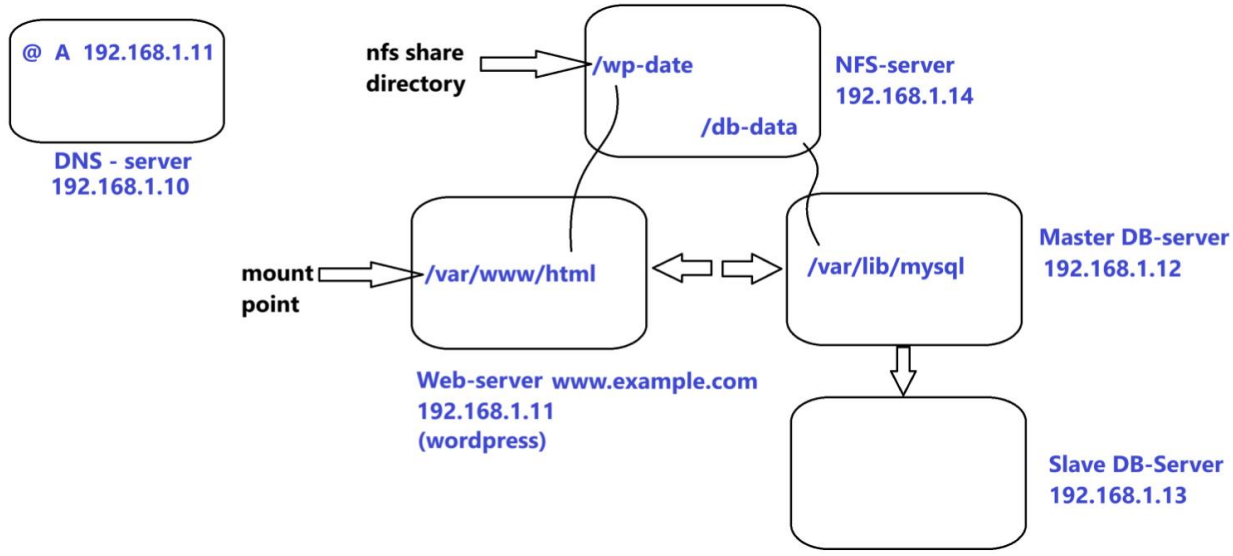
Project Title: Implementation of a Multi-Server Architecture using DNS, NFS, Web Server, and MariaDB



Objective:

To design and deploy a multi-server infrastructure that includes a DNS server, an NFS server, a web server hosting WordPress, and a MariaDB database server (Master-Slave setup). This architecture ensures centralized storage, database replication, and seamless web hosting.

Project Scope:

- **DNS Server:** Resolve domain names to IP addresses.
- **NFS Server:** Provide shared storage for web data and database storage.
- **Web Server:** Host a WordPress website with data stored on the NFS server.
- **Database Server:** Implement a Master-Slave MariaDB setup for data redundancy and high availability.

Network Topology:

1. **DNS Server:** 192.168.1.10

2. **Web Server:** 192.168.1.11 (www.example.com, WordPress hosted)
3. **Master Database Server:** 192.168.1.12
4. **Slave Database Server:** 192.168.1.13
5. **NFS Server:** 192.168.1.14

Functional Requirements:

- **DNS Server:**
  - Configure a DNS server to resolve `www.example.com` to `192.168.1.11`.
  - Ensure proper hostname resolution for all servers.
- **NFS Server:**
  - Create shared directories:
    - `/wp-data` for WordPress files (mounted on `/var/www/html` of the Web Server)
    - `/db-data` for MariaDB data (mounted on `/var/lib/mysql` of the Master DB Server)
- **Web Server:**
  - Install and configure Apache/Nginx with PHP support.
  - Mount NFS shared directory `/wp-data` to `/var/www/html`.
  - Install and set up WordPress with a database connection.
- **Database Server:**
  - Install MariaDB on Master and Slave servers.
  - Set up Master-Slave replication for database consistency.
  - Mount `/db-data` from the NFS server to store database files.

Expected Outcomes:

- A fully functional multi-server environment.
- Centralized storage management with NFS.
- Scalable and redundant database system using Master-Slave replication.
- Seamless WordPress hosting with persistent storage.

Note: Students need to research and implement the configuration steps for each component.