Internet Protocols
Fall 2004
Lecture 1
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Course Description

• Learn about the protocols that make the Internet work
  - Understand design space and tradeoffs
  - Compare different protocols at the same level
    • Protocol examples: Ethernet, WiFi, IP, TCP, HTTP
• Learn how to write code for networked applications
Text Books

- Required: *Computer Networks: A Systems Approach* (3rd ed.) by Peterson, Davie
- Recommended: *UNIX Network Programming* by Richard Stevens
- Recommended: *Web Protocols and Practice: HTTP/1.1, Networking Protocols, Caching and Traffic Measurements*

Course Times

- Lectures: MW 2-3:15 pm Shaffer 304
- Office Hours: MW 1-2pm WP 417 and by appt
- TA Section: Every second week
- TA Office Hours: Wed 9:30-10:30am, Thurs 3-4pm and by appt
Grading Policies

- Grading
  - Homework 10%, Projects 35%
  - Midterm 20%, Final 30%
  - Class Participation 5%
  - Different curves for 349/449
- NO LATE HOMEWORK ACCEPTED (really)
- Project groups DO NOT change

Course Schedule

- W1 (9/8) Introduction, Internet Architecture
- W2 (9/13) Link Layer: Ethernet, PPP, IP
- W3 (9/20) IP: Addressing, ARP/RARP, ICMP and examples
- W4 (9/27) Routing: RIP, OSPF, BGP
- W5 (10/4) Transport Layer: UDP, TCP
- W6 (10/11) TCP Reliability, Review
- W7 (10/18) Midterm (10/18), TCP Congestion Control
Course Schedule (2)

- W8 (10/25) TCP Congestion Control
- W9 (11/1) DNS
- W10 (11/8) Virtual Router Proj 3
- W11 (11/15) SMTP
- W12 (11/22) HTTP
- W13 (12/1) Streaming Media
- W14 (12/8) Wrap Up
- Final TBA

Course Projects

• Three implementation projects
  - Learn how to write TCP/IP networked applications (using the Unix API)
  - Teams of 2-3
  - For the last project you will create a software router that handles real traffic!
    • http://klamath.stanford.edu/vns/vns.html
Logistics

- **Course website**
  - [http://hinrg.cs.jhu.edu/cs349-fall04/](http://hinrg.cs.jhu.edu/cs349-fall04/)
  - Check every day
    - Everything goes there

- **Course email list**
  - [cs349@hinrg.cs.jhu.edu](mailto:cs349@hinrg.cs.jhu.edu)
  - To subscribe:
    - [https://hinrg.cs.jhu.edu/mailman/listinfo/cs349/](https://hinrg.cs.jhu.edu/mailman/listinfo/cs349/)