Installing the BIND DNS Server

Objectives:

At the end of this episode, I will be able to:

1. Describe the BIND DNS server and its purpose.
2. Install and verify BIND on a Linux server.
3. Configure access controls, caching, and forwarders in BIND.

> Additional resources used during the episode can be obtained using the download link on the overview episode.

- BIND

    - **B**erkeley **I**nternet **N**ame **D**omain
    - Oldest, most standards compliant DNS server
    - Created in the 1980s
    - *named* packaged with other tools

- BIND9

    - Released over 20 years ago
    - Currently supported by ISC
    - **I**nternet **S**ystems **C**onsortium

- Installing BIND

    - Not installed by default
    - *systemd-resolved* provides basic services
    - `/etc/hosts` is also commonly used
    - Install steps

        - `sudo apt install bind9 bind9-utils`

- Utility Packages

    - `bind9-utils`

        - Tools for managing a DNS server
        - `dnssec-*`
        - `rndc`
        - `named-checkconf`
        - `named-checkzone`

    - `bind9-dnsutils`

        - Tools for DNS clients to query a server
        - `dig`
        - `nslookup`
        - `nsupdate`

- BIND Default Configuration

    - Can act as a caching server
    - Will only respond to localhost
    - Configuration steps

        1. Define listening ports
        2. Configure access control list
        3. Configure miscellaneous options

- Listener ports

    - TCP/UDP Port 53 by default
    - Check for conflicts with other services

        - *dnsmasq*
        - *systemd-resolved*

- sudoedit /etc/bind/named.conf.options

  - options {

    - listen-on port 53 { 127.0.0.1; 10.0.222.51; };
    - listen-on-v6 port 53 { ::1; };

- Access Control List

  - Defines who can connect
  - Defines what actions they can take

    - acl "trusted-hosts" {

      - localhost;
      - localnets;
      - 10.0.222.51;
      - 10.0.0.0/16;

    - options {

      - recursion yes;
      - allow-recursion { trusted-hosts; };
      - allow-query { trusted-hosts; };
      - allow-transfer { none; };

- Miscellaneous Options

  - BIND supports many special configuration settings
  - DNS-SEC
  - Forwarders

    - Sends non-authoritative lookups upstream

  - Configuration

    - forwarders {

      - 8.8.8.8;
      - 8.8.4.4;

- Applying changes to BIND

  - Start *named* now, and at boot time

    - sudo systemctl enable --now named.service

- Allow BIND through firewall

  - BIND needs a minimum of UDP/53
  - sudo ufw allow Bind9
  - sudo ufw allow 53 comment "Bind DNS Server"