Incident Report for Border Router Internet Interruption

February 3, 2014

Issue

Saturday, January 25, 2014 at 8:45 pm, OIT received notification from our monitoring systems and from customer reports that connectivity to/from the Internet was interrupted from multiple buildings on the CU Boulder campus. The problem was resolved at approximately 10:30 pm after traffic to/from Internet was re-routed through the secondary border router.

Background

The CU Boulder campus network architecture uses two border routers in an active-active pairing environment that provides high-availability, off-campus network connectivity. The two units contain route processing engines that are synchronized via the campus fiber-optic cabling infrastructure. This allows one unit to operate as the primary router and the other unit as secondary router. The routers are located in separate buildings to provide geographic separation. The operating system software had been recently upgraded as a manufacturers' recommended corrective action for a similar condition that occurred on January 10, 2014.

Cause

After a period of investigation, the problem was isolated to a failure with the routing process on the border router located at the Computing Center. The Computing Center router had stopped the routing processing functions but did not actually go off line. This condition indicated to the high-availability system that the router was still operational and thus the auto-failover function was not enabled. This situation caused some connectivity to and from the Internet to be adversely impacted. An emergency software upgrade to the Computing Center border router was performed per the manufacturer recommendation on January 10, 2014 to correct this issue. The same upgrade was also applied to the TLC border router to ensure both units were operating with the same version of software. However, the problem re-occurred after the upgrade and the manufacturer is continuing to investigate root cause.

Solution

OIT manually failed over routing functions to the secondary unit at the Teaching and Learning Center (TLC) to stabilize the service.

What can be done to prevent this from happening again?

Once root cause is determined we anticipate a software upgrade will be provided by the manufacturer to eliminate this problem permanently.

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