2012 Item Processing Disaster Recover Test

Event Details

The planned recovery of critical systems and business functions for Item Processing services (normally performed at the primary production datacenter in Kentwood) on systems hosted at the HA recovery datacenter in Muskegon.

Event Start Date: November 7, 2012
Event End Date: November 7, 2012

This report identifies any challenges observed, lessons learned, and recommendations for future events.

For more information on the CU*Answers Disaster Recovery and High Availability programs, please visit the Business Continuity Planning section of our web site at http://www.cuanswers.com/bcp/

Overview

As part of a robust business continuity program, CU*Answers actively tests recovery plans to ensure validation of processes and identify areas to improve recovery efforts and minimize impact to the organization and its major stakeholders.

As noted in the 2011 report, the Item Processing department had migrated operations to a new application, called ImageCenter. This platform change dramatically altered the way Item Processing performs its daily operations and functions. In December of 2011, the first recovery test of critical core operations including ImageCenter at an alternate site was successfully completed. While the 2011 recovery test was performed by staff working from the production datacenter with remote access to the recovery site, the 2012 test was performed with recovery teams deployed at the actual recovery site for the duration of the test. The 2012 recovery test was completed without the need of external vendor support. In addition, two new CU*Answers staff (one from the Item Processing team and the other from the Network Services team) participated in this recovery test for cross-training purposes.

Although we allowed ourselves 16 hours for the duration of the test, the recovery teams were able to successfully complete all steps, including travel time, within 10 hours. The test was performed in a sandboxed environment, parallel with production servers. Our clients experienced zero downtime or disruptions during this test.

Event Review

Data volumes for the ImageCenter application are stored in a Storage Area Network (SAN) environment at the production datacenter. Volumes are replicated to the SAN environment at the recovery datacenter. For the purpose of this test, two (database and application) of the four (database, application, two web servers) servers that comprise the applications were imaged and virtualized on our VMware server

the recovery datacenter.

In preparation for this test, data replication was interrupted on the morning of Tuesday (11/06). The following morning (11/07) we performed our test by retrieving data from the previous day and processing it within the sandboxed environment (virtual servers). In essence, we replayed the transactions from (11/06) and compared the results with production systems. Firewall rules were set in place to ensure that the ImageCenter servers at the recovery datacenter could not communicate over the network with production ImageCenter servers. This allowed us to perform the test in parallel with production operations without the added risk of contaminating live production data.

The Item Processing business critical functions performed during this test included:

❖ Downloading test files from FedLine
❖ Importing files to restored servers
❖ Performing reject/repair procedures
❖ Client totals reporting/comparisons
❖ Building and transmitting distribution files for online and offline clients
❖ Creating manual return files
❖ Uploading test files to FedLine
❖ Outgoing exception report creation and printing

Two new processes added for the 2012 test include:

❖ Processing FRB returns
❖ Processing NSF (member) returns

The test process began on Wednesday (11/07) at 9:30 AM and was completed by 4:30 PM. Participants operated from the recovery datacenter.

Challenges

Many of the documented challenges below are the result of our efforts to perform a recovery test parallel with the production environment (no downtime for clients). In an actual disaster recovery effort (recovering the production environment), most these challenges would not exist.

Snapshots of the virtualized servers for the purpose of this test contained previous (expired) user passwords. To complete the tests, users had to reset passwords to match the replicated production data.

One of the utilities used for secure file transfer requires the use of XP mode for compatibility on Windows 7 workstations. This mode did not honor the host table entries made to the workstation to point to the recovery servers for mapping drives. This was corrected by manually mapping the drive using FQDN (fully qualified domain names). This would not have been an issue in a real recovery on production servers. A new version of the secure file transfer tool that is compatible with Windows 7 is being released and will be implemented prior to the next planned recovery test.

There was a delay in viewing a check image after it had been (confirmed) imported. This delay is not observed in the production environment. It has been determined that the delay was related to the resources allocated to virtualized servers used for this test. The delay did not impede on the recovery process.

Continued Efforts and Recommendations

One of the purposes of performing recovery tests and exercises is to incrementally improve our capability and preparedness in the event of an actual outage. Based on the results of this test, the following recommendations are provided:

❖ Identify additional functions and processes (core but not necessarily "critical") to include in future tests to expand the scope by 9/1/2013.

❖ Virtualize current physical production servers and move them to the primary production VM cluster. This would allow more current "snapshots" replicated to the secondary VM server. Note that for this test the two servers were virtualized using snapshots from mid-summer. The process to perform these physical-to-virtual snapshots is manual and potentially problematic. By moving the production servers to a VM

server, this process could be automated and less problematic.

A project proposal has been created and submitted to help determine the feasibility of this recommendation. A meeting will be scheduled prior to 6/1/2013 to review the status of this project.

We anticipate this will have been completed prior to the next annual test in 2013.

❖ Network Services is investigating the feasibility of implementing changes to the primary production SAN that would allow production replication to continue to the secondary SAN during future disaster recovery events. Currently, data replication for the ImageCenter application is paused during these recovery tests. Findings of this study are to be provided by 9/1/2013.