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

World’s Leading Mobile Commerce Platform Provider
Enabling Fault Tolerant, Highly Available and Secure Cloud Application Platform for Mobile POS

As the world’s leading mobile commerce platform provider, our customer helps merchants get to the market quickly with secure, cost-effective and powerful Mobile Point-of-Sale (mPOS) solutions, regardless of the technology environment.

Since 2005, the company has been known as a pioneer in the mPOS space. It developed and distributed the industry’s first secure mobile card reader and today powers mPOS solutions for many of the leading companies in the global market. The company has continued to innovate, evolve and expand the breadth of its mobile commerce offerings.

The company provides a full suite of mPOS products, solutions, tools and services to many of the leading retailers and merchant-facing organizations worldwide. Together, the company and its parent company, 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.

The customer was planning for its new, leading-edge application, mcm 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 data on a long-term basis. mcm 5 is the first enterprise-ready mPOS 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 by Compunnel provides an extensive range of highly tailored cloud solutions and managed services. 0-Downtime was selected to help customers address the following:

- Strategize, design and plan for the deployment of the mcm 5 mPOS application
- 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, the company 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. The company 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**: A growing customer base required more capital-intensive, standalone servers and software. Considering the nature of the business, servers were utilized sometimes and under-utilized the rest of the time. The company 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 led to customer dissatisfaction
- **Low Availability**: This was one of the major challenges and high availability was critical
- **Low Scalability**: The existing infrastructure wasn’t scalable. With growing and variable demand, the company had to have a highly scalable and cost-efficient solution
The 0-Downtime Cloud Solutions by Compunnel

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 the customer achieve its objectives, the 0-Downtime team recommended the Amazon Web Services (AWS) cloud application platform and helped the customer 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 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.

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 the customer’s 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
- 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 application environment included:

- Web Servers – RHEL 6, JDK 6, and Tomcat 6
- App Servers – RHEL 6 and JDK 6

- The 0-Downtime team engaged Amazon AWS Architects to recommend and define a custom cloud architecture for AWS deployment of the company’s applications based on industry best practices.

- Post deployment, the 0-Downtime Team provides ongoing management and support services for the company’s AWS infrastructure and applications.
AWS Advantages

The company 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 Multi-AZ
- **Security**: To ensure maximum security, the company 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 the company 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 the customer 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 the company 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 performance audits on a weekly basis
0-Downtime Cloud Solutions—The Right Choice

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.

Compunnel 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.

For more information about 0-Downtime Cloud Solutions, visit www.compunnel.com, call (800) 696-8128 or email us at contactus@compunnel.com

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