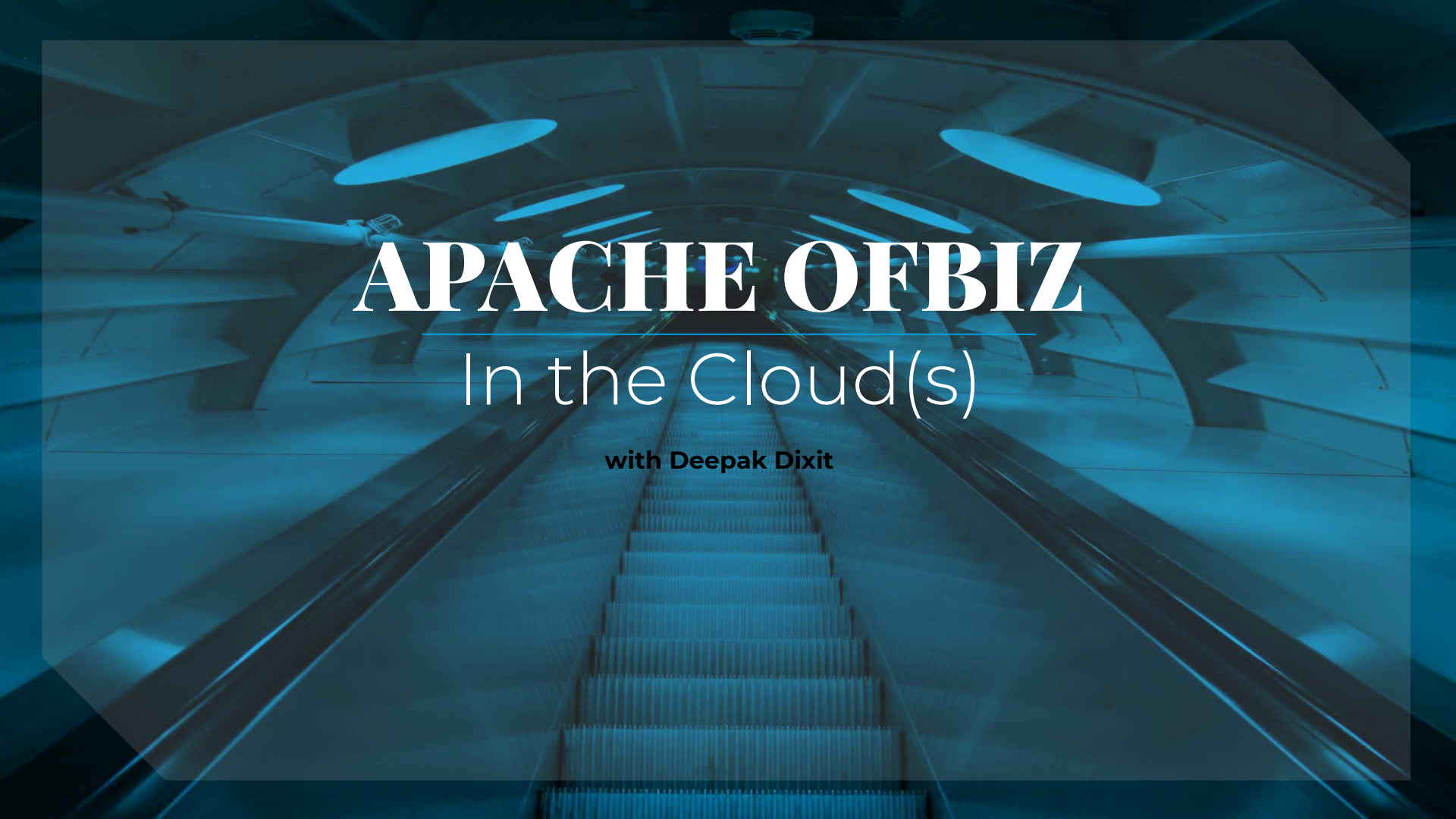


# APACHE OFBIZ

## In the Cloud(s)

**with Deepak Dixit**

# Deepak Dixit


Director of Product Engineering
HotWax Commerce


Member, Apache Software Foundation
PMC, Apache OFBiz

# Apache OFBiz Cloud

- Apache ofbiz is used by many companies to solve their complicated business problems
- Companies wants scalability, high availability, performance
- Apache OFBiz and Cloud is perfect fit for these companies

# Agenda

1. Deployments in Cloud
2. Leverage images - AMI, Docker
3. Database options for the Cloud
4. Continuous Deployments
5. Load Balancing
6. Session management

# Deployments in the Cloud

## Advantage of using cloud computing

- Cost savings
- Scalability
- Control choices
- Elasticity
- Flexibility of work practices
- Access to automatic updates

# Available Cloud Computing Services

- Amazon Web Service
- Microsoft Azure
- Google Cloud Service
- And many more....

# OFBiz Deployment

**The deployment can be made in the same way as in a standard host.**

- Download Apache OFBiz
- Edit entityengine to set up the database
- Run dataload command
- Start the OFBiz server

# Leverage Images – AMI, Docker

**Advantage of AMI, and Dockers**

- Faster set-up
- Simplified pricing
- Continuous Deployment and Testing
- Multi-Cloud Platforms
- Environment Standardization and Version Control
- Isolation
- Security

# AMI – Amazon Machine Images

**AMI provides the information required to launch an instance.**

- Can launch multiple instances from a single AMI when you need multiple instances with the same configuration.
- Can use different AMIs to launch instances when you need instances with different configurations.
- ‘OFBiz-for-Starter’ image is available on AMI

# Docker

- Create docker image
- Launch the docker container in attached or detached mode
- Access instance, browse at https://localhost/webtools/control/main

# Cloud Database

Advantages of using these DB services

- **Scale - Vertically or Horizontally**
- **Multi-database support for structured data**
- **Simplicity**
- **Automatic Management**
- **Robust**
- **Minimal Downtime**
- **Speed & Performance**
- **Automated Backup**
- **Security**

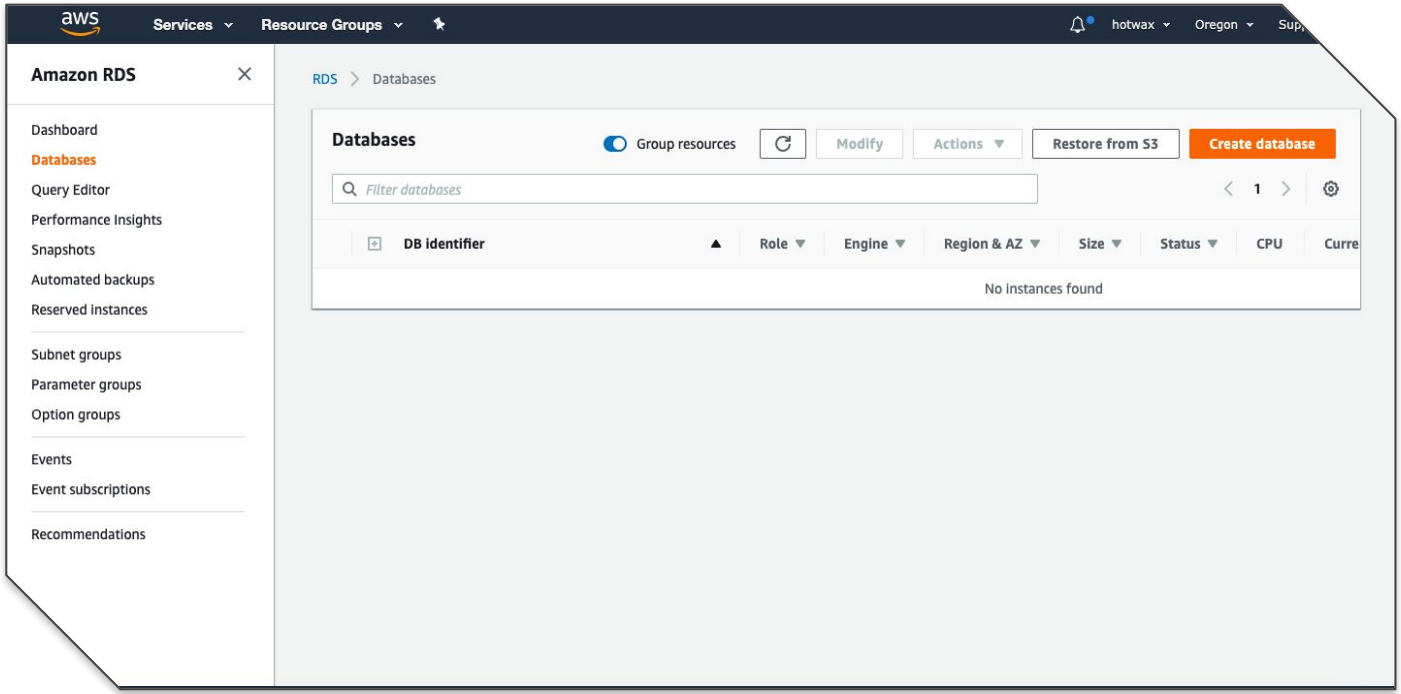
# Available Cloud Database Options

- Amazon RDS
- Cloud SQL
- Google Cloud Spanner
- And many more....

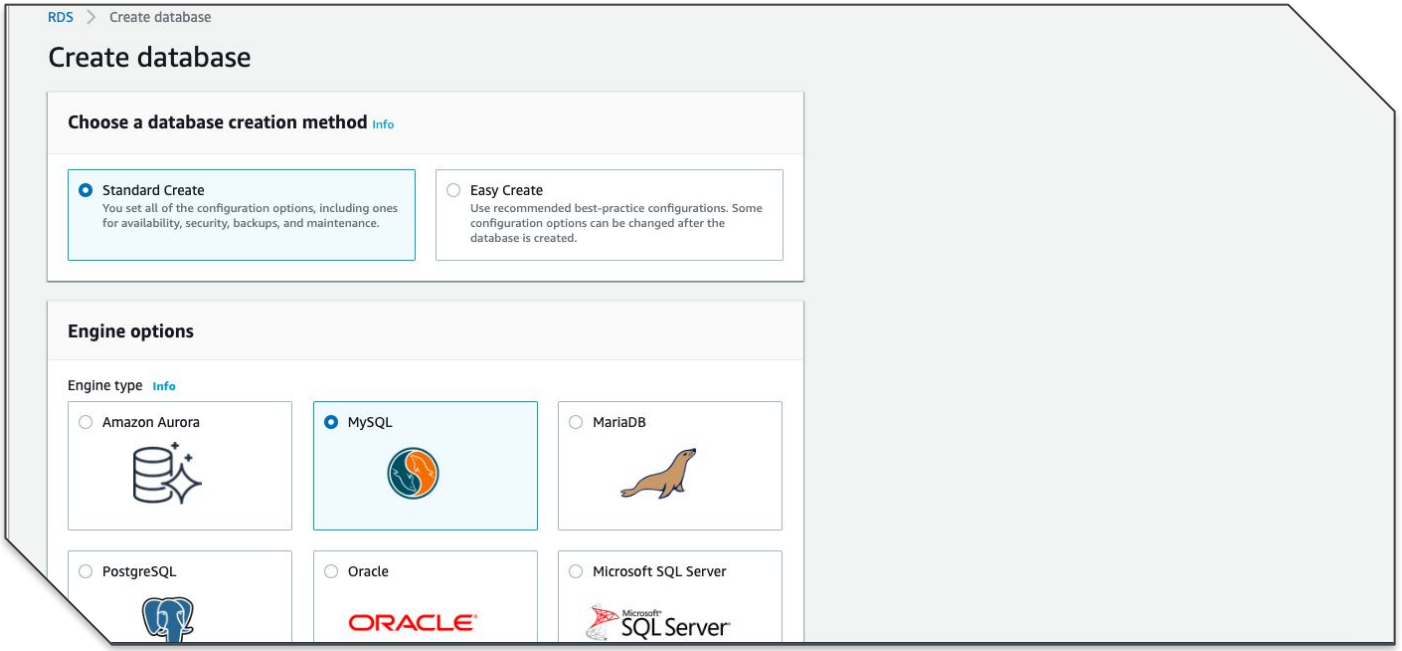
# Configuring Amazon RDS

1. Create Database (MySQL is taken as example)
2. Add database related information
3. Refer the endpoint details
4. Update the entityengine.xml with database configuration

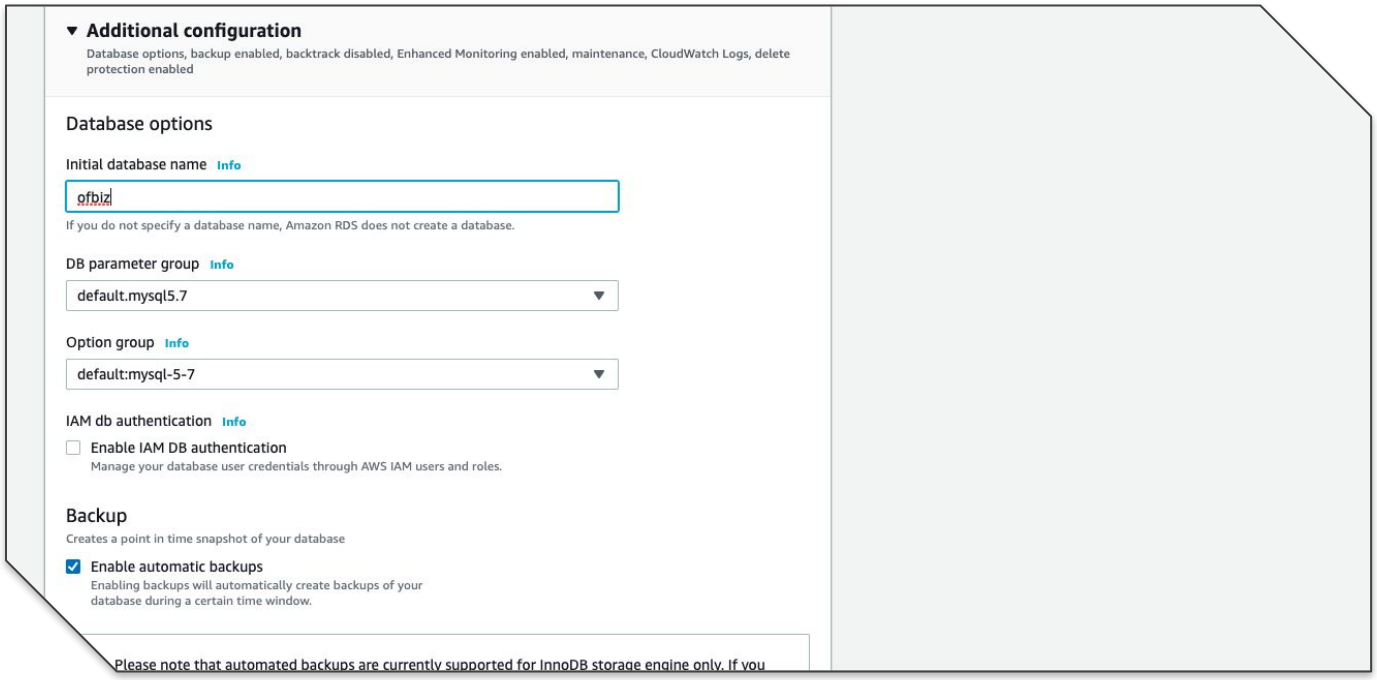
# Create Database (MySQL is taken as example)



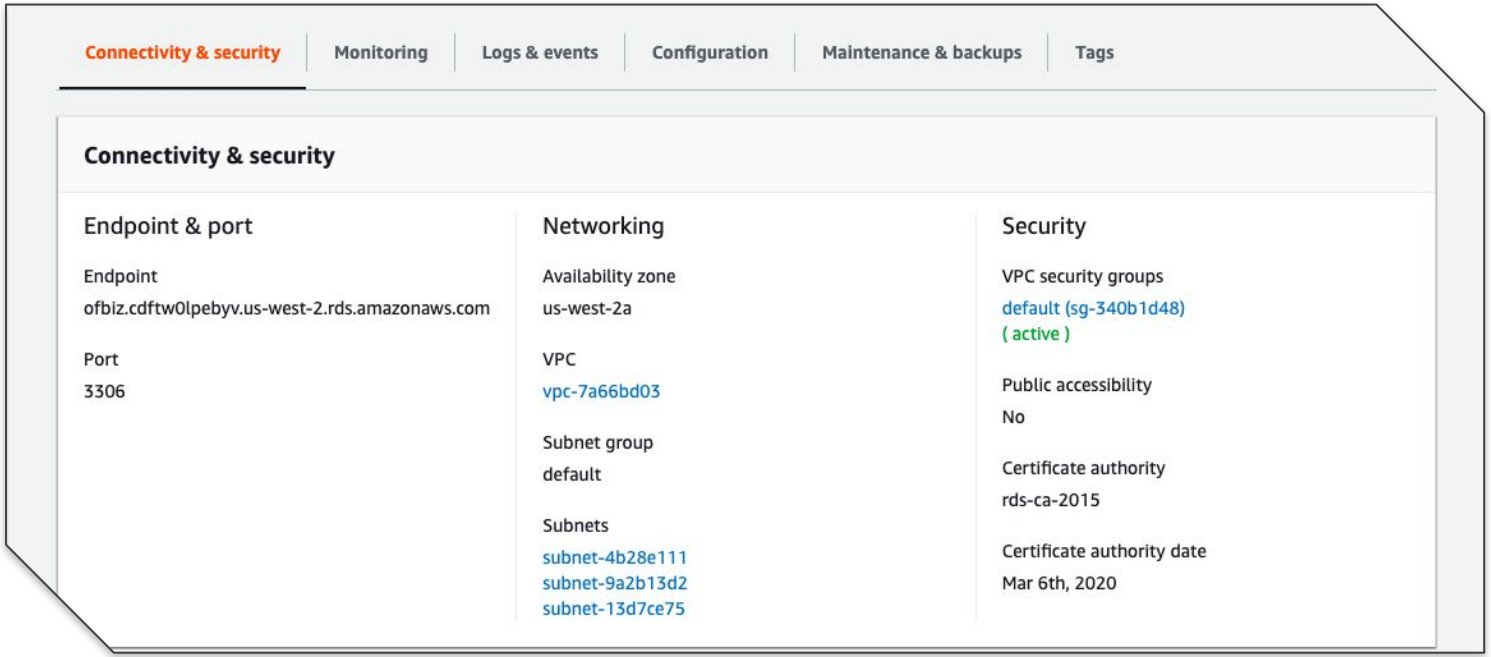
# Create Database (MySQL is taken as example)



# Add database related information



# Refer the endpoint details



# Update the entityengine.xml with database configuration

```
<delegator name="default" entity-model-reader="main" entity-group-reader="main"
entity-eca-reader="main" distributed-cache-clear-enabled="false">

    <group-map group-name="org.apache.ofbiz" datasource-name="localmysql"/>

    <group-map group-name="org.apache.ofbiz.olap" datasource-name="localmysql"/>

    <group-map group-name="org.apache.ofbiz.tenant" datasource-name="localmysql"/>

</delegator>
```

# Update the entityengine.xml with database configuration...

<datasource name="localmysql".....

.....

<inline-jdbc

jdbc-driver="com.mysql.jdbc.Driver"
jdbc-uri="jdbc:mysql://ofbiz.cdftw0lpebyv.us-west-2.rds.amazonaws.com/ofbiz?autoReconnect=true&characterEncoding=UTF-8"

jdbc-username="XXXXX"

jdbc-password="XXXXX"

isolation-level="ReadCommitted"

pool-minsize="2"

pool-maxsize="250"

time-between-eviction-runs-millis="600000"/>

# Cloud Spanner

- Replication is synchronous and strongly consistent.
- Supports a native SQL interface for reading and writing data.
- It provide horizontal scaling

# Enhanced Networking

- Enhanced networking uses single root I/O virtualization
- It used provide high-performance networking capabilities
- SR-IOV is a method of device virtualization that provides higher I/O performance and lower CPU utilization

# Continuous Deployments

- Automate the repetitive tasks and focus on actual testing
- Make deployments frictionless without compromising security
- Scale from a single application to an Enterprise IT portfolio
- Create workflows across the development, testing, and production environments

# Advantage of using CI/CD in OFBiz

- Faster Software Builds
- Time-to-Market
- Improvements to Code Quality
- Efficient Developers

# GitLab CI/CD example

**Setting up GitLab Runner**

- Install GitLab Runner on machine
- Registering Runners
- Assigning Runners to a Project
- Set Up SSH Key for GitLab Runner
- Enable ssh permission to instance user
- Configure .gitlab-ci.yml file

# Load Balancing

Load balancing refers to efficiently distributing incoming network traffic across a group of backend servers.This ensures no single server bears too much demand

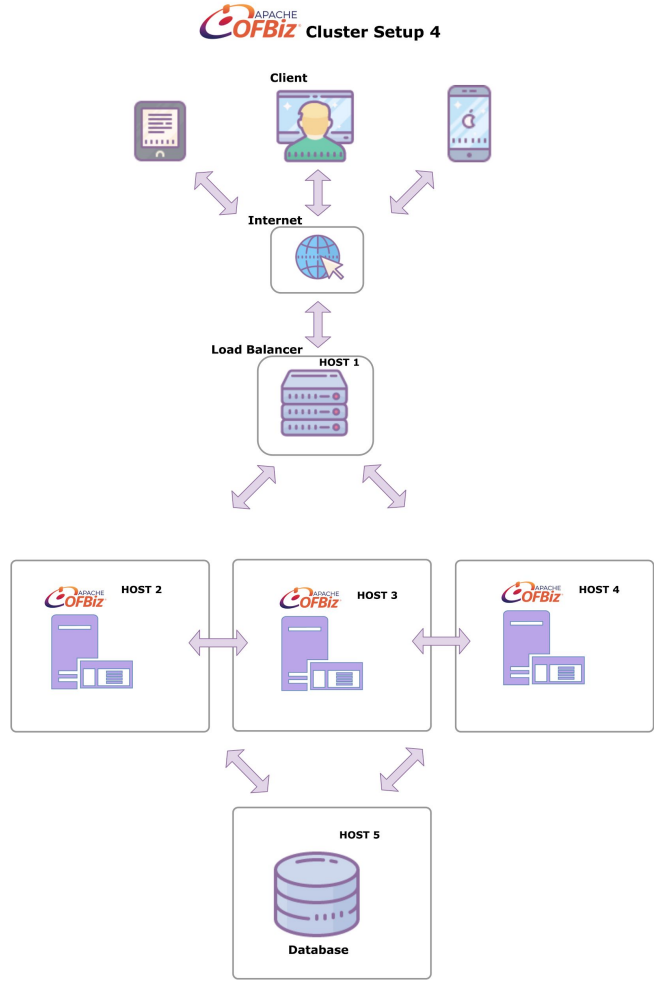
## Advantage of Load Balancing

- **Increased Scalability**
- **Redundancy**
- **Reduced Downtime, Increased Performance**
- **Efficiently Manages Failures**
- **Increased Flexibility**
- **High availability**

# Introduction to Load Balancing an OFBiz Cluster

## Load Balancing Architecture

- Setup multiple OFBiz host
- OFBiz host with single database
- Setup Load Balancer



# Details to Consider

- OFBiz job poller
- HAProxy
- Sticky sessions

# Session management

- Session management is the process of securing multiple requests to a service from the same user
- It help to achieve high performance

# Sticky Session Management

- Sticky sessions is most commonly maintained by the session's jvmRoute
- When using sticky sessions, servers within your network don’t need to exchange session data
- Sticky sessions allow for more effective utilization of your application’s RAM cache, resulting in better responsiveness.

# Distributed Session Management

- The distributed session cache is an independent service that acts as a centralized session repository for a clustered
- The distributed session cache is most commonly used to achieve failover.

# Recap and References

- Docker / AMI images
- OFBiz deployment on Could
- Cloud services
- Cloud database
- CI/CD
- Session Management
- https://docs.gitlab.com/ce/ci/
- https://aws.amazon.com/rds
- https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/enhanced-networking.html
- https://www.hotwaxsystems.com/ofbiz/ofbiz-development/apache-ofbiz-performance/
- https://www.hotwaxsystems.com/quality-assurance/restore-pre-build-amazon-machine-images-to-load-test-ofbiz/