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## **SITE-FOUR HIGH AVAILABILITY PROGRAM REVIEW**

**EVENT DATE(S): 04.07.2024 - 04.14.2024**

### **SUMMARY:**

As part of an ongoing business continuity program, CU\*NorthWest, CU\*SOUTH and Site-Four actively maintain 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. Recurring, biannual, HA rollover events are scheduled in the Spring and Fall every year, where core-processing and Operations are redirected to our secondary/backup datacenter (located in Kentwood, MI) for seven business days as part of an active and constantly evolving business continuity program. At the completion of each event, core-processing is then redirected back to the primary datacenter, location in Yankton, SD. These rollover exercises are an invaluable part of our business continuity program, testing and confirming our recovery processing readiness and ensuring the ongoing availability of our CU\*Base/GOLD core processing environment.

These events are a vital component of the Site-Four value proposition, and Site-Four encourages that these results be shared with all stakeholders. This level of commitment and reliability is above par and should be shared in the board rooms for client credit unions.

This rollover to the Kentwood, MI system was performed on Sunday, April 7<sup>th</sup>, 2024. Preparations began at 9:00PM CT. The subsystems were brought down at 9:43PM CT. The rollover began at 10:20PM CT and was done by 10:27PM CT. Rollover was completed by 11:20PM CT.

The roll back to the Yankton facility was performed on Sunday, April 14<sup>th</sup>, 2024. Preparations began at 9:00PM CT and the subsystems were brought down at 9:45PM CT. The roll back began at 10:07PM CT and was done by 10:25PM CT. The roll event was called completed by 10:51PM CT.

This event was performed through the combined efforts of Site-Four, CU\*NorthWest, CU\*SOUTH, and CU\*Answers as part of an ongoing reciprocal HA colocation agreement with CU\*Answers. This arrangement was originally created in 2014 as a proactive measure to minimize disruptions at credit union branch locations across the CU\*Asterisk network. The Group Providers announce these planned events and work directly with the credit unions to do network testing to assess their connectivity to the secondary data center in advance of the rollover. This allows us to minimize issues attendant to the role-swap exercise.

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 ensure a high and practiced level of readiness. This allows the party experiencing the disaster time to focus on recovery and resumption while the unaffected partner oversees daily operations from the high-availability data center site.

The following sections review details, challenges encountered, lessons learned, and recommendations for consideration following this rollover exercise event.

### **EVENT DETAILS:**

This rollover to the Kentwood, MI system was performed on Sunday, April 7<sup>th</sup>, 2023. Preparations began at 9:00PM CT. The subsystems were brought down at 9:43PM CT and the Splash-page for online and mobile banking was put

up to advise users of the maintenance being conducted. Control of the host was then handed over to the iSeries Admin Team at 11:57PM CT and prechecks began. During the system prechecks one of the PC's was still running the ROBOT GUI which needed to be shutdown. A newer Operator at CU\*A logged into the system without realizing Site-Four was in the middle of a Rollover. FIS had reached out to CU\*Answers Operations when they received no answer from Site-Four and advised that the CU\*Answers team that the Site-Four connection was down. He logged in to attempt to restart the ISO Switch as requested, not realizing we were mid-roll. The actual rollover process began at 10:07PM CT. At 10:31PM Todd Wolcott indicated that the roll was done but Journals were not running, and he was noticing general slowness. At 10:42PM CT control was returned to Site-Four and the networking changes were initiated. DNS changes were implemented immediately, but during the firewall changes, a change that had been made since the last rollover event caused an overlap conflict when attempting to reconfigure the VPN tunnels to backhaul comms traffic. Once this was finally tracked down and corrected the team began starting subsystems while the networking changes were completed. Subsystems were started and online by 11:11PM CT. Post-rollover testing began, and it was noticed that part of ROBOT had already started. Final checks discovered that RBTJOBS was not running. This had been missed because parts of ROBOT had already started so sections of the RunSheets were skipped. Alan stressed the importance of following every step of the RunSheets in order and not to skip or jump around as that will only lead to mistakes. At 11:15PM it is noticed that end users are already logging onto the system. One last check of all systems was done and at 11:19PM CT the rollover was called complete.

The roll back to the Yankton facility was performed on Sunday, April 14<sup>th</sup>, 2024. Preparations began at 9:00PM CT. Quite a few end users were logged in and active on the system, and another logged in and began running reports minutes before the rollover was to start. System messages were sent to the users and those that did not log off were forcibly disconnected at 9:44PM CT. The subsystems were brought down at 9:45PM CT and the Splash-page for online and mobile banking was put up at that time. At 9:53PM CT the system was handed over to the admin team and it was noticed that ROBOT was running. The ROBOT subsystem had been checked by 2 additional people following the procedure to end it to confirm it was down. Logs were checked and it was determined that a notification process restarted the ROBOT SLEEPER subsystem. Subsystems were shut back down and further analysis was scheduled for after the rollover. Role swap began at 10:07PM CT. At 10:25PM CT control was returned to Site-Four and the network changes were made without any issues this time. At 10:34PM CT the subsystems were started, and testing began at 10:39PM CT. The splash-page was taken down at that time and post-roll checks were complete and online and mobile banking were verified by 10:50PM CT. The roll event was called completed by 10:52PM CT and Site-Four Operations was notified that End-of-Day processing could be started.

## **CHALLENGES:**

Site-Four continues to expand and improve as we provide our services to a growing client network. Systems and network environments continue to 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 in an effort to maintain our preparedness 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.

During the last rollover event, the team used an updated version of the subsystem dashboard and problems were encountered that forced the team to revert back to the original dashboard. During this rollover event, however, the new dashboard performed quite well. When the process is performed as instructed, the subsystems stopped and started in the order intended, streamlining and error checking the procedure.

It is important to note that the previous changes made to the replication system continue to minimize the time needed to perform the actual role swap. We are still seeing times less than 10 minutes vs the 40 minutes we used to suffer through.

Following the rollover on Monday morning, 04/08/2024, we received complaints regarding Instant Issue not working and it was noted by CU\*SOUTH that the subsystems for Instant Issue were all offline. As Instant Issue

relies on third party equipment that previously did not support a high-availability environment, it was expressed that this was not an issue that could be resolved by Site-Four. During the discussion it was mentioned that it had worked previously and that their configuration now supported FQDN instead of IP addresses. When the subsystems were restarted by Site-Four, they came online, and the end users were advised to test the functionality, which was successful. It is important to note that the Site-Four policy has not changed in regards to management of third party hardware. But when the vendor professes to support a high-availability environment, we will do everything in our power to ensure that connectivity and functionality are established throughout the roll event.

Perhaps the most important issue that occurred during the exercise was an issue with communications that caused instability with GOLD sessions for our Operations team in South Dakota. The first clue we had that something was amiss was the mention during the rollover that general slowness was being experienced by the iAdmin Team. This hit use particularly hard when GOLD failed during the ACH Receive process. CNS was immediately engaged, and we requested a bandwidth boost on our WAN connection in Kentwood. The technician involved noted that the VPN tunnel between Yankton and Kentwood renegotiated at that time which is likely the cause of the GOLD session dropping. Additional reviews of logs were done as well, but sessions were running stable at that point. Indications were that the issue was past, but the afternoon ACH Receive process was dropped as well. When CNS was engaged, it was determined that the bandwidth had not been increased as requested in the morning, but it was increased to 250Mb at that time. Additionally, the ISP connection supporting the VPN was switched from Midco to SDN Communications. Lastly, since only GOLD was showing the instability issues and Green Screen emulator sessions were not affected by the VPN renegotiation, the Operators were instructed to only use the 5250 emulator when running any process involving ACH. I personally monitored the processes throughout the overnight shift as well to ensure that we would be able to specifically determine the cause in the event that additional issues were encountered.

A number of issues were revealed during the support and recovery process involved in recovering from the ACH failures caused by the GOLD instability. These will be specifically addressed by the support and programming teams in the very near future.

Aside from those specifically mentioned here, no additional outages or failures occurred during the event that could be attributed to the rollover event.

#### **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.

As stated previously, the overall purpose of these events is to encounter issues in a controlled environment so we can learn how to deal with them. We take what we learn from these incidents and apply that to safeguard against those same situations crippling us in the future when we least expect it. Our goal is to improve and by doing so, increase our efficiency and effectiveness.

Respectfully,



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