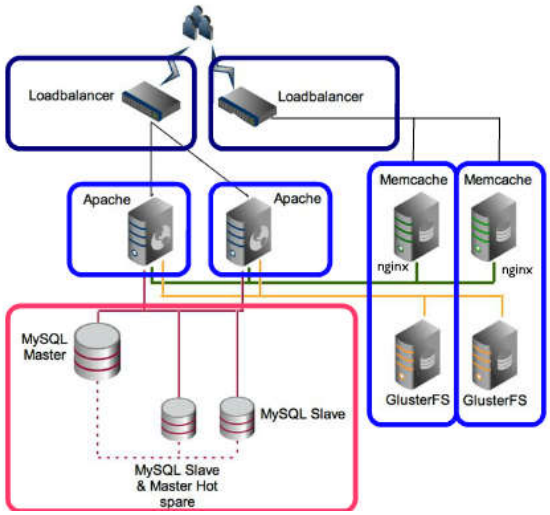
1. Concept one – Dedicated Hosting

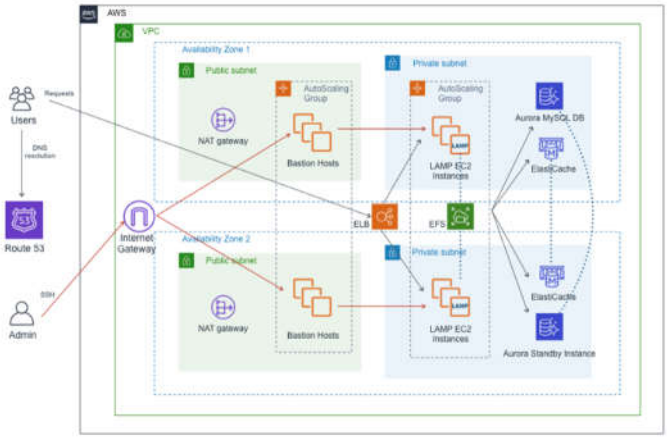
- Alma.com is a high traffic website
- We can deploy and run more than one virtual servers in a datacenter
  - Discard idea for one server / shared hosting using for this requirement!
  - We can deploy LAMP servers (Linux, Apache, MySQL, and PHP based web applications) in HA mode.
  - This concept is working on bare metal and virtual environments, too (VMWare, VirtualBox, Ovirt, Red Hat Enterprise Virtualization (RHEV), KVM, and Xen)
  - **Enable Disaster recovery on Hypervisor is mandatory**
  - **Scales without downtime** (add more servers or resources without users even noticing)
  - **Load balanced servers** with nginx
  - High Availability for the IP Address (More than four DNS servers)
  - **Highly Available Storage with GlusterFS**
  - **MySQL slave-master DB cluster**
  - **Memcache or Redis object cache** (Here our application can be smarter if it is aware of memcache)
  - Sources Control System to stored web served data
- The ability to easily roll back if we made a mistake
- The ability to store the data on the local filesystem of each server, rather than having to use a fileserver



High availability for LAMP web-hosting

2. Concept two – Cloud Side LAMP Hosting on AWS

- We can design and architect our infrastructure with focusing on Cloud provider specific tools and our customer location for planning to deploy our solutions in AWS region. Our instances must be in High Availability set on AWS.
- We will be used cost effective solutions for 'pay as you go' after optimized our development…
- We can use scalable developed for its purpose services in AWS for web applications
  - Regions and Availability zones for targeting customer regions
  - **Amazon Aurora** is a MySQL and PostgreSQL-compatible relational database supported Elastic cache
  - **DNS Route 53**
  - **ELB** – Elastic Load Balancer
  - **Bastion Host** for security used (is a server whose purpose is to provide access to a private network from an external network, such as the Internet.)
  - **Amazon EFS** (Amazon Elastic File System - fully managed elastic NFS file system for use with AWS Cloud services and on-premises resources)

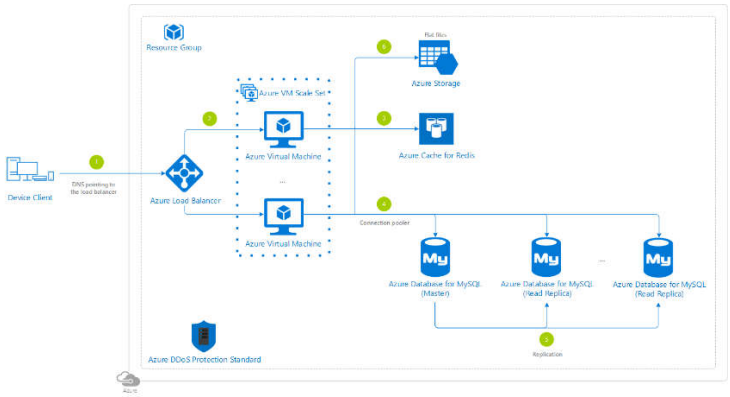


3. Concept two – Cloud Side LAMP Hosting on Azure

- Our goal is same and solution is similar than in AWS but Azure services named differently
- Architecture services
  - Azure Linux Virtual Machines - The most basic way to get computing power on Azure, in this case hosting the Apache web server and application PHP files LAMP components.
  - Azure Virtual Machine Scale Set - Let you create and manage a group of identical, load balanced Virtual Machines.

Created by Szabolcs Illes 30.12.2020 /szabolcs.illes@yahoo.com

- Azure Database for MySQL - The LAMP data-storage component.
- Azure Cache for Redis - Cache to improve the performance and scalability of the architecture.
- Azure Load Balancer - Distributes the traffic across the different Azure Linux Virtual Machine instances from the Azure Virtual Machine Scale Set.
- Azure Storage - Stores the flat files.
- Azure DDoS Protection Standard - Azure DDoS protection, combined with application design best practices, provide defense against DDoS attacks.



4. Concept three – Cloud Side LAMP Hosting on GCP

- On Google Cloud Platform we can deploy LAMP stack on a Compute Engine instance. Community tutorials: https://cloud.google.com/community/tutorials/setting-up-lamp
  Video tutorials: https://www.youtube.com/watch?v=YQluAdRTQqg

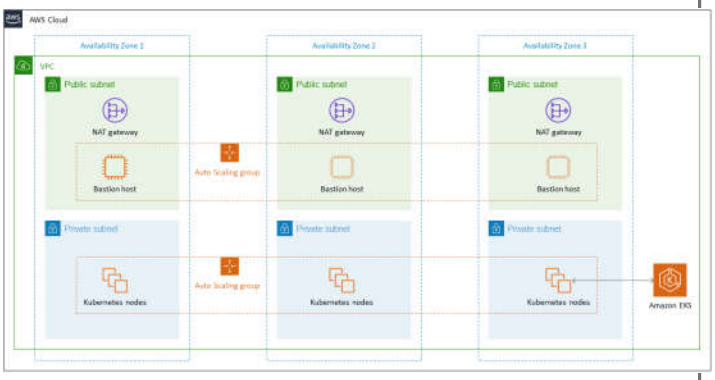
5. Concept three – Using Serverless solutions on Cloud providers Kubernetes Platform

- Amazon EKS - Amazon Elastic Kubernetes Service
- Azure – AKS (https://docs.microsoft.com/en-us/azure/aks/intro-kubernetes)
- Google Cloud Platform – GKE (https://cloud.google.com/kubernetes-engine/docs/concepts/cluster-architecture)

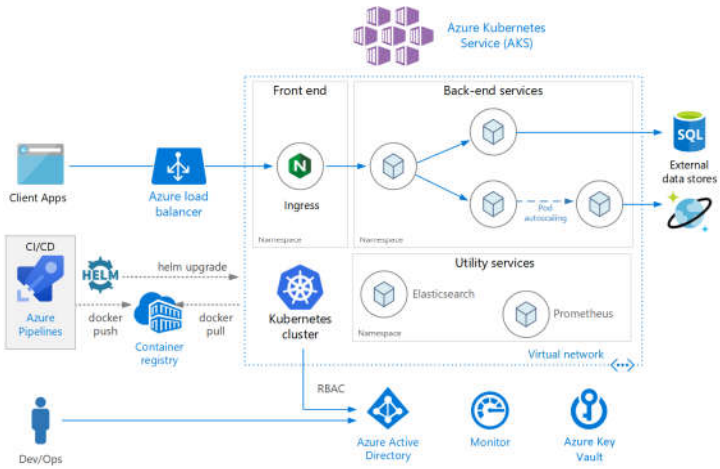
Benefits of using Kubernetes:

- Portability and flexibility
- Multi-cloud capability
- Increased developer productivity
- Open source
- Proven and battle-tested
- Market leader, etc.

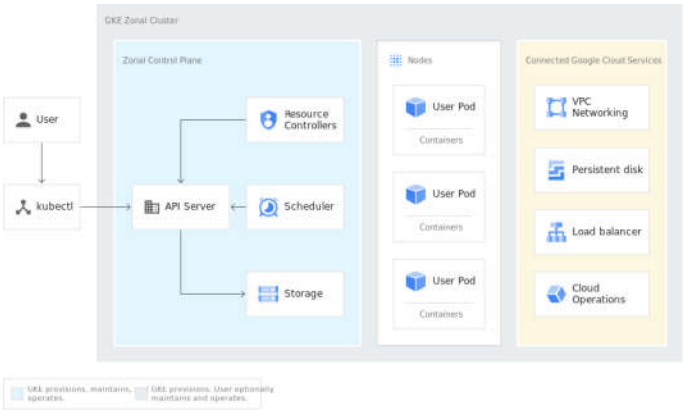
- **Amazon EKS** architecture



- **Azure AKS** architecture



- **Google Cloud Platform Kubernetes** architecture



Created by Szabolcs Illes 30.12.2020 /szabolcs.illes@yahoo.com