

# Accounting Directory with NFS and Time Synchronization

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This project implements a solution for the accounting department at Dunder Mifflin to post content to the company website without granting full editing rights. The solution involves setting up an NFS (Network File System) share on **Machine E** and mounting it on **Machine C** to allow for secure file access. The project also addresses time synchronization across the network using NTP, ensuring that all machines are synchronized to the same time server for consistency.

## Key Features

### 1. NFS Export and Mount:

- On **Machine E**:
  - Created the directory `/home/accounting/www` with the same permissions as `/home/accounting` (`rw-rws---`).
  - Set up NFS to export the directory `/home/accounting/www` only to the DMZ subnet, with the following options:
    - `rw`: Read and write access.
    - `sync`: Synchronous file writing.
    - `root_squash`: Maps root to a non-privileged user to prevent security issues.
    - `no_all_squash`: Prevents all user mappings.
- On **Machine C**:
  - Mounted the NFS export from **Machine E** to `/var/www/html/dundermifflin/accounting`.
  - Ensured that any files from this directory are accessible via the web server at the URL <http://www.dundermifflin.com/accounting/foo.html>.
  - Mounted with the options `ro` (read-only) and `soft` to ensure better handling of server unavailability.

### 2. Web Server Configuration:

- Ensured that the DocumentRoot for the Dunder-Mifflin website is correctly set to `/var/www/html/dundermifflin` and serves the existing content properly.
- Students in 5030 and 5113: Ensured that the backup web server is synchronized to match the primary server's content.

### 3. Time Synchronization:

- On **Machine A**:
  - Configured **chrony** to sync time with the NIST servers (`time-a-www.nist.gov` and `time-a-b.nist.gov`) as Stratum 2 NTP server.
  - Configured **Machine A** as the NTP server for the LAN and DMZ network.
- On **Machines B-F (and X)**:
  - Updated DHCP and other configuration files to ensure all machines use **Machine A** as their NTP server.
- On **Debian machines**:
  - Enabled and configured `systemd-timesyncd` for time synchronization.
- Installed and configured **ntpd** on the BSD machine.

### 4. Group Management:

- Applied necessary corrections from previous assignments to ensure the accounting group exists on all machines with the appropriate members.

### 5. Configuring Automounter with Direct Map for On-Demand Mounting of Accounting Directory:

- Configured the **automounter** to use a direct map, which ensures that the `/var/www/html/dundermifflin/accounting` directory is only mounted from **Machine E** when the directory is accessed, improving efficiency and system performance.

This solution helps streamline the process for the accounting department to update website content, while maintaining security and efficiency across the network. It also ensures that time synchronization is consistent and accurate across all machines in the infrastructure.