



Optimising Cloud Computing for Profitability

Part of UC Berkeley's Professional Series in Cloud Computing

Date

30 March - 1 April 2011,
8.30am – 7.30pm

Venue

Next U @ NTUC
Trade Union House
73 Bras Basah Road

Course Fees

\$5,000 per module

Discounts are available for the following:

- **Early Bird**
Register before 25 Feb 2011
- **Group Registration for 3 or more students**
- **NTUC Members**
- **Partner Association Members**
(SITF, SCS & ITMA)
- **Registration for full program**
(i.e. all 4 modules)

Funding of up to 50% available!*

Register Now!

Seats are limited!
For registration or enquiries, please call **6837 8388** or email us at pme@nextu.com.sg

*Terms & Conditions apply.
Please call **6837 8388** for details.

Course Introduction

Learn techniques to leverage cloud services for maximizing profit, including scheduling strategies.

We will begin with the study of compute, storage, collaborative and other cloud services available today. After gaining a firm understanding of services and their pricing, students will study specific cases which cover different applications, and analyse the cost to host these applications on the cloud. Investigate the dynamics of instant on-demand capacity increase, and apply queuing theory concepts to analyse the cost of cloud computing services in various queuing and non-queuing configurations.

Course topics will cover (1) contemporary cloud service offerings, (2) step-by-step approach to migrate to the cloud, and (3) how to utilise the cloud services for profit. The course will focus on understanding traffic fluctuations, and how they affect the capacity required, and at what capacity the cloud computing resources should be configured.

Who will Benefit

- Corporate Strategists
- IT managers
- IT directors
- Product Marketers
- Product Managers
- Network Administrators
- Programmers

Course Objectives

- Know about contemporary cloud computing services, who offer them, and how they are priced.
- Understand issues around instantaneous capacity increase, and how it affects the pricing.
- Be able to analyze the price of hosting a business on the cloud.
- Correlate traffic fluctuations to the cloud resource limit requested.
- Gain understanding of queuing theory concepts.
- Apply queuing theory concepts to utilize cloud services for optimized profit.

Pre-requisites

Students must be able to identify key aspects of cloud computing and have a basic understanding of virtual machines. Furthermore, students should also have a firm foundation of university level math, particularly in statistics.

Instructional Methodology

Classroom instruction will contain:

- Lectures
- Group Discussions
- Class Participation
- Quiz

Course Outline

1) Cloud services

- Review and refresh cloud computing principles.
- What vendors are available for cloud services?
- How are they priced?
- Pricing breakdown by vendors.

2) Case study of Amazon pricing model

- Study of Amazon compute, storage, queue, and other services.
- A business price study using Amazon services.

3) On-demand capacity increase

- What does on-demand increase imply in the cloud?
- How does it affect pricing?
- Pricing case study by setting different resource requirement limits.

4) Traffic fluctuations

- The stochastic nature of traffic.
- How does internet traffic behave?
- Predictions for cloud traffic based on the internet traffic.

5) Waiting Time

- Study of M/M/1, M/G/1, and G/M/1 queue.

6) Multiple queues & Advance Reservations for profit

- Examples of using multiple queues.
- Use of advance reservations.
- Impact on the waiting time.
- Impact on the cost/profit.

7) Computation and Data intensive applications on the cloud

- Use of a compute-intensive application for analyzing cost.
- Use of a data-intensive application for analyzing cost.
- Use of a collaborative application for analyzing cost.

8) Optimizing for profit

- Use of queuing theory and traffic fluctuation concepts, to configure resource limit.
- Calculate the 1-year, 3-year, and 5-year cost both with and without applying queuing theory concepts.

