



ORACLE

# Billing and Cost Management

## Level 100

KD Singh

Oracle Cloud Infrastructure

September, 2019

## Safe harbor statement

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# Topics

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

3-5 mins



NETWORKING  
[Create a virtual cloud network](#)

1-3 mins

Billing and cost related options are  
available under 'Account Management'

2-3 mins

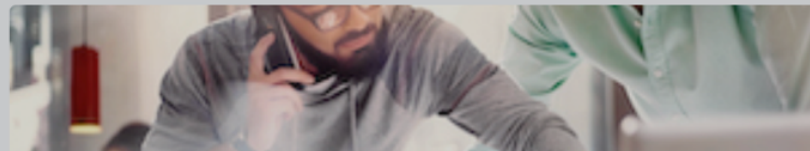
NETWORKING SOLUTIONS  
[Create an IPsec VPN connection](#)

Cost Analysis

Payment Method

Budgets


Usage Report



**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

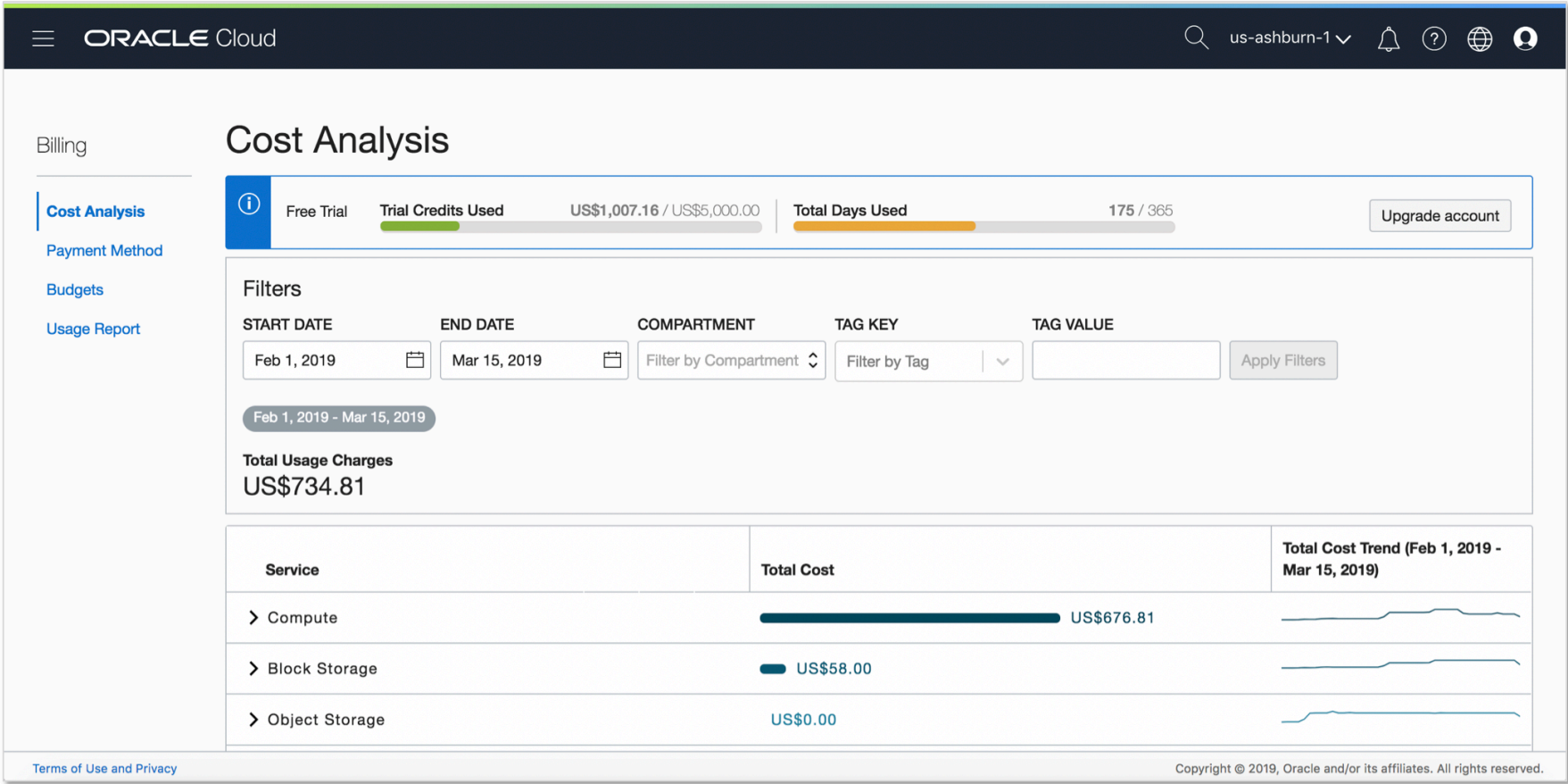
Oracle Functions is now generally available and recommended for event-driven workloads  
Jul 31, 2019

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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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

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)
---------	------------	------------------------------------------------



# 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

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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="#">talemoss-costs</a>	Compartment	<a href="#">/talemoss_compartment</a>	US\$100.00	N/A	N/A	N/A ⋮

Showing 2 Items < Page 1 >

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# 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

helpcancel

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

CreateCancel



# Budgets Alerts

Create Budget Alert Rule

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

THRESHOLD METRIC ⓘ

☒ ACTUAL SPEND☐ FORECAST SPEND

THRESHOLD TYPE ⓘ

☒ PERCENTAGE OF BUDGET☐ ABSOLUTE AMOUNT

THRESHOLD %

80

EMAIL RECIPIENTS

test@test.test

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

test message

Enter the body of the email message

Create

Cancel



# Budget Alert Emails

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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>.



# 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

*define tenancy usage-report as ocid1.tenancy.oc1..abc..*

*endorse group MyGroupName to read objects in tenancy usage-report*

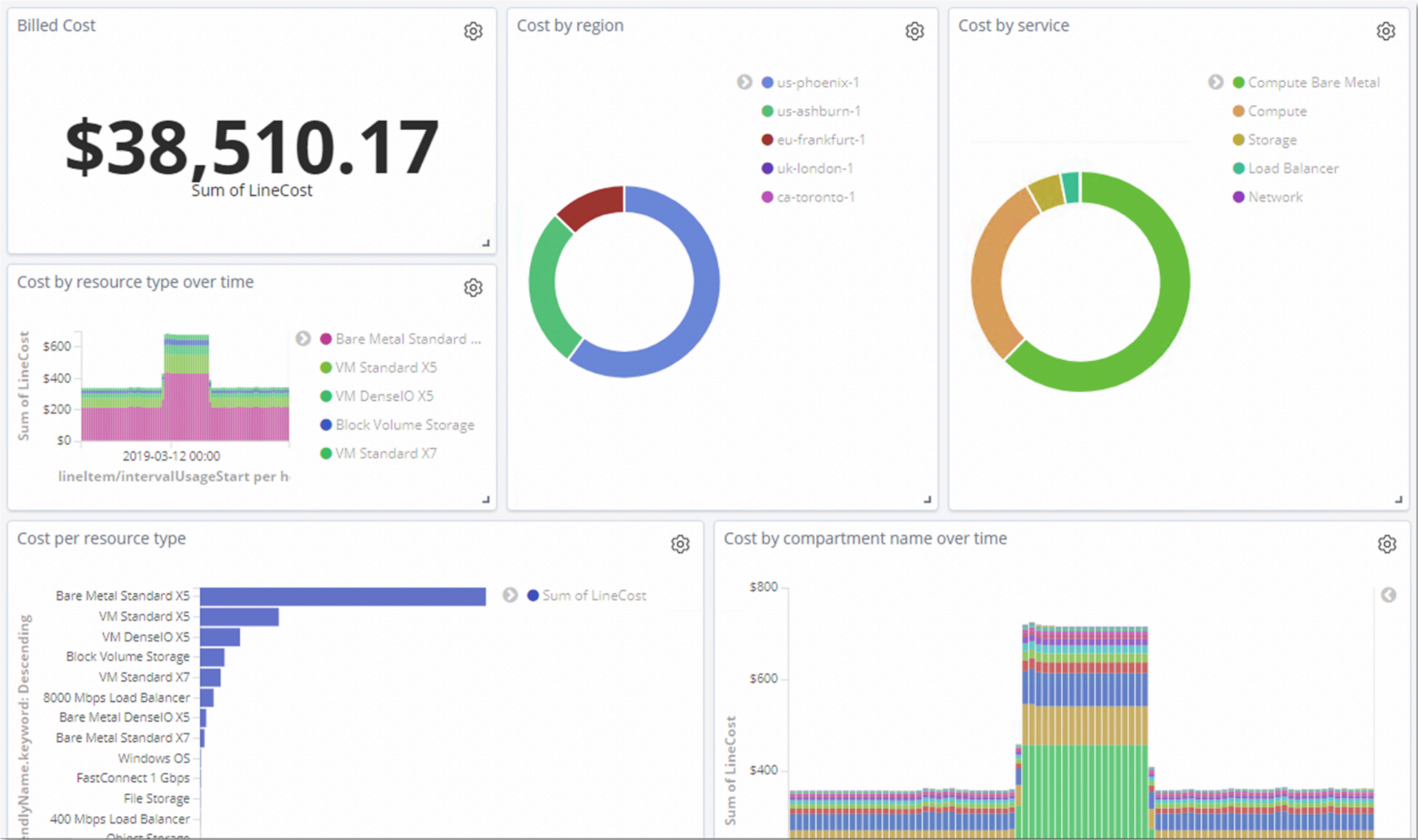
## Download using console

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

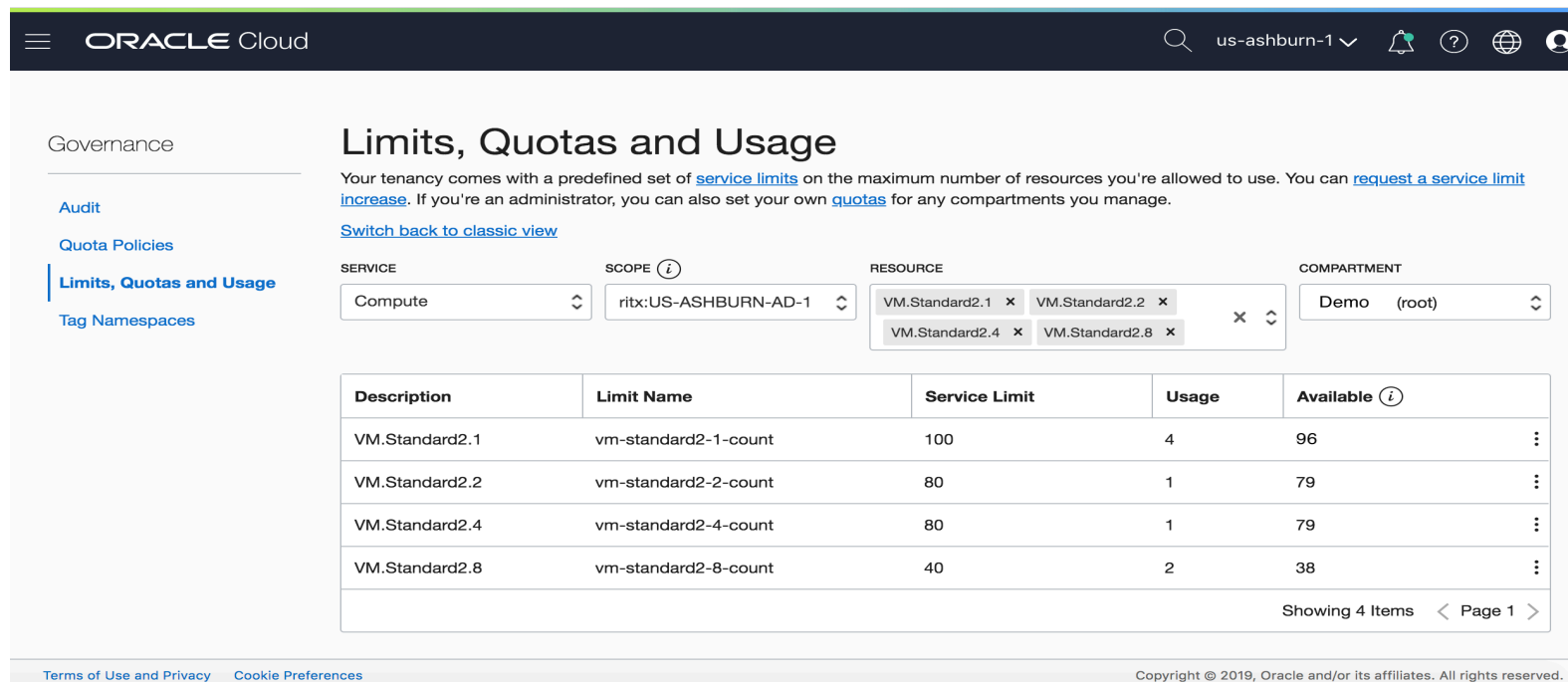
- Use the Object Storage APIs
- stored in the tenancy's home region
- Object storage namespace used for the reports is bling; the bucket name is the tenancy OCID

# 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)

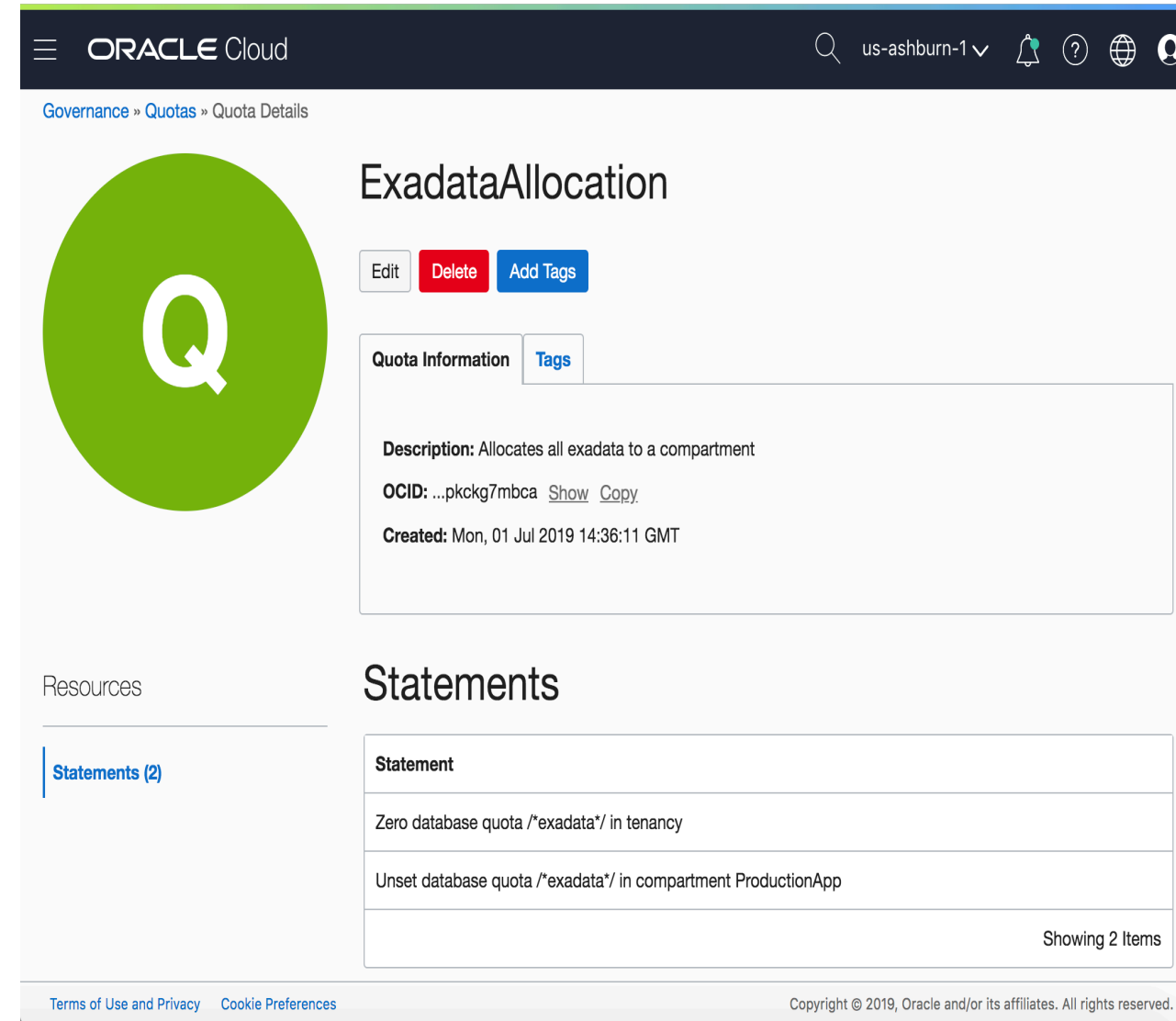
Description	Limit Name	Service Limit	Usage	Available ⓘ
VM.Standard2.1	vm-standard2-1-count	100	4	96 ⋮
VM.Standard2.2	vm-standard2-2-count	80	1	79 ⋮
VM.Standard2.4	vm-standard2-4-count	80	1	79 ⋮
VM.Standard2.8	vm-standard2-8-count	40	2	38 ⋮

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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. At the top, the Oracle Cloud logo and navigation links are visible. The breadcrumb trail indicates the path: Governance » Quotas » Quota Details. The main heading is 'ExadataAllocation'. Below this, there are buttons for 'Edit', 'Delete', and 'Add Tags'. A large green circle with a white 'Q' icon represents the quota. To the right, the 'Quota Information' tab is active, showing the description: 'Allocates all exadata to a compartment', the OCID: '...pkckg7mbca', and the creation date: 'Mon, 01 Jul 2019 14:36:11 GMT'. Below this, the 'Statements' section is visible, showing two policy 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 for 2019.

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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

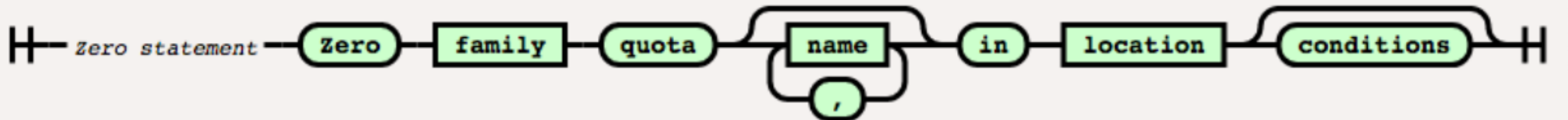
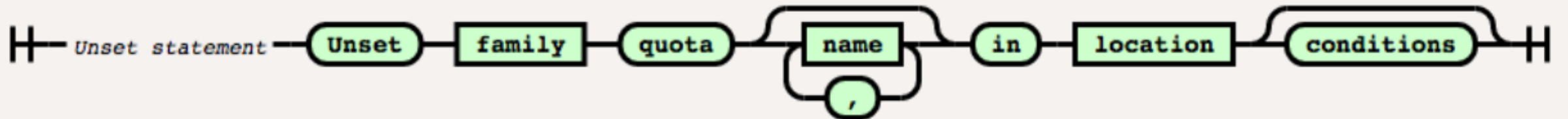
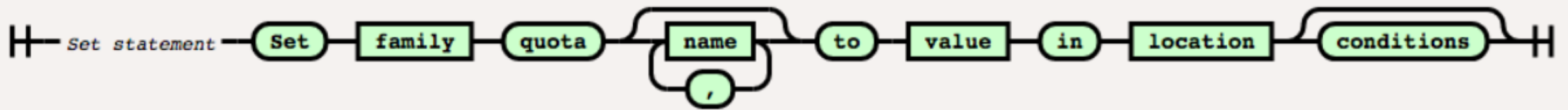
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# Quota Policies

- **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:

```
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:

```
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.



### **Oracle Cloud always free tier:**

[oracle.com/cloud/free/](https://oracle.com/cloud/free/)

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[cloud.oracle.com/en\\_US/iaas/training](https://cloud.oracle.com/en_US/iaas/training)

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[education.oracle.com/oracle-certification-path/pFamily\\_647](https://education.oracle.com/oracle-certification-path/pFamily_647)

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[ocitraining.qcloudable.com/provider/oracle](https://ocitraining.qcloudable.com/provider/oracle)

### **Oracle learning library videos on YouTube:**

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