Incident Report – January 10, 2013

Incident #2013-0001

Summary

Corrupted student identities reduced or removed access to applications and services.

At the change of each term, it is necessary to update the data in our Identity Management tool, IDM. On December 21, 2012, IDM requested that the PeopleSoft Sustainment (PSS) team make the appropriate changes to roll over the academic term (Fall to Winter). The change was made on December 22, and a new data file was compiled out of PeopleSoft (PS) that had an (incorrect) date.

Starting December 23, this file was consumed by the central directory services (LDAP and AD) that provide authentication and authorization to applications and services, changing the start date for ~70,000 student identities to the year prior. This erroneous data, when propagated, changed several identity attributes: graduate students changed to 4th year students; 3rd year changed to 2nd year; 2nd year changed to 1st year; 1st year changed to applicant; and graduate and non-credit students were terminated (X'd). Other attributes such as concentration in the academic load were also removed.

Impact

Students in their first year at Queen's had their role changed to "applicant" and could not access many services, including Moodle. In addition, when Instructors searched for these students in Moodle, they could not find them. On December 26, students and instructors began reporting access problems (via iTrack and emails to individual staff members). ITServices staff members immediately began investigating and posting notifications. On December 27, the problem was tracked back to the data feed processing.

After resolution of the underlying issue, several members of the Moodle team then spent the weekend restoring grades, rebuilding custom groups and processing the backlog of course requests and issues that had been reported. Full restoration of academic load (concentration) was completed by January 10, 2013.

There were also impacts to other applications using direct feeds from AD or LDAP.

Resolution

When PSS staff returned in January, the team immediately began investigating and within hours the problem was established to be the data feed problem. The date was corrected and the file regenerated. The volume of events (and the pre-existing queue), coupled with our inexperience with this particular scenario, caused our time estimates for resolution to be far too optimistic. Data corrections began on January 2, 2013, and ran until January 9, 2013.

No data (student assignments or marks) were lost and the integrity of the data in PeopleSoft was not impacted.

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Communications (Internal)

Internal communications were executed primarily by email, instant messaging and telephone due to the time of year and number of people working to resolve the issue from remote locations (on vacation). Client Services took the lead and turned over the issue to Infrastructure Services upon return to work in January. It was a struggle to keep everyone informed, particularly as the University was closed for the holiday season.

Communications (External)

Each time new information was known, the Moodle home page was updated as was the ITS Notifications page. Many positive comments on efforts to keep the community informed were received. We heard from the Arts & Science faculty office that they were directing everyone to the Moodle page for the most current information (demonstrating confidence in the source).

There were also differing opinions of who needed to be communicated with – just users? or Registrar? or Deans? or…

Lessons Learned

- Impact of PeopleSoft integration has a widespread effect. Communication of this type of event is difficult and requires a dedicated lead.
- There is a need for data validation prior to pushing data feeds. Limiting the human element from these processes will limit the opportunity for error.
- PSS to review testing methodology used before deploying to production.
- There is a need to ensure the "downstream" impact has been identified and is managed. Change control is an option for this.
- "On-call" role is not clearly defined regarding response to this type of incident. The Infrastructure area of ITServices has built an expectation for emergency response that has been in place for many years. This response has traditionally been for outages on critical systems and best effort call-in is in place.
- PSS process for troubleshooting and deployment is limited by PS security.
- There is a need to develop a more effective communication channel between PSS and the application/infrastructure teams. Having had a better understanding of the time to resolve could have changed decisions that were made on how to proceed with the resolution. Backups were cycled while waiting for a response.
- Data processing through the current IDM solution is slow with volume.
- Difficult to resolve issue and keep user community (and key stakeholders) informed, manage queue (existing trouble tickets submitted, call backs) plus respond to new requests (always a significant increase in requests via email, phone, iTrack and drop-ins at beginning of term). Providing the Moodle community with an understanding of the Registrar's policies for mark submissions and publishing may be an opportunity to reduce the impact.

Recommendations

- ➢ Implement data validation for the data feed.
- ➢ Work with the Office of the University Registrar (OUR) to ensure that the policy for mark submission and mark publication are communicated.
- ➢ Familiarize PSS and database administration (DBA) teams with existing change control process.
- ➢ IDM, PSS, DBA teams to submit term change requests to central ITServices change control.
- ➢ Review "on-call" role and include PSS, Client Services and Support Services.
  - o Add on-call email/process to the Quick Contact list, provide link from ITS internal wiki, and publish to Coordinators and staff.
  - o Develop an emergency call-in process for PSS.
- ➢ Provide additional access for PSS to perform emergency procedures.
- ➢ Review vacation approval schedule to ensure sufficient coverage across all units.
- ➢ Replace Sun IDM service.
- ➢ Review ITServices Notification procedures.
- ➢ Post external incident report on ITS website Services/Core Services Page.
- ➢ Create "In the Spotlight" story for ITServices home page.
- ➢ Review communications protocol for key stakeholders (beyond existing Notifications).

Costs

Soft Costs: confidence, reputation

Financials: staff overtime (does not include Coordinators' time) = 155 hours