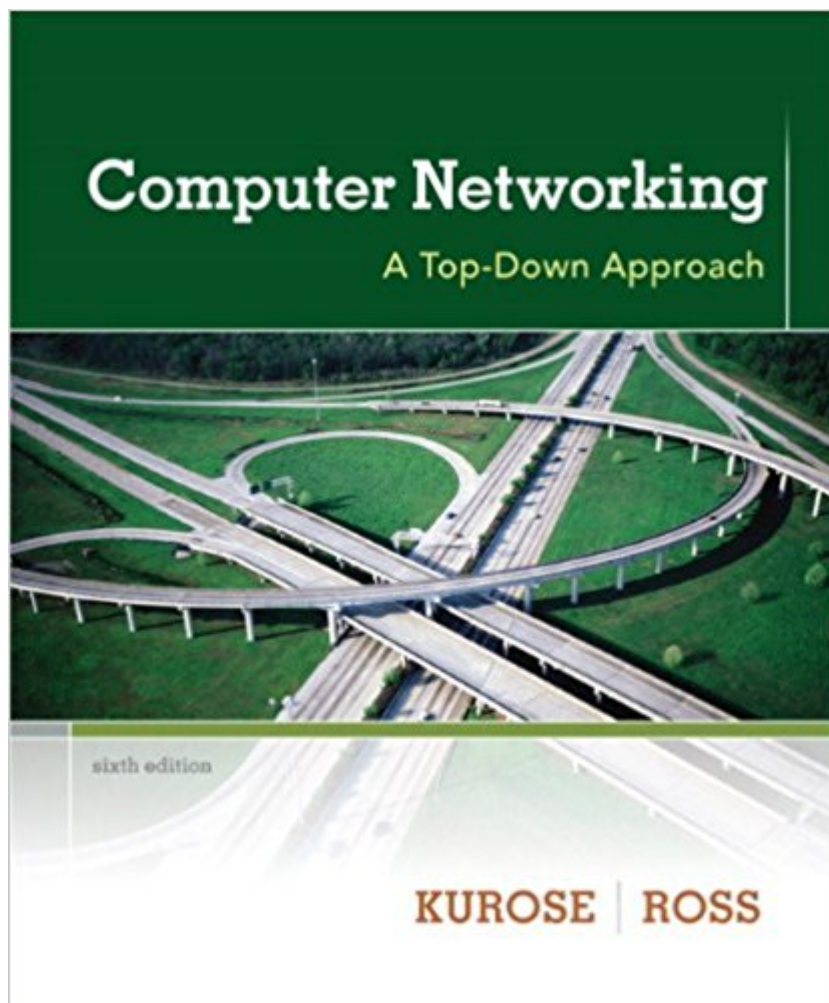


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# Computer Networking: A Top-Down Approach (6th Edition)



## Synopsis

>Computer Networking continues with an early emphasis on application-layer paradigms and application programming interfaces (the top layer), encouraging a hands-on experience with protocols and networking concepts, before working down the protocol stack to more abstract layers.

This book has become the dominant book for this course because of the authors' reputations, the precision of explanation, the quality of the art program, and the value of their own supplements. Visit the authors' blog for information and resources to discuss the newest edition, as well as valuable insights, teaching tips, and discussion about the field of Computer Networking <http://kuroseross.com>

## Book Information

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## Customer Reviews

James Kurose teaches at the University of Massachusetts at Amherst. His research interests include network protocols and architecture, network measurement, sensor networks, multimedia communication, and modeling and performance evaluation. He received his PhD from Columbia University. Keith Ross is a professor of computer science at Polytechnic University. He has worked in peer-to-peer networking, Internet measurement, video streaming, Web caching, multi-service loss networks, content distribution networks, voice over IP, optimization, queuing theory, optimal control of queues, and Markov decision processes. Professor Ross received his PhD in Computer and Control Engineering from the University of Michigan.

I think it's worth starting off by saying that I'm not going to be too detail specific. I rented this as part of an introductory networking course. Unfortunately, the course and the book don't really work well together. Some aspects of networking are really detailed and thorough - especially when discussing how to build the network layer into software, but when trying to understand the concepts, this book misses pretty significantly. I found myself flipping through several pages looking for the meat of the topic. ("Is there a page missing? Why did it end there?") This could be a good reference book, however some of the core examples are too specific to certain transient solutions or technologies. I liked that the book was organized into the network layers, but there was still some cherry-picking of the details that should have had more content. This has been mentioned in another review as well.

This review compares the following four books: Computer Networks by Peterson and Davie (P & D) Computer Networks by Tanenbaum Computer Networks by Comer / Internetworking with TCP/IP Computer Networking by Kurose and Ross (K & R) By far the best book in the list is "Computer Networking" by Kurose and Ross. This book covers all of the essential material that is in the other books but manages to do so in a relevant and entertaining way. This book is very up to date as seen by the release of the 5th Ed when the 4th Ed is barely two years old. There are lots of practical exercises using Wireshark and the companion website is actually useful and relevant. The attitude of this book with regard to teaching networking concepts could be summed up as "try it out and see for yourself". One interesting thing to note is that the socket programming examples are all in Java. Next up is the Peterson and Davie book which covers everything that Kurose and Ross discuss but is slightly more mathematical in how it goes about things. There are a lot more numerical examples and defining of formulas in this book which is fine by me and in no way detracts from the book. Also the socket programming examples are in C which is a little more traditional. The points where this text loses ground to K & R is that it doesn't have the practical application exercises that K & R has and it also doesn't extend the basic networking theory that is covered to modern protocols like K & R. The two Comer books come next. Comer's "Computer Networks" book is probably the most introductory book out of this whole list and is more of a survey of networking topics that doesn't cover anything in any real depth. Still, this is an excellent book in that it is a quick clear read that is very lucid in its explanations and you can't help feeling that you understand everything that is covered in the book. Comer's TCP/IP book is the equivalent of the other authors' computer network books and in that respect it is pretty average. It covers all of the relevant material and in a manner which is more than readable but that is all. There is nothing exceptional about the

book which stands out from the rest. Last comes Tanenbaum's book from the author who is probably most famous for his OS books. This is probably the most technical and detailed of the books with lots of sample C code belying his experience with operating systems and their network stack code. The weak point of this book is that all of the code and technical minutia might prevent the reader from seeing the forest for the trees. Unless you are trying to learn how to program your own network stack for a Unix/Linux system, then I would get either the K & R book or the P & D book to learn networking for the first time. This book would best be served as a reference in which case the technical nature of the book becomes a benefit rather than detracting from the text.

I am student at the University of Massachusetts and I had James Kurose, the co-author of this book, as the professor for my computer networking class. Not only was the class excellent, but the book was also. Everything is explained very clearly and proficiently. The book is not math-based which makes it much easier reading and great as an introductory book. There are lots of concrete analogies and examples used in the book to help the reader understand the more complex concepts. Since taken the class I've read through computer networks by Andrew S. Tanenbaum and although that it is a good book I would not recommend it for those who are just being introduced to the world of networking. The online supplementary content that comes with the book is also very beneficial and complement the book well.

As a 3rd year computer science student with little experience with networks prior to the course that used this textbook, I found it very accessible. The textbook outlines and then defines the five layers of networking: application, transport, network, link-layer and physical, chapter-by-chapter. In addition, there are chapters that cover network security, network management and wireless networks. The textbook provides a great deal of information interlaced with an appropriate amount of humor. I would fully recommend this book for learning networking topics, for those without a significant understanding of networking concepts.

I have the International Edition and so can only speak for that. This is the recommended text for our Data Comm course and I find that the book does a good job given the fact I have zero background in this area. The lecturer also used the slides prepared by the authors so everything tied in nicely. If you do get the book, I would recommend that you check out the student's resources at the publisher's website. There are useful animations that enhance understanding of the material and the one that sticks in my mind concerns routing, MAC addresses and IP addresses. One final

note, if you wish to learn subnetting painlessly you will need more material. My advice is to download the 3Com paper referenced by the authors, I read it and it was like a light was switched on.

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