Library Server Configuration Guide

This comprehensive guide outlines the process of setting up a robust library server environment using VirtualBox. The setup includes two virtual machines: an Ubuntu Server and a Linux workstation, both configured with dual network adapters for internet access and internal networking. The server is equipped with essential services such as DHCP, DNS, and a web server to create a fully functional local network infrastructure.

(AH) **par ahbd hmz**

VirtualBox Network Configuration

Ubuntu Server

Configured with two network adapters: Adapter 1 set as NAT for internet access, and Adapter 2 set as Internal Network for local communication.

Linux Workstation

Also configured with two network adapters: Adapter 1 for NAT and Adapter 2 for Internal Network, mirroring the server setup.

Server Services

DHCP for serving the local internal network, DNS for resolving internal and external resources, and a Web Server hosting a local webpage.

DHCP Server Configuration

1 — **Installation**

Update package lists and install isc-dhcp-server using apt.

2 — **Configuration**

Edit dhcpd.conf to define DHCP range and set up basic subnet. Configure INTERFACESv4 to listen on internal network adapter.

3 — **Static IP Setup**

Set static IP on internal network by editing netplan configuration.

4 — **Service Management**

Restart and enable DHCP service. Test connectivity by pinging external sites and internal server.

DNS Server Configuration

Installation

Install BIND9 using apt for DNS server functionality.
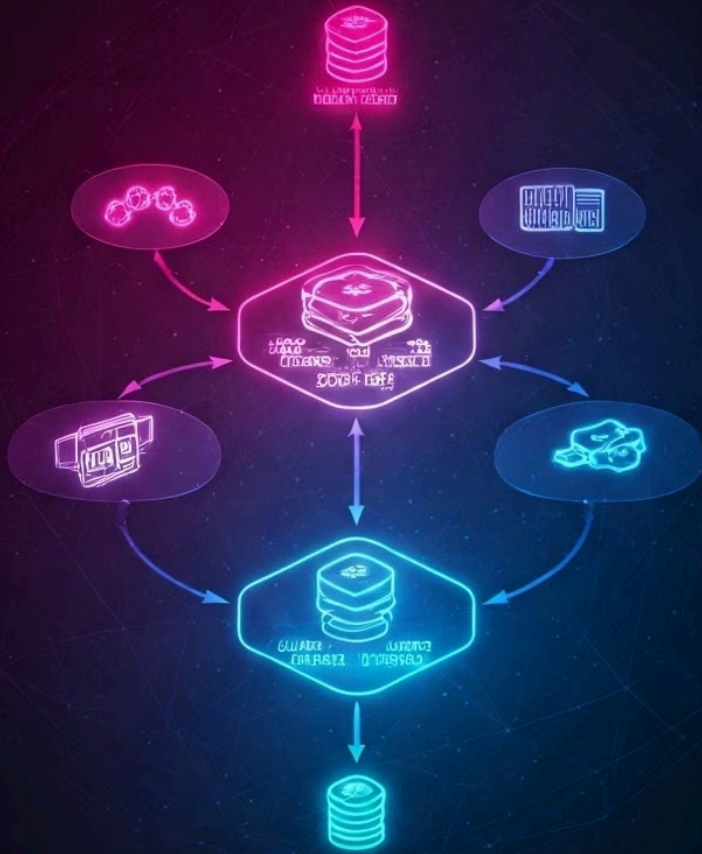
Main Configuration

Edit named.conf.options to forward external queries and listen on internal network interface.

Local Zone Setup

Configure named.conf.local and create custom zone file for internal resources.

Testing

Verify configuration by resolving internal and external resources using nslookup.

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Local Web Server Configuration

Install Nginx
1

Use apt to install Nginx web server.

Service Management
2

Start and enable Nginx service.

Create Webpage
3

Add index.html file with welcome message in /var/www/html.
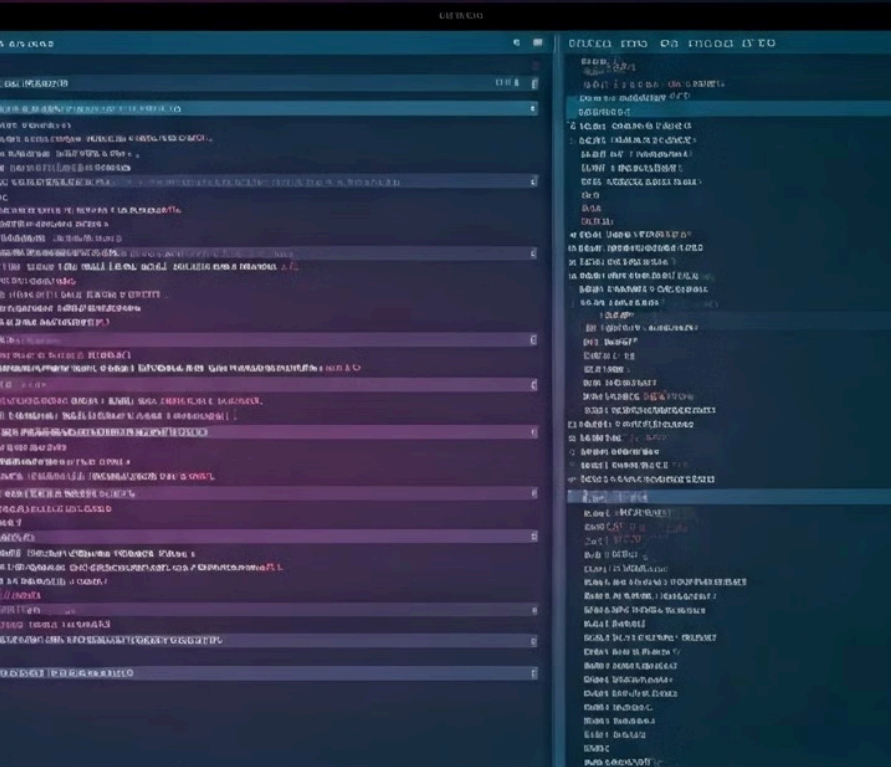
Test Configuration
4

Check for syntax errors and restart service.

Verify Setup
5

Access webpage from Linux workstation browser.

Weekly Backup Configuration

1 Create Backup Script

Write a shell script to compress configuration files for Nginx, BIND, and DHCP into a single archive.

2 Set Permissions

Make the backup script executable using chmod.

3 Schedule Backup

Add a cron job to run the backup script weekly on Sundays at 2 AM.

4 Verify Backup

Test the backup script manually to ensure it creates the backup file correctly.

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SSH Configuration for Remote Management

1 Install OpenSSH

Use apt to install the OpenSSH server package on the Ubuntu server.

2 Enable SSH Service

Start and enable the SSH service to allow remote connections.

3 Configure SSH Security

Edit sshd_config to disable root login for improved security.

4 Test Remote Access

Verify SSH configuration by connecting from the Linux workstation to the server.