



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,

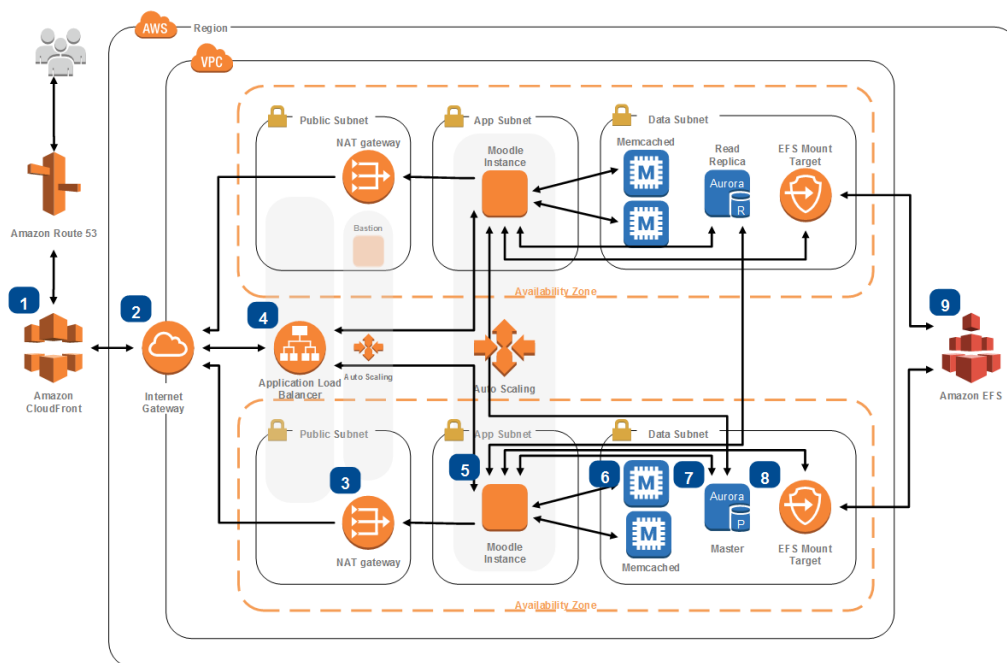
- Amazon Elastic File System (Amazon EFS),
- Amazon CloudFront,
- Amazon Route 53,
- Amazon Certificate Manager (Amazon ACM)
- AWS CloudFormation.

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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Download full image here ->

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)