CU*ANSWERS ITEM PROCESSING DISASTER RECOVERY TEST REVIEW

Event Date(s): 9/11/2017 – 9/13/2017

Report Revision Date: 10/05/2017

SUMMARY

CU*Answers actively tests its business continuity plans to ensure validation of procedures for restoring critical processes and to identify opportunities to improve recovery efforts and minimize the impact of disruptions to the organization and its stakeholders.

During the week of September 11, 2017, team members from the CU*Answers Item Processing department completed a disaster recovery test of the Electronic Check Processing environment by restoring the CheckLogic Manager application and database servers and performing critical business functions from the secondary datacenter located in Muskegon, MI.

In previous recovery tests, data replication (for the CheckLogic application) between servers at the primary and secondary data centers was suspended 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.

A different approach was used for the 2017 test. This time, the data volume on the SAN (Storage Area Network) at the secondary data center was "cloned" each morning and copied to a test volume so that recovered servers could perform their daily tasks without the need to disrupt data replication in the production environment.

This recovery test was performed parallel with the production environment with zero impact to clients, by members of the Item Processing and Network Services 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 located at the primary production data center in Kentwood, MI with data replicated to a redundant SAN at the secondary facility in Muskegon. For this test, application servers were cloned (virtualized) in a sandboxed environment at the secondary facility with drives mapped to cloned data volumes on the backup SAN. Servers were configured to communicate with other systems in the test environment by manually changing host lookup tables and application INI files.

Network Services participants restored the application servers and cloned the data volume required for the test on the morning of September 11th. Item Processing staff performed their testing on both the 11th and the 12th.

Item Processing staff participated in testing individual components of the CheckLogic application and performed the critical IP functions listed below. All identified functions were completed successfully with minimal challenges or issues.

The Item Processing business critical functions identified for this test included:

- 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
- View and print Image Replacement Documents (IRD) created for chargebacks
- Receive, import and balance online return file
- Create and submit stacked return file
- Generate daily reports
- Deliver posting file to one offline client

Item Processing Team participants operated from the primary production datacenter while accessing workstations in the recovery test environment at the secondary 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. When starting the [secure file transfer] application, an error message was received.
    a. The error was due to files missing their routing number from a credit union that recently merged with another credit union. This error also occurred in the production environment and was resolved.

2. The initial attempt to launch iDOC Vault for keying rejects was unsuccessful.
    a. An alternate URL was required for the test (to avoid accessing the production environment). Once the correct URL was identified, the rejects were successfully keyed in.

3. The initial Reject/Repair process failed due to the method used to call the process within the application.
    a. To resolve this, the process was referenced by http://localhost/ instead of the production path. This allowed the Reject/Repair process to be performed successfully.

4. After all files were downloaded and rejects were keyed in, the totals were off by $216.48.
    a. After investigation, it was discovered through looking at logs and in folders, a routing number correction was made to clear out the items.

5. An error message was presented when trying to create IRD print files.
    a. Instructions about changing internet browser settings from the 2016 IP DR testing were used and eliminated the problem, allowing the operator to view the IRD files.

6. Unable to log into the server to work on NSF Return File (log files indicated an issue with MySQL on the restored server).
    a. Network Services participants found the MySQL service unresponsive. Once the service was restarted, the NSF Return Files were once again available. The cause of the service disruption was not apparent. To avoid any potential data crossover from the test environment to the production environment, services and scripts are started manually on the restored servers. Had this occurred in the production environment, the service would be configured to restart automatically.

CONTINUING EFFORTS AND RECOMMENDATIONS

1. Key benefits of performing recovery tests are the experience gained and lessons learned when combined with previous exercises. That knowledge is rolled into updated documentation so that teams are even better prepared should an actual future disruption occur.
    a. The knowledge gained benefits not only the application support teams but also the software development teams. This new information will be documented and disseminated among support teams.
2. By reconfiguring the individual components that make up the complex CheckLogic Manager environment to function parallel to the production environment, new insights into the process flow and system interdependencies is gained.
    a. Teams will compare notes and seek areas to improve the design and use of the application for the benefit of all.
3. For the purpose of this recovery test, identified functions were limited to internal activities performed by Item Processing 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. Due to access restrictions to the test environment, these client-facing tasks will be performed by internal staff.