Case Study

Windows Azure Deployment

Cloud based Business Management Solution

techcello

Introduction

A Customer built a Cloud based Business Management Solution for Small and Medium Businesses leveraged Cello framework to build .Net based Multi Tenant SaaS Application and chosen Windows Azure as the cloud deployment partner.

The Need & Challenges

An Integrated multi tenant SaaS based Sales, HR and Finance product built to serve huge concurrent user base requires a well equipped, scalable cloud platform which can scale to any heights. The Key SLAs of the product were Availability, Fault Tolerance, Security and Superior Performance which are only possible with highly secured, elastic, scalable, virtualized and cost effective cloud providers such as Microsoft Windows Azure.   The application was expected to be used by many customers especially from Asia Pacific and Australian regions, end users are mostly people from finance, sales and accounting which are expected to generate huge volume of data by each customer. The application had to offer 99.9 percent of availability for the consumers because of the nature of the domain and the product cannot afford to go down even for a minute, which may impact badly for the vendor and product reputation. The database management system required mirroring of data to maintain secondary databases to avoid data loss and failures.

The application data has to be backed up and replicated to other available zones cost effectively and securely to avoid single point of failure. The application has to scale efficiently and intelligently based on the usage and traffic as well scale down when appropriate.

Elastic cache mechanism and superior content delivery network was some of the key requirements to avoid network latency. Simplified product development and deployment which can reduce the time and effort for the developers to publish, patch and manage the applications on cloud.

The Azure Solution

Keeping the promises to the customer as per the SLAs defined with the thin margin product plans was a huge challenge for the customer which made him to choose the Azure platform for the various benefits it offers. The application was deployed in multiple VMs located in different available zones ie South East Asia Singapore and US East Virginia for the maximum availability and to have instances nearer to the customer. Utilizing the windows Azure Traffic Manager [WATM] helped to route the user's requests to multiple hosted server based on intelligence policy engine which has been instructed to send the requests to appropriate instances, redirecting the requests to available and less busy instances boosted the performance of the application. WATM in turn uses Azure Monitoring services to continuously monitor the availability of the instances; it sends notification to the traffic manager and dashboard in case if any one of the services is

down for a considerable amount of time and based on this azure platform auto magically spins off a new instance in case of a complete failure.

Customer chose the preinstalled SQL Server VM Image to have full control of the data management. For the database high availability, the database mirroring mechanism using certificates was implemented within a single availability zones for more savings. Leveraged the backup file facility offered by Windows Azure Blob storage service which was inexpensive and it can be directly accessible to either an on-premises SQL Server or another SQL Server running in a Windows Azure Virtual Machine.
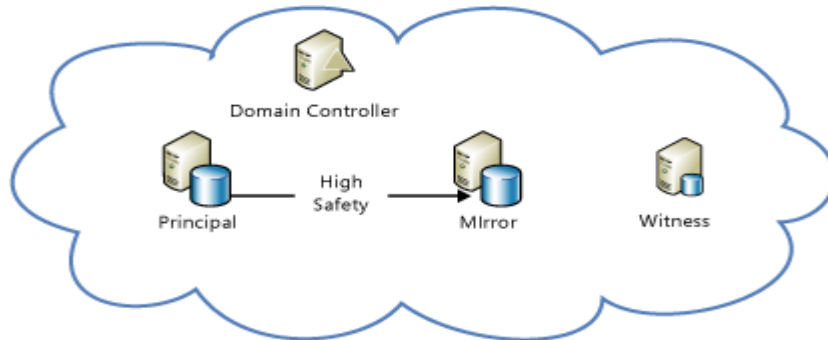
Courtesy: MSDN –Microsoft

The application employed Scalable, Distributed in memory caching services to accelerate the performance of the application. The Well architected Azure cache layer helped to improve the speedy responsiveness thereby reducing costly roundtrips to the database. Using the single click deployment feature the customer was able to seamlessly deploy, patch, upgrade and manage the application. Upgrading or patching the cloud applications was hassle free by utilizing the Virtual IPs swapping technique, the tested and upgraded version from the staging environment was able to effortlessly deployed to production environment.

Conclusion

The Product, an internet scale Business solution built using Cello's Multi Tenant SOA based architecture helped the customer to mould his vision into a cloud based application and deployed in Windows Azure PaaS platform to provide 99.9 % availability and Security to their end customers. The various features and benefits were effectively utilized to offer secured, scalable and reliable superior experience to the customers with very minimal cost.

Cello built on .Net framework and does not require any runtime container; it has many cloud friendly components and features which can drastically reduce the time for developing Multi Tenant SaaS Solutions. Solutions built on Cello framework can be readily deployed to windows azure, on premise datacenter or VMs with SQL Server.

About Techcello

Techcello's "Multi-tenant SaaS Framework" (product name: CelloSaaS) fills an important gap between .NET and the Cloud (Amazon, Azure, Private, Public). It helps you build multi-tenant applications 30-40% faster and 50% cheaper. The framework has all the plumbing, engineering and operational components required for a robust and scalable SaaS product.

Why use a Framework?

Techcello's productized framework approach gives complete freedom, flexibility and control of custom development, without the complexities, risks, cost and time overheads of building and maintaining your own multi-tenant engineering stack. It provides a true multi-tenant architecture at the application level and database level.

Why Techcello?

Unlike other alternatives it does not lock you in to a proprietary development environment or a non-Microsoft run time container, application server or APaaS platform. It retains the .NET environment both during development and deployment, giving complete technical and strategic control over the entire application stack.

Benefits

Saves 40-50% on the cost of building a SaaS product or migrating an existing application to a multi-tenant architecture. You can get to the market faster. It provides a robust, scalable and strong engineering foundation to your product or application (tested, supported and easily extensible). You can deploy your application anywhere from on-premise Windows boxes, Private Clouds and Data centre

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