



## Case Study

# ENHANCING SECURITY AND SCALABILITY FOR A HEALTHCARE CLIENT IN SOUTHEAST ASIA

## Case Summary

A renowned healthcare provider in Southeast Asia was facing difficulties scaling their 200 GB PostgreSQL database, managing rising data security concerns, and adhering to strict compliance regulations. With operations expanding across Indonesia, Singapore, Malaysia, the Philippines, and Taiwan, the organization needed a robust, scalable solution to support their rapid growth and ensure sensitive patient data security.

AceCloud, leveraging Amazon RDS and a suite of AWS services, provided a secure, scalable, and compliant infrastructure. This facilitated the client to handle increased traffic, streamline database management, and ensure regulatory compliance across multiple regions.

## The Client

The client operates the largest verified network of healthcare professionals in Southeast Asia. Their platform enables collaboration and knowledge sharing, connecting healthcare experts to drive better health outcomes globally. The organization also fosters partnerships between healthcare professionals and companies, focusing on education, research, and growth.

## Challenges Faced

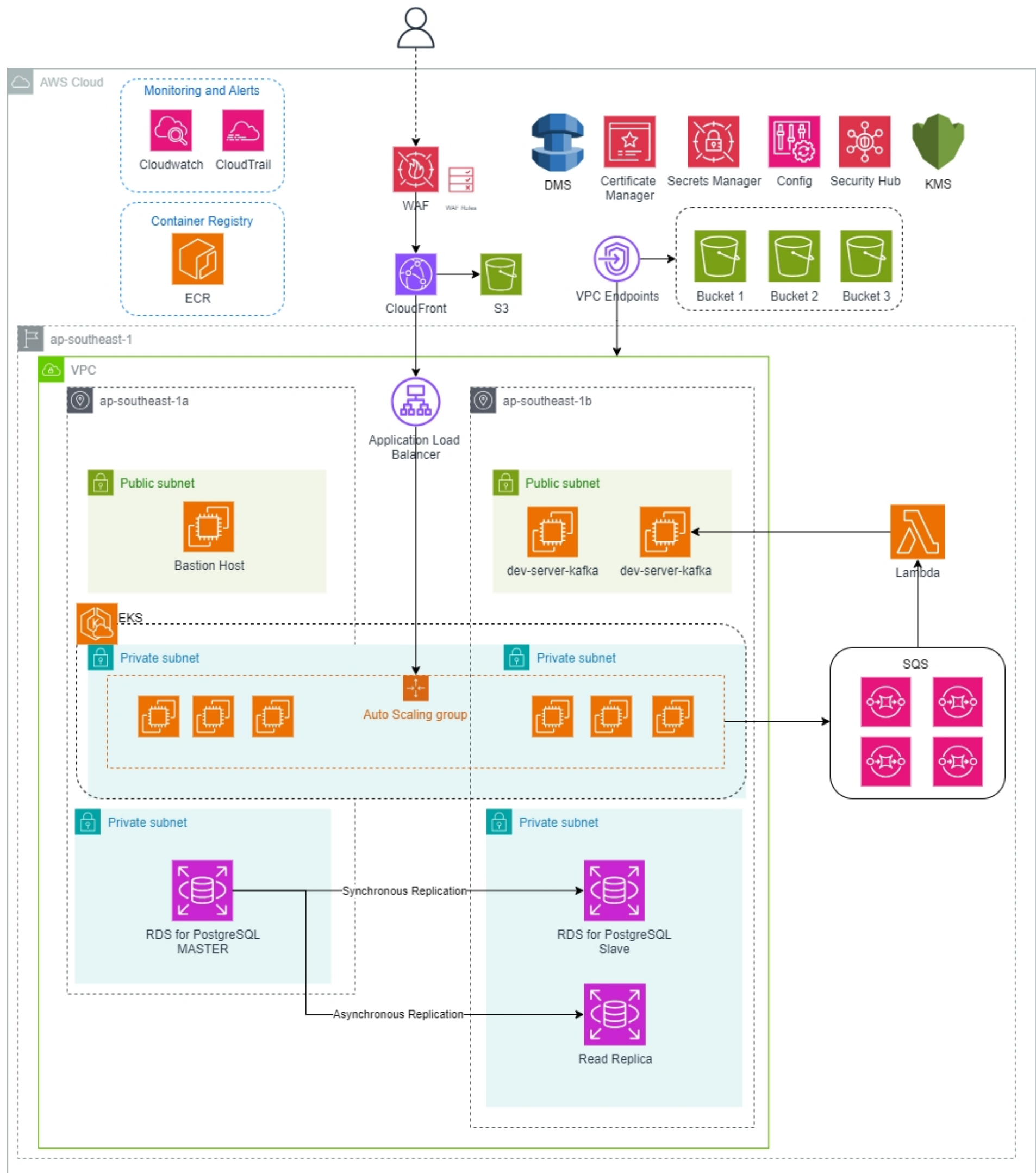
- **Scalability Issues:** Their PostgreSQL database, hosted on Amazon EC2, struggled with increased read traffic, with projections indicating 20% annual data growth.
- **Data Security Concerns:** Securing the database and ensuring compliance with healthcare regulations was critical for sensitive patient data.
- **Disaster Recovery Needs:** They prioritized high availability and business continuity in case of regional outages.

## Solutions Deployed

AceCloud, a trusted AWS Well-Architected Partner, delivered a solution developed specifically to meet the client's requirements. The first step was migrating their PostgreSQL database to Amazon RDS to improve scalability and handle their expected growth efficiently. To manage the high read traffic, we implemented read replicas to maintain top performance without slowing down data access.

To safeguard sensitive healthcare information, we put vital security measures in place, including encryption at rest and in transit. We also established a multi-region backup strategy to ensure data availability and disaster recovery, even in the event of regional issues. Our solution was built to comply with the healthcare industry regulations in all the client's operating countries, giving them a secure, scalable, and compliant infrastructure that supports their expanding business.

# Architecture Diagram



## Results

- **Improved Scalability:** The client can now efficiently handle the growing database by migrating the database to Amazon RDS and using read replicas, maintaining performance even with the expected 20% annual data growth.
- **Data Security and Integrity:** The client saw reduced security risks with improved security measures, ensuring the full protection of their sensitive healthcare data.
- **Cost Efficiency:** Managing an expanding database can be costly. Using Amazon RDS and read replicas helped the client lower operational and management costs by 20%, all while building a strong and reliable infrastructure.
- **Seamless Performance:** The optimized database setup resulted in a 30% improvement in query response times, providing users with a faster, smoother experience, even during high-traffic periods.
- **Reliable Disaster Recovery:** A well-designed backup strategy ensured high availability and disaster recovery capabilities, minimizing any potential downtime and keeping data safe in case of failures.
- **Regulatory Compliance:** The solution met all regulatory requirements in each operating country, allowing the client to maintain compliance across Indonesia, Singapore, Malaysia, the Philippines, and Taiwan.
- **Operational Efficiency:** The client experienced enhanced operational efficiency, reducing the need for time-consuming database management, which freed up their team to focus on core business initiatives.



# Decision to Use Amazon RDS for PostgreSQL

## 1. Security and Compliance

- **Data Protection:** To safeguard sensitive healthcare data, encryption was set up for data stored in Amazon RDS using AWS Key Management Service (KMS).
- **Secure Connections:** AWS Certificate Manager (ACM) was used to manage security certificates, ensuring that data transmitted between the application and the database remained encrypted.
- **Managing Credentials Safely:** AWS Secrets Manager securely stored the database login details, further tightening the security around data access.

## 2. Scalability and Availability

- **Handling Large Workloads:** Amazon RDS for PostgreSQL deployed with a setup that allows automatic failover, which meant the database stayed available across the client's regions.
- **Improving Performance:** By using read replicas, the database could handle heavy traffic more effectively, leading to faster response times and better overall performance.
- **Monitoring:** AWS CloudWatch was enabled to monitor the database in real-time, helping the client proactively manage any potential issues.

## 3. Migration

- **Seamless Transition:** The database was moved from an Amazon EC2 instance to Amazon RDS for PostgreSQL using AWS Database Migration Service (DMS). The process went smoothly with minimal interruptions.

## 4. Visibility and Security

- Ongoing Monitoring:** AWS Config tracked changes and configurations in the AWS resources, ensuring everything was set up according to best practices.
- Unified Security Management:** AWS Security Hub worked alongside AWS Config to give the client a centralized view of any security concerns and help them comply with regulations.

## AWS Services Used



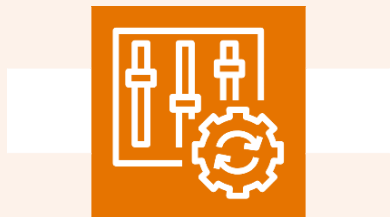
Amazon RDS for PostgreSQL



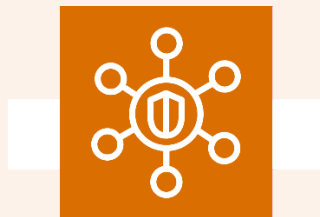
Amazon EC2



Amazon CloudFront



AWS Config



AWS Security Hub

## Conclusion

By migrating to Amazon RDS for PostgreSQL, the healthcare client gained a secure, scalable, and highly available database solution crucial for managing their 200 GB database with a projected 20% annual growth. AceCloud's implementation of multi-AZ deployments, read replicas, and advanced security features resulted in a 30% improvement in read performance, a 25% increase in efficiency, and a significant reduction in downtime.

Compliance with industry standards was ensured, and business continuity was perfectly maintained, significantly enhancing the client's security posture and operational efficiency.

## About Us



Years of Exp

**15+**



Data Center

**10+**



Awards

**100+**

AceCloud is a leading provider of end-to-end cloud computing solutions to global organizations across industries at scale. It offers a full spectrum of cloud services, including Public Cloud, Application Hosting, AWS Services, Managed Security Services, and Hosted Virtual Desktop Solutions.

AceCloud is a brand of [Real Time Data Services](#) (RTDS) group of companies – a leading provider of information technology capabilities specializing in Cloud Computing and Cloud Telephony. RTDS Group has an employee base of 600+ across India, the US, and the UK, supporting over 20,000+ customers and IT infrastructure in 10+ data centers spanning the globe. It offers industry-leading technological solutions that help customers streamline their operations and enhance efficiency.

As an advanced consulting and certified AWS Well-Architected Partner, AceCloud recently achieved the prestigious AWS Storage Competency and is also recognized as an Amazon RDS Service Delivery Partner. These achievements underscore its deep expertise in AWS technologies and commitment to delivering high-quality cloud solutions.



- Public Sector
- Amazon RDS Delivery
- Storage Services Competency
- Well-Architected Partner Program





## Contact Us

Are you ready to cut down your cloud spending? Contact AceCloud Experts today to get a customized quote.



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