Virtual Network Services and Solutions

CHAPTER 10

DNS

EPISODE 10.01

DNS Overview

- DNS (Domain Name System)

- RFCs 1034 and 1035

- Domains are specified boundaries of activity

- DNS provides name to IP address mapping

DNS Resolution

What is IP address for aws.amazon.com?

1. Requestor queries a root server to find com DNS server

2. Requestor queries com DNS server to get amazon.com DNS server

3. Requestor queries amazon.com DNS server to get IP address for aws.amazon.com

DNS Resolution

Root DNS Servers

com DNS servers   org DNS servers   edu DNS servers

?

Requestor
Here's
amazon.com's
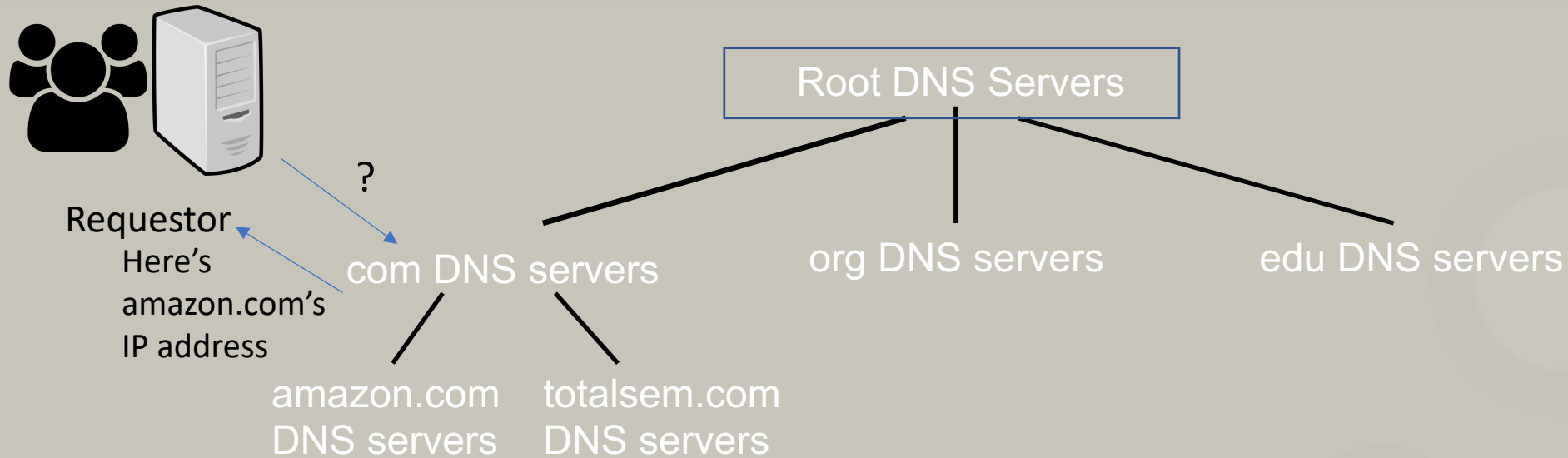IP address

amazon.com
DNS servers

totalsem.com
DNS servers

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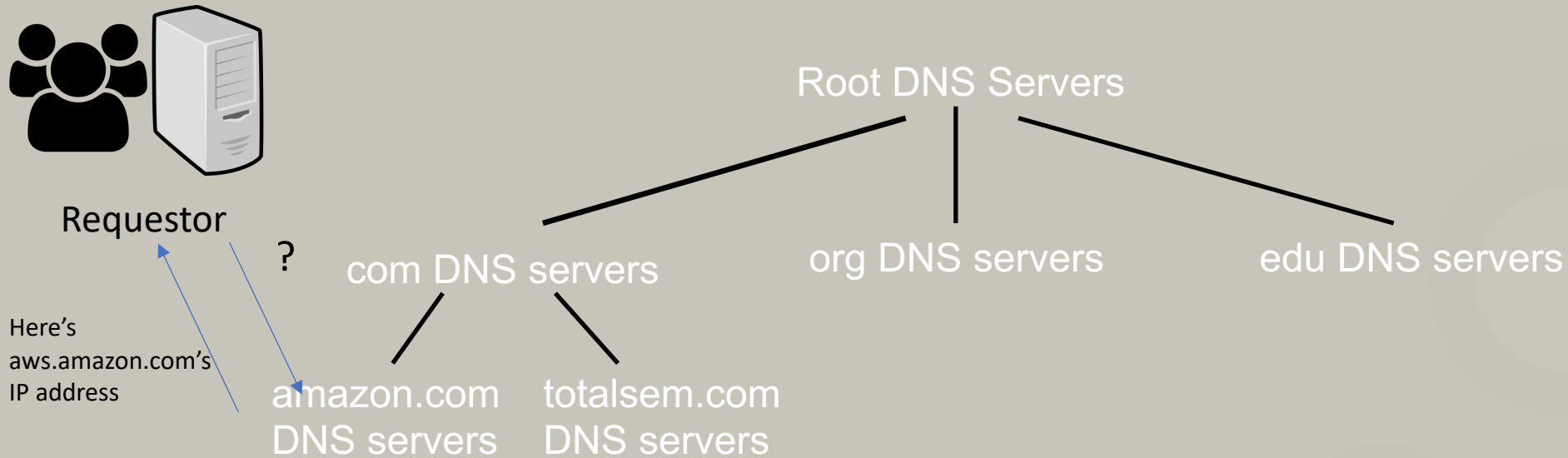
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DNS Hosting

- Provides name resolution
  - Caching
  - Recursion
- Stores DNS database
  - Aliasing
- Provides DNS zone transfers
  - Offloads name resolution processing

DNS Resolution

- Requests IP address of a host name
  - Forward lookup
- Requests host name of an IP address
  - Reverse lookup
- Requestor is configured with a DNS server address
  - Example: 8.8.8.8

DNS Records

- A and AAAA
  - Hostname > IPv4 or IPv6

- NS
  - Domain > hostname

- MX
  - Mail record

- CNAME
  - Alias for the real name (canonical)

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- DNS Configuration Defaults

Route 53

EPISODE 10.03

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- Managing Route53

ACLs and NACLs Lab

EPISODE 10.04

DEMO

- Viewing Default ACLs

Flow Logs

EPISODE 10.05

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- Creating Flow Logs on Network Interfaces

- Creating Flow Logs on VPCs

- Creating Flow Logs on Subnets

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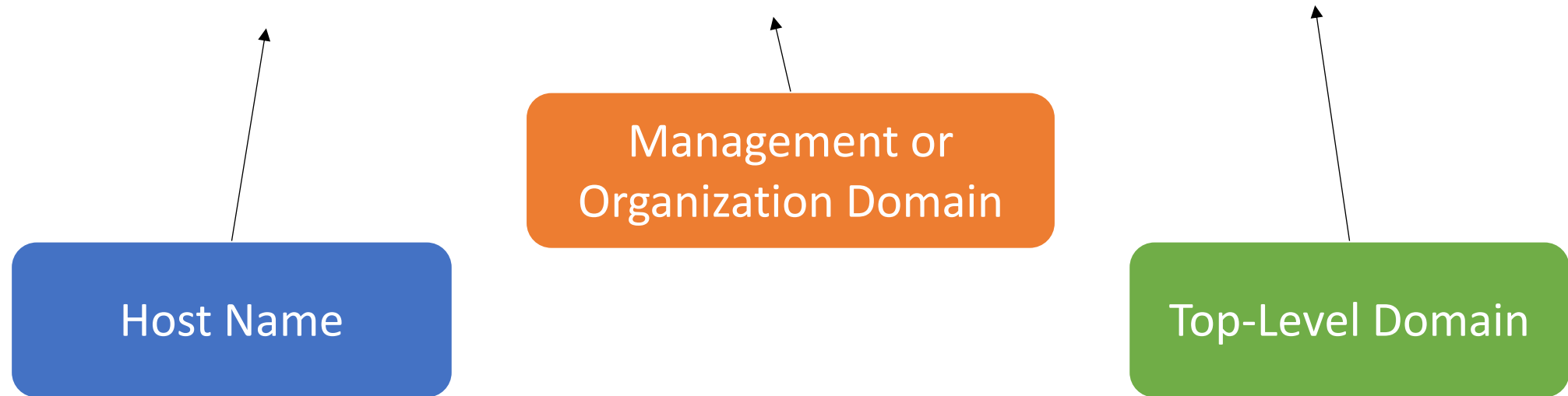- DNS provides name to IP address mapping

DNS Name Structure
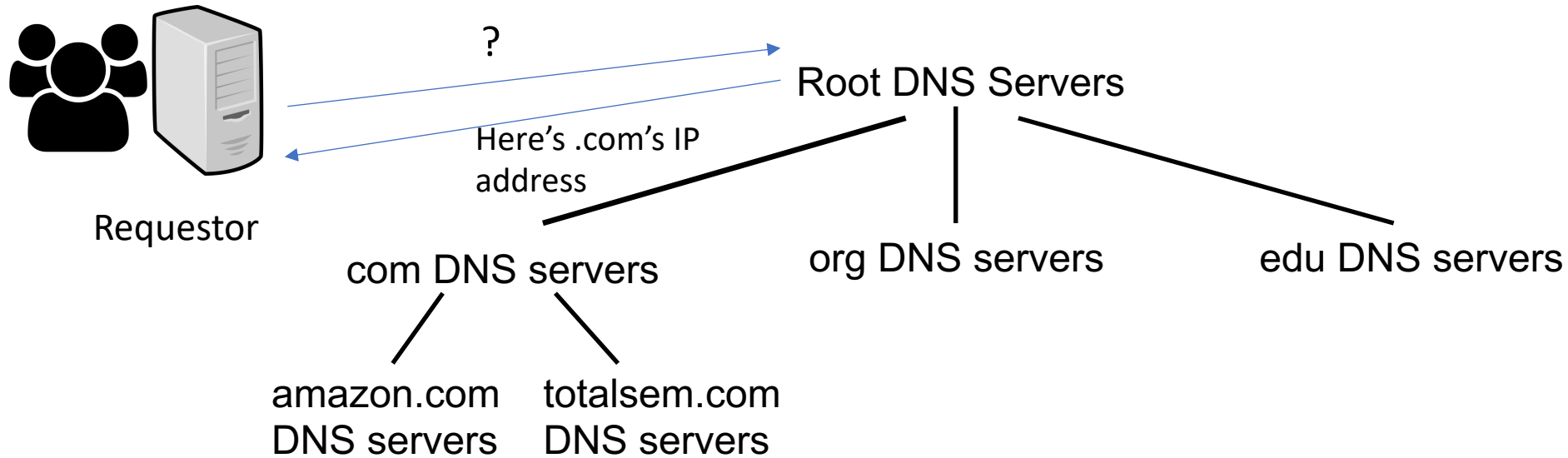
Fully Qualified Domain Name (FQDN)

aws.Amazon.com

Host Name

Management or Organization Domain

Top-Level Domain

DNS Resolution

?

Root DNS Servers

Here's .com's IP address

Requestor

com DNS servers   org DNS servers   edu DNS servers

amazon.com DNS servers   totalsem.com DNS servers

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- A and AAAA
  - Hostname > IPv4 or IPv6
- NS
  - Domain > hostname
- MX
  - Mail record
- CNAME
  - Alias for the real name (canonical)
  - www.widgetmakers.biz is really aws-ec2-east-us1.aws.amazon.com

- EPISODE 10.03
- Amazon Route 53

Amazon Route 53

- DNS service
  - Domain registration
  - DNS resolution
  - DNS management
  - Health checking

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- Managing Route53

- EPISODE 10.04
- Access Control Lists

- S3 buckets
- VPC ACLs
- Subnet ACLs

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- Viewing Default ACLs

- EPISODE 10.05
- Flow Logs

DEMO

- Creating Flow Logs on Network Interfaces

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- Creating Flow Logs on Subnets

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- 75.126.29.106 = www.totalsem.com