Project

Romania base company a fast-growing online marketplace and e-commerce leader in south-eastern Europe headquartered in Romania.

Specific Issues:

- Businesses face numerous obstacles when attempting to sell products across borders, including:
- **Regulatory Compliance**: Navigating different legal and regulatory frameworks in each country can be daunting and time-consuming.
- **Logistics and Shipping**: Coordinating international shipping, customs, and delivery can lead to delays and increased costs.
- **Currency Exchange and Payment Processing**: Managing multiple currencies and payment methods can complicate transactions and financial planning.
- **Cultural Differences and Marketing**: Adapting marketing strategies to different cultural contexts is essential but challenging.

Platform Migration Process

- Romania base company we used AWS Cloud base. all tools and data were migrated onto a single platform.
- By using CDP() we perform different types of data processing to enrich the information
- It uses Kafka for Streaming and impala and hive as SQL engine, HDFS() for storage, and spark with Scala for data processing

Leveraging AI, DevOps, and Cloud Technologies:

- **Scalable Cloud Infrastructure with AWS**:
- Implement a cloud-based infrastructure using AWS to automatically scale resources in response to traffic demands. AWS services such as EC2, S3, and RDS provide the flexibility and scalability required to handle fluctuating web traffic efficiently.
- **CDP for Efficient Data Management**:

Utilize Cloudera Data Platform (CDP) to streamline data integration, processing, and management. CDP provides a unified data platform that ensures reliable and readily available data for analysis.

- **Capacity Planning with Hadoop**:

Use Hadoop for scalable storage and processing of large datasets. Capacity planning with Hadoop ensures that the infrastructure can handle data growth efficiently and cost-effectively.

- **Secure Data Handling with Kerberos:**

Implement Kerberos for secure authentication and authorization. Kerberos provides robust security measures to protect sensitive data and ensure compliance with regulatory standards.

- **Continuous Integration and Deployment with Jenkins, Docker, and Kubernetes**:

Adopt DevOps practices with Jenkins for continuous integration and continuous deployment (CI/CD). Jenkins automates the build and deployment process, ensuring faster and more reliable releases.

Utilize Docker for containerization to ensure consistency across development and production environments.

Implement Kubernetes for container orchestration, providing automated deployment, scaling, and management of containerized applications.

Capacity Planning

1.Assess Current Infrastructure and Workload:

- **Identify Resources:** List all current AWS resources (EC2 instances, S3 storage, RDS databases) and Cloudera Data Platform (CDP) components.
- **Evaluate Utilization:** Use AWS CloudWatch, CDP monitoring tools, and Hadoop metrics to evaluate the current usage of these resources. Monitor traffic, storage usage, data processing, and database queries.

2. Define Performance Metrics and Requirements:

- **Set Benchmarks:** Determine acceptable performance levels for response time, throughput, and latency across all services.
- **Traffic Analysis:** Use historical data to understand peak usage times and growth trends. Analyze the types of workloads on Hadoop (batch, real-time) and their resource usage patterns.

3. Forecast Future Demand:

- **Growth Projections:** Based on historical data, project future growth in traffic, data storage, and processing needs. Estimate future data ingestion rates for Hadoop and CDP

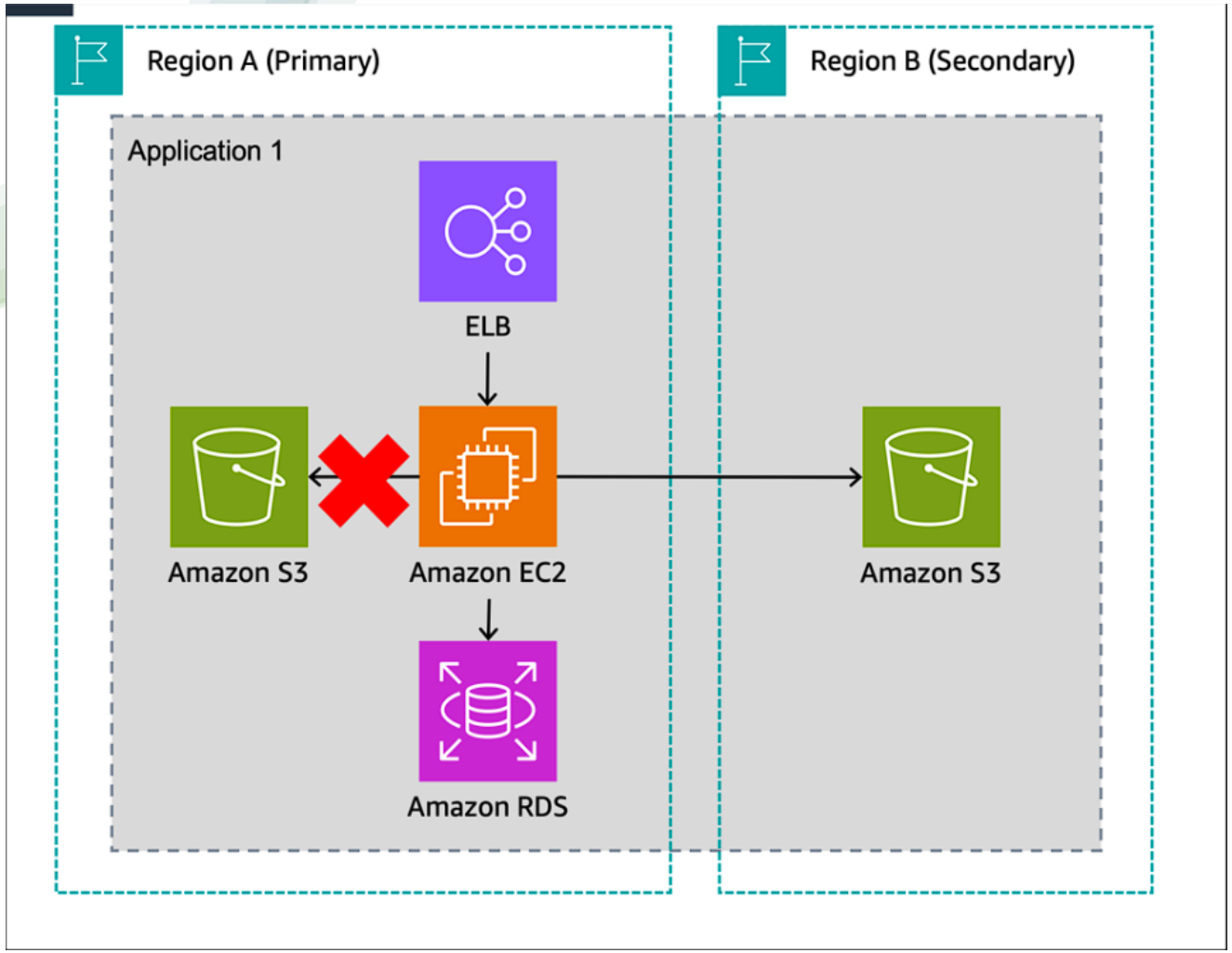
4. Resource Planning:

- **AWS Resources:**
  - **EC2 Instances:** Plan for scaling EC2 instances based on traffic patterns using Auto Scaling.
  - **S3 Storage:** Ensure sufficient S3 storage for data growth with lifecycle policies for data management.
  - Build a security monitoring solution with AWS AppFabric and Amazon Security Lake

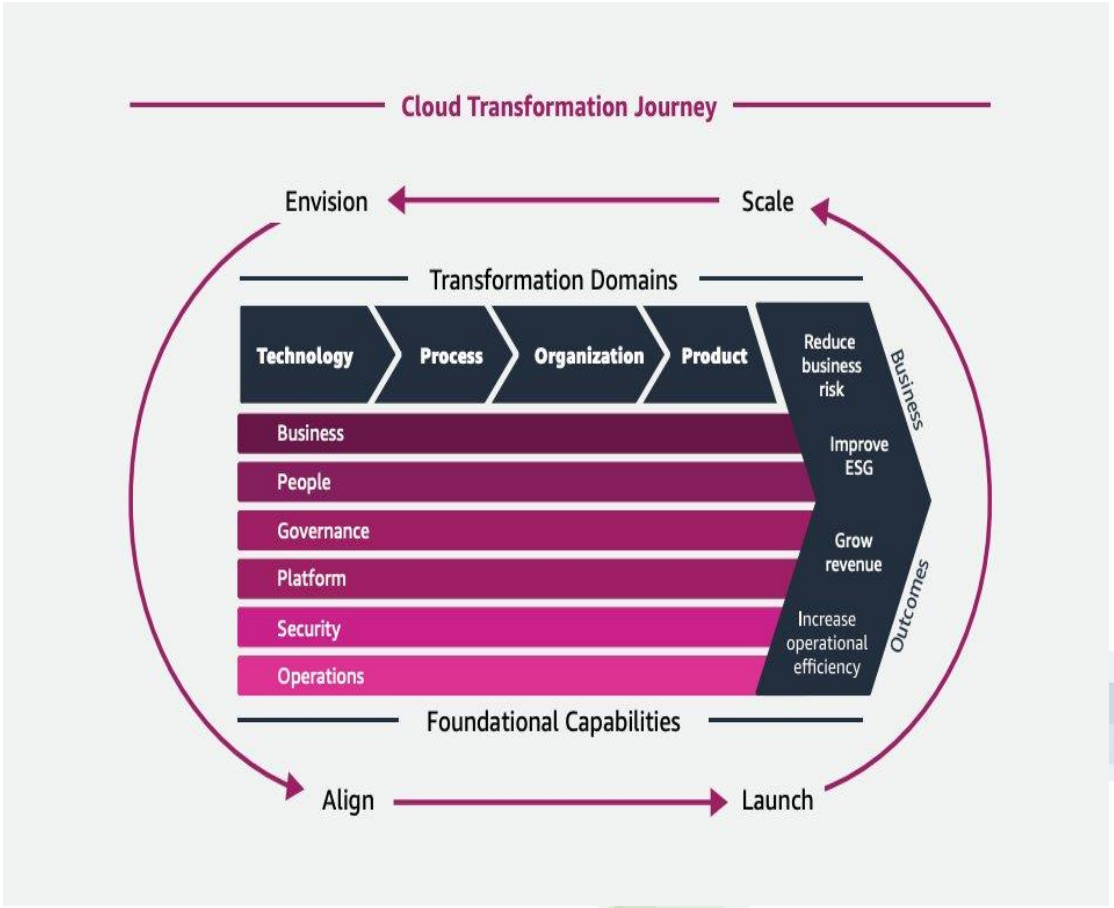
5.Security with Kerberos:

- **Kerberos Integration:** Ensure all components (AWS, CDP, Hadoop) are integrated with Kerberos for unified security management.
- **Regular Audits:** Conduct regular security audits and updates to security policies

Architecture



Creating an organizational multi-Region failover strategy



Migrating to the cloud with AWS