

Syllabus

Course Name: Part III: Planning and Capacity/Performance Management in Cloud Computing Systems

Teaching Materials: selected from the references and technical papers

Instructor: 林永松 (Rm. #808 of the 2nd Management College Building, 3366-1191),
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Grading Policy:

1. Homework 40% (no late/cribbed homework shall be accepted)
2. Final report/presentation 60%
3. Extra credits

Office Hours: by appointment via phone/email or after class meetings

Course Scope:

1. Introduction to cloud computing systems
2. Trade-off between cost and performance
3. Fundamental performance analysis techniques
4. Fundamental algorithms
5. Fundamental optimization techniques
6. Advanced topics on planning and capacity/performance management in cloud computing systems

Tentative Course Outline:

1. Overview of cloud computing systems
2. A framework of planning and capacity/performance management in cloud computing systems
3. Introduction to queueing theory and optimization techniques
4. Special topics/case studies
5. Final presentations

Remarks:

1. An Web site will be set up for participants to upload and download course related materials.
2. Proper materials shall be selected from the references to achieve the objectives of the course. Supplementary materials outside the references may also be included in the course.
3. Active participation of all participants in the class meetings is highly encouraged.
4. Papers presented in the class should be selected from IEEE Transactions or with special approval from the Instructor.
5. Invited talks by distinguished speakers may be arranged.
6. Case studies on cloud computing system planning and security may be arranged.
7. Plagiarism is strictly forbidden.

Textbook and References:

1. Andrew S. Tanenbaum, Computer Networks, 5th Ed., carried (international edition) by 新月圖書公司 (reference)
2. D. Bertsekas and R. Gallager, Data Networks, 2nd Ed., Prentice-Hall. (reference)
3. D.G. Luenberger, Linear and Nonlinear Programming, Addison-Wesley. (reference)
4. M.S. Bazaraa, H.D. Sherali and C.M. Shetty, Nonlinear Programming - Theory and Algorithms, Wiley-Interscience. (reference)
5. L. Kleinrock, Queueing Systems Volume I: Theory, New York: Wiley, 1975-1976. (reference)