"Design of Efficient Backup with Security"

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Abstract: Day by days the workload in organizations is increasing rapidly. There is large amount of data is to be handled. In case of important data, their regular backup is important. Many organizations follow manual techniques for backing up the data. If the data is important and large size. In such cases, we provide advanced software approaches for backing up the data. So we have a concept of regular data backup through advance software approaches. Manually, it is very hard to backup only that data which is modified on any particular date or any particular date range. This concept of regular data backup for any organization on periodic basis. It means the software will take backup of any specified location and will generate logs, error logs, size trends and many more. This concept can raise many new trends in data backup. As backup remains as problematic as ever, but there are several emerging trends in technology and functional convergence that should address some of the biggest challenges: increasing capacities, shrinking backup windows, increasing recovery point requirements, and limited budgets etc. We are trying to tackle such issues through our backup system by using advanced technology approaches.

Keywords: Backup, Security, Efficiency, Recovery.

I. INTRODUCTION

Backup refers to making copies of data so that these additional copies may be used to restore the original after a data loss event. These additional copies are typically called "backups." Backups are useful primarily for two purposes. The first is to restore a state following a disaster. The second is to restore small numbers of files after they have been accidentally deleted or corrupted. Backups are typically that last line of defence against data loss, and consequently the least granular and the least convenient to use. Before data is sent to its storage location, it is selected, extracted, and manipulated. Many different techniques have been developed to optimize the backup procedure.

Day by days the workload in organizations is increasing rapidly. There is large amount of data is to be handled. In case of important data, their regular backup is important. Many organizations follow manual techniques for backing up the data.
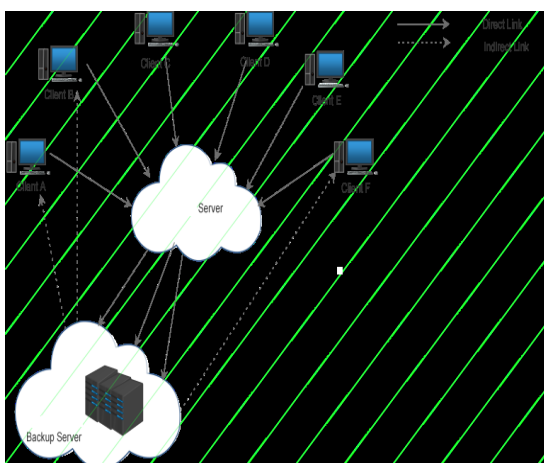

Fig1. System Design of backup model

If the data are important and large, in such cases, what if we provide advanced software approaches for backing up the data. So we have a concept of regular data backup through advance software approaches.

Manually, it is very hard to backup only that data which is modified on any particular date or any particular date range. So we can use advance technologies software.

We have concept of regular data backup for any organization on periodic basis. It means the software will take backup of any specified location and will generate logs, error logs, size trends and many more. This concept can raise many new trends in data backup.

As backup remains as problematic as ever, but there are several emerging trends in technology and functional convergence that should address some of the biggest challenges: increasing capacities, shrinking backup windows, increasing recovery point requirements, and limited budgets etc. We are trying to tackle such issues through our backup system by using advanced technology approaches.

The software application in our eye will do following tasks.

1. Compare backup status to generate file trends and reports.

2. Retrieve files based on date or date range options from any location to particular location without breaking continuity.

3. Generate logs of backup like size logs, copy logs etc.

4. Generate error logs of backup e.g. a file not copied; it will tell why it is not copied.

II. OBJECTIVES

Interface – No confusing interface for the client, software installs on client machine.

Platform - To offer functionality of software package under .NET framework.

Industry orientation – Software program interface useful in industries.

User interface – To develop a user friendly and easy to use interface adhering to standard formats.

Authorization – We give access to only authorized clients.

Presentation – We try to build the GUI of software so it is easy to access by any type of user.

Documentation – All the developed stages of software should be properly documented. The documentation should include the SRS and User manual and test cases.

Reusability – Templates should be made for the   new algorithms developed during the development of that they can be reusable. This will be insured using Object Oriented Approach.

Optimization - The code should be optimized for resource utilization, execution time and size.

Security – The login-id and password, which are stored in database, should be secured from unnecessary access by malicious use.

III. LITERATURE REVIEW

Design of Efficient Backup Scheduling[3], our goal is to automate the design of a backup   schedule that minimize the overall completion time for a given set of backup jobs. While there is a growing variety of services and systems that provide efficient file system backups over the internet, the traditional tape-based backup is still a preferred choice in many enterprise environments and the best choice for long-term data backup and data archival.

Data generated in electronic form are large in amount. To maintain this data efficiently, there is a necessity of data recovery services. To cater this, we propose a smart remote data backup [7].

IV. IMPLEMENTATION DETAILS

A.MODULES & THEIR FUNCTIONALITY

The object design consists of the five modules:

1.Administrative Module:
This module is visible only at admin level.

1). Machine Manager:
This is responsible for adding, deleting, editing machines on which the software runs.
2). Location manager:
This sub module is responsible for adding server location where the backup data is stored.
3). Users Manager:
It has three sub parts:-
1. Manage users:
This is responsible for adding new users to software. The users have two levels
> 1. Admin level.
> 2. User level.

2. Manage user locations:
This is responsible for assigning server locations to users to store data.
3. Manage user machine association:
This is used when software is used in network to assign machine to user to work.

2. Backup Module:
In the backup utility service the back module is responsible for taking backup of data to destination. This is totally automatic service.

We just have to schedule the service when it should run in the profile. When user initializes machine the backup utility service starts with date and time specified in profile.

User can create number of profiles with different source locations. The user have to specify time at which back up should be taken with   source file of which backup should be taken & destination file at which back should be stored.

3. Retrieval Module:
In the retrieval module to retrieve data from backup server there is application window. In this application window we have to specify the date or date range from which we want data. This request is sent to file processor. File processor checks for files which it has to retrieve in the database.

To retrieve files stored at backup server the software checks for list of files stored at database at particular date. Then copy processor take names of files from database which it has to retrieve & copies that files to specified location. After the copying of file is completed the log is generated for it. If retrieval is successful   then it creates log which contains name of files retrieved

If file is not copied back then it creates log & error log for it .The error log consist of reason of failure. After the log generation the database is also updated which gives information about whether retrievel is successful or not.

4. Log Generator Module:
The log generator module generates log whenever the retrieval of data is done. If the retrieval is successful then it creates the log showing files which are successfully restored. If the retrieval is failed then it creates two logs:

One showing the retrieval is failed. Another showing error log which gives information about file which is not restored on client machine with reason.

5. Report Module:
The report module generates reports whenever there is request for report then data is retrieved from database.

The report generator process takes data from database & generates report. The report generator process generates report as specified by user.

In report module the user sends request for report which include type i.e. whether it should be daily/weekly/monthly.

V. RESULT ANALYSIS

Fig2.First splash screen is open.
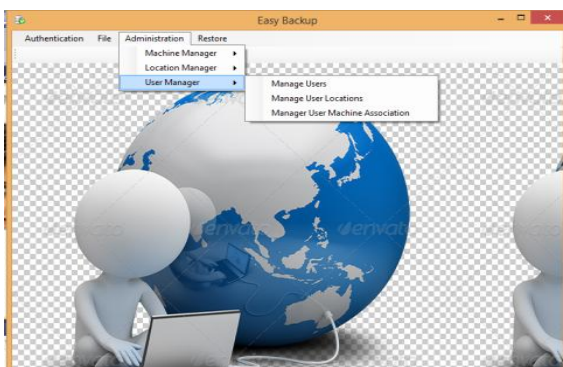
fig3. Main Backup Form.
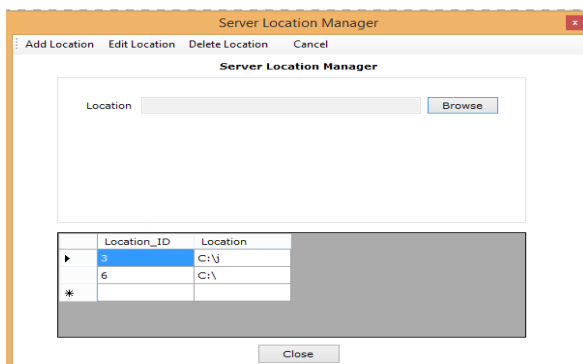
Fig4. Add the server location where the data is stored.
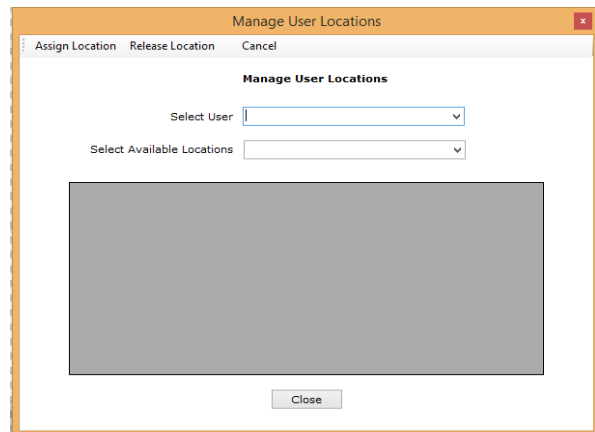
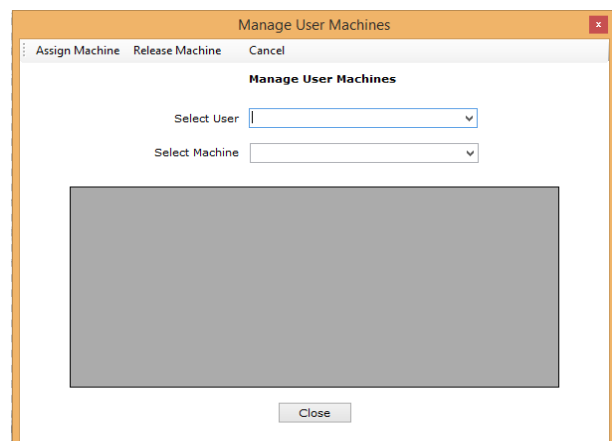Fig5. Select the User and assign the location of data.
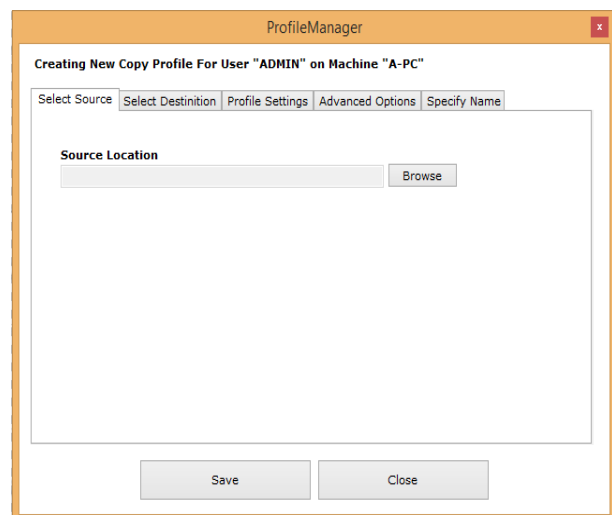

Fig6. Assign machine to the User.

Fig7. Manage the profile.

VI.CONCLUSION

Application backup data at given location successfully if required conditions are available. Profile wise working is successful according to given creating. Editing, deleting, restoring. Consequently, many organizations have significant amounts of backup data stored on tape, and are interested in improving performance of tape based data protection solution.

In this paper, we pursue a goal for automated design of a backup that minimizes the overall completion time for a given set of backup jobs.

In this paper, we proposed an automatic data backup which helps the user to recover the disaster files from the remote location.

Experimentation and results shows that there is no modification can be done in the original file so the integrity of the file should be maintained and the time related issues also being solved by the proposed automatic backup so, it took minimum time to recover the files from remote server.

In short, This project will done important task of backup based on customized settings, plus it will log everything it is doing, and very importantly, it will enable us to recover files, and will generate organizational reports for enhancement.

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REFERENCES

[1] Ludmila Cherkasova, "Design of Efficient Backup", IEEE, 2010.
[2] S. Deepa and Dr. G. Rsmschandran, "Disaster Recovery System Using Seed Block Algorithm in Cloud Computing Environment", IEEE, 2015.
[3] Lucy.cherkasova, alex.zhang,xiaozhou.li@hp.com
[4] R. V. Gandhi and M Seshaiah "Data Back-Up and Recovery Techniques for Cloud Server Using Seed Block Algorithm", 2015.
[5] Noriharu Miyaho and Yoichiro Ueno, "Study of a Secure Backup NetworkMechanism for   Disaster Recovery and Practical NetworkApplication", 2010.
[6] C.L. McCreary and A.A. Khan, "A Comparison of Heuristics for Scheduling DAGs on Multiprocessors".