



ROAM (TECHNOLOGY)

Fault Tolerant Cloud Application Platform for Mobile Point-of-Sale & AWS Managed Support

Enabling Fault Tolerant, Highly Available and Secure Cloud Application Platform for Mobile POS

- ROAM is a part of the world's number one payment solutions provider, Ingenico, and it is known as a pioneer in the mobile point-of-sale (mPOS) space.
- The company was looking for cloud solution expertise to set up the mobile application in the cloud with high availability and complete redundancy.

As the world's leading mobile commerce platform provider, ROAM helps merchants get to market quickly with secure, cost-effective and powerful mobile point-of-sale solutions, regardless of the technology environment.

Since 2005, ROAM has been known as a pioneer in the mobile point-of-sale (mPOS) space. ROAM developed and distributed the industry's first secure mobile card reader and today powers mobile point-of-sale solutions for many of the leading companies in this market globally. The company has continued to innovate, evolve and expand the breadth of its mobile commerce offerings.

ROAM provides a full suite of mobile POS products, solutions, tools and services to many of the leading retailers and merchant-facing organizations worldwide. Together, ROAM and its parent, Ingenico, have worked with card brands, merchants, retailers, processors, financial institutions and banks in many countries around the world to successfully implement industry leading mobile commerce solutions.

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(continued)**

ROAM was planning for its new, leading-edge application, ROAMmcm 5. For mPOS devices, this application will handle a heavy volume of real-time, financial transactions into a cloud application. A very reliable, fault-tolerant storage mechanism had to be made available to store and archive the data on a long-term basis. ROAMmcm 5 is the first enterprise-ready mobile point-of-sale solution and the first EMV-ready solution that enables businesses to quickly deploy and centrally manage global mPOS environments.

Backed by years of experience in successful cloud implementations with customers across numerous industries, 0-Downtime Cloud Solutions provides an extensive range of highly tailored cloud solutions and managed services. 0-Downtime was selected to help ROAM address the following:

- Strategize, design and plan for the deployment of the mcm 5 mPOS application, ROAMmcm 5
- Deploy a secure, PCI complaint and redundant mobile application solution in the cloud
- Provide ongoing support and maintenance for the cloud-based application to ensure a high level of availability and fault tolerance combined with reliable performance

The Customer’s Business Challenges

Anticipating market demand, ROAM wanted to develop a radical application, mcm 5. While the company had plans to set the application up, it needed a solution/platform to prevent the new application from having glitches that were in the existing application. Due to the nature and sensitivity of the data handled by this application, it had to be set up in an environment that would comply with PCI requirements and provide a high level of security. ROAM was looking for cloud solution expertise to set up the mobile application in the cloud and address the following challenges:

High Total Cost of Ownership: ROAM’s growing customer base required more capital-intensive, stand-alone servers and software. Considering the nature of the business, servers were utilized some of the time and under-utilized the rest of the time. ROAM had to deal with buying and updating these servers, whether fully utilized or not, along with maintenance and software update costs.

High Downtime: Without redundancy, there was a high amount of downtime, when a maintenance requirement had to be addressed or an interruption occurred. This lead to customer dissatisfaction.

Low Availability: This was one of ROAM’s major challenges and high availability was critical.

Low Scalability: The existing infrastructure wasn’t scalable. With growing and variable demand, ROAM had to have a highly scalable and cost-efficient solution.

Approach & 0-Downtime Customized Solutions

- The 0-Downtime Team engaged Amazon AWS Architects to recommend and define a custom cloud architecture for AWS deployment of ROAM's applications based on industry best practices.
- Post-deployment, the 0-Downtime Team provides ongoing management and support services for ROAM's AWS infrastructure and applications.

The 0-Downtime Cloud Solutions

The 0-Downtime Team engaged closely with the company to take a deeper look at the applications to be deployed and the challenges involved. To help ROAM achieve its objectives, the 0-Downtime Team recommended the Amazon Web Services (AWS) cloud application platform and helped ROAM to define and document an effective strategy and roadmap for an AWS deployment.

Based on the discussions and information gathered in the discovery and analysis phase, the 0-Downtime Team recommended breaking up delivery of the custom services involved into 6 phases:

Phase 1 - Discovery and Analysis

Phase 2 - Architecture and Design

Phase 3 - Setup and Configuration

Phase 4 - Implementation and Testing

Phase 5 - Go Live and Initial Monitoring

Phase 6 - Post Implementation Support and Management

Based on the desired outcome and requirements determined in the discovery phase, the 0-Downtime Team engaged Amazon AWS Architects to recommend and define a custom architecture for AWS deployment for the new application.

Approach & 0-Downtime Customized Solutions (continued)

The production environment included the following features:

- High availability in Multi-Availability Zone (Multi-AZ)
- Relational Database Service (RDS) Multi-AZ with Database Failover
- Setup for auto-scaling for web and app servers
- Setup cloud watch alerts for monitoring of servers and services

The key tasks included:

- Design and architect a solution for hosting ROAM applications on the Amazon Cloud with appropriate development, UAT and production environment setups.
- Setup of a virtual private cloud (VPC) with public and private subnets in the AWS account and isolate each environment (Dev, UAT and production).
- Configuration of necessary security groups in public and private subnets.
- Provisioning of EC2 instances for web and application servers in their respective environments.
- Provisioning of RDS instances for database servers to host the database for the application in their respective environments.

Approach & 0-Downtime Customized Solutions (continued)

Provisioning of a Micro Instance that will serve as the Gateway (NAT) instance for providing Internet access to servers inside the VPC, if necessary.

Setup and configure all web servers and application servers (all environments) with the relevant sites and applications.

Setup highly available secure connections over a VPN for Mobile Tier Communication.

Setup custom monitoring, logging and alerts to monitor VPN connections.

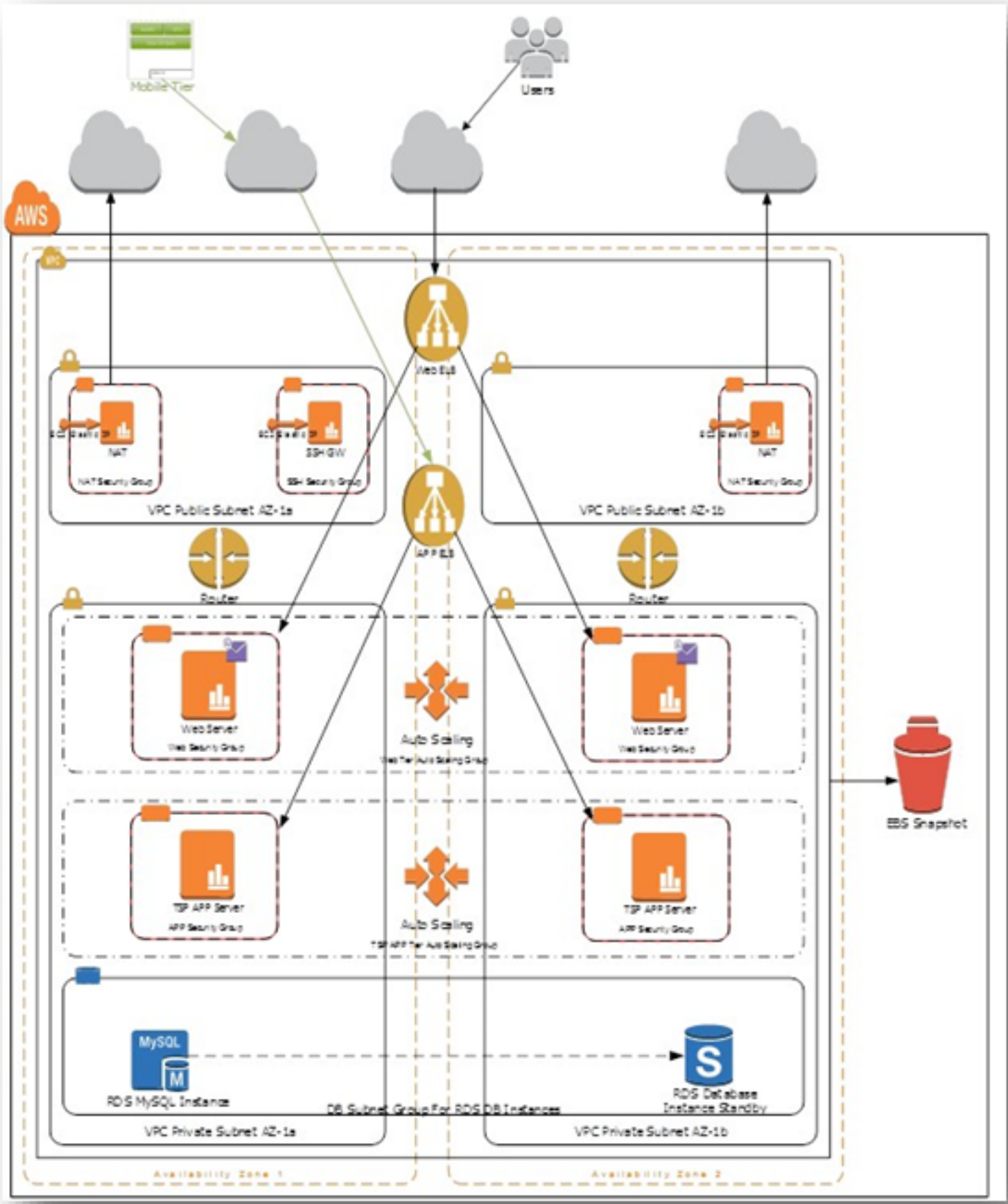
Setup application and resource monitoring and alerts.

The key tasks included:

Web Servers – For MyROAM, ROAMSupport and APIWS: RHEL 6, JDK 6 and Tomcat 6.

App Servers – For TSP core: RHEL 6 and JDK 6.

Amazon AWS Architecture



Benefits & Outcomes

- 0-Downtime is a leading, Advanced AWS[™] Consulting Partner, helping customers leverage AWS's Web Service's secure, highly preferred on-demand cloud infrastructure.

-Amazon Web Services include a complete set of infrastructure and application services that enable you to run virtually everything in the cloud - from enterprise applications and big data projects to social games and mobile apps.

AWS Advantagest

ROAM gained the following infrastructure advantages by using the Amazon Web Service platform:

Fault Tolerance: Inherently fault tolerant building blocks, like S3, EBS, CloudWatch, SQS, SNS and SES can be used for storage, monitoring and messaging.

Elasticity: EC2 instances can be added or removed based on load patterns and the process is very quick with the "click of a button".

High Availability: For high availability within a region, instances can be distributed across multiple availability zones (AZs).

Security: To ensure maximum security, ROAM can leverage a VPC, security groups, IAM policies, MFA and secure access through keys.

Reliability: With AWS, you have access to the same reliable, secure technology platform that is used to power Amazon.com's global web properties.

Business Benefits

The AWS cloud infrastructure enabled ROAM to implement multiple redundant sites for business continuity and disaster recovery. The 0-Downtime Cloud Solutions also helped the business realize the following benefits:

Benefits & Outcomes (continued)

The 0-Downtime Team of deep cloud experts with years of experience in cloud consulting helped ROAM develop an integrated solution to address its business challenges.

Business Benefits

The AWS cloud infrastructure enabled ROAM to implement multiple redundant sites for business continuity and disaster recovery. The 0-Downtime Cloud Solutions also helped the business realize the following benefits:

Unlike before, web server instances are now continuously monitored using the AWS CloudWatch Service. When the servers hit the predefined threshold, they will scale up or down automatically. Auto-scaling enables the company to only pay for what it needs and this cloud solution approach prevents ROAM from spending money on unnecessary physical infrastructure.

Higher performance levels were achieved with the use of the 0-Downtime Cloud Solutions and this resulted in higher customer satisfaction levels for ROAM with its customers.

Now, without affecting the business applications, periodic server maintenance could be addressed as needed in parallel to normal application operations.

Implementing the AWS cloud solution helped the company reduce IT costs, speed up application performance and gain more flexibility.

As a part of the ongoing management and support service that 0-Downtime provides, we perform regular internal efficiency audits on performance on a weekly basis.

ABOUT 0-DOWNTIME

0-Downtime Cloud Solutions provides extensive cloud technology expertise and a proven track record to help businesses address a wide range of cloud deployment and cloud maturity needs. We provide exceptional project management based on processes perfected over almost 20 years of delivering business technology services and successful customer outcomes.

0-Downtime provides consultative advice on the most effective approaches and ways to save on costs. We explain how we will ensure that each project is primed for success. We provide roadmap assessments and consultative guidance, discovery, design, building, deployment, and operational support. We understand that for an effective transition to the cloud, an integrated approach is necessary to realize the full business value of cloud computing. We will walk you through every step to achieve a successful outcome and provide unparalleled support where you need it; short-term and long-term. We provide highly specialized and cost-effective teams—drawing from our expert IT resources of 1,000+ worldwide.

0-Downtime is a leading, Advanced AWS™ Consulting Partner, helping customers leverage AWS' Web Service's secure, highly preferred on-demand cloud infrastructure. Through the use of Amazon Web Services infrastructure and application services and effective cloud implementations, 0-Downtime Cloud Solutions help customers unleash tremendous flexibility and cost optimization along with performance, scalability and responsiveness improvements.



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