# 香港浸會大學理學院
## HKBU Faculty of Science

# DEPARTMENT OF COMPUTER SCIENCE

## MPhil Degree Oral Presentation

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| MPhil Candidate: | Ms He CHANG |
| Supervisor: | Prof Yiu Wing LEUNG |
| External Examiner: | Dr Eric W M WONG (EEx from City University of Hong Kong) |
| Time: | 28 April 2017 (Friday)<br>2:30 pm - 4:30 pm (35 mins presentation and 15 mins Q & A) |
| Venue: | FSC703, Fong Shu Chuen Library, HSH Campus |

## *"Server Selection for Heterogeneous Cloud Video Services"*

## Abstract

In cloud computing, server selection is an important problem in which a cloud service provider directs the user requests to the servers in one of the geo-distributed data centers. The existing solutions usually assume homogeneity of cloud services and handle user requests on an individual basis which incurs high computational overhead. In this study, we propose a new and effective server selection scheme in which diversities of cloud services are taken into account. We focus on a specific cloud service, i.e., online video service, and assume that different videos have different bandwidth requirements. We group users into clusters and handle user demands on a cluster basis for faster and more efficient processing. We assign the user requests to the servers under the bandwidth constraint such that the overall latency (measured by the network distance) between the user clusters and the selected servers is minimized. We formulate this problem as a linear programming problem which can be solved by the existing techniques. The system regularly solves this problem based on the up-to-date status for optimal server selection. The simulation results show that this server selection scheme is significantly better than random server selection and the YouTube server selection strategy. Then we further generalize this problem by considering two additional factors: i) the storage capacities of the servers, and ii) an additional objective of balancing the traffic load. We formulate this generalized problem and present simulation results to study the tradeoff involved.

## *** ALL INTERESTED ARE WELCOME ***