Web-based File Hosting System

Jeetesh Mangwani, 10314
Kaustubh Tapi, 10346
Harshit Maheshwari, 10290
Jitendra Kumar Dhakar, 10316

Introduction

Web-based file hosting system provides a web based platform for users to host files. It allows users to upload files and get distributible links which can be used by intended recipient to download the same file. It also allows the users to backup their files on an external server.

Implementation Details

We have implemented the server using the LAMP (Linux, Apache HTTP Server, MySql, PHP) software bundle. We have created the following php files:

PHP

index.php

This is the main page of our project. The user can login after registering with the server. We have also provided for CAPTCHA authentication to distinguish user access from automated access.

captcha.php

This file generates a CAPTHA image in a PNG format to be used on the main page(index.php) of the server.

guard.php

This is a PHP code snippet and included as header of all other PHP files. It acts as a "guard" by ensuring that user can access the page only if he is logged in. Also, it destroys the session that has timed out due to long user inactivity. If the user is not logged in he is redirected to the main page(index.php) page.

account.php

After the user has successfully logged in this file displays the user account. There are two iframe objects embedded in this page, namely 'leftpane' and 'rightpane'. The 'leftpane' displays the directory structure of the user account in a tree format. The 'rightpane' displays the directory or file details of the currently selected directory or file. If a directory is selected, then the 'rightpane' displays the following information:

1. Directory name
2. Time of creation
3. Time of last access
4. Directory renaming option
5. Directory deletion option
6. Subdirectory creation option
7. File uploading option

If a file is selected, then the 'rightpane' displays the following information:

1. File name

2. File size (in bytes)
3. File type (MIME type)
4. Time of upload
5. Time of last download
6. File download link
7. No. of downloads
8. A checkbox to set whether download is allowed or not
9. File rename option
10. File deletion option

directory.php
This file displays the directory structure of the user in a tree format. The file contains a print_dir($inode) function which is a recursive function that displays the directory structure in a tree format in the 'leftpane' of the userpage. It is the 'src' attribute of the 'leftpane' iframe of user account page.

dblink.php
This PHP file establishes a connection to the MySQL database on the server. On failure, it prints the error message.

inode.php
Displays details specific to a particular inode in our simulated file system. An inode can be a file or a direcotory.

upload.php
This PHP code snippet looks out for any file uploaded by the user. If found, it creates a new inode and saves the file.

download.php
This PHP file handles file downloads from the server. A valid link is replied back with the corresponding file (if it is set downloadable). An error message is displayed otherwise.

delete.php
This PHP file deletes an inode. It contains a delete($inode) function which recursively deletes a directory and all its child inodes. Redirects to inode.php after the operation. (**home** directory cannot be deleted.)

footer.php
This php file contains a set of PHP commands common to many PHP files. The commands flush the output buffer.

<u>MySQL</u>

We have implemented the file hosting server with the help of MySQL DBMS. When a user registers successfully, a record is inserted into the '**users**' table with the following fields:
- **userid**
  - Uniquely identifies all the users
- **username**

- This field contains names of the users (max size: 255 characters)
- **password**
  - This field contains passwords of the users (max size: 255 characters)

At the time of successful registration of a use, a table (with a name same as username) is also created which contains the following fields:
- **inode**
  - Uniquely identifies all the directories and files
- **name**
  - Contains the name of the file or directory (maximum size -255 characters)
- **filedir**
  - This indicates whether the inode is a directory or a file
- **size**
  - Contains the size of file inode, zero for directory inodes
- **mime**
  - This field indicates the file type. The default is set to "text/plain" for files and NULL for directories
- **parent**
  - This field stores the inode number of the parent and is essential for implementing hierarchical structure of the simulated file system
- **data**
  - It stores the actual binary data forming the content of the file
- **uploaded**
  - This shows the time of creation of the file or directory on the server
- **downloaded**
  - The time when the last download of the file occurred
- **downloads**
  - This field indicates the number of time a file has been downloaded
- **downloadable**
  - This field indicates whether the selected file is downloadable or not

Functionality
- For security purpose we have provided for password and CAPTCHA authentication.
- A person can access his account only when he is logged in. A user is automatically logged out on long inactivity.
- Every user can create any directory structure for himself(we have allowed subdirectory creation).
- User can upload files(up to 5MB in size)
- User can download a file any number of times.
- Our file hosting system remembers the last time a file was downloaded.
- Users can rename a directory/file.
- Users can delete files and directories.
- We even allow the deletion of non-empty directories.
- Download link has been provided for each file that is uploaded.
- User can decide whether to keep the file downloadable or not.

Server's System Specification

Ubuntu
Release 11.04 (natty)
Kernel Linux 2.6.38-8-generic
GNOME 2.32.1

Server version: Apache/2.2.17 (Ubuntu)
Server built: Feb 14 2012 19:59:02

PHP 5.3.5-1ubuntu7.11 with Suhosin-Patch (cli) (built: Sep 12 2012 18:47:04)
Copyright (c) 1997-2009 The PHP Group
Zend Engine v2.3.0, Copyright (c) 1998-2010 Zend Technologies

mysql Ver 14.14 Distrib 5.1.63, for debian-linux-gnu (x86_64) using readline 6.2

Screenshot