



## High Concurrency Architecture on AWS

**Moodle high concurrency architecture in AWS involves using multiple cloud servers with AWS auto scaling feature to handle the load of high user traffic.**

### **Benefits of using High Concurrency Architecture (Horizontal Scaling)**

- High Availability of Moodle Website
- Elasticity of scaling the servers automatically when traffic increases
- Optimized database services
- Caching systems
- Cost effective

### **Services to be used on AWS platform for the deployment :**

- Amazon Virtual Private Cloud (Amazon VPC),
- Amazon Elastic Compute Cloud (Amazon EC2),
- Auto Scaling, Elastic Load Balancing (Application Load Balancer),
- Amazon Relational Database Service (Amazon RDS),
- Amazon ElastiCache,

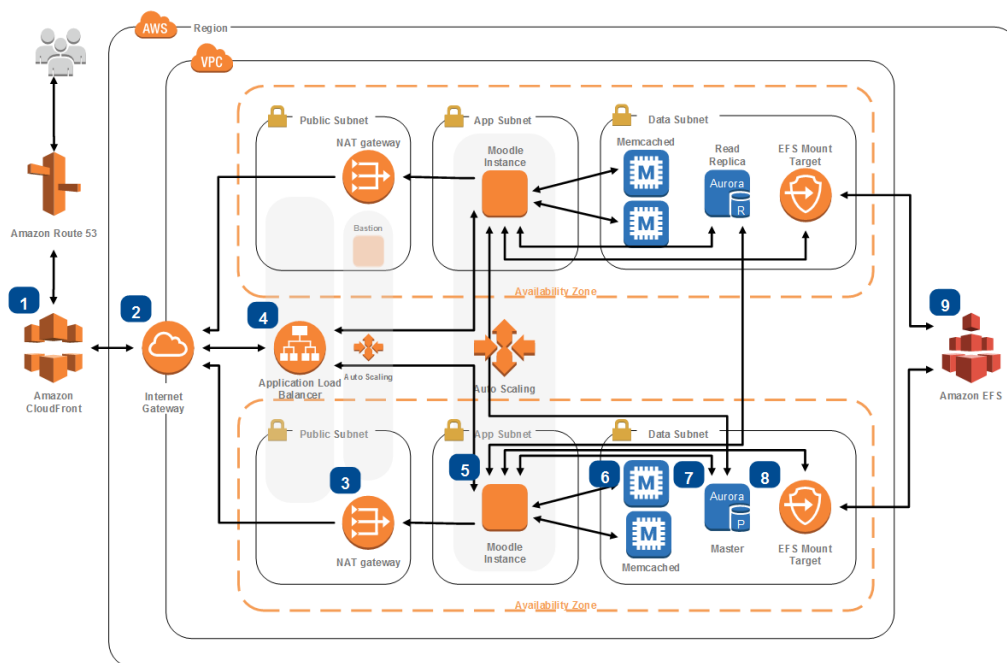
***The above services will run 24/7 on your AWS platform.***

## Architecture Diagram :

# Moodle Hosting

## How to run Moodle on AWS

Moodle is a learning platform designed to provide educators, administrators and learners with a single robust, secure and integrated system to create personalised learning environments.. This reference architecture simplifies the complexity of deploying a scalable and highly available Moodle site on AWS.



- 1 Static and dynamic content is delivered by **Amazon CloudFront**
- 2 An **Internet gateway** allows communication between instances in your VPC and the Internet
- 3 **NAT gateways** in each public subnet enable Amazon EC2 instances in private subnets (App & Data) to access the Internet.
- 4 Use an **Application Load Balancer** to distribute web traffic across an Auto Scaling Group of Amazon EC2 instances in multiple AZs.
- 5 Run your Moodle site using an **Auto Scaling group of Amazon EC2 instances**. Install Moodle 3.4, Apache 2.4, and PHP 7.
- 6 Configure two instances of **Amazon ElastiCache (Memcached)**. One for Session cache and one for Application caching.
- 7 Simplify your database administration by running your database layer in **Amazon RDS** using Aurora PostgreSQL.
- 8 Amazon EC2 instances access shared Moodle data in an Amazon EFS file system using **Mount Targets** in each AZ in your VPC.
- 9 Use **Amazon EFS**, a simple, highly available, and scalable network file system so Moodle instances have access to shared data.



## AWS Reference Architectures

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[https://raw.githubusercontent.com/anirbandutta9/moodle\\_high\\_available\\_aws/master/aws-refarch-moodle-architecture.png](https://raw.githubusercontent.com/anirbandutta9/moodle_high_available_aws/master/aws-refarch-moodle-architecture.png)

## **Requirements for deploying moodle on AWS using horizontal scaling:**

- 1) AWS account console access ( AWS account must have billing activated )
- 2) Domain/Subdomain name to be mapped with moodle installation
- 3) Domain DNS access to add DNS records
- 4) Moodle version to be installed (will install the latest version by default if not specified)

**THANKS & REGARDS**

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