

Open Source Database Trends

Rockplace Inc. 2017

KEUNDONG KIM

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- Open Source Database Trends
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COMPANY OVERVIEWS

Introduction

Overviews

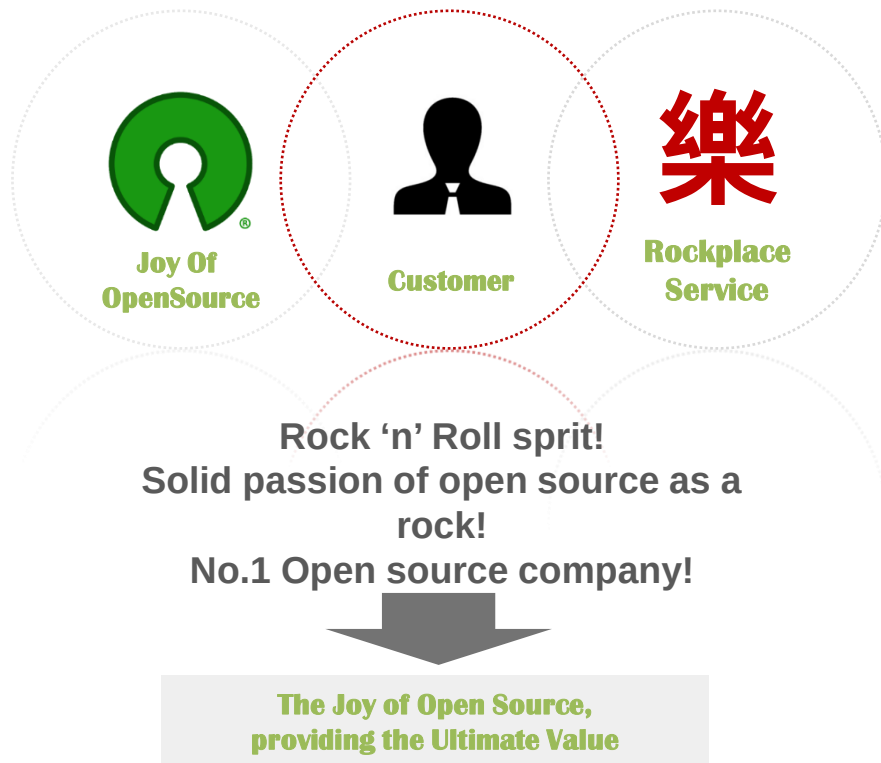
Service Portfolio

Competency Roadmap

INTRODUCTION

OpenSource PLACE, ROCKPLACE

rockPLACE



rockPLACE
OpenSourcePLACE

OVERVIEW

OpenSource PLACE, ROCKPLACE

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Member of Telecommunications Technology Association (Telecommunications Technology association)
Member of Korea Open Source Software Association (Korea Open Source Software Association)

**NAME OF
COMPANY :**

ROCKPLACE INC.

**NAME OF
REPRESENTATIVE :**

Sou, Dong Shik

BUSINESS TYPE :

Open Source Consulting,
Migration, Implementation
& Maintenance

ESTABLISHMENT :

2005.11.4

OF EMPLOYEES :

104 Employees(2017.7)

BUSINESS ITEMS :

RedHat Enterprise Linux /
RedHat Enterprise
Virtualization / OpenStack/
OpenShift, etc.

ADDRESS :

7, 8F Yundang Bldg, 844, Eonju-ro, Gangnam-gu, Seoul

SERVICE PORTFOLIO

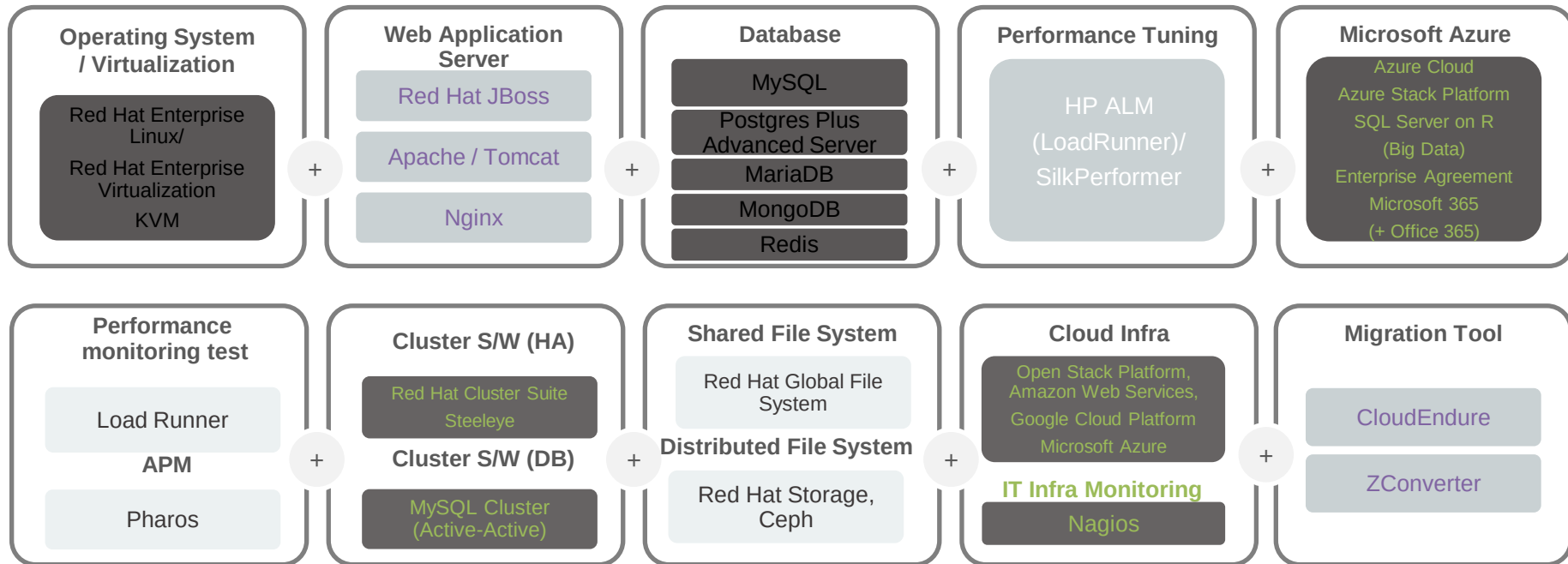
OpenSource PLACE, ROCKPLACE

rockPLACE

All about open source!

Service and support for IT infrastructure based on open source software

Red Hat 'Top Partner' in Korea awarded for 5 consecutive years(2011-2015)



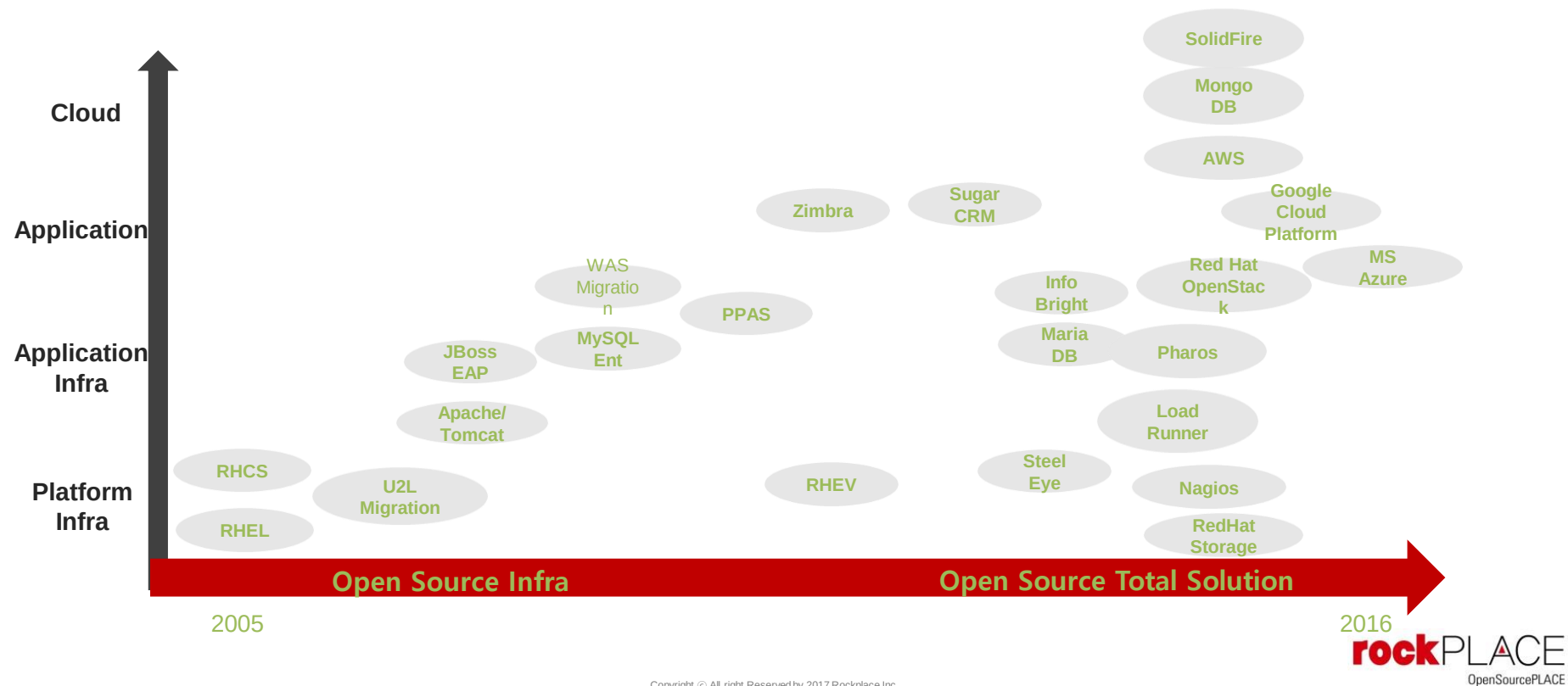
rockPLACE
OpenSourcePLACE

COMPETENCY ROADMAP

OpenSource PLACE, ROCKPLACE

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Rockplace Core Competency



OPEN SOURCE DATABASE TRENDS

DB-Engines Ranking

Google Trends

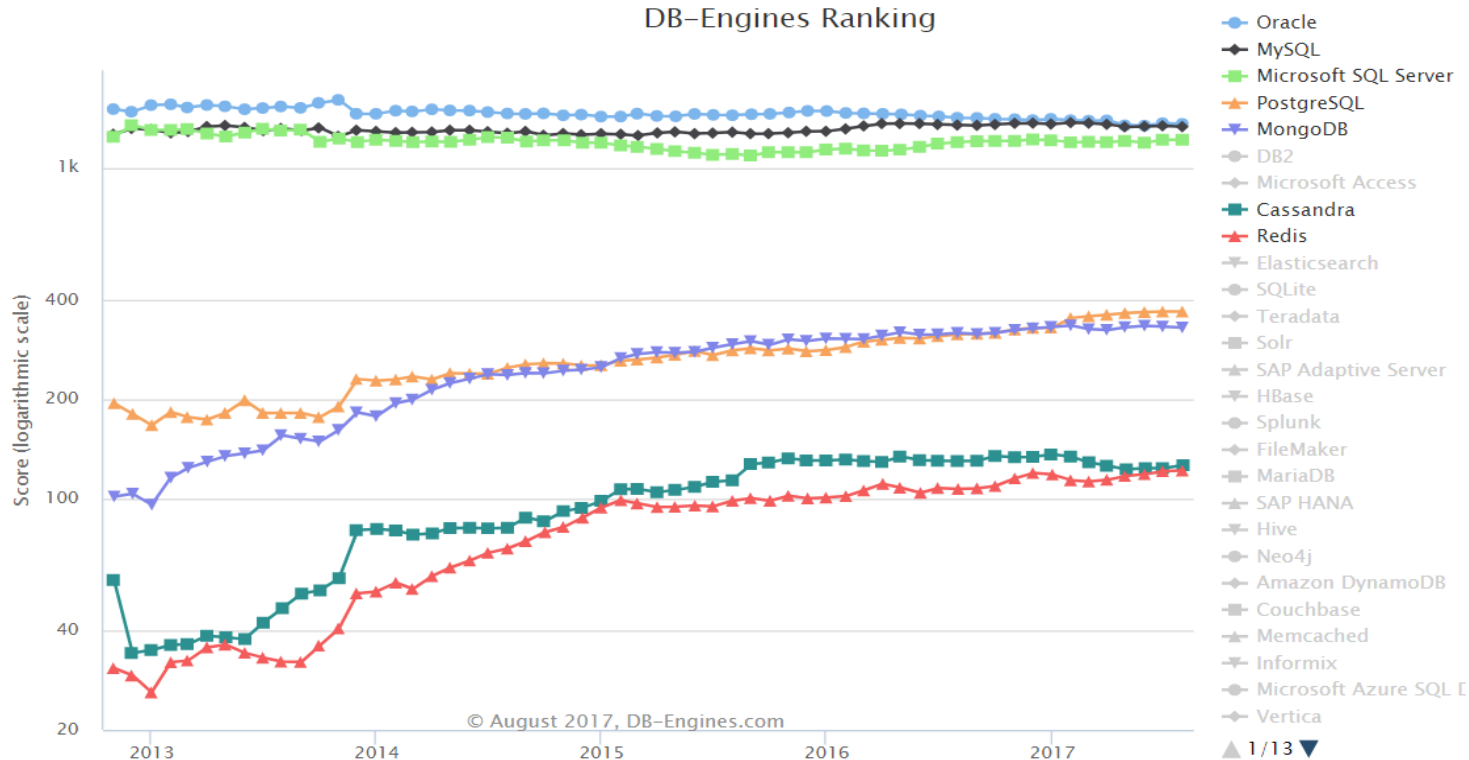
Open Source Database Trends

- DB-Engines Ranking(<http://db-engines.com/en/ranking>, 2017)

Sep 2017	Aug 2017	Sep 2016	DBMS	Database Model	Sep 2017
1.	1.	1.	Oracle  	Relational DBMS	1359.09
2.	2.	2.	MySQL  	Relational DBMS	1312.61
3.	3.	3.	Microsoft SQL Server  	Relational DBMS	1212.54
4.	4.	4.	PostgreSQL  	Relational DBMS	372.36
5.	5.	5.	MongoDB  	Document store	332.73
6.	6.	6.	DB2 	Relational DBMS	198.34
7.	7.	 8.	Microsoft Access	Relational DBMS	128.81
8.	8.	 7.	Cassandra 	Wide column store	126.20
9.	9.	 10.	Redis 	Key-value store	120.41
10.	10.	 11.	Elasticsearch 	Search engine	120.00

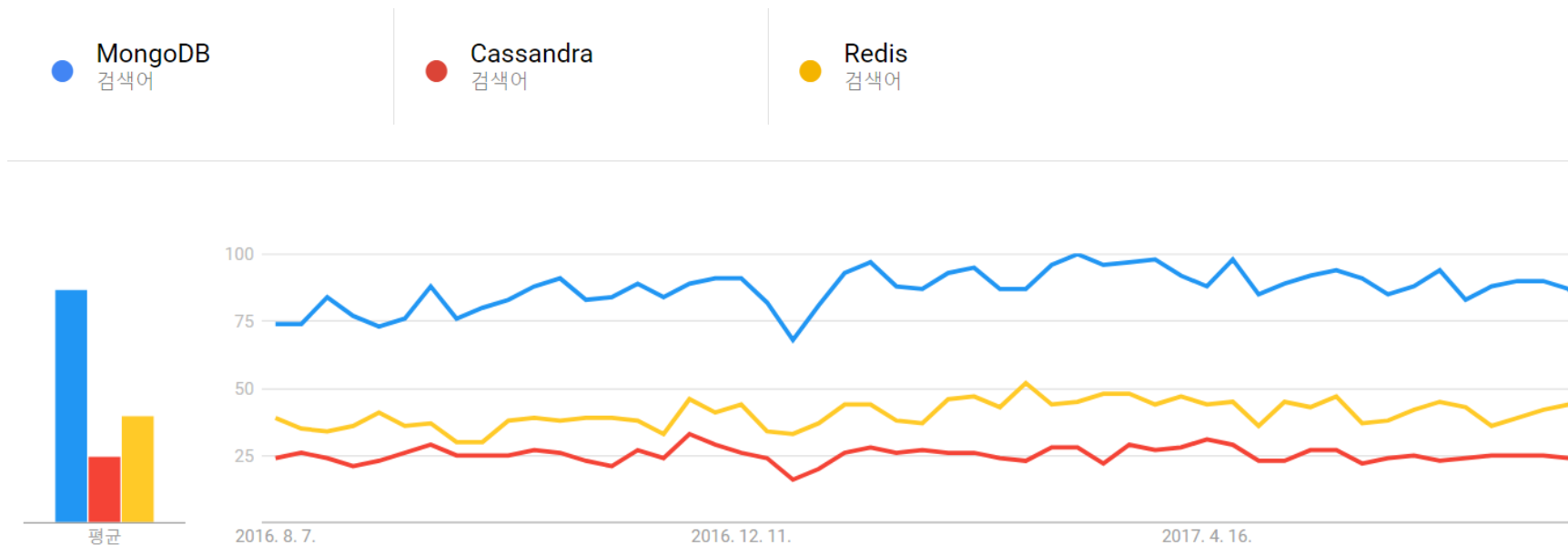
Open Source Database Trends

- DB-Engines chart(https://db-engines.com/en/ranking_trend, 2017)



Open Source Database Trends

- Google NoSQL Trends(2017)



CASE STUDY – ANY DB ON AZURE

Background

Service fundamentals

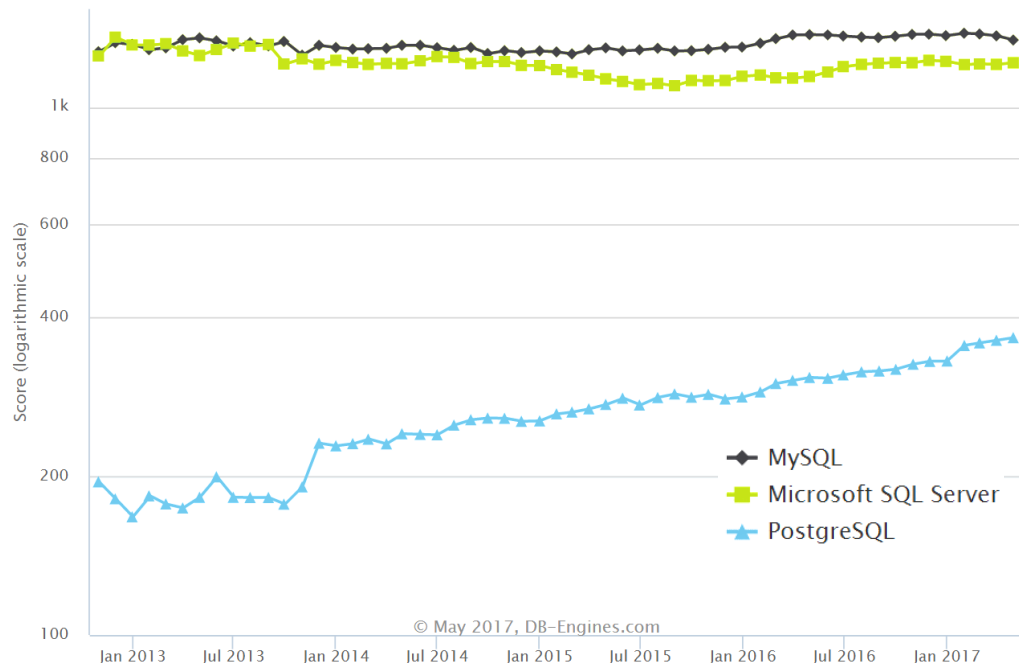
Performance Tiers

Applications

Background

Database Trends

Popularity trend of commercial and open source databases

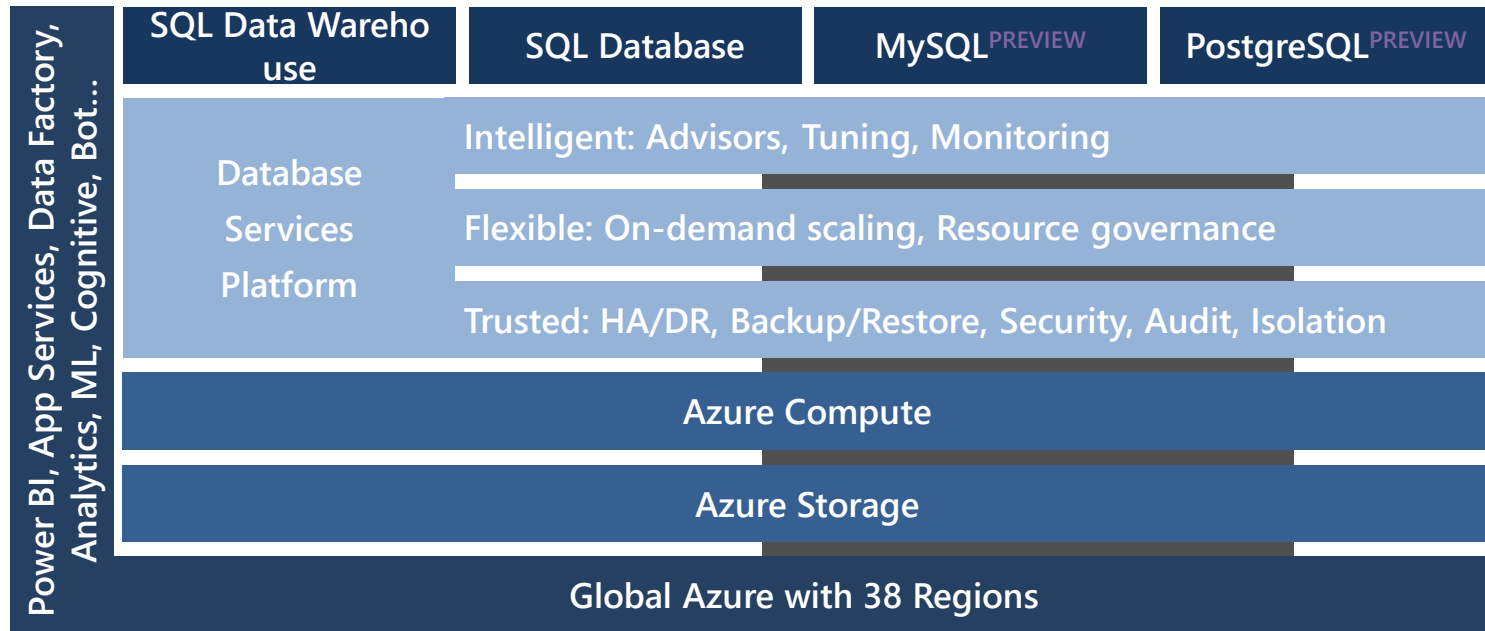


By 2018

70%

of new in-house apps
will be built on OSS DBs

Azure Relational Database Platform



Intelligent // Trusted // Flexible

Azure Database – MySQL & PostgreSQL

Managed MySQL database service for app developers



- Provision in minutes with **built-in high availability**
- Predictable performance, inclusive **pay-as-you-go pricing**
- **Scale on the fly** without application downtime
- **Secured to protect sensitive data** at-rest and in-motion
- **Automatic backups** and Point-In-Time-Restore for up to 35 days
- Deep integration with Azure Web Apps

We're Not Exactly "New" to MySQL



MySQL Database on Azure China

- Launched in September 2015
- No partner-based MySQL PaaS solution in China
- Among top 10 utilized Azure services in China
- Based on different managed service architecture
- New service will replace the Azure China solution

azure.cn/pricing/details/mysql

Microsoft Azure 由 世纪互联 运营

首页 产品 价格 解决方案 案例与伙伴 文档与资源 博客 支持 镜像市场

MySQL Database on Azure

产品功能
价格详情
价格估算器
文档
服务级别协议
相关产品
相关文档和链接

MySQL Database on Azure

兼容 MySQL 开源数据库平台；帮助用户快速部署；提供高可靠、高安全、高可用、高性价比的数据库；降低运维成本，让您专

申请试用 > 立即购买 >

MySQL Database on Azure 是 Azure 提供的一种关系型数据库服务，全面兼容 MySQL 协议，为用户提供了一个性能稳定，操作简到两分钟即可在 Azure 上构建一个具备高可用性的 MySQL 数据库服务器，而无需自己管理虚拟机或基础设施。MySQL Database 管理和维护的功能和体验。您可以方便地监控数据库性能和资源的利用，并根据需要在不同的版本间切换。MySQL Database on Azure 原。并且，相对于用户自己在 Azure 虚拟机上搭建的 MySQL 服务器，MySQL Database on Azure 提供了更好的性价比。

版本与定价详细信息

MySQL Database on Azure 提供六个不同的版本，性能从低到高按倍数提高。

从2016年4月1日起，价格会下调 25.5%，以下是下调后的新价格：

*以下价格均为含税价格。



Service Fundamentals

Conceptual Model

- ✓ **Logical**, not bound to server instance
- ✓ **Connection endpoint** for MySQL server
- ✓ Can create one to many user databases
- ✓ Highly available with automatic failover
- ✓ Pinned to a **region**
- ✓ **Policy scope**, e.g. firewall rules, recovery, monitoring and management

 Account

 Subscription

 Resource Group

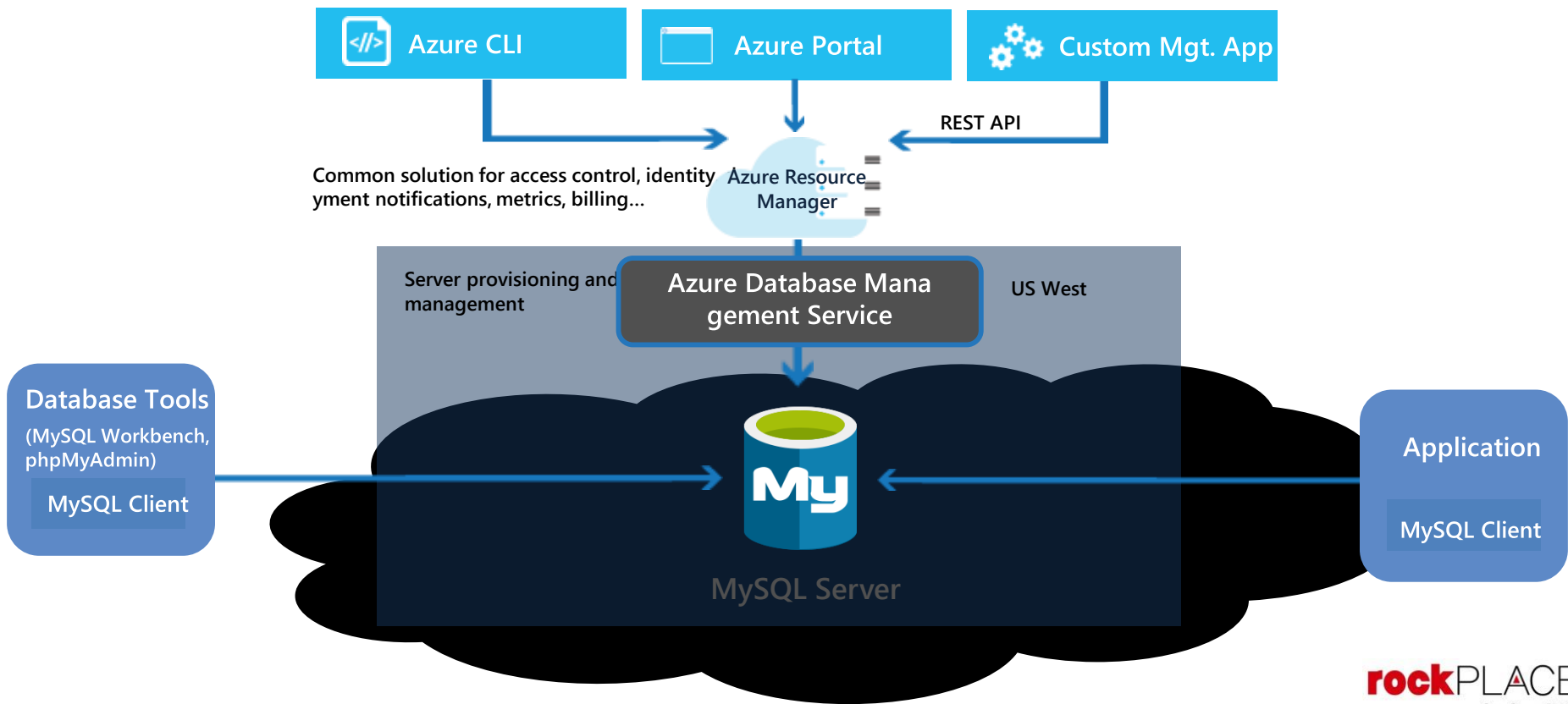
 Server

 Database

Azure

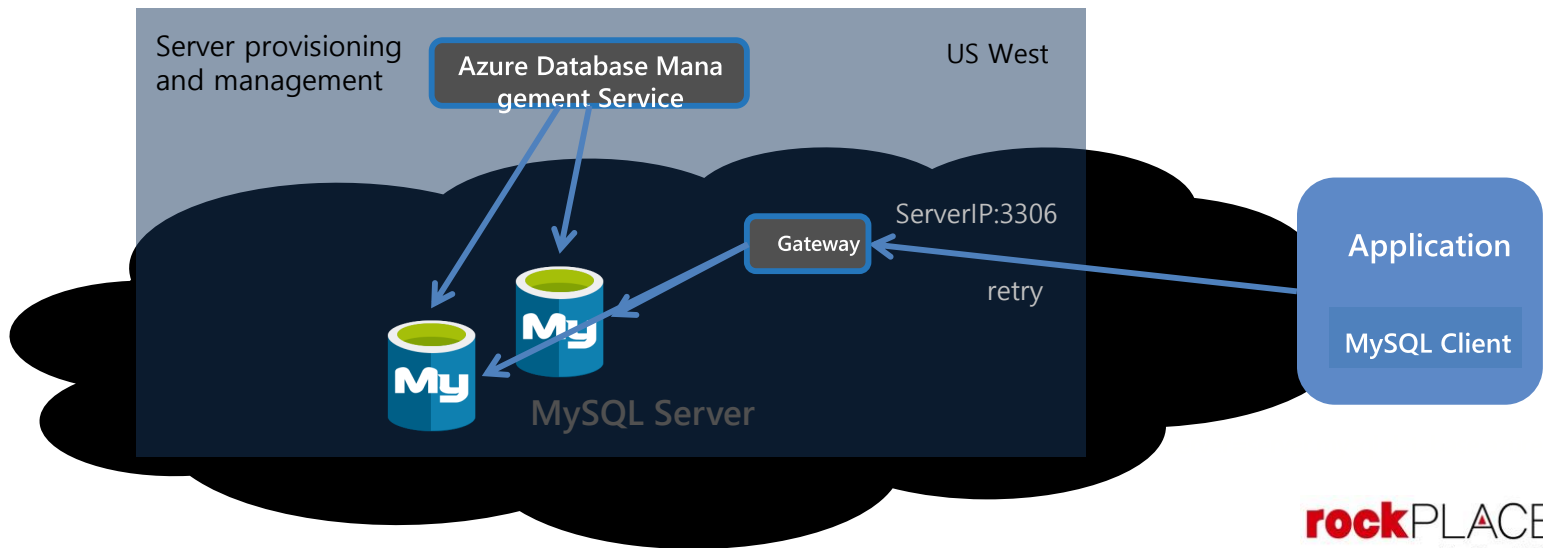
Azure Database
for MySQL

Create, Connect and Manage



High Availability

Enables scale on the fly, server patching, without virtually no app down time!



Security built in



Identity

- Native authentication



Control access

- Secure SSL connectivity
- Server firewall rules



Protect data

- Built-in encryption for application data and backups

Performance Tiers

Performance Levels Measured in Compute Units

A Compute Unit is a measure of CPU processing throughput

Pre-configured with a fixed amount of memory, optimized for the Basic and Standard service tiers.

100 Compute Units equate to ~1 full core

Ratios may be adjusted to ensure consistent performance across different hardware generations

Enables workloads that require high I/O performance and lower CPU/RAM to be achieved without having to upgrade to higher SKU

The screenshot displays the 'Pricing tier' window with three tiers: Basic, Standard, and Premium. The Basic tier is selected and highlighted with a dashed blue border. Below the tiers, the configuration for 'Compute Units' is shown, with a slider set to 100. The calculation shows 100 units multiplied by 0.39 equals 39.00 USD. Below this, the 'Storage (GB)' section shows 'Included storage' set to 50 GB, which adds 0.00 USD to the total. The final 'Monthly cost' is 39.00 USD.

Pricing tier	Description
Basic	For workloads that scale with variable IOPS
Standard	For workloads that require on-demand scaling optimized for high throughput with provisioned IOPS
Premium	Coming soon

Configuration	Value	Unit Price	Total Cost
Compute Units (50-100 Compute Units)	100	0.39	39.00 USD
Storage (GB)	50	0.00	0.00 USD
Monthly cost			39.00 USD

Flexible Service Tiers for any Workload

Service Tier

Basic

For workloads that scale with variable IOPS

50, 100

50GB
Magnetic Media

Variable

Additional Options

Scale up to 1 TB

NA

Flexible Service Tiers for any Workload

Service Tier

Basic	Standard Balanced IO and Compute
For workloads that scale with variable IOPS	For workloads that require on-demand scaling optimized for high throughput with provisioned IOPS
50, 100	100, 200, ... 2000
50GB Magnetic Media	125GB Remote SSD
Variable	375 Scales 3:1 (IOPS:GB)

Additional Options

Scale up to 1 TB
NA

Flexible Service Tiers for any Workload

Service Tier

Basic	Standard Balanced IO and Compute	Premium IO and Memory Optimized
For workloads that scale with variable IOPS	For workloads that require on-demand scaling optimized for high throughput with provisioned IOPS	For workloads that require on-demand scaling optimized for lowest latency with provisioned IOPS
50, 100	100, 200, ... 2000	100, 200, ... 2000
50GB Magnetic Media	125GB Remote SSD	125GB Local SSD
Variable	375 Scales 3:1 (IOPS:GB)	Provisioned IOPS

Additional Options

Scale up to 1 TB	Scale up to 10 TB
NA	Through increasing storage

99.99% SLA | fully managed | built-in HA | online performance scaling

Public Preview Service Tier Availability

Offers

Basic	Standard Balanced IO and Compute
For workloads that scale with variable IOPS	For workloads that require on-demand scaling optimized for high throughput with provisioned IOPS
50, 100	100, 200, 400, 800
50GB Magnetic Media	125GB Remote SSD
Variable	375 Scales 3:1 (IOPS:GB)

Additional Options

Scale up to 1 TB	Scale up to 1 TB
NA	Through increasing storage

99.99% SLA | fully managed | built-in HA | online performance scaling

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Azure regions available today

West US, North Central US, East US, East US2, South Central US, West Europe, North Europe, Japan West, Japan East, East Asia, SE Asia

● AZURE DATABASE FOR MYSQL
REGION AVAILABILITY TODAY

More coming soon!

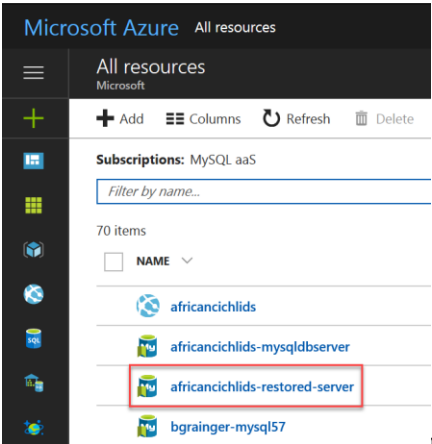
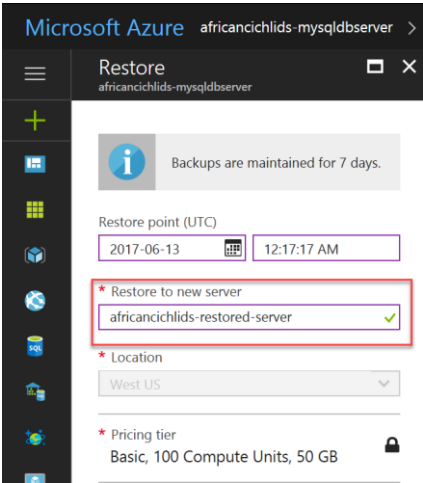
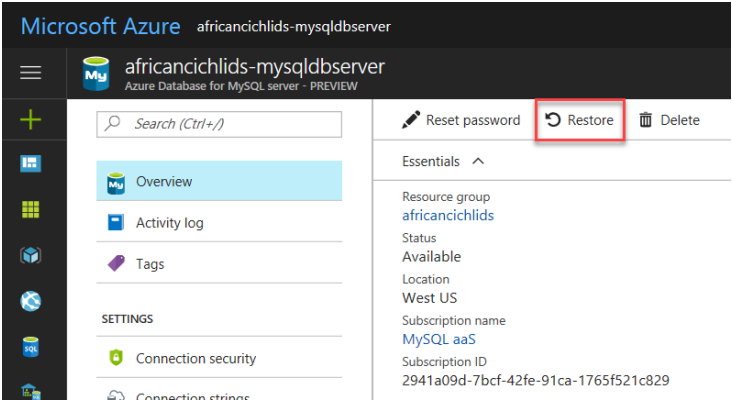
Backup & Restore

Built-in backup

No configuration needed

Backup storage included

PITR up to 35 days



Monitoring, Alerting & Logging

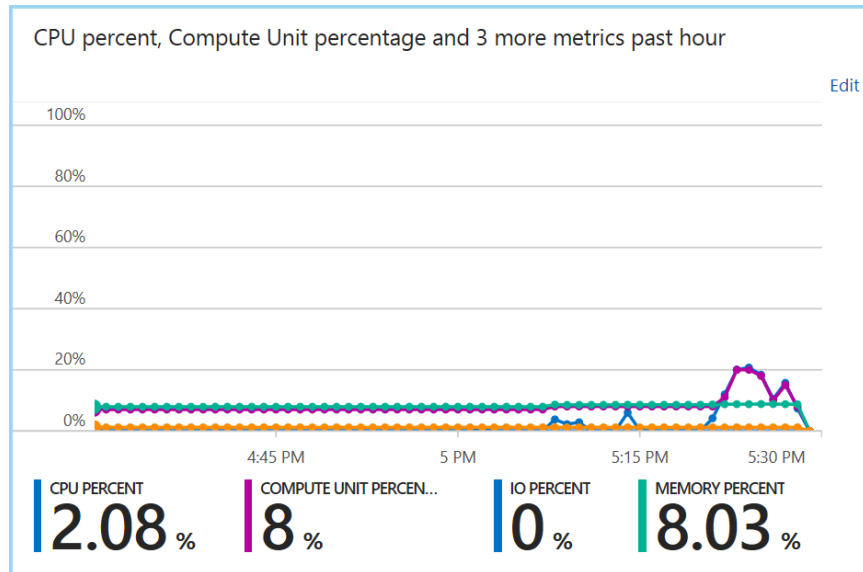
Monitor server activity

- Compute Unit
- CPU
- RAM
- IOPS

Alerting based on user settings

Error & Query Logs for PostgreSQL

Slow Query Log for MySQL



User-Configurable Server Parameters

Selected server parameters exposed for user configuration

Parameters not exposed are those that can impact the performance of the server

- (eg; innodb_buffer_pool_size)

<https://docs.microsoft.com/en-us/azure/mysql/howto-server-parameters>

<https://docs.microsoft.com/en-us/azure/postgresql/howto-configure-server-parameters-using-cli>

Mysql.exe & psql.exe in Azure Cloud Shell

Microsoft Azure africancichlids-mysqldbserver

afrcancichlids-mysqldbserver
Azure Database for MySQL server - PREVIEW

Search (Ctrl+/)

Overview

Activity log

Tags

SETTINGS

Connection security

Connection strings

Reset password

Restore

Delete

Essentials

Resource group: africancichlids

Status: Available

Location: West US

Subscription name: MySQLaaS

Subscription ID: 2941a09d-7bcf-42fe-91ca-1765f521c829

Server name: africancichlids-mysqldbserver.mysql.database.azure.com

Server admin login name: mysqlbuser@africancichlids-mysqldbserver

MySQL version: 5.7

Performance configuration: Basic, 50 Compute Units, 50 GB

SSL enforce status: Disabled

Monitoring

Bash

Azure CLI Documentation

```
Requesting a Cloud Shell..Succeeded.
Connecting terminal...

Welcome to Azure Cloud Shell (Preview)

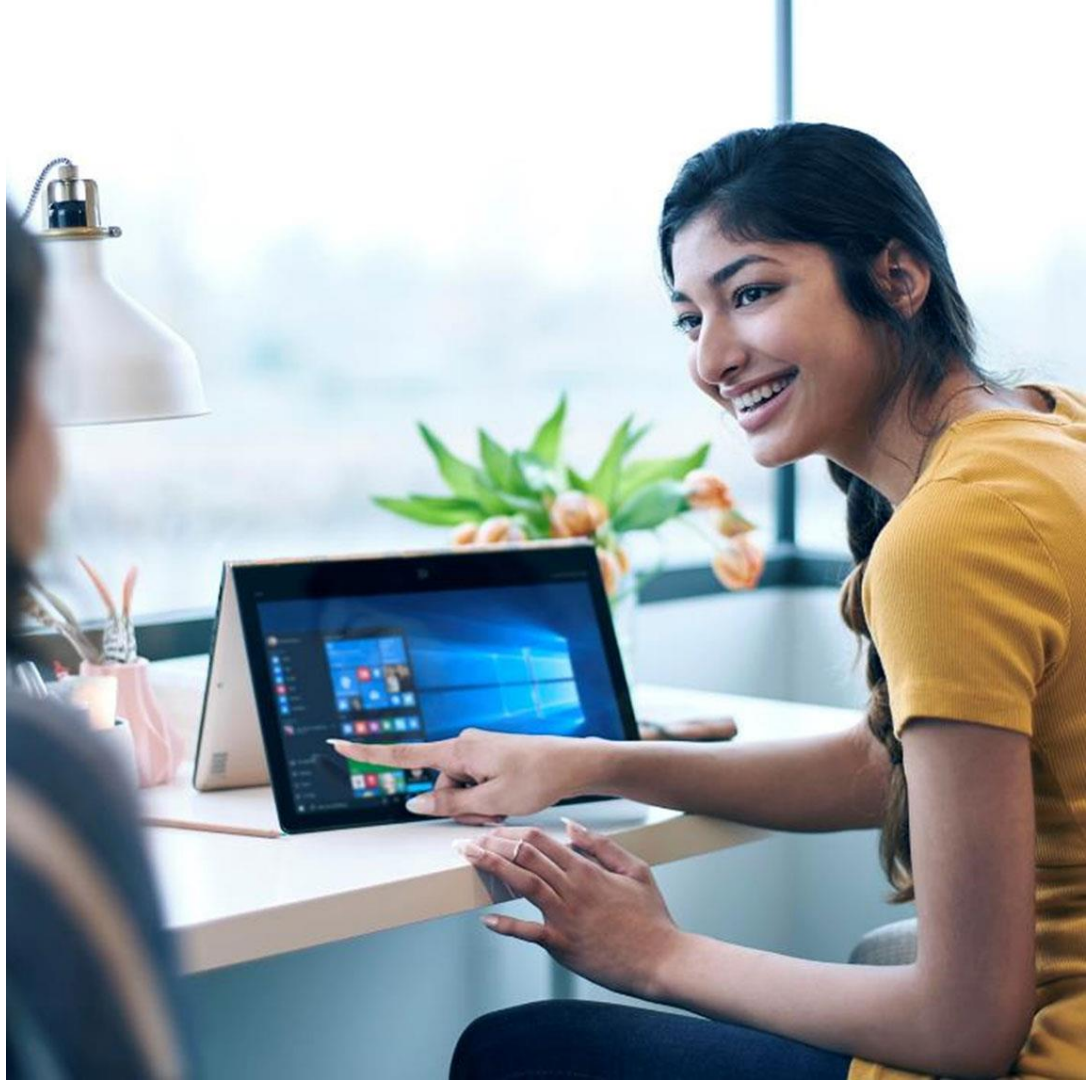
Type "help" to learn about Cloud Shell
Type "az" to use Azure CLI 2.0

jason@Azure:~$ mysql -h africancichlids-mysqldbserver.mysql.database.azure.com -u mysqlbuser@africancichlids-mysqldbserver -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 65519
Server version: 5.6.26.0 MySQL Community Server (GPL)

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```

Demo



Applications

No need to learn new tools or frameworks

Simplify and optimize with the support of all major tools, frameworks, and languages you already use

Frameworks



Languages



Integration with Azure Web Apps

Azure Database for MySQL & PostgreSQL is now tightly integrated with Azure Web Apps as a DB Provider

Deploy a new Web App + MySQL/PostgreSQL and add your own app

Pre-configured Web Apps –



+



+



php



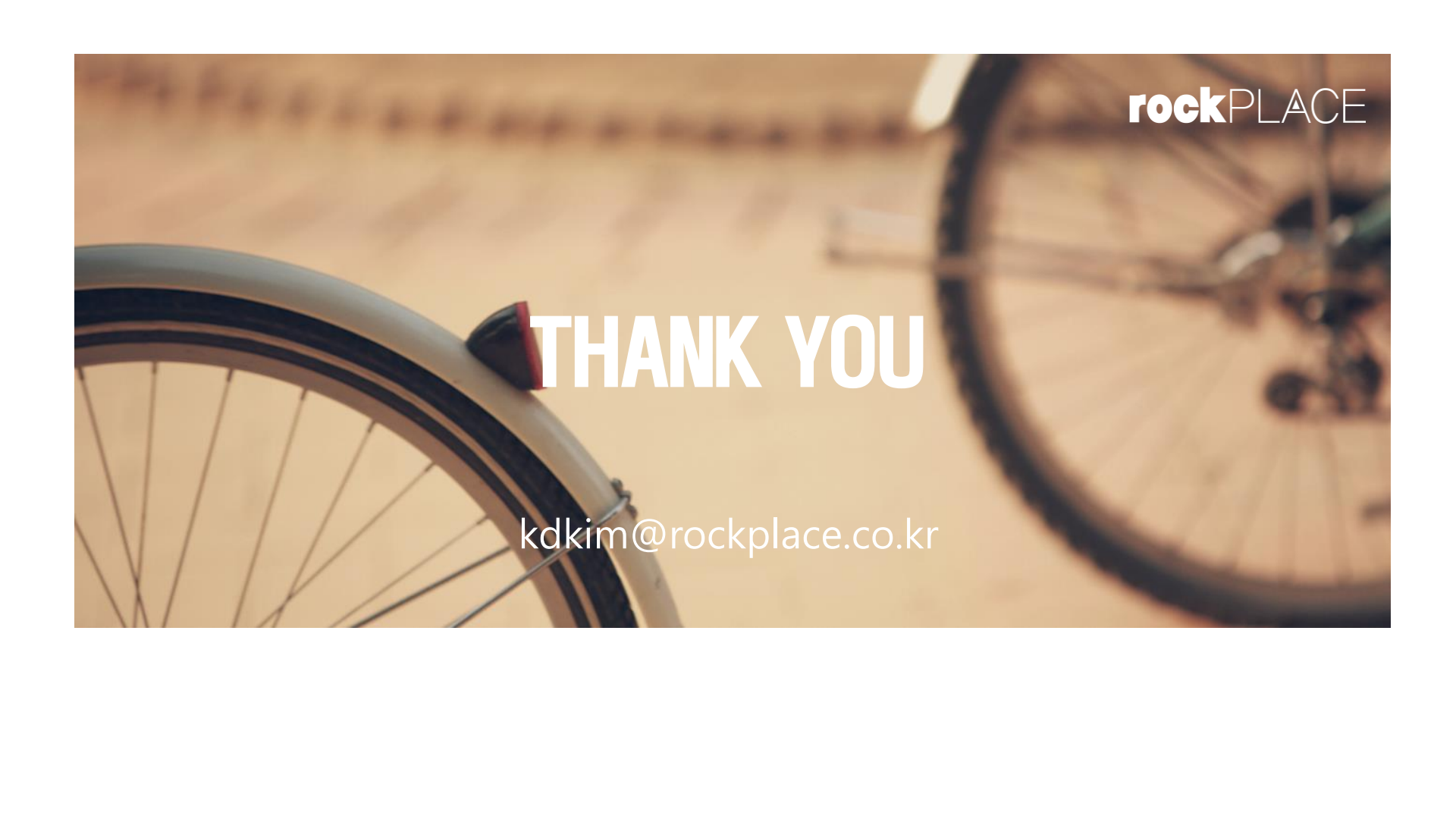
Deploy through CLI using your own customized ARM deployment template

Roadmap to GA...

- Increased security Vnet integration
- Introduction of Premium Performance Tier
- Higher Compute Unit scaling (up to 2000)
- Ability to scale up/down between Performance Tiers
- Read-Replicas
- Disaster Recovery
- Much more....

Resources

- Azure service page:
 - PostgreSQL: [Azure Database for PostgreSQL](#)
 - MySQL: [Azure Database for MySQL](#)
- Documentation:
 - PostgreSQL: [Azure Database for PostgreSQL](#)
 - MySQL: [Azure Database for MySQL](#)
- Discussion forum:
 - PostgreSQL: [MSDN](#), [StackOverflow](#)
 - MySQL: [MSDN](#), [StackOverflow](#)
- Feedback forum:
 - PostgreSQL [User Voice](#)
 - MySQL: [User Voice](#)
- GitHub repo:
 - <https://github.com/Azure/azure-postgresql>



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THANK YOU

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