Incident Report - May 28th, 2015
Incident #2015-82

Summary

On the afternoon of May 28, 2015, clients were reporting to the ITSC that they were unable to access multiple services (Moodle, Wiki, Solus, Portal, etc.).

At the time of the reports, ITS Systems staff were working on replacing load balancer (F5) hardware. Upon receiving the reports, the units were immediately shut off to simplify the diagnostics of the outage. This did not remedy the situation.

The Systems team started diagnostics including restarting the load balancers and checking connection logs for network activity. When the ARP cache on the Production Data Centre firewalls was flushed services started returning. Most services returned immediately, but some needed a restart to re-establish backend connections.

It was determined that the problem was caused by multiple address conflicts between the existing load balancers and the new appliances. Although the new appliances were configured as offline, they still registered their IPs with the DCP firewall, causing routing problems. This was unexpected behavior.

Future work on the F5 appliances will be done with the service interfaces disconnected. This will eliminate the possibility of this problem returning.

Issue

Work being done on new load balancing appliances caused a network conflict between the live, production appliances and the ones being worked on. Service did not immediately return because the firewall ARP cache needed to be flushed of the invalid data.

Impact

The services hosted by the production load balancer (Webpublish – Drupal, Oracle Database Services, QShare, Blackberry BES, Eservices, Authentication, On-premise Exchange, Office365 authentication, Moodle, MyQueen's Portal, Wiki, QCat, PeopleSoft, Ensemble) were unavailable for approximately 20 minutes.

Root Cause

A network conflict was caused by competing load balancer appliances.

Resolution

The new F5 load balancers were shut down and the firewall ARP cache was cleared in order to remove the invalid entries.

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Communications (Internal)

The manager of Infrastructure Operations coordinated communications with ITS application owners and the IT Support Centre, keeping them apprised of the situation. Once it was confirmed by application owners that their applications were healthy, alerts to campus were updated indicating the systems were fully operational.

ITSPP Communications (External)

Notifications (May 28th, 2015)

- 3:36 pm – Multiple Service Disruption
  - Note: delayed due to access to Notification Tool
- 3:53 pm – Service resolution notice

Lessons Learned

- Though a non-LDAP user exists to post and update notifications, it was not well-known
- Server/Appliance staging needs to be done in a protected environment

Action Items

- Distribute authentication information for non-LDAP user for Notification Tool
- Build lab environment for server/appliance staging
- Develop safe network processes to avoid conflicts