

# INCIDENT REPORT

INFORMATION TECHNOLOGY SERVICES



## Incident Report - December 29, 2016

Incident #2016-175

*2016 Dec 29 Data Centre Power Failure*

### Summary

One of two main data centre UPS units failed at approximately 1:30 am on December 29, 2016, causing power to be lost to many systems in the Dupuis Hall data centre. The generator only engages when incoming utility power is lost so the generator did not provide protection from this failure. Network staff were called in at approximately 7:15 am and the faulty UPS was manually bypassed, allowing systems to be restored. Systems staff were called in at 7:30 am to begin the restoration process.

### Impact

Several services and systems in the Dupuis data centre were offline or not accessible. These services included, but were not limited to, [www.queensu.ca](http://www.queensu.ca), Drupal, PeopleSoft, AD/LDAP and SSO authentication, Listserv, on premise email, QShare, MyQueensu, iTrack, Identity Manager and all physical and virtually-hosted environments.

### Root Cause

Root cause analysis continues with the UPS maintenance provider but it has been determined that at least one circuit board in the unit has failed.

### Resolution

The UPS was put in bypass mode and powered down at approximately 7:30 am and then powered up in bypass mode at approximately 11:15 am for troubleshooting with the maintenance provider. It has been determined that at least one circuit board has failed and a preliminary list of parts was assembled. Sourcing parts has been difficult due to the age of the unit and replacement of the failed UPS unit is necessary. Funding for the replacement of the 2<sup>nd</sup> UPS, providing full redundancy between the two UPS units will be requested as a part of the 2017/18 Infrastructure renewal budget.

### Communications (Internal)

At 8:10 am the CIO was notified. Staff called in by phone at 7:30 am. Notification by email was made to hosted customers at approximately 9:30 am and included ITS Associate Directors. The ITS Notification posting was made at 10:16 am which included email distribution and a Twitter update. Updates were posted throughout day.



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## ITSP Communication (External)

The Twitter notification posted at 8:10 am through the CIO Twitter account. Notification by email was made to hosted customers at approximately 9:30 am. Notification by Listserv to the hosted customer distribution list was at 11:20 am (as some customers were missed). The ITS Notification Tool posting at occurred at 10:16 am - email distribution and Twitter update was included in this posting.

## Lessons Learned

- PSIG not on monitoring.
- CCS Server monitoring needs redundant power so ITS can be alerted in all cases of failures.
- Node Ping external monitoring put into production with wider notification distribution.
- Hosting service agreements between ITS and departments need to have contact information updated.
- Paper copy of notification processes, procedures and distribution needs to be available (and updated regularly).
- SAN switches were all powered by one source. When one UPS went down, storage was not available to the VMware and Solaris environments. This caused outages of the main web, ITS notifications and their databases. These switches have since been connected to two separate power sources to eliminate this outage in future.

## Action Items

- Replace both aging UPS' units making them fully redundant.
- Once UPS units are replaced, review power distribution and cabling in the data centre to ensure proper load distribution across UPS units.
- Create paper copies of all notification processes. Procedures and distribution needs to be available in an emergency and updated regularly.
- Update customer contact information in hosting agreements and update hosting customer listserv.
- Make sure CCS server has redundant power.
- Monitor PSIG.

