

Design

MyBB is LAMP application. To be reasonably available and scalable, stack need to include at least 2 database servers, 2 frontend servers in different availability zones and a loadbalancer. RDS Aurora was chosen as database backend. For frontend servers Amazon Linux AMI are used, mainly because of predictable cloudinit. Following areas are extending this basic design.

Security:

Backend database servers are in Private1 and Private2 subnetss that are not accessible from Internet, only from frontend servers, over dedicated private routing table and private security group to port 3306.

Frontend servers are accessible from Internet on port 80. Frontend servers are managed with SSH from subnet and keys defined during stack deployment. Frontend servers have dedicated public routing table and public security group as well, which allows access to ports 22,80,443. They use VPC Internet Gateway to access public Internet.

Monitoring:

ELB is logging to S3 bucket. SNS topic is set up to deliver notifications from three Cloudwatch alarms – CpuHigh, CpuLow and CostAlarm. Notification email is set during stack deployment with CloudFormation.

High Availability:

Backend is set up as a database cluster with 1 writer and 1 read replica. Frontend servers are behind ELB. Both frontend webservers and backend database servers are in 2 availability zones.

Scalability:

Both frontend and backend servers can be scaled verticaly and horizontaly. Vertical scaling is done in EC2 or RDS instance sizes. Horizontal scaling for backend servers are read-replicas, for frontend servers are Upgrade and Downgrade AutoScalingGroup policies based on CpuHigh and CpuLow alarms on instances. There is upper limit set to 1000 for number of frontend servers.

Architecture:

Below is the overall architecture created on top of respective AWS components used.

