

# Acelerando o seu negócio com MySQL HeatWave e Oracle Analytics Cloud

**Herbert Rogério B. de Menezes**

Trilha Inovação com dados em nuvem

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**Herbert Rogério B. Menezes**  
Engenheiro de Soluções  
Oracle MySQL



[linkedin.com/in/herbertrbmenezes](https://linkedin.com/in/herbertrbmenezes)



# Inovação com dados em nuvem

TRILHA

#TheDevConf  
Oracle



# Agenda

Introdução ao MySQL Database Service e HeatWave

Introdução ao Oracle Analytics Cloud

Criando um solução analítica 100% Cloud Native na OCI

Q&A





# Introdução ao MySQL Database Service e HeatWave



## GPL2 License Model

- Commercial Subscription
- Oracle Premier Support
  - Consultative Support
  - MySQL Enterprise Monitor
  - MySQL Enterprise Backup
  - MySQL Enterprise DataMasking
  - MySQL Enterprise Audit
  - MySQL Enterprise Firewall
  - MySQL Enterprise Encryption
  - MySQL Enterprise TDE
  - MySQL Enterprise Authentication
  - MySQL Enterprise Thread Pool

# MySQL<sup>TM</sup>

## Database Service



100% desenvolvido, gerenciado  
e mantido pelo time de MySQL

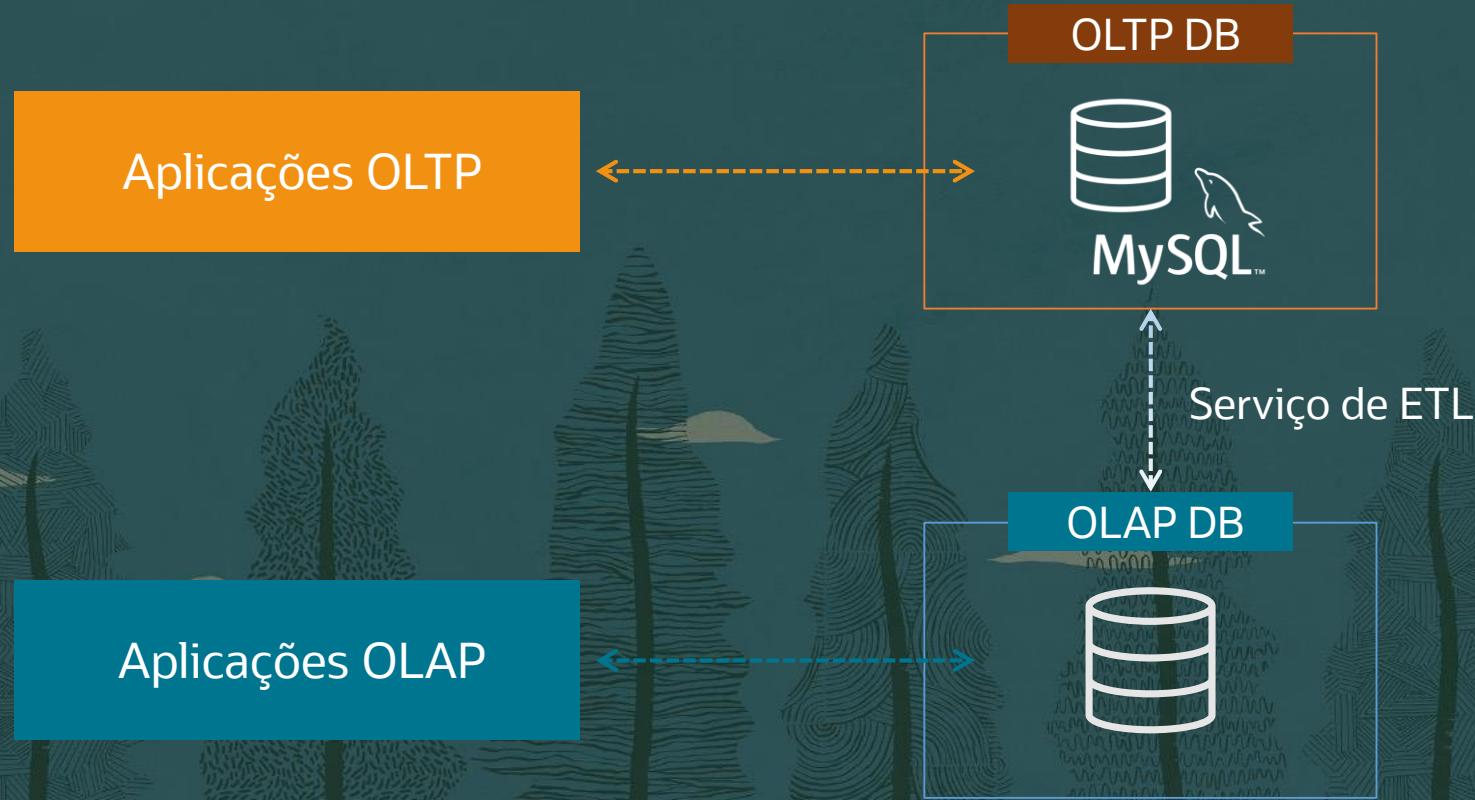
100% compatível com MySQL On-Prem

MySQL Enterprise Edition

100% compatível com outras  
tecnologias Oracle

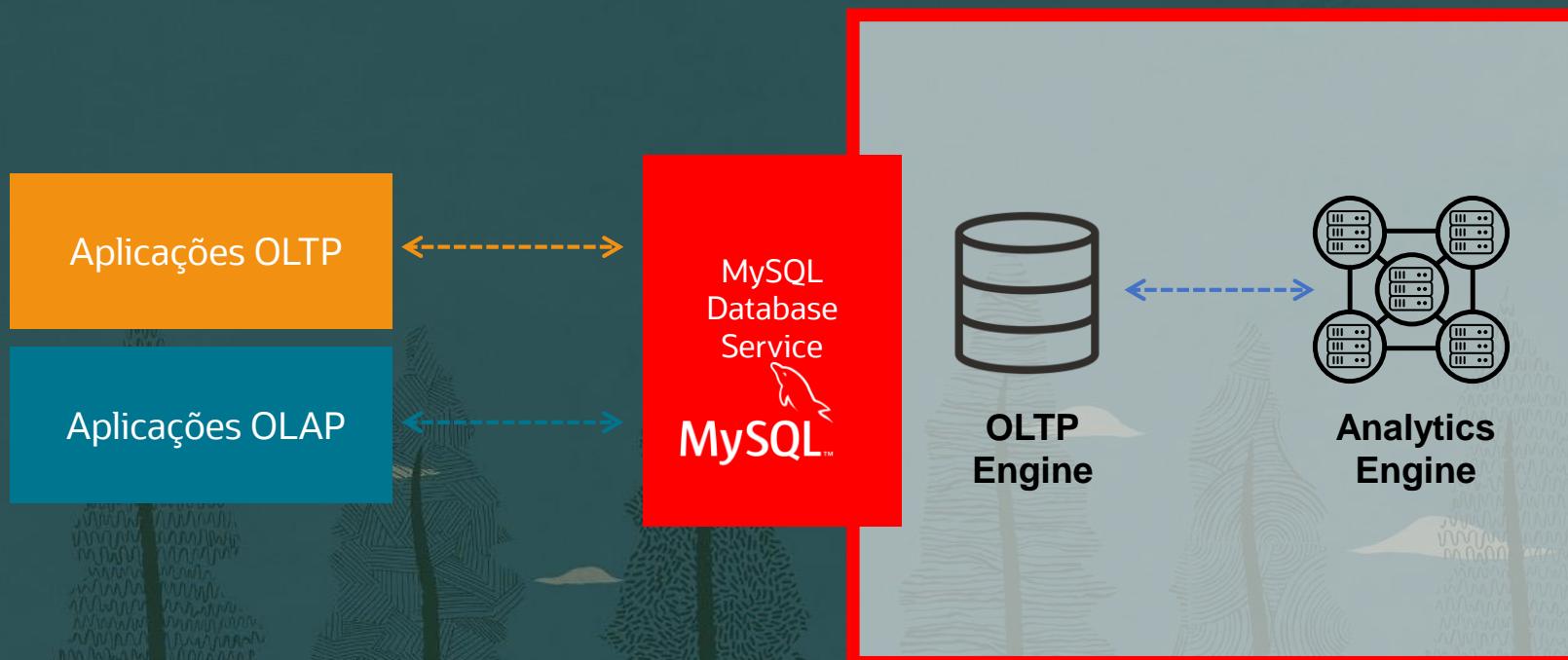
Oracle Premier Support + Suporte  
Consultivo

# Problema: Como fazer o MySQL trabalhar com OLTP e OLAP?



# MySQL Database Service com HeatWaveAnalytics Engine

Execute queries analíticas de alta performance no MySQL sem necessidade de ETL

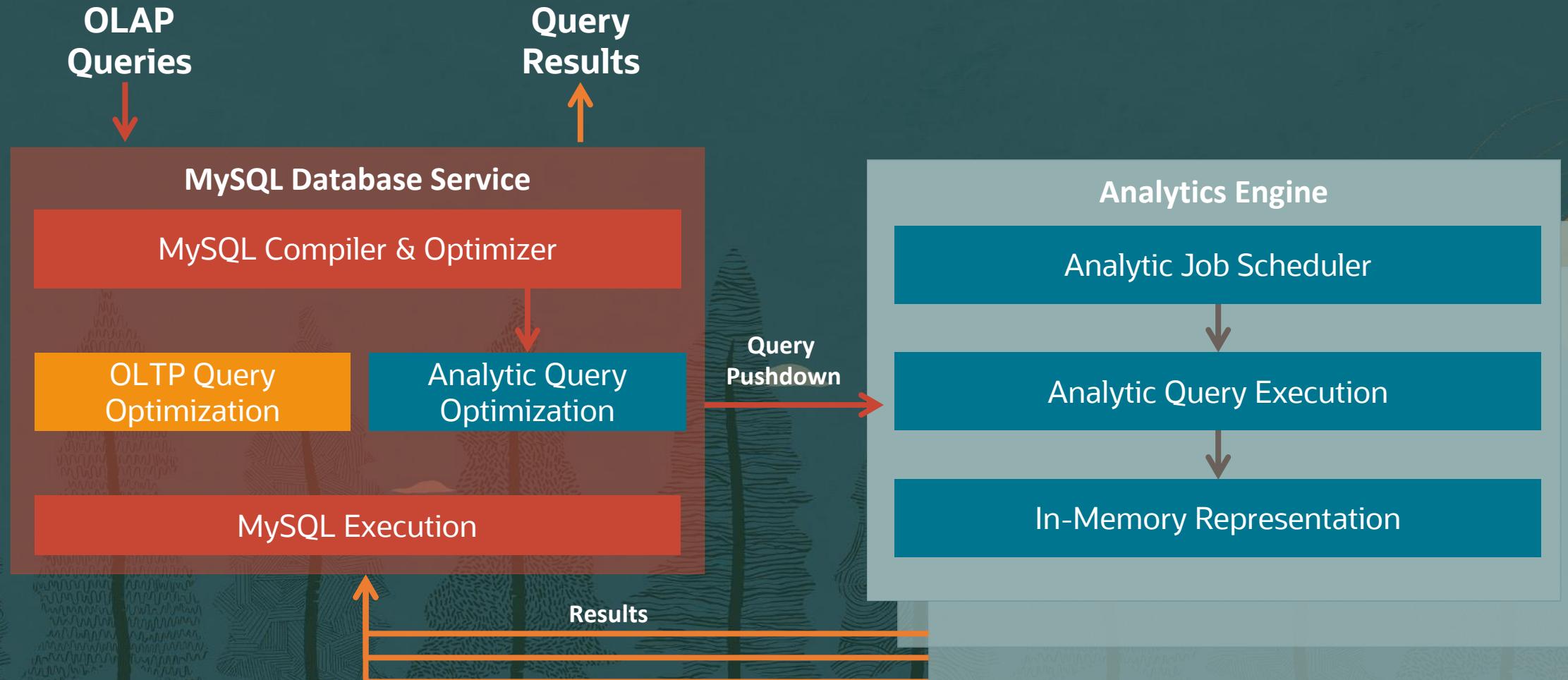


Um único banco de dados MySQL para aplicações OLTP e Analíticas

As suas aplicações legadas continuam funcionando sem a necessidade de alterações

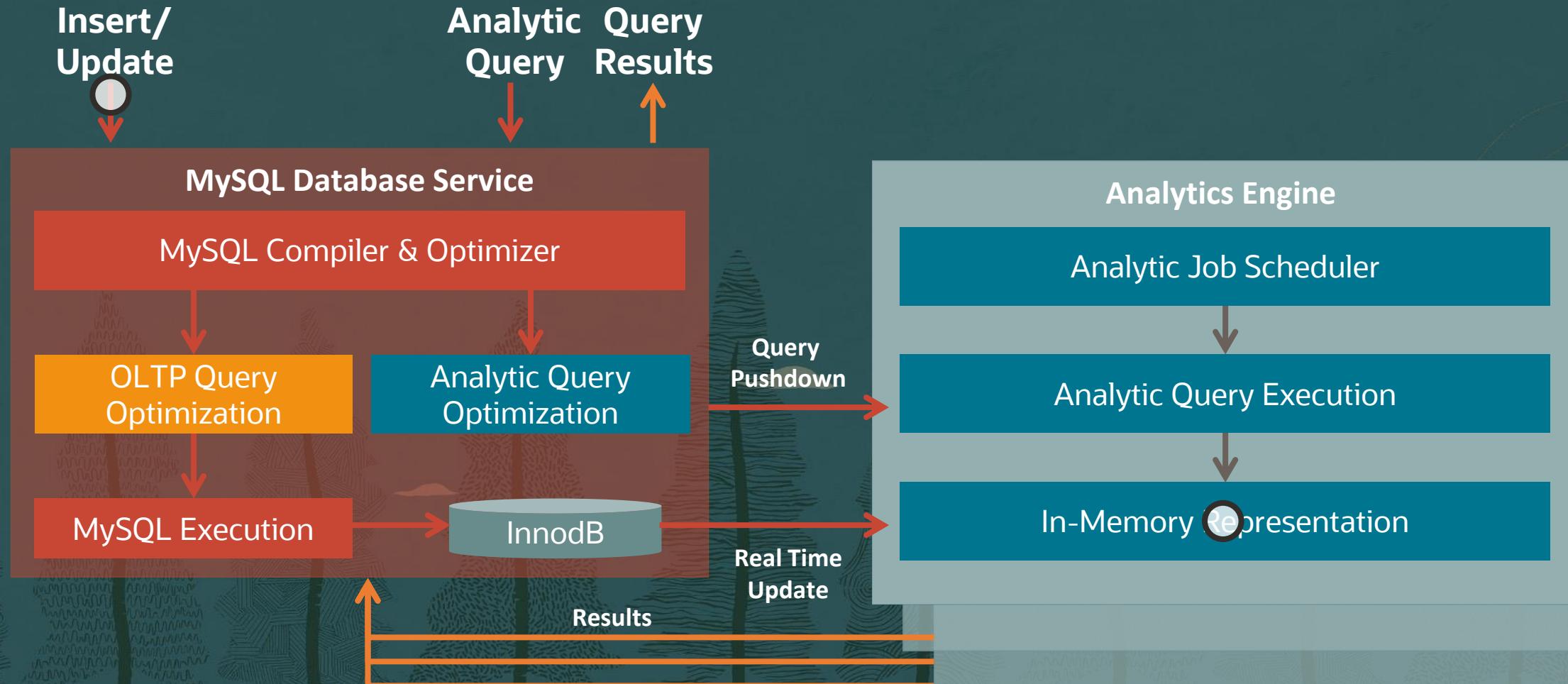
Alta performance: 400x mais rápido que o MySQL "tradicional"

# Um solução nativa de alta performance usando um motor in-memory



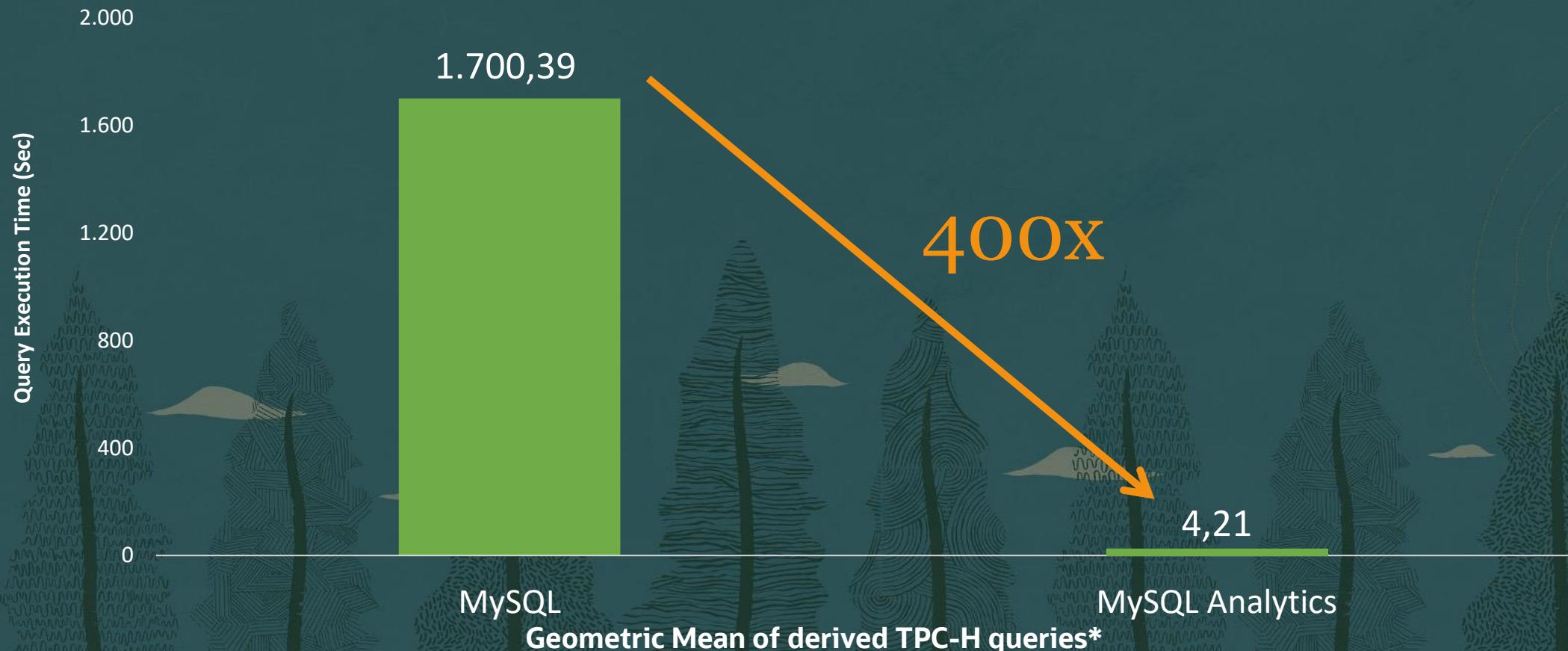
# Queries OLAP em tempo real

Os dados inseridos no MySQL estão disponíveis para queries analíticas



# Extremamente mais performático

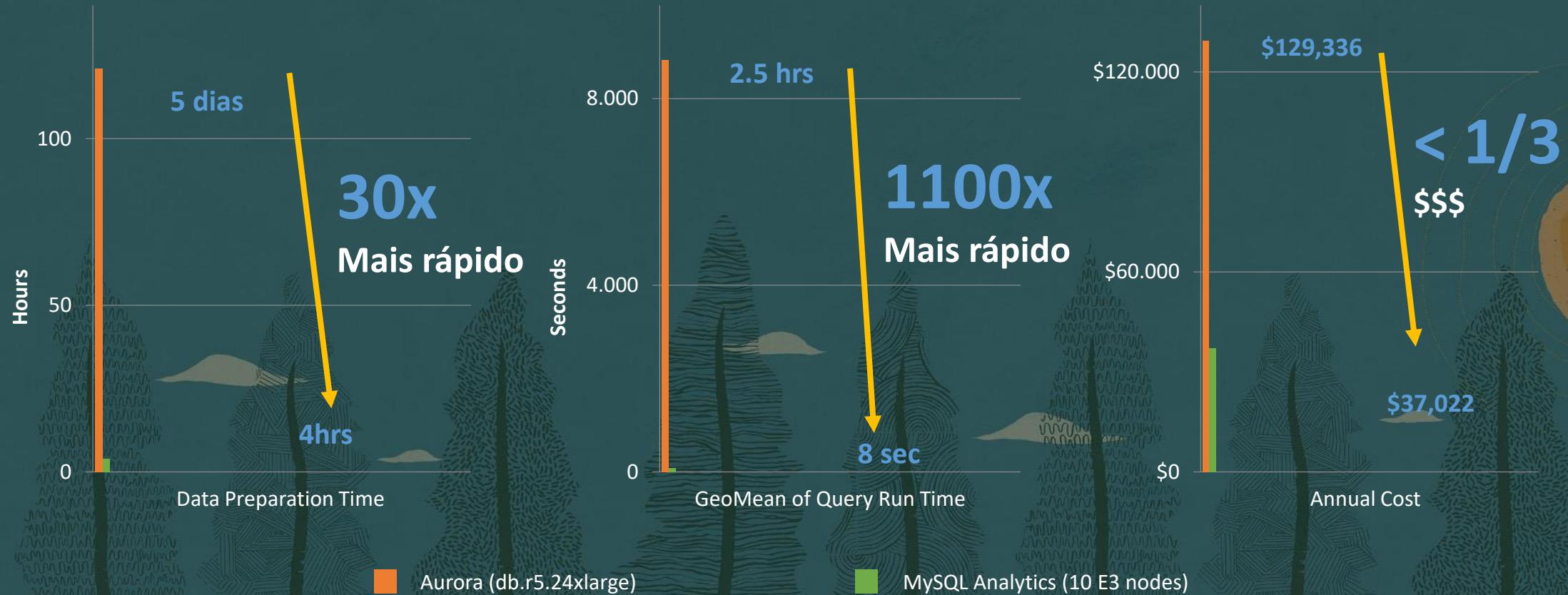
400G, 64 cores



\*Benchmark queries are derived from the TPC-H benchmark, but results are not comparable to published TPC-H benchmark results since they do not comply with the TPC-H specification

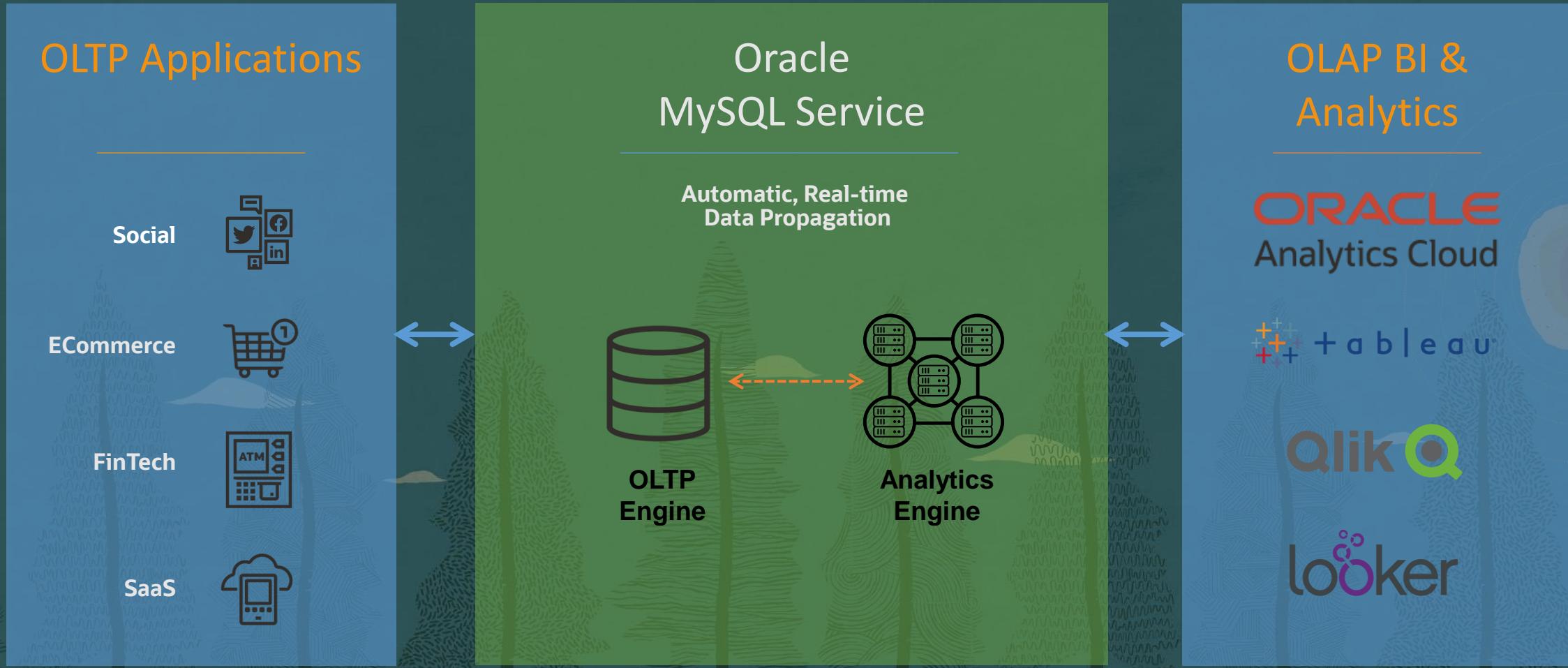
# MySQL HeatWave vs. Amazon Aurora

4TB



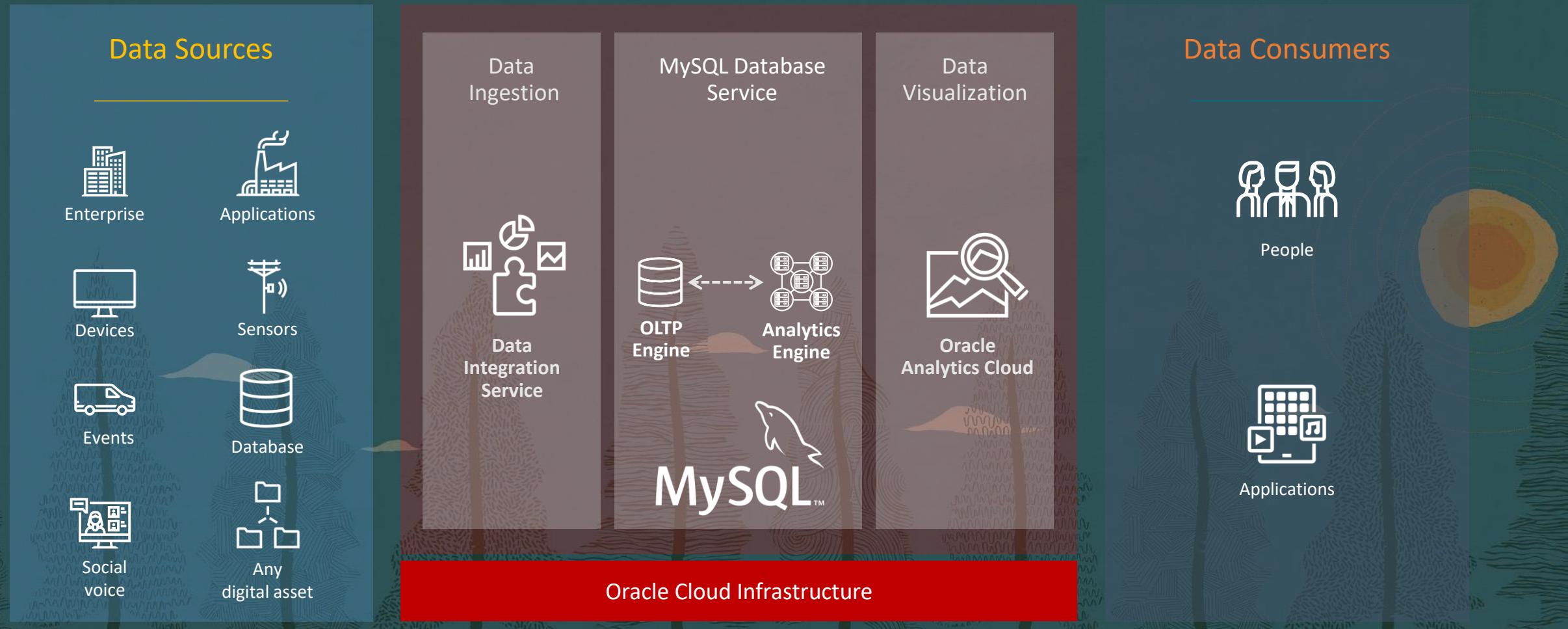
\*Benchmark queries are derived from TPC-H benchmark, but results are not comparable to published TPC-H benchmark results since they do not comply with TPC-H specification.

# Uma arquitetura completa utilizando somente o MySQL



# MySQL Database Service com outros serviços da Oracle Cloud

Uma solução End-to-end, desde a entrada dos dados até a visualização





# Introdução ao Oracle Analytics Cloud

# Visualização rápida dos dados

Insights Inteligentes e Instantâneos

Preparação automatizada de dados

Análise avançada preditiva e integrada

Colaboração e publicação

**ORACLE**  
Analytics Cloud

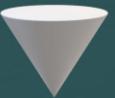




**Criando uma solução analítica 100%  
Cloud Native na OCI com o MDS e o OAC**

# Criando uma solução analítica 100% Cloud Native na OCI com o MySQL Database Service e o Oracle Analytics Cloud

Criar uma instância do  
MySQL Database Service



Home | Oracle Cloud Infrastructure X HeatWave X

https://cloud.oracle.com/?region=ca-toronto-1

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Get Started Dashboard

Quick Actions

COMPUTE Create a VM instance (2-6 mins)

AUTONOMOUS TRANSACTION PROCESSING Create an ATP database (3-5 mins)

AUTONOMOUS DATA WAREHOUSE Create an ADW database (3-5 mins)

NETWORKING Set up a network with a wizard (2-3 mins)

RESOURCE MANAGER Create a stack (2-6 mins)

OBJECT STORAGE Store data (2-6 mins)

NETWORKING Set up a load balancer (5 mins)

ORACLE CLOUD DEVELOPMENT KIT Set up an instance with developer tools (10-15 mins)

SEARCH View all my resources

Collage ▲

Start Exploring

Get Started →

Key Concepts and Terminology DOCUMENTATION

To get started with Oracle Cloud Infrastructure, familiarize yourself with some key concepts and terminology.

Introduction to APEX FEATURED

BLOG Always Free Eligible

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

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All systems operational View health dashboard

Install the OCI Mobile app Learn more

Account Center

User Management Add a user to your tenancy

Billing Analyze costs Manage payment method

What's New

Friendly formatting now available for email subscriptions Mar 9, 2021

SMS notifications available Mar 9, 2021

System load and memory allocation stalls metrics for compute instances Mar 8, 2021

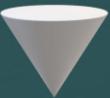
VPN Connect logging is now available Mar 8, 2021

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View release notes...

# Criando uma solução analítica 100% Cloud Native na OCI com o MySQL Database Service e o Oracle Analytics Cloud

Criar uma instância do  
MySQL Database Service



Carregar os dados no  
MySQL Database Service



Adicionar um  
cluster HeatWave





## mds\_heatwave

Edit Start Stop Restart More Actions ▾

### MySQL DB System Information

Tags

#### General Information

OCID: ...ocin34qy3a [Show](#) [Copy](#)

Description: -

Compartment: [HerbertMenezes-Sandbox](#)

Created: Wed, Mar 17, 2021, 19:32:48 UTC

#### DB System Configuration

Shape: MySQL.HeatWave.VM.Standard.E3 [i](#)

OCPU Count: 16

Memory: 512 GB

Storage Size: 1 TB

MySQL Version: 8.0.23-u2-cloud

Configuration: [MySQL.HeatWave.VM.Standard.E3.Standalone](#)

#### Backup

Automatic Backups: Disabled [Enable](#)

Retention Days: 7

Backup Window: 00:00 UTC

#### Networking

Virtual Cloud Network: [vcnsp1](#)

Subnet: [Private Subnet-vcnsp1](#)

Subnet Type: Regional

#### Endpoint

Connect to the MySQL DB System using the endpoint below and a MySQL client application. [Learn more](#)

Private IP Address: 10.0.1.3 [Copy](#) [i](#)

Internal FQDN: mysql... [Show](#) [Copy](#)

Availability Domain: YOIV:SA-SAOPAULO-1-AD-1

Fault Domain: FAULT-DOMAIN-3

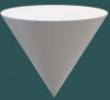
MySQL Port: 3306

MySQL X Protocol Port: 33060



# Criando uma solução analítica 100% Cloud Native na OCI com o MySQL Database Service e o Oracle Analytics Cloud

Criar uma instância do MySQL Database Service



Carregar os dados no MySQL Database Service



Adicionar um cluster HeatWave



Carregar suas tabelas no HeatWave



Preparar suas tabelas para usar o HeatWave



Criar uma instância do Oracle Analytics Cloud



Salvamento Automático MySQL Database Service HeatWave Hands-on Labs — Salvo no meu Mac

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## Get Started

Dashboard

### Quick Actions

Collapse ^

COMPUTE



[Create a VM instance](#)

2-6 mins

AUTONOMOUS TRANSACTION PROCESSING



[Create an ATP database](#)

3-5 mins

AUTONOMOUS DATA WAREHOUSE



[Create an ADW database](#)

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2-6 mins

OBJECT STORAGE



[Store data](#)

2-6 mins

NETWORKING



[Set up a load balancer](#)

5 mins

ORACLE CLOUD DEVELOPMENT KIT



[Set up an instance with developer tools](#)

10-15 mins

SEARCH



[View all my resources](#)

### Start Exploring

Collapse ^

Get Started

Deploy Websites & Apps

Explore Developer Tools

Manage Bills

#### Key Concepts and Terminology

DOCUMENTATION

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Mar 9, 2021

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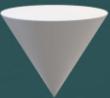
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Per-image permissions for custom images  
Mar 5, 2021

View release notes...

# Criando uma solução analítica 100% Cloud Native na OCI com o MySQL Database Service e o Oracle Analytics Cloud

Criar uma instância do MySQL Database Service



Carregar os dados no MySQL Database Service



Adicionar um cluster HeatWave



Carregar suas tabelas no HeatWave



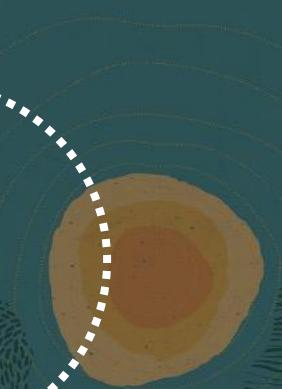
Preparar suas tabelas para usar o HeatWave



Criar uma instância do Oracle Analytics Cloud



Criar um Private Access Channel



Analytics Cloud | Oracle Cloud X HeatWave X

https://cloud.oracle.com/analytics/instances/ocid1.analyticsinstance.oc1.sa-saopaulo-1.aaaaaaaaahjf6n76vsinxumtaycuqqk3dvmhaueryoheidxrlextelouuhda?region=sa-saopaulo-1

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**OAC** ACTIVE

**Instance Details** Additional Details Tags

**Basic Information**

**OCID:** ...xtelouuhda Show Copy

**Compartment:** mysqlse (root)/Sandbox/HerbertMenezes-Sandbox

**Created:** Mon, Mar 22, 2021, 00:06:55 UTC

**Capacity:** 2 OCPUs

**Feature set:** Enterprise Analytics

**License Type:** License included

**Network**

**Access Type:** Public i

**Access Control Rules:** Not Configured Edit

**Access Information**

**URL:** <https://oacdemo-idazzjcjgzj-gr...> Show Copy

**Vanity URL:** Create Vanity URL

**Resources**

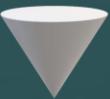
**Activity Log**

Action	Status	Started	Duration
CREATE_ANALYTICS_INSTANCE	SUCCEEDED	Mon, Mar 22, 2021, 00:07:05 UTC	11 min 24 s

Showing 1 Item < 1 of 1 >

# Criando uma solução analítica 100% Cloud Native na OCI com o MySQL Database Service e o Oracle Analytics Cloud

Criar uma instância do MySQL Database Service



Carregar os dados no MySQL Database Service



Adicionar um cluster HeatWave



Carregar suas tabelas no HeatWave



Preparar suas tabelas para usar o HeatWave



Criar uma instância do Oracle Analytics Cloud



Criar um Private Access Channel



Criar uma conexão para o MySQL Database Service



ORACLE  
Analytics Cloud



Q&A

# Vamos juntos nesta trilha!



[linkedin.com/groups/8984009](https://linkedin.com/groups/8984009)



[youtube.com/c/Inovaçãocomdadosemnuvem](https://youtube.com/c/Inovaçãocomdadosemnuvem)



[anchor.fm/inova-dados-nuvem](https://anchor.fm/inova-dados-nuvem)



[github.com/taborda-cbip/inovacao-com-dados-em-nuvem](https://github.com/taborda-cbip/inovacao-com-dados-em-nuvem)



# Inovação com dados em nuvem

ACELERANDO O SEU NEGÓCIO  
COM MYSQL HEATWAVE  
E ORACLE ANALYTICS  
CLOUD

