



# Billing and Cost Management

# Module Objectives

- Billing and account management options in OCI Console
- Cost Analysis
- Budgets
- Usage Reports
- Service limits and usage
- Compartment Quotas
- Cost management best practices





Autonomous Data Warehouse

Autonomous Transaction Processing

 Solutions and Platform

Analytics >

Resource Manager >

Email Delivery >

Application Integration >

Monitoring >

Developer Services >

Marketplace

My Services Dashboard

 Governance and Administration

Account Management >

Identity >

Security >

Governance >

Administration >

2-6 mins



AUTONOMOUS TRANSACTION PROCESSING

[Create a database](#)

3-5 mins



NETWORKING

[Create a virtual cloud network](#)

1-3 mins

3-5 mins

2-6 mins



NETWORKING SOLUTIONS

[Create an IPsec VPN connection](#)

2-3 mins



**All systems operational**

[View health dashboard](#)

## Action Center



User Management

[Add a user to your tenancy](#)



Billing

Current billing  
cycle charges

US\$0.00

Days elapsed  
in billing cycle

27 / 31

[Analyze costs](#)

[Manage payment method](#)

## What's New

Oracle Functions is now generally available and recommended for event-driven workloads

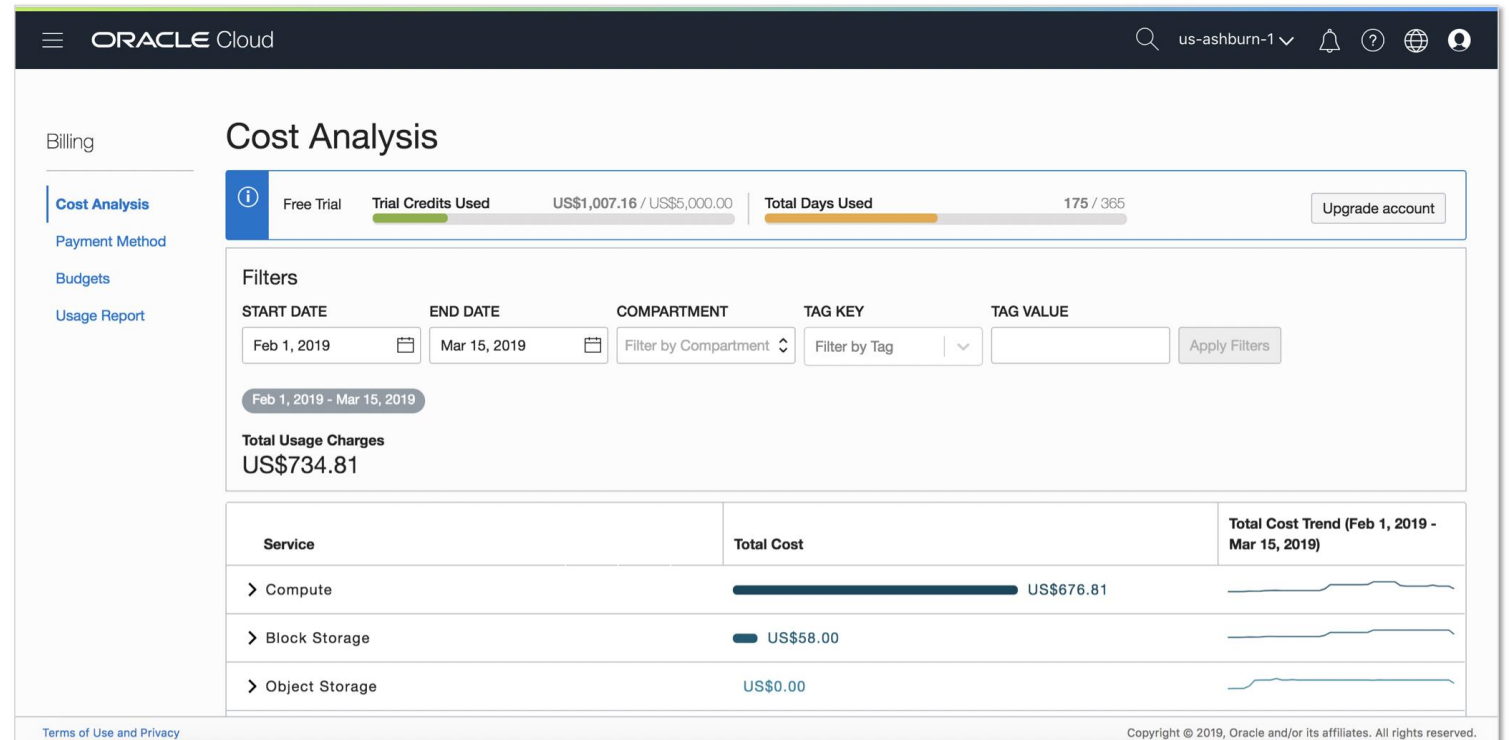
Jul 31, 2019

Oracle Cloud Infrastructure Events is now generally available and helps you respond to resource state changes

Jul 31, 2019

# OCI Cost Analysis

- Visualization tools Help understand spending patterns at a glance
- Filter costs by Date, Tags and Compartments
- Trend lines show how spending patterns are changing
- To use Cost Analysis you must be a member of the Administrators group



# Cost Analysis: Filter Costs by Date

- 1. Open the navigation menu. Under **Governance and Administration**, go to **Billing** and click **Cost Analysis**.
- 2. In **Start Date**, select a date.
- 3. In **End Date**, select a date (within six months of the start date).
- 4. Click **Apply Filters**.

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us-ashburn-1

Billing

- Cost Analysis
- Payment Method
- Budgets
- Usage Report

Cost Analysis

Days elapsed in billing cycle 23 / 31

Filters

START DATE

Feb 28, 2019

END DATE

Aug 28, 2019

COMPARTMENT

Filter by Compartment

TAG KEY

Filter by Tag

TAG VALUE

Apply Filters

Feb 28, 2019 - Aug 28, 2019

Total Usage Charges

US\$

Service	Total Cost	Total Cost Trend (Feb 28, 2019 - Aug 28, 2019)
---------	------------	--

# Cost Analysis: Filter Costs by Tags

- 1. Open the navigation menu. Under **Governance and Administration**, go to **Billing** and click **Cost Analysis**.
- 2. From **Tag Key**, select a tag.
- 3. Click **Apply Filters**.

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Billing

Cost Analysis

Payment Method

Budgets

Usage Report

Cost Analysis

Days elapsed in billing cycle 23 / 31

Filters

START DATE

END DATE

COMPARTMENT

TAG KEY

TAG VALUE

Apply Filters

Feb 28, 2019

Aug 28, 2019

ocisateam (root)

Filter by Tag

Feb 28, 2019 - Aug 28, 2019

Total Usage Charges

US\$

Service	Total Cost	Total Cost Trend (Feb 28, 2019 - Aug 28, 2019)
---------	------------	--

# Cost Analysis: Filter Costs by Compartments

- 1. Open the navigation menu. Under **Governance and Administration**, go to **Billing** and click **Cost Analysis**.
- 2. From **Compartment**, select a compartment.
- 3. Click **Apply Filters**.

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Billing

Cost Analysis

Payment Method

Budgets

Usage Report

Cost Analysis

Days elapsed in billing cycle 23 / 31

Filters

START DATE

Feb 28, 2019

END DATE

Aug 28, 2019

COMPARTMENT

ocisateam (root)

TAG KEY

Filter by Tag

TAG VALUE

Apply Filters

Feb 28, 2019 - Aug 28, 2019

Total Usage Charges

US\$

Service	Total Cost	Total Cost Trend (Feb 28, 2019 - Aug 28, 2019)
---------	------------	--

# OCI Budgets

- Track actual and forecasted spending for the entire tenancy or per compartment
- Set alerts on your budgets at predefined thresholds to get notified
- View all of your budgets and spending from one dashboard

Account Management

Cost Analysis

Payment Method

**Budgets**

Usage Report

Tag Filters [add](#) | [clear](#)

no tag filters applied

BUDGET SCOPE

☒ COMPARTMENT

☒ COST-TRACKING TAG

## Budgets

You can use budgets to track costs in your tenancy. After creating a budget for a compartment, you can set up alerts that will notify you if a budget is forecast to be exceeded or if spending surpasses a certain amount.

[Create Budget](#)

Name	Budget Scope	Target	Amount	Spent	% Spent In Period	Forecast ⓘ
<a href="#">Dev-Test</a>	Compartment	<a href="#">/ACME_CORP</a>	US\$1,000.00	N/A	N/A	N/A ⋮
<a href="#">talem0s-costs</a>	Compartment	<a href="#">/talem0s_compartment</a>	US\$100.00	N/A	N/A	N/A ⋮

Showing 2 Items < Page 1 >



# Accessing OCI Budgets

- To use budgets, you must be in a group that can use "usage-budgets" in the tenancy
- All budgets are created in the root compartment, regardless of the compartment they are targeting

IAM Policy	Description
Allow group accountants to inspect usage-budgets in tenancy	Accountants can inspect budgets including spend.
Allow group accountants to read usage-budgets in tenancy	Accountants can read budgets including spend (same as list).
Allow group accountants to use usage-budgets in tenancy	Accountants can create and edit budgets and alerts rules.
Allow group accountants to manage usage-budgets in tenancy	Accountants can create, edit, and delete budgets and alerts rules.

# Create Budgets

Create Budget

[help](#) [cancel](#)

BUDGET SCOPE

☒ COMPARTMENT ☐ COST-TRACKING TAG

NAME

Dev-Test

Name can only contain alphanumeric characters, dashes, periods, and underscores.

DESCRIPTION

Dev and test

TARGET COMPARTMENT ⓘ

ACME\_CORP

ocisatteam (root)/ACME\_CORP

MONTHLY BUDGET AMOUNT (IN US\$)

1000

The minimum allowed value is US\$1.00; the maximum allowed value is US\$999,999,999.00.

Budget Alert Rule (optional)

You can set up a budget alert rule now, or add it later. You can set up multiple alerts for the same budget.

THRESHOLD METRIC ⓘ

☒ ACTUAL SPEND ☐ FORECAST SPEND

THRESHOLD TYPE ⓘ

☒ PERCENTAGE OF BUDGET ☐ ABSOLUTE AMOUNT

THRESHOLD %

EMAIL RECIPIENTS

Enter one or more email addresses to receive the alerts. Multiple addresses can be separated using a comma, semicolon, space, tab, or new line.

EMAIL MESSAGE

Enter the body of the email message

[Show advanced options](#)

Create

Cancel

# Budgets Alerts

Create Budget Alert Rule

[help](#)[cancel](#)

THRESHOLD METRIC ⓘ

☒ ACTUAL SPEND ☐ FORECAST SPEND

THRESHOLD TYPE ⓘ

☒ PERCENTAGE OF BUDGET ☐ ABSOLUTE AMOUNT

THRESHOLD %

EMAIL RECIPIENTS

Enter one or more email addresses to receive the alerts. Multiple addresses can be separated using a comma, semicolon, space, tab, or new line.

EMAIL MESSAGE

Enter the body of the email message

CreateCancel

# Budget Alert Emails

**ORACLE** Cloud

Compartment:	philpoc
Budget:	Tenancy_Commitment
Monthly budget:	\$700.00
Alert Type:	Forecast
Threshold:	100%
Spend in cycle:	\$362.49
Forecast:	\$749.14
Time in cycle:	15 / 31 days

**Message from your administrator**

You are getting this alert because you are forecasted to overspend your budget this month. Please take action to reduce your spending. If your increase in spending is required and you cannot find ways to save money, refer to internal guidelines at <http://myintranetsite.com/accounting/budgets>.

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# Usage Reports

- Detailed information about your OCI consumption
- CSV file with one record per resource per hour with metadata and tags
- Automatically generated daily, and stored in an Oracle-owned object storage bucket
- Contain 24 hours of usage data
- Retained for one year
- Can be used in conjunction with your rate card for:
  - Invoice reconciliation
  - Custom reporting
  - Cross-charging
  - Cost optimization
  - Resource inventory

# Accessing Usage Reports

- Reports are generated in another tenancy and stored in an Oracle-owned object storage bucket
- Set up a cross-tenancy IAM policy to access your usage reports
  1. *define tenancy usage-report as ocid1.tenancy.oc1..abc..*
  2. *endorse group MyGroupName to read objects in tenancy usage-report*

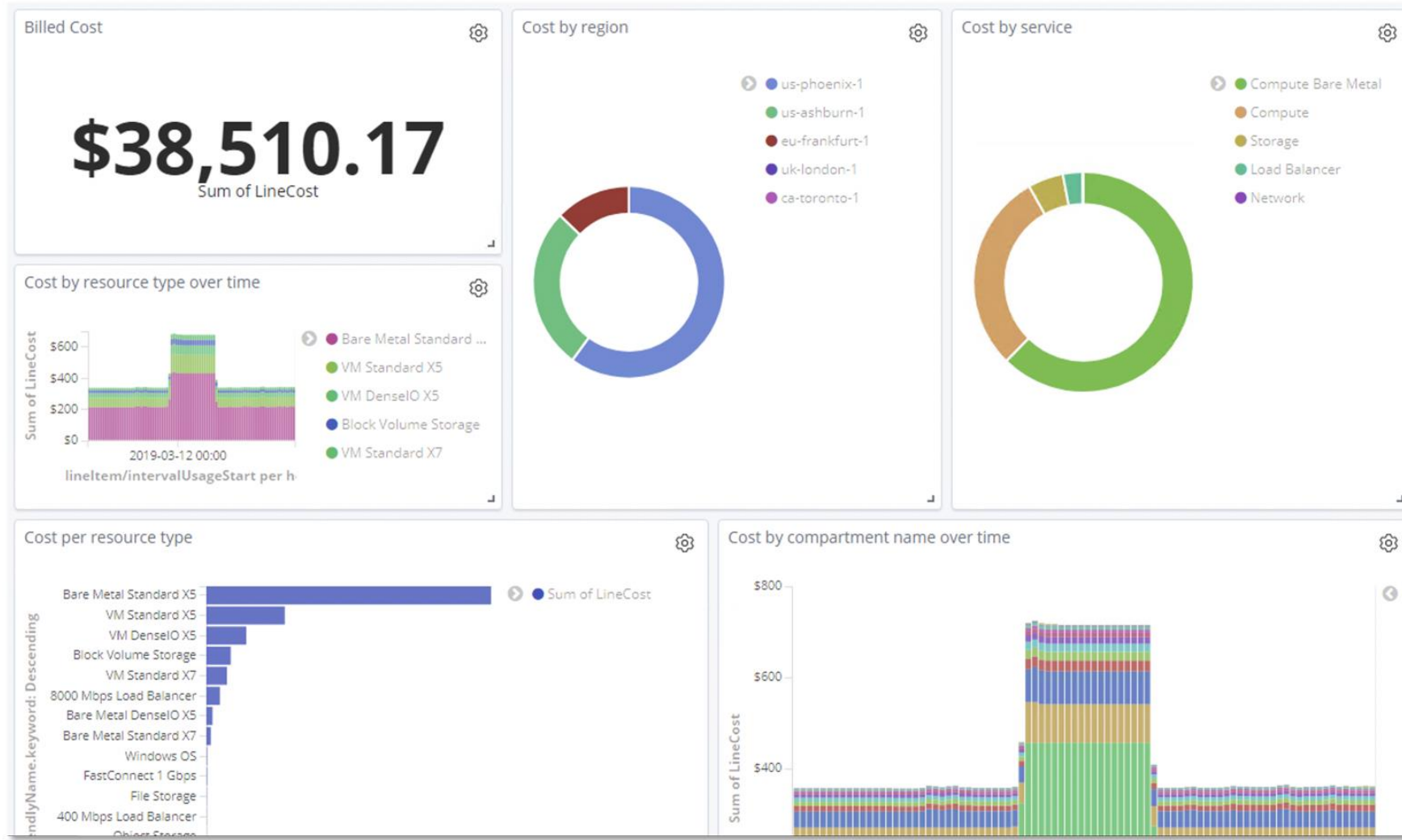
## Download using console

1. Open the navigation menu. Under **Governance and Administration**, go to **Billing** and select **Usage Report**.
2. Click the report you want to download from the list, and follow your browser's instructions for downloading.

## Download using API

- Use the Object Storage APIs
- stored in the tenancy's home region
- Object storage namespace used for the reports is bling; the bucket name is the tenancy OCID

# Sample Dashboard from a Usage Report



# Service Limits and Usage

- When you sign up for Oracle Cloud Infrastructure, a set of service limits are configured for your tenancy.
- The service limit is the quota or allowance set on a resource.
- You can view your tenancy's limits, quotas, and usage in the Console.
  - You can check Limits and Quotas before a deployment
- You can submit a request to increase your service limits from within the Console.

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Governance

Audit

Quota Policies

**Limits, Quotas and Usage**

Tag Namespaces

Limits, Quotas and Usage

Your tenancy comes with a predefined set of [service limits](#) on the maximum number of resources you're allowed to use. You can [request a service limit increase](#). If you're an administrator, you can also set your own [quotas](#) for any compartments you manage.

[Switch back to classic view](#)

SERVICE: Compute

SCOPE: ritx:US-ASHBURN-AD-1

RESOURCE: VM.Standard2.1, VM.Standard2.2, VM.Standard2.4, VM.Standard2.8

COMPARTMENT: Demo (root)

Description	Limit Name	Service Limit	Usage	Available
VM.Standard2.1	vm-standard2-1-count	100	4	96
VM.Standard2.2	vm-standard2-2-count	80	1	79
VM.Standard2.4	vm-standard2-4-count	80	1	79
VM.Standard2.8	vm-standard2-8-count	40	2	38

Showing 4 Items < Page 1 >

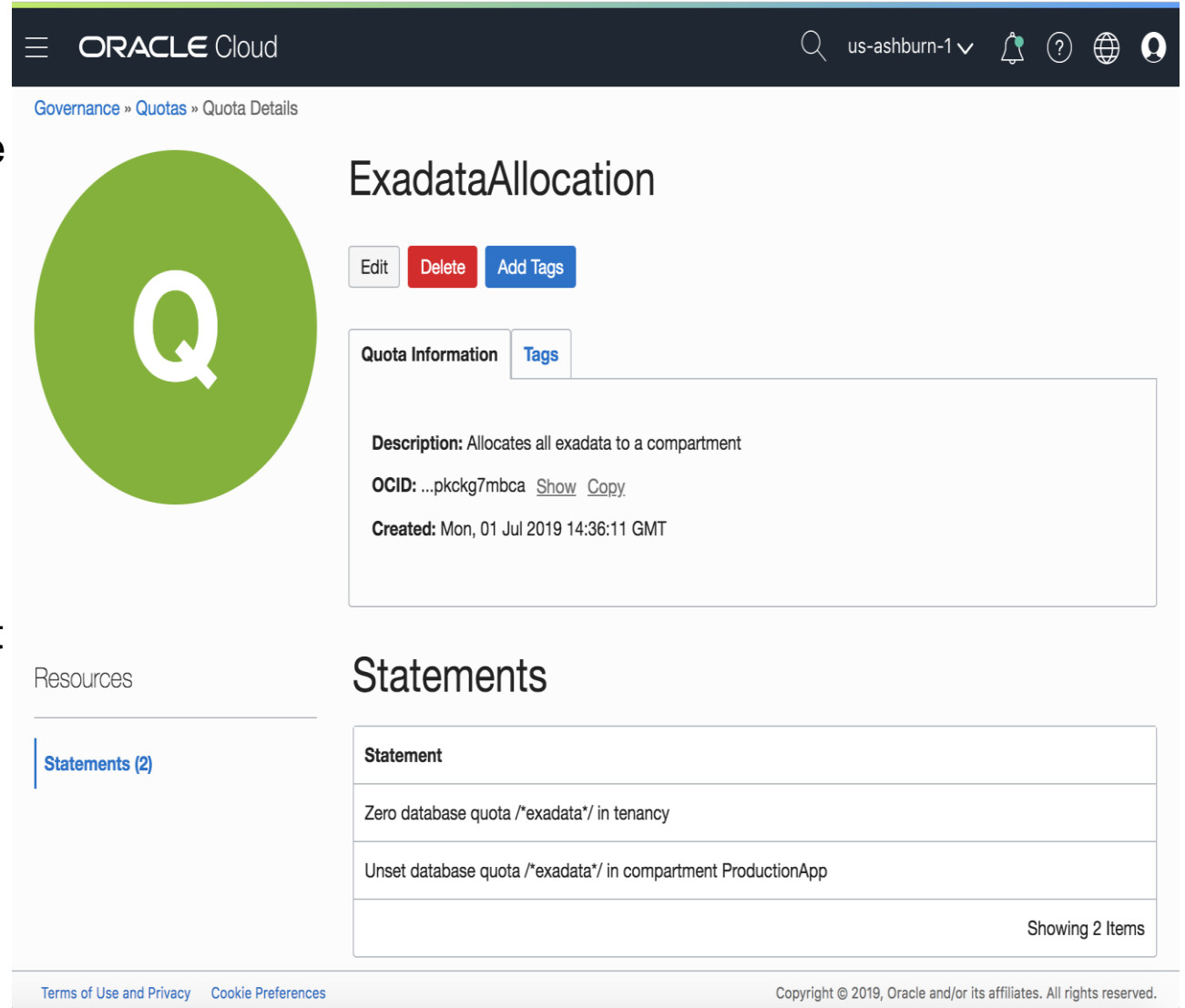
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# Compartment Quotas

- Quotas give you better control over how resources are consumed by letting you allocate resources to projects or departments
  - Allocate high-value and expensive resources only to specific compartments
  - Restrict a compartment's usage to a small set of resources, restrict resource counts or disable services as necessary
- Similar to *Service Limits*; but service limits are set by Oracle, and compartment quotas are set by administrators
- Set using *policy statements* written in a simple declarative language that is similar to the IAM policy language



The screenshot displays the Oracle Cloud console interface for a quota. The top navigation bar shows the Oracle Cloud logo and the user's location as 'us-ashburn-1'. The breadcrumb trail indicates the path: Governance » Quotas » Quota Details. The main heading is 'ExadataAllocation'. Below the heading are three buttons: 'Edit', 'Delete', and 'Add Tags'. A large green circle with a white 'Q' icon represents the quota. To the right of the icon, there are tabs for 'Quota Information' and 'Tags'. The 'Quota Information' tab is active, showing the following details: Description: Allocates all exadata to a compartment; OCID: ...pkckg7mbca (with 'Show' and 'Copy' links); and Created: Mon, 01 Jul 2019 14:36:11 GMT. Below the quota information, there is a section for 'Resources' and a tab for 'Statements (2)'. The 'Statements (2)' tab is active, showing a table with two statements: 'Zero database quota /\*exadata\*/ in tenancy' and 'Unset database quota /\*exadata\*/ in compartment ProductionApp'. The bottom of the console shows links for 'Terms of Use and Privacy' and 'Cookie Preferences', along with a copyright notice: 'Copyright © 2019, Oracle and/or its affiliates. All rights reserved.'

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Governance » Quotas » Quota Details

## ExadataAllocation

Edit Delete Add Tags

Quota Information Tags

**Description:** Allocates all exadata to a compartment

**OCID:** ...pkckg7mbca [Show](#) [Copy](#)

**Created:** Mon, 01 Jul 2019 14:36:11 GMT

Resources

Statements (2)

Statement
Zero database quota /*exadata*/ in tenancy
Unset database quota /*exadata*/ in compartment ProductionApp

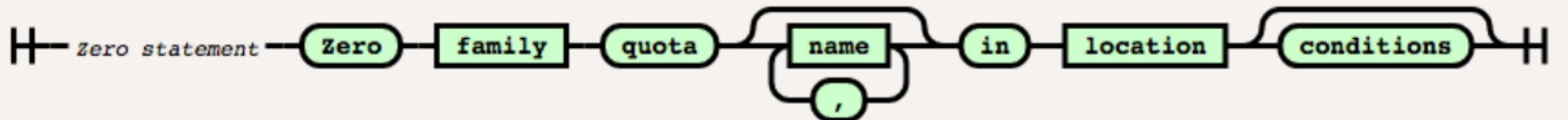
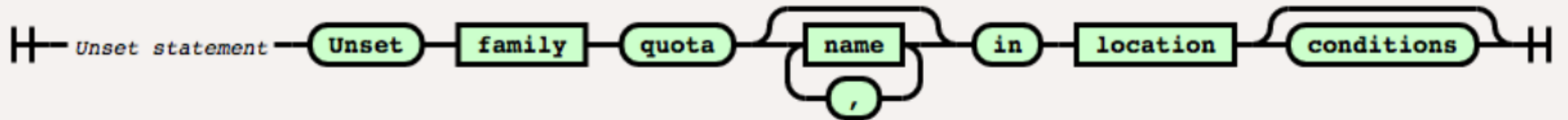
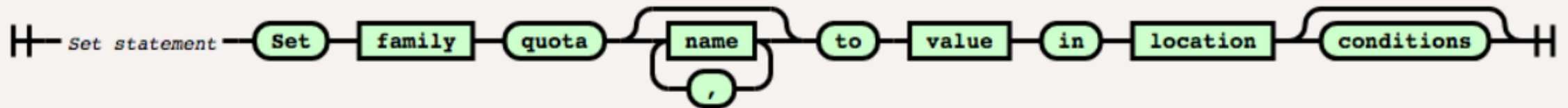
Showing 2 Items

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# Quota Policies

- **set** - sets the maximum number of a cloud resource that can be used for a compartment
- **unset** - resets quotas back to the default service limits
- **zero** - removes access to a cloud resource for a compartment



# Quota Policies Examples

This example policy statement only allows one VM.Standard2.1 Compute instance in a single compartment in a single region:

1. zero compute quotas in tenancy  
set compute quota vm-standard2-1-count to 10 in compartment IT where request.region = us-phoenix-1

You can clear quotas by using an unset statement, which removes the quota for a resource - any limits on this resource will now be enforced by the service limits:

1. zero compute quotas in tenancy  
unset compute quota vm-dense-io1-16-count in tenancy

# Cost Management Best Practices

- Create a budget that matches your commitment amount and an alert at 100 percent of the forecast.
  - Gives you an early warning if your spending increases and you're at risk of getting an overage.
- Use compartments for cost management along with access-control. Many customers set up one compartment per department for cost management and cross-charging.
- Use cost-tracking tags (like cost-center) to allocate cost in more granular ways.
- Enable monitoring on all resources. You can merge monitoring data with cost data to gain powerful insights on how to improve resource utilization.
- Use the usage report to analyze costs and drive custom solutions.

# Summary

- Understand scale-up/down and scale-out/in options
- Understand Instance Configuration, Pools and Autoscaling
- Setup a Compute Autoscaling Policy
- Understand Autonomous DB scaling options

