

Microsoft Open Source Roadshow

2.0 | Datastores



Azure – really any datastore?

Here's a quiz. Which of the following doesn't run on Azure?

Apache Spark

Hadoop / HDFS

CouchDB

Oracle

Cassandra

Redis

Elasticsearch

MySQL

PostgreSQL

DB2

SAP Hana

MongoDB










Microsoft SQL Server 2000

Datstores overview

- IaaS:
 - run any datastore you can find a binary for!
 - Many Marketplace offerings.
 - SQL Server 2017 on Linux!
- PaaS and Partner:
 - Azure Database for MySQL and PostgreSQL
 - Azure Redis Cache
 - Azure Search
 - Cosmos DB: API for Mongo DB
 - MySQL in-app on App Service.
- Security, availability and management options.

Azure Database for MySQL

Partner (PaaS)









| NAME | PUBLISHER | CATEGORY |
|--|---------------|--------------|
|  MySQL | Bitnami | Compute |
|  MySQL Database | ClearDB | Databases |
|  MySQL with Replication | Bitnami | Compute |
|  Azure Database for MySQL (preview) | Microsoft | Databases |
|  Web App + MySQL | Microsoft | Web + Mobile |
|  phpBB on MySQL | phpBB | Web + Mobile |
|  ScaleArc for MySQL | ScaleArc | Compute |
|  Web App On Linux + MySQL (preview) | Microsoft | Web + Mobile |
|  Hardened MYSQL 5.7 on Centos 7.3 | Cognosys Inc. | Compute |

VM (IaaS)

Azure Database for MySQL

- “LightOps” DBaaS
- Common hosting infrastructure to Azure SQL Database
- Runs MySQL Community Edition (5.6 / 5.7)
- Use tools like MySQL Workbench to manage
- Manage growth with scale-up and out – no need to worry about VMs!

Azure Database for PostgreSQL

| NAME | PUBLISHER | CATEGORY |
|---|---------------|--------------|
|  PostgreSQL | Bitnami | Compute |
|  Postgresql with Replication | Bitnami | Compute |
|  Django + PostgreSQL | Django | Web + Mobile |
|  Web App on Linux + PostgreSQL (preview) | Microsoft | Web + Mobile |
|  Web App + PostgreSQL (preview) | Microsoft | Web + Mobile |
|  Azure Database for PostgreSQL (preview) | Microsoft | Databases |
|  Hardened Postgresql on Ubuntu 14.04 LTS | Cognosys Inc. | Compute |
|  Hardened PostgreSQL on Ubuntu 14.04 LTS | Cognosys Inc. | Compute |

VM (IaaS)

Azure Database elasticity

- Say hello to “Compute Units”.

Pricing tier ☐ ✕

♥ Feedback

| | | |
|---|--------------------------------|-------------------------------|
| Basic For workloads that scale with variable IOPS | Standard Coming soon | Premium Coming soon |
|---|--------------------------------|-------------------------------|

Compute Units (50-100 Compute Units) - [What is Compute Unit?](#)

x 0.50 = **25.00** AUD

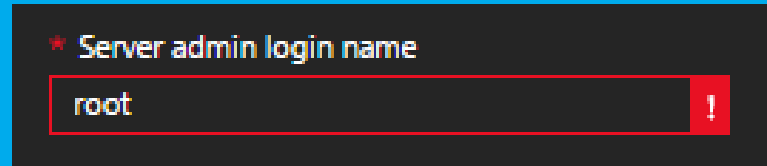
Storage (GB)

Included storage **0.00** AUD

Monthly cost **25.00** AUD

Azure Database security

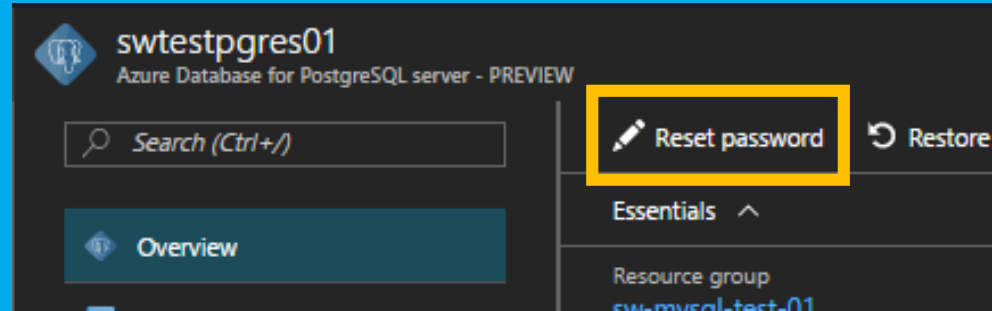
- Firewall blocks all inbound traffic by default
- TLS secured connections enabled by default
- Server patching managed by Microsoft
- You can't create user accounts with well-known names.







A screenshot of a configuration window with a dark background. The title bar reads "Server admin login name". Below the title is a text input field containing the word "root". To the right of the input field is a red square icon with a white exclamation mark, indicating an error or warning. The entire window is set against a solid blue background.

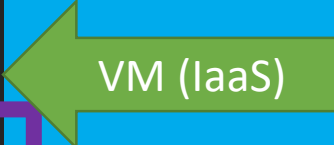
Azure Database management

- Databases backed up every 5 minutes – retention period based on configured Tier
- PostgreSQL – you can view / download server logs
- Manage Server Parameters in Azure Portal and CLI
- Reset your server admin password from the Azure Portal.



Azure Redis Cache

| NAME | PUBLISHER | CATEGORY |
|--|---------------|-----------|
|  Redis | Bitnami | Compute |
|  Redis Cache | Microsoft | Databases |
|  Hardened Redis on CentCentOS 7.3 | Cognosys Inc. | Compute |
|  Hardened Redis on Ubuntu 14.04 LTS-Basic LIC | Cognosys Inc. | Compute |



VM (IaaS)

Azure Search










- Based on Elasticsearch, but is not an Elasticsearch drop-in replacement
- Lucene query syntax support
- Lucene and Microsoft analysers support 56 languages
- Feed Azure and non-Azure data into the service
- Geospatial data support
- SDK support for a range of languages.

Cosmos DB - MongoDB API

- A 100% compatible MongoDB API for Cosmos DB
- Leverage the features of Cosmos DB without needing to change your code or learn new concepts:
 - SSD-based storage with 99.99% availability SLA
 - Multi-Region replication with controllable consistency levels
 - Automatic indexing of documents
- Congratulations... if you know MongoDB, you know Cosmos DB too!



MySQL in App Service

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MySQL in App Service

- Supported on Windows-based App Service instances
- MySQL shares resources with the co-located Web App
- Importing of data to MySQL and slow query logging available
- Limitations:
 - No ability to auto-scale
 - Microsoft does not recommend for production workloads*.

Azure datastore fundamentals

- MySQL and Postgres:
 - Availability depends on deployment model utilised – in preview instances are limited to a single Azure Region
 - Performance will be based on the selected Tier. Always plan ahead – avoid moving between Tiers under load!
 - Management performed using tools you already know, along with new ones in Azure – for example - make sure you understand / utilise the in-built backups!
 - Security has good defaults. Think hard before you open firewalls or turn off TLS!
 - Virtual Network / private network isn't currently supported.

Azure datastore fundamentals

- Cosmos DB:
 - Understand geo-replication and its effect on the consistency model you can use for your datastore.
 - Learn about HTTP / TCP connections and how you can manipulate which replica you connect to.
 - Don't forget there is a firewall you can use and also the ability to use read-only connection keys.

2.0 | LAB

<https://github.com/sjwaight/OpenSourceRoadLabs/>