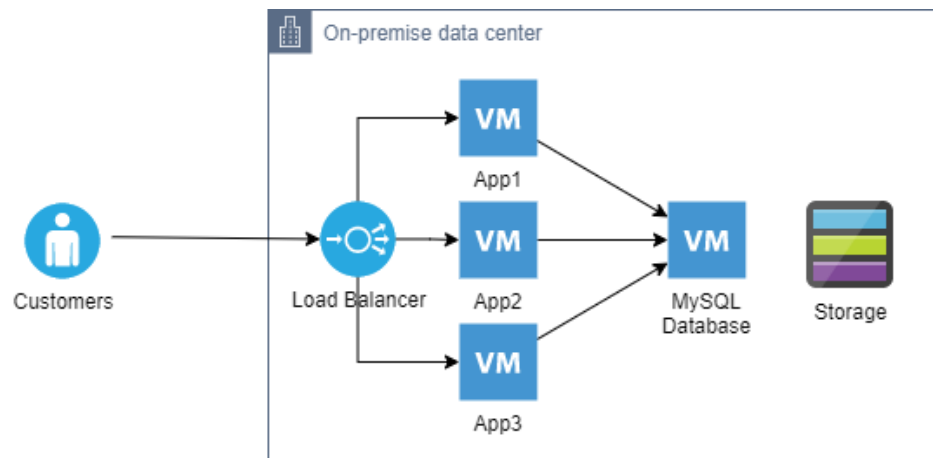


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Assignment 2 (20 points)

My Healthy Eating Inc., a Toronto-based company, sells healthy food online to customers across North America. The company builds and maintains its own e-Commerce website. Over the last few years, the company has experienced rapid growth due to the increasing popularity of their products. Meanwhile, their IT operational cost has also gone up significantly.

Below is a diagram of the company's on-premise data center environment, which is a typical three-tier application, including a load balancer, three application servers running the e-Commerce application, and a MySQL database server. In addition, the company has a total of approximately 2 TB data stored in the data center.



As an AWS certified cloud practitioner, you decide to write a report to the IT manager suggesting the company to migrate its on-premise data center to AWS. In the report, you need to discuss the cloud benefits, identify the AWS services to use and high-level cost estimation, and outline a brief migration plan.

Write your report below:

My Healthy Eating Inc. Toronto, ON

To: IT Manager, My Healthy Eating Inc.

From: Monil Parmar

Date: March 23, 2025

Subject: Suggestion to Migrate On-Premises Infrastructure to AWS Cloud

INTRODUCTION

My Healthy Eating Inc. has grown quickly, and managing IT in our current on-premise setup is getting harder and more costly. As a cloud computing student, I've learned how AWS can help

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businesses save money and scale more easily. In this report, I'll share the benefits of moving to the cloud, suggest some AWS services, give a basic cost estimate, and explain a simple migration plan based on what I've learned so far.

WHY AWS?

Compared to our current on-premise setup, moving to the cloud with AWS can bring several advantages. Right now, we pay upfront for servers, even if we don't use them all the time. With AWS, we only pay for what we use, which can save money. Our current system also can't easily handle changes in traffic, but AWS can automatically scale up or down based on how many users are visiting the site. On-prem systems need manual backups and maintenance, while AWS offers built-in security, automatic backups, and better uptime. Overall, cloud migration would make our system more flexible, cost-effective, and easier to manage.

SUGGESTED AWS SERVICES AND ESTIMATED COSTS

Our current setup includes a load balancer, several application servers, and a MySQL database. On AWS, we can replicate this structure using cloud-based services that are scalable and easier to manage. Below are the main AWS services I suggest, along with their approximate monthly costs:

- **Amazon EC2** will host the application servers. With Auto Scaling enabled, this service is expected to cost around **\$100 to \$150** per month.
- **Elastic Load Balancing (ELB)** can manage website traffic efficiently and typically costs about **\$20** per month.
- **Amazon RDS (MySQL)** will be used for the relational database. It simplifies tasks like backups and patching, with an estimated monthly cost of **\$60 to \$100**.
- **Amazon S3** is suitable for storing our 2TB of data securely and durably, at approximately **\$46** per month.
- **Amazon CloudWatch** will help monitor performance and resource usage, with costs ranging from **\$10 to \$15**, depending on how detailed the monitoring is.
- **AWS Identity and Access Management (IAM)** is used for secure access control and is generally available at **no extra cost** for standard use.

Altogether, this setup would likely cost between **\$266 and \$361 per month**, depending on actual usage. We might also benefit from AWS Free Tier during the first few months, which could help reduce some of these costs initially.

MIGRATION PLAN

Due to the scale of this transition, a full migration all at once may introduce unnecessary risks. Therefore, I recommend following a phased, step-by-step migration approach that allows us to test and validate each stage before moving on.

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The first phase would involve assessing the current application architecture and data. This step is important to understand system dependencies and ensure nothing is overlooked during migration. Once the assessment is complete, we can begin preparing the AWS environment by setting up a Virtual Private Cloud (VPC) along with essential security configurations, such as security groups and IAM roles.

After the environment is ready, we can begin by launching a single EC2 instance and deploying a test version of the e-commerce application. This allows us to confirm that the application functions correctly on AWS before committing to a full-scale move.

Next, we can migrate the MySQL database using AWS Database Migration Service (DMS). This tool enables us to transfer the data to Amazon RDS with minimal downtime. Static files and media can be moved to Amazon S3 using AWS DataSync, which simplifies and automates the transfer process.

Once key components are fully operational and tested in AWS, we can update DNS settings to route live customer traffic to the new infrastructure. Finally, after monitoring performance and confirming system stability, we can decommission the on-premise environment and complete the transition.

This methodical approach helps minimize disruption while ensuring each part of the system is properly validated before going live on AWS.

Migrating to AWS can help the company reduce costs, improve reliability, and scale more easily. This report provides an initial plan, and I'm open to developing it further as needed.

Yours sincerely,
Monil Parmar.