

CU*ANSWERS HIGH AVAILABILITY PROGRAM REVIEW

EVENT DATE: 4/12/2015 – 4/15/2015

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.

Procedures followed during this rollover exercise were similar to the previous event, performed on September 21-24, 2014. Each 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:

- This was the first HA rollover exercise at CU*Answers for the newest member of the iSeries Administration team.
- By rolling production to systems at the secondary datacenter, we were able to install IBM OS PTF updates on systems at the primary datacenter without the need for scheduled downtime.
- Third-party EFT vendors were notified prior to the HA rollback on Wednesday, reducing the time required to resynchronize host communications.
- Prior to this rollover exercise, all PCs in the Operations Center at the secondary facility had been replaced, requiring configuration for specific roles unique for each of the three shifts. No issues were observed regarding the new PCs throughout the duration of the event.
- This was the first rollover exercise since outsourcing member notice production to SAGE Direct. During prior rollover events, member notices were processed on equipment at the primary datacenter.

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

EVENT DETAILS

On Sunday, April 12, at 10:15 PM ET, the production host was taken offline and rollover procedures initiated. By 10:48 PM, recovery teams began testing core-processing applications on systems at the secondary datacenter. At 10:55, all applications were confirmed and CU*BASE/GOLD brought online.

On Wednesday, April 15, 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 10:45 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.

- Browser compatibility during application testing
 - During application testing immediately following the rollover Sunday evening, it was reported that Daily Reports were not accessible from the CU*SPY application. After engaging support from the Imaging Solutions Team, they quickly discovered that testing was being performed with an incompatible browser version.
- CU*BASE/GOLD access for Xtend staff working at CU*South
 - On Monday following the rollover, two staff members from Xtend located at the CU*South office were not able to access CU*BASE/GOLD at the secondary datacenter. Router and firewall configuration changes was required on the CU*South network to restore access. This was the first HA rollover event since Xtend staff started working at the CU*South location.
- Network communication disruption for EFT vendor (Fiserv)
 - On Monday evening following the rollover, Operations Team members were not able to receive the RECON files for processing from systems on the Fiserv network. In January of this year, connectivity to the Fiserv network was upgraded to a new MPLS circuit with redundant communications at the secondary datacenter. Network configuration changes were required to restore connectivity.

Although connectivity was verified at the time of the circuit upgrade in a test environment, this is another example of the value of performing HA rollover exercises in a live production environment. Doing so helps us to uncover and resolve potential disruptive conditions.

- Incomplete data presented on LUSRPLST – USER ID information report.
 - Information on this report includes ‘Last Login Date’, ‘Last Password Change Date’, and ‘User Account Creation Date’ for each CU*BASE/GOLD User Account at the credit union. The data used to create this report is generated from the local SYSTEM account tables, unique to each host (CUAPROD and CUAHA). During a rollover event, (when CUAHA is the primary host), this report will reflect USER history on CUAHA, not USER history on CUAPROD.

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 review the LUSRPLST –USER ID information report to determine if modifications can be made to provide the desired information, whether or not the report should be available during rollover events, and/or if documentation updates are required.
2. We will update the documented procedures for testing web-based applications following rollover and recovery efforts to include supported browser versions.
3. On the morning following the initial rollover, all of the 200+ credit union branches were successfully redirected to systems at the secondary datacenter without the need for additional support. 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.
4. 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. We will continue to be proactive in communications prior to the HA rollover events in an effort to minimize downtime.
 - b. 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.
 - c. 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.