CA Global Information Services (GIS) Team "Drinks its own Champagne": Dramatically Accelerates Development Cycles and ROI with CA Service Virtualization

Introduction

Periodically, ENTERPRISE MANAGEMENT ASSOCIATES® (EMA™) analysts conduct Return on Investment (ROI) case studies on enterprise management products that demonstrate above-average customer value.

This EMA ROI case study is distinctive in that it profiles CA® Technologies' (NASDAQ Ticker: CA) own use of its industry-leading CA Service Virtualization solution in support of its Global Information Services group.

"The CA Technologies portfolio of software and services helps our customers accelerate innovation by ensuring critical application performance, simplifying security, reducing complexity, and improving reliability across the service lifecycle. From the data center to the device, our software helps you plan, deliver, manage and secure your IT investments while reducing costs and improving reliability".[1]

HIGHLIGHTS

Vendor name: CA Technologies

Product name: CA Service Virtualization

Product function: Modeling and simulation of software system dependencies

Availability: Currently Available

Target markets:

- Application Development, Deployment, and QA teams
- DevOps teams

Interviewee Information

Deven Shah, Senior Director, Information Technology

The Role of CA Service Virtualization

Traditionally, testing of integrated, component-based applications has been constrained by lack of access to external systems. Modern distributed applications link to platforms hosted by partners, customers and a wide variety of industry-specific service providers. Each platform requires specific data exchange formats and protocols, some of which are proprietary and not publicly documented. Since duplicating these platforms in test environments is expensive, if not impossible, the code accessing these links typically cannot be tested against "real" environments. In essence, these integrations are almost always under-tested, due to lack of access in pre-production.

CA Service Virtualization is one of only a few products on the market that "records" the responses of such platforms, then "plays back" these responses to simulate real-world production environments for software testing. This enables developers and Quality Assurance (QA) testers to conduct "flight simulations" against real system models versus traditional scaled-down stub programs. The ability to thoroughly test these interactions throughout the lifecycle can be extremely valuable in ensuring that software will work well when it is moved to production.

According to CA Technologies, "*CA simulates constrained or unavailable systems across the software development lifecycle (SDLC), allowing developers, testers and performance teams to work in parallel for faster delivery and higher application quality and reliability*"[2].

[1] Self-description from CA Technologies home page, www.ca.com
[2] Description from CA Technologies site http://www.ca.com/us/products/detail/ca-.aspx

Problem Scenario

In developing this case study, EMA analysts worked extensively with Deven Shah, a Senior Information Technology Director, who manages CA Technologies' worldwide GIS Development and QA departments. GIS is responsible for developing and delivering more than 700 business critical applications, supporting CA Technologies employees by providing them with the tools they need to fulfill their responsibilities. A key GIS objective is to accelerate the delivery of new systems to support continued business success in today's competitive and dynamic business climate.

In fulfilling this mandate, Deven's team was confronting a variety of challenges. One was the fact that sales teams were having trouble processing orders at quarter- and year-end. The existing system simply couldn't handle the volume of orders requiring processing during the final days of the quarter. Since accounting rules for software companies state that revenue cannot be booked until orders are processed, potential processing delays could impact sales commissions or revenue reporting.

The second challenge related to the company's SaaS CRM platform. Each software "object" within the platform (account, contact, lead, etc.) incorporates role-based security, and access to each object is controlled by a profile. Each profile, in turn, can be associated with multiple users.

In a company with almost 14,000 employees, each software update could require setting up profiles for hundreds of objects. Since testing and verifying every profile would require approximately 20 man-days – an eon in terms of software release testing – a random subset was typically tested. While partial testing posed potential security risks, testing 100% of the profiles for every release was simply too resource intensive to be viable.

Finally, a number of the company's corporate applications connect to Dun & Bradstreet (D&B) to verify customer information. When applications were modified or new ones built, testing against D&B data was a challenge. In some cases, the connection to the site was unavailable. When it was available, access for testing purposes was limited by the company's negotiated access limits. Additional D&B licenses are expensive. In addition, testing requirements are difficult to predict, and therefore negotiate, ahead of time. Needless to say, software testing against the "real" platform was necessarily limited. Development and testing teams needed a way to test programs to make sure they were accessing the platform correctly, but without paying higher access rates.

CA in Support of GIS

Soon after the acquisition, the GIS Development & QA organization evaluated the product for CA Technologies' own internal use. The product was then adopted by GIS to support internal software development initiatives. While the organization continues to devise new use cases for the product, the GIS team is already reporting impressive results in three important systems:

- **Order processing:** The team first leveraged the product to tackle the CRM problems that were impacting sales and revenue. The sales booking application was supported by a legacy application that used single-threaded communications to access the CRM platform. They found that, at quarter end, orders became "backed up" and were not delivered to the platform in the correct order or in a timely manner. This meant that some sales were posted to the next quarter.

  Solution: To solve this problem, developers implemented multi-threaded communication into the order software. However, they then had to test it. To do so, developers used CA to ramp up the number of messages going into the message queue – basically load testing the new system to ensure it worked well at peak times.

  This proved to be the right strategy for delivering a robust Order Entry system. The system can now handle the order load, even at peak times such as quarter- or year-end. Revenue is booked cleanly and on time.

Hard ROI: Savings are in terms of productivity, development and testing time and include:

- Shortened testing time by ten days, cost savings of $16,000 per quarter from reduced development and testing hours: $48K savings annually.
- Annual savings of $133,000 from reductions in sales and clerical overhead.

Soft ROI:

- Higher levels of customer satisfaction on the sales side, as sales teams now receive their commissions on time.
- Improved revenue reporting, as revenue can be booked in the correct quarter.

- **CRM profile management:** The team next leveraged CA to streamline the process of managing CRM profiles. In the original process, 100 different profiles had to be tested against thousands of employees and more than 250 different objects. The process involved manually accessing profile administration screens, scrolling down to object-level permissions, and individually comparing each cell in an Excel spreadsheet with the corresponding data in the CRM system. This process consumed approximately eight hours of validation for every profile, with approximately 25 people required to complete the full process.

  Solution: Using CA 's workflow capabilities, they automated the process. The workflow gathers data from the Excel sheets, searches for the profile and object in the CRM system, goes through all checks, and validates that each profile has appropriate permissions. It then creates a report containing a detailed log file including time stamps, indicating whether test cases passed or failed.

  Hard ROI:

  - Process, which previously required 25 people, is now automated and completes in less than a minute.
  - Savings of 1,345 hours and $27,000 per quarterly test cycle.

  Soft ROI:

  - Now, 100% versus random sample of profiles are tested.
  - Reduced risk of unauthorized data access.

- **D&B Testing:** In a final use case, Deven's team utilized CA to transform a major testing challenge into a non-issue. Many of the applications created by Development needed access to D&B for testing purposes. However, each call to D&B counted against CA Technologies' negotiated access limit. Development needed a way to thoroughly test new and modified software without incurring overage charges.

  Solution: In this scenario, the team used CA to "virtualize" D&B responses, and in doing so eliminated the dependency on D&B for testing. Where testing had previously been a major challenge and potentially a major expense, developers ran tests against "replays" of real responses.

  Hard ROI:

  - Shortened development times by ten days per quarter.
  - Shortened user acceptance testing by five days per quarter.

  Soft ROI:

  - Continuous testing available 24 X 7 against a service which is never "down."
  - Cost avoidance with no additional charges for D&B access.
  - Applications can be tested more thoroughly at no additional charge.

Quotes:

"There are so many integrations and dependencies in enterprise applications. Our ERP system 'talks to' more than 25 upstream and downstream apps. Some are point-to-point and some go through middleware. End-to-end testing is needed to make sure data sent up and downstream is working in the end-to-end scenarios. Today, using CA Service Virtualization, we automate testing across the end-to-end scenario. Every release is tested, and the process is streamlined and efficient."

Hard ROI				
System	**ROI Results**	**Before**	**After**	**Savings**
Order Entry	**Reduced development and testing hours**	Order Entry system could not handle the load, impacting sales personnel and revenue accounting	All orders booked during a quarter are accurately reflected	$48,000 annual savings
	Reduced sales and clerical overhead	Limitations in system meant orders could not be processed- personnel pitched in to handle manually	Quotes arrived on correct queue and in the correct order, processed by the software vs. personnel	$133,000 annual savings
CRM	**Automated testing for 100% of object profiles**	Reduced manual validation time from eight hours (and 25 people) to less than one minute per profile. Savings of 1,345 hours and $27,000 per quarterly test cycle	Process automated, eliminating manual validation	$108,000 annual savings
D&B	**More thorough testing of D&B calls without additional access costs**	Negotiated limit on number of calls to Dunn and Bradstreet. Exceeding could result in temporary suspension, resulting in company's inability to complete sales quotes	D&B service virtualized, enabling full testing. This reduced development time by ten days per quarter	Savings of 40 days in elapsed time annually, enabling software delivery dates to be compressed
			User acceptance time reduced by five days per quarter	Savings of 20 days in elapsed time annually, enabling software delivery dates to be compressed
Total				**$289,000 annually** **60 days reduced from software delivery schedule**

Table 1: Hard ROI

Soft ROI		
System	**Before**	**After**
Order Entry	Late bookings impacted sales commissions Manual entries required excess sales and clerical time	Improved customer satisfaction Sales “customers” can book sales and receive commissions on time
CRM	Random profile testing increased risk of unauthorized access Potential human error in manual testing	Profiles are now 100% tested, always correct Eliminated risk of human error
D&B	Limited testing resulted in potential for software “bugs” Increasing limits on D&B access would be costly	Continuous testing available 24 X 7 against a service that is never “down” Applications tested more thoroughly at no additional charge Cost avoidance, comprehensive testing without D&B access

Table 2: Soft ROI

About EMA

Founded in 1996, Enterprise Management Associates (EMA) is a leading industry analyst firm that provides deep insight across the full spectrum of IT and data management technologies. EMA analysts leverage a unique combination of practical experience, insight into industry best practices, and in-depth knowledge of current and planned vendor solutions to help its clients achieve their goals. Learn more about EMA research, analysis, and consulting services for enterprise line of business users, IT professionals and IT vendors at www.enterprisemanagement.com or blogs.enterprisemanagement.com. You can also follow EMA on Twitter or Facebook. 2909.120314