CU*ANSWERS HIGH AVAILABILITY PROGRAM REVIEW

EVENT DATE(S): 9/14/2025 – 9/21/2025

SUMMARY

As part of an ongoing business continuity program, CU*Answers actively maintains a high-availability (HA) core processing environment with near real-time data replication between identical hosts located at two geographically dispersed, state-of-the-art data centers. A minimum of twice each year, live HA rollover events are scheduled to redirect CU*BASE production and operations to the secondary data center (located in Yankton, SD) for a period of one full business week or longer. At the conclusion of the rollover event, core processing is redirected back, and operations resumed at the primary data center (located in Kentwood, MI).

These live production HA rollover events are invaluable to ensure the ability to recover CU*BASE GOLD core processing in an effective and timely manner when unexpected incidents occur that threaten to disrupt business operations. A secondary benefit of regular scheduled rollovers is to allow time to bring production systems offline without incurring downtime for users, so that planned maintenance tasks can be performed. This helps to ensure peak system performance and the application of applicable software and security updates.

In addition to CU*BASE core processing, secondary servers for CBX (browser-based CU*BASE) and **It's Me 247** (online and mobile banking) at the new Las Vegas data center are included in the scope of testing as outlined in this report. This exercise represents the first test performed since relocated secondary web servers from Grand Rapids to the Las Vegas data center this past June. Although networks at the new site were designed to mirror the former location, new IP addresses were assigned to each device and network.

A week-long test of the secondary CBX servers was scheduled in part due to the announced sunsetting of the GOLD user interface at the end of the 2025 calendar year. Going forward, CBX will be the primary application used to access the CU*BASE database.

The CU*Answers Fall HA rollover was performed as planned, starting on Sunday, September 14th through Sunday, September 21st, lasting one week with a higher-than-average number of challenges or issues observed as detailed in this report. The majority of those issues involved connectivity to the secondary CBX web servers at the recently relocated Las Vegas data center.

The objectives of the spring HA rollover centered around four primary goals:

1. [**Secondary CBX web servers**]: Test the functionality and performance of recently launched CBX (brower-based CU*BASE) from the secondary web server pools following the relocation from the Grand Rapids, MI, to the Las Vegas, NV, data centers, with connectivity to the HA host in Yankton, SD.
2. [**CBX peak volume test**]: Perform a "flash mob" event where a large percentage of staff at credit unions use CBX instead of GOLD to simulate peak volume periods as a benchmark for use after the GOLD sunset date at the end of the calendar year.

3. [**Secondary Online and Mobile Banking web servers**]: Test the functionality and performance of online and mobile banking applications from the secondary load-balanced web server pools also recently relocated from the Grand Rapids, MI, to the Las Vegas, NV, data centers.
4. [**Third-Party EFT network performance**]: Additional testing of performance and network latency for third-party applications including RTP® and the FedNow® service with core processing production from the secondary data center in Yankton, SD.

All goals and objectives were met. The data collected from this exercise will be extremely helpful in our continued planning and implementation of the new data center in Las Vegas, NV, which seeks to serve credit unions west of the Rockies. In fact, part of the testing described below includes CBX web servers and infrastructure recently relocated to the new data center this past June.

The remainder of this report reflects the details of the event, challenges observed, and continuing efforts to improve the HA rollover process, given the significance it plays in ensuring availability of CU*BASE core processing during potentially disruptive scenarios.

All times noted in this report are Eastern Time.

EVENT DETAILS AND TIMELINE

The CU*Answers Fall HA Rollover exercise was divided into multiple phases to accomplish the above stated objectives:

1. **CU*BASE HA Rollover** (Sunday, Sept. 14, 3:00 AM – 4:00 AM)
    - Redirect CU*BASE core processing to the secondary servers at the Yankton, SD, data center for one week.
2. **CBX HA Rollover** (Sunday, Sept. 14, 4:00 AM)
    - Redirect CBX web traffic to server pools located at the Las Vegas, NV, data center for one week.
3. **Online and Mobile Banking Rollover** (Wednesday, Sept. 17, 6:00 AM – 7:00 AM)
    - Redirect all online and mobile banking traffic to server pools located at the Las Vegas, NV, data center for one hour.
4. **CBX peak volume stress test** (Thursday, Sept. 18, 3:30 PM – 4:00 PM)
    - Encourage all credit union staff to login and perform several functions within the CBX application to simulate peak volume usage from secondary web servers in Las Vegas and HA core CU*BASE server in Yankton for 30 minutes to gather system performance log data.
5. **CU*BASE HA Rollback** (Sunday, Sept. 21, 3:00 AM – 4:00 AM)
    - Redirect CU*BASE core processing back to the production data center in Kentwood, MI.
6. **CBX HA Rollback** (Sunday, Sept. 21, 3:30 AM)
    - Redirect CBX web traffic back to the production data center in Kentwood, MI.

Timeline of events:

Sunday, September 14th

On the morning of Sunday, September 14th, beginning at **3:00 AM ET**, teams initiated the procedures to bring **CU*BASE** subsystems offline and start the process for the high availability rollover. At **3:09 AM**, after pre-roll

checks were completed, the official role-swap process began. This is the stage of the rollover process where PROD and HA (aka Source and Target) trade places, lasting approximately 20 minutes. The server at the Yankton, SD, becomes the CU*BASE production host, and all core processing network traffic is directed at it for the duration of the rollover period.

At **3:55 AM**, all data integrity checks were completed and subsystems back online. Teams began performing application testing. By **4:05 AM**, all tests had been completed, and nightly processing (EOD/BOD) resumed for all time zones at the secondary data center in Yankton, SD.

Teams then turned toward redirecting **CBX** traffic to the secondary web servers recently moved from the Grand Rapids, MI, to Las Vegas, NV, data center. This process started at **4:13 AM** and completed by **4:19 AM**. Approximately five minutes is required for DNS changes to fully propagate the network.

Monday, September 15th

On Monday morning, support calls were received from several credit unions who were experiencing connectivity issues using CBX. The GOLD interface was working as expected. Announcements had been issued several weeks prior to the rollover with instructions regarding the routing changes and new IP addresses for systems at the Las Vegas data center. These changes were not completed prior to the rollover event, prohibiting access from those credit union locations.

All of the impacted credit unions involved networks that are either self-managed or managed by a third-party vendor other than CU*Answers Network Services. Support teams worked with each credit union to administer the required changes and confirm connectivity.

Wednesday, September 17th

On the morning of Wednesday, September 17th, beginning at **6:00 AM**, teams initiated the changes to redirect traffic for online and mobile banking to secondary servers located at the Las Vegas data center. This test was limited to one hour due to the number of third-party EFT vendor connections that had yet to make the necessary firewall and routing changes. Teams focused primarily on application functionality and performance to identify any issues to correct prior to scheduling a longer duration test. At **6:50 AM**, traffic was redirected back to the production servers with log files collected for observation.

Thursday, September 18th

Announcements were sent out prior to the rollover to all CU*Answers credit unions to encourage a load test on the secondary CBX servers at **3:30 PM** for a period of 30 minutes. This exercise was intended to allow teams to monitor system performance during peak volume periods and identify opportunities for improvement. Teams collected log information for observation purposes.

Sunday, September 21st

On the morning of Sunday, September 22nd, beginning at **2:50 AM ET**, teams initiated the procedures to perform the HA rollback. At **3:13 AM**, after pre-roll checks were completed, the official role-swap process began. At **3:30 AM**, changes were made to redirect all CBX traffic back to the production servers in Kentwood, MI. At **3:57 AM**, all data integrity checks were completed and subsystems back online. Teams began performing application testing. By **4:05 AM**, all tests had completed, and nightly processing (EOD/BOD) resumed for all time zones at the primary production data center in Kentwood, MI.

CHALLENGES AND CONTINUING EFFORTS

Technology and system processes are always changing and evolving. As a result, there is an opportunity to learn and improve with each HA rollover performed. In this report, the challenges and continuing efforts are shared with all interested parties as evidence of the value received. During this exercise, the following challenges were observed:

CU*BASE/CBX Rollover

1. Following the initial rollover, several credit unions (30+) reported connectivity issues to the CBX servers located at the Las Vegas data center. These servers were part of a relocation project completed in late June to move the secondary CBX and OLB environments from the Grand Rapids site to Las Vegas. As part of the project, new IP addresses were assigned to each server.
    a. Multiple announcements were published beginning thirty days in advance of the HA rollover to all credit unions with instructions regarding the new IP addresses and required network routing and firewall configuration changes. In addition, a call campaign was completed one week prior to the HA rollover targeting those showing the Las Vegas client VPN as "down." GOLD access remained available for those credit unions who were not able to connect using CBX.
    b. Connectivity issues were anticipated during this initial rollover to systems at the new Las Vegas data center in part due to the scale of the relocation project. As such, the decision was made to include the CBX web servers as part of the week-long HA rollover to allow for ample testing. Support teams were ready to assist in restoring CBX connectivity quickly for the credit unions.
    c. One credit union did not report the connectivity issue until late on Thursday. They opted to wait until after the rollback to engage their IT support vendor to make the necessary correction.
    d. The updated routing and firewall requirements are included in the AnswerBook article #KB5579 and will be part of all new credit union core conversions going forward.

2. Approximately 24 hours prior to the HA rollback, a failed hard drive was detected on the production CU*BASE server at the Kentwood, MI, data center.
    a. The installed RAID (Redundant Array of Independent Disks) feature worked as expected to automatically rebuild the new drive without interruption.
    b. The replacement hard drive was delivered and installed within 12 hours of failure.
    c. All diagnostics and testing came back as positive with no interruptions to the HA rollover process.

Online and Mobile Banking (OLB) Rollover

1. The OLB rollover performed represented the first test since relocating the secondary web and SQL servers from the Grand Rapids to Las Vegas data center.
    a. These servers also were assigned new IP addresses and required significant routing and firewall changes, impacting primarily third-party vendor integrations.
    b. As such, the duration of the exercise was limited to one hour, limiting any disruptive impact to members while allowing support teams time to test application functionality and collect log files to identify any errors.

2. Changes to the server load balance configuration to bring down the production servers and redirect traffic to the secondary servers required a failover to allow the systems to recognize the changes.
    a. Once this was completed, OLB traffic was able to connect to the appropriate servers.

b. Although this was a relatively seamless process, teams will engage with the vendor to determine the need to perform this unit failover.

3. It was discovered that the web servers at the secondary data center were running the previous version of the **It's Me 247** application software rather than the production version. While most functionality remained intact, some new features recently added were not available.
    a. Teams will review the process for keeping servers synchronized at the new data center, a feature that worked without any issues at the former location.

4. There were multiple connectivity issues with third-party integrations in **It's Me 247** likely due to the new IP address space.
    a. Connectivity challenges were anticipated due to the high level of integration and coordination required for making significant network changes involved in launching a new data center.
        i. Today's data center environment is very dynamic and complex with ongoing projects and implementations involving several vendors. This adds to the value of these exercises and gives weight to the need to perform them regularly.
    b. Teams are working to prioritize and communicate with the 80+ vendors involved. This has proven difficult in the past due to vendor consolidation and contact changes that can make locating the appropriate parties a challenge.

5. Once all changes and improvements have been made, a follow-up OLB rollover will be scheduled for a longer duration period.

CLOSING REMARKS

Once again, the value that these regular high-availability rollovers provide is instrumental not only in the prevention and preparation for disruptive incidents, but also in the planning and implementation of new technologies as the core data center environment evolves. Major projects on the horizon include the sunsetting of GOLD, leaving CBX as the sole user interface for CU*BASE at the credit union, and completing the build-out of a new production center in Las Vegas. This new production center is designed to host credit unions west of the Rockies, as well as function as the new HA environment for the Kentwood production center starting in late 2027.

These rollover exercises give us the opportunity to validate the significant changes being made in the data centers as well as provide invaluable data regarding performance and resilience of each system and the network at large. Through stress testing and forcing failovers between redundant systems, we are able to design and optimize the technology layer that will drive the future of core processing.