SITE-FOUR HIGH AVAILABILITY PROGRAM REVIEW
EVENT DATE(S): 11/17/2019 – 11/24/2019

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. At the completion of each event, core-processing is redirected back to the primary location (located 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.

The rollover was initially scheduled for November 10, 2019. Because of replication delays caused by connectivity issues, the rollover was rescheduled to the following Sunday. The initial role-swap to the Kentwood, MI HA system took place on the evening of Sunday, 11/17/19 and began at 10:00pm CT. The rollover itself was completed at 11:25pm CT. The roll back was completed on Sunday, November 24 at which time the core processing of CU*BASE/GOLD was transferred back to the primary system in Yankton, SD.

This event was performed with the collaboration of recovery teams from Site-Four, CU*Northwest, CU*South, and CU*Answers as part of an ongoing reciprocal HA colocation agreement with CU*Answers begun 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.

Notable characteristics regarding this rollover event include:

- CU*NorthWest took the lead on many aspects of the rollover process as a training opportunity for managing and providing backup for future rollovers.
- All network change documentation was rewritten in an effort to provide additional details over the course of the role-swap and are readily available in a step-by-step document to aid in training additional networking personnel.

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, November 17 beginning 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 11:25pm CT.

The rollback was completed on Sunday, November 24 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 11:19pm CT.

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 small investment to better prepare for a situation that is less ideal. It is the position of Site-Four that any rollover which does not uncover any issues is a missed opportunity to learn and improve. In the case of this rollover, the preparation paid dividends in our capability to be flexible in timing and in consistently expanding business continuity capabilities.

The biggest issue encountered for this particular event was the delay that was necessary because of the network/communications issues at the originally scheduled date. It was determined that the communications instability that led to critical delays in replication was caused by a faulty border router on the Centurylink network. Our analysis showed that during the day the equipment performed well, but degraded each night at approximately 7:00pm until midnight (CT). As Centurylink is not a direct communications provider to Site-Four, we were not able to directly open a ticket with them; working with our primary Internet provider, SDN Communications was able to open a ticket with Telia Communications. Telia, in turn, contacted Centurylink. Telia responded back to SDN Communications stating that Centurylink refused to address the issue because the "losses were not deemed significant enough to warrant corrective action." As a result, Telia Communications rebalanced their border routers to direct traffic away from the Centurylink equipment at issue. Communications immediately improved as a result of the changes. Continued monitoring showed the connection between the Yankton and Kentwood datacenters remained stable throughout the day.

Another significant aspect of this rollover event was that all vendors were transferred to backup communications and no issues were encountered and no EFT vendors needed to be contacted to assist in re-establishing connectivity. All third parties also recovered within minutes on rollback without need for Site-Four to contact them. This is a major accomplishment in our rollover capabilities.

Because of the issues experienced on the initial, scheduled rollover date, Site-Four is reviewing implementation of additional network monitoring and alerting capabilities.

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:

•   One of the issues encountered is that while rolled, we are unable to clearly check status on ports (bytes in and out) because all IP addresses are reported in the Netstat tool on the host as the WAN address of the Site-Four HA firewall. We will research to see if this can be changed, but at present no solution is forthcoming.

Both the rollover and rollback went exceptionally well and have raised the bar and set a new standard for future rollovers.

Respectfully,

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