

Internet Applications

—— *Course Outline*

BUPT/QMUL

2014-2-18



Instructor

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Prerequisite Courses

- Prerequisite courses
 - 1300029
 - Programming Fundamentals
 - EBU5403
 - Internet Protocols



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Electronic Engineering 



Topics

- Background
 - Introduction of Internet
 - TCP/IP and OSI/RM
 - Sockets

- Typical Internet Applications
 - DNS (Domain Name System)
 - DHCP (Dynamic Host Configuration Protocol)
 - Remote Interactive Computing: TELNET/SSH
 - Email: SMTP/POP/IMAP/MIME
 - File Transfer and Access: FTP/TFTP/NFS
 - World Wide Web: HTTP
 - Network Management: SNMP
 - Multimedia and Voice: SIP / H.323, RTP / RTCP
 - New Applications



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Reference Textbooks

- Internetworking with TCP/IP Volume I Principles, Protocols and Architecture
- Fifth Edition
- Douglas E. Comer





Labs and Projects

- Basics—Linux command, compiling, debugging, ...
- Simple UDP client / server program
- Simple TCP client / server program
- Application programming, such as email server and client ...



Evaluation

- Your final credit in this course will be determined by:
 - Labs and homework ---- 30%
 - Final Exam ---- 70%





Course Schedule (1)

Week	Lecture (Tuesday)	Lab (Thursday)
1 (Feb 17)	Introduction: History of Internet	Install Linux in VM
2 (Feb 24)	Network Layered Architecture	Commands and Operations in Linux
3 (Mar 3)	Basic Concepts in Network Programming	How to use text editor <i>vi</i> ?
4 (Mar 10)	Introduction to Sockets Interface	Socket programming practice with given example program
5 (Mar 17)	Socket Programming: UDP Echo as example	Socket programming: get information of a host
6 (Mar 24)	Dynamic Host Configuration Protocol	Socket programming: UDP





Course Schedule (2)

Week	Lecture (Monday)	Lab (Thursday)
7(Mar 31)	Domain Name System	Socket programming: UDP
8 (Apr 7)	TELNET / SSH and Applications	using Wireshark to capture and analyze DHCP and DNS
9 (Apr 14)	Email Systems and Protocols	Using TELNET to understand Email
10 (Apr 21)	File Transfer Protocols	Project
11 (Apr 28)	WWW and HTTP	
12 (May 5)	Network Management Protocols	



Course Schedule (3)

Week	Lecture (Monday)	Lab (Thursday)
13 (May 12)	Multimedia on Internet	Project
14 (May 19)	NGI seminar	
15 (May 26)	Review	
16 (Jun 2)	Dragon boat festival	
17 (Jun 9)	Preparation for Final Exam	
18 (Jun 16)		