

THE POWER OF CLOUD TO SOLVE APPLICATION PERFORMANCE ISSUES

Apptis has been a driving force in the development of a secure Cloud Computing solution to enable federal agencies to take advantage of the great efficiencies and cost saving benefits of Cloud Computing. Convinced and committed in belief of these benefits, the company has implemented a Cloud Computing solution within its own organization to solve operational business problems.

PROBLEM

A sophisticated, industry standard financial planning application used by the company for budgeting and forecasting purposes was taking upwards of 20 hours on four application servers to produce the financial reports needed by the executive management team to run the business. This time was in addition to the 18 to 20 hours required monthly to update the application with the pertinent information and business data before it could produce accurate reports. The delay in the production of reports trickled down the process chain.

The financial reports are used by the business division executives to track their progress against forecast. If there were discrepancies they would schedule meetings with the appropriate Program Managers to discuss the reasons behind variances and take appropriate remediation action. If the reports were delayed, the meetings would get pushed later in the month. Then, whatever resolution was developed for issues would get implemented, but often times this would not be until mid-month or later, causing the problems to remain for yet another month.

Originally, the application vendor worked with Apptis and determined that four servers would be sufficient for application performance. When Apptis engaged the vendor to help increase performance of its tool, the vendor's recommended solution was to add additional servers. Apptis reached out to its industry partners who use the same application to validate the recommendations and found that other organizations have deployed dozens of servers dedicated to the application. The acquisition of the additional servers would be a huge capital expense for a one-time per month solution. After evaluating multiple options Apptis decided to break out of the box with its own Cloud Computing solution.

RESULT

By moving the application to the Cloud, the time to run the critical reports was reduced from 20 hours, to less than one hour – for a total cost to the company of just \$18.00 per month. Now, the management team receives the critical reports early in the month and are quickly able to take action to initiate program changes to resolve financial variances.

DISCOVERY

Finding a Windows Compatible Partner

Apptis was an early adopter of Cloud Computing in June 2007 when the concept was in its infancy. Apptis sought out providers that could accommodate its needs to support a Windows-based application, but found that the majority of Cloud providers only offered Linux OS exclusively or Windows OS in beta only.

Apptis elected to move forward with a Cloud Computing provider that offered a beta Windows OS environment. At this stage in Cloud Computing, a Virtual Private Cloud offering was not available for Apptis to allow secure connections back to the internal Apptis server farm. The financial system is in a multi-tier architecture consisting of Web server, application server, and a database server, Apptis decided initially to leave the database in-house running on Microsoft SQL 2000. At the time, no provider offered Microsoft SQL 2000 compatibility in a Public Cloud offering. Apptis created a hybrid scenario by keeping the database and authentication servers in its data center and placing the Web servers and application servers in the Cloud.

Finding a Sense of Security

In order to preserve security, Apptis established a secure, encrypted VPN connection between the servers deployed in the selected Cloud service provider environment and the servers in Apptis data centers allowing for authentication against the Apptis directory service, creating a Virtual Private Cloud environment.

Working through the hybrid model, Apptis identified the storage and reuse limitations of the beta version. To provide repeatable service, it required servers be left up and running to maintain the VPN connection and static server and application configuration.

Otherwise, Apptis experienced loss of credentials, the need to rebuild, reconfigure, and reconnect the servers when service disruptions occurred. At the time, the beta provider did not offer the ability to backup a server configuration, to create server images, or to take snap shots of the running configuration.

Finding a Solution

As part of the overall Apptis Cloud strategy, research continued on the evolution of the Cloud market space. Apptis became aware of a new feature being offered by Amazon Web Services (AWS). These new features provides support for Windows-based applications featuring more powerful servers and enhanced services with the ability to store server images for reuse. This storage scenario proved to be a distinct advantage and just what Apptis required to build its server images, save them, and come back to use them when required as dictated by the business requirements.

SOLUTION

The Apptis final solution was the use of Amazon Simple Storage Service (Amazon S3) and Amazon Elastic Compute (Amazon EC2). Amazon S3 provides a highly available and highly durable object store exposed via Web services APIs, which allows storage, management, and controlled access to any number of objects varying in size. Data is stored in Amazon S3 and can be transferred over HTTP or HTTPS connections. Amazon EC2 provides resizable compute capacity in the Cloud, exposed via a simple Web service interface that allows you to obtain and configure capacity with minimal friction.

Apptis used Amazon EC2 to provision on demand application servers to run the reports, and then decommission the servers at the completion of the run cycle. With the move to AWS, Apptis discovered a linear progression when processing its application. Doubling capacity each time by simply launching more Amazon EC2 instances, the application run time was cut in half with no diminishing returns. In the end, Amazon EC2 enabled Apptis to use only the computing power it needed in order to get the application running in just under an hour.

LESSONS LEARNED

- The Cloud provider that is first engaged is not always the Cloud provider that meets the requirements for the end solution
- Vigilance is required to continuously re-evaluate providers Cloud offerings, understand the changing market place and modify to leverage changes
- Standard IT and security practices can be translated into the Cloud model
- By availing of our own service offering, Apptis has experienced the benefits and constraint of Cloud Computing environments
- Apptis is able to translate our own Cloud experiences into better solutions for our clients
- Experience and expertise translates into more cost-effective and lower risk implementations for our clients
- Established credibility with current and potential customers
- Apptis has developed the skills to evaluate applications and make solid recommendations on whether the Cloud is an option for application process efficiency

THE LEADER IN
FEDERAL CLOUD

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