Incident Report - May 6, 2016
Incident #2016-144
Portal Outage

Summary

On the morning of Friday, May 6, 2016, there was a brief service interruption of the production Liferay Portal (https://my.queensu.ca) between approximately 10:55 am - 11:10 am.

Impact

During the time of the incident, the service outage page hosted on the load-balancers would have been displayed to any users attempting to login to the portal. The service outage page hosted on the load balancer includes a link to SOLUS, so students should have been unaffected. Staff and faculty attempting to login may have needed to utilize an alternate method to access PeopleSoft or other resources accessed through the portal during this time.

Root Cause

The primary Liferay Portal node was taken offline in order to attempt to resolve an issue with a bad VM snapshot. It seems that the secondary node became unstable because of the way the primary node was shutdown. The pool member was disabled in the load-balancer before the Tomcat service was shutdown. This resulted in a large number of row locks on the production Liferay database, along with severed connections that needed to timeout. This is what caused the secondary node to have issues while the primary node was offline.

The monitor flapping issues with qu-lifray01-prd appear to have been caused by a bad VM snapshot, with VMWare trying to correct the issue intermittently. We have seen a direct correlation between the times VMWare attempts to repair the snapshot, and the load-balancer monitor flapping.

Resolution

The qu-lifray01-prd VM was restarted, and re-enabled in the load-balancer pool "rp_my_queensu". Almost immediately after this change was made, qu-lifray02-prd stabilized and https://my.queensu.ca was accessible and fully operational and responsive. The row locks on the database were also resolved almost immediately.

An emergency change was completed on the morning of Tuesday, May 10, 2016 in order for the ITS Systems Team to attempt to resolve the issue with the VM snapshot again. We hope this will also resolve the monitor flapping experienced with qu-lifray01-prd.

Communications (Internal)

In the time leading just before, and while the issue was occurring, the ITS Middleware team was in communication with the ITS Systems team via Skype for Business.

After the portal was brought back online, ITS Middleware team coordinated in-person and via Skype for Business, in order to attempt to find the cause of the Liferay port flapping, and the cause of the instability on qu-lifray02-prd.

ITSPP Communications (External)

On May 6, 2016 at 11:52 am an ITS Notification was created, indicating that there was an issue between about 10:55 am - 11:10 am with the MyQueen'sU portal, that the issue had been resolved and that the portal was functioning properly again. This notification was flagged as an alert, and was also sent out via Twitter.

Lessons Learned

If a similar change is required in the future, the service running on the server should be shut down before the node is disabled in the load-balancer. While this may cause some users to be temporarily directed to the service outage page, which could occur due to a persistence cookie or delay in the load-balancer, it is a better option than having one node become completely unusable for the entire duration that the other node is offline.

Action Items

The initialization script for the Liferay Portal will need to be modified such that there is at least a one minute delay added when stopping the service (and shutting down the server). This is required for Tomcat to clean up all the connections to the Liferay database, and gracefully shutdown the Tomcat service.