Graduate Seminar

Speaker:

Dwayne Hart
Memorial University

Thursday, April 3

1:00 p.m., HH-3017

Here Comes the Bride: A Marriage Between Physical and Virtual Technology

Abstract:

Historically, to provide a resource to a given group of people, the department and the University as a whole relied on installing a platform which served a single function (PaaS - Platform as a Service). As more services were required, more platforms were installed.

This caused administration of these platforms to become cumbersome because the various systems had different OS versions installed and required different knowledge sets when interacting with them. When a service was disrupted by a software configuration issue, OS or software stability, or possibly a hardware failure, the outage would last as long as it took to fix the configuration file, install a new version of the code or replace the failed component. With various stake holders expecting better reliability and availability, the CS/Math Systems Group developed LabNet. These outages have become a thing of the past through the use of this software framework which allows us to administer these systems by utilizing shared OS images. This framework permits us to alter the roles of existing platforms by adding additional service(s) at any given time to mitigate a service outage and to provide us with a means of software roll back.

The one outstanding issue is that we are not able to harness the full potential of a given system. In order to accomplish this task we will leverage open source virtual software (IaaS - Infrastructure as a Service) stacks either from Citrix's XenServer or Oracle's VirtualBox, depending on hardware compatibility, to allow us to slice up the resources as required. This allows us to provision a platform's given resources to maximize the computing/infrastructure resources currently at our disposal. For resource intensive projects that require specialized components, we will make PaaS instances available and work with the stake holders involved to minimize the risk.