

AWS Free Services

Cheat sheets, Practice Exams and Flash cards 🖱️ www.examprompro.co/clf-c01

AWS Free services are free forever, unlike the “free-tier” that are up to a point of usage or time



IAM - Identity Access Management



Amazon VPC



Auto Scaling



CloudFormation



Elastic Beanstalk



Opsworks



Amplify



AppSync



CodeStar



Organizations & Consolidated Billing



AWS Cost Explorer

The AWS services are also free. however these AWS Services provision other services which may cost money

AWS Support Plans

Cheat sheets, Practice Exams and Flash cards 🖱️ www.exampromo.co/clf-c01

Basic

Email Support only
For **Billing and Account**

Developer

Tech Support via **Email** ~24 hours until reply

No third party support

General Guidance

System Impaired

Business

Tech Support via **Chat, Phone** Anytime 24/7

Production System Impaired

Production System **DOWN!**

Enterprise

Business-Critical System **DOWN!**

🕶️ Personal Concierge

🧐 TAM

7 Trusted Advisor Checks

All Trusted Advisor Checks

\$0 USD /month

***\$29 USD** /month

***\$100 USD** / month

***\$15,000 USD** / month



AWS Support Plans

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Developer

***\$29 USD /month**

or

3% of monthly AWS usage
whichever is greater

eg.

Monthly Spend is \$500

3% of 500 = \$15 USD (\$29)

Monthly Spend is \$1000

3% of 1000 = \$30 USD

Business

***\$100 USD / month**

or

10% of monthly AWS usage for the first \$0–\$10K
7% of monthly AWS usage from \$10K–\$80K
5% of monthly AWS usage from \$80K–\$250K
3% of monthly AWS usage over \$250K
whichever is greater

eg.

Monthly Spend is \$1000

10% of 1000 = \$100 USD

Monthly Spend is \$5000

10% of 5000 = \$500 USD

Monthly Spend is \$12,000

10% of 10,000 = \$1000 USD

7% of 2,000 = 140 USD

\$1140 USD

Enterprise

***\$15,000 USD / month**

or

10% of monthly AWS usage for the first \$0–\$150K
7% of monthly AWS usage from \$150K–\$500K
5% of monthly AWS usage from \$500K–\$1M
3% of monthly AWS usage over \$1M
whichever is greater

Technical Account Manager (TAM)

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A Technical Account Manager? (TAM) provides both **proactive guidance and reactive support** to help you succeed with your AWS journey

What does a TAM do? (Straight from an AWS Job Posting)

- Build solutions, provide technical guidance and advocate for the customer
- Ensure AWS environments remain operationally healthy whilst reducing cost and complexity
- Develop trusting relationships with customers, understanding their business needs and technical challenges
- Using your technical acumen and customer obsession, you'll drive technical discussions regarding incidents, trade-offs, and risk management
- Consult with a range of partners from developers through to C-suite executives
- Collaborates with AWS Solutions Architects, Business Developers, Professional Services Consultants, and Sales Account Managers
- Proactively find opportunities for customers to gain additional value from AWS
- Provide detailed reviews of service disruptions, metrics, detailed prelaunch planning
- Being part of a wider Enterprise Support team providing post-sales, consultative expertise
- Solve a variety of problems across different customers as they migrate their workloads to the cloud
- Uplift customer capabilities by running workshops, brown bag sessions, etc.



TAMs follow the Amazon Leadership Principles
Especially about being Customer Obsessed!



TAMs are only available at the Enterprise Support tier.

AWS Marketplace

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AWS Marketplace is a curated digital catalogue with **thousands** of software listings from independent software vendors.

Easily find, buy, test, and deploy software that already runs on AWS.

The product can be **free** to use or can have an **associated charge**. The charge becomes part of your AWS bill, and once you pay, AWS Marketplace pays the provider.

The sales channel for ISVs and Consulting Partners allows you to **sell your solutions** to other AWS customers.



Products can be offered as

- Amazon Machine Images (AMIs)
- AWS CloudFormation templates
- Software as a service (SaaS) offerings
- Web ACL
- AWS WAF rules

Consolidated Billing

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Consolidated Billing is a feature of AWS Organizations that allows you to pay for multiple AWS accounts with **one bill**.

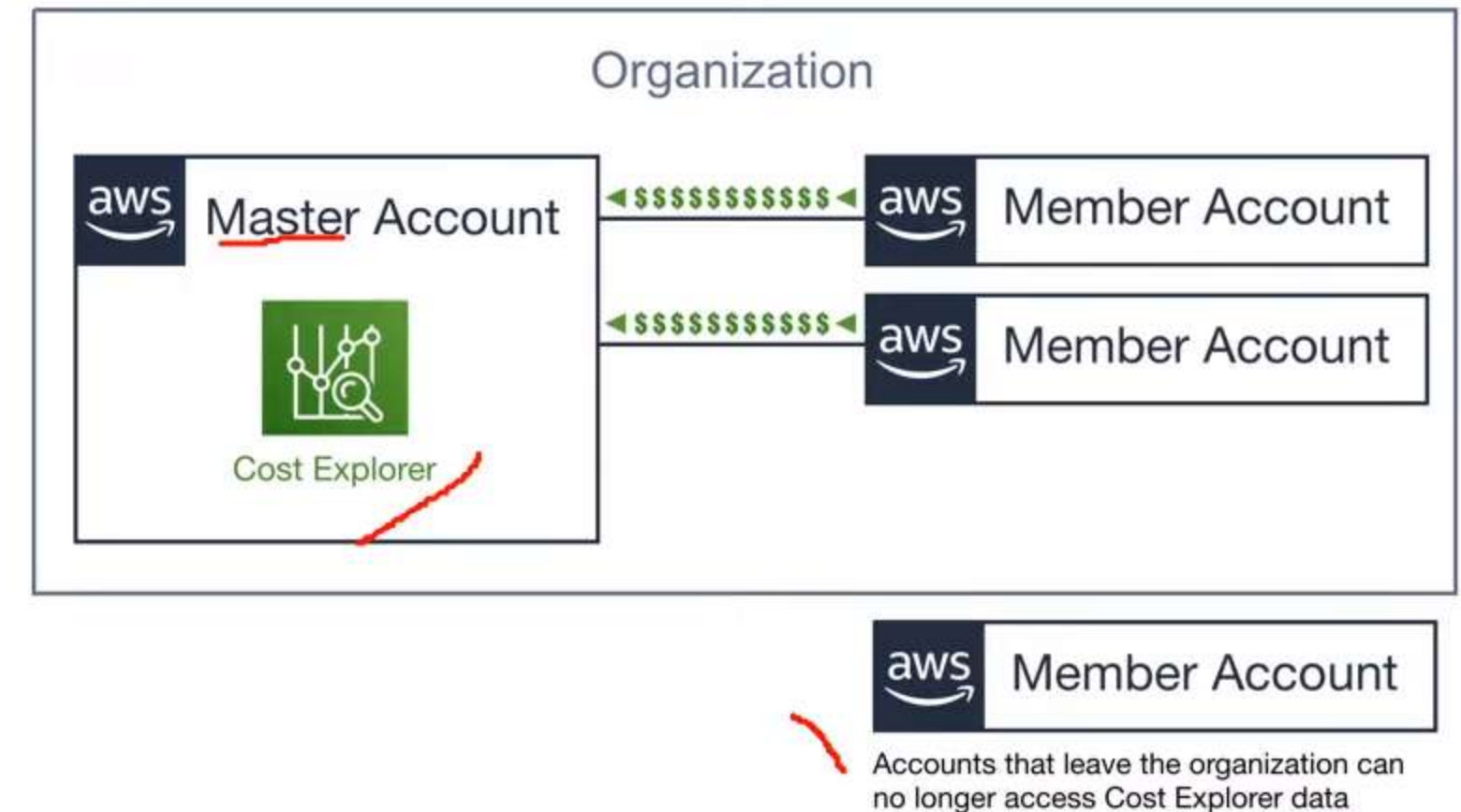
For billing AWS treats all the accounts in an organization as if they were one account.

You can designate one **master account** **that pays the charges** of all the other **member accounts**.

Consolidated billing is offered at no additional cost!

Use **Cost Explorer** to visualize usage for consolidated billing

You can combine the usage across all accounts in the organization to share the volume pricing discounts



Consolidated Billing – Volume Discounts

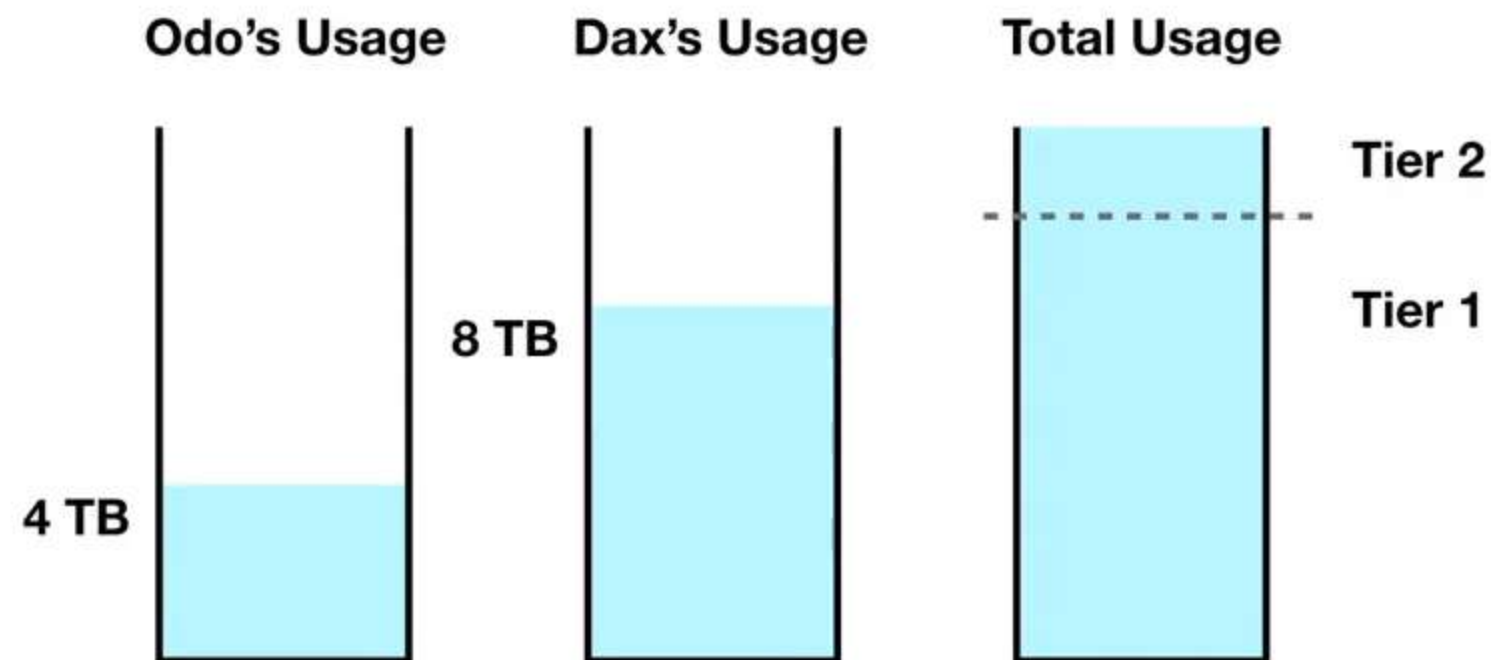
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AWS has **Volume Discounts** for many services

The more you use, the more you save.

Consolidated Billing lets you take advantage of Volume Discounts

Consolidate Billing is a feature of AWS Organizations



Data Transfer	
First 10 TB	\$0.17 per GB
Next 40 TB	\$0.13 per GB

Odo $(4 * 1024) * 0.17 = \$696.32$

Dax $(8 * 1024) * 0.17 = \$1392.64$

Unconsolidated $696.32 + 1392.64 = \$2088.96$

Consolidated $((10 * 1024) * 0.17) + ((2 * 1024) * 0.13) = \2007.04

1 TB = 1024 GB

AWS Trusted Advisor

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AWS Trusted Advisor is a **recommendation tool** which automatically and actively monitors your AWS account to provide **actional recommendations** across a series of categories.

The screenshot displays the AWS Trusted Advisor dashboard. On the left, a sidebar lists categories: Dashboard, Cost optimization, Performance, Security, Fault tolerance, Service limits, and Preferences. The main area shows the 'Dashboard' with a 'Checks summary' section. This section has two cards: 'Action recommended' with a red 'x' icon and the number '2', and 'Investigation recommended' with a yellow warning triangle icon and the number '1'. Both cards are for the 'Security' category. Above these cards are buttons for 'Refresh all checks' and 'Download all checks'. A red arrow points from the 'Investigation recommended' card to a detailed recommendation card on the right. This card is titled 'Security Groups - Specific Ports Unrestricted' and states: 'Checks security groups for rules that allow unrestricted access (0.0.0.0/0) to specific ports. 51 of 146 security group rules allow unrestricted access to a specific port.' It also shows 'Last updated: 3 minutes ago' and a refresh icon.



Think of AWS Trusted Advisor like an automated checklist of best practices on AWS

The 5 categories of AWS Trusted Advisor

- Cost Optimization – How can we save money?
- Performance – How can improve performance?
- Security – How we can improve security?
- Fault Tolerance – How can we prevent a disaster or data loss?
- Service Limits – Are we are going to hit the maximum limit for a service?

AWS Trusted Advisor

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AWS Trusted Advisor provides different level of checks based on your AWS Support Plan

Basic

Developer

Business

Enterprise

7 Trusted Advisor Checks

All Trusted Advisor Checks

AWS provides the following checks for free:

1. MFA on Root Account
2. Security Groups – Specific Ports of Unrestricted
3. Amazon S3 Bucket Permissions
4. Amazon EBS Public Snapshots
5. Amazon RDS Public Snapshots
6. IAM Use - discourage the use of root access
7. Service Limits (All Service limits checks are free)

Six security checks

AWS Trusted Advisor

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Cost Optimization

- Amazon EC2 Reserved Instances Optimization
- Low Utilization Amazon EC2 Instances
- Underutilized Amazon EBS Volumes
- Amazon EC2 Reserved Instance Lease Expiration
- Amazon RDS Idle DB Instances
- Amazon Route 53 Latency Resource Record Sets

Idle Load Balancers

Unassociated Elastic IP Addresses

- Underutilized Amazon Redshift Clusters



Performance

- CloudFront Alternate Domain Names
- Amazon EBS Provisioned IOPS (SSD) Volume Attachment Configuration
- Amazon EC2 to EBS Throughput Optimization
- Amazon Route 53 Alias Resource Record Sets
- CloudFront Content Delivery Optimization
- CloudFront Header Forwarding and Cache Hit Ratio

High Utilization Amazon EC2 Instances

- Large Number of EC2 Security Group Rules Applied to an Instance
- Large Number of Rules in an EC2 Security Group
- Overutilized Amazon EBS Magnetic Volumes



Security

- AWS CloudTrail Logging
- IAM Password Policy
- MFA on Root Account**
- Security Groups - Specific Ports Unrestricted
- Security Groups - Unrestricted Access
- Amazon S3 Bucket Permissions
- IAM Access Key Rotation**
- Amazon EBS Public Snapshots
- Amazon RDS Public Snapshots
- Amazon RDS Security Group Access Risk
- Amazon Route 53 MX Resource Record Sets and Sender Policy Framework
- CloudFront Custom SSL Certificates in the IAM Certificate Store
- CloudFront SSL Certificate on the Origin Server
- ELB Listener Security
- ELB Security Groups
- Exposed Access Keys
- IAM Use

AWS Trusted Advisor

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Fault Tolerance

- Amazon EBS Snapshots
- Amazon RDS Multi-AZ
- Amazon S3 Bucket Logging
- Amazon S3 Bucket Versioning
- Amazon Aurora DB Instance Accessibility
- Amazon EC2 Availability Zone Balance
- Amazon RDS Backups**
- Amazon Route 53 Deleted Health Checks
- Amazon Route 53 Failover Resource Record Sets
- Amazon Route 53 High TTL Resource Record Sets
- Amazon Route 53 Name Server Delegations
- Auto Scaling Group Health Check
- Auto Scaling Group Resources
- ELB Connection Draining
- ELB Cross-Zone Load Balancing
- Load Balancer Optimization
- VPN Tunnel Redundancy
- AWS Direct Connect Connection Redundancy
- AWS Direct Connect Location Redundancy
- AWS Direct Connect Virtual Interface Redundancy
- EC2Config Service for EC2 Windows Instances
- ENA Driver Version for EC2 Windows Instances
- NVMe Driver Version for EC2 Windows Instances
- PV Driver Version for EC2 Windows Instances



Service Limits

- Auto Scaling Groups
- Auto Scaling Launch Configurations
- CloudFormation Stacks
- DynamoDB Read Capacity
- DynamoDB Write Capacity
- EBS Active Snapshots
- EBS Active Volumes
- EBS Cold HDD (sc1) Volume Storage
- EBS General Purpose SSD (gp2) Volume Storage
- EBS Magnetic (standard) Volume Storage
- EBS Provisioned IOPS (SSD) Volume Aggregate IOPS
- EBS Provisioned IOPS SSD (io1) Volume Storage
- EBS Throughput Optimized HDD (st1) Volume Storage
- EC2 Elastic IP Addresses
- EC2 On-Demand Instances
- EC2 Reserved Instance Leases
- ELB Active Load Balancers
- IAM Group
- IAM Instance Profiles
- IAM Policies
- IAM Roles
- IAM Server Certificates
- IAM Users
- Kinesis Shards per Region
- RDS Cluster Parameter Groups
- RDS Cluster Roles
- RDS Clusters
- RDS DB Instances
- RDS DB Parameter Groups
- RDS DB Security Groups
- RDS DB Snapshots Per User
- RDS Event Subscriptions
- RDS Max Auths per Security Group
- RDS Option Groups
- RDS Read Replicas per Master
- RDS Reserved Instances
- RDS Subnet Groups
- RDS Subnets per Subnet Group
- RDS Total Storage Quota
- Route 53 Hosted Zones
- Route 53 Max Health Checks
- Route 53 Reusable Delegation Sets
- Route 53 Traffic Policies
- Route 53 Traffic Policy Instances
- SES Daily Sending Quota
- VPC**
- VPC Elastic IP Address
- VPC Internet Gateways



Service Level Agreements

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What is a Service Level Agreement (SLA)?

A SLA is a **formal commitment** about the **expected level of service** between a customer and provider.

When a service level is not met and if Customer meets its obligations under the SLA, Customer will be eligible to receive the compensation eg. **Financial or Service Credits**

What is a Service Level Indicator (SLI)?

A **metric/measurement** that indicates what measure of performance a customer is receiving at a given time

A SLI metric could be uptime, performance, availability, throughput, latency, error rate, durability, correctness

What is a Service Level Objective (SLO)?

The objective that the provider has agreed to meet

SLOs are represented as a specific **target percentage** over a period of time.

Availability SLA of 99.99% in a period of 3 months

Target percentages

- 99.95%
- 99.99%
- 99.999999999% (commonly called **Nine nines**)
- 99.99999999999% (commonly called **Nine elevens**)

AWS Service Level Agreements

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DynamoDB SLA

AWS will use commercially reasonable efforts to make DynamoDB available with a Monthly Uptime Percentage for each AWS region, during any monthly billing cycle, of (a) at least 99.999% if the Global Tables SLA applies, or (b) at least 99.99% if the Standard SLA applies

In the event DynamoDB does not meet the Service Commitment, you will be eligible to receive a Service Credit as described below

	Monthly Uptime Percentage	Service Credit Percentage
Global Tables SLA	Less than 99.999% but equal to or greater than 99.0%	10%
	Less than 99.0% but equal to or greater than 95.0%	25%
	Less than 95.0%	100%
Standard SLA	Less than 99.99% but equal to or greater than 99.0%	10%
	Less than 99.0% but equal to or greater than 95.0%	25%
	Less than 95.0%	100%

AWS Service Level Agreements

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Compute SLAs

- Amazon Elastic Compute Cloud (Amazon EC2)*
- Amazon Elastic Block Store (Amazon EBS)
- Amazon Elastic Container Service (Amazon ECS)
- AWS Fargate for Amazon ECS and Amazon EKS

AWS makes two SLA commitments for the Included Services:

1. a Region-Level SLA that governs Included Services deployed across multiple AZs or regions, and
2. an Instance-Level SLA that governs Amazon EC2 instances individually.

Monthly Uptime Percentage

Service Credit Percentage

Region-Level SLA

Less than 99.99% but equal to or greater than 99.0%
Less than 99.0% but equal to or greater than 95.0%
Less than 95.0%

10%
30%
100%

Instance-Level SLA

Less than 99.5% but equal to or greater than 99.0%
Less than 99.0% but equal to or greater than 95.0%
Less than 95.0%

10%
30%
100%

AWS Service Level Agreements

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RDS SLA

AWS will use commercially reasonable efforts to make Multi-AZ instances available with a Monthly Uptime Percentage of at least 99.95% during any monthly billing cycle

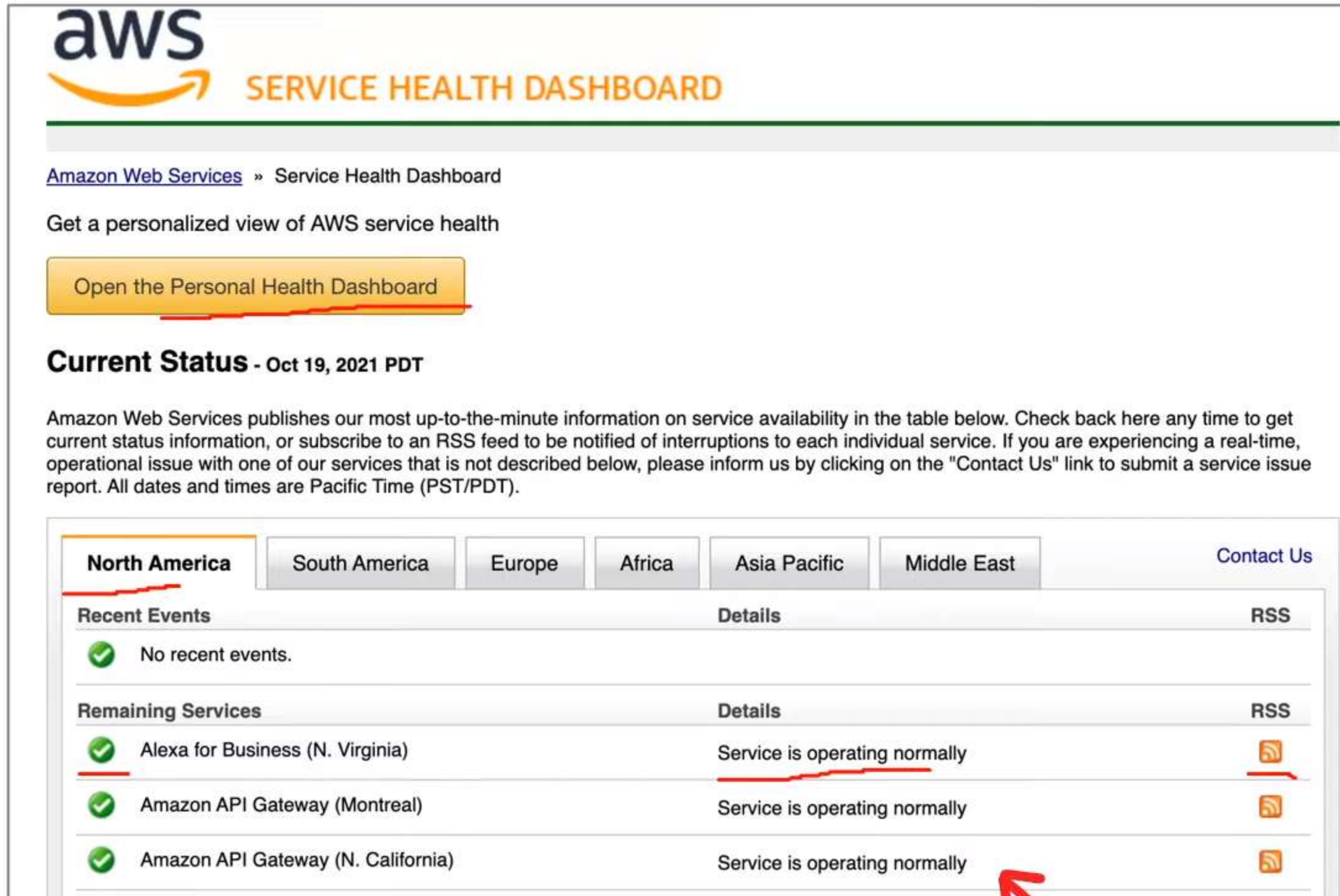
In the event Amazon RDS does not meet the Monthly Uptime Percentage commitment, you will be eligible to receive a Service Credit as described below.

Monthly Uptime Percentage	Service Credit Percentage
Less than 99.95% but equal to or greater than 99.0%	10%
Less than 99.0% but equal to or greater than 95.0%	25%
Less than 95.0%	100%

Service Health Dashboard

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The **Service Health Dashboard** shows the general status of AWS services,



The screenshot shows the AWS Service Health Dashboard interface. At the top is the AWS logo and the title 'SERVICE HEALTH DASHBOARD'. Below this is a breadcrumb trail 'Amazon Web Services » Service Health Dashboard' and a sub-header 'Get a personalized view of AWS service health'. A yellow button labeled 'Open the Personal Health Dashboard' is present. The main section is titled 'Current Status - Oct 19, 2021 PDT' and contains a paragraph explaining that the dashboard provides up-to-the-minute information on service availability. Below this is a navigation bar with tabs for 'North America', 'South America', 'Europe', 'Africa', 'Asia Pacific', and 'Middle East', along with a 'Contact Us' link. The 'North America' tab is selected. The dashboard is divided into two main sections: 'Recent Events' and 'Remaining Services'. The 'Recent Events' section shows 'No recent events.' with a green checkmark icon. The 'Remaining Services' section is a table with three columns: 'Remaining Services', 'Details', and 'RSS'. It lists three services: 'Alexa for Business (N. Virginia)', 'Amazon API Gateway (Montreal)', and 'Amazon API Gateway (N. California)'. Each service row has a green checkmark icon in the 'Remaining Services' column, the text 'Service is operating normally' in the 'Details' column, and an RSS icon in the 'RSS' column. A red arrow points from the text 'An icon and details will indicate the status of each AWS Service' to the green checkmark and 'Service is operating normally' text in the table.

aws SERVICE HEALTH DASHBOARD

[Amazon Web Services](#) » Service Health Dashboard


Get a personalized view of AWS service health







[Open the Personal Health Dashboard](#)

Current Status - Oct 19, 2021 PDT

Amazon Web Services publishes our most up-to-the-minute information on service availability in the table below. Check back here any time to get current status information, or subscribe to an RSS feed to be notified of interruptions to each individual service. If you are experiencing a real-time, operational issue with one of our services that is not described below, please inform us by clicking on the "Contact Us" link to submit a service issue report. All dates and times are Pacific Time (PST/PDT).

North America South America Europe Africa Asia Pacific Middle East [Contact Us](#)

Recent Events	Details	RSS
 No recent events.		

Remaining Services	Details	RSS
 Alexa for Business (N. Virginia)	Service is operating normally	
 Amazon API Gateway (Montreal)	Service is operating normally	
 Amazon API Gateway (N. California)	Service is operating normally	

An **icon** and **details** will indicate the status of each AWS Service

AWS Personal Health Dashboard

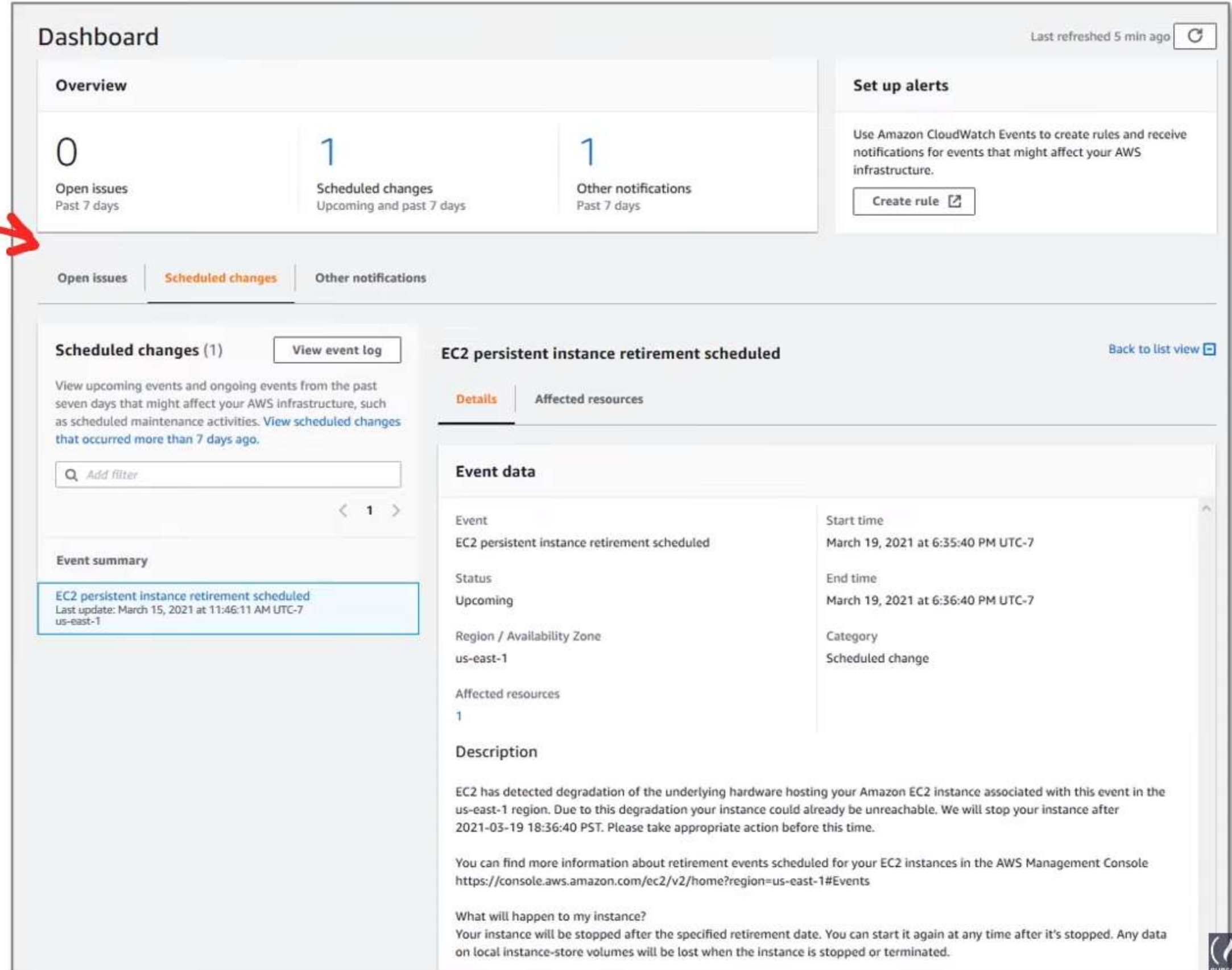
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AWS Personal Health Dashboard provides **alerts and guidance** for AWS events that might affect your environment.

All AWS customers can access the Personal Health Dashboard.

The Personal Health Dashboard shows recent events to help you manage active events, and shows proactive notifications so that you can plan for scheduled activities

Use these alerts to get notified about changes that can affect your AWS resources, and then follow the guidance to diagnose and resolve issues.



The screenshot displays the AWS Personal Health Dashboard interface. At the top, the 'Dashboard' header includes a refresh button and a timestamp 'Last refreshed 5 min ago'. Below this is an 'Overview' section with three cards: 'Open issues Past 7 days' (0), 'Scheduled changes Upcoming and past 7 days' (1), and 'Other notifications Past 7 days' (1). A red arrow points from the text 'alerts and guidance' to the 'Scheduled changes' card. To the right is a 'Set up alerts' section with a 'Create rule' button. The main content area has tabs for 'Open issues', 'Scheduled changes' (selected), and 'Other notifications'. Under 'Scheduled changes (1)', there is a 'View event log' button and a description of upcoming events. An 'Event summary' section lists 'EC2 persistent instance retirement scheduled' with a last update timestamp. The right pane shows details for this event, including 'Event data' (Event name, Status, Region, Affected resources) and a detailed 'Description' of the hardware degradation and retirement process.

Dashboard Last refreshed 5 min ago

Overview

- 0 Open issues Past 7 days
- 1 Scheduled changes Upcoming and past 7 days
- 1 Other notifications Past 7 days

Set up alerts

Use Amazon CloudWatch Events to create rules and receive notifications for events that might affect your AWS infrastructure.

Create rule

Open issues **Scheduled changes** Other notifications

Scheduled changes (1) [View event log](#)

View upcoming events and ongoing events from the past seven days that might affect your AWS infrastructure, such as scheduled maintenance activities. [View scheduled changes that occurred more than 7 days ago.](#)

Q Add filter

< 1 >

Event summary

- EC2 persistent instance retirement scheduled
Last update: March 15, 2021 at 11:46:11 AM UTC-7
us-east-1

EC2 persistent instance retirement scheduled [Back to list view](#)

Details Affected resources

Event data

Event	Start time
EC2 persistent instance retirement scheduled	March 19, 2021 at 6:35:40 PM UTC-7
Status	End time
Upcoming	March 19, 2021 at 6:36:40 PM UTC-7
Region / Availability Zone	Category
us-east-1	Scheduled change
Affected resources	
1	
Description	
EC2 has detected degradation of the underlying hardware hosting your Amazon EC2 instance associated with this event in the us-east-1 region. Due to this degradation your instance could already be unreachable. We will stop your instance after 2021-03-19 18:36:40 PST. Please take appropriate action before this time.	
You can find more information about retirement events scheduled for your EC2 instances in the AWS Management Console https://console.aws.amazon.com/ec2/v2/home?region=us-east-1#Events	
What will happen to my instance? Your instance will be stopped after the specified retirement date. You can start it again at any time after it's stopped. Any data on local instance-store volumes will be lost when the instance is stopped or terminated.	

AWS Abuse

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AWS Trust & Safety is a team that specifically deals with abuses occurring on the AWS platform for the following issues:

Spam

You are receiving unwanted emails from an AWS-owned IP address, or AWS resources are used to spam websites or forums.

Port scanning

Your logs show that one or more AWS-owned IP addresses are sending packets to multiple ports on your server. You also believe this is an attempt to discover unsecured ports.

Denial-of-service (DoS) attacks

Your logs show that one or more AWS-owned IP addresses are used to flood ports on your resources with packets. You also believe that this is an attempt to overwhelm or crash your server or the software running on your server.

Intrusion attempts:

Your logs show that one or more AWS-owned IP addresses are used to attempt to log in to your resources.

Hosting prohibited content:

You have evidence that AWS resources are used to host or distribute prohibited content, such as illegal content or copyrighted content without the consent of the copyright holder.

Distributing malware

You have evidence that AWS resources are used to distribute software that was knowingly created to compromise or cause harm to computers or machines that it's installed on.



AWS Support does not deal with Abuse tickets. You need to contact abuse@amazonaws.com or fill out the Report Amazon AWS abuse form.

AWS Free-Tier

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AWS has a free-tier which allows you to use AWS at no cost

- for the first 12 months of signup
- Or free usage up to a certain monthly limit forever



EC2 Web Server

t2.micro 750 hours per month for 1 year

The Best Deals



RDS Database (MySQL or Postgres)

t2.db.micro 750 hours per month for 1 year



ELB Load Balancer

750 hours per month for 1 year

Amazon CloudFront Homepage Video

50 GB data-transfer out in total for 1 year

Amazon Connect Toll Free Number

90 minutes of call-time per month for 1 year

Amazon ElastiCache Caching

cache.t3.micro 750 hours per month for 1 year

Amazon ElasticSearch Service Full Text Search

750 hours per month for 1 year

PinPoint Campaign / Marketing Emails

5,000 targeted users per month for 1 year

SES Emails sent by your web-application

62,000 emails per month forever

AWS CodePipeline CI/CD

1 Pipeline free

AWS CodeBuild Building Code

100 build minutes per month forever

AWS Lambda Serverless Compute

1M free request per month

3.2M seconds of compute time per month

AWS Credits

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AWS Promotional Credits (or AWS Credits for short) are the equivalent to USD dollars on the AWS platform. AWS Credits can be earned several ways:

- Joining the AWS Activate startup program
- Winning Hackathons
- Participating in Surveys
- ...



Summary	
Total amount remaining	Total amount used
\$500.00	\$332.00

AWS Credits generally have an expiry date attached to them.

AWS Credits can be used for most services but there are exceptions where AWS Credits cannot be used eg. Purchasing a domain via Route53