Newmarket Implements Actifio: Gains Faster Recovery and Time to Market for SaaS Customers

Laura DuBois

IDC OPINION

Much has been made about the copy data challenge – specifically that as an industry, we continue to create independently addressable copies of production data for purposes such as operational backup, archiving, disaster recovery (DR), application test and development, database reporting, and analytics. It's not uncommon for a large firm to have as many as 25 copies of data for different use cases, stakeholders, applications, and dedicated infrastructure. This creates a lot of excess spending and administration. IDC has continued to quantify this problem and, in a survey of 300 storage professionals, found that an average of 65% of external storage systems capacity is used for copy data. In addition:

- Collectively, we need to curb the growing amount of an overall IT budget that is allocated to storage. One mechanism to achieve this is by creating fewer copies, which is not likely to happen any time soon. Another mechanism to achieve this is by using copy data management solutions to create virtual copies, as needed.

- While a firm won't eliminate redundant hardware and software spending all at once, over time, investments in dedicated silos of infrastructure for backup, archive, business continuity, and test/development can be eliminated. The economics of this should not be overlooked.

IN THIS BUYER CASE STUDY

This IDC Buyer Case Study examines the issues Newmarket International Inc. (Newmarket) faced in meeting desired recovery objectives and supporting an agile software-as-a-service (SaaS) business. This document, based on discussions with Newmarket leadership, provides an overview of the options the company considered in addressing its challenges and the experience and results that it realized in implementing the Actifio Copy Data Virtualization platform.

SITUATION OVERVIEW

Since 1985, Newmarket International, an Amadeus company, has delivered proven business solutions for empowering hospitality organizations to lower costs and increase revenue while improving customer satisfaction and guest loyalty. With more than 40,000 installations and 150,000 users in over 154 countries worldwide, Newmarket's technologies are a cornerstone in the global hospitality industry. Offering solutions for sales and marketing automation, customer relationship management, catering and events, guest loyalty, meeting intelligence, workflow management, and property

maintenance, Newmarket enables hospitality professionals to work smarter and better manage all aspects of their transient, leisure, and groups and meetings business.

Organization Overview

With the rise of cloud computing, in 2000, Newmarket recognized the opportunity to serve its customers with a subscription-based software-as-a-service model. Through both organic and inorganic development as well as accelerated cloud delivery in 2007, Newmarket today has many different software-as-a-service solutions to empower sales and catering teams to streamline business and increase revenue, optimize operations and reduce costs, and improve customer and guest satisfaction, improving customer loyalty. Today, approximately 55% of Newmarket's revenue is derived from the company's subscription-based customer contracts. And with growing demand for its SaaS offerings, Newmarket allocates its IT resources accordingly. An internal IT department and leadership focus on traditional enterprise business applications, development, and QA, while another IT department and leadership is responsible for managing the customer subscription business.

Back in 2010 as Newmarket expanded into SaaS offerings, the company needed to improve its current recovery objectives, provide faster time to market, and streamline development and support operations. This IDC Buyer Case Study provides insight into the challenges the company faced and the options it considered. It also provides a summary of Newmarket's experience running Actifio in a proof of concept (POC) for 12 months and the results that Newmarket has realized since putting the product into production. To gather these insights and tell the Newmarket story, IDC spoke with Ken Wilson, director of OnDemand Operations at Newmarket International.

Information Technology Overview

Today, Newmarket has two primary datacenters – one in Portsmouth, New Hampshire (Newmarket's headquarters) and the other in Boston. Additional datacenters are located in Miami, Florida, and Hong Kong. The subscription business supports customers out of the Boston, Miami, and Hong Kong datacenter locations. Newmarket's internal IT environment is supported out of the Portsmouth datacenter as well as centers in Singapore, London, and Shanghai, China. The internal IT environment consists of approximately 600 physical servers spread across these datacenters. The Portsmouth and Boston datacenters each serve as the disaster recovery datacenter for the other datacenters.

On the subscription side, there are two types of customer deployment models. The first model is taking the Newmarket traditional client/server software and installing it inside a set of virtual machines (VMs) that are dedicated to that customer. This approach allows Newmarket to take its heritage applications and offer them in a SaaS model, but without rewriting the application. The second model is a true multitenant SaaS application approach, where the application has been written to offer all the attributes of a SaaS-based cloud computing model. Customers share a multitenant front-end software architecture and the same database and Web servers.

A look exclusively at Newmarket's subscription business running out of the company's datacenters shows that this segment of the company is supported by an additional 80 physical servers that are running 1,900 virtual machines, making this business near 100% virtualized. From an infrastructure perspective, the subscription business relies on VMware, and from an operating perspective, it relies on Microsoft Windows and makes heavy use of Microsoft SQL Server. For storage, Newmarket utilizes

IBM XIV shared storage. Each application has its own set of VMFS partitions, with many virtual machines occupying a shared data LUN. Newmarket also uses RDM for some of its older database servers. Newmarket has three XIV systems with 350TB of used primary storage data and 50TB of production capacity.

For new subscription-based customers that come online, Newmarket has a few approaches it leverages. With over 14 different applications supported, according to Wilson, "Some applications run strictly in our Boston area datacenter. Akamai's CDN is used to provide connectivity globally out of that datacenter. In the Miami and Hong Kong locations, customers are primarily dedicated to Newmarket's subsidiaries, and specific applications have multiple instances. Depending on the location of the customer, the application will get installed and spun up in an instance that's closest to the customer. The datacenters in Miami and Hong Kong utilize a similar physical architecture, VMware and VMFS partitions, but with the IBM Storwize V7000 storage systems with SSDs."

Challenges and Solution

Newmarket's Challenges

In 2010, the challenge Wilson, director of OnDemand Operations, and his team faced in supporting the growing subscription business was threefold. First, the team was employing a daily full backup and taking one copy offsite each week using EMC NetWorker and tape. The use of tape for local and remote backup served as a mechanism for operational and disaster recovery as well as for copies for QA and development and support services. The hurdle for the Newmarket team was keeping up with more stringent recovery objectives as well as the use of copy data for things other than recovery. According to Wilson, "The recovery time was at least 8 hours to set up a DR environment, and we wanted to achieve an RTO of one hour. Since our backups were occurring daily, we had an RPO of the previous night's backup, and we wanted to cut the RPO to 30 minutes. We needed to be prepared for a datacenter catastrophe." The use of disk was a natural choice, but Newmarket did not want to pay expensive tier 1 storage prices for a replication, snapshot, and recovery strategy. Wilson summarized by saying, "Our RTOs and RPOs were not acceptable to us, and they certainly weren't acceptable to our customers."

In addition, Newmarket needed local and remote recovery options and was leveraging asynchronous replication to copy data bidirectionally between the Portsmouth and Boston datacenters. As Wilson said, "The challenge with replication for Newmarket was the rate of change in our databases is so great that we really had to have a substantial network pipe to be able to replicate the data effectively between the locations. The size of the network pipe needed was too costly." Newmarket wanted a solution that would offer sync replication services as well as provide storage and network bandwidth savings. Newmarket needed a snapshot solution that would automate the process of placing the SQL databases into a consistent state, which would eliminate the need for Newmarket to write and maintain separate scripts.

Last, Newmarket's development and QA teams did not have a dependable and quickly available configuration of the environment that adequately reflected production. This was needed not only for software development but also for customer service and QA to triage problems and test patches against a production configuration. According to Wilson, "For the development team to install the production environment from scratch took days, which dramatically impacted customer service and our

ability to resolve customer issues." Lack of timely access to the production environment could impact time to market for a new SaaS release or impact the time to resolve a customer service issue. Further complicating issues, the SaaS environment is made up of distributed applications with complex configurations. The manual process Newmarket relied on to recreate the production configuration often resulted in misaligned configurations between the test environment and production.

Strategy and Options Considered

The CTO challenged the team to find a replacement for tape and a solution that could address the challenges identified. Newmarket outlined the requirements for a new solution and considered several options. One option was to leverage array-based copy services. However, this required exact storage configurations as the source and target locations. In addition, while Newmarket used the XIV asynchronous replication at the time, the XIV solution did not offer automated, point-in-time snapshots with out-of-the-box software to ensure application consistency.

Other options considered were EMC Data Domain and Avamar Data Store. Given that Newmarket was already an EMC NetWorker customer, this might have been an acceptable solution. However, according to Wilson, "With both the EMC solutions, additional purchased components were required. Specifically, we had to license additional software functionality." And Newmarket was looking for not just a disk-based target for backup and recovery but also a solution that could create near-instant copies for test, development, and QA.

The Actifio Solution

At some point, Newmarket's VAR users suggested Actifio as a solution to consider. In meeting with the Actifio team, Newmarket was intrigued by the Actifio approach and developed the essential criteria to test Actifio in a proof of concept. The POC was run for 12 months and concluded with a nine-page test report summary that included comparisons against other competitive offerings. As Wilson said, "We worked closely with the Actifio engineers and really tested out the functionality based on a proof-of-concept checklist. As we worked through the POC, we ran into items that we thought should be changed or improved. Actifio was quick to address our concerns and work with us to provide what we were looking for."

What set Actifio apart from the alternatives, and what was the tipping point for an Actifio investment? "Innovativeness, flexibility, and reliability were important to us in the decision-making process. We really liked the innovativeness of the product, the storage virtualization concept, and that the solution was built on a tried and true platform that was a decade old. We liked the responsiveness and agility in the way that Actifio delivered software updates throughout the year. Additionally, the Actifio team was very easy to work with, very supportive, and just an overall fantastic team. We were impressed by the caliber of the people that they brought in from management all the way down," said Wilson.

In addition, with Actifio, all the features – from snapshots and replication to deduplication and compression – were included without additional fees. Moreover, the Actifio solution allows for replication and snapshotting services to depend on lower-cost hardware rather than depending on more expensive tier 1 storage. Further, Actifio allows Newmarket to create copies of data on demand for internal teams, enabling faster time to market and service resolution. Newmarket could achieve

these objectives with a single solution from Actifio versus procuring multiple products or options from other suppliers.

Results

Results with Actifio

Today, Actifio supports the subscription business infrastructure as well as test, development, and QA for the internal IT organization. Actifio has been running in production for three years in the Portsmouth and Boston datacenters. The Actifio solution utilized 100TB of IBM Storwize V7000 storage across both locations and serves as bidirectional DR infrastructure for each datacenter. The Actifio solution in the Boston datacenter also serves as the DR solution/site for the Miami datacenter. Newmarket is protecting about 50TB of production data with Actifio including database, Web, and application servers. As Wilson elaborated, "We are taking regular snapshots and replicating to our secondary site. For critical servers, we are replicating using asynchronous deduplication replication and regularly rehydrate this data in the secondary site."

Table 1 identifies the before and after protection and recovery environment for the Newmarket systems where Actifio has been deployed.

TABLE 1

Benefits for Newmarket After Implementing Actifio

	Environment Before	With Actifio	Benefits with Actifio	Newmarket Comment
Recovery point objective (RPO)	24 hours	<30 minutes	98% improvement	"We were concerned about a catastrophic datacenter event."
Recovery time objective (RTO)	8 hours	1 hour	88% improvement	"Our customers were expecting better SLAs."
Network bandwidth	Remote replication using XIV native replication	Replication of deduplicated compressed data	70% network bandwidth savings	"We were going to need a fatter network pipe."
Tier 1 disk savings*	XIV disk	IBM Storwize V7000 disk	~$97,000	"We were able to reduce our spend on the tier 1 disk."
Deduplication savings**	No deduplication and compression	Actifio deduplication and compression	93% storage reduction	"We see on average a 15:1 deduplication ratio."
Copies for test, development, and QA	Days	Hours	Faster time to market, service, and support	"It would take us days to build production from scratch."

* Assumes 100TB of Newmarket storage was capacity-optimized disk versus performance-optimized disk (IDC estimates that capacity-optimized disk in 2011 was $0.98 per gigabyte, while performance-optimized disk was $1.95 per gigabyte. For Newmarket, this equated to approximately $970 per terabyte in savings, or a total of $97,000 in savings.)

** Assumes 50TB of data was being protected, using an average 15:1 storage efficiency rate, which equates to a 93% storage reduction

Source: IDC, 2014

Today, Newmarket leverages Actifio as the go-to solution for operational and disaster recovery but still uses tape as well. As Wilson said, "When we were looking at Actifio, our goal really was to get off tape. But tape has been around for so long, and we were nervous to completely back away from it. We think it's good to use different media to back up data." For some customers, Newmarket replicates some of the databases natively from one XIV to another. "Defense in depth is a common information security term and applies to data protection as well."

FUTURE OUTLOOK

Newmarket plans to expand the use of Actifio in the future to support protection of enterprise IT workloads. As Wilson said, "A big thing we're looking at are hybrid cloud solutions in conjunction with Microsoft Azure." Newmarket is looking at replicating out to the public cloud using the Actifio solution while leveraging Azure as the target for recovery. In addition, Newmarket expects some targeted primary workloads to move to Azure at some point, so bidirectional replication between the Newmarket datacenters and the public cloud may be an option.

Like any customer, Newmarket has enhancements it would like to see Actifio make in the product. Newmarket would like to see improved scalability of the individual clusters and greater levels of availability among all Actifio nodes. On the scalability front, there has been a limitation of up to 2,048 virtual disk volumes per I/O group. According to Wilson, "That meant you can get to 2,000 virtual machines on a particular cluster, but most virtual machines have more than one virtual disk. So, realistically, we were able to get about 600 servers on a cluster, and we have many more than that." On the availability side, Wilson added, "I would like to see the Actifio software running actively on all the nodes all the time. When failing over to the secondary node, connectivity is maintained, but Actifio functionality ceases until failback." The last improvement would be in the area of reporting. It is really important for Newmarket to have the ability to customize reporting extensively, and access to the underlying database is critical to that end.

ESSENTIAL GUIDANCE

More and more firms are using disk as the target of choice for operational and disaster recovery. While the economics of tape cannot be overlooked, the continuing declines in dollars per gigabyte of capacity-optimized disk in concert with storage efficiency technologies make disk an optimal media for faster recovery. We see the role of tape changing rather than going away. Newmarket still makes copies of data on tape as much as for another level of insurance as anything. As Wilson said, "We utilize tape really as our last resort." However, IDC research suggests that as a target for deep archive or cold storage, tape absolutely still has a role, in particular when the infrastructure has triple-digit petabytes of data.

With greater use of disk comes a natural consideration for the mechanism that is used to create the data copy. Is a legacy backup application that places data into proprietary backup formats used? Or can a snapshot and/or replication process be used to create the copy? And with this copy process, can the data stay in its native application format, thus making it faster for users to search for, locate, and retrieve and recover data? IDC research suggests that as more workloads get encapsulated into virtual machines, there is a greater propensity to use snapshot and/or copy services that allow the data and the image to be portable and reusable.

Firms with excessive amounts of secondary data should consider strategies to rightsize their storage environment. One approach is to consider a copy data management solution. These solutions support creating and retiring virtual copies of data for use cases such as test/development, archiving, backup, disaster recovery, reporting, and analytics. A copy data management solution that provides storage virtualization, storage efficiency, and application-aware data management services eliminates the

need to procure separate infrastructure for each of these use cases. Making an investment in a copy data management solution can significantly reduce opex and capex across software, compute, and storage infrastructure.

LEARN MORE

Related Research

- *Worldwide Disk-Based Data Protection and Recovery 2014–2018 Forecast: The Rise of the 3rd Platform and Implications on Data Protection* (IDC #249712, July 2014)

- *The Copy Data Management Challenge: 65% of External Storage Capacity Is Used for Copy Data* (IDC #lcUS24655014, January 2014)

About IDC

International Data Corporation (IDC) is the premier global provider of market intelligence, advisory services, and events for the information technology, telecommunications and consumer technology markets. IDC helps IT professionals, business executives, and the investment community make fact-based decisions on technology purchases and business strategy. More than 1,100 IDC analysts provide global, regional, and local expertise on technology and industry opportunities and trends in over 110 countries worldwide. For 50 years, IDC has provided strategic insights to help our clients achieve their key business objectives. IDC is a subsidiary of IDG, the world's leading technology media, research, and events company.

Global Headquarters

5 Speen Street
Framingham, MA 01701
USA
508.872.8200
Twitter: @IDC
idc-insights-community.com
www.idc.com