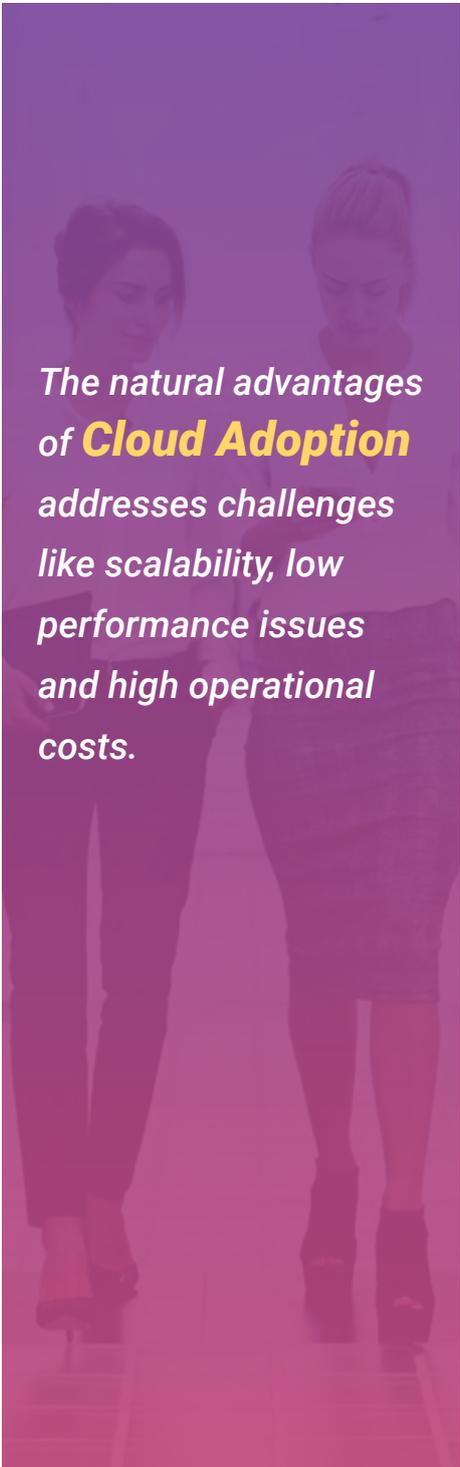# How Trio–Migration strategy helped an organization to add $57 million to its vault

67% enhanced IT real estate performance for a Leading US Publisher

*The natural advantages of **Cloud Adoption** addresses challenges like scalability, low performance issues and high operational costs.*

Introduction:

Organizations are looking up to Cloud as a positive step in overhauling their IT infrastructure. Although, cloud adoption is a continuous journey and requires a deeper impact analysis of their current IT provisioning, has a lot of natural advantages. Having a roadmap and getting expert consultation on cloud adoption strategy based on the IT real estate is a foolproof method for an effective and successful Cloud journey. The Cloud partners help enterprises frame their Cloud adoption Strategy that may range from a simple lift and shift to a complex Cloud Re-engineering solution. So, it becomes imperative to choose the right cloud service providers to cater to infrastructure needs and right cloud partners to channelize the cloud journey.

About the Customer:

Our customer is a U.S. based leading education publishing and assessment service provider to school and corporations with branches across the world. This organization owns multiple channel media brands. They are a leading provider of online learning solutions to the K12 segment.

Bottlenecks:

When a strategic move happens within an organization, they feel the heat to match up with existing infrastructure capability and new demands generated due to the move. Similarly, when organizations move into new business arenas, they aspire to expand and therefore, limited infrastructure capability can seriously underwhelm the brand value of the enterprise. Here is a story of an organization which had limited infrastructure capability and hence, faced severe performance issues through multiplicity of applications and overridden operational cost. Being a new spin-off company from their parent company they had been facing platform compatibility and many of their applications were still running from on premise data centers, 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 felt the need to migrate to a cloud-based data center, which would reap them far-reaching business returns.
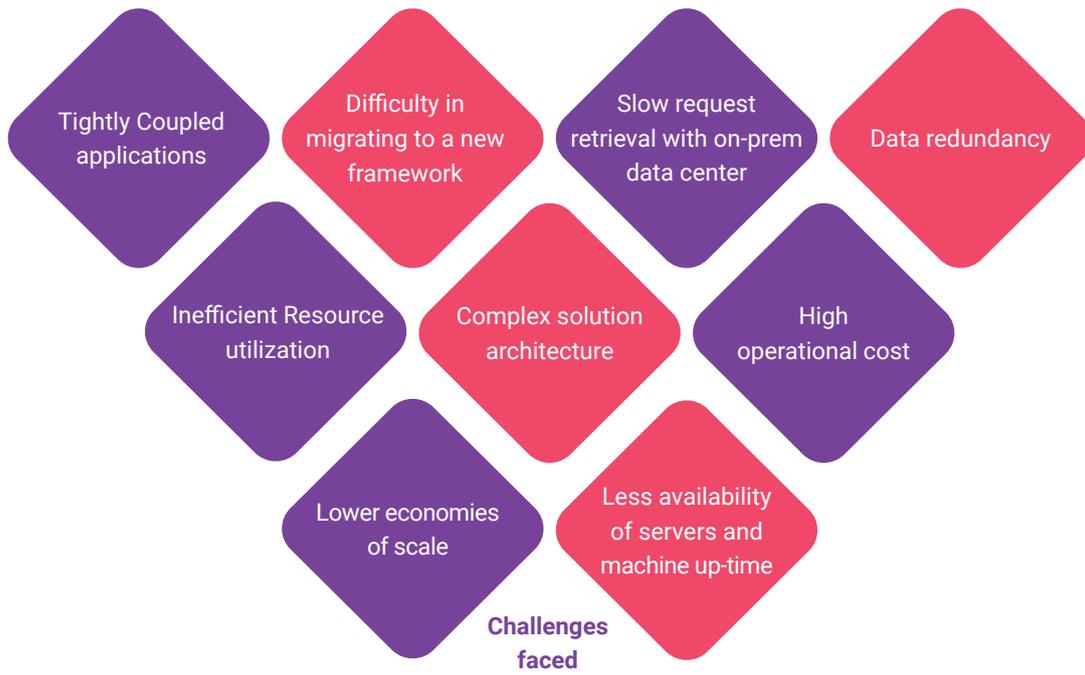
Load spike during Covid times

During Covid19 times, the demand for e-learning had increased and people flocked to Edu-tech platforms for their curriculum. Our customer being an industrial leader in Edu-tech, users using our customer's platform had increased up to **200%**. Due to the load spike, the servers were to be prepared for the increase in demand.

Pain points

- Poor Application Performance

- Platform incompatibility

- Lack of documentation

- Deployment architecture should be Cloud Agnostic

- Multiplicity of applications

- Location specific performance issues

Tightly Coupled applications

Difficulty in migrating to a new framework

Slow request retrieval with on-prem data center

Data redundancy

Inefficient Resource utilization

Complex solution architecture

High operational cost

Lower economies of scale

Less availability of servers and machine up-time

Challenges faced

Trio Migration– Application, Database and Administrative migration strategy

Through trio migration strategy, how we helped our customer save $57 million over three–year period?

1. **Reducing Data center Operation cost:**

   • About 1,755,681 lines of code were authored

    • Eliminating datacenter maintenance and support cost

2. **Database migration to PostgreSQL by eliminating 67% of licensing cost**

    • 2,233 DB objects were migrated

    • More than 72,247 lines were added

The customer partnered with Aspire Systems for leveraging the right Cloud Adoption methodologies and roadmap. Aspire's Cloud Architects came up with Cloud Re-engineering solutions on the bedrock of 6Rs (Refactor, Re-platform, Rehost, Repurchase, Retire and Retain)

Aspire's time tested approach, ACME (Aspire Cloud Migration Enabler) was at the heart of the solutions offered to the customer. ACME is a three-step process to reduce the dependencies and fast-track project completion.
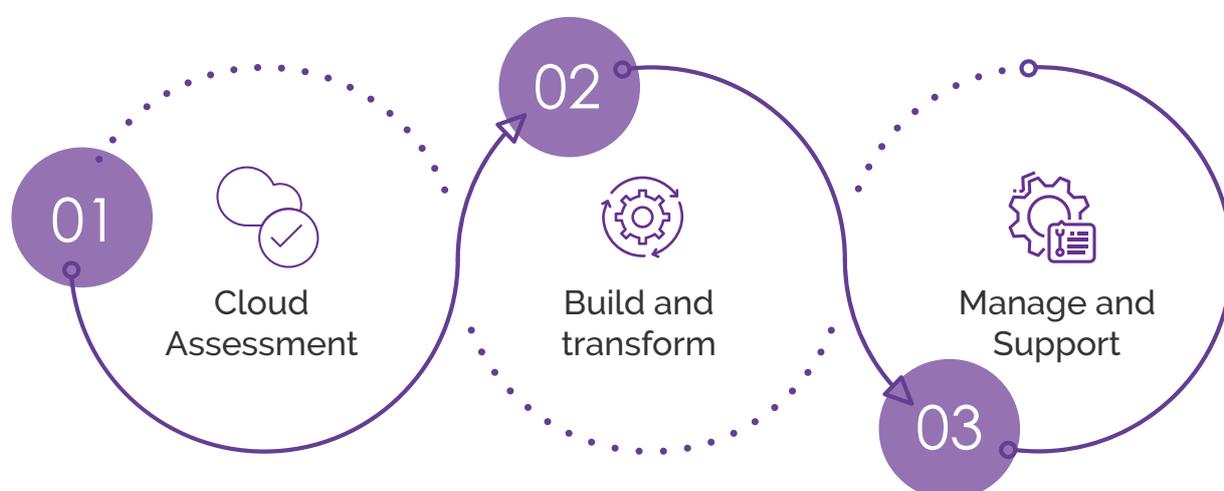
Success Story in detail

Cloud Architects at Aspire had an in-depth understanding of the existing environment which helped them assess better in spite of the load spike after Covid situation. The solutioning was rooted in reducing the business impacts and for this they have framed a roadmap that was a precursor for a successful migration. Aspire decided to migrate to AWS, which was powered by the use of technologies such as Java, PHP, Amazon EKS, PostgreSQL, Jenkins, and Amazon RDS/ Aurora. Solution Architects at Aspire adopted a module specific approach to ensure smooth migration to AWS cloud.
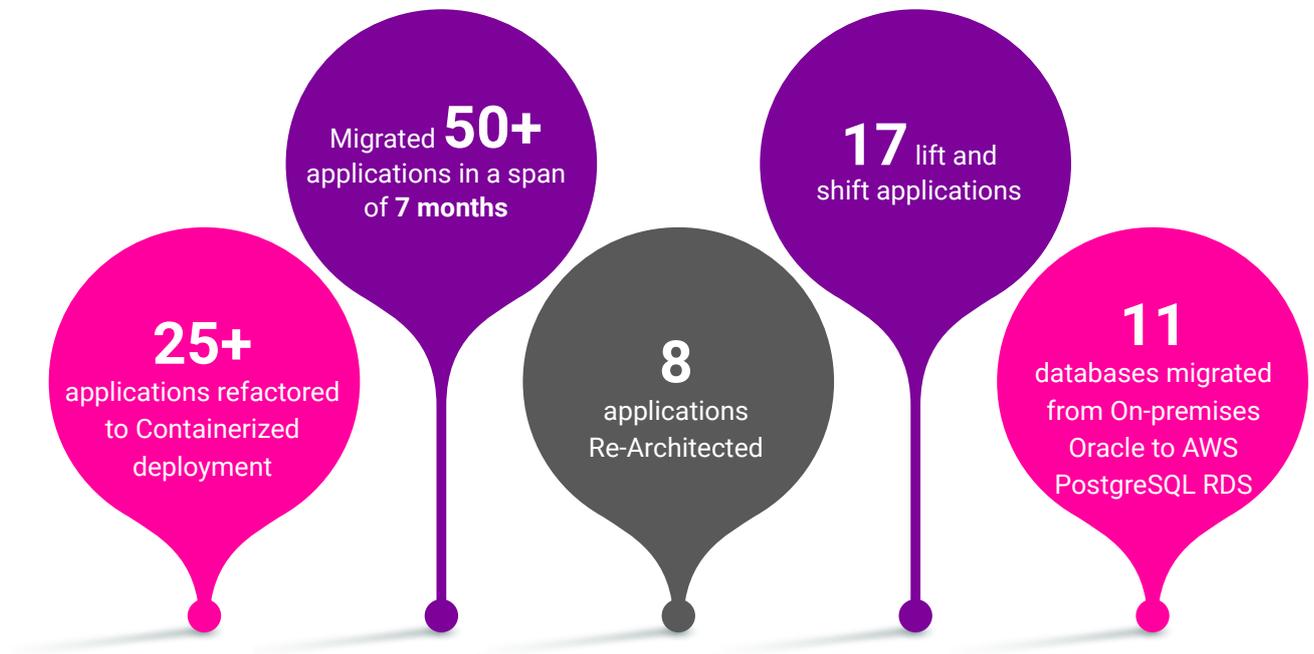
1. **Application migration:** The cloud related changes were done to make sure all applications were ready for cloud deployment/ enablement. Developed internally built published subscription systems and was re-architected based on AWS Kafka. Other enhancements like log changes, queue related changes and Java development kit changes were in place and WebLogic was updated.

2. **DB migration:** Instances of Oracle, SQL, and MySQL was hosted in AWS RDS/Aurora and applications which were not compatible in AWS RDS/Aurora was hosted in EC2. Further, Data migration services were 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.

Highlights:

- Multiple applications were rebuilt and architected again

- Oracle DB migrated to PostgreSQL DB Containerizations delivered through Amazon EKS architecture

- Containerized applications were moved to Jenkins Continuous integration and further to Jenkins continuous deployment pipelines

- Mirroring approach employed in migration to AWS

- Removed dependency from centralized datacenter

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

25+ applications refactored to Containerized deployment

8 applications Re-Architected

17 lift and shift applications

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

Migration Timeline

Total Lines of Code
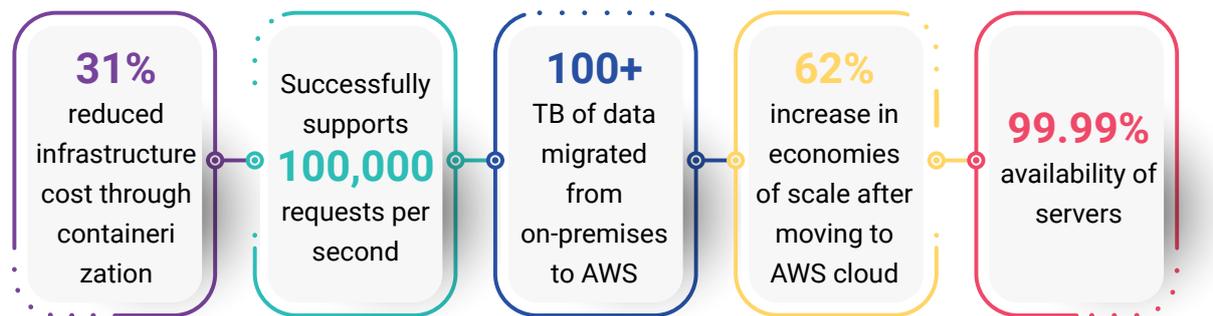1,755,681

Total Number of Commits
1,385

Content Migrated
10TB

DB Objects Migrated
2,233

Round of Testing
17

Lines Added
72,247

Files Touched
2,258

DB Data Migrated
1TB

Lines Removed
215,492

Rounds of Performance Testing
270

Partner Team Members
200+

TB of Data Migrated from DCs
151

Simultaneous Projects
22

Months of Work
11

Snow Tickets Created
400

Individual Repository Commits
6,800+

DB Tables Replatformed
18,000

Objects Rebranded
3.5M

Objects Assessed
100M+

DB Tables Migrated
113

Total Number of Commits
801

Total Lines of Code
1,391,522

Rounds of Testing
33

Business Benefits:

ACME being our philosophy in implementation of the mammoth task, we helped the customer achieve better scalability support up to 10x, portability, Cost, CI/ CD through containerization and ensured **99.99 %** availability and scalability.

| **31%** reduced infrastructure cost through containeri zation | 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 |

Faster adoption

As the cloud adoption was done within a short window period, a great amount cost savings was possible for our customer. The quicker cloud adoption led to savings of **$20 million** dollars and on the whole **$57 million** dollars (including the licensing cost savings) were saved through our trio migration strategy

In addition to this, customer saw an increase in speed and agility after migrating to AWS as resources were better used to grow profits for the business. There was a macro reduction in operational cost with dynamic scaling. The new Cloud Environment supports 100,000 requests/second for certain micro services and has the capability to support data volume of **3 billion** records. 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

About Aspire

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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