Database As a Service

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Introduction

- A database that typically runs on a cloud computing platform, access to it is provided as a service.

- It is a software that enables users to ***provision***, ***manage***, ***consume***, ***configure*** , and ***operate database.***

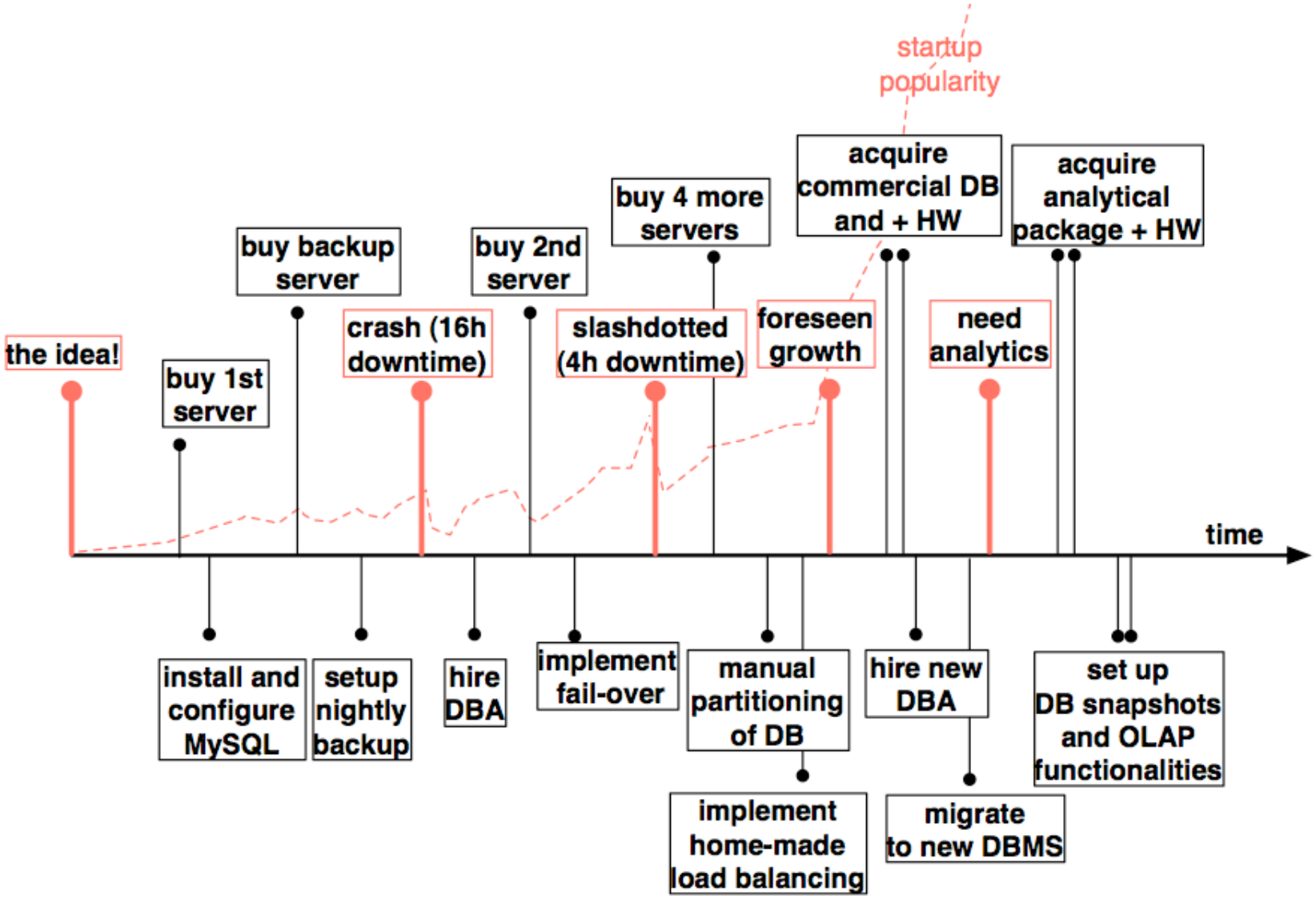


Fig: Generic physical database configuration process

Source: (Bhattacharya , 2011)

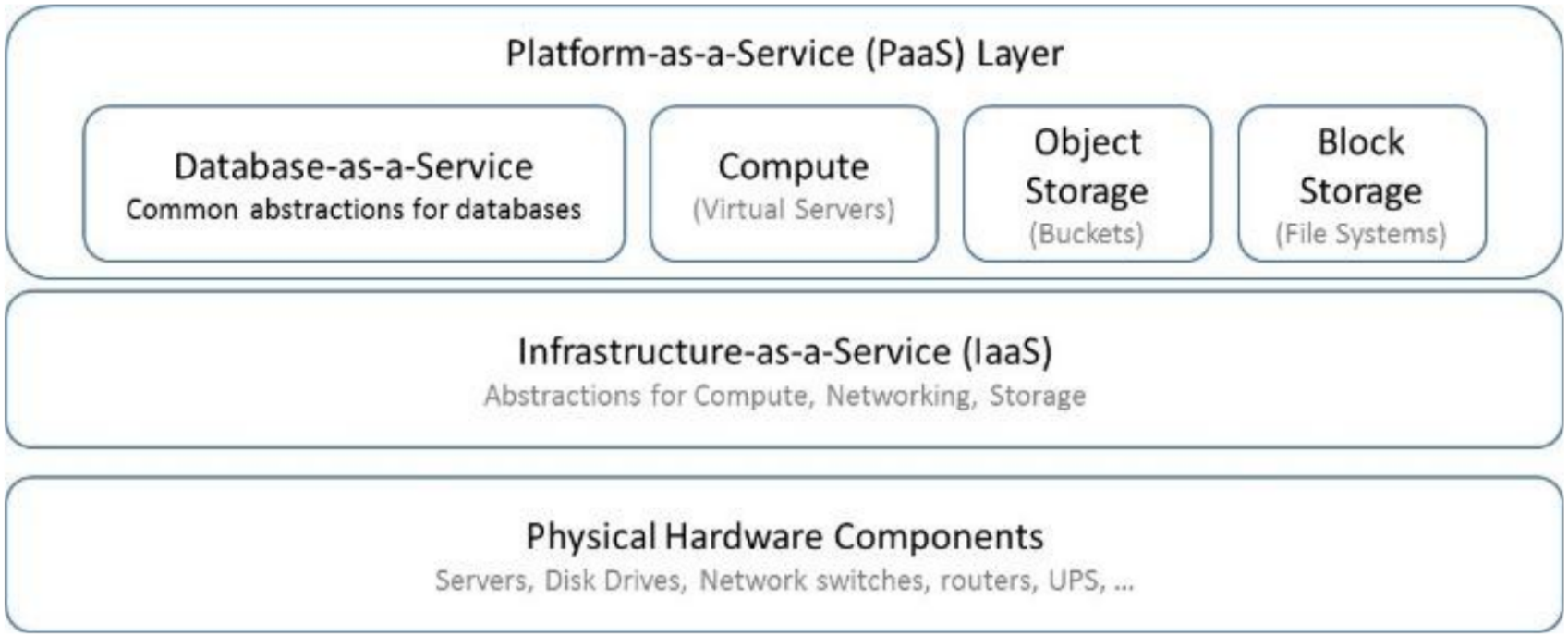


Fig: Service Layers

Source: (Days, 2017)

DBaaS in the context of other cloud components

DBaaS has two primary consumers

The IT organization (DBA)

An IT organization deploys DBaaS that enables end users (developers) to provision a database of their choice from a catalog of supported databases.

The developer

An end user would access the DBaaS system through a portal that allows one to choose from a number of database titles, and in a variety of different configuration options setup by the DBA as per organizational needs.

The benefits of DBaaS

Developer agility

Complex database operations like resizing a cluster are now a simple API call and the developer need not concern with the minutiae of how this operation should be performed for the specific database and version.

DBA productivity

DBaaS solutions provide abstractions that allow DBAs to manage groups of databases and perform operations like upgrades and configuration changes on a fleet of databases in a simplified way.

Application reliability, performance and security

DBaaS ensures that all common workflows involved in the provisioning, configuration, management, and operation of databases are consistent.

Some Popular DBaaS solutions

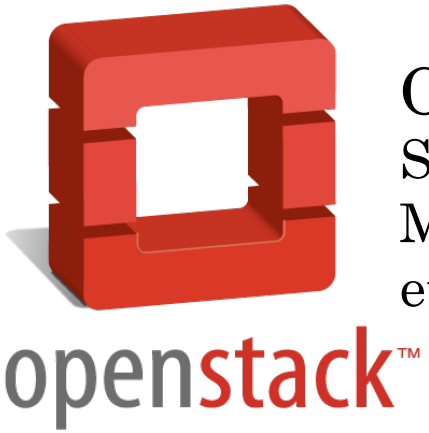
Amazon Relational Database Service

Supports MySQL, MariaDB, Oracle, PostgreSQL and SQL Server.

In addition, Amazon RDS also provides support for Aurora and DynamoDB.

Microsoft Azure

Microsoft offers SQL database as part of the Azure Cloud platform.



OpenStack / Trove

Supports most commonly used FOSS databases: MySQL, Redis, Cassandra, MongoDB, PostgreSQL etc.

Conclusion

- DBaaS provides a framework within which enterprises can operate all of their databases in an efficient way.

- It provides end users with improved agility and simplified provisioning and operation and the flexibility to choose from.

- DBaaS improves the operation of fleets of diverse database through automation and standardization.

References

Bhattacharya, A (2011). A Database-as-a-Service for the Cloud Retrieved 1 May 2017, from *https://people.eecs.berkeley.edu/~istoica/classes/cs294/.../16-arka-relationalcloud.pptx*

Days, F. (2017). *What is Database as a Service?* Retrieved 1 May 2017, from http://www.stratoscale.com/blog/dbaas/what-is-database-as-a-service/