

## CU\*ANSWERS HIGH AVAILABILITY PROGRAM REVIEW

EVENT DATE: 9/21/2014 – 9/24/2014

### SUMMARY

As part of an ongoing business continuity program, CU\*Answers actively maintains a high-availability (HA) core-processing environment with real-time CU\*BASE/GOLD data replication between identical hosts located at two geographically dispersed, state-of-the-art datacenters. A minimum of twice each year, HA rollover events are scheduled to redirect core-processing and operations to the secondary datacenter (located in Muskegon, MI) for a minimum period of three business days. At the completion of each event, core-processing is redirected back and operations resumed at the primary datacenter (located in Kentwood, MI). These HA rollover events are invaluable in our effort to validate our procedures and ensure our ability of recovering CU\*BASE/GOLD core processing in an effective and timely manner.

This particular scheduled HA rollover was eagerly anticipated and carefully monitored, given that the previous two rollover events (November 27, 2013 and May 18, 2014) were unplanned, triggered by error conditions on the production host and performed by recovery teams to avoid a disruption of core-processing services. Each one of these rollover exercises brings with it a unique set of circumstances and challenges, but common among them are the goals and objectives of a successful continuity and recovery program.

Notable characteristics of this event include:

- The first scheduled HA rollover following two previous “unplanned” rollover events during which procedures were modified due to the circumstances of each scenario.
- The first HA rollover performed following the major core network switch upgrade project (July) at the production datacenter.
- Rolling to systems at the secondary datacenter allowed us to perform hardware maintenance on the production host that included the installation of new solid state disk drives to expand capacity.

The following sections identify any challenges observed, lessons learned, and recommendations for consideration related to this event.

### EVENT DETAILS

On Sunday, September 21, at 10:00 PM ET, the production host was taken offline and rollover procedures initiated. By 10:30 PM, recovery teams began testing core-processing applications on systems at the secondary datacenter. At 10:44, all applications were confirmed and CU\*BASE/GOLD brought online.

On Wednesday, September 24, at 10:00 PM ET, the rollback process was initiated bringing CU\*BASE/GOLD core-processing back to the primary datacenter. This process was completed and systems back online by 10:48 PM.

## 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 rapid pace. Performing these rollover exercises in a planned, controlled setting during non-peak business hours is a small investment to best prepare us should the need arise under less optimal conditions to perform a true recovery during an unplanned disruption.

Maintenance windows necessary to perform these rollover events continue to shrink as more daily tasks are required of system operators. It is important that we continuously seek ways to improve processing efficiency through automation and managed productivity, while at the same time become even more creative in testing our operational resilience.

Due to the nature of the rollover exercise (redirecting live production traffic from 200+ credit union locations to systems at the secondary datacenter), some challenges are to be expected. Compared to previous rollover events, the scope and impact of challenges for this event (identified below) was relatively light.

- CU\*BASE/GOLD login errors
  - On Monday morning following the rollover, support calls were received from client credit unions as a result of error messages presented when logging into CU\*BASE/GOLD. A licensing service restart on the production host resolved the issue. Although the login process was tested immediately following the rollover, the service stopped responding once the volume of logins increased at the beginning of the business day. This same licensing service sits idle for an extended period of time while the system at the secondary datacenter is in 'stand-by' mode. For future rollovers, recovery teams will recycle/refresh this service after initial testing has been performed.
- Network communication issues for select third-party EFT vendors (FIS, ELAN)
  - This is an expected condition following a rollover event that requires the vendor to restart services on the remote host to resynchronize data communications between parties. What once required 20-30 minutes for troubleshooting following a rollover has been narrowed to 5 minutes, once the vendor has been notified. We will continue to work with these two vendors to shave recovery times and to identify a more permanent solution.
- Credit card daily maintenance file transmission postponed
  - To ensure a timely start to the rollover process (10:00 PM), an Operations Team task that involves the creation and transmission of a daily maintenance file for a credit card vendor was paused. The file was created prior to the rollover but transmission suspended until after the rollover.

## CONTINUING EFFORTS AND RECOMMENDATIONS

Whether planned or unexpected, each recovery test and high-availability rollover exercise provides us the opportunity to continually improve the process and adjust our procedures. The best way to accomplish this is to “Practice. Learn. Repeat”. The following is a list of action items and projects that we are pursuing to get us closer to that goal:

1. We will continue to work with third-party EFT vendors to improve the recoverability of network communications and minimize downtime during high-availability and recovery events.
  - a. The scope of future HA rollovers will be expanded to include the redirection of network traffic to the secondary datacenter for those vendors who have invested in high-availability technologies.
  - b. The growing size and amount of time required for the transmission of the card maintenance files has been squeezing the available windows for performing these types of tests and exercises. We will continue our efforts to collaborate with third-party EFT vendors on solutions such as increasing bandwidth to reduce time required for file transmissions.
2. During this rollover event, two first-time recovery team members participated in performing network and operations procedures. This continued cross-training effort helps to ensure a pool of qualified and trained individuals for future rollover and recovery efforts.
3. On the morning following the initial rollover, of the 200+ credit union branches, only one credit site required assistance from support teams to reconnect to systems at the secondary datacenter. We will continue our communications campaign to educate and remind clients on the requirements and importance of complying with standard network configuration settings for connecting to CU\*BASE/GOLD as well as procedures for testing at the credit union.