SITE-FOUR HIGH AVAILABILITY PROGRAM REVIEW

EVENT DATE(S): 06/14/2020 – 06/21/2020

SUMMARY:

As part of an ongoing business continuity program, Site-Four, LLC actively maintains a high-availability (HA) core-processing environment with real-time CU*Base/GOLD data replication between identical servers located at two geographically dispersed, state-of-the-art datacenters. Regular HA rollover events are scheduled to redirect core-processing and operations to the secondary/backup datacenter (located in Kentwood, MI) for up to seven business days as part of an active and constantly evolving business continuity program. At the completion of each event, core-processing is redirected back to the primary location in Yankton, SD. These rollover exercises are an invaluable part of business continuity testing and recovery processing readiness and ensure the ongoing availability of CU*Base/GOLD core processing environment.

This rollover was initially scheduled for April 19, 2020 through April 26, 2020. However, it was precisely at this time that we all were experiencing the primary impact of the COVID-19 outbreak. Rather than risk unnecessary impact to clients, it was decided as an abundance of caution to postpone the rollover and reschedule at a more opportune time. The event was rescheduled for Sunday, June 14 through Sunday, June 21 and the role-swap exercise was completed during that window.

The rollover to the Kentwood, MI system began at 10:00pm CT. The rollover itself was completed at 12:05am CT. The roll back on Sunday, June 21 was started at 10:00pm CT and was completed at 11:20pm CT with core processing of CU*BASE/GOLD transferred back to the primary system in Yankton, SD.

This event was performed through the collective efforts of Site-Four, CU*Northwest, CU*South, and CU*Answers as part of an ongoing reciprocal HA colocation agreement with CU*Answers initiated in 2014. As a proactive measure and to minimize disruptions at credit union branch locations, the Group Providers announced this planned event and firmly encouraged credit unions to test their connectivity to the secondary data center in advance of the rollover.

As highlighted in this report, the mutual colocation agreement between Site-Four and CU*Answers not only includes shared facility space within a state-of-the-art data center, but also network and operations support throughout the rollover event. The end goal in this agreement is to provide seamless support and a level of readiness that allows the party experiencing the disaster time to focus on recovery and resumption while the unaffected party oversees daily operations from the high-availability data center.

The following sections identify other details, challenges observed, lessons learned, and recommendations for consideration.

EVENT DETAILS:

On the evening of Sunday, June 14, at 10:00pm CT, the recovery team brought CU*BASE/GOLD offline and began the role-swap process to redirect Site-Four core-processing from the production system in Yankton, SD to the high availability system in Kentwood, MI. During the rollover process, a “splash-page” for online mobile banking was displayed to alert members that system maintenance was being performed. All processes were verified, communications were back online, and CU*BASE/GOLD was back online by 12:05am CT. Note that this is a slightly longer window than normal; see ‘Challenges’ below.

The rollback was completed on Sunday, June 21 beginning at 10:00pm CT to redirect core-processing back to the primary production server in Yankton, SD to complete the rollover event. All processes were verified, communications were back online, and CU*BASE/GOLD was back online by 11:20pm CT (average, and only one-minute difference in time from our last rollback).

CHALLENGES:

As we continue to expand and improve our products and services to a growing client network, systems and environments experience an increased number of changes at a very rapid pace. Performing these rollover exercises in a planned, controlled setting during non-peak business hours is a deliberate investment to prepare for an actual crisis. It is the position of Site-Four that any role-swap event which does not reveal any issues is regarded as a missed opportunity to learn and improve.

Most notable in this rollover was an issue encountered in the processes of initially rolling over to the Kentwood system (which resulted in the longer window for this initial process). As we prepared to roll, the iTERA replication application (which handles the real-time data replication for the high availability process) varied off the port using the IP address required to complete the rollover. System Admin, Todd Wolcott, restarted the port to bring the IP address back online and the rollover completed normally. The adverse effect was that the rollover monitor was still reporting the rollover in progress when in fact it had completed. While it was likely that there were no issues, we always use caution whenever there is any unexpected variation in the rollover process. Because of this, iTERA technical support was engaged. Response time became extended as vendor level 1 support was escalated to a developer. Due to the slow engagement by an iTERA developer, at 12:00am CT, the decision was made to continue and finalize the rollover. This direction was later confirmed as correct by the iTERA developer.

On the morning after rollover, the daily reports to CU*South were not immediately available. On investigation, the reports had been generated and transmitted, the GA (GoAnywhere) transmission process was successful, but the CU*Spy server import failed due to a configuration issue that only affected CU's that converted to CU*Spy after May 2016. In these cases, the CU*Spy software was rejecting authentications due to the misconfiguration. Imaging Solutions made a correction to the configuration and hand-offs began operating properly. Additionally, the clock on the HA host was 4 minutes 50 seconds slow and had to be adjusted to be in sync with the world atomic clock. This was noted and completed on Wednesday June 17.

On the day after the rollover, a CU client reviewed a report that is generated to review Last Login Date of User Profiles. The data for this report is not replicated and is regenerated each evening as a part of the EDBD (end-of-day/beginning-of day) process. The CU was not actually viewing the profiles, but using CUBASE tool #933; this tool does not pull real-time data. The report is updated at EoD and the file used to generate the report data is NOT replicated so was showing last login data from the last time we rolled. The data was available through query and was up to date in the report on the next day.

Two credit unions experienced issues in connecting to GOLD. It was determined, in both instances, that the CUs had not properly tested their connections to the HA site as recommended prior to the rollover. Both connectivity issues were quickly resolved after testing and adjustment.

CONTINUING EFFORTS AND RECOMMENDATIONS:

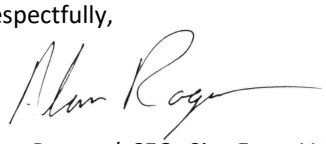
Each recovery test and high-availability rollover exercise provides us the opportunity to improve the process, expand capabilities, and adjust procedures as the production environment changes. The best way to accomplish this is to execute, document, and improve in regular iterations. The best way to be ready for a disaster is to practice.

The following is a list of action items and projects that we are completing to improve our HA rollover capabilities:

1. In advance of the next rollover, we will notify iTERA support to be on standby and watch carefully for any unusual behavior in IP route handling during the rollover. We will bring in iTERA immediately if there is a recurrence of the issue of the last rollover to research for cause.
2. We will check to see if 1) tool #933 can run off live data or 2) if the data used by tool #933 can be replicated without any negative impact to the environment.

This was a successful rollover; while the roll to the HA system was extended in duration, this is a positive sign that all participants in the process are on the ball, exercising appropriate caution, and reacting accordingly.

Respectfully,



Alan Rogers | CEO- Site-Four, LLC
arogers@site-four.com