

A Strategic Approach to Human resource planning (H R P):

An exercise to meet HRM objectives

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Abstract

Human resource planning has traditionally been used by organizations to ensure that the right person is in the right job at the right time. Increasing environmental instability, demographic shifts, changes in technology, and heightened international competition are changing the need for and the nature of human resource planning in leading organizations. Planning is increasingly the product of the interaction between line management and planners. In addition, organizations are realizing that in order to adequately address human resource concerns, they must initiate better human resource planning.

Introduction

Contemporary human resource planning occurs within the broad context of organizational and strategic business planning. It involves forecasting the organization's future human resource needs and planning for how those needs will be met. It includes establishing objectives and then

developing and implementing programs (staffing, appraising, compensating, and training) to ensure that people are available with the appropriate characteristics and skills when and where the organization needs them. It may also involve developing and implementing programs to improve employee performance or to increase employee satisfaction and involvement in order to boost organizational productivity, quality, or innovation (Mills, 1985b).

Finally, "HRP includes estimation of how many qualified people are necessary to carry out the assigned activities, how many people will be available, and what, if anything, must be done to ensure personnel supply equals personnel demand at the appropriate point in the future." Another explanation can be "HRP is a Process, by which an organization ensures that it has the right number and kind of people at the right place, at the right time, capable of effectively and efficiently completing those tasks that will help the organization achieve its overall objectives." Human resources is part of the strategic (business) planning process. It's part of policy development, line extension planning and the merger and acquisition processes. Little is done in the company that doesn't involve us in the planning, policy or finalization stages of any deal. (Lawrence, 1989, p. 70)

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Factors Underlying Increased Interest in Human Resource Planning

Undoubtedly, there are many factors that account for the increased attention directed to human resource planning, but environmental forces-globalization, new technologies, economic conditions, and a changing work force seem particularly potent (Dumaine, 1989; Dyer & Heyer,

1984; Greenhalgh, McKersie, & Gilkey, 1986). These create complexity and uncertainty for organizations. Uncertainty can interfere with efficient operations, so organizations typically attempt to reduce its impact; formal planning is one common tactic used by organizations to buffer themselves from environmental uncertainty (Thompson, 1967).

Meaning / Purpose of HRP

- In simple words HRP is understood as the process of forecasting an organization's future demand for and supply of the right type of people in the right numbers.
- It is only after HRP is done, that the company can initiate and plan the recruitment and selection process.
- HRP is a sub-system in the total organizational planning.
- HRP facilitates the realization of the company's objectives by providing right type and right number of personnel.
- HRP is important because without a clear-cut manpower planning, estimation of a organization's human resource need is reduced to mere guesswork.

Need & Importance of HRP

Forecast future personnel needs: To avoid the situations of surplus or deficiency of manpower in future, it is important to plan your manpower in advance. For this purpose a proper forecasting of futures business needs helps you to ascertain our future manpower needs. From this angle, HRP plays an important role to predict the right size of manpower in the organization.

Cope with change: HRP enables an enterprise to cope with changes in competitive forces, markets, technology, products and government regulations. Such changes generate changes in job content, skills demands and number of human resources required.

Creating highly talented personnel: Since jobs are becoming highly intellectual and incumbents getting vastly professionalized, HRP helps prevent shortages of labor caused by attritions. Further technology changes would further upgrade or degrade jobs and create manpower shortages. In these situations only accurate human resource planning can help to

meet the resource requirements. Further HRP is also an answer to the problems of succession planning.

Protection of weaker sections: A well-conceived personnel planning would also help to protect the interests of the SC/ST, physically handicapped, children of socially oppressed and backward classes who enjoy a certain percentage of employments notwithstanding the constitutional provisions of equal opportunity for all.

International strategies: International expansion strategies largely depend upon effective HRP. With growing trends towards global operations, the need for HRP further becomes more important as the need to integrate HRP more closely into the organization keeps growing. This is also because the process of meeting staffing needs from foreign countries grows in a complex manner.

Foundation of personnel functions: **HRP provides essential information for designing and implementing personnel functions such as recruitment, selection, personnel development, training and development etc.**

Increasing investments in HR: Another importance is the investment that an organization makes in human capital. It is important that employees are used effectively throughout their careers. Because human assets can increase the organization value tremendously as opposed to physical assets

Resistance to change & move: The growing resistance towards change and move, self-evaluation, loyalty and dedication making it more difficult to assume that organization can move its employees everywhere. Here HRP becomes very important and needs the resources to be planned carefully.

Other benefits: Following are the other benefits of HRP.

1. Upper management has a better view of HR dimensions of business
2. Management can anticipate imbalances before they become unmanageable and expensive.
3. More time is provided to locate talent
4. Better opportunities exists to include women and minorities in future growth plans
5. Better planning of assignments to develop managers
6. Major and successful demands on local labor markets can be made.

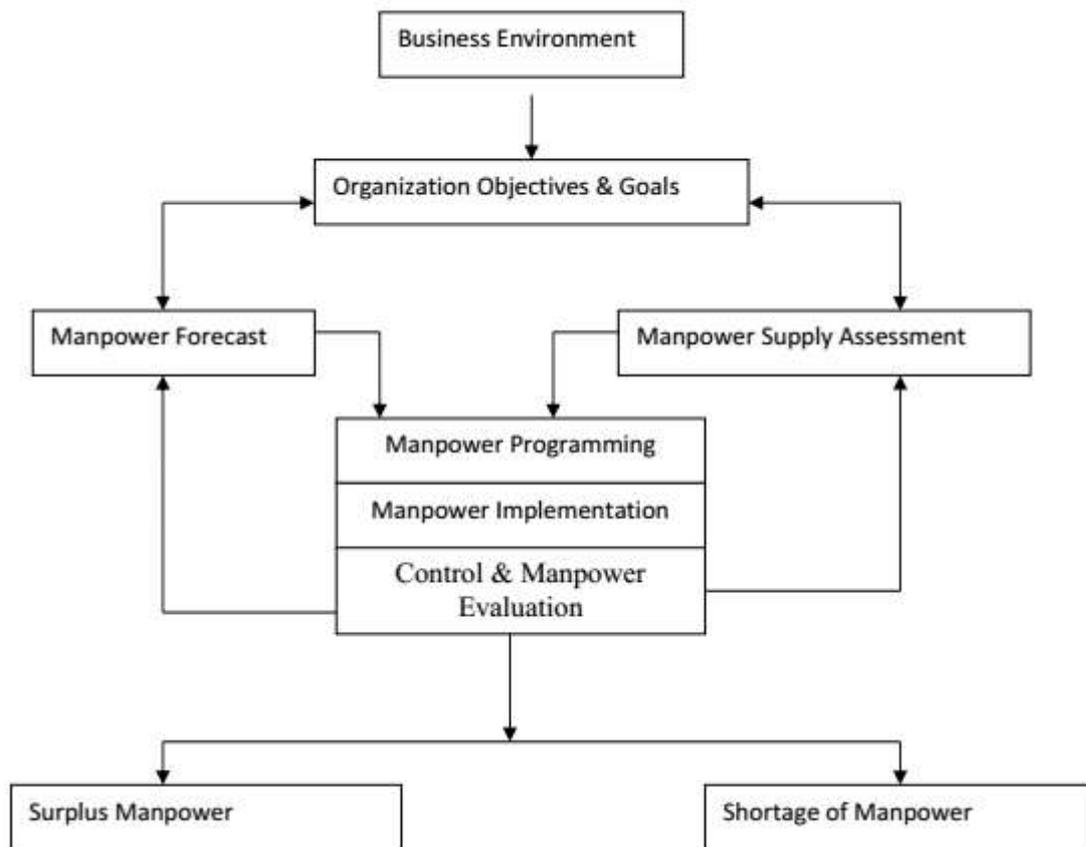
HRP System

HRP System as such includes following elements or sets for planning

1. Overall Organization Objectives
2. Business Environment

3. Forecasting Manpower Needs
4. Assessing Manpower Supply
5. Matching Manpower Demand-Supply factors

Based on these elements we can draw “HRP System Architecture” as under.



HRP Process Organizational Objectives & Policies: -

The objectives of HR plan must be derived from organizational objectives like specific requirements of numbers and characteristics of employees etc. HRP needs to sub-serve the overall objectives by ensuring availability and utilization of human resources. Specific policies need to be formulated to address the following decisions.

- Internal Hiring or External Hiring?
- Training & Development plans
- Union Constraints
- Job enrichment issues

- Rightsizing organization
- Automation needs
- Continuous availability of adaptive and flexible workforce

Manpower Demand Forecasting: -

It is the process of estimating the future quantity and quality of people required. The basis should be annual budget and long term corporate plans Demand forecasting should be based on following factors.

Internal Factors: -

- Budget constraints
- Production levels
- New products and services
- Organizational structure
- Employee separation

External Factors: -

- Competition environment
- Economic climate
- Laws and regulatory bodies • Technology changes
- Social Factors

Reasons for Manpower Demand Forecasting: -

- To quantify jobs
- To determine the Staff-mix
- To assess staffing levels and avoid unnecessary costs
- Prevent shortages of people
- Monitor compliances of legal requirements with regards to reservations

Manpower Forecasting Techniques: -

Management Judgment: In this techniques managers across all the levels decide the forecast on their own judgment. This can be bottom-up or top-down approach and judgments can be reviewed across departments, divisions and top management can conclude on final numbers of manpower required.

Ration-Trend Analysis: This technique involves studying past ratios, and forecasting future ratios making some allowance for changes in the organization or its methods.

Work Study Techniques: It is possible when work measurement to calculate the length of operations and the amount of manpower required. The starting point can be production budget, followed by standard hours, output per hour; man-hours required etc could be computed.

Delphi Techniques: This technique solicits estimates from a group of experts, and HRP experts normally act as intermediaries, summarizes various responses and report the findings back to experts.

Flow Models: This technique involves the flow of following components. Determine the time required, Establish categories, Count annual movements, Estimate probable transitions. Here demand is a function of replacing those who make a transition.

Manpower Supply Forecasting: -

This process measures the number of people likely to be available from within and outside the organization after making allowance for absenteeism, internal movements and promotions, wastages, changes in hours and other conditions of work.

Reasons for Manpower Supply Forecasting:

- Clarify Staff-mixes exist in the future
- Assess existing staff levels
- Prevent shortages
- Monitor expected future compliance of legal requirements of job reservations

Supply Analysis covers:

Existing Human Resources: HR Audits facilitate analysis of existing employees with skills and abilities. The existing employees can be categorized as skills inventories (non-managers) and managerial inventories (managers) Skill inventory would include the following;

- Personal data
- Skills
- Special Qualifications
- Salary
- Job History
- Company data
- Capabilities
- Special preferences

Management inventories would include the following

- Work History
- Strengths
- Weaknesses
- Promotion Potential
- Career Goals
- Personal Data
- Number and Types of Subordinates
- Total Budget Managed
- Previous Management Duties

Internal Supply: -

Internal supply techniques help to assess the following

- Inflows and outflows (transfers, promotions, separations, resignations, retirements etc.)

- Turnover rate (No. Of separations p.a. / Average employees p.a. X 100)
- Conditions of work (working hours, overtime, etc.)
- Absenteeism (leaves, absences)
- Productivity level
- Job movements (Job rotations or cross functional utilizations)

External Supply: -

External sources are required for following reasons

- New blood,
- New experiences
- Replenish lost personnel
- Organizational growth
- Diversification

External sources can be colleges and universities, consultants, competitors and unsolicited applications.

HR Plan Implementation: -

A series of action programs are initiated as a part of HR plan implementation as under.
Recruitment & Selection: Employees are hired against the job vacancies. Based on the manpower demand and supply forecasts made, hiring of employees is initiated based on supply forecasts. For this internal and external sources of manpower are utilized. A formal selection board is established to interview and select the best of the candidates for the required vacancies. Finally the selected employees also need to be placed on proper jobs. Here some companies recruit employees for specific jobs while others recruit fresh trainees in large number and train them for future manpower needs.

Training and Development: The training and development program is charted out to cover the number of trainees, existing staff etc. The programs also cover the identification of resource personnel for conducting development program, frequency of training and development programs and budget allocation.

Retraining and Redeployment; New skills are to be imparted to existing staff when technology changes or product line discontinued. Employees need to be redeployed to other departments where they could be gainfully employed.

Retention Plan: Retention plans cover actions, which would reduce avoidable separations of

employees. Using compensation plans, performance appraisals, avoiding conflicts, providing green pastures etc, can do this.

Downsizing plans: Where there is surplus workforce trimming of labor force will be necessary. For these identifying and managing redundancies is very essential.

Managerial Succession Planning; Methods of managerial succession plans may vary. Most successful programs seem to include top managements involvement and commitment, high-level review of succession plans, formal performance assessment and potential assessment and written development plans for individuals. A typical succession planning involves following activities.

- Analysis of demand for managers and professionals
- Audit of existing executives
- Projection of future likely supply from internal and external sources
- Individual career path planning
- Career counseling
- Accelerated promotions
- Performance related training and development
- Strategic recruitment

Conclusion –

Because the purpose of human resource planning is to ensure that the right people are in the right place at the right time, it must be linked with the plans of the total organization. Traditionally, there has been a weak one way linkage between business planning and human resource planning. Business plans, where they exist, have defined human resource needs, thereby making human resource planning a reactive exercise. HR Plan must also clarify responsibilities for control and establish reporting procedures, which will enable achievements to be monitored against the plan. The HR Plan should include budgets, targets and standards. These plans may simply be reports on the numbers employed, recruited against targets etc.

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A Survey on Secure Storage in Cloud Computing

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ABSTRACT

Cloud Computing is continuously evolving and showing consistent growth in the field of computing. It is getting popularity by providing different computing services as cloud storage, cloud hosting and cloud services for different types of industries as well as academics. Cloud storage service avoids the cost expensive on software, personnel maintenance and provides better performance, less storage cost and scalability. But the maintenance of stored data in a secure manner is not an easy task in cloud environment and especially that stored data may not be completely trustworthy. This work surveyed on several existing cloud storage frameworks, techniques and their advantages, drawbacks and also discusses the challenges that are required to implement secure cloud data storage. This survey results help to identify the future research areas and methods for improving the existing drawbacks.

Keywords—*Cloud Computing, Data Security, Software as a Service (SaaS), Platform as a Service (PaaS), Infrastructure as a Service (IaaS)*

I. INTRODUCTION

Cloud Computing is an environment for providing information and resources that are delivered as a service to end-users over the Internet on demand. Thus cloud enables users to access their data from any geographical locations at any time and also has brought benefits in the form of online storage services. Cloud computing has recently emerges as new paradigm for hosting and delivering services over the Internet. Cloud Computing is defined as a service model that enables convenient, on-demand network access to a large shared pool of configurable computing resources (e.g., network, servers, storage, application and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. [1] Cloud Computing is the use of computing resources such as hardware and software that are delivered as services over the internet. The term “cloud” originates from the telecommunications world of the 1990s, when providers began using virtual private network (VPN) services for data communication. [2]

Reason for moving into Cloud is simply because of Cloud allows users to access applications from anywhere at any time through internet. But in past, consumers run their programs and applications from software which downloaded on physical server in their home or building. Cloud provides benefits such as flexibility, disaster recovery, software updates automatically, pay-per-use model and cost reduction. [3] However Cloud also includes major risks such as security, data integrity, network dependency and centralization. When storing customer’s data into cloud data storage, security plays a vital role. Sometimes customers store some sensitive information in cloud storage environment. This causes some serious security issues. So providing security to such sensitive information is one of the difficult problems in Cloud computing.

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II. SERVICES IN CLOUD COMPUTING

A. Infrastructure as a service (IaaS)

This level represents the most computational and storage (e.g., Microsoft, Google, Amazon) manage a vast set of computational and storage resources. Depending on the provider, end users may have direct access of the hardware resources or access to a set of virtual resources. Clouds typically utilize virtual resources and grid applications have direct access to hardware. Application and service built upon virtual resources sets are not hardware dependent and can be deployed seamlessly across different cloud platforms. This service is best representing by services like Amazon EC2, a virtual machine platform [4].

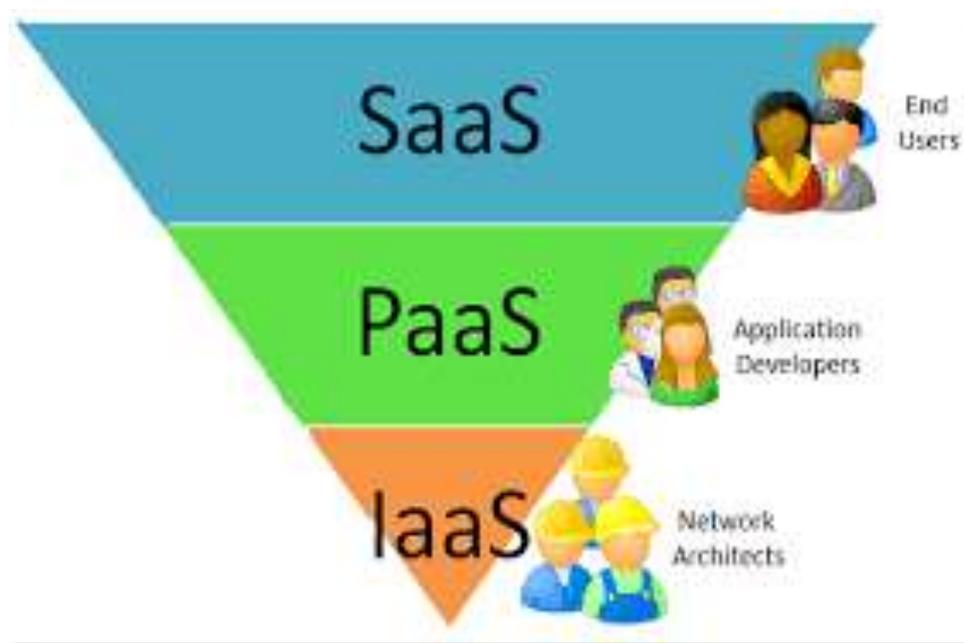


Fig.1 Cloud Computing Services

B. Platform as a service (PaaS)

At the next level of services are presented to users as a software /application platform instead of hardware. Typically this layer consists of application frameworks that make up the basis of the SaaS layer describe next [4]. The Google APP Engine and Microsoft Azure both offer a large set of programming tools at this level.

C. Software as a service (SaaS)

This is the highest level of services provided by cloud platforms. This level provides applications that end users interact with. Examples include Google Docs, Microsoft Office live, Google Maps and Facebook [4].

III. CLOUD STORAGE MODELS

A. Public Cloud:

In this model, general public can access the services, storage, application offered by the provider. Public clouds are owned and managed by the third- party service providers. Flexibility, elastic environment, freedom of self service, pay-per-use, availability, reliability are some of the characteristics of public cloud.[5] The main drawback of this model is lack of high level security. Ex: Amazon Elastic Cloud Compute, Google App Engine, Blue Cloud by IBM. [6]

B. Private Cloud:

A private cloud is one in which the computing environment is operated exclusively for a specific organization. It may be managed by the organization or by a third party, and may be hosted within the organization’s data center or outside of it. The disadvantage of this model is, it is difficult to deploy globally. Amazon Virtual Private Cloud, Microsoft Private Cloud are some of the examples of this model. [7].

C. Hybrid Cloud:

A hybrid cloud is a Cloud Computing environment in which an organization provides and manages some resources in - house and has others provided externally.[8]

D. Community Cloud:

It refers to a special purpose cloud environment which is shared and managed by number of related organization participating in a common domain or vertical market. This deployment model share resources with many organizations in a community that shares common concerns (like security, governance, compliance etc).[6]

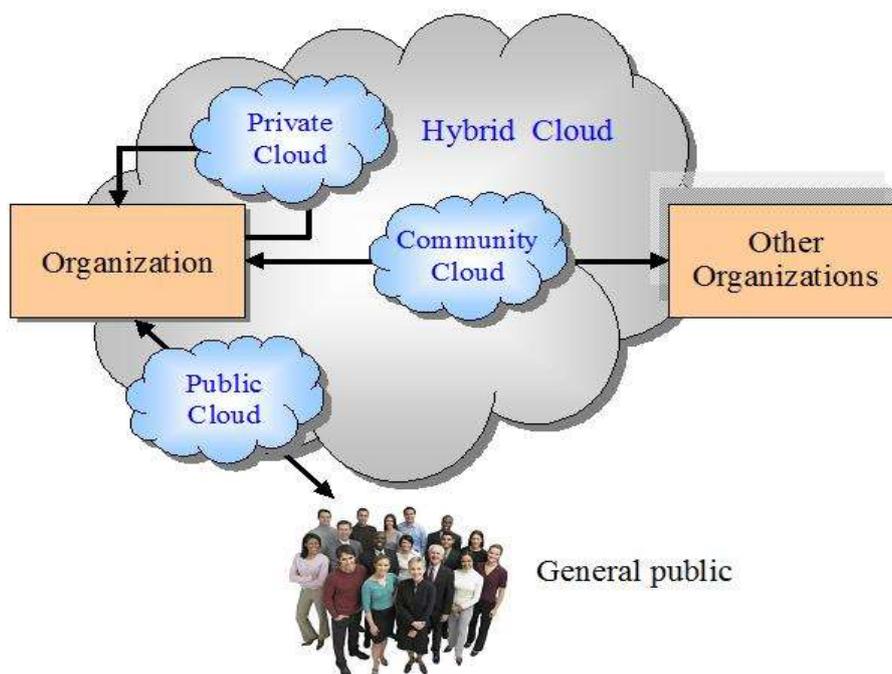


Fig.2 Cloud Computing Model

IV. STORAGE TECHNIQUES IN CLOUD COMPUTING

In this section various existing techniques has been discussed. Cloud storage is regarded as a system of disseminated data centers that generally Utilizes virtualization technology and supplies interface for data storage. Cloud storage is a service model in which data is maintained, managed and backed up remotely and made available to users over a network (typically the Internet).[9]

A. Implicit Storage Security to Data in Online

- Providing implicit storage security to data in online is more beneficial in a cloud computing. The use of a data partitioning scheme for implementing such security involving the roots of a polynomial in finite field. In this scheme data is partitioned in such way that each portion is implicitly secure and does not to be encrypted. These portions are stored on different servers on the network which are known only to the user.
- Reconstruction of the data requires access to each server and the knowledge as to which servers the data portion is stored. Several versions of this scheme are described, which include the implicit storage of encryption keys rather than the data and where a subset of the partition may be brought together to recreate the data.[1]

B. Identify –Based Authentication

- In Cloud Computing, resources and services are distributed across numerous consumers. So there is a chance of various security risks. Therefore authentication of users as well as services is an important requirement for cloud security and trust.
- When SSH Authentication protocol (SAP) was employed to cloud, it becomes very complex. As an alternative to SAP, proposed a new authentication protocol based on identity which is based on hierarchical model with corresponding signature and encryption scheme. [3]
- Signature and encryption schemes are proposed to achieve security in cloud communication. When comparing performance, authentication protocol based on identity is very weightless and more efficient and also weightless protocol for client side.

C. Public Auditing with Complete Data Dynamic Support

- Verification of data integrity at unreliable servers is the major concern in cloud storage with public audit ability trusted entity with expertise and capabilities data owners do not possess can be delegated as an external audit party to access the risk of outsourced data when needed. It also provides a transparent yet cost effective method for data owners to gain trust in the cloud.[11]
- To accomplish, dynamic data support, the existent proof read of PDF (or) POR scheme is improved by spoofing the basic Markel Hash tree (MHT).

D. Efficient Third Party Auditing (TPA)

- Cloud consumers save data in cloud server so that security as well as data storage correctness is primary concern.
- The data owners having huge amount of outsourced data and auditing the data correctness in a cloud environment can be difficult and expensive for data owners [11].

- To support third party auditing where user safely delegate in integrity checking tasks to third party auditors(TPA)this scheme can almost guarantee the simultaneous localization of data error(i.e the identification of misbehaving servers)[3]
- A novel and homogeneous structure is introduced to provide security to different cloud types. To achieve data storage security, BLS (Bonch-Lynn-Sachems) algorithm is used to signing the data blocks before outsourcing data into cloud. Reed Solomon technique is used for error correction and to ensure data storage correction.

E. Way of Dynamically Store Data in Cloud

- Data storage in cloud may not be completely trustable because the clients did not have local copy of data stored in cloud.[11]
- To address these issues proposed a new protocol system using the data reading protocol algorithm to check the data integrity services providers help the clients to check the data security by the proposed effective automatic data reading algorithm.
- A flexible distributed storage integrity auditing mechanism (FDSIAM), this mechanism utilizes the homomorphism tokens, blocking erasure and unblocking factors and distributed erasure coded data [1].

F. Effective and Secure Storage Protocol

- Current trend is users outsourcing data into service provider who have enough area for storage with lower storage cost.
- A secure and efficient storage protocol is proposed that guarantees the data storage confidentiality and integrity [9].
- This protocol is invented by using the construction of elliptic curve cryptography and sober sequence is used to confirm the data integrity.
- Data and software process protocol step executed by cloud customers to add the privacy enforcement structure to the software and data before transferring them to the cloud.
- Challenge response protocol is protocol is credential so that it will not exposes the contents of the data to outsiders.
- Data dynamic operations are also used keep the same security assurance and also provide relief to users from the difficult of data leakage and corruptions problems.

G. Storage Security of Data

- The data is secured in server based on user's choice of security method so that data is given high secure priority resources are being shared across server trouble to data security in cloud.
- Transmitting data over internet is dangerous due to the intruder attacks data encryption plays an important role in cloud environment. Introduced a consistent and novel structure for providing security to cloud types and implemented a secure cross platform [3].
- The proposed effective and flexible distribution scheme two-way handshakes based on token management by utilizing the homomptic token with distributed verification of erasure coded data, our scheme achieves the integration of storage correctness insurance and data error location (i.e.) the identification of misbehaving server.

H. Secure and Dependable Storage Service

- Storage service of permits consumers to the data in cloud as well as allowed to utilize the available well qualified application with no worry data storage maintenance. Although

cloud providers benefits, such a service gives up the self-control of user's data that introduced fresh vulnerability hazards to cloud data correctness [11].

- To handle the novel security issue, accomplish the cloud data integrity and availability assurances, a pliable mechanism is proposed for auditing integrity in a dispersed manner
- The proposed a flexible distributed storage integrity auditing mechanism, utilizing the homomorphism token and distributed coded-data. The proposed design further support secure and efficient dynamic operation on outsource data including block modification, deletion and append.

I. Optimal cloud storage systems

- Cloud data storage which requires no effort is acquiring more popularity for individual, enterprise and institutions data backup and synchronization. The proposed system describes, at a high level, a possible architecture for a cryptographic storage service.
- A taxonomic approach to attain storage service optimality with resource provider, consumer's lifecycle is presented.

J. Process of access and store small files with storage

- To support services extensively, Hadoop distributed file system server reasons are examined for small file trouble of native Hadoop distributed file system. Burden on NameNode of HADOOP distributed file system is enforced by large amount of small files, for data placement correction are not considered prefetching mechanism is not also presented.
- In order to overcome these small size problems, proposed an approach that improves the small files efficiency on Hadoop distributed file system.[3]
- That improves the small file efficiency on Hadoop distributed file system(10), In a large cluster, thousands of servers both host directly attached storage and execute user application task. By distributing storage and computation across many servers the resource an grow with demand while remaining economical at every size.[9]

K. File storage security management

- To assure the security of stored data in cloud, presented a system which utilizes distributed scheme proposed system consists of a master server and a set of slave server. This is not direct commutation link between clients and slave servers in the proposed model.
- Master server is responsible to process the client's request and at slave server chunking operation in order to provide data backup for file recovery in future. clients file is stored in the form of tokens on main server and files were chunked on slave server for file recovery.

L. File Assured Deletion (FADE) for Secure Storage

- Proposed a file assured deletion scheme based on policy to dependably efface files of cancelled file access policies [12]. Working prototype of FADE is implemented at the top of Amazon S3. Performance overhead is also evaluated on Amazon S3.

M. File Assured Deletion Based on Policy

- Data file is logically connected with file access policy and a data key. Each file access policy should be attached with control key.
- Maintenance of control key is the responsibility of key manager. When a policy is cancelled, control key of that policy will be dispatched from the key manager.

- The main idea is as follows: each file with data key is saved and control key is used to protect data key. Here key manager is responsible for retaining keys. The control key is deleted when a policy is cancelled. So that the encrypted file and data key could not be regained.
- In case the file is removed still a copy exists, that file is encrypted and unavailable to everyone. Multiple policies such as conjunctive and disjunctive policies are also presented. Conjunctive policies are used to recover file by satisfying all policies whereas disjunctive policies satisfying only one policy.

N. Accessing Outsourced Data Efficiently

- An approach is proposed to attain flexible access control and dynamic large-scale data in a safe and effective way. An Owner-write-user-read scenario is presented for accessing data [11]. Original data owner be only able to update/ modify their data.
- Cloud users will be able to read information with corresponding access rights. Proposed approach deals with key generation, dynamics handling and overhead analysis.

Table 1. Comparative analysis on advantage and limitation of existing storage techniques

Storage Scheme	Proposed Approach	Advantages	Restrictions
1. Implicit Storage Security to Online data	Data partitioning scheme for online data storage.	Partitioned data pieces cannot bring out any user information.	In case user forgot where the data stored, it will become difficult for users.
2. Identity-Based Authentication	New authentication protocol based on identity which is based on hierarchical model	Weightless and more expeditious.	Only certificate communication is taken into account.
3. Public Auditing with Complete Data Dynamics support	PKC-based homomorphic authenticator is used to outfit the verification protocol.	Basic Markle Hash Tree (MHT) is manipulated for block tag authentication.	Computation cost of BLS scheme is prominent.

4. Efficient Third Party Auditing (TPA)	Novel and uniform security structure. Storage security is accomplished by utilizing BLS algorithm.	Auditor performs auditing jobs for different users at the same.	Unable to support both public verification and dynamic data correctness.
5. Dynamic Storage way in Cloud Computing	New protocol system using the data reading protocol algorithm. Multi server data comparison algorithm to recover data.	Integrity can be verified before and after data insertion.	TPA is not considered for integrity checking process.
6. Effective and Secure Storage Protocol	Efficient and secure storage protocol is implemented by utilizing Elliptic curve cryptography and Sobol Sequence	Block level data dynamic operations are also used to maintain the same security assurance.	Elliptic Curve Cryptography scheme is only suitable for devices with restricted low power.
7. Storage Security of data	Uniform and modern structure of security for different cloud types. SHA Hash, GZIP algorithm and SFSP algorithm.	Provided data backups for data recovery. Includes essential security services such as authentication, encryption and decryption and compression.	Data back ups are available at multiple servers. So there is a chance for servers to behave unreliably.

8. Secure and Dependable Storage Services	Homomorphic token with Reed-Solomon erasure correcting code.	Guaranteed the correctness insurance and also identified the immoral server behavior.	Gross overhead approximately stays equal with other.
9. Optimal Cloud Storage Systems	Taxonomic approach for achieving cloud storage service optimality. Proposed a new NubiSave prototype	Proposed generic architecture served as blueprint for optimal storage controller. NubiSave is available freely.	NubiSave is needs to integrate with frontends for future research.
10. Process of access and store small files with storage	Prefetching technique should be used to make better access efficiency.	Improves the access ability of small files. Cut-off point is measured to improve I/O performance	Formula for cut-off point not available. It will be identified in future.
11. File Storage Security Maintenance	Distributed scheme contains master server and a set of slave servers. Token generation algorithm and merging algorithm are used.	File chunking operation is carried out to provide data backup in case of server failure.	Data chunks are stored in slave server will lead to an opportunity of corrupting data by servers.
12. File Assured Deletion (FADE) for Secure Storage	Conjunctive and disjunctive policies are used for file recovering process.	Support for dynamic data operations and meta data overhead is less.	Time and Space are the major overhead of this scheme.

13. Accessing outsourced data efficiently	An Owner-write-user-read Scenario for accessing data.	Original data owner be only able to update/ modify their data.	Combination of multiple policies is not supported.
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CONCLUSION

Cloud Computing is an emerging computing paradigm, allows users to share resources and information from a pool of distributed computing as a service over Internet. Even though Cloud provides benefits to users, security and privacy of stored data in cloud are still major issues in cloud storage. Cloud storage is much more beneficial and advantageous than the earlier traditional storage systems especially in scalability, cost reduction, portability and functionality requirements. This paper presented a survey on secure storage techniques in Cloud Computing. First several storage techniques that provide security to data in cloud have been discussed in detail and also highlighted the necessity for future research on storage methods to provider much better security and accountability. Finally, presented a comparative analysis on storage techniques, that includes the proposed approach, advantages and limitations of those storage techniques.

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