

Incident Report - August 6th, 2015

Incident #2015-89

Network Outage

Summary

There was a campus wide network outage between 1:16 pm and 1:29 pm on August 6th, 2015.

Impact

The campus core network was unavailable, thereby affecting university productivity.

Root Cause

Spanning Tree Protocol detected a loop and shutdown portions of the campus network. It was determined the loop was on VLANs 1, 800 and 801. These are VLANs that traverse our network to provide service from ICES->ORION-ICES Queen's->ICES DR HPCVL.

The ICES network traverses the Queen's network to connect equipment at HPCVL and Abramsky Hall to the Ontario Research and Innovation Optical Network (ORION) which interconnects ICES Ontario sites. This in turn is a wide area layer 2 network which has the same risks as the layer 2 networks that we have on campus. A loop within this network will cause outages at all sites and any networks it traverses.

Resolution

Removing VLAN 800 from the FLE-05-Core1 device immediately resolved the issue. The ORION network has attempted to suppress some L2 protocols across the L2 extension. We have configured Queen's network interface to ORION to block some Spanning Tree protocols as well.

Communications (Internal)

- Attempted to contact the ITSC, email access was unavailable to post any notice. The only number we have for the ITSC is 36666; the phone was busy. Networks does not have a record of the emergency line for ITSC.
- Manager of Networks and Facilities sent text messages to the CIO, Associate Director of Office of the CIO, Manager of Systems and Manger of Infrastructure Operations.

Communications (External)

- Manager of Networks and Facilities sent tweets to @ITQueensU from personal account.
- Networks Level 3 Team initiated incident triage procedures to coordinate diagnosis and resolution.

Lessons Learned

- Using cross campus VLANs and FLE_05-E01 in effect as a media changer may seem like a solution to connect ICES. However this added risk to the campus that a change in ICES Ottawa location could bring down the campus network.
- ICES connection from ORION should be direct via fibre from Dupuis to Abramsky and Innovation Park to HPCVL.
- Layer 2 cross-campus VLANs are a major risk and continuing to reduce their failure domains needs to be a priority to operate a reliable Queen's network.