# 1. Introduction to Networking

#### Introduction

A network is simply a group of two or more Personal Computers linked together. Many types of networks exist, but the most common types of networks are Local-Area Networks (LANs), and Wide-Area Networks (WANs).

In a LAN, computers are connected together within a "local" area (for example, an office or home). In a WAN, computers are further apart and are connected via telephone/communication lines, radio waves or other means of connection.

#### **How are Networks Categorized?**

Networks are usually classified using three properties: Topology, Protocol and Architecture.

**Topology** specifies the geometric arrangement of the network. Common topologies are a bus, ring and star. You can check out a figure showing the three common types of network topologies here.

Protocol specifies a common set of rules and signals the computers on the network use to communicate. Most networks use Ethernet, but some networks may use IBM's Token Ring protocol.

Architecture refers to one of the two major types of network architecture: Peer-topeer or client/server. In a Peer-to-Peer networking configuration, there is no server, and
computers simply connect with each other in a workgroup to share files, printers and
Internet access. This is most commonly found in home configurations and is only
practical for workgroups of a dozen or less computers. In a client/server network there
is usually an NT Domain Controller, to which all of the computers log on. This server
can provide various services, including centrally routed Internet Access, mail (including
e-mail), file sharing and printer access, as well as ensuring security across the network.
This is most commonly found in corporate configurations, where network security is
essential.

# **Network Topologies**

#### Introduction

Network topologies can take a bit of time to understand when you're all new to this kind of cool stuff, but it's very important to fully understand them as they are key elements to understanding and troubleshooting networks and will help you decide what actions to take when you're faced with network problems.

I will try to be as simple as possible and give some examples you can relate to, so let's get stuck right into this stuff!

### The Stuff:

There are two types of topologies: Physical and Logical. The physical topology of a network refers to the layout of cables, computers and other peripherals. Try to imagine yourself in a room with a small network, you can see network cables coming out of

# **Mtech Cse Computer Networks Lab Manual**

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same name This course introduces the architecture structure functions components and models of the Internet and other computer networks The hands on labs and class activities are designed for you to practice performing tasks that will help you learn how to build simple LANs perform basic configurations for routers and switches and implement IP addressing schemes

Mastering Network+ Certification James L. Antonakos, Kenneth C. Mansfield. 2003 Lab Manual Dean Farwood, 2009-01-05 The Lab Manual for SECURITY GUIDE TO NETWORK SECURITY FUNDAMENTALS 3rd Edition is a valuable tool designed to enhance your classroom experience Lab activities objectives materials lists step by step procedures illustrations review questions and more are all included Important Notice Media content referenced within the product description or the product text may not be available in the ebook version Introduction to Networks Cisco Networking Academy, 2013 Introduction to Networks Companion Guide is the official supplemental textbook for the Introduction to Networks course in the Cisco Networking Academy CCNA Routing and Switching curriculum The course introduces the architecture structure functions components and models of the Internet and computer networks The principles of IP addressing and fundamentals of Ethernet concepts media and operations are introduced to provide a foundation for the curriculum By the end of the course you will be able to build simple LANs perform basic configurations for routers and switches and implement IP addressing schemes The Companion Guide is designed as a portable desk reference to use anytime anywhere to reinforce the material from the course and organize your time. The book s features help you focus on important concepts to succeed in this course Chapter Objectives Review core concepts by answering the focus questions listed at the beginning of each chapter Key Terms Refer to the lists of networking vocabulary introduced and highlighted in context in each chapter Glossary Consult the comprehensive Glossary with more than 195 terms Summary of Activities and Labs Maximize your study time with this complete list of all associated practice exercises at the end of each chapter Check Your Understanding Evaluate your readiness with the end of chapter questions that match the style of questions you see in the online course guizzes The answer key explains each answer Related Title Introduction to Networks Lab Manual ISBN 10 1 58713 312 1 ISBN 13 978 1 58713 312 1 How To Look for this icon to study the steps you need to learn to perform certain tasks Interactive Activities Reinforce your understanding of topics with more than 50 different exercises from the online course identified throughout the book with this icon Packet Tracer Activities Explore and visualize networking concepts using Packet Tracer exercises interspersed throughout the chapters Hands on Labs Work through all 66 course labs and Class Activities that are included in the course and published in the separate Lab Manual This book is part of the Cisco Networking Academy Series from Cisco Press Books in this series support and complement the Cisco Networking Academy curriculum

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## **Table of Contents Mtech Cse Computer Networks Lab Manual**

- 1. Understanding the eBook Mtech Cse Computer Networks Lab Manual
  - The Rise of Digital Reading Mtech Cse Computer Networks Lab Manual
  - Advantages of eBooks Over Traditional Books
- 2. Identifying Mtech Cse Computer Networks Lab Manual
  - Exploring Different Genres
  - Considering Fiction vs. Non-Fiction
  - Determining Your Reading Goals
- 3. Choosing the Right eBook Platform
  - Popular eBook Platforms
  - Features to Look for in an Mtech Cse Computer Networks Lab Manual
  - User-Friendly Interface
- 4. Exploring eBook Recommendations from Mtech Cse Computer Networks Lab Manual
  - Personalized Recommendations

- Mtech Cse Computer Networks Lab Manual User Reviews and Ratings
- Mtech Cse Computer Networks Lab Manual and Bestseller Lists
- 5. Accessing Mtech Cse Computer Networks Lab Manual Free and Paid eBooks
  - Mtech Cse Computer Networks Lab Manual Public Domain eBooks
  - Mtech Cse Computer Networks Lab Manual eBook Subscription Services
  - Mtech Cse Computer Networks Lab Manual Budget-Friendly Options
- 6. Navigating Mtech Cse Computer Networks Lab Manual eBook Formats
  - ∘ ePub, PDF, MOBI, and More
  - Mtech Cse Computer Networks Lab Manual Compatibility with Devices
  - Mtech Cse Computer Networks Lab Manual Enhanced eBook Features
- 7. Enhancing Your Reading Experience
  - Adjustable Fonts and Text Sizes of Mtech Cse Computer Networks Lab Manual
  - Highlighting and Note-Taking Mtech Cse Computer Networks Lab Manual
  - Interactive Elements Mtech Cse Computer Networks Lab Manual
- 8. Staying Engaged with Mtech Cse Computer Networks Lab Manual
  - Joining Online Reading Communities
  - Participating in Virtual Book Clubs
  - Following Authors and Publishers Mtech Cse Computer Networks Lab Manual
- 9. Balancing eBooks and Physical Books Mtech Cse Computer Networks Lab Manual
  - Benefits of a Digital Library
  - Creating a Diverse Reading Collection Mtech Cse Computer Networks Lab Manual
- 10. Overcoming Reading Challenges
  - Dealing with Digital Eye Strain
  - Minimizing Distractions
  - Managing Screen Time
- 11. Cultivating a Reading Routine Mtech Cse Computer Networks Lab Manual
  - Setting Reading Goals Mtech Cse Computer Networks Lab Manual
  - Carving Out Dedicated Reading Time
- 12. Sourcing Reliable Information of Mtech Cse Computer Networks Lab Manual
  - Fact-Checking eBook Content of Mtech Cse Computer Networks Lab Manual

- Distinguishing Credible Sources
- 13. Promoting Lifelong Learning
  - Utilizing eBooks for Skill Development
  - Exploring Educational eBooks
- 14. Embracing eBook Trends
  - Integration of Multimedia Elements
  - Interactive and Gamified eBooks

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