iDrive

(A back-up utility)

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Revision History

Version	Date	Author(s)	Description
v1.0	09/11/2014	Ambuj Som, Mohit Sharma, Rohit Patiyal	Final Report

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Introduction

This Software named 'iDrive' is a utility which features backing up the files from a particular folder to the server and vice-versa.The iDrive system is based on file transfer using ssh. It is an linux based software system system for personal machines. It provides functionalities includes folder backup, file sharing, manual, auto and scheduled syncing. It has an easy-to-use Terminal interface for the users providing all the options and features.

- *Need and Purpose*

  iDrive mainly intends to prevent the loss of documents by creating a back-up of all the files saved in a particular folder.

Description

This Software would be able to backup a folder on a system and vice-versa while mainly focusing on addressing the problem of loss of documents. It uses linux tools and commands like rsync, chown etc to manipulate the syncing of the files/folders.

- *Features and Functions*

  iDrive provides following features:

  1. Current Status
  2. iAuto Sync
  3. Schedule iSync
  4. Manual iSync
  5. Data Retrieval
  6. File Sharing

Operating Environment

- *Hardware*

  iDrive requires an entry-level PC which have enough free space equivalent to space allotted to for syncing.

- *Software*

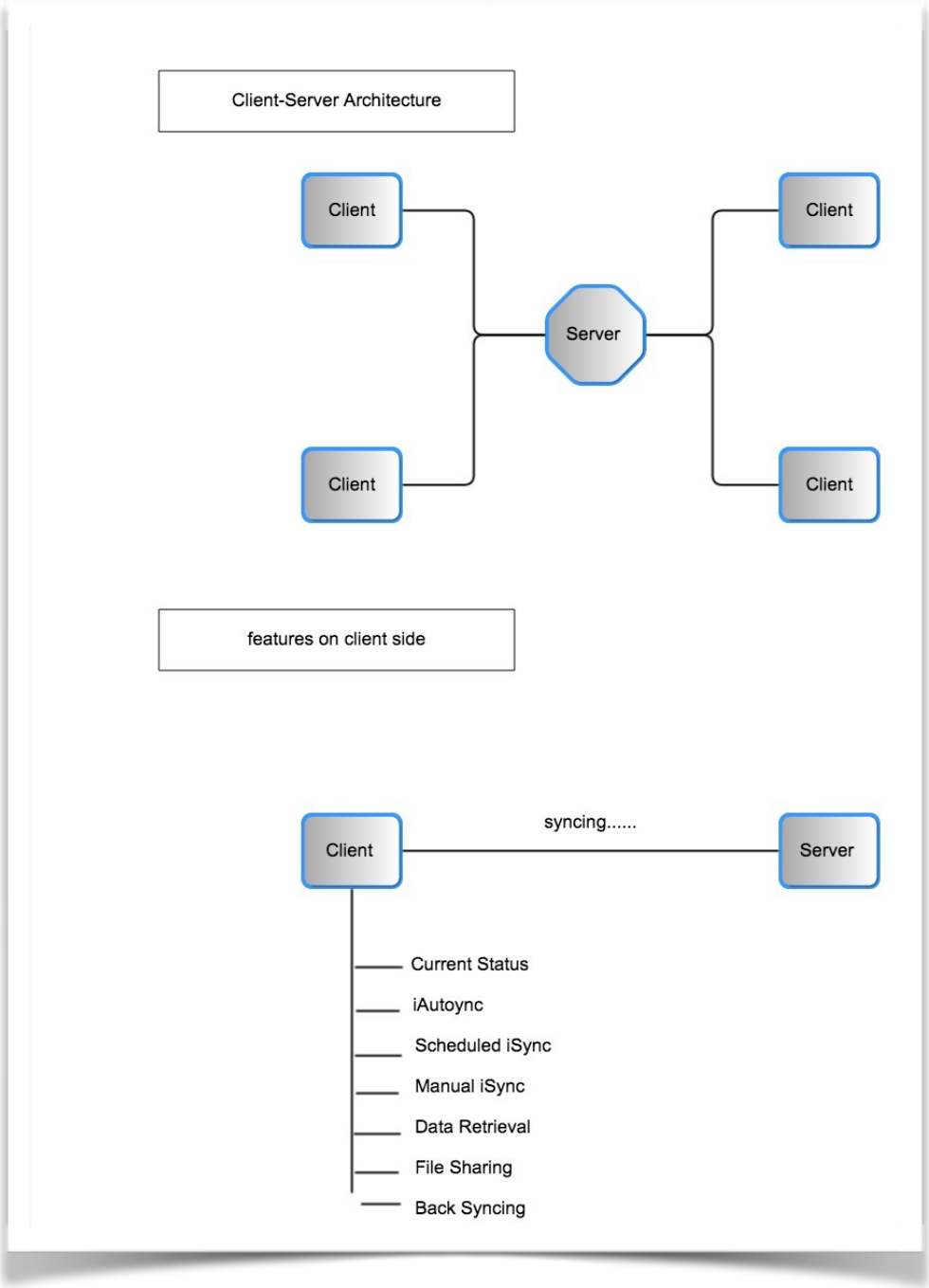
  The iDrive server can run on any recent version of Linux, such as Ubuntu, Fedora, etc. It requires :

  1. gcc for C,C++
  2. rsync
  3. dirent
  4. sockets
  5. ssh or other remote login program
  6. web sockets
  7. pthread libraries
  8. sshpass

Detailed Design

- *Architecture*

  The iDrive architecture follows the basic client-server architecture where multiple clients make requests and the server provides services including storage and communicates using sockets if necessary.



- *Components*

  The System Commands are used as-is. Commands like mkdir, ls and rsync are used extensively.

  The Client GUI are written in C++ with interactive options making it very user-friendly even for novice users.

  The Users accounts which allow the users to access iDrive folders are authenticated via username and password. Only ssh is used from the clients for the syncing process. Some Communication via TCP sockets is planned for efficient interaction with the server.

- *Interface*

  The interface between the client and the user is via TCP sockets for communication and ssh for file syncing.

Algorithms and Data Structures

There are no significant algorithms developed for this product. The only important data structure is on the server side and that is a vector/ list /hash table for keeping record of the users registered for iDrive and for manipulating the file sharing among different users. The use of this data structure can be eliminated by doing dynamic searching based on the request queries.

Specific Requirement

- *External Interfaces*

  The server's performance including number of clients supported at a time etc will depend upon the hardware provided. So major requirement is the hardware of the clients and the servers. It uses the default file system structure of the Operating System i.e Linux (Fedora/Ubuntu etc).

- *Performance Requirements*

  The software requires active internet connection for the syncing process.The server system should be capable of handling large files and should have sufficient storage space. The read and write capabilities of the clients and especially the server should be good for the smooth performance of the software.This product is benchmarked on ubuntu PC’s both for server and clients.