University of Victoria | Graduate Studies

Notice of the Final Oral Examination
for the Degree of Master of Applied Science

of

ROB O'DWYER

BASc (University of British Columbia, 2012)

"Analysis and Load Testing of a Real World Distributed System"

Department of Physics and Astronomy

Friday, December 9, 2016
1:00 P.M.
Engineering Office Wing
Room 503

Supervisory Committee:
Dr. Stephen Neville, Department of Electrical and Computer Engineering, University of Victoria (Co-Supervisor)
Dr. Thomas Darcie, Department of Electrical and Computer Engineering, UVic (Co-Supervisor)

External Examiner:
Dr. Yvonne Coady, Department of Computer Science, University of Victoria

Chair of Oral Examination:
Dr. James Young, Department of Philosophy, UVic

Dr. David Capson, Dean, Faculty of Graduate Studies

Abstract

This thesis uses data from a real-world distributed system to develop a model for realistic load tests, and analyzes the results of several different workload scenarios on a test deployment. The research focused on characterizing the workload of the real-world Pretio system using logs captured from the production deployment, modelling a workload from those logs, and analyzing the impact on a test deployment of the system of a series of scenarios providing different parameters to the model. The results were evaluated by testing the response time distributions across multiple test runs for statistical similarity.