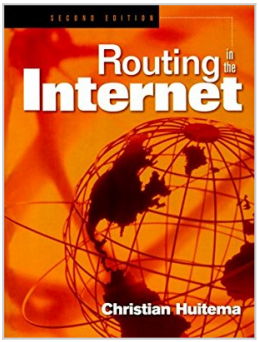

Routing in the Internet (2nd Edition)

By Christian Huitema

Routing in the Internet (2nd Edition) By Christian Huitema

The Internet routing best-seller-now completely updated! Nobody knows more about Internet routing than Christian Huitema, former head of the Internet Architecture Board. Now, hes completely updated his classic best-seller on Internet routing to deliver the critical information that networking and software professionals need right now. Routing in the Internet, Second Edition offers unparalleled practical insight for architecting 21st century enterprise networks. Youll find all this, and more: * Internet Quality of Service (QoS) technologies, including policy routing and Resource Reservation Protocol (RSVP) * Extensively updated coverage of the OSPF (Open Shortest Path First) intra-company protocol * Revamped, in-depth coverage of BGPv4 for connecting enterprises to Internet Service Providers * IPv6: Rationale, goals, technical details, and key migration issues * Internet multicasting: how it works, and how you can use it today * Mobile IP: a preview of anywhere, anytime Internet connectivity PC Week called the first edition of Routing in the Internet surprisingly approachable; IEEE Communications called it excellent. Communications and networking professionals worldwide will cal

Routing in the Internet (2nd Edition)

By Christian Huitema

Routing in the Internet (2nd Edition) By Christian Huitema

The Internet routing best-seller-now completely updated! Nobody knows more about Internet routing than Christian Huitema, former head of the Internet Architecture Board. Now, hes completely updated his classic best-seller on Internet routing to deliver the critical information that networking and software professionals need right now. Routing in the Internet, Second Edition offers unparalleled practical insight for architecting 21st century enterprise networks. Youll find all this, and more: * Internet Quality of Service (QoS) technologies, including policy routing and Resource Reservation Protocol (RSVP) * Extensively updated coverage of the OSPF (Open Shortest Path First) intra-company protocol * Revamped, in-depth coverage of BGPv4 for connecting enterprises to Internet Service Providers * IPv6: Rationale, goals, technical details, and key migration issues * Internet multicasting: how it works, and how you can use it today * Mobile IP: a preview of anywhere, anytime Internet connectivity PC Week called the first edition of Routing in the Internet surprisingly approachable; IEEE Communications called it excellent. Communications and networking professionals worldwide will cal

Routing in the Internet (2nd Edition) By Christian Huitema Bibliography

- Sales Rank: #1762446 in Books
- Published on: 1999-12-03
- Original language: English
- Number of items: 1
- Dimensions: 9.00" h x .90" w x 6.90" l, 1.41 pounds
- Binding: Paperback
- 385 pages

Editorial Review

Amazon.com Review
Routing in the Internet takes a carefully measured, textbook-style approach to a very complex topic, and rewards the attentive reader with a deep knowledge of how packets traverse networks. Author Christian Huitema begins by explaining the mechanics of IP addressing and returns to that theme (as it applies to IPv4 and IPv6) throughout this book.

Once he's laid his addressing groundwork, Huitema sets out to explain interior routing. He begins with the relatively simple (and relatively weak) Routing Information Protocol (RIP), using it as a vehicle for introducing routing terminology and concepts before explaining why RIP is not a good solution for most real-world internetworking problems and moving on to more robust routing algorithms. His coverage of Open Shortest Path First (OSPF) compares favorably to others'--he is careful to explain each aspect of OSPF (including link state databases) thoroughly. Exterior protocols are covered similarly well. Huitema isn't stingy with coverage of special situations, such as those created by mobile IP and IP multicasting.

Huitema's style tends to emphasize the theoretical aspects of the subjects he covers, and he writes with a somewhat academic tone. (You'll appreciate his liberal notes if you want to follow up on particular details of his presentation.) He makes good use of packet and network diagrams. You'll be pleased by the depth and detail of the material in *Routing in the Internet* and, despite its lack of practical material, will find it useful in real-life router configuration work and in studying for Cisco certification exams. --*David Wall*

Topics covered: Internet Protocol (IP) addressing (including versions 4 and 6), address resolution, routing metrics, distance vector protocols, and (especially) routing algorithms. Covered interior routing protocols include Routing Information Protocol (RIP, versions 1 and 2) and Open Shortest Path First (OSPF), while covered exterior routing protocols include Exterior Gateways Protocol (EGP) and Classless Inter-Domain Routing (CIDR). Futures, especially multicasting, receive attention as well.

From the Inside Flap
1 Introduction to Routing in the Internet

I first heard of the Internet in 1982. At that time, it was still centered around the Arpanet. Its access was reserved to a few research centers around the world. Our own research center, INRIA in France, could perhaps have joined its transatlantic extension, Satnet, but we never quite managed to convince the funding agencies of the usefulness of such a project. In fact, we were quite happy to acquire an indirect connection through the UNIX-based Usenet network a few years later. We had to wait until 1988 for a direct connection with the NSFnet, the interconnection network funded by the U.S. National Science Foundation. 1.1 The Worldwide Internet

The situation has changed a lot since that time. There were only a few hundred machines connected to the Internet by 1982: it was pretty much the playground for an elite group of computer scientists. That number had grown to 2.5 million connected computers on January 1, 1994, when the first edition of this book was being prepared. By the time of the second edition, in July 1999, there are about 60 million computer addresses registered in the domain name service. An estimated 20 million users had access to it, then. Nobody really knows how many users have access to the Internet now; estimates vary between 100 and 200 million. The initial core of experts has been joined by a variety of teachers and students, researchers and merchants, journalists and engineers. More than half of the connected computers in the United States already

belonged to commercial companies in 1994, while academia only represents one-sixth of the network in 1999. The initial Internet was mostly a U.S.-only network, with a few appendices in a couple of friendly countries. By 1994, one could estimate that over half of the net was located in the United States, about one-third in Europe, with a growing presence in Asia and other continents. This figure has not changed much in 1999, as the North American networks have kept growing just as fast as the international networks. This rapid increase of the commercial and international participation is characteristic of the recent evolution and probably explains the amazing growth of the recent years: the net seems to double its size every year! 1.2 How Is It Organized?

The Internet is not "one network" in the common sense of the term: there is no such thing as one huge international company that would provide connections to users in various continents. Instead, the Internet is "a loose interconnection of networks," belonging to many owners. One usually distinguishes three levels of networks: organizational, regional, and transit.

The companies and institutions attached to the Internet generally manage an internal network. Its complexity can vary widely with the size of the organization. A typical example may be the research unit of INRIA in Sophia-Antipolis, where I used to work. The local network consisted of six Ethernet segments connecting about 300 workstations scattered in six buildings. The segments were connected to each other by a fiber-optic FDDI backbone that was directly attached to our supercomputers and service machines. Connection between the ring and the segments was assured by several specialized routers, using the Internet protocols. Indeed, this network was more complex than those of several small companies which often consist of one single Ethernet or token ring network. But large universities often have thousands of machines to connect, and multinational companies may have to manage a worldwide mesh of links between their different sites.

Most organizations' networks are connected to the Internet through a "regional" provider which manages a set of links covering a state, a region, or maybe a small country. These regional networks provide connectivity to their customers; they also render a number of related services, such as helping users to manage their networks or to get Internet addresses and providing mailboxes for isolated users. The regional nature of these providers is generally derived from these service relations: proximity helps. There is, however, no regional monopoly. Several companies may well compete in the same city or in the same region. There is also no restriction on the scope of the provider. Some companies that started in a limited geographic area are currently expanding their operations to other regions, maybe other countries. In fact, we are currently observing the burgeoning activity of a new industry. While the market grows, many new operators start their own activities. Some will succeed and become the giants of tomorrow. Some will remain small and concentrate on a particular corner of the market. Many others will probably be absorbed.

Being connected to other Internet users in the same city, even in the same state, is not quite sufficient. The purpose of the Internet is more ambitious: worldwide connectedness. This connectivity may be provided by a "transit" provider. The first network that clearly positioned itself as primarily a transit provider was the NSFnet. This successor of the Arpanet had a deliberate policy of allowing connection only through intermediate, regional providers. Another well-known transit system is the EBONE in Europe, which is operated in cooperation by several European regional networks. Such an interconnection is not adequate when the regional networks have grown so large that they already encompass many regions or many countries. In that case, bilateral or multilateral arrangements are preferred. The NSFnet has now been decommissioned, and the transit services are provided by a small number of very large international networks run by commercial organizations. 1.3 A Study of Routing

Many books have already been written on the Internet; yet another one would not be the most useful addition to the shelves of our libraries. This book, however, seeks to address one very specific topic: the organization of routing—the structure that glues together the worldwide Internet. It is divided into five parts. The first part

includes three chapters: the general principles of the Internet architecture, the presentation of the Internet Protocol (IP) itself, and the presentation of IPv6, which has been designed as a replacement for IP. Each of the following chapters will present both the state of the art, based on the current version of IP (IPv4), and the provisions that are made for IPv6.

Three chapters cover the routing within organizations' networks. chapter 5 is devoted to RIP, the old Internet routing protocol. It is also an introduction to routing protocols in general, detailing the easy-to-understand "distance vector" technology. Then in chapter 6 we present the more modern Open Shortest Path First (OSPF) protocol, an example of the "link state" technology. chapter 7 completes this second part by discussing the other routing protocols in use in the Internet.

The interconnection between organizations' networks and providers requires another set of protocols, more concerned with the "management of connectivity" than with the dynamics of routing. Part 3 includes four chapters presenting the first "Exterior Gateway Protocol" (EGP), then the modern "Border Gateway Protocol" (BGP). chapter 10 is devoted to the recent development of "Inter-Domain Routing," while chapter 11 presents the general requirements of "policy-based routing."

The fourth part of the book is devoted to the recent advances in routing technology, with three chapters detailing the support of multicast transmission, mobile hosts, and real-time applications. This is a natural introduction to the last part of the book, which presents the transition to the new Internet Protocol. This transition will be necessary if we want to connect thousands of billions of hosts to the twenty-first century's Internet!

From the Back Cover

2264G-2

The Internet routing best-seller-now completely updated!

Nobody knows more about Internet routing than Christian Huitema, former head of the Internet Architecture Board. Now, he's completely updated his classic best-seller on Internet routing to deliver the critical information that networking and software professionals need right now. Routing in the Internet, Second Edition offers unparalleled practical insight for architecting 21st century enterprise networks. You'll find all this, and more:

- Internet Quality of Service (QoS) technologies, including policy routing and Resource Reservation Protocol (RSVP)
- Extensively updated coverage of the OSPF (Open Shortest Path First) intra-company protocol
- Revamped, in-depth coverage of BGPv4 for connecting enterprises to Internet Service Providers
- IPv6: Rationale, goals, technical details, and key migration issues
- Internet multicasting: how it works, and how you can use it today
- Mobile IP: a preview of anywhere, anytime Internet connectivity

PC Week called the first edition of Routing in the Internet "surprisingly approachable"; IEEE Communications called it "excellent." Communications and networking professionals worldwide will call Routing in the Internet, Second Edition absolutely indispensable.

Users Review

From reader reviews:

Stephanie Cromwell:

Hey guys, do you wishes to finds a new book you just read? May be the book with the name Routing in the Internet (2nd Edition) suitable to you? Typically the book was written by well-known writer in this era. The actual book untitled Routing in the Internet (2nd Edition)is a single of several books which everyone read now. This specific book was inspired a lot of people in the world. When you read this e-book you will enter the new way of measuring that you ever know prior to. The author explained their plan in the simple way, so all of people can easily to understand the core of this book. This book will give you a lots of information about this world now. So that you can see the represented of the world within this book.

Natalie Hernandez:

The particular book Routing in the Internet (2nd Edition) has a lot info on it. So when you check out this book you can get a lot of help. The book was compiled by the very famous author. Tom makes some research previous to write this book. That book very easy to read you can get the point easily after reading this article book.

George Clark:

With this era which is the greater person or who has ability to do something more are more precious than other. Do you want to become one among it? It is just simple method to have that. What you have to do is just spending your time not very much but quite enough to get a look at some books. One of the books in the top collection in your reading list is usually Routing in the Internet (2nd Edition). This book which is qualified as The Hungry Mountains can get you closer in growing to be precious person. By looking up and review this guide you can get many advantages.

James Horowitz:

As we know that book is important thing to add our information for everything. By a publication we can know everything we want. A book is a set of written, printed, illustrated or even blank sheet. Every year ended up being exactly added. This guide Routing in the Internet (2nd Edition) was filled with regards to science. Spend your spare time to add your knowledge about your scientific research competence. Some people has several feel when they reading a book. If you know how big good thing about a book, you can experience enjoy to read a reserve. In the modern era like currently, many ways to get book that you wanted.

By Christian Huitema #X6U2L7IFDPK

Read Routing in the Internet (2nd Edition) By Christian Huitema for online ebook

Routing in the Internet (2nd Edition) By Christian Huitema Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Routing in the Internet (2nd Edition) By Christian Huitema books to read online.

Online Routing in the Internet (2nd Edition) By Christian Huitema ebook PDF download

Routing in the Internet (2nd Edition) By Christian Huitema Doc

Routing in the Internet (2nd Edition) By Christian Huitema Mobipocket

Routing in the Internet (2nd Edition) By Christian Huitema EPub

X6U2L7IFDPK: Routing in the Internet (2nd Edition) By Christian Huitema