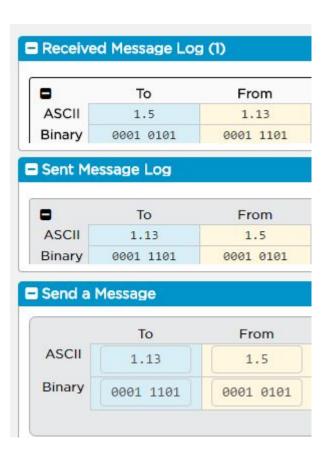# Routers and Redundancy

Lesson 10
Summary

To / From Address:

Like an IP address, included on every message sent over the Internet.

Dropped Messages

Poorly formed messages cannot be delivered and so are dropped, just like a letter with a bad address on it. In lesson 11 more technical reasons messages are dropped will be discussed.

Multiple Hops

A message travelling across the Internet will visit many routers as each tries to forward it along the most efficient path to its destination

In the Internet Simulator the hops were chosen randomly. Actual routers use algorithms to determine the best path to send a message along.
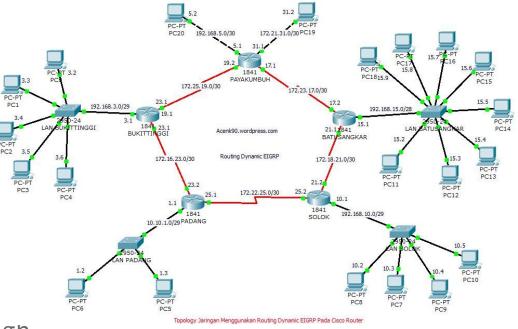
Different Paths = Redundancy

Routers respond to traffic on the Internet in real time. The best path at one moment might be backed up a few seconds later.

Routers choose **the current best path** to get the message through.

Topology Jaringan Menggunakan Routing Dynamic EIGRP Pada Cisco Router

Class Discussion recap

- Benefits of redundancy in a routed system, to provide mandy paths between users of the network
- Routed messages aren't seen by all users, but they can still be seen by owners of the router.
- If you control all the routers, you entirely control the way messages travel through the network, and additionally can see all the traffic.

Standards Addressed

Computer Science Principles

▼ **3.3** - There are trade offs when representing information as digital data.

    ▼ **3.3.1** - Analyze how data representation, storage, security, and transmission of data involve computational manipulation of information. [P4]

    • **3.3.1A** - Digital data representations involve trade offs related to storage, security, and privacy concerns.

    • **3.3.1F** - Security and privacy concerns arise with data containing personal information.

▼ **6.1** - The Internet is a network of autonomous systems.

    ▼ **6.1.1** - Explain the abstractions in the Internet and how the Internet functions. [P3]

    • **6.1.1B** - An end to end architecture facilitates connecting new devices and networks on the Internet.

    • **6.1.1C** - Devices and networks that make up the Internet are connected and communicate using addresses and protocols.

    • **6.1.1E** - Connecting new devices to the Internet is enabled by assignment of an Internet protocol (IP) address.

▼ **6.2** - Characteristics of the Internet influence the systems built on it.

    ▼ **6.2.1** - Explain characteristics of the Internet and the systems built on it. [P5]

    • **6.2.1D** - Routing on the Internet is fault tolerant and redundant.

    ▼ **6.2.2** - Explain how the characteristics of the Internet influence the systems built on it. [P4]

    • **6.2.2B** - The redundancy of routing (i.e., more than one way to route data) between two points on the Internet increases the reliability of the Internet and helps it scale to more devices and more people.