CASE STUDY

Aspire DevOps Product for a Leading International Education Company in the US

schoolnet®

aspire SYSTEMS

attention. always.

About the Customer

SchoolNet is a leading international education company. Leader in data-driven education for K-12 School system in US. It is a global advisory and educational management firm, and is the largest operator of kindergarten-to-grade-12 schools in the world. The company has its network over **433** First Nations schools under federal jurisdiction in over a dozen countries. It works internationally with public and private sector clients on school improvement initiatives.

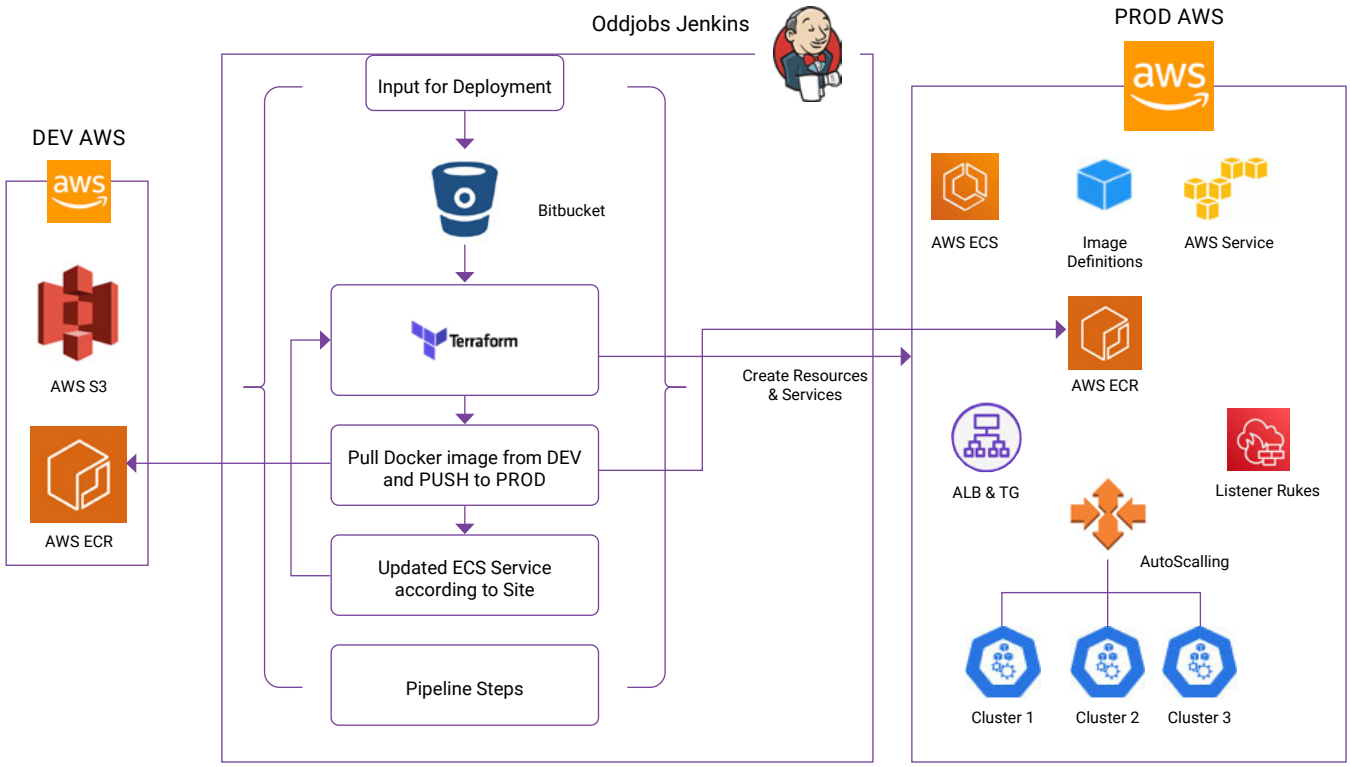
The Challenge

During this pandemic, most of the schools are operating online which directly increased the usage of the online education portal of the customer. More schools opted to use the online education portal, due to which there was a huge responsibility from the customer to make sure all the public and private schools are able to perform flawless.

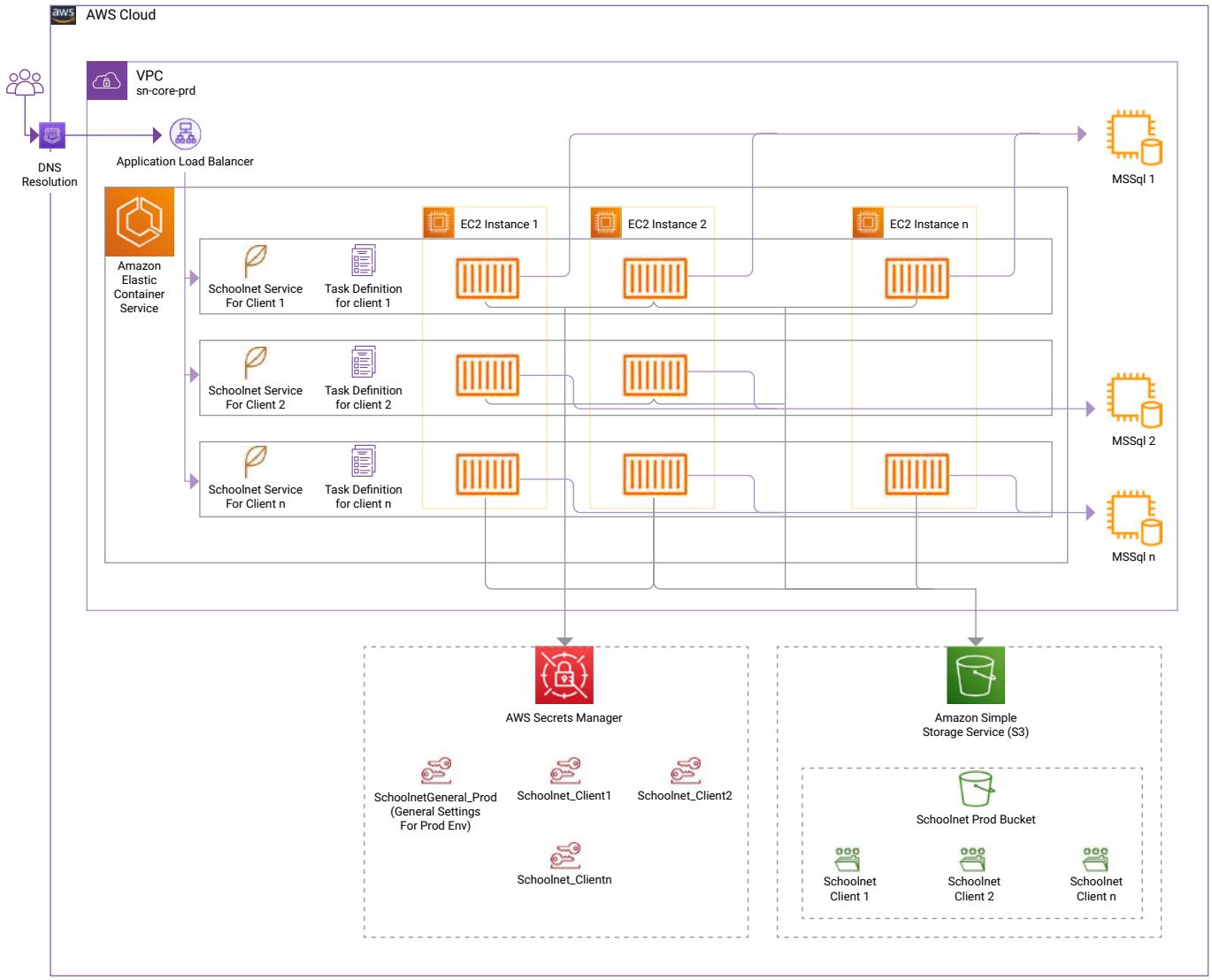
The customer was in need of a Portal comprising of Academic Services, Non-Academic Services, Reporting Services, Customer Relation Management (CRM) system, Back-end Management Services, and other common base framework services like Integration with third-party systems, User, Role & Privilege Management Services, Configuration Services, Workflow Engine, etc.

- The customer expected the Aspire team to design a solution with future vision to make a stabilized platform to handle huge load in a cost-effective way
- Expected a zero downtime during the deployments
- Reduce load times, save bandwidth, and speed responsiveness
- Security centric system design

Deployment Using Jenkins:



Schoolnet Site Deployment:



Aspire's Solution

The Aspire team has implemented a release-based branching model which helps the developers to easily collaborate with other teams without any code conflicts

The SAST Testing and vulnerability report is generated during the SonarQube code analysis are sent as an email attachment to the developers for their reference

- The team has a multi-environment setup comprising of DEV, QA and PROD. The Pipeline setup was seamless without manual intervention expect for approval on deployment phase to the environments.
- All the Sensitive data in the pipeline flow was made sure that it is Secured and encrypted
- Proper branching policies have been enabled for all the branches
- The build artifacts for UI based application were properly versioned and maintained in a centralized location (S3 Bucket) in a secured way.
- The application specific docker images were stored in ECR with image scanning enabled for vulnerability check.
- To handle huge load in a cost-effective way and to reduce the man power, the team had designed a solution to use AWS ECS cluster.
- Load Testing Environment is architected and the results are views via GRAFANA and Logs are Monitored using SPLUNK and NEW RELIC .
- The Services are hosted in Azure App Services.
- Containers are hosted in ECS Cluster irrespective to the environment (DEV, QA and PROD).
- The Aspire team also ensured zero percent downtime.

Technology Snapshot

- **CICD Tools:** Jenkins
- **SCM:** Bitbucket and GIT
- **Code Quality Check Tools:** SonarQube.
- **Artifact Management:** S3 bucket
- **Performance Testing:** Jmeter
- **ITSM:** Jira & ServiceNow
- **Log Management:** Splunk, Grafana and NewRelic
- **Languages** .NET, .NET Core and NodeJS
- **Cloud:** AWS & Azure
- **DB:** MySql and SQL Server
- **Packet Management:** Nexus
- **Container Orchestration:** AWS ECS
- **IAC:** Terraform and CloudFormation

Result and ROI

- Aspire's automation in pipelines help the customer to achieve zero downtime during deployments and reduced the manual work.
- The containerization of the applications enabled the team to handle large number of end users at ease.
- **55%** reduction in deployment cost
- With automation features, productivity increased by **45%**
- Improved code coverage of **85%** by automation review process
- Achieved **15%** reduction in defect leakage into production driven by increase in build frequency
- Reduced time to market by **30%**
- IaC [Terraform] provisioning reduced the manual efforts of deploying infrastructure to matter of minutes from hours.
- **200%** increase in release frequency

Future Impact

- Aspire team design ensures that the customer can handle the enormous number of end users, the flow is easily adaptable and meets the standards of customer.
- Aspire team ensured that a proper disaster recovery setup is implemented.
- The team also implemented industry best practices across the development and also the workflow. Thus implemented a proper DevOps process and culture.

Aspire Systems is a global technology services firm serving as a trusted technology partner for our customers. We work with some of the world's most innovative enterprises and independent software vendors, helping them leverage technology and outsourcing in our specific areas of expertise. Our core philosophy of "Attention. Always." communicates our belief in lavishing care and attention on our customer and employees.

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