

Como migrar os seus dados da AWS para o MySQL Database Service na Oracle Cloud

Herbert Rogério B. de Menezes

Trilha Inovação com dados em nuvem
03.12.2020 09h10

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HERBERT MENEZES



Inovação com dados em nuvem

TRILHA

#TheDevConf
Oracle



Agenda

Por que migrar do

- RDS para o
Oracle MDS?

Como migrar do

- RDS para o
Oracle MDS?

- Q&A

Safe Harbor Statement

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Agenda

Por que migrar do

- RDS para o
Oracle MDS?

Como migrar do

- RDS para o
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- Q&A

Quando você tem acesso as últimas features e patches de segurança do MySQL?

Você tem compatibilidade com o seu MySQL OnPrem?

Como ter segurança e conformidade regulatória?

Como me integro com as demais tecnologias Oracle?

Tenho suporte técnico especializado em MySQL?



Quando você tem acesso as últimas features
e patches de segurança do MySQL?

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Tenho suporte técnico especializado em MySQL?

MySQL™
Database Service



Quando você tem acesso as últimas features e patches de segurança do MySQL?

100% desenvolvido, gerenciado e mantido pelo time de MySQL

Você tem compatibilidade com o seu MySQL OnPrem?

100% compatível com MySQL On-Prem

Como ter segurança e conformidade regulatória?

MySQL Enterprise Edition

Como me integro com as demais tecnologias Oracle?

100% compatível com outras tecnologias Oracle

Tenho suporte técnico especializado em MySQL?

Oracle Premier Support + Suporte Consultivo

MySQL Database Service na Oracle Cloud Infrastructure

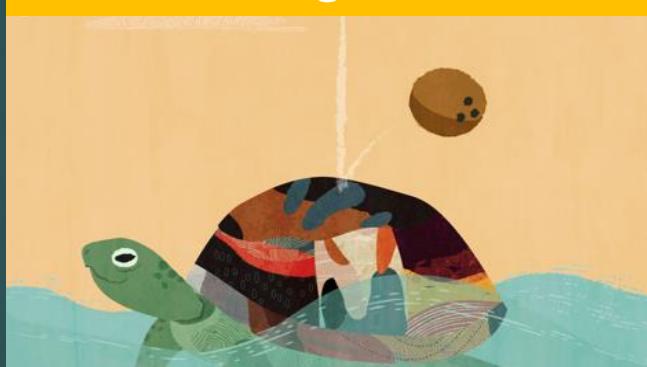
100% desenvolvido, gerenciado e mantido pelo time de MySQL

Fácil de Usar



- Serviço de banco de dados totalmente gerenciado
- Provisionamento Instantâneo
- Recursos mais recentes

Seguro



- Proteção de dados
- Segurança Avançada
- Últimas atualizações de segurança

Enterprise-Ready



- Construído com MySQL Enterprise Edition
- Compatibilidade com On-Premisse
- Construído na Gen 2 Cloud Infrastructure

MySQL Database Service: Principais usos

Novos Cloud Native Apps	Mova Bases já Existentes	Flexibilidade de uma nuvem híbrida	Aplicações SaaS
<ul style="list-style-type: none">Novas instâncias do MySQL em minutosFoco no desenvolvimento e não na administração do banco de dadosUse código aberto e Oracle Cloud Native Services	<ul style="list-style-type: none">Melhore a segurança e a capacidade de obter suporte técnico especializadoMelhorar a produtividadeEvite Shadow IT	<ul style="list-style-type: none">100% compatível com MySQL on-premisseSem ficar preso a um fork ou nuvemMova e implante cargas de trabalho na nuvem e on-premisse	<ul style="list-style-type: none">Escale globalmente de acordo com as suas necessidadesSLAs de desempenho, disponibilidade e capacidade de gerenciamento da OCISuporte técnico especializado MySQL
#1 Database for Developers*	100% Developed, Managed, Supported by MySQL team	100% Compatível	Popular com ISVs

*Stackoverflow survey

MySQL Database Service x RDS

Construído no MySQL Enterprise Edition

- Maior confiabilidade e segurança
- Suporte 24x7 da equipe MySQL

100% compatível com MySQL On-Premisse

- Implementações de nuvem híbrida
- Sem Cloud Fork Lock-in

Últimos updates de Segurança

Todas as features do MySQL

- X Dev API, MySQL Shell, Document Store

Construído na Gen 2 Oracle Cloud Infrastructure

- Segurança core-to-edge para cargas de trabalho corporativas
- Integração com tecnologias Oracle (Oracle Data Integrator, Audit Vault ...)



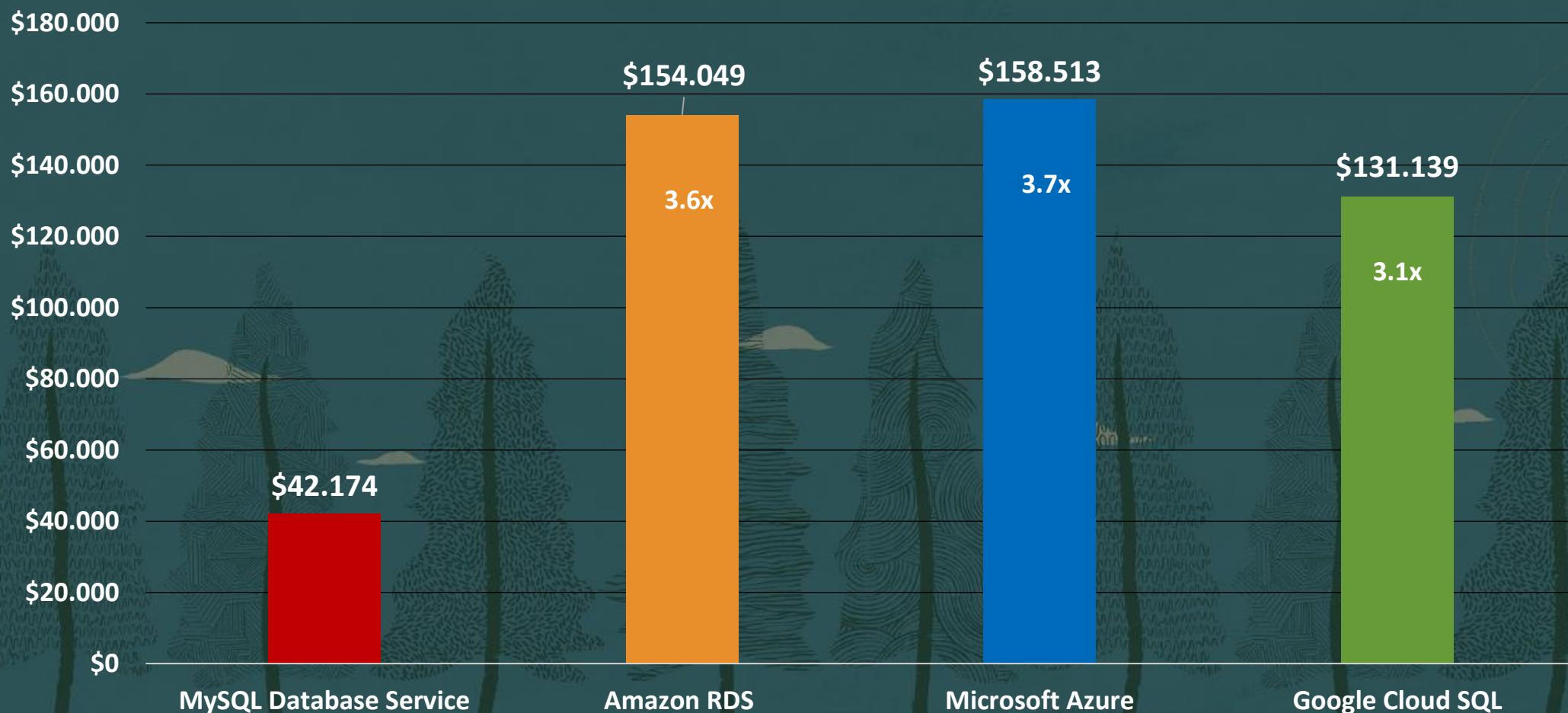
OCI: Menor preço do que outras nuvens

	Oracle	AWS
Standard Virtual Machine Instances (\$/OCPU/Hour)	\$0.0638	+49%
Bare Metal Standard (\$/OCPU/Hour)	\$0.0638	+45%
GPU Instances (\$/GPU/Hour)	\$2.25	+26%
Block Storage: Massive Perf (annual cost, 400GB 20K IOPS)	\$204	+7,900%
Internet Data Egress (50TB/Month)	\$340	+1,300%

MySQL Database Service: 1 Year TCO

100 OCPUs, 1 TB Storage

MySQL: Standard E2 AMD 8GB/Core
RDS: Intel M5 8GB/Core, [AWS US East](#),
Azure: General Purpose Intel 10GB/Core, [MS Azure US-East](#)
Google: N1 Standard Intel 7.5GB/Core, [GCP Northern Virginia](#).
Configuration: 100 OCPUs, 1TB Storage



Oracle Cloud Cost Estimator: MySQL Database Service

<https://www.oracle.com/cloud/cost-estimator.html>

▼ Oracle MySQL Database Service	\$37	trash
▼  MySQL Database	\$37	trash
Utilization		
<ul style="list-style-type: none">▶ Number of Instances / 1 Instance(s)▶ Average Days Usage per Month / 31 day(s)▶ Average Hours Usage per Day / 24 hour(s)		
Configuration		
▶ MySQL Database - Standard - E2 - OCPU Per Hour (B92425) / 1 Ocpu Per Hour	\$35	
▶ MySQL Database - Storage - Gigabyte Storage Capacity per Month (B92426) / 50 Gigabyte Storage Capacity Per Month	\$2	
▶ MySQL Database - Backup Storage - Gigabyte Storage Capacity per Month (B92483)	\$0	

Agenda

Por que migrar do

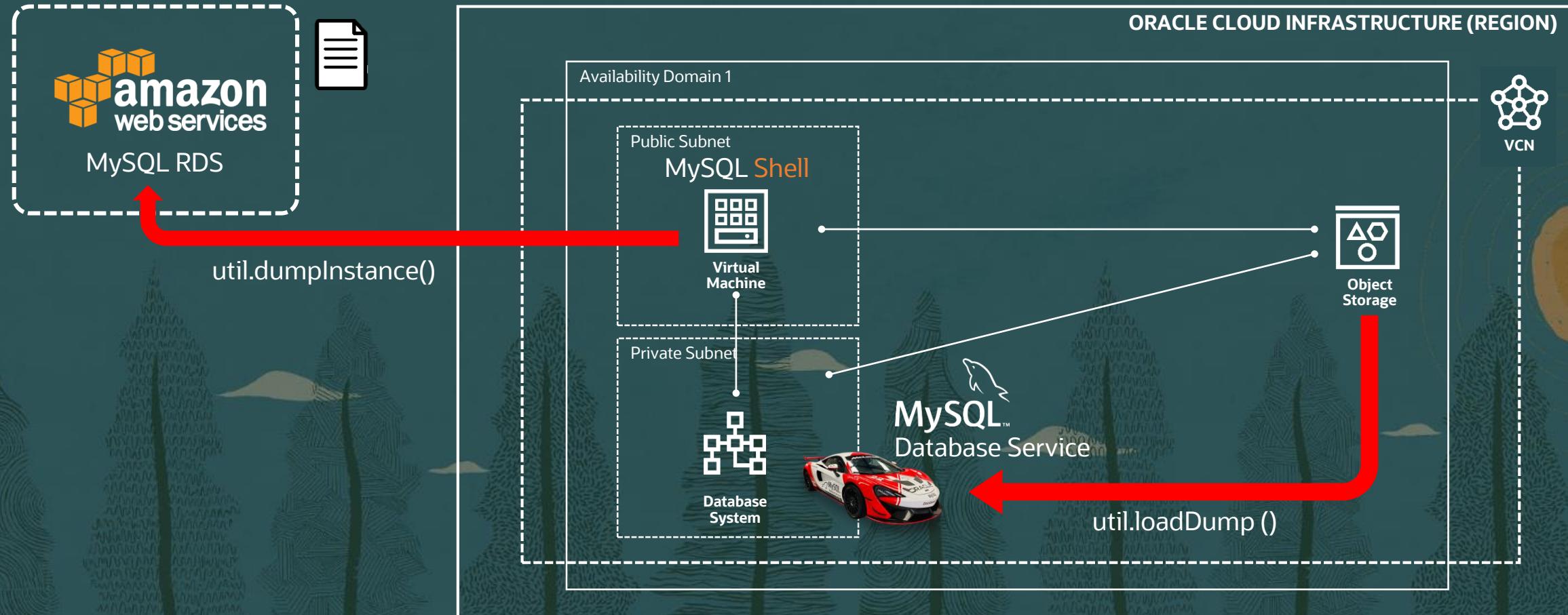
- RDS para o
Oracle MDS?

Como migrar do

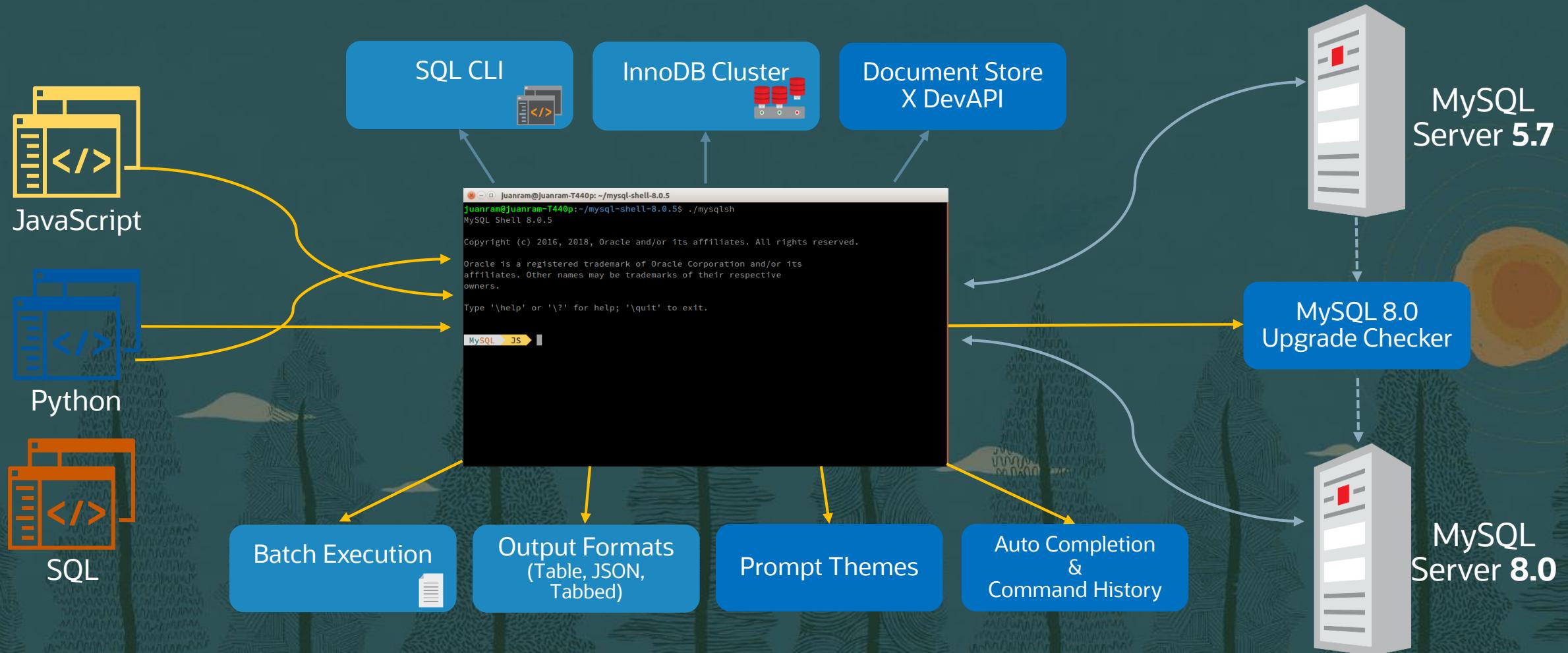
- RDS para o
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Migrando do Amazon RDS para o MySQL Database Service



MySQL Shell 8.0.21 ou superior



MySQL Shell Upgrade Checker

`util.checkForServerUpgrade()`

```
priscila.galvao — mysqlsh — 83x24
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Other names may be trademarks of their respective owners.

Type '\help' or '\?' for help; '\quit' to exit.
[ MySQL ] JS [ ] \c admin@mdb.cmafklq6vywl.us-east-2.rds.amazonaws.com:3306
Creating a session to 'admin@mdb.cmafklq6vywl.us-east-2.rds.amazonaws.com:3306'
Fetching schema names for autocomplete... Press ^C to stop.
Your MySQL connection id is 5703
Server version: 8.0.20 Source distribution
No default schema selected; type \use <schema> to set one.
[ MySQL ] mdb.cmafklq6vywl.us-east-2.rds.amazonaws [ JS ] util.checkForServerUpgrade()
The MySQL server at mdb.cmafklq6vywl.us-east-2.rds.amazonaws.com:3306, version
8.0.20 - Source distribution, will now be checked for compatibility issues for
upgrade to MySQL 8.0.21...

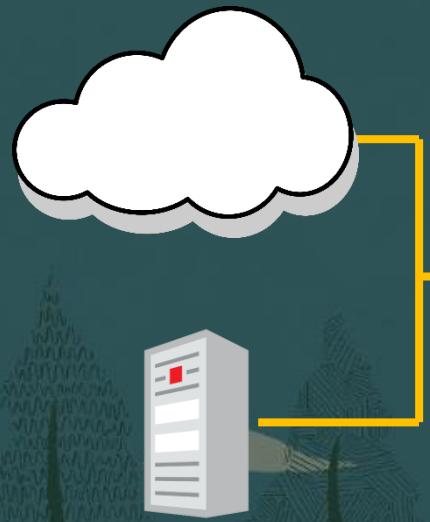
1) Issues reported by 'check table x for upgrade' command
   No issues found

Errors:  0
Warnings: 0
Notices: 0

No known compatibility errors or issues were found.
[ MySQL ] mdb.cmafklq6vywl.us-east-2.rds.amazonaws [ JS ]
```

MySQL Shell 8.0.21+ - MySQL Shell Dump & Load

Amazon, Google, Microsoft, etc.



MySQL Shell Dump & Load

```
hannan@juman:~$ ./mysql-shell 8.0.5
Juan and Juan on T440p:~/mysql-shell-8.0.5 ./mysqlsh
MySQL Shell 8.0.5

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affiliates. Other names may be trademarks of their respective
owners.

Type '\help' or '\?` for help; '\quit' to exit.

MySQL>
```

Oracle Cloud Infrastructure Gen2



MySQL Database Service

MySQL Shell 8.0.21+ - MySQL Shell Dump & Load

`util.dumpInstance()`: realiza o dump de toda instância, incluindo os usuários

`util.dumpSchemas()`: realiza o dump de um grupo de schemas

`util.loadDump()`: carrega o dump em outro banco de dados



MySQL Shell Dump & Load: Como Funciona?

- Dump **multi-thread**, dividindo grandes quantidades de dados em porções menores (chunks), com velocidades de **3GB/s** para dump e **200MB/s** para load
- Carrega os **chunks** em paralelo
- Capacidade de carga paralela enquanto o **dump** está sendo **realizado** (waitDumpTimeout)
- Abort and Resume
- Compressão de Dados Built-in (zstd & gzip)
- Dump&Load direto de/para um **Object Storage** na OCI
- Compatibilidade com o MySQL Database Service



RDS > OCI Object Storage > MDS

Passo 1: Create Bucket on OCI Object Storage

The screenshot shows the Oracle Cloud Applications Console interface. The left sidebar navigation path is:

- ORACLE Cloud
- Applications >
- Core Infrastructure
- Compute
- Block Storage
- Object Storage
- File Storage
- Networking
- Oracle Database
- Overview
- Autonomous Data Warehouse
- Autonomous JSON Database
- Autonomous Transaction Processing
- Bare Metal, VM, and Exadata
- Exadata Cloud@Customer
- Database
- MySQL
- NoSQL Database

The "Object Storage" menu item is highlighted with a teal border. A sub-menu for "Object Storage" is open, showing:

- Create an ATP database
- Store data

The main content area displays several service cards:

- AUTONOMOUS TRANSACTION PROCESSING: Create an ATP database (3-5 mins)
- AUTONOMOUS DATA WAREHOUSE: Create an ADW database (3-5 mins)
- RESOURCE MANAGER: Create a stack (2-6 mins)

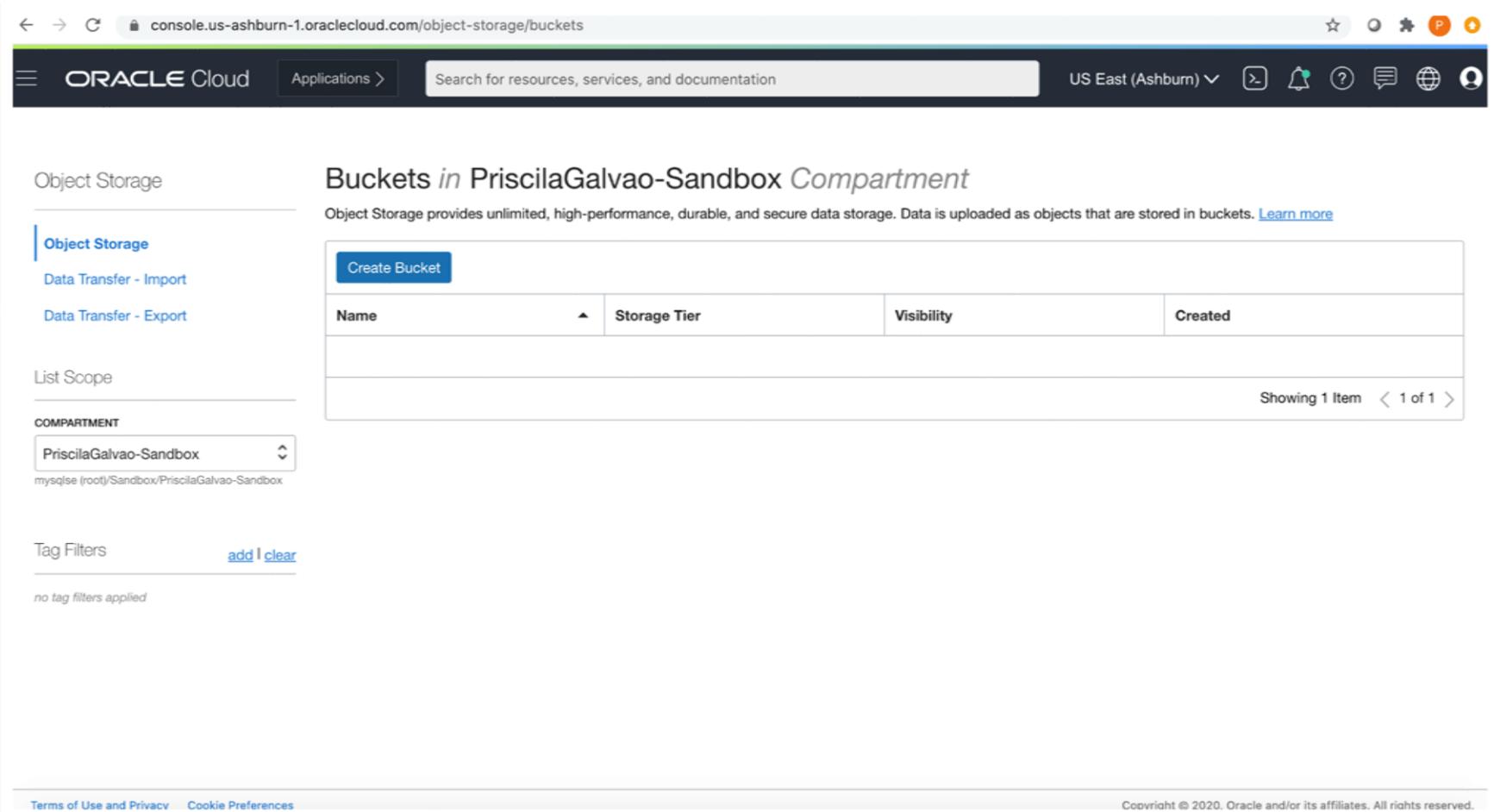
Below these cards, there are two featured sections:

- Key Concepts and Terminology DOCUMENTATION**: To get started with Oracle Cloud Infrastructure, familiarize yourself with some key concepts and terminology.
- Introduction to APEX** (FEATURED): Oracle Application Express (APEX) is a low-code development framework that enables you to rapidly build modern, data-driven apps right from your browser - no additional tools required. See how you can use APEX to develop and deploy compelling low-code apps in minutes.

The top right corner of the screen shows the status "All systems operational" and the location "US East (Ashburn)". The bottom right corner contains copyright information: "Copyright © 2020, Oracle and/or its affiliates. All rights reserved."

RDS > OCI Object Storage > MDS

Passo 1: Create Bucket on OCI Object Storage



The screenshot shows the Oracle Cloud Object Storage Buckets page. The URL in the browser is `console.us-ashburn-1.oraclecloud.com/object-storage/buckets`. The page title is "Buckets in PriscilaGalvao-Sandbox Compartment". On the left, there's a sidebar with "Object Storage" selected, followed by "Data Transfer - Import" and "Data Transfer - Export". Below that are "List Scope" and "COMPARTMENT" set to "PriscilaGalvao-Sandbox". Under "Tag Filters", it says "no tag filters applied". The main area displays a table titled "Create Bucket" with columns: Name, Storage Tier, Visibility, and Created. A single row is shown, indicating "Showing 1 Item" with "1 of 1". The row contains empty fields for Name, Storage Tier, Visibility, and Created.

RDS > OCI Object Storage > MDS

Passo 1: Create Bucket on OCI Object Storage

The screenshot shows the Oracle Cloud Object Storage 'Create Bucket' dialog. The 'BUCKET NAME' field contains 'MDS-bucket'. Under 'STORAGE TIER', 'STANDARD' is selected. In the 'OBJECT EVENTS' section, there is an unchecked checkbox for 'EMIT OBJECT EVENTS'. In the 'OBJECT VERSIONING' section, there is an unchecked checkbox for 'ENABLE OBJECT VERSIONING'. Under 'ENCRYPTION', 'ENCRYPT USING ORACLE MANAGED KEYS' is selected. The 'TAGS' section includes a link 'Learn more about tagging'. A table at the bottom shows a single tag entry: 'TAG NAMESPACE' is 'PriscilaGalvao-Sandbox', 'TAG KEY' is 'Created', and 'VALUE' is 'Thu, Aug 27, 2020, 20:45:37 UTC'. The sidebar on the left shows 'Object Storage' selected under 'Object Storage' and lists 'Data Transfer - Import', 'Data Transfer - Export', 'List Scope', and a compartment dropdown set to 'PriscilaGalvao-Sandbox'.

RDS > OCI Object Storage > MDS

Passo 1: Bucket created on OCI Object Storage

The screenshot shows the Oracle Cloud Object Storage Buckets page. On the left, there's a sidebar with 'Object Storage' navigation, including 'Object Storage' (which is selected), 'Data Transfer - Import', and 'Data Transfer - Export'. Below that are 'List Scope' and 'COMPARTMENT' dropdowns set to 'PriscilaGalvao-Sandbox'. There are also 'Tag Filters' with 'add | clear' buttons and a note 'no tag filters applied'.

The main area displays 'Buckets in PriscilaGalvao-Sandbox Compartment'. It includes a 'Create Bucket' button, a table with a single row for 'MDS-bucket' under 'Name' and 'Standard' under 'Storage Tier', and a link 'Object Storage » Bucket Details'.

A large green circle with a white letter 'B' is overlaid on the page.

On the right, there's a detailed view for the 'MDS-bucket'. It shows 'Bucket Information' with 'Visibility: Private', 'Namespace: idazzjlcjqzj', 'Storage Tier: Standard', 'Approximate Count: 20 versioned objects', 'ETag: 011b828a-d99c-4142-8fa6-10f37a73e4a0', and 'OCID: ...2xvzievq' with 'Show' and 'Copy' links. There are also buttons for 'Edit Visibility', 'Move Resource', 'Re-encrypt', 'Add Tags', and 'Delete'.

The URL at the bottom is <https://console.us-ashburn-1.oraclecloud.com/object-storage/buckets/idazzjlcjqzj/MDS-bucket/objects>.

RDS > OCI Object Storage > MDS

Passo 2: Create an oci.config file

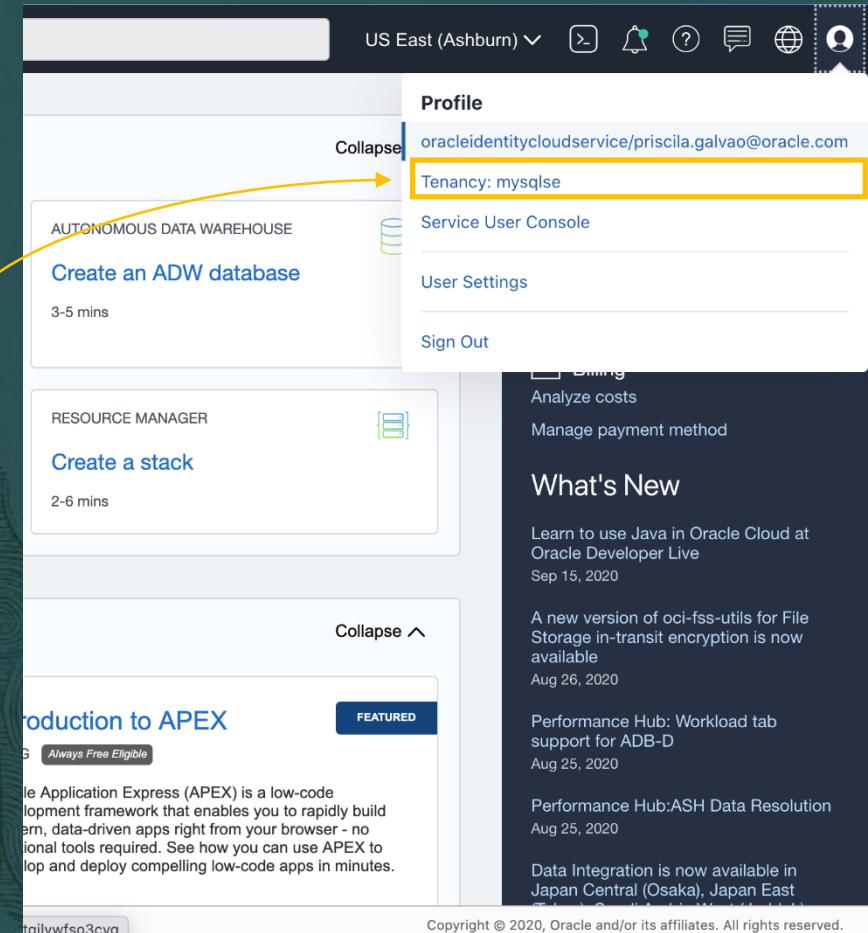
```
[DEFAULT]
user=ocid1.user.oc1..<unique_ID>
fingerprint=<your_fingerprint>
key_file=~/.oci/oci_api_key.pem
tenancy=ocid1.tenancy.oc1..<unique_ID>
region=us-ashburn-1
```

Source: <https://docs.cloud.oracle.com/en-us/iaas/Content/API/Concepts/sdkconfig.htm>

RDS > OCI Object Storage > MDS

Passo2: How to find the oci.config values

```
[DEFAULT]
user=ocid1.user.oc1..<unique_ID>
fingerprint=<your_fingerprint>
key_file=~/.oci/oci_api_key.pem
tenancy=ocid1.tenancy.oc1..<unique_ID>
region=us-ashburn-1
```



RDS > OCI Object Storage > MDS

Passo 2: How to find the oci.config values

The screenshot shows the Oracle Cloud Administration interface at console.us-ashburn-1.oraclecloud.com/tenancy. The page displays tenancy details for a compartment named "mysqlse".

Tenancy Information:

- OCID:** ...5rieiq (highlighted with a yellow box)
- Name:** mysqlse
- Audit Retention Period:** 365 Days
- Home Region:** US East (Ashburn)
- CSI Number:** 22229856

Object Storage Settings:

- Amazon S3 Compatibility API Designated Compartment:** mysqlse (root)
- SWIFT API Designated Compartment:** mysqlse (root)
- Object Storage Namespace:** idazzjlcjqzj

Manage Regions or Service Limits:

To manage or subscribe to new regions for Infrastructure or Platform Services, go to [Manage Regions](#). To view your Service Limits, go to [Limits, Quotas and Usage](#).

[Terms of Use and Privacy](#) [Cookie Preferences](#)

RDS > OCI Object Storage > MDS

Passo 2: Create a public/private key

To generate the key with no passphrase:

Copy

```
openssl genrsa -out ~/.oci/oci_api_key.pem 2048
```

Generate the public key:

Copy

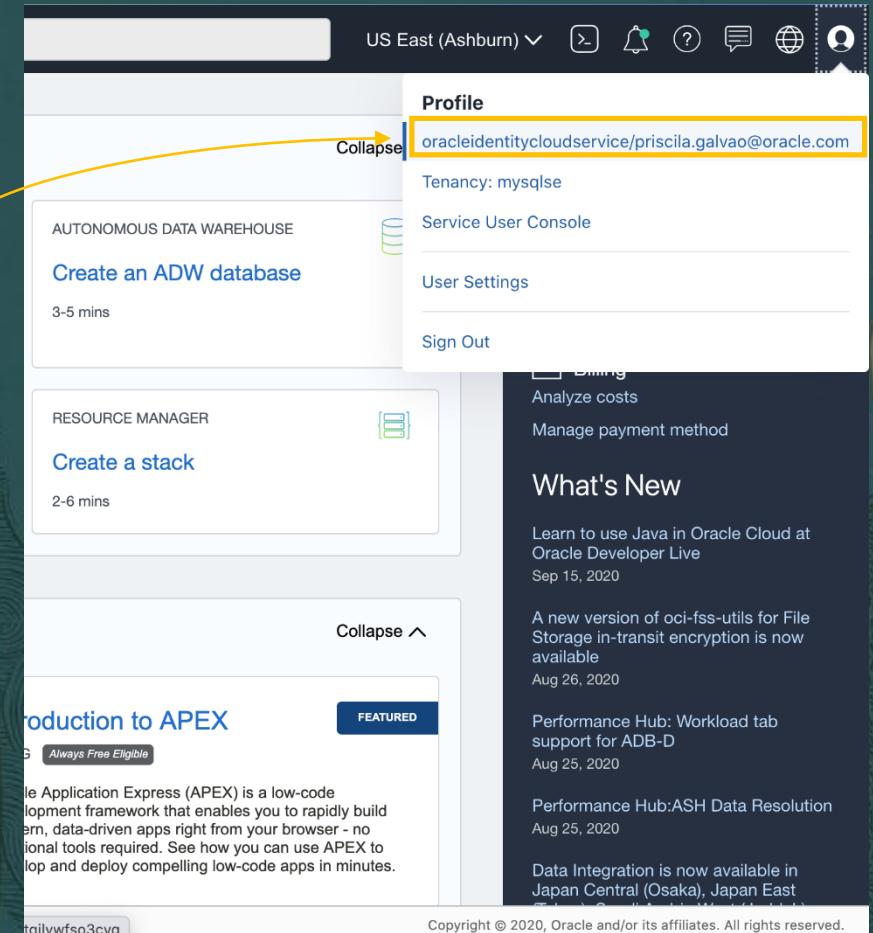
```
openssl rsa -pubout -in ~/.oci/oci_api_key.pem -out ~/.oci/oci_api_key_public.pem
```

Source: <https://docs.cloud.oracle.com/en-us/iaas/Content/API/Concepts/apisigningkey.htm#two>

RDS > OCI Object Storage > MDS

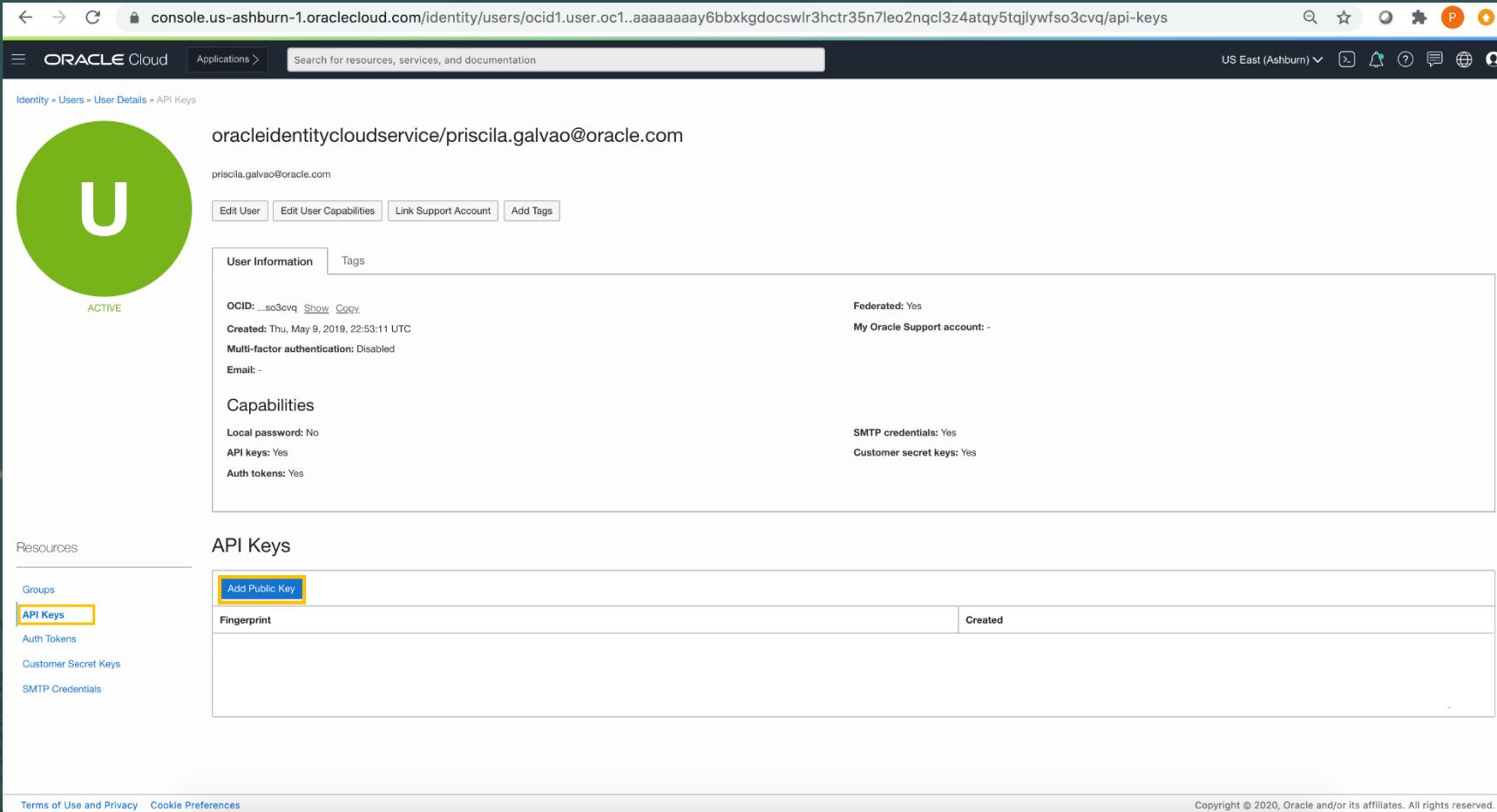
Passo 2: Create a public/private key

```
[DEFAULT]
user=ocid1.user.oc1..<unique_ID>
fingerprint=<your_fingerprint>
key_file=~/.oci/oci_api_key.pem
tenancy=ocid1.tenancy.oc1..<unique_ID>
region=us-ashburn-1
```



RDS > OCI Object Storage > MDS

Passo 2: Add API key to your user



The screenshot shows the Oracle Cloud Identity interface for managing user API keys. The URL in the browser is `console.us-ashburn-1.oraclecloud.com/identity/users/ocid1.user.oc1..aaaaaaaaay6bbxkgdocsuir3hctr35n7leo2nql3z4atqy5tqjlywfso3cvq/api-keys`. The page displays a user profile for `oracleidentitycloudservice/priscila.galvao@oracle.com`. The 'User Information' tab is selected, showing details like OCID, creation date, and capabilities. The 'API Keys' tab is also visible. On the left sidebar, the 'API Keys' option is highlighted with a yellow box. At the top of the main content area, there is a blue button labeled 'Add Public Key'.

RDS > OCI Object Storage > MDS

Passo 2: Copy the fingerprint to add to your oci.config file

```
[DEFAULT]
user=ocid1.user.oc1..<unique_ID>
fingerprint=<your_fingerprint>
key_file=~/.oci/oci_api_key.pem
tenancy=ocid1.tenancy.oc1..<unique_ID>
region=us-ashburn-1
```

The screenshot shows the Oracle Cloud Identity interface. On the left, there is a sidebar with a green circular icon containing a white 'U' and the word 'ACTIVE'. Below it are sections for 'Groups', 'API Keys' (which is selected and highlighted in blue), 'Auth Tokens', 'Customer Secret Keys', and 'SMTP Credentials'. The main content area shows a user profile for 'oracleidentitycloudservice/priscila.galvao@oracle.com'. The profile includes fields for 'User Information' (OCID, Created date, Multi-factor authentication status, Email), 'Capabilities' (Local password, API keys, Auth tokens), and 'Federated' (My Oracle Support account). Below this is a table titled 'API Keys' with two entries. The first entry has a yellow arrow pointing to its 'Fingerprint' field, which contains two redacted lines. The second entry shows 'Created' dates of 'Thu, Jun 11, 2020, 20:58:44 UTC' and 'Tue, Sep 1, 2020, 21:04:04 UTC'. At the bottom of the page are links for 'Terms of Use and Privacy' and 'Cookie Preferences'.

RDS > OCI Object Storage > MDS

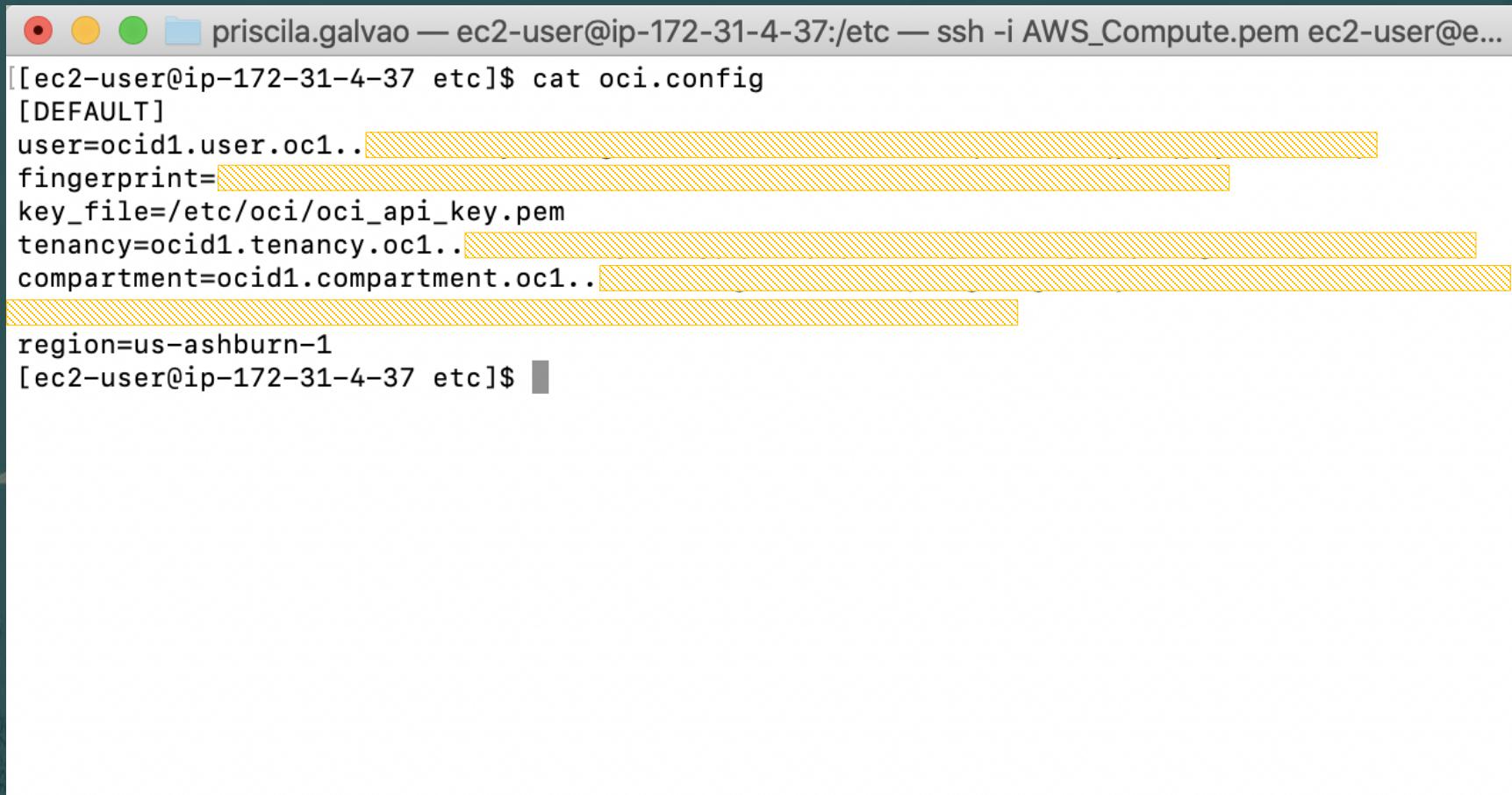
Passo 3: Connect to AWS EC2 Compute

```
priscila.galvao — ec2-user@ip-172-31-4-37:~ — ssh -i AWS_Compute.pem ec2-user@ec2...
[Priscilas-MBP:~ priscila.galvao$ ssh -i AWS_Compute.pem ec2-user@ec2-3-129-24-205.us-east-]
2.compute.amazonaws.com
The authenticity of host 'ec2-3-129-24-205.us-east-2.compute.amazonaws.com (3.129.24.205)'
can't be established.
ECDSA key fingerprint is SHA256:tAzrPTyTJV07FKZv30m+hzNsqKhLgXlHzdoP01Rf6ew.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'ec2-3-129-24-205.us-east-2.compute.amazonaws.com,3.129.24.205'
(ECDSA) to the list of known hosts.
This system is not registered to Red Hat Insights. See https://cloud.redhat.com/
To register this system, run: insights-client --register

Last login: Tue Sep  8 22:26:51 2020 from 66.90.216.148
[ec2-user@ip-172-31-4-37 ~]$
```

RDS > OCI Object Storage > MDS

Passo 3: Create an oci.config file on AWS EC2 Compute



```
priscila.galvao — ec2-user@ip-172-31-4-37:/etc — ssh -i AWS_Compute.pem ec2-user@e...
[[ec2-user@ip-172-31-4-37 etc]$ cat oci.config
[DEFAULT]
user=ocid1.user.oc1..[REDACTED]
fingerprint=[REDACTED]
key_file=/etc/oci/oci_api_key.pem
tenancy=ocid1.tenancy.oc1..[REDACTED]
compartment=ocid1.compartment.oc1..[REDACTED]
[REDACTED]
region=us-ashburn-1
[ec2-user@ip-172-31-4-37 etc]$ ]]
```

RDS > OCI Object Storage > MDS

Passo 4: Connect from EC2 to RDS using MySQL Shell

```
priscila.galvao — ec2-user@ip-172-31-4-37:/etc — ssh -i AWS_Compute.pem ec2-user@e...
[[ec2-user@ip-172-31-4-37 etc]$ mysqlsh
MySQL Shell 8.0.21

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Type '\help' or '\?' for help; '\quit' to exit.
[ MySQL | JS ] \c admin@mdb.cmafk1q6vywl.us-east-2.rds.amazonaws.com:3306
Creating a session to 'admin@mdb.cmafk1q6vywl.us-east-2.rds.amazonaws.com:3306'
[Please provide the password for 'admin@mdb.cmafk1q6vywl.us-east-2.rds.amazonaws.com:3306']:
*****
Fetching schema names for autocompletion... Press ^C to stop.
Your MySQL connection id is 5150
Server version: 8.0.20 Source distribution
No default schema selected; type \use <schema> to set one.
MySQL | mdb.cmafk1q6vywl.us-east-2.rds.amazonaws.com:3306 ssl | JS ]
```

RDS > OCI Object Storage > MDS

Passo 5: Dump from RDS directly into OCI Object Storage (using oci.config file)

```
[ MySQL ] mdb.cmafk1q6vywl.us-east-2.rds.amazonaws.com:3306 ssl priscila.galvao — ec2-user@ip-172-31-4-37:/etc — ssh -i AWS_Compute.pem ec2-user@e...  
[ MySQL ] mdb.cmafk1q6vywl.us-east-2.rds.amazonaws.com:3306 ssl priscila.galvao — ec2-user@ip-172-31-4-37:/etc — ssh -i AWS_Compute.pem ec2-user@e...  
ld', {ociConfigFile: "/etc/oci.config",  
jqzj", threads:1, dryRun:false, consistencyLevel: "strong", compatibility:[ "strip_restricted_grants" ], thds dumping - 37% (2.00K rows / ~5.27K rows), 641.00 rows/s, 22.82 KB/s uncompressed, 0  
compatibility:[ "strip_restricted_grants" ], thds dumping - 75% (4.00K rows / ~5.27K rows), 641.00 rows/s, 22.82 KB/s uncompressed, 0  
Checking for compatibility with MySQL Databases: 1 thds dumping - 77% (4.08K rows / ~5.27K rows), 641.00 rows/s, 22.82 KB/s uncompressed, 0  
NOTE: User admin@% had restricted privileges: 1 thds dumping - 81% (4.32K rows / ~5.27K rows), 1.17K rows/s, 47.64 KB/s uncompressed, 16  
NOTE: User rdsadmin@localhost had restricted privileges: 1 thds dumping - 100% (5.30K rows / ~5.27K rows), 1.17K rows/s, 47.64 KB/s uncompressed, 1  
BINLOG_ADMIN) removed 1 thds dumping - 100% (5.30K rows / ~5.27K rows), 1.23K rows/s, 47.64 KB/s uncompressed, 1  
NOTE: Database world had unsupported ENCS: 6.86 KB/s compressed  
Compatibility issues with MySQL Database  
view the changes made before loading the Duration: 00:00:04s  
Writing global DDL files  
Writing users DDL  
Preparing data dump for table `world`.`city` Schemas dumped: 1  
Writing DDL for schema `world` Tables dumped: 3  
Data dump for table `world`.`city` will be compressed by 3.1 Uncompressed data size: 194.62 KB  
Preparing data dump for table `world`.`country` Uncompressed data size: 62.42 KB  
Data dump for table `world`.`country` will be compressed by 3.1 Compressed data size: 62.42 KB  
Preparing data dump for table `world`.`countrylang` Compressed data size: 62.42 KB  
Data dump for table `world`.`countrylang` will be compressed by 3.1 Bytes written: 62.42 KB  
Running data dump using 1 thread.  
NOTE: Progress information uses estimates. Compression ratio: 3.1  
Writing DDL for table `world`.`city`  
Writing DDL for table `world`.`country` Rows written: 5302  
Writing DDL for table `world`.`countrylang`  
Data dump for table `world`.`city` will be compressed by 3.1 Bytes written: 62.42 KB  
Data dump for table `world`.`country` will be compressed by 3.1 Bytes written: 62.42 KB  
Data dump for table `world`.`countrylang` Average uncompressed throughput: 45.20 KB/s  
Average compressed throughput: 14.50 KB/s
```

RDS > OCI Object Storage > MDS

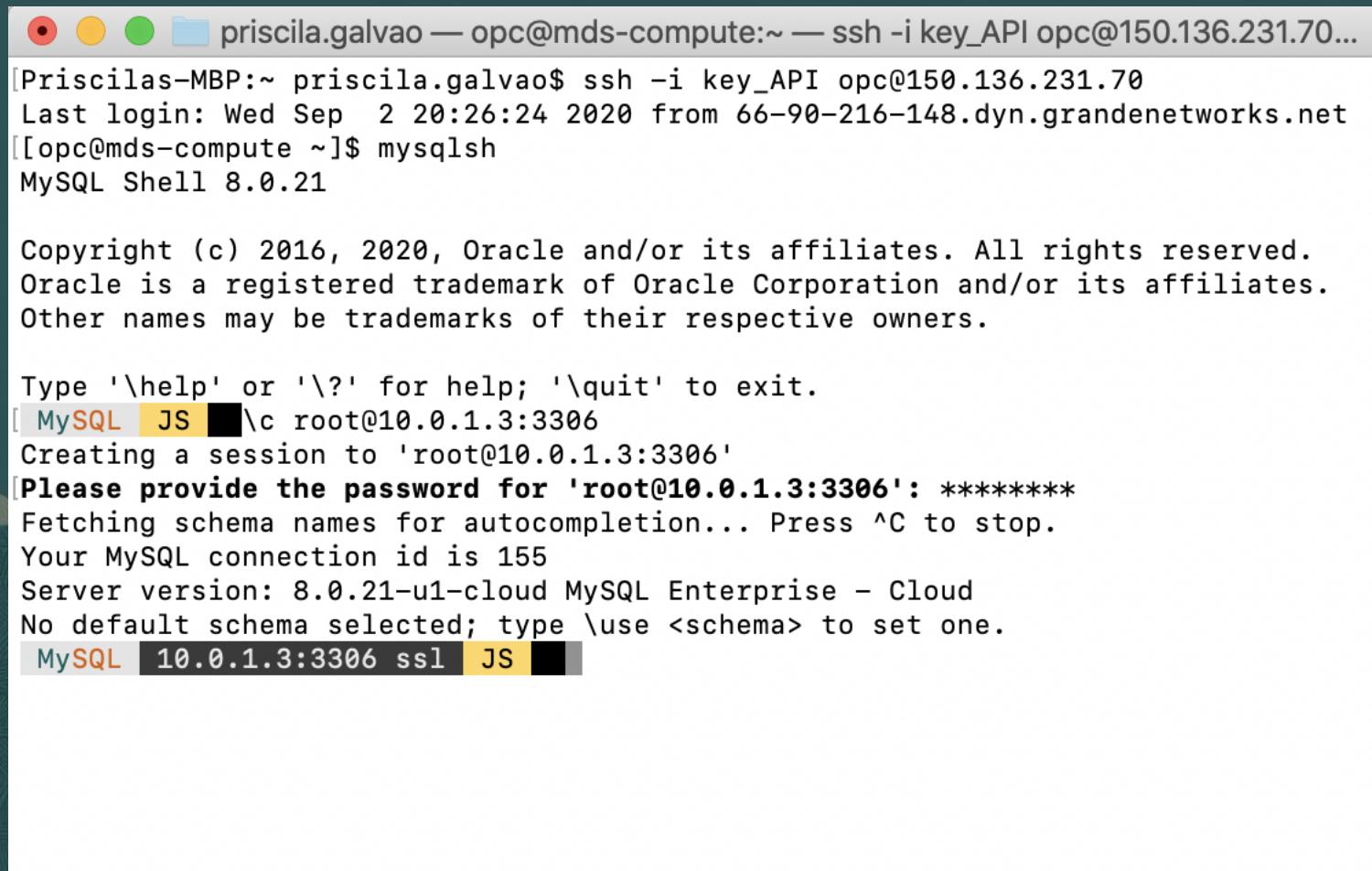
Passo 6: Check dump files created into OCI Bucket

The screenshot shows the Oracle Cloud Object Storage Bucket Details page for a bucket named 'MDS-bucket'. The page has a header with the URL 'console.us-ashburn-1.oraclecloud.com/object-storage/buckets/idazzjlcjqzj/MDS-bucket/objects'. Below the header is a navigation bar with tabs for 'Bucket Information' and 'Tags'. The 'Bucket Information' tab is selected, displaying details such as Visibility: Private, Namespace: idazzjlcjqzj, Storage Tier: Standard, Approximate Count: 16 versioned objects, ETag: 011b828a-d99c-4142-8fa6-10f37a73e4a0, and OCID: ...2xvzieqv. It also shows encryption details like Oracle managed key assigned, Created: Thu, Aug 27, 2020, 20:45:37 UTC, Compartment: PriscilaGalvao-Sandbox, Approximate Size: 92.32 KB, and Emit Object Events: Disabled. Object Versioning is set to Suspended. On the left, there's a sidebar with 'Resources' sections for 'Objects', 'Metrics', 'Pre-Authenticated Requests', 'Work Requests', 'Lifecycle Policy Rules', 'Replication Policy', and 'Retention Rules'. The main content area is titled 'Objects' and lists 16 objects with their names, last modified times, sizes, and statuses. The objects include various JSON and SQL files related to a 'world' dataset.

Name/Version ID	Last Modified	Size	Status
world@.done.json	Tue, Sep 8, 2020, 23:23:48 UTC	216 bytes	Available
world@.json	Tue, Sep 8, 2020, 23:23:45 UTC	644 bytes	Available
world@.post.sql	Tue, Sep 8, 2020, 23:23:45 UTC	275 bytes	Available
world@.sql	Tue, Sep 8, 2020, 23:23:45 UTC	275 bytes	Available
world@.users.sql	Tue, Sep 8, 2020, 23:23:46 UTC	3.68 kB	Available
world/world.json	Tue, Sep 8, 2020, 23:23:45 UTC	381 bytes	Available
world/world.sql	Tue, Sep 8, 2020, 23:23:46 UTC	594 bytes	Available
world/world@city.json	Tue, Sep 8, 2020, 23:23:46 UTC	626 bytes	Available
world/world@city.sql	Tue, Sep 8, 2020, 23:23:46 UTC	993 bytes	Available
world/world@city@0.tsv.zst	Tue, Sep 8, 2020, 23:23:47 UTC	67.08 kB	Available
world/world@city@0.tsv.zst.idx	Tue, Sep 8, 2020, 23:23:47 UTC	72 bytes	Available
world/world@country.json	Tue, Sep 8, 2020, 23:23:47 UTC	878 bytes	Available
world/world@country.sql	Tue, Sep 8, 2020, 23:23:46 UTC	1.32 kB	Available

RDS > OCI Object Storage > MDS

Passo 7: Connect to MySQL Shell from OCI Compute



```
priscila.galvao — opc@mds-compute:~ — ssh -i key_API opc@150.136.231.70...
[Priscilas-MBP:~ priscila.galvao$ ssh -i key_API opc@150.136.231.70
Last login: Wed Sep  2 20:26:24 2020 from 66-90-216-148.dyn.grandenetworks.net
[[opc@mds-compute ~]$ mysqlsh
MySQL Shell 8.0.21

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Type '\help' or '\?' for help; '\quit' to exit.
[ MySQL ] JS [root@10.0.1.3:3306]
Creating a session to 'root@10.0.1.3:3306'
[Please provide the password for 'root@10.0.1.3:3306': *****
Fetching schema names for autocomplete... Press ^C to stop.
Your MySQL connection id is 155
Server version: 8.0.21-u1-cloud MySQL Enterprise - Cloud
No default schema selected; type \use <schema> to set one.
[ MySQL ] 10.0.1.3:3306 ssl [ JS ]
```

RDS > OCI Object Storage > MDS

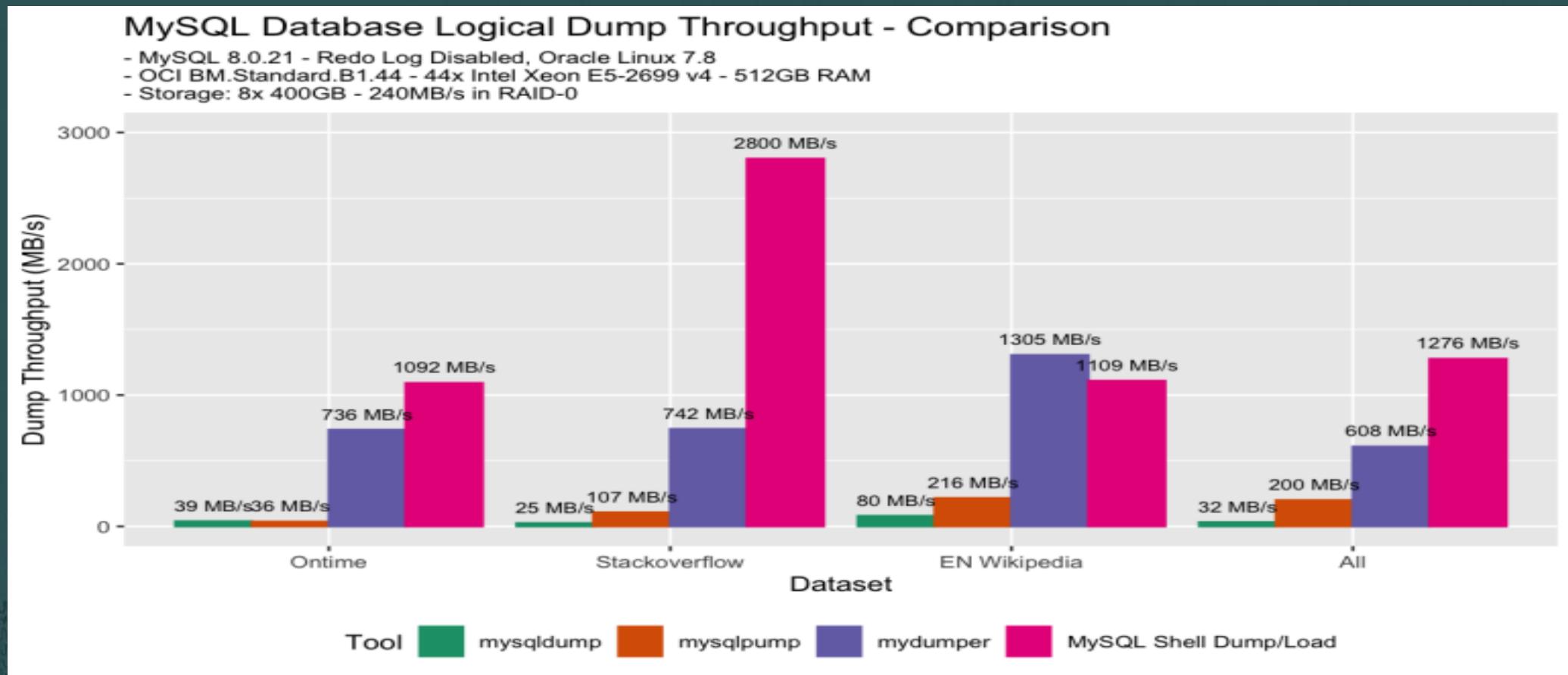
Passo 8: Load dump from OCI Object Storage into MDS instance

```
priscila.galvao — opc@mds-compute:/etc — ssh -i key_API opc@150.136.231.7...
No default schema selected; type \use <schema> to set one.
[ MySQL | 10.0.1.3:3306 ssl JS ] util.loadDump("world", {ociConfigFile: "/etc/oci
.config", osBucketName:"MDS-bucket", osNamespace: "idazzjlcjqzj", threads:1})
Loading DDL and Data from OCI ObjectStorage bucket=MDS-bucket, prefix='world' us
ing 1 thread.
Target is MySQL 8.0.21-u1-cloud. Dump was produced from MySQL 8.0.20
Checking for pre-existing objects...
Executing common preamble SQL
Executing DDL script for schema `world`
Executing DDL script for `world`.`countrylanguage`
Executing DDL script for `world`.`country`
Executing DDL script for `world`.`city`
[Worker000] world@city@@0.tsv.zst: Records: 4079 Deleted: 0 Skipped: 0 Warnin
gs: 0
[Worker000] world@country@@0.tsv.zst: Records: 239 Deleted: 0 Skipped: 0 Warn
ings: 0
[Worker000] world@countrylanguage@@0.tsv.zst: Records: 984 Deleted: 0 Skipped:
 0 Warnings: 0
Executing common postamble SQL

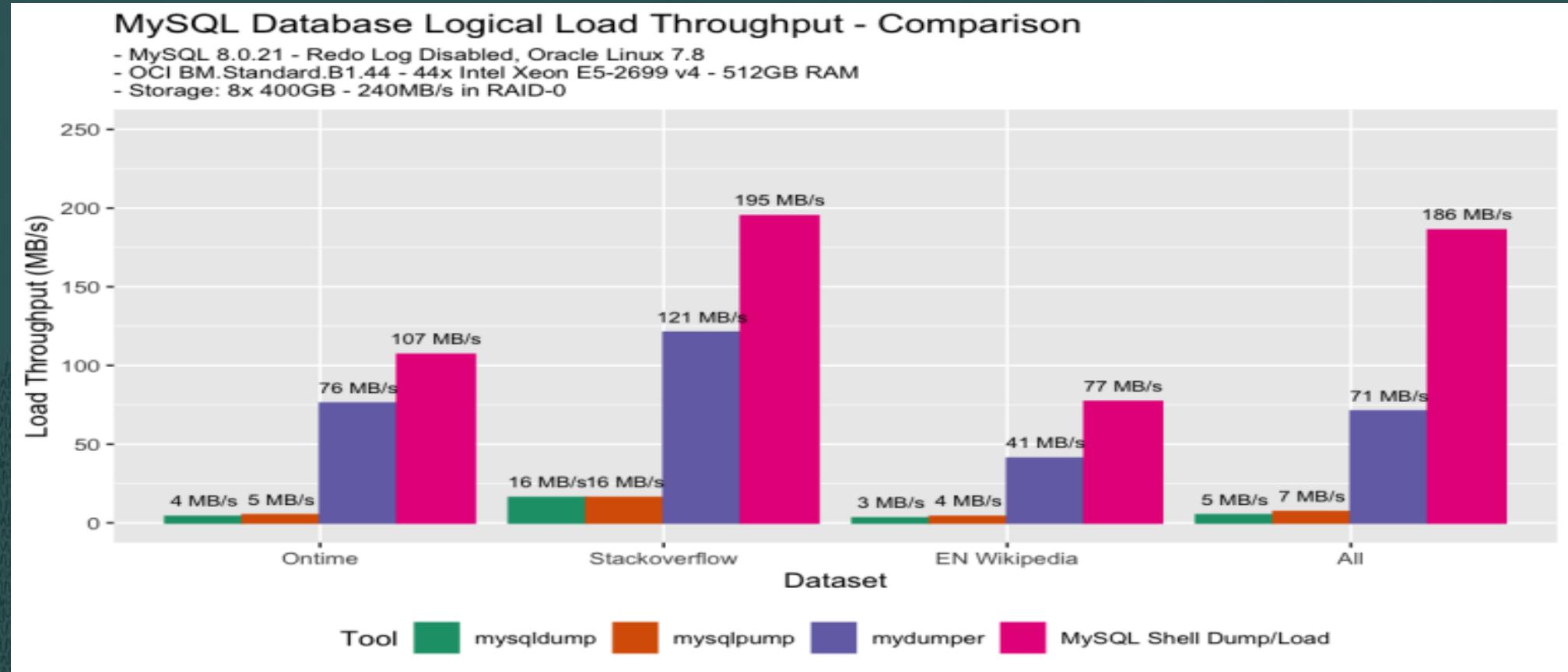
3 chunks (5.30K rows, 194.62 KB) for 3 tables in 1 schemas were loaded in 3 sec
(avg throughput 64.87 KB/s)
0 warnings were reported during the load.
MySQL | 10.0.1.3:3306 ssl JS
```



MySQL Shell Dump & Load – Benchmarks



MySQL Shell Dump & Load – Benchmarks



Considerações finais

- Sempre use as ferramentas MySQL Shell Dump & Load
- Verifique a compatibilidade com o MySQL 8.0
- Verifique o tamanho da sua base de dados
- Configure sua conexão segura de rede



Agenda

Por que migrar do

- RDS para o
Oracle MDS?

Como migrar do

- RDS para o
Oracle MDS?

- Q&A



Inovação com dados em nuvem

COMO MIGRAR OS SEUS DADOS DA AWS
PARA O MYSQL DATABASE SERVICE
NA ORACLE CLOUD

