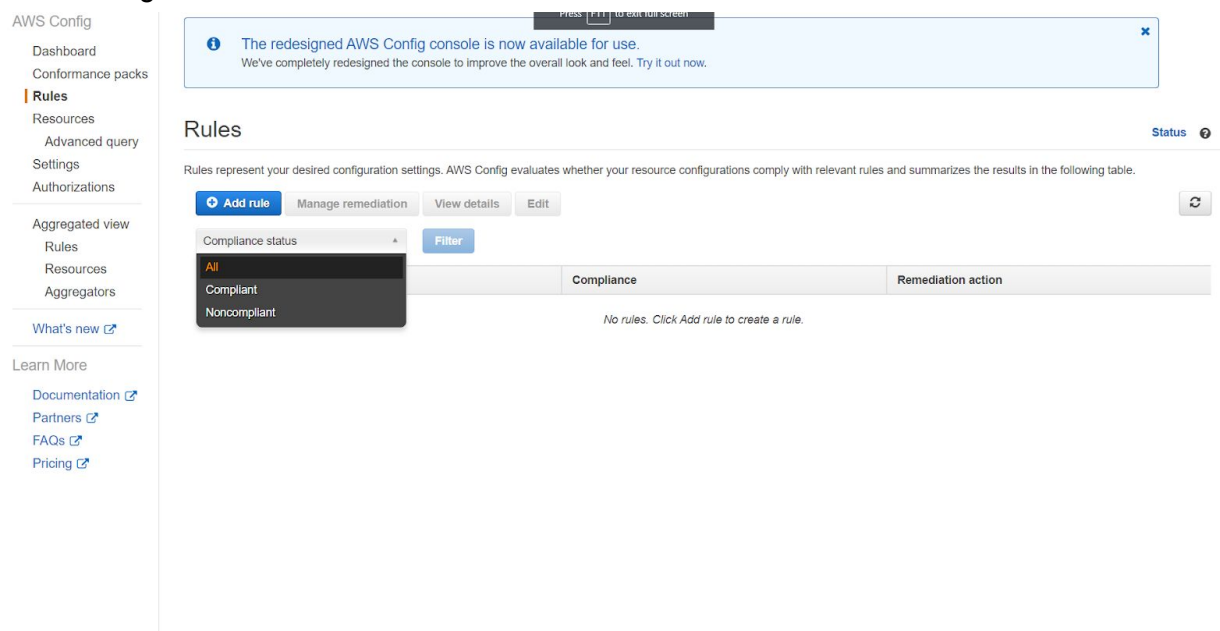
Since this is the first time starting AWS Config, this welcome screen is displayed.

Config Dashboard



After selecting the S3 bucket (cali818), enabling SNS, and creating a service role for config, the Config Dashboard is activated.

AWS Config - Rules



During the setup step for AWS Config, no Rules were set in place. This can be done after AWS Config is activated.

AWS Config - Add Rule

AWS Config

Rules > Add rule

The redesigned AWS Config console is now available for use. We've completely redesigned the console to improve the overall look and feel. Try it out now.

Add rule

Add rules to define the desired configuration settings of your AWS resources. Customize any of the following rules to suit your needs, or add a custom rule. To add a custom rule, you must create an AWS Lambda function for the rule.

[Add custom rule](#)

Filter by rule name, label or description

« < Viewing 1 - 9 of 119 AWS managed rules > »

access-keys-rotated Checks whether the active access keys are rotated within the number of days specified in <code>maxAccessKeyAge</code> . The rule is non-compliant if the access keys have not been rotated for IAM - Periodic	acm-certificate-expiration-check Checks whether ACM Certificates in your account are marked for expiration within the specified number of days. Certificates provided by ACM are automatically renewed. ACM	alb-http-to-https-redirect-check Checks whether HTTP to HTTPS redirection is configured on all HTTP listeners of Application Load Balancers. The rule is NON_COMPLIANT if one or more HTTP EC2 - ELB
api-gw-cache-enabled-and-encrypted Checks that all methods in Amazon API Gateway stages have cache enabled and cache encrypted. The rule is NON_COMPLIANT if any method in Amazon API Gateway - REST API	api-gw-endpoint-type-check Checks that Amazon API Gateway APIs are of type as specified in the rule parameter 'endpointConfigurationTypes'. The rule returns COMPLIANT if any of the RestApi endpoint API Gateway - REST API	api-gw-execution-logging-enabled Checks that all methods in Amazon API Gateway stage has logging enabled. The rule is NON_COMPLIANT if logging is not enabled. The rule is NON_COMPLIANT if API Gateway - Logging

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The following 119 AWS managed rules are available for monitoring.

Add AWS managed rule

AWS Config

Rules > Configure rule

Add AWS managed rule

AWS Config evaluates your AWS resources against this rule when it is triggered.

Name* s3-bucket-public-read-prohibited
A unique name for the rule. 128 characters max. No special characters or spaces.

Description Checks that your S3 buckets do not allow public read access. If an S3 bucket policy or bucket ACL allows public read access, the bucket is noncompliant.

Managed rule name S3_BUCKET_PUBLIC_READ_PROHIBITED

Trigger
AWS Config evaluates resources when the trigger occurs.

Trigger type* ☒ Configuration changes ☒ Periodic ⓘ

Scope of changes* ☒ Resources ☐ Tags ☐ All changes ⓘ

Resources* S3 Bucket x
Resource identifier (optional)
This rule can be triggered only when recorded resources are created, changed, or deleted. Specify which resources are recorded on the Settings page.

Frequency* 24 hours

Choose remediation action
The execution of remediation actions is achieved using AWS Systems Manager Automation. Choose from a set of AWS recommended remediation actions or custom remediation actions. To remediate a rule choose all the noncompliant resources in scope from table.

Remediation action Remediation action

Auto remediation ☐ Yes ☒ No

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The purpose of this rule is to deny public Read access to the S3 bucket.

AWS Config - Rules

The screenshot shows the AWS Config Rules console. On the left is a navigation sidebar with links to Dashboard, Conformance packs, Rules (selected), Resources, Advanced query, Settings, Authorizations, Aggregated view, Rules, Resources, Aggregators, What's new, and Learn More. The main content area is titled 'Rules' and includes a status indicator. Below the title, a message states: 'Rules represent your desired configuration settings. AWS Config evaluates whether your resource configurations comply with relevant rules and summarizes the results in the following table.' There are buttons for 'Add rule', 'Manage remediation', 'View details', and 'Edit'. A 'Compliance status' dropdown and a 'Filter' button are also present. The table below has three columns: 'Rule name', 'Compliance', and 'Remediation action'. It contains one row for the rule 's3-bucket-public-read-prohibited', which is currently in an 'Evaluating' state with a loading spinner icon. The remediation action is 'Not set'.

Rule name	Compliance	Remediation action
s3-bucket-public-read-prohibited	Evaluating...	Not set

The S3 buckets are being evaluated for compliance after saving the policy.

AWS Config - Rules

This screenshot shows the same AWS Config Rules console as the previous one, but the rule 's3-bucket-public-read-prohibited' is now in a 'Compliant' state, indicated by a green checkmark icon. The table structure and other UI elements remain the same.

Rule name	Compliance	Remediation action
s3-bucket-public-read-prohibited	Compliant	Not set

Because there are currently no public S3 buckets, the Rule returns with complaint.

AWS Config - Add Rule

The screenshot shows the AWS Config 'Add Rule' page. The left sidebar contains navigation links: Dashboard, Conformance packs, Rules (selected), Resources, Advanced query, Settings, Authorizations, Aggregated view, What's new, Learn More, Documentation, Partners, FAQs, and Pricing. The main content area is titled 'Rules > Add rule'. A notification banner at the top states: 'The redesigned AWS Config console is now available for use. We've completely redesigned the console to improve the overall look and feel. Try it out now.' Below the notification, the 'Add rule' section explains that rules define configuration settings for AWS resources. A button 'Add custom rule' is visible. A list of 28 AWS managed rules is displayed, with 'ec2' selected. The details for the 'ec2-security-group-attached-to-eni' rule are shown, including its description and the VPC: Security Group parameter. Other rules shown include 'ec2-stopped-instance', 'ec2-volume-in-use-check', 'eip-attached', 'encrypted-volumes', 'required-tags', 'restricted-common-ports', 'restricted-ssh', and 'vpc-flow-logs-enabled'.

Because EC2 instances may require computers to connect to it, restricted SSH is good practice.

Add AWS managed rule

The screenshot shows the AWS Config 'Add AWS managed rule' page. The left sidebar is the same as the previous screenshot. The main content area is titled 'Rules > Configure rule'. The 'Add AWS managed rule' section explains that AWS Config evaluates resources against the rule when it is triggered. The rule name is 'restricted-ssh' and the description is 'Checks whether security groups that are in use disallow unrestricted incoming SSH traffic.' The managed rule name is 'INCOMING_SSH_DISABLED'. The trigger is set to 'Configuration changes' and 'Periodic'. The scope of changes is 'Resources'. The resources are 'EC2: SecurityGroup'. The remediation action is 'Remediate action'. The auto remediation is set to 'No'. The rate limits are 'Concurrent Execution Rate' and 'Error Rate'. The resource ID parameter is 'n/a'.

A rule to check whether security groups that are in use disallow unrestricted incoming SSH traffic.

AWS Config - Rules

AWS Config

- Dashboard
- Conformance packs
- Rules**
- Resources
- Advanced query
- Settings
- Authorizations

Aggregated view

- Rules
- Resources
- Aggregators

What's new [?](#)

Learn More

- Documentation [?](#)
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- FAQs [?](#)
- Pricing [?](#)

The redesigned AWS Config console is now available for use. We've completely redesigned the console to improve the overall look and feel. Try it out now.

Rules

Status [?](#)

Rules represent your desired configuration settings. AWS Config evaluates whether your resource configurations comply with relevant rules and summarizes the results in the following table.

[Add rule](#) [Manage remediation](#) [View details](#) [Edit](#)

Compliance status [Filter](#)

Rule name	Compliance	Remediation action
<input type="radio"/> restricted-ssh	3 Noncompliant resource(s)	Not set
<input type="radio"/> s3-bucket-public-read-prohibited	Compliant	Not set

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After enabling restricted-ssh, there are 3 noncompliant resources.

AWS Config - restricted-ssh

Aggregators

What's new [?](#)

Learn More

- Documentation [?](#)
- Partners [?](#)
- FAQs [?](#)
- Pricing [?](#)

Overall rule status [Last successful invocation on April 24, 2020 at 2:10:29 PM](#) [Last successful evaluation on April 24, 2020 at 2:18:29 PM](#)

Choose resources in scope

Resources in scope represent those resources where this rule is being applied to and their compliance status.

Compliance status [Remove exceptions](#) [Resource actions](#) [Remediate](#)

Noncompliant

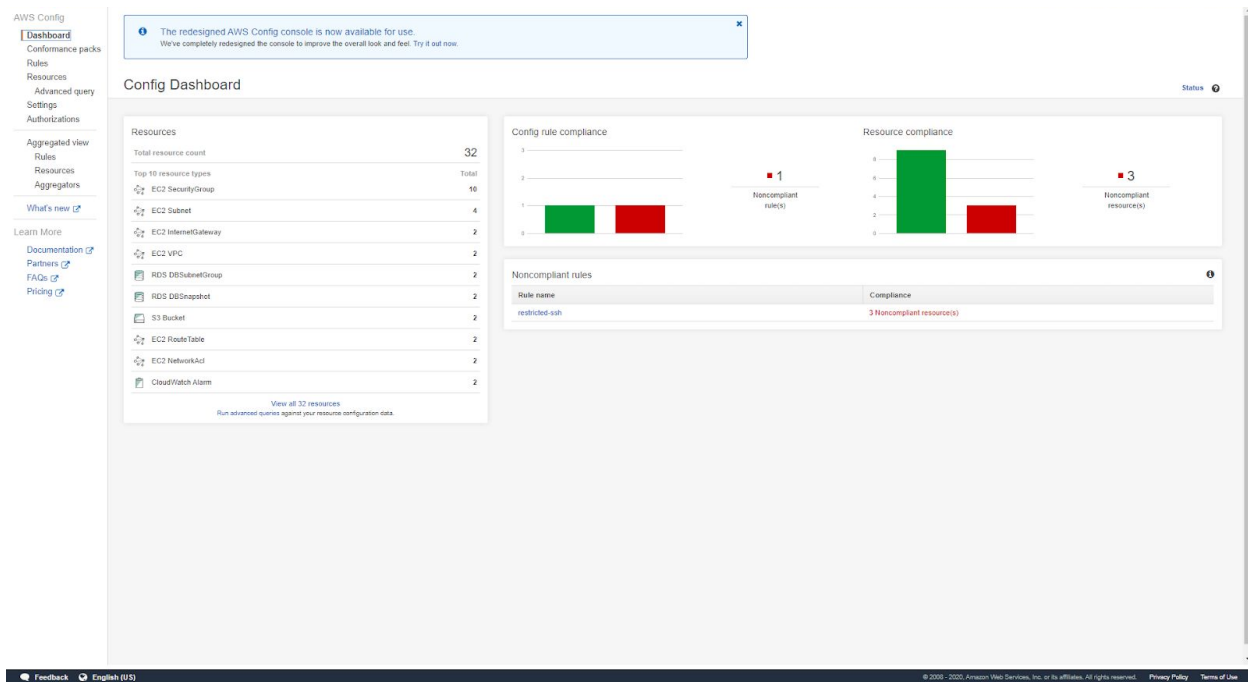
Resource ID	Resource type	Resource compliance status	Action status
<input type="checkbox"/> sg-42b5570cd710e967	EC2 SecurityGroup	Noncompliant	n/a
<input type="checkbox"/> sg-8d32a3c4a55a93164	EC2 SecurityGroup	Noncompliant	n/a
<input type="checkbox"/> sg-9a2b1219b6c4da91c	EC2 SecurityGroup	Noncompliant	n/a

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Each of the EC2 SecurityGroups are noncompliant.

AWS Config - Dashboard



All non compliant resources are listed.

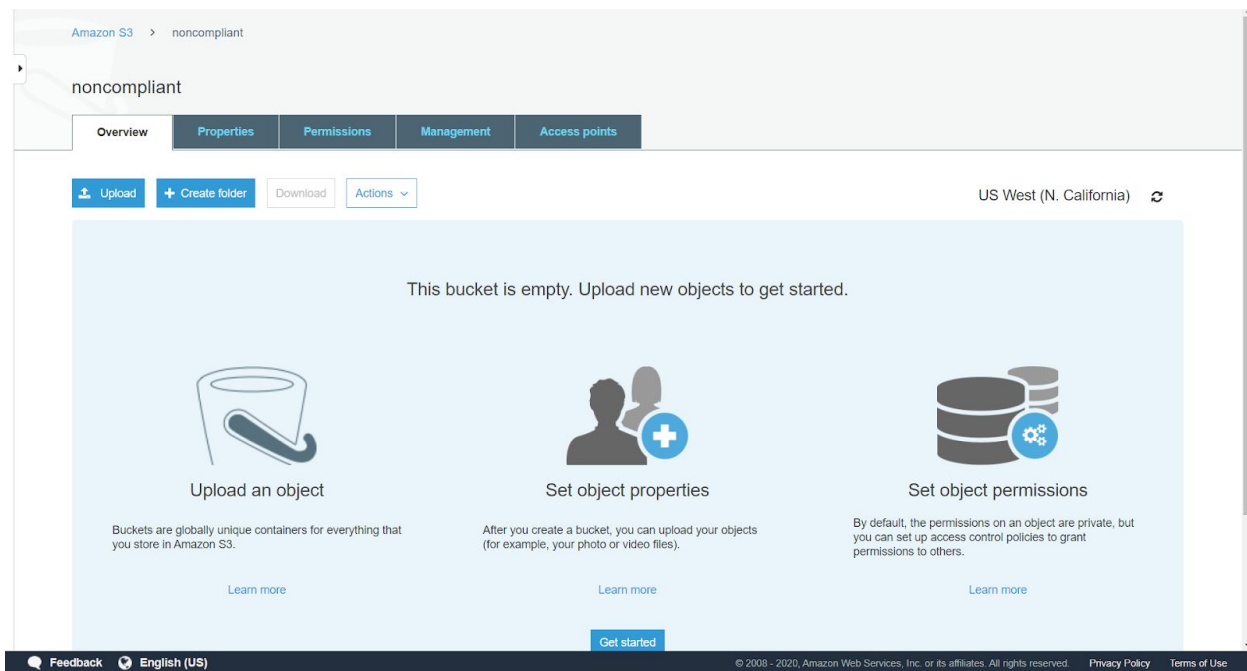
AWS Config - Resource Inventory

The screenshot shows the AWS Config Resource Inventory page. A notification at the top states: "The redesigned AWS Config console is now available for use. We've completely redesigned the console to improve the overall look and feel. Try it out now." The page includes a search bar and a table of resources.

Resource identifier	Resource type	Compliance
aws:ec2:MyAutoScalingGroup2-CPU-Utilization	CloudWatch Alarm	--
aws:ec2:MyAutoScalingGroup2-High-CPU-Utilization	CloudWatch Alarm	--
AWS-EC2: SecurityGrouping-628557bdc710e967	Config ResourceCompliance	--
AWS-EC2: SecurityGrouping-654c4e5a496819b5a	Config ResourceCompliance	--
AWS-EC2: SecurityGrouping-666a3cd805b19ae4	Config ResourceCompliance	--
AWS-EC2: SecurityGrouping-66a25ea0b41e0dc7	Config ResourceCompliance	--
AWS-EC2: SecurityGrouping-6c02a3c4a5d53194	Config ResourceCompliance	--
AWS-EC2: SecurityGrouping-6c02b12186a4d4b1c	Config ResourceCompliance	--
AWS-EC2: SecurityGrouping-6d6e58a701fe11ff	Config ResourceCompliance	--

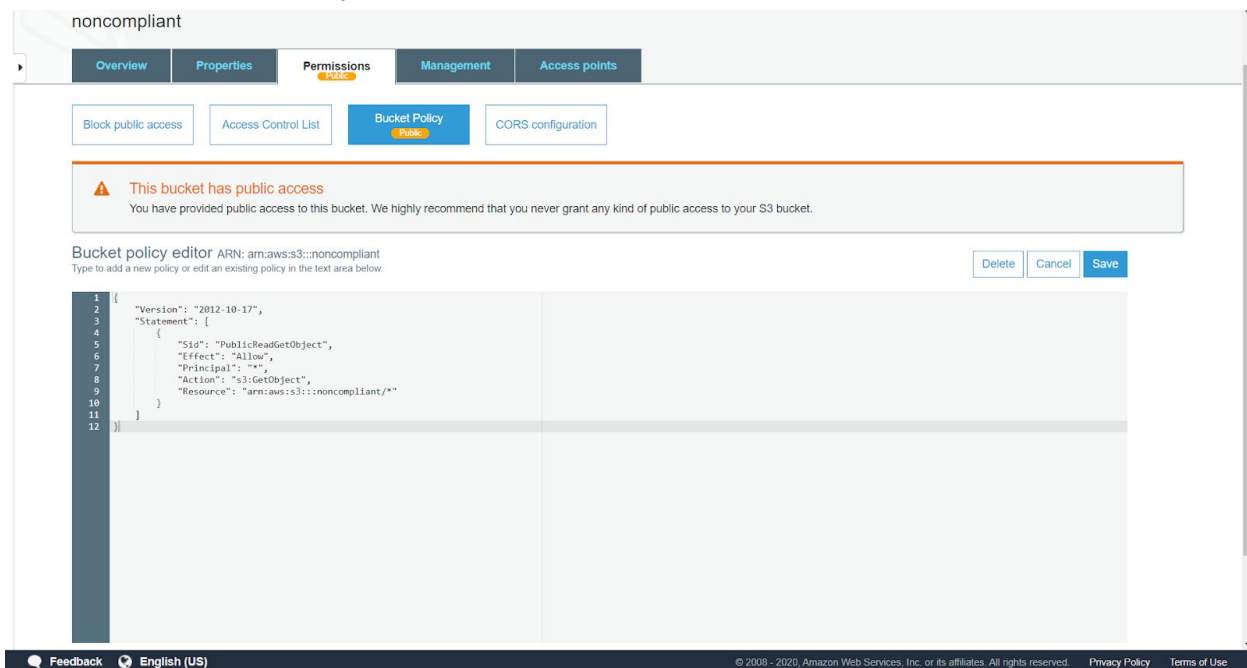
All the resources of the account recorded by AWS Config.

AWS Config - Dashboard



At this point there are 3 noncompliant resources (SSH related), to test for noncompliance in S3, a public S3 bucket was created.

Amazon S3 - Bucket Policy



The noncompliant test bucket is issued "PublicReadGetObject". A noncompliance action according to AWS Config.

AWS Config - Rules

AWS Config

- Dashboard
- Conformance packs
- Rules**
- Resources
- Advanced query
- Settings
- Authorizations

Aggregated view

- Rules
- Resources
- Aggregators

What's new [↗](#)

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The redesigned AWS Config console is now available for use. We've completely redesigned the console to improve the overall look and feel. Try it out now.

Rules

Status [?](#)

Rules represent your desired configuration settings. AWS Config evaluates whether your resource configurations comply with relevant rules and summarizes the results in the following table.

[Add rule](#) [Manage remediation](#) [View details](#) [Edit](#)

Compliance status [Filter](#)

Rule name	Compliance	Remediation action
<input type="radio"/> restricted-ssh	3 Noncompliant resource(s)	Not set
<input type="radio"/> s3-bucket-public-read-prohibited	1 Noncompliant resource(s)	Not set

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After about fifteen minutes, the noncompliant test S3 bucket shows up in AWS Config.

AWS Config - Dashboard

AWS Config

- Dashboard**
- Conformance packs
- Rules
- Resources
- Advanced query
- Settings
- Authorizations

Aggregated view

- Rules
- Resources
- Aggregators

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The redesigned AWS Config console is now available for use. We've completely redesigned the console to improve the overall look and feel. Try it out now.

Config Dashboard

Status [?](#)

Resources

Total resource count	33
Top 10 resource types	Total
EC2 SecurityGroup	10
EC2 Subnet	4
S3 Bucket	3
EC2 InternetGateway	2
EC2 VPC	2
RDS DBSubnetGroup	2
RDS DBSnapshot	2
EC2 RouteTable	2
EC2 NetworkAcl	2
CloudWatch Alarm	2

[View all 33 resources](#)

[Run advanced queries](#) against your resource configuration data.

Config rule compliance

2 Noncompliant rule(s)

Resource compliance

4 Noncompliant resource(s)

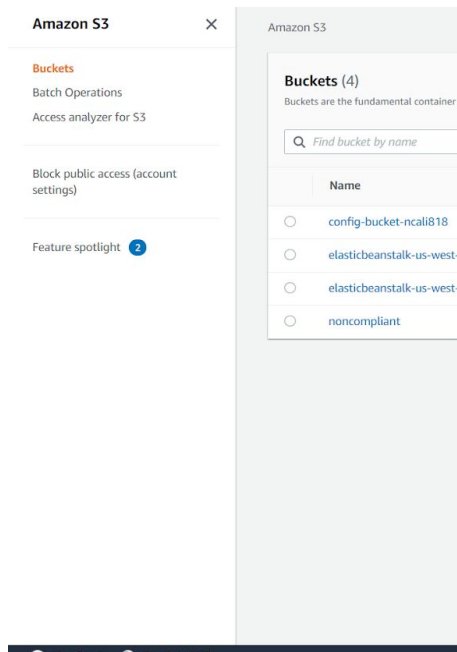
Noncompliant rules

Rule name	Compliance
restricted-ssh	3 Noncompliant resource(s)
s3-bucket-public-read-prohibited	1 Noncompliant resource(s)

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Dashboard is confirming the new non-compliant S3 bucket.

Amazon S3 - Buckets



On interesting note is the elasticbeanstalk bucket created from a prior assignment. Access is set to "Objects can be public", but AWS Config does not show this as a non-compliant bucket. This may cause confusion in other scenarios. Note the non-compliant test bucket as "Public".