CU*ANSWERS ITEM PROCESSING DISASTER RECOVERY TEST REVIEW

Event Dates: 6/13/2016 – 6/15/2016

Report Revision Date: 6/28/2016

SUMMARY

As part of a robust business continuity program, CU*Answers actively tests recovery plans to ensure validation of procedures for recovering critical processes and to identify opportunities to improve recovery efforts and minimize the impact of a disruption to the organization and its stakeholders.

During the week of June 13, select team members from the CU*Answers Item Processing department completed a follow-up disaster recovery test of the Electronic Check Processing environment by restoring CheckLogic Manager application and database servers and performing critical business functions from the secondary datacenter located in Muskegon, MI. The purpose of this test was to confirm the procedural and recovery process changes implemented as a result of the prior test performed during the week of January 11.

As in previous tests, data replication was suspended at the secondary datacenter to allow Item Processing staff to "replay" the events of a typical day to ensure the processes on the servers in the test environment performed as those in the production environment. This test was performed in parallel with the production environment with zero impact to clients. This was the second recovery test performed since migrating to the CheckLogic Manager platform in 2015. The test was performed by members of the Item Processing, Network Services, and eDOC support teams.

This report identifies the details of the test, challenges observed, lessons learned, and recommendations for consideration based on the results of this exercise.

EVENT REVIEW

The existing production CheckLogic environment includes data volumes hosted on a SAN (Storage Area Network) located at the primary facility with data replicated to a redundant SAN at the secondary facility. As mentioned above, data replication was suspended prior to the test window. Production application servers were cloned (virtualized) in a sandboxed environment at the secondary facility with drives mapped to data volumes on the backup SAN. Test servers were configured to communicate with other servers in the test environment by manually changing host lookup tables and application INI files.

Critical IP functions were divided among the three day window to minimize the length of time that data replication was suspended on any one day, especially during peak production periods. On the morning of June 13, Network Services team members began the exercise by suspending data replication for the CheckLogic environment and

preparing servers for the test environment. Between June 13 and June 15, the following critical IP functions were completed successfully:

- Download Electronic Check Processing (ECP) files from FRB
- Import ECP files using Fed Admin
- Perform repairs on the rejected images
- Compare individual client totals and reports with FRB totals
- Generate and submit transmission files for online clients and each off-line client representing all delivery channels (CUAPROD, GoAnywhere/SFTP, etc.)
- Download chargeback files from FRB
- Process pay/no-pay decisions on chargebacks
- Generate redeposit files for chargebacks
- Print Image Replacement Documents (IRD) created for chargebacks
- Receive and balance online return file
- Create and submit stacked return file
- Generate daily reports

Item Processing Team participants operated from the Kentwood datacenter while accessing workstations in the recovery test environment at the Muskegon datacenter using remote access tools.

CHALLENGES

Many of the documented challenges below are the result of 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 of these challenges would not exist.

1. On the first day of the test, a service that automatically checked for and downloaded production files from the FRB was left enabled (default setting) during the server recovery process. As a result, the daily import files were downloaded to the test server environment. In a true disaster, this would be the desired action to take.
    a. A batch process was performed to back out the file import changes. This did not affect the servers in the production environment.
    b. Procedures for restoring servers in a test environment have been modified to disable this service.

2. Initial attempts to communicate with the FRB host for file transfers had failed, requiring a reset of Secure Client (Cipher Suites and SSL Protocols).
    a. Not completely unexpected given that the test server was restored from the production server backup files as the source (server names and IP addresses changed for the purpose of the test).

3. The amount of MySQL data restored during this test has grown to 160GB, up from 120GB just six months ago during the first test (33% increase). The server test environment for this application currently has a maximum capacity of 175GB.
    a. Prior to the next test, additional storage space will be required, either on the physical server or SAN located at the secondary datacenter.

CONTINUING EFFORTS AND RECOMMENDATIONS

The success of this second recovery test of the CheckLogic Manager environment helps to validate the changes made as a result of our initial test performed back in January and confirm our capabilities of recovering the application within the goals and objectives set. From here we will embark on an annual recovery test schedule, seeking to expand the scope and enhance our capabilities.

1. For the purpose of this recovery test, identified functions were limited to internal activities performed by IP staff.
    a. Future recovery tests will include processes that are normally performed by external clients who access the application through the CheckLogic web server pool. While the processes will be tested, at this time access will still be limited to internal staff (to prevent unintentional crossover with the production environment).

2. For this test, only one offline client was selected for the generation and delivery of FRB posting file.
    a. Future recovery tests will seek to include all offline clients (3).

Report submitted by: Jim Lawrence, CBCP | CU*Answers | Manager of Business Continuity and Recovery Services