

# A Study of Secure Data Storage Analysis in Cloud Computing

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**Abstract-** Cloud computing is an identical IT capacity (services, software, or infrastructure) delivered via internet technologies in a pay-per-use, self-service way. Cloud storage based file management services, such as DropBox, Google Drive, OneDrive and Mega, are worldwide resource used by millions of users. Features for rising of outer file systems with DropBox, FTP and GoogleDrive facilitate users have all their file sync and distribute tools in a single interface. Cloud storage like DropBox, Google Drive, OneDrive and Mega Cloud to trust our data on other people's data centre. OwnCloud is open source file sync and share can keep our data on our servers and decide what other public cloud services we want to integrate into personal cloud of cloud storage size, security, and used in platform between online public cloud as OneDrive, GoogleDrive, DropBox, Mega, and private cloud storage OwnCloud with public cloud OpenShift and some file related storage analysis between them.

**Keywords**— DropBox, Google Drive, OneDrive, Mega, OpenShift with OwnCloud, Security Comparisons.

## I. INTRODUCTION

Cloud storage system can be fine planned to be a network of distributed data centers which classically uses cloud computing technologies similar to virtualization, and offer various kind of interface for storing facts. To increase the availability of the data, it may be redundantly stored at dissimilar locations. [10]. It allows user to store up files online so that the user can right to use them from any place via the internet. Many cloud provider's similar services, like GoogleDrive, Microsoft OneDrive, and DropBox. The resources of data storing, accessing are mostly available for free. Users are likely to upload huge amount of private and secretive data [7]. Administrators external cloud storage (DropBox, Google, OneDrive, etc.) and decide whether it is to be accessible by the entire consumer, or a particular consumer. User is capable to do the similar, provided that the initial yet file sync and contribute to capability across multiple cloud services, using OwnCloud as the particular summit of exact to utilize.

## II. Insecure Cloud Data

DropBox and other related cloud such as Sky Drive/OneDrive, GoogleDrive, and, Box all allows user to log in to an account, upload documents and access from any mechanism, wherever at every time. User is able to sync documents across devices and allocate records but, along with the upsides these cloud storage offer like increased efficiency and team collaboration cause grave data insecurity. The largest part cloud storage space services, there are for all time available to be a more under shoot effort to attack Drop Box's infrastructure, and more data to hackers look at [6].

Some to save from impairment information:

- Don't store private information such as tax return, social protection number, DOB, or bank account information on online cloud storage or hard disk.
- If electronic copy of receptive facts is favored, keep them on a removable drive to can be protected away.

#### **A. Microsoft OneDrive:**

Microsoft OneDrive [2] is basically associated with Microsoft's windows phone and windows operating systems, and Office Online. If we have a Microsoft email account outlook or Microsoft hotmail then we already have OneDrive, as well as access to Office Online. A Microsoft window OneDrive is the apps integrated through the OS and is easy to get from start panel. We capable of contact every files from our PC by using OneDrive website. OneDrive is included with Microsoft Office online (and now with Windows 8 as well), we can view our documents online without downloading them to our personal. Microsoft OneDrive gives his users 15 GB at no cost space.

#### **B. Google Drive**

Google Drive [3] is cloud storage space of Google and offers 15 GB at no cost space available while a Google account created. GoogleDrive grant a two-steps authentication process that it won't interfere into the content of the folder unless compelled by law enforcement agencies. GoogleDrive does not provide extra storage space through referral the customer account to community media, similar to OneDrive and DropBox. Data store on GoogleDrive is encrypted to data in 128-bit AES rather than the 256.

#### **C. DropBox**

DropBox [4] is the cloud storage it is consistent, straightforward, and a draft to set up. Our record be present in the cloud and we can get it any time from DropBox website, desktop appliance for Mac, windows and linux, and in mobile iOS, Android, BlackBerry and Kindle Fire mobile apps. We can store any kind of files in Dropbox, by either uploading to the website or adding together with the desktop apps. There is no size limit on files upload to Dropbox by the desktop pc or mobile apps, but bigger files can get several hours to upload, depending on our connection speed. DropBox get a lot of honor for its clean design, and rightfully. DropBox give his user abundance of opportunity to get additional storage space the paltry 2GB we get when with sign up.

### III. PARTIAL SECURE CLOUD

#### **MEGA**

MEGA [5] is cloud storage where we can upload file to their servers and access them it everywhere. MEGA gives his user 50 GB free storage and it is secure cloud storage. It will reduce loading times; improve download performance and strange then security. Secure (auto) updates are provided to cryptographic private key signing. The data encrypted and decrypted throughout the transport process users can access his data anywhere and anytime.

The following Computer hardware configuration used in this research.

Vendor id: Genuine Intel

Model Name: Intel(R) Core(TM) i5-4590 CPU @ 3.30GHz

Architecture: x86\_64

Virtualization: VT-x

CPU op-mode(s): 32-bit, 64-bit

Cached Memory: 8GB

Basic Disk Storage: 320GB

**Table1. Uploaded Files in OneDrive, GoogleDrive, DropBox and Mega**

Cloud Storage			OneDrive	Google Drive	DropBox	Mega
File Name	File Type	File Size(MB)	Uploading Time (Seconds)	Uploading Time (Seconds)	Uploading Time (Seconds)	Uploading Time (Seconds)
WP_20150430_02_12_56_Pro	.jpg	1.6	73	13	10	8
Atif Mashup	.mp3	8.4	19	21	36	14
Cloud Computing	.mp4	81.7	40	35	73	70
DNS Server using BIND on Centos	.mp4	100.3	192	175	75	63
Computer Syster Architecture	.pdf	126.6	121	62	59	58

#### IV. SECURE CLOUD

##### *OwnCloud*

OwnCloud is a software system it is similar like DropBox. Owncloud is free and open source without any charge; it gives unlimited storage space capacity of disk.

##### **Own cloud security [8]**

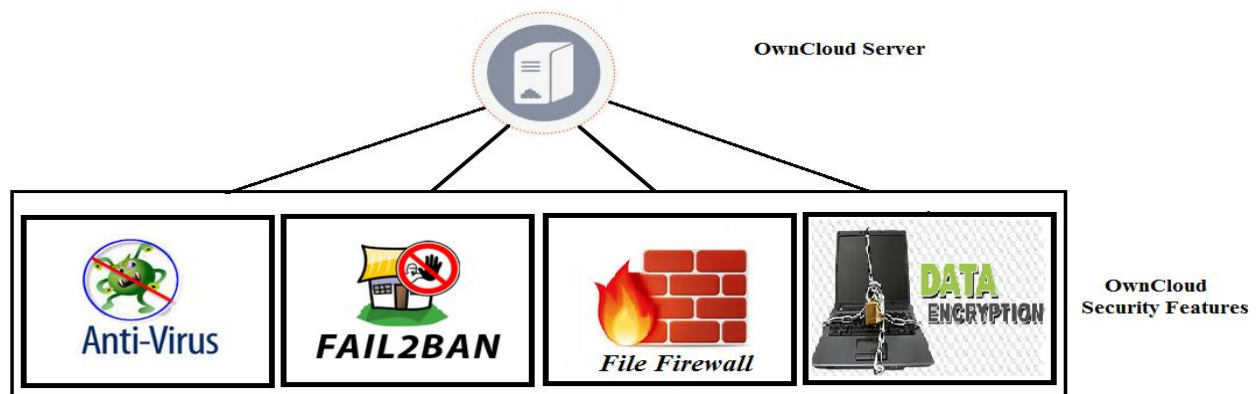


Fig1. OwnCloud security features ensure that data stored on the ownCloud server remains secure [8]

**Keep our data wherever it is:** ownCloud is hosted in our data center or in a third-party data center choice on physical or personal cloud servers.

**Give IT whole manage:** Administrators classify security policies downward to the file provision user and group, observe movement logs and overall system strength, and manage usage and quotas all from ownCloud's admin interface.

**Automate consumer verification:** Built-in wizards allow it to integrate ownCloud with active directory or LDAP and Single Sign on is also supported.

**Restrict access to records at many levels:** File-level permissions can be defined when and where files are shared. Access ending dates and confines are able to be set at several levels. In addition, administrators can use file firewall to create regulations which manage to ownCloud server's base on consumer associations, time interval, and geographic location.






**Ward off virus with antivirus scan:** Uploaded documents are scanned by ClamAV, preventing the potential for usual sharing of infected files. Or, with minimal customization, external bug scanners may used to scan records as they reach your destination going on the server.

**make possible full auditability:** Not simply does ownCloud allow to control each user's permissions, but it also enables a full audit trail allowing to understand how, when and where data is accessed and shared.

### OwnCloud IN OpenShift Platform

OpenShift [1] is a Platform as a Service (PaaS) developed by Redhat and allows to developers quickly and easily apps on cloud. OpenShift supports application produced in an amount of languages include PHP, Java, Ruby and Perl. It allows developers to easily deploy their own app, easy to get, check and set up the ridge open source web applications. Here we set up OwnCloud in OpenShift. OwnCloud is a project aimed users with the abilities as many commercially backed public clouds as OneDrive, GoogleDrive, DropBox, and Mega but by means of the capability to deploy it anywhere we choose. OwnCloud first we create a stub application in the format that OpenShift adds appliance support programming languages, frame, and databases based on cartridges. OwnCloud written in PHP and Java Script. Using php-5.3 cartridge to create the application and then to provide MySQL support to add the mysql-5.1 cartridge. Use the rhc-create-app tool to create application in OpenShift login credentials. We need to provide the password linked with key, produced for the duration of registration.

### V. Comparison of OneDrive Google Drive DropBox Mega and OwnCloud[9]

Service Name	Free storage	OS Supported	Security
	15 GB	Windows, Mac, Android, iOS, Blackberry	SSL only
	15 GB	Windows, Mac, Android, iOS	SSL/TLS only
	2 GB	Windows, Mac, Linux, Android, iOS, Blackberry, Kindle Fire	Secure Sockets Layer (SSL) and AES-256 bit
	50 GB	Windows Android, BlackBerry OS and iOS	2048-bit private/public
	no limits on storage space (except for disk capacity)	Windows, Mac ,OS X , Linux, Android and iOS	TLS,HTTPS,CSR, 2048-bit RSA key, owner should be root and the permissions 640

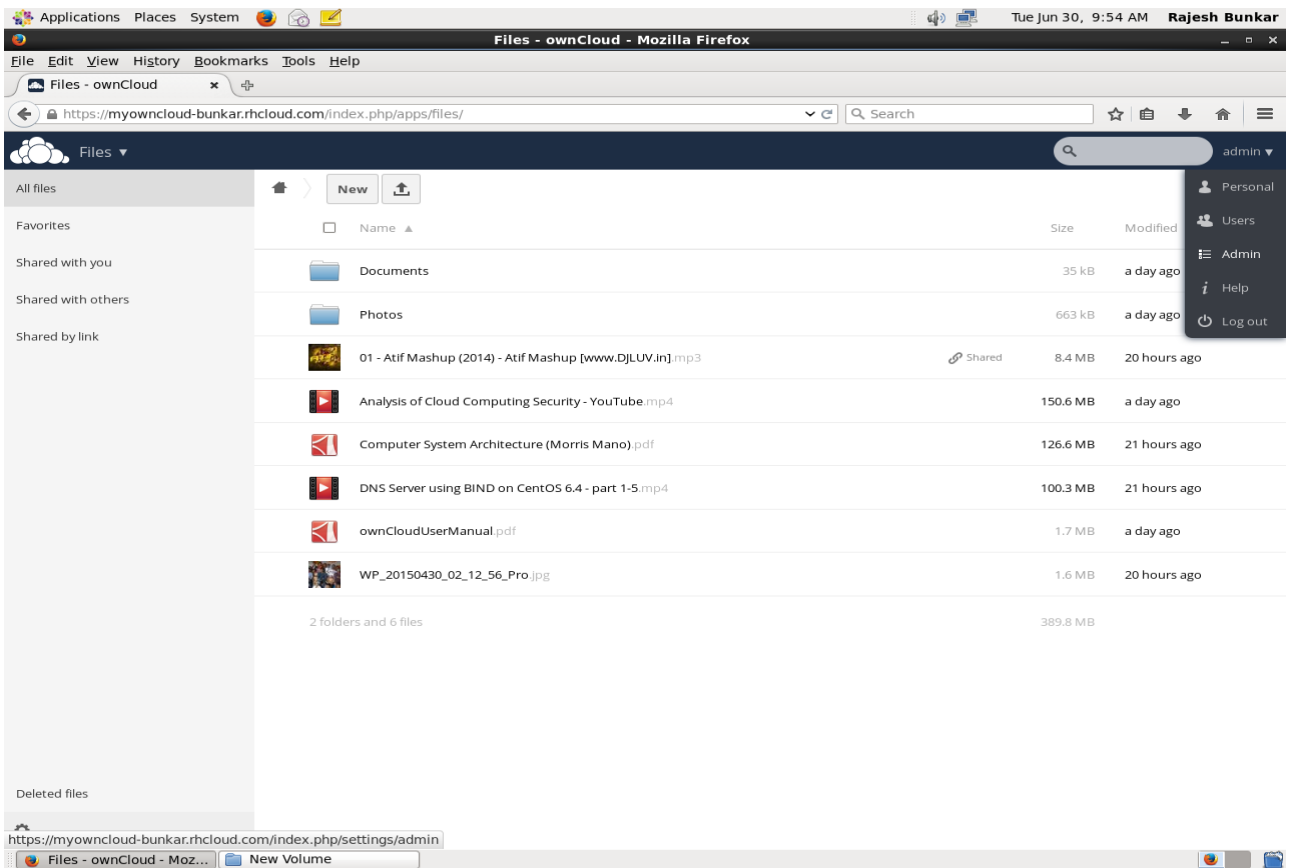
**Table2 Comparisons of cloud storage**

The key difference between OwnCloud and other cloud storage such as Dropbox, GoogleDrive, OneDrive, and Mega, which store our data at remote third-party data centers, is that we get to pick where OwnCloud stores data in own data center. We deploy it by itself on our own servers or we can faultlessly integrate it with other cloud-storage services such as Amazon. OwnCloud with its protection, storage space, monitor and exposure tools to manage our own private cloud storage services. OwnCloud storage is LAMP software (Linux, Apache, MySQL, and PHP) program. Besides MySQL, we use SQLite or PostgreSQ for the

database management system. OwnCloud in OpenShift platform we upload some files in OneDrive, GoogleDrive, DropBox and Mega.



**Fig2. URL myowncloud-bunkar.rhcloud.com**

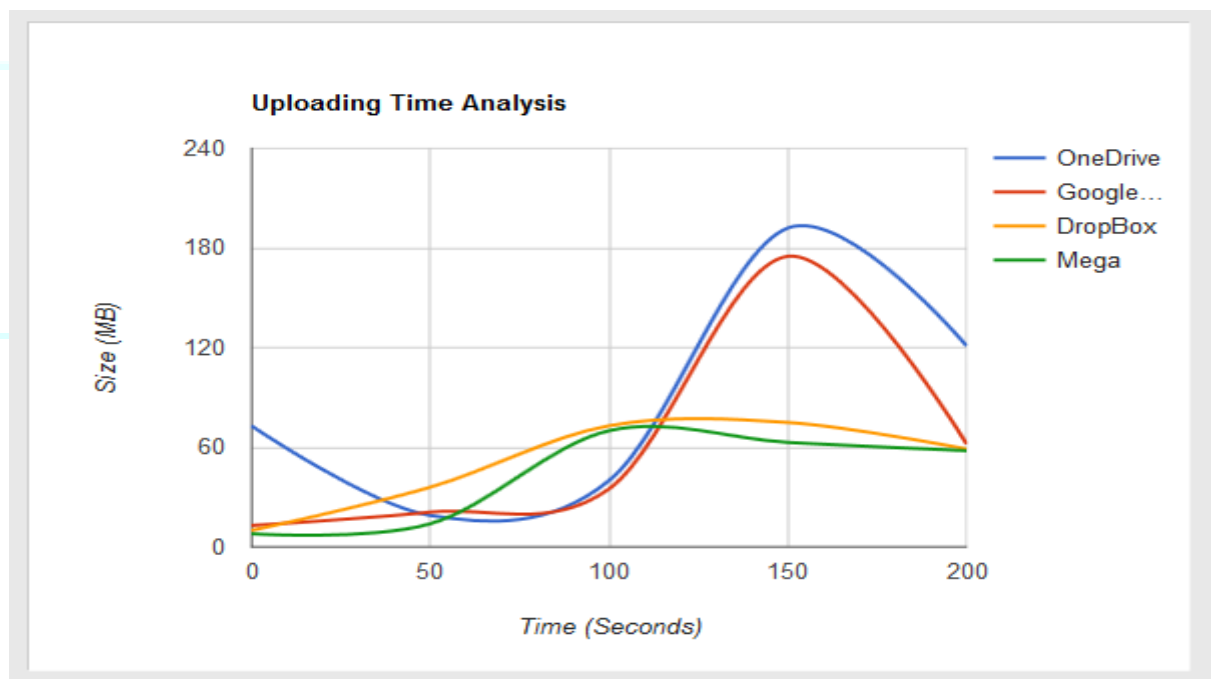


**Fig3. Uploaded file in OwnCloud-OpenShift**

**Table3. Uploaded Files in OneDrive, Google Drive, DropBox, Mega and OwnCloud-OpenShift**

Cloud Storage			OneDrive	Google Drive	DropBox	Mega	OwnCloud (OpenShift)
File Name	File Type	File Size(MB)	Uploading Time (Seconds)	Uploading Time (Seconds)	Uploading Time (Seconds)	Uploading Time (Seconds)	Uploading Time (Seconds)
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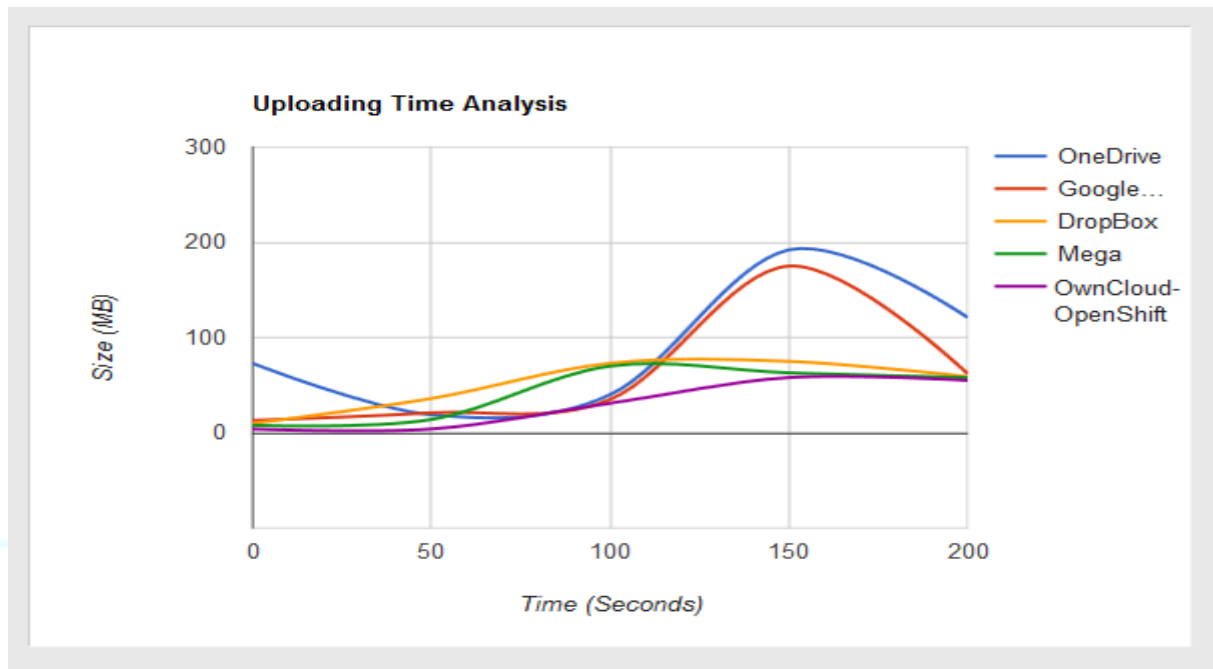
## VI. Results Discussion



Graph1. Analysis Uploaded time vs. files size in online cloud storage (OneDrive, GoogleDrive, DropBox, Mega)

The comparison between insecure public cloud OneDrive, GoogleDrive, DropBox and Partial security based public cloud Mega. Mega is a secure cloud based storage where we can store our data in secure facton because in mega our data is Encrypted and decrypted by using 2048-bit private/public key. And it cannot store our authentication information in his server. According to table1 and graphical view between time and file size of mega each and every seconds the graph is in increasing order. If file size increased then also uploading time increased but in case of OneDrive, GoogleDrive, DropBox some time increased and decreased graph. Based on

the table3 Owncloud which is deployed in public cloud OpenShift, its performance is better than other online public cloud. The OwnCloud is more secure compared to other public cloud such as OneDrive, GoogleDrive, DropBox and Mega because the file stored through OwnCloud it's controlled by own server and security is TLS, HTTPS, CSR, 2048-bit RSA key, owner should be root and the permissions 640.



Graph2. Uploaded time vs. files size in online cloud storage (OneDrive, GoogleDrive, DropBox, Mega and OwnCloud-OpenShift)

Based on table3 and the graphical view is shown OwnCloud-OpenShift the file uploading performance is better than other public cloud (OneDrive, GoogleDrive, DropBox and Mega).

### Conclusion

This Paper Discussed about OneDrive, GoogleDrive, DropBox, partial secure cloud mega and secure OwnCloud cloud storage and uploaded some different types of file and analysis of them file size vs. taken time (seconds).

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