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Oracle Database Migration on AWS: Enhancing Performance and Scalability

Customer Overview:

The client is a leading enterprise operating a business-critical application that experienced slowness issues due to running the application and Oracle database on the same EC2 instance. They sought a solution to improve performance, scalability, and data security.

Problem Statement:

The client's application performance was severely affected by high load average on the EC2 instance, primarily caused by the excessive memory and CPU consumption of the Oracle database. The co-location of the application and database on a single instance resulted in suboptimal performance and increased vulnerability.

Proposed Solution & Architecture:

After a thorough analysis of the client's infrastructure, our team proposed a comprehensive solution to address the performance and scalability challenges. The key recommendations included:

1. Separation of Application and Database: We advised the client to separate the application and the Oracle database onto separate instances. This approach ensures better resource allocation, reduces the load average, and improves overall performance.
2. Migration to Amazon RDS: To achieve optimal database performance, we recommended migrating the Oracle database to Amazon RDS (Relational Database Service). RDS provides managed database services with automatic backups, high availability, and scalable compute and storage resources.
3. Right-sizing of EC2 Instances: We optimized the EC2 instance size according to the specific requirements of the application. By rightsizing, we ensured that the resources allocated to the application instance are aligned with its workload, leading to improved efficiency and cost optimization.

About the Customer

Dishman Carbogen Amcis

Dishman Group was founded in 1983. Since that time, the Dishman Group's focus has been on the research and development of various in-house technologies to manufacture quaternary ammonium compounds (quats) and active pharmaceutical ingredients. Through several acquisitions, The pharmaceutical industry has become a global organization with multiple manufacturing facilities in India, Europe, and China, serving the pharmaceutical, biopharmaceutical, healthcare, and general industries.

4. **Automated Data Snapshot and Management:** We implemented automated snapshots for both the EC2 instance and the RDS database. This enabled easy data recovery, increased data availability, and simplified management.
5. **Proactive Monitoring:** We set up monitoring alerts to detect and address any minor issues promptly. This proactive approach ensured system stability and minimized downtime.

Outcomes and Success Metrics:

The project delivered significant improvements in performance, scalability, and user experience. The key outcomes and success metrics include:

1. Enhanced Application Performance: The separation of the application and database onto dedicated instances resolved the slowness issue, resulting in a seamless and responsive user experience.

2. Normalized Load Average: Following the migration of the Oracle database to RDS, the load average on the EC2 instance returned to normal levels, eliminating performance bottlenecks.

3. Increased User Login Ratio: With the improved application performance, the client observed an increase in user login ratio, leading to improved business productivity and customer satisfaction.

TCO Analysis:

We conducted a comprehensive Total Cost of Ownership (TCO) analysis, comparing the AWS pricing model with the client's existing infrastructure costs. By evaluating hardware, network, backup, and disaster recovery factors, we demonstrated cost savings and increased efficiency by leveraging AWS services.

Lessons Learned:

Throughout the project, our team gained valuable insights and knowledge in Oracle services, versioning, and migration scripts. We learned the importance of thorough infrastructure analysis, proper resource allocation, and the benefits of leveraging managed database services like Amazon RDS.

Conclusion:

The successful migration of the client's Oracle database to AWS, separating the application and database instances, resulted in improved performance, scalability, and user satisfaction. By leveraging AWS services and adopting best practices, we enabled the client to optimize their infrastructure, enhance security, and achieve significant business benefits.

Discus Business Solutions (DBS), an ISO 9001:2015 certified products & Services based IT consultancy and software solutions provider, is renowned for simplifying the digital transformation journey for enterprises. With our commitment to excellence, a dedicated team of over 100 professionals, and a global reach across five continents, DBS has successfully served a diverse clientele in industries such as engineering, manufacturing, pharmaceuticals, FMCG, and trading houses. We take pride in offering flexible, comprehensive, and configurable solutions tailored to specific industry niches.

DBS excels in delivering end-to-end AWS solutions that drive business excellence. Our expertise extends to providing certified AWS solutions designed for various verticals within organizations. As part of our commitment to enabling seamless digital transformations, we have forged a strong partnership with Amazon Web Services (AWS) and have gained extensive expertise in deploying customer solutions on the AWS cloud platform.

Our skilled team comprises trained and certified technical consultants with exceptional project management expertise. We have successfully undertaken numerous SAP migration projects, leveraging the power of AWS to seamlessly transition our clients' business-critical systems to the cloud. By leveraging AWS, we have enabled organizations to experience the benefits of enhanced scalability, improved performance, and increased flexibility. Our expertise in AWS cloud migrations has empowered businesses to optimize their operations, reduce infrastructure costs, and ensure regulatory compliance.

In addition to SAP and AWS expertise, we have a proven track record in delivering a wide range of services, including but not limited to business process optimization, system integration, data analytics, and mobile application development. Our commitment to innovation and customer satisfaction sets us apart, as we continuously strive to exceed expectations and drive measurable business outcomes for our clients.

DBS remains dedicated to simplifying the digital transformation journey for enterprises, leveraging our strong SAP competency, extensive AWS expertise, and a customer-centric approach. With our comprehensive solutions and a focus on industry-specific requirements, we are well-equipped to help organizations navigate the complexities of the digital landscape and unlock their true potential for growth and success. DBS is consulting partner of AWS and currently in SELECT tier.