Proposal

Here, we're excited to outline the necessary steps to migrate the PETRA application to the AWS Cloud that will match your vision for expansion and operational efficiency. This document will provide a detailed plan to guarantee a smooth transition and boost PETRA's performance in its new cloud environment.

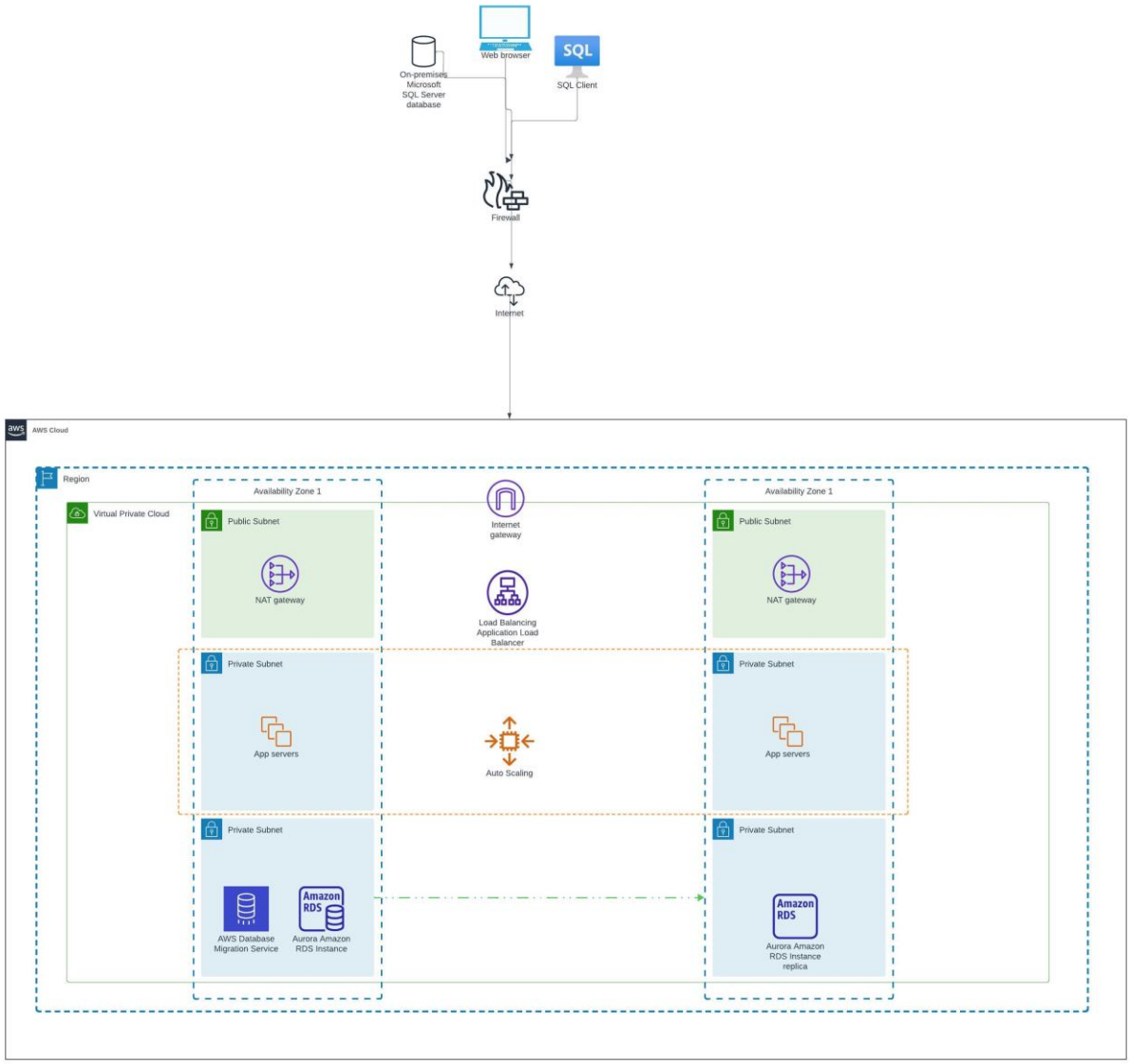
Steps on-premises

- Install the SQL Drivers and AWS Schema Conversion Tool (SCT) on Local Computer
- Prepare your Microsoft SQL Server database for migration.
- Use AWS SCT to Convert the SQL Server Schema.
- Create AWS DMS Source and Target Endpoints.
- Provide training to the IT staff.

AWS Account Configuration and Beyond

1. **Create AWS Account:** Sign up for an AWS account.
2. **Set up IAM (Identity and Access Management):** Configure IAM users, groups, and roles with necessary permissions for security.
3. **Create a Virtual Private Cloud (VPC):** Set up a VPC in AWS for network isolation, including subnets, route tables, and internet gateways.
4. **Set up EC2 Instances:** Launch EC2 instances for the application and web servers. Select the appropriate instance type based on the existing server specifications.
5. **Configure Amazon RDS (Relational Database Service):** Create an RDS instance mirroring the current database configuration.
6. **Data Migration:** Use AWS Database Migration Service to migrate the database from the on-premises SQL Server to RDS. Ensure data integrity and consistency.
7. **Application Migration:** Deploy the application code to the EC2 instances. Adjust configurations to point to the new RDS instance.
8. **Set up Elastic Load Balancing (ELB):** Configure ELB to distribute traffic across EC2 instances for high availability and fault tolerance.
9. **Implement Security Measures:** Establish security groups, Network Access Control Lists (NACLs), and IAM policies to ensure access control and protection.
10. **Backup and Disaster Recovery:** Configure AWS Backup for regular backups and consider a multi-region deployment for disaster recovery.
11. **Testing:** Conduct extensive testing in the new AWS environment, including load testing and user acceptance testing.

12. **DNS Update:** Update DNS records to point to the AWS-hosted application once testing is successful.
13. **Launch:** Once all systems are operational and tested, officially migrate all operations to the AWS environment.
14. **Post-Migration Support:** Monitor the system closely after migration for any issues and provide necessary support.



An AWS Cloud architecture for web hosting in migration process

	Upfront Cost	Monthly cost
Amazon EC2	**£0.00**	**£12.26**
AWS Application Migration Service	**£0.00**	**£0.00**
AWS Database Migration Service	**£0.00**	**£923.82**
Amazon RDS Custom for SQL Server	**£0.00**	**£1,086.24**
Amazon Route 53	**£0.00**	**£0.00**
Amazon Virtual Private Cloud(VPC)	**£0.00**	**£36.50**
AWS IAM Access	**£0.00**	**£100.40**
Elastic Load Balancing	**£0.00**	**£89.43**
Total	**£0.00**	**£2,248**

8 weeks staff training	£300,000
Post-Migration Support	**£150,000**

Role	**Rate**
Business Analyst	£400
Cloud Consultant	£2000
Solution Architect	£1000
Server Migration Engineer	£650
Database Migration Engineer	£750
First/Second line Cloud support	£250
Third line Cloud support	£350

In total £816,000

References

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2. AWS Prescriptive Guidance. (n.d.). Migrating an On-Premises Microsoft SQL Server Database to Amazon EC2. https://docs.aws.amazon.com/prescriptive-guidance/latest/patterns/migrate-an-on-premises-microsoft-sql-server-database-to-amazon-ec2.html](https://docs.aws.amazon.com/prescriptive-guidance/latest/patterns/migrate-an-on-premises-microsoft-sql-server-database-to-amazon-ec2.html

3. AWS Whitepapers. (n.d.). An AWS Cloud Architecture for Web Hosting. https://docs.aws.amazon.com/whitepapers/latest/web-application-hosting-best-practices/an-aws-cloud-architecture-for-web-hosting.html](https://docs.aws.amazon.com/whitepapers/latest/web-application-hosting-best-practices/an-aws-cloud-architecture-for-web-hosting.html