Introduction to Routing in IP: Intradomain & Interdomain

In this lesson, we'll look at an introduction to intradomain and interdomain routing algorithms.

We'll cover the following

Introduction

If every router on the Internet had to manage routing entries for the entire Internet, then we would need very high-end and high performing routers. Also, the scale of exchanging routing information would be humongous. Instead, the Internet consists of **separate administrative domains**. Each domain is run and managed by an independent authority.

The Internet is hence comprised of **domains**. A domain can be a small enterprise that manages a few routers in a single building, a larger enterprise with a hundred routers at multiple locations, or a large Internet Service Provider managing thousands of routers. For example, Verizon is responsible for managing all devices in its networks.

As of this writing, the Internet is composed of more than $30,000$ such different domains and this number is still growing.

Intradomain Vs. Interdomain Routing

The two main classes of routing protocols that are used to allow these domains to efficiently exchange routing information are: **intradomain routing protocols** and **interdomain routing protocols**.

Routers *within* a domain exchange routing information with each other - this is called **intradomain routing**.

Routers at the edges of the domains that connect to routers in other domains are called **border routers**. These routers run **interdomain routing** protocols. These protocols import routing information from other domains and export summarized information about their own domain to other domains.

Due to the differences in goals and priorities for interdomain and intradomain routing, the routing algorithms and protocols used are significantly different. We'll look at key protocols from each class.

Quick Quiz!

1 Why are domains needed?

- A) For security purposes. Separating the Internet into domains makes it more secure.
- B) Every single router would otherwise have to manage routing entries for the entire Internet which is not scalable
- C) They are important to make the public adapt IPv6 addresses

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In the next lesson, we'll look at an intradomain routing algorithm called OSFP.