MySQL Cloud Service Deep Dive

Safe Harbor Statement

The following is intended to outline our general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. The development, release, and timing of any features or functionality described for Oracle's products remains at the sole discretion of Oracle.

Oracle MySQL Cloud Service

The World's Most Popular Open Source Database in the Oracle Cloud

Oracle MySQL Cloud Service enables you to rapidly, securely and cost-effectively develop & deploy modern applications powered by the World's Most Popular Open Source Database

Complete

Open

Secure

Choice

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Complete

- Spanning all layers of the cloud: IaaS, PaaS, SaaS

- Ever layer...integrated

- Based on our foundational infrastructure platforms; cloud equivalent, cloud ready

- Reduces complexity

- Every category and stakeholder

- Consumption models for all

Open

- An open, standards-based platform

- Supports all workloads, applications, languages, open source, OS platforms, data types

- For everyone to build on, customers & partners

- Integrated with Oracle apps and the application ecosystem

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Secure

- Offers protection for every layer
- Physical datacenter access
- Encryption of data at rest, in motion
- App access; privileged users controls
- Masking, redacting sensitive data
- Identity management

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Choice

- Deployment opportunities–private cloud, public cloud, public cloud on premises (OCM) & hybrid cloud

- Same environments preserve existing IT investments, skills

- Migration and adoption paths–infrastructure, workloads, apps, integrations, extensions

- Broad ecosystem of partners

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MySQL Cloud Service
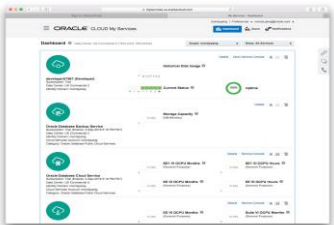
MySQL Enterprise Edition
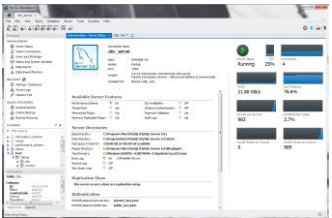
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- Simple
  - Quickly provision MySQL database instances with only a few clicks
- Automated
  - Database management made easy with tools that automate administrative tasks
- Integrated
  - Integrated with Oracle Cloud Services for quick development and deployment
- Enterprise Ready
  - Oracle's proven MySQL Enterprise Edition for performance, security & uptime`

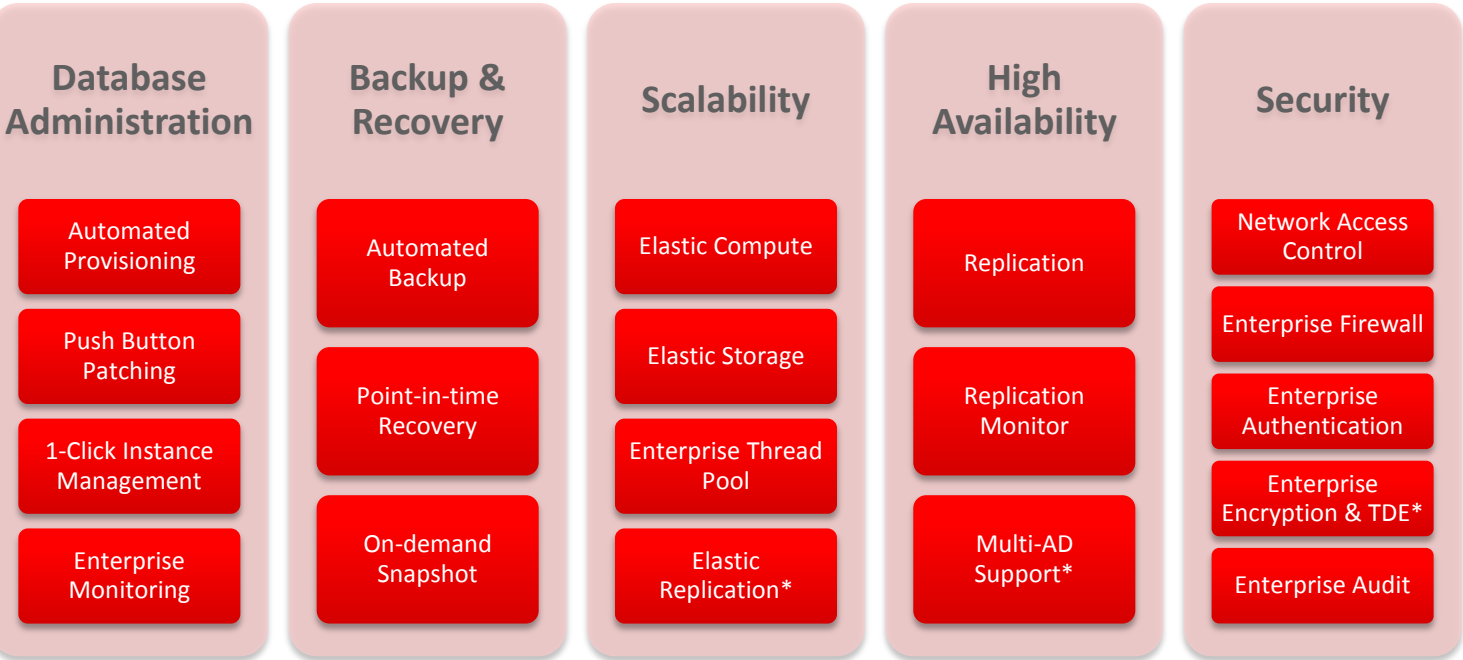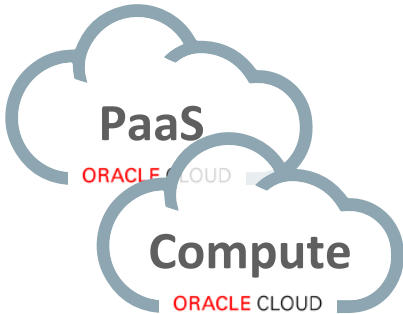ORACLE®

MySQL Cloud Service: Product Overview

Management Access

Oracle Cloud Console

MySQL Tools

CLI
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SSH

REST API
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Data Access

PaaS
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Compute
ORACLE CLOUD

On-premise Applications

Database Administration
- Automated Provisioning
- Push Button Patching
- 1-Click Instance Management
- Enterprise Monitoring

Backup & Recovery
- Automated Backup
- Point-in-time Recovery
- On-demand Snapshot

Scalability
- Elastic Compute
- Elastic Storage
- Enterprise Thread Pool
- Elastic Replication*

High Availability
- Replication
- Replication Monitor
- Multi-AD Support*

Security
- Network Access Control
- Enterprise Firewall
- Enterprise Authentication
- Enterprise Encryption & TDE*
- Enterprise Audit

MySQL Enterprise Edition

Oracle Infrastructure Cloud Services

Oracle Premier Support

In Short

- Oracle Public Cloud

- Database as a Service (PaaS)

- MySQL with the annoying bits managed for you:
  - Backups
  - Patches
  - Monitoring
  - etc.

What version of MySQL is it?

- Powered by MySQL 5.7 Enterprise Edition

- Same software used in cloud as on premise
  - You will be able to migrate workloads in both directions

- Optimized configuration
  - In my.cnf file
  - In compute and storage

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Enterprise Cloud C ×

https://cloud.oracle.com/en_US/home

ORACLE Cloud

Applications | Platform | Infrastructure | Resources

Platform

Oracle Cloud Platform as a Service

Oracle Cloud is the industry's broadest and most integrated public cloud. It offers best-in-class services across software as a service (SaaS), platform as a service (PaaS), and infrastructure as a service (IaaS), and even lets you put Oracle Cloud in your own data center. Oracle Cloud helps organizations drive innovation and business transformation by increasing business agility, lowering costs, and reducing IT complexity.

Software as a Service

Reimagine your business, processes, and experiences

Under the Hood

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Optimized Configuration of MySQL

- InnoDB IO Configuration optimized
  - Number of IO threads
  - O_DIRECT
  - Redo log size and buffer
  - Plus more…

- Thread Pool Enabled By Default

- Scalable Auto Increment

- Memory optimized to compute shape
  - Buffer Pool

- *Plus more…*

Optimized Compute and Storage

- Oracle Linux 6
  - UEK
  - MySQL task priority
  - Memlock
  - ext4 Filesytstem

- Storage is powered by ZFS Appliances
- Optimized for latency:
  - Binary Logs
  - Redo Logs
- Optimized for throughput:
  - Data files

Optimized Configuration

Functionality

- GTIDs Enabled by Default

- UTF8 By Default

- Event Scheduler Enabled

- Physically Separate Undo Log
  - With automatic truncation enabled

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Sign In | Oracle Clou ☓ | Oracle MySQL Clou ☓

← → C 🔒 https://psm.europe.oraclecloud.com/psmui/faces/paasRunner.jspx?_afrLoop=14553227938038145&_afrWindowMode=0&serviceT

morgan.tocker@oracle... ▾

ORACLE® CLOUD My Services

📊 Dashboard   👥 Users   🌐 Notifications

Oracle MySQL Cloud Service 📋   **Services**   Activity   SSH Access   **Welcome!**

Summary

2	2	15GB	270GB	2
Services	OCPUs	Memory	Storage	Public IPs

Services

Search by service name 🔍   As of Sep 17, 2016 7:48:05 AM UTC ↻   **Create Service**

wordpressdb

Subscription: Hourly	Edition: Enterprise Edition	OCPUs: 1
Version: 5.7.13	Created On: Sep 17, 2016 7:32:44 AM UTC	Memory: 7.5 GB
		Storage: 135 GB

test1

Subscription: Hourly	Edition: Enterprise Edition	OCPUs: 1
Version: 5.7.13	Created On: Sep 16, 2016 6:31:02 PM UTC	Memory: 7.5 GB
		Storage: 135 GB

Backup

- Fully Managed:
  - On Demand
  - Scheduled
  - Incremental
- Powered by MySQL Enterprise Backup

- Default
  - Weekly full backup
  - Daily incremental backup
  - 30 day retention (in Cloud Storage)
  - 7 day retention (locally)
- **Access to Raw Backup Files**

User Initiated Patching

- Time maintenance to opportune time

- Click of a Button

- Delay upgrade if desired
  - Very occasionally patches need to change behavior
  - Security being example

- Automatic backup before patching

- Rollback option if required

MySQL Enterprise Edition

- MySQL Enterprise Firewall
  - Block SQL Injection Attacks
  - Intrusion Detection

- MySQL Enterprise Encryption
  - Public/Private Key Cryptography
  - Asymmetric Encryption
  - Digital Signatures, Data Validation

- MySQL Enterprise Authentication
  - External Authentication Modules
    - Microsoft AD, Linux PAMs

- MySQL Enterprise Audit
  - User Activity Auditing, Regulatory Compliance

- MySQL Enterprise Monitor
  - Changes in Database Configurations, Users Permissions, Database Schema, Passwords

- MySQL Enterprise Backup
  - Physical backup ideal for larger databases
  - Verifies data as it copies

- MySQL Thread Pool
  - Improves performance on high concurrency workloads

More information available at : http://www.mysql.com/products/enterprise/

Moving Data In and Out

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→ wordpress
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SSH Access
Oracle Public Cloud Exclusive Feature

- Log into your MySQL Cloud Service Instance

- Works well with MySQL Workbench

  – SSH Tunnel direct from Workbench to Cloud Service

  – Port 3306 does not need to be exposed

MySQL Root Access

- Connect via Command Line or Workbench

- Perform Administration tasks as MySQL root:

  - Set offline mode, read only

Replication

- Binary log already enabled
  - Service already fully configured to be a master
  - Binary log defaults to 90 day retention
- Can replicate to/from on premise
  - Restricted only by firewall rules
- Can replicate to other instances of MySQL Cloud Service

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Scaling Up / Down

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Restoring from Backup

What's next?

Integrated Cloud
Applications & Platform Services

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