



AWS Management & Governance Blog

Monitoring Service Limits with Trusted Advisor and Amazon CloudWatch

by Stas Neyman | on 24 NOV 2017 | in [AWS Trusted Advisor](#), [Management Tools](#) | [Permalink](#) | [Share](#)

Understanding your [service limits](#) (and how close you are to them) is an important part of managing your AWS deployments – continuous monitoring allows you to request limit increases or shut down resources before the limit is reached.

One of the easiest ways to do this is via [AWS Trusted Advisor's](#) Service Limit Dashboard, which currently covers [39 limits across 10 services](#).

With the recent launch of Trusted Advisor metrics in Amazon CloudWatch, [Business](#) and [Enterprise](#) support customers can create customizable alarms for individual service limits. Let's look at an example of how to do that.

Example: Create an alarm for EC2 On-Demand Instance limits

Begin by logging into the [Trusted Advisor console](#) and clicking the "Service Limits" link on the left side of the page. After doing so, you should see the new service limits dashboard.

Service Limits

37 ✓ 0 ⚠ 1 ❗

Filter by tag: Tag Key Tag Value Apply filter Reset

View: All checks

Service Limits Checks

❗	VPC Elastic IP Address	Checks for usage that is more than 80% of the VPC Elastic IP Address. 2 of 14 items have usage that is more than 80% of the service limit.	Refreshed: 18 minutes ago	Download Refresh
✓	Auto Scaling Groups	Checks for usage that is more than 80% of the Auto Scaling Groups. 0 of 14 items have usage that is more than 80% of the service limit.	Refreshed: 18 minutes ago	Download Refresh
✓	Auto Scaling Launch Configurations	Checks for usage that is more than 80% of the Auto Scaling Launch Configurations.	Refreshed: 18 minutes ago	Download Refresh

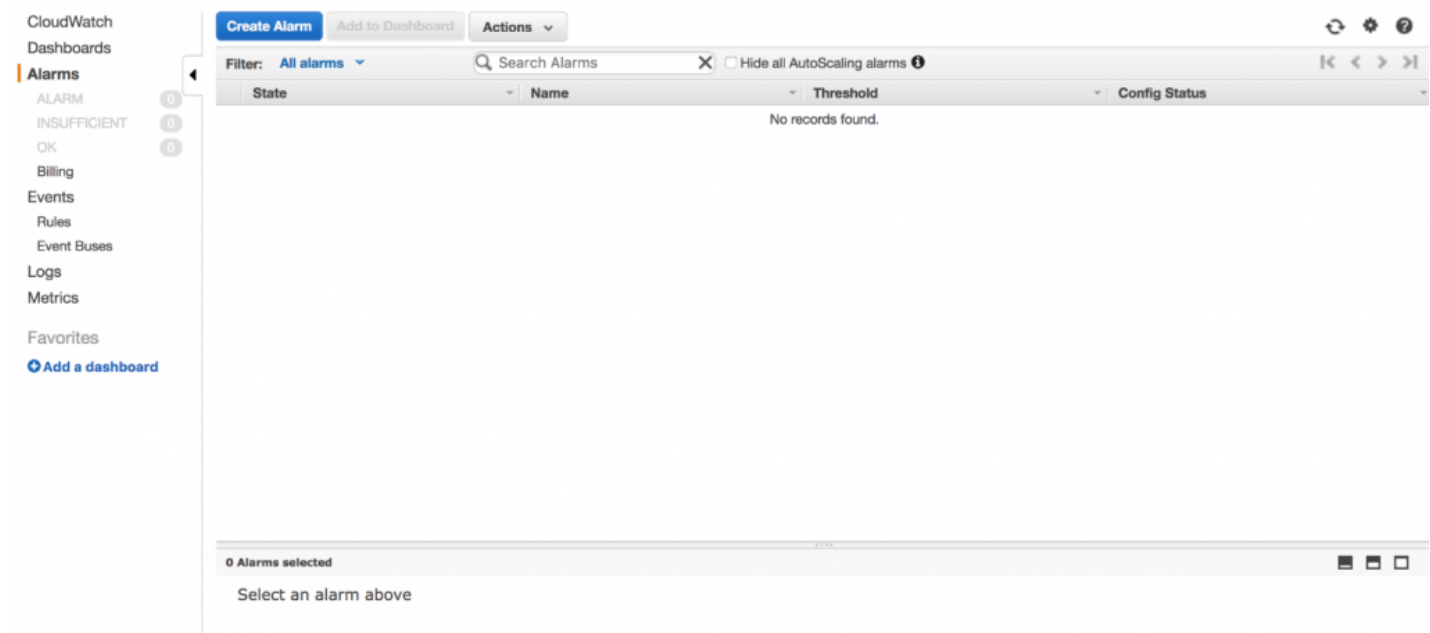
Click the refresh icon in the top-right of the screen to retrieve the most current utilization and limit data for the service limit checks. This can take a while if you have a lot of AWS resources deployed, so be patient! Once complete, a notification will appear at the top of the Trusted Advisor console.



This ensures that CloudWatch has the most up-to-date information available from Trusted Advisor.

Next, head over to the [CloudWatch console](#). Trusted Advisor passes a single metric called "ServiceLimitUsage" that represents the percentage of utilization versus the limit. You can filter these limits by region, limit, or service using the available dimensions.

Make sure you are in the US East (N. Virginia) region, then click the "Alarms" link on the left side of the page and then click the "Create Alarm" button.



Click "Service Limits by Region" under the "Trusted Advisor" category.

Create Alarm

1. Select Metric

2. Define Alarm

Browse Metrics

Search Metrics

X

CloudWatch Metrics by Category

Your CloudWatch metric summary has loaded. Total metrics: **1,094**

ApplicationELB Metrics : 11 Per AppELB Metrics : 2 Per AppELB, per TG Metrics : 4 Per AppELB, per AZ Metrics : 1 Per AppELB, per AZ, per TG Metrics : 3 TargetGroup : 1	DX Metrics : 6 Connection Metrics : 6	EBS Metrics : 19 Per-Volume Metrics : 19
EC2 Metrics : 26 Per-Instance Metrics : 26	Events Metrics : 5 Across All Rules : 3 By Rule Name : 2	Logs Metrics : 4 Account Metrics : 2 Log Group Metrics : 2
RDS Metrics : 423 DBClusterIdentifier,Role : 96 Per-Database Metrics : 143 By Database Class : 66 DbClusterIdentifier,EngineName : 6 By Database Engine : 66 Across All Databases : 46	Redshift Metrics : 26 Node Metrics : 13 Aggregated by Cluster : 13	S3 Metrics : 10 Storage Metrics : 10
SQS Metrics : 18 Queue Metrics : 18	AWS/TrustedAdvisor Metrics : 546 Category : 27 CheckName : 116 Region,Service Limit : 253 Region,ServiceLimit,ServiceName : 150	

Update Graph

Cancel

Previous

Next

Create Alarm

In the search bar, type "Overall On-Demand Instances". This will filter the list of available limits down to the EC2 overall on-demand instance limits that are tracked by Trusted Advisor. Click the checkbox next to the limit for the us-east-1 region and click "Next".

Create Alarm

1. Select Metric

2. Define Alarm

AWS/TrustedAdvisor

Overall On-Demand Instances

1 to 2 of 2 metrics

Category

CheckName

Region,Service Limit

Region,ServiceLimit,ServiceName

AWS/TrustedAdvisor > Region,ServiceLimit,ServiceName

	Region	ServiceLimit	ServiceName	Metric Name
<input type="checkbox"/>	us-east-1	Overall On-Demand instances	EC2	ServiceLimitUsage
<input type="checkbox"/>	us-west-2	Overall On-Demand instances	EC2	ServiceLimitUsage

Select a metric above to view graph

Click a checkbox to select a metric

Click on text to add to search

Update Graph

Time Range

Relative

Absolute

UTC (GMT)

From: 12

hours ago

To: 0

hours ago

Zoom: 1h | 3h | 6h | 12h | 1d | 3d | 1w | 2w

Left Y-axis

Limits

Min

0

Max

Auto

Auto

Cancel

Previous

Next

Create Alarm

You can now set up your CloudWatch alarm for this limit. In this example, we've configured it to alarm when you've reached 60% of the EC2 On-Demand instance limit. Trusted Advisor updates these metrics once per week by default, but refreshing [checks](#) via the Trusted Advisor console or Support API will send updated metrics on demand.

Create Alarm

1. Select Metric
2. Define Alarm

Alarm Threshold

Provide the details and threshold for your alarm. Use the graph on the right to help set the appropriate threshold.

Name: on-demand-limit-us-east-1

Description: EC2 On-Demand Limit for us-east-1

Whenever: ServiceLimitUsage

is: \geq 0.6

for: 1 consecutive period(s)

Additional settings

Provide additional configuration for your alarm.

Treat missing data as: missing

Actions

Define what actions are taken when your alarm changes state.

Notification

Whenever this alarm: State is ALARM

Send notification to: Select a notification list [New list](#) [Enter list](#)

+ Notification
+ AutoScaling Action
+ EC2 Action

Alarm Preview

This alarm will trigger when the blue line goes up to or above the red line for a duration of 5 minutes

Namespace: AWS/TrustedAdvisor

ServiceName: EC2

ServiceLimit: Overall On-Demand in:

Region: us-east-1

Metric Name: ServiceLimitUsage

Period: 5 Minutes

Statistic: ☒ Standard ☐ Custom

Average

Cancel Previous Next **Create Alarm**

You can repeat this process for any or all of the service limits covered by Trusted Advisor. For more information and a guide to creating these for any type of Trusted Advisor check, visit [Creating Trusted Advisor Alarms Using CloudWatch](#).

About the Author

Scott Allison is the Senior Technical Product Manager for Trusted Advisor – an AWS service designed to keep your deployments secure, fault tolerant, and cost-effective. He enjoys working directly with customers and hearing the creative ways people use Trusted Advisor!








TAGS: [Amazon CloudWatch](#), [Amazon CloudWatch Alarm](#), [Trusted Advisor](#)

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