aspire **SYSTEMS** | a t t e n t i o n. a l w a y s.

Data center migration and database re–platforming to AWS Cloud

About The Customer

Our customer is a world's leading education publishing and assessment service provider to school and corporations. The customer owns multiple channel media brands and has its presence all across the world.

Challenges:

- *Multiple applications and platforms to be moved to AWS cloud which makes the process tedious*
- *Lack of documentation support and redundant data for on premise datacenter*
- *Poor application performance while accessing from different geo-locations*

Solution:

- *Multiple applications are rebuilt and architected again*
- *Oracle DB migrated to PostgreSQL DB*
- *Containerizations delivered through Amazon EKS architecture.*
- *Containerized applications are moved to Jenkins Continuous integration and further to Jenkins continuous deployment pipelines.*
- *Mirroring approach employed in migration to AWS*
- *Removed dependency from centralized datacenter*

Business Scenario

The customer decided to sell-off their US courseware division to private equity firm. After this strategical move, the customer faced issues regarding platform compatibility. Few of the applications were still running from on premise data center and had to be moved to AWS cloud. Aspire systems came up with a program called **"Trio Migration"** involving administrative migration, data center migration and Database migration.

The Need

Our customer has been using on premise data center which faced many issues such as:

- Upfront hardware and software cost

- Difficulty in capacity building and deployment

- Required dedicated resources for maintaining the data center.

They have felt the need to migrate to a cloud based data center which would reap them far-reaching business returns. The AWS cloud was chosen as a platform which the customer preferred to migrate. Migrating to AWS has following benefits:

- 99.95% uptime of the servers

- Less maintenance cost

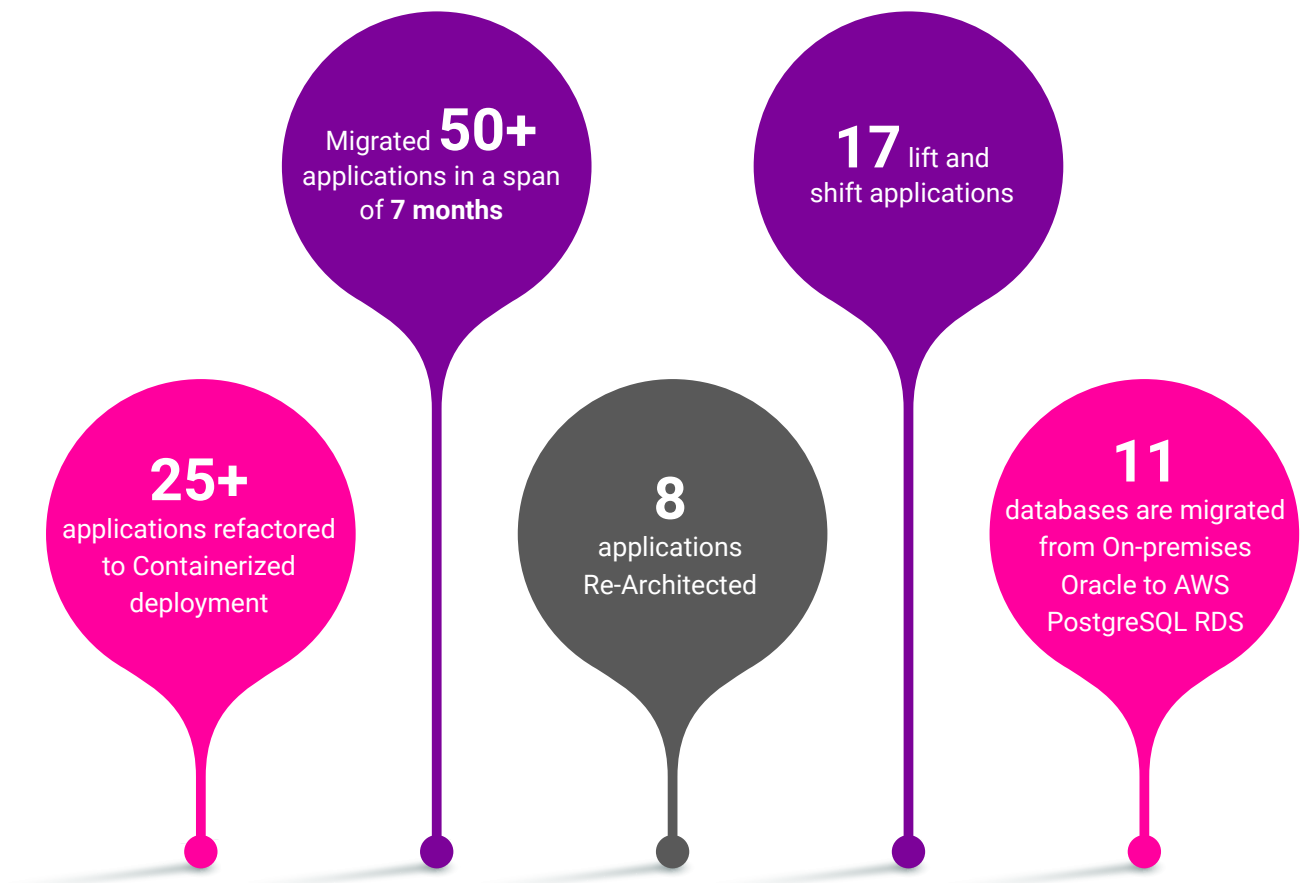- Zero data loss and robust back-up protocols

Results:

- *31% reduced infrastructure cost through containerization*
- *Successfully supports 100,000 requests per second*
- *100+ TB of data migrated from on-premises to AWS*
- *62% increase in economies of scale after moving to AWS cloud*
- *99.99% availability of servers*

Although, our customer was ready to migrate to AWS cloud, there were plenty of challenges in place. The following were the major challenges in detail:

- Multiplicity of applications and platforms which needs to be migrated to AWS. (13 content and 15 customer applications)

- Technical challenges like the deployment architecture should be cloud agnostic.

- Very tightly-coupled applications with complex solution architecture and redundant data

- Difficult to incrementally migrate to a newer framework

- Performance issues associated with on premise data center

Technical Highlights

Migrated **50+** applications in a span of **7 months**

17 lift and shift applications

25+ applications refactored to Containerized deployment

8 applications Re-Architected

11 databases are migrated from On-premises Oracle to AWS PostgreSQL RDS

Aspire's Solution

After initial analysis, our solution architects found that there was an immediate need to re-architect multiple applications and re-build it on containerized architecture. The continuous integration/continuous deployment was automated using Jenkins. The containerizations were delivered through Amazon Elastic Kubernetes Services and developed a centralized log forwarding system from the applications and cluster.

Solution in detail:

The migration to AWS was powered by use of technologies such as Java, PHP, Amazon EKS, PostgreSQL, Jenkins, and Amazon RDS/ Aurora. Each module has a unique approach to ensure smooth migration to AWS cloud.

1. **Application migration:** The cloud related changes are done to make sure all applications are ready for cloud deployment/ enablement. Developed internally built published subscription systems and been re-architected based on AWS Kafka. Other enhancements like log changes, queue related changes and Java development kit changes are in place and WebLogic has been updated.
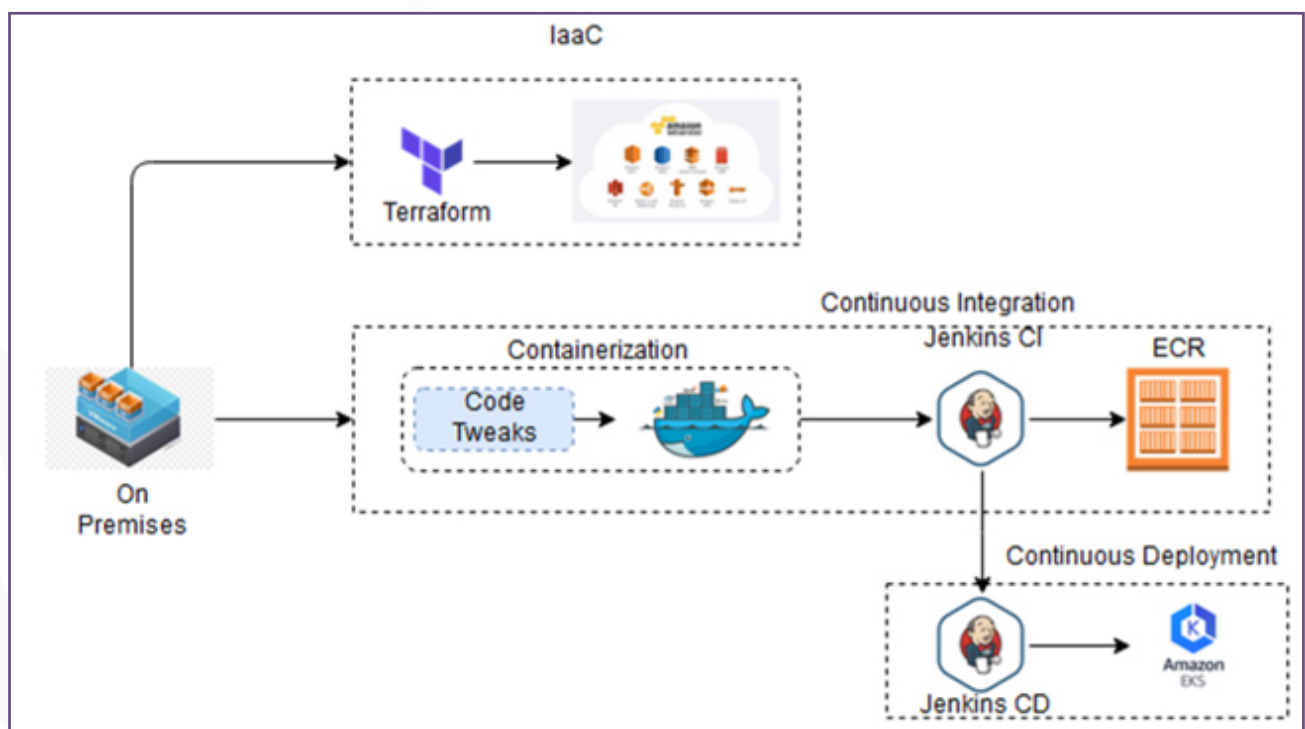
2. **DB migration:** Instances of Oracle, SQL, and MySQL is hosted in AWS RDS/Aurora and applications which are not compatible is AWS RDS/Aurora will be hosted in EC2. Further, Data migration services was used to synchronize data from Data center to AWS. Snowball device was used to export data as the data was more than 1 TB.
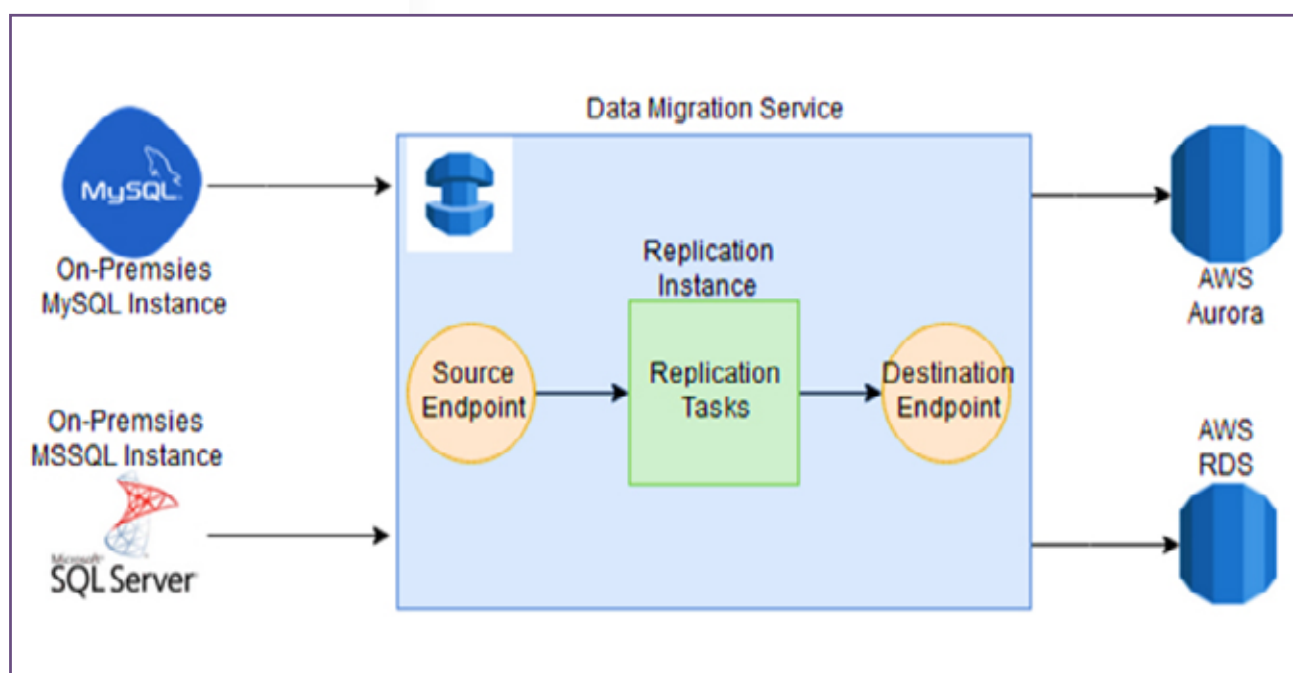
3. **Testing approach:** There were about 8 tiers of testing done right from Restore from backup testing to smoke test to ensure the error free migration to AWS cloud.

4. **URL migration:** When a user hits the old URL, it will be redirected to new URL and we have implemented return services in F5 load balancer feature.

Benefits

- Achieved better scalability support up to 10x, portability, Cost, CI/CD through containerization and ensured 99.99 % availability and scalability.

- Increased speed and agility after migrating to AWS as resources are better used to grow profits for the business.

- Reduced Operational cost with dynamic scaling.

- Supports 100,000 requests/second for certain micro services and capability to support data volume of 3 billion records.

- Increased economy of scale and optimized cost by using right combination of AWS services.

- Higher performance was possible in-spite of accessing the application from different geographical location.

- Reduced business and operational risks by migrating to a more resilient and secured IT environment.

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.

For more info contact: info@aspiresys.com or visit www.aspiresys.com

NORTH AMERICA	POLAND	INDIA	MIDDLE EAST	EUROPE	SINGAPORE
+1 630 368 0970	+44 203 170 6115	+91 44 6740 4000	+971 50 658 8831	+44 203 170 6115	+65 3163 3050