CIS 640 – Advanced Topics in Computer Systems: Electronic Commerce Systems

Spring 2000

Partial Reading List (Version 0.1)

1 Web Architecture

High Performance Servers

1. B. Devlin, J. Gray, B. Laing, G. Spix, "Scalability Terminology: Farms, Clones, Partitions, and Packs: RACS and RAPS," Microsoft Research Tech Report, MS-TR-99-85, Dec 1999. $\surd$
2. Commercial Systems: Microsoft NT clusters, iPlanet Commerce Server, S/390 cluster technology `www.ibm.com/servers/clusters/`
3. "The JAWS Adaptive Web Server."
   `http://www.cs.wustl.edu/ jxh/research`

Performance Evaluation and Improvement

1. P. Barford and M. E. Crovella, "A Performance Evaluation of Hyper Text Transfer Protocols," in Proceedings of ACM SIGMETRICS '99, pp. 188-197, Atlanta, Georgia, May 1999. $\surd$
2. Anja Feldmann, Ramon Caceres, Fred Doudlis, Gideon Glass, and Michael Rabinovich, "Performance of Web Proxy Caching in Heterogeneous Bandwidth Environments," Infocom 99. $\surd$
3. Erich M. Nahum, Tsipora Barzilai, and Dilip Kandlur, "Performance Issues in WWW Servers," ACM SIGMETRICS Conference on Measurement and Modeling of Computer Systems, May, 1999. $\surd$
4. Edith Cohen, Balachander Krishnamurthy and Jennifer Rexford, "Improving End-to-end Performance of the Web Using Server Volumes and Proxy Filters," SIGCOMM 98. $\surd$
5. Pei Cao, Li Fan, and Quinn Jacobson, "Web Prefetching Between Low-Bandwidth Clients and Proxies: Potential and Performance," Sigmetrics 99. $\surd$

Load Sharing

1. Vivek Pai, Mohit Aron, Gaurav Banga, Michael Svendsen, Peter Druschel, Willy Zwaenepoel and Erich Nahum “Locality-Aware Request Distribution in Cluster-based Network Servers,” Eighth International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS VIII), October 1998, (San Jose, CA) $\surd$

2. A. Bestavros, M. E. Crovella, J. Liu, and D. Martin, “Distributed Packet Rewriting and its Application to Scalable Server Architectures” in Proceedings of the 1998 International Conference on Network Protocols (ICNP ’98) October, 1998. $\surd$

3. Huican Zhu, Ben Smith, and Tao Yang, “Hierarchical Resource Management for Web Server Clusters with Dynamic Content,” ACM Sigmetrics 99 $\surd$

4. H. Zhu, T. Yang, Q. Zheng, D. Watson, O.H. Ibarra and T. Smith, “Adaptive Load Sharing for Clustered Digital Library Servers,” Seventh IEEE International Symposium on High Performance Distributed Computing, Chicago, July 1998. $\surd$

5. D. Andresen, T. Yang, “Multiprocessor Scheduling with Client Resources to Improve the Response Time of WWW Applications,” in Proc. of the 11th ACM SIGARCH International Conference on Supercomputing (ICS’97), 1997. $\surd$

6. D. Andresen, T. Yang, O. Ibarra, O. Egecioglu, ”Adaptive Partitioning and Scheduling for Enhancing WWW Application Performance”, Journal of Parallel and Distributed Computing, 1998. 49(1), pp. 57-85, 25 February 1998.

7. P. Barford and M. Crovella, ”Generating Representative Web Workloads for Network and Server Performance Evaluation”, ACM SIGMETRICS, pp. 1-17, 1998.

8. A. Bestavros, L. Aversa, ”Load Balancing a Cluster of Web Servers Using Distributed Packet Rewriting”, Technical Project Report, Boston University, Computer Science Department, January 1999.

9. H. Zhu, B. Smith, and T. Yang, ”Hierarchical Resource Management for Web Server Clusters with Dynamic Content”, ACM SIGMETRICS, pp. 198-199, 1999.

10. H. Zhu, B. Smith, and T. Yang, ”Scheduling Optimization for Resource-Intensive Web Requests on Server Clusters”, ACM Symposium on Parallel Algorithms and Architectures (SPAA), pp. 13-22, 1999.

QoS

1. Marco Conti, Enrico Gregori and Fabio Panzieri, “Load Distribution among Replicated Web Servers: A QoS-based Approach,” Second Workshop on Internet Server Performance, in conjunction with ACM SIGMETRICS 99, Atlanta, GA, May 1st, 1999 $\surd$

2. Jussara Almedia, Mihaela Dabu, Anand Maniкntty, Pei Cao, "Providing differentiated levels of service in web content hosting," First Workshop on Internet Server Performance, Madison, Wisconsin, June 23, 1998 √
3. Tarek Abdelzaher and Nina Bhatti, "Web Server QoS Management by Active Content Delivery," International Workshop on Quality of Service, 1999 √

Caching

1. J. Wang, "Survey on Web Caching Scheme for the Internet," ACM Computer Communication Review (CCR). √
2. J. Yin, L. Alvisi, M. Dahlin, C. Lin, "Volume Leases for Consistency in Large-Scale Systems," *IEEE Trans. on Knowledge and Data Engineering*, 11, 4, July/August 1999.
3. `www.akamai.com`

Middleware

1. Scott M. Lewandowski, "Frameworks for Component-Base Client/Server Computing," ACM Computng Survey, March 1998, pp. 1-27. √
2. Philip A. Bernstein, "Middleware: A Model fro Distributed System Services," CACM, Feb 1996, pp. 86-98. √
3. CORBA, DCOM

2 Security and Document Confidentiality

Public Keys

1. Bruce Schneier, Chapter 1, "Applied Cryptography", Second edition. √
2. C. Ellison and B. Schneier, "Ten Risks of PKI: What You're not Being Told about Public Key Infrastructure," *Computer Security Journal*, Vol. XVI, No. 1, 2000. √
3. C. Wang and W.A. Wulf, "Towards a Scalable PKI for Electronic Commerce Systems," *Proc. Int. Workshop on Advance Issues of E-Commerce and Web-Based Information Systems*, 1998.

Firewalls

1. M. Greenwald, S.K. Singhal, J.R. Stone, D.R. Cheriton, "Design an Academic Firewall: Policy, Practice, and Experience with SURF," *IEEE Symp. on Network and Distributed System Security,* Feb 22-23, 1996, pp. 79-92. √

Privacy, Anonymity and Information Hiding

1. H. Berghel, "Digital Watermarking Makes its Mark," CACM, Sep 1998, pp. 32-38.

2. H. Berghel, "Watermarking Cyberspace," CACM, Nov 1997, pp. 19-24. $\surd$

3. N.F. Johnson, Z. Duric, S. Jajodia, "A Role for Digital Watermarking in Electronic Commerce," To appear in ACM Computer Surveys, 1999. `www.jjtc.com/pub/acmcs99a.htm`

4. E. Praun, H. Hoppe. A. Finkelstein, "Robust Mesh Watermarking." `www.cs.princeton.edu/gfx/proj/meshwm/` $\surd$

5. Information Hiding – A Survey F. Petitcolas, R. Anderson, M. Kuhn Proceedings of IEEE, 87(7):1062-1078, July 1999.

6. Multimedia Watermarking Techniques F. Hartung, M. Kutter Proceedings of IEEE, 87(7):1079-1107 July 1999

7. A Secure, Robust Watermark for Multimedia I. Cox, J. Kilian, T. Leighton, T. Shamoon Proceedings of 1st Information Hiding Workshop, ??? $\surd$

8. Electronic Marking and Identification Techniques to Discourage Document Copying J. Brassil, S. Low, N. Maxemchuk, L. O'Gorman IEEE Journal on Selected Areas in Communications, 13(8):1495-1504

9. Techniques for Data Hiding W. Bender, D. Gruhl, N. Morimoto IBM Systems Journal, 35(3-4):313-336 $\surd$

10. Perceptual Watermarks for Digital Images and Video R. Wolfgang, C. Podilchuk, E. Delp Proceedings of IEEE, 87(7):1108-1126 $\surd$

11. Attacks on Copyright Marking Systems F. Petitcolas, R. Anderson, M. Kuhn Proceedings of 2nd Information Hiding Workshop, 218-238 $\surd$

12. Resolving Rightful Ownerships with Invisible Watermarking Techniques: Limitations, Attacks, and Implications S. Craver, N. Memon, B-L Yeo, M. Yeung IEEE Journal on Selected Areas in Communicatioins, 16(4):573-586

13. Copy Protection for DVD Video J. Bloom, I. Cox, T. Kalker, J. Linnartz, M. Miller, B. Traw Proceedings of IEEE, 87(7):1267-1276

14. steganography. (`www.jjtc.com/Steganography/`)

15. `www.zeroknowledge.com, www.freedom.com`

16. OVtech, Inc., "Interosa: Internet Email Integrity," Technical White Paper, Oct 1999. $\surd$

3 Formal Modeling/Specification and Analysis

Protocol Specification and Analysis

1. Talk slides: Overview of Formal Methods for Security Protocol Analysis John Mitchell, in CAV'98.
   `http://theory.stanford.edu/people/jcm/home.html/`

2. Model Checking Electronic Commerce Protocols Nevin Heintze, Doug Tygar, Jeannette Wing, and Hao-Chi Wong In Second USENIX Workshop on Electronic Commerce, 1996. $\surd$

3. V. Shmatikov, J. Mitchell, "Analysis of a Fair Exchange Protocol, *Symp. Network and Distributed System Security (NDSS)*, 2000.

Modeling of Web Application Designs

1. Jim Conallen, "Modeling Web Application Design with UML," White Paper, Rational, 1998. $\surd$

4 E-auction

Agents

1. R.H. Guttman, A.G. Moukas, and P. Maes, "Agent-mediated Electronic Commerce: A Survey," To appear, *Knowledge Engineering Review*, June 1998. $\surd$

2. P. Maes, R. Guttman, and A. Moukas, "Agents that Buy and Sell: Transforming Commerce as we Know It," *Communications of the ACM*, March 1999. $\surd$

3. C. Shirky, "Agents vs. big fat webservers," CACM, Sep 1999, pp. 50-52.

Auctions

1. M.K. Franklin and M.K. Reiter, "The Design and Implementation of a Secure Auction Service," *IEEE Transaction on Software Engineering*, Vol. 22, No. 5, May 1996. $\surd$

2. R.A. Gagliano, M.D. Fraser, and M.E. Schaefer, "Auction Allocation of Computing Resources," *Communications of the ACM*, Vol. 38, No. 6, June 1995. $\surd$

3. M.N. Huhns and J.M. Vidal, "Online Auctions," *IEEE Internat Computing*, May/June 1999. $\surd$

4. M. Kumar and S.I. Feldman, "Internet Auctions," Technical Report, IBM Institute of Advanced Commerce, November 1988.

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5 Other Topics

1. Software engineering issues such as large system testing, validation.
2. Web-based collaboration
3. Wed development tools: PHP (`www.php.net`)
4. Web server performance and log file analysis tools: The Webalizer (`www.mrunix.net/webalizer`)
5. PDAs and Wireless network for E-commerce
6. Wearable devices/computers
7. Jini technology for E-commerce
8. Payment schemes, Ecommerce protocols (Contract, Fair Exchange, etc.)
9. MP3
10. XML
11. Lincoln D. Stein, *Web Security: A Step-by-Step Reference Guide,* Addison-Wesley, 1998.