AWS LMS Engineer – Real-time Project (Moodle on AWS)

This PDF walks you through a production-grade Moodle deployment on AWS using Terraform and Docker. It includes architecture notes, step-by-step setup, security tips, and troubleshooting.

Architecture (High level)

- VPC (2 public + 2 private subnets) - ALB + Auto Scaling Group (EC2) running Nginx + Moodle container - RDS MySQL (Multi-AZ), S3 for filedir, optional CloudFront, optional Redis - CloudWatch for logs/metrics, AWS Backup

Setup Steps

1) Clone repository and install Terraform/AWS CLI. 2) Configure AWS credentials. 3) Edit terraform.tfvars with region, DB password, instance types. 4) terraform init/plan/apply. 5) Open ALB DNS in browser and complete Moodle installer. 6) (Optional) Add Route 53 + ACM for HTTPS.

Security

• Use Secrets Manager for DB credentials. • Restrict SGs to ALB->EC2 and EC2->DB only. • Attach AWS WAF to ALB; enable Shield if public-facing. • Enforce TLS 1.2+, HSTS in Nginx.

Operations

• Patch via AMI pipeline or replace Launch Template version. • Autoscale by CPU or ALB request count. • Back up DB via AWS Backup; test restores monthly.

Troubleshooting

• 5xx on ALB: check target health, Nginx access/error logs. • Install loop: database connectivity/env vars. • Slowness: enable Redis, raise PHP memory limit, add CloudFront.