

Incident Report - September 22nd, 2015

Incident #2015-99

Reduced Wireless Network Service

Summary

The wireless network was unable to handle users especially during class change over times.

Impact

Campus wireless clients were impacted. The symptoms were difficulty accessing network resources, acquiring an IP address, and keeping connected to the wireless network. Residences clients were not affected.

Root Cause

There were four distinct times when customers were affected; in all cases the issue was with clients receiving DHCP addresses from the external (Bluecat) DHCP server. The wireless infrastructure (Aruba controllers, Access Points, etc.) were not at fault. The cause of the issue was an unknown and hidden hard limit of 100 DHCP relay conversations through the firewall at one time.

Resolution

After a considerable amount of time trying to track down the issue, a software update on the firewalls was done which raised their DHCP relay conversation limit from 100 to 500. This provided some relief but during the busiest times, more than 500 DHCP relay conversations were seen. The final solution was to remove the firewall as the DHCP relay agent and to use an IP helper address on each individual wireless controller.

Communications (Internal)

- Emails to NetL1, NetL2, NetL3, Ray, Gail, Brad, Systems
- Emails to ITS-L
- Technical Assistance Case opened with Aruba
- Technical Assistance Case opened with Cisco
- Meeting and huddles of the Networks and Systems teams

Communications (External)

Notices posted and updates communicated:

- Wireless access issues - September 22nd, 1:30 pm
- Updates: Wednesday, September 23rd, 2015 at 11:42 am
- Wednesday, September 23rd, 2015 at 2:04 pm
- Wednesday, September 23rd, 2015 at 4:16 pm
- Upcoming Wireless Upgrade, Sept 25th, 2015 6:00 am to 6:45 am
- Updates: Friday, September 25th, 2015 at 10:15 pm
- Monday, September 28th, 2015 at 4:11 pm

Lessons Learned

The Cisco Firewall has a hard limit when it comes to DHCP relay conversations. This limit would be impossible to find without a high load passing through the firewall.