

# **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-to-peer 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

# Computer Network Lab Manual

**Michael Meyers, Dennis Haley**



## Computer Network Lab Manual:

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**Network+ Lab Manual for Guide to Networks** Todd Meadors, 2000 The Network Guide to Networks Lab Manual presents extensive hands on exercises and case studies to practice concepts learned on the way to obtaining Network certification Designed as a complement to Network Guide to Networks this manual also stands alone as an excellent resource for practical hands on independent study

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**Mastering Networks** Jörg Liebeherr, Magda El Zarki, 2003 Class tested for several years this text drives home the fundamentals of networks by

providing real experience and using real equipment Ten labs each covering a specific aspect of networking allow students to put the details of computer networking into practice thereby giving them a solid understanding of and appreciation for the discipline

**Network+ All-in-One Lab Manual** Catherine Creary,2002-03-13 This guide prepares readers for the real world by applying networking concepts to solve real networking problems Contains step by step not click by click lab scenarios that require students to think critically

**Connecting Networks V6 Labs & Study Guide** Cisco Networking Academy,Allan Johnson,2017-07 The only authorized Lab Manual for the Cisco Networking Academy Connecting Networks course in the CCNA Routing and Switching curriculum Each chapter of this book is divided into a Study Guide section followed by a Lab section The Study Guide section offers exercises that help you learn the concepts configurations and troubleshooting skills crucial to your success as a CCNA R S exam candidate Each chapter is slightly different and includes some or all the following types of exercises Vocabulary Matching Exercises Concept Questions Exercises Skill Building Activities and Scenarios Configuration Scenarios Packet Tracer Exercises Troubleshooting Scenarios The Labs Activities include all the online course Labs and Packet Tracer activity instructions If applicable this section begins with a Command Reference that you will complete to highlight all the commands introduced in the chapter

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*Network Basics Lab Manual* Cisco Networking Academy, 2013-08-04 The Network Basics Lab Manual provide students enrolled in the Cisco Networking Academy Network Basics course with a convenient complete collection of all the course lab exercises that provide hands on practice and challenges

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Networking and Data Communications Laboratory Manual Frances S. Grodzinsky, 1999 Designed for any introductory networking or data communications course This laboratory manual is designed for the purpose of enhancing the understanding of concepts discussed in a variety of networks and data communications texts This manual represents a work of dedication and collaboration by faculty from universities and colleges across the country

**Introduction to Networks Lab Manual V5. 1** Cisco Networking Academy, Cisco Networking Academy Program, 2015-11-09 The Introduction to Networks Lab Manual provides students enrolled in a Cisco Networking Academy Introduction to Networks course with a convenient complete collection of all the course lab exercises that provide hands on practice and challenges

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