

# AWS Cloud Migration Proposal

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## Overview

This proposal outlines a cost-effective and scalable cloud migration plan for a Raleigh, NC-based startup. The plan utilizes AWS services to address the company's needs for hosting web applications and managing a SQL Server database. The recommendations were determined using the AWS Pricing Calculator, prioritizing performance, cost optimization, and simplicity.

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## Region Selection

The recommended AWS region is **US East (N. Virginia)**. This region was chosen due to its geographic proximity to Raleigh, NC, ensuring:

- **Low latency** for users in the startup's primary operational area.
  - **Availability of required services** with optimal pricing.
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## AWS Services and Configuration

### 1. Web Servers

**Service:** Amazon EC2

**Use Case:** Hosting Windows-based web applications.

- **Configuration:**
  - **Instance Type:** **t3.xlarge**
    - 4 vCPUs, 16GB RAM, 50GB gp3 storage per instance.
  - **Number of Instances:** 2 (to support scalability and availability).
  - **Tenancy:** Shared.
  - **Workload:** Constant usage.
- **Pricing Model:**
  - **3-Year Reserved Instances (No Upfront).**

- Monthly cost per instance: **\$60.30**.
  - **Rationale:**
    - Provides full control over the Windows OS, meeting the company's requirement to manage its environment.
    - Offers scalability to accommodate future growth.
    - Reserved Instances reduce costs significantly while supporting consistent workloads.
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## 2. Database Server

**Service:** Amazon RDS for SQL Server

**Use Case:** Managed database hosting.

- **Configuration:**
    - **Instance Type:** **db.m5.xlarge**
      - 8 vCPUs, 16GB RAM, 750GB gp3 storage.
    - **Database Engine:** Microsoft SQL Server.
    - **Storage Configuration:**
      - 750GB gp3 SSD.
      - IOPS: 3,000.
      - Throughput: 125 MiB/s.
  - **Pricing Model:**
    - On-Demand pricing: **\$2,645.74/month**.
  - **Rationale:**
    - Fully managed service eliminates the need for the startup to manage database operations, backups, and updates.
    - Ensures high availability and scalability for critical applications.
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## Cost Summary

The estimated total monthly and annual costs for this migration plan are as follows:

Service	Monthly Cost	Annual Cost
2 x EC2 Instances	\$104.97	\$1,259.64

<b>RDS Instance</b>	\$2,645.74	\$31,748.88
<b>Total</b>	<b>\$2,750.71</b>	<b>\$33,008.52</b>

- **Note:** Cost estimates include all configurations, such as Reserved Instances for EC2 and gp3 storage for RDS.

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## AWS Pricing Calculator Estimate

A detailed breakdown of the cost estimate is available through the AWS Pricing Calculator. Access it using the following link:

[View Pricing Estimate](#)

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## Key Benefits of the Proposed Plan

1. **Scalability:**
  - EC2 and RDS configurations allow seamless scaling as the startup grows.
2. **Cost Optimization:**
  - Reserved Instances and gp3 storage reduce long-term costs without sacrificing performance.
3. **Reliability:**
  - Fully managed services (RDS) ensure high availability and minimal downtime.
4. **Low Latency:**
  - Hosting in the US East (N. Virginia) region provides fast response times for Raleigh-based operations.

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## Next Steps

1. Review and finalize the proposed configurations.
2. Proceed with account setup and resource provisioning in the AWS Management Console.
3. Implement monitoring tools to ensure performance and budget adherence post-migration.

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Prepared with a focus on scalability, cost-efficiency, and performance, this proposal demonstrates a robust cloud migration strategy tailored to the startup's needs.

