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Press Report

Cloud storage for company environments

Focusing on Encryption, Rights Assignment and Management

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There are certain requirements for cloud storage in company environments that are far more complex than what is needed for private online-storage. Amongst others the security, management and feature-set. This article discusses these requirements in detail.

Modern work life without cloud storages has become unimaginable. They can be used as a central storage medium for scattered workgroups, for file-sharing and for collaborations. Under certain circumstances they can even serve as a remote-site part of a company's back-up concept. However, to make all this work, there are a number of requirements that need to be met.

Access rights

Agreeing on who has access to which files is one of the most important points that needs to be settled. Therefore, it is important that the cloud-storage offers functions that enable the creation of storage units such as folders that are only available to certain users. Within these folders it should be possible to assign certain rights such as "read", "write" and "delete" to individual users.

For example, a scenario would be conceivable in which a user from the IT department would have read rights in the "IT Invoices" folder, which is located within the "Accounting" folder, while an accounting employee would have all rights in the same subfolder.

It is equally as important to determine, which user has rights on which files and folders. High-performance cloud-storages no longer need a central administrator; this means that, with the right configuration, nobody in the whole company has access to all data. At the beginning of the configuration of the cloud storage there is an administrator, who creates the first user accounts and the first folders. However, this administrator can then name other employees, such as department managers, as administrators of individual (department) folders.

These "sub-administrators" then have the option to revoke the rights to "their" data room from the original administrator. This way environments can be created, in which only the

users, who really need it, have access to the stored information. This is especially important for handling sensitive data such as health data, salaries or similar data.

Encryption

A similarly important issue: data encryption. Cloud-storage-data needs to be encrypted in three different situations: on the client, on the server and during transport. Nowadays most cloud-providers offer encryption on the server and during transport, e.g. via HTTPS-connections.

For many other cloud stores, encryption can be added at all three locations using third-party tools such as Boxcryptor or open source tools such as Cryptsync and Cryptomator. However, there are also providers, such as Dracoon, that offer a complete solution from a single source with encryption on the client and server as well as during transport. This can play a major role in connection with the GDPR conformity of the storage facility.

Further enterprise-features

For many companies it is very important that the cloud storage represents the corporate identity. That is why professional cloud storages offer the possibility to adapt the branding according to the design of the organization.

However, access features are even more important for the use of the storage. All cloud storages are available via an HTTPS-encrypted web-interface. In most environments, however, it makes sense to be able to access the memory directly from the client as well without having to take the detour via the browser.

Therefore nearly all providers such as Box, Dracoon, Dropbox or Google Drive and Microsoft OneDrive offer client programs for Windows and MacOS systems. They incorporate the cloud storage via local folders or drives so that the user can work with the data as if it were stored exclusively on their local hard disk. For secure environments these client programs – as mentioned above – need to make sure that the stored data is also encrypted in the local system.

In connection with operating system support Dropbox stands out positively. This pioneer in the market of cloud storage not only supports MacOS and Windows with its software, but also Linux. With most other cloud storages Linux-users have to fall back on the web-interface or use any available Linux on-board resources (the latter works with Google Drive, for example).

Mobile access

Nowadays access with mobile devices is just as important. While notebooks can usually be integrated into the environment via the same client programs as desktop systems, special client solutions must be available for smartphones and tablets under Android and iOS, which should also be able to make encrypted information seamlessly available on these endpoints.

Particularly powerful cloud storages can also be integrated into the workflow. For example, an Outlook plug-in can ensure that the e-mail client no longer sends unencrypted e-mails via the network. Instead, the plug-in automatically separates the attachments from the mail and uploads them into a folder in the cloud that can be accessed by the recipient.

In this case the recipient receives a download-link in the mail instead of an attachment. With this link he can download the attachment via a secure HTTPS-connection. A positive aspect of this solution is that it even works with recipients that are not registered in the database of the company and do not use a special client software, meaning with everyone that has an e-mail account.

Logs and reports

The traceability of the actions concerning the data stored in the cloud memory is especially important in company environments. That is why the storage solution not only needs to log which user accessed which file and when, but must also ensure that the responsible employees are able to use this information quickly and easily.

That is why powerful cloud-storages have a wide range of analysis tools that help those responsible to extract all relevant information from the logs and to provide it in an understandable form. Often it also makes sense to use automatic reports on memory usage, which the solution creates at regular intervals with the help of previously defined parameters and sends to the responsible employees, for example by e-mail.

Data reconstruction

How deleted data is dealt with also plays an important role when selecting a cloud storage. It often happens that a user accidently deletes data or that files are modified in the course of the collaboration of several employees in such a way that content is lost that is important to a responsible person who was not there during the revision. In this case, it makes sense if the cloud storage has a recycle bin from which the data can be recovered – ideally with a version management that not only makes it possible to restore the last version of the document, but also the versions before, e.g. the version of the week before.

Such a function also offers effective protection against ransom ware-attacks. If a user catches ransom ware, it encrypts the data on his hard drive, and if this process goes unnoticed until all the data has been uploaded to the cloud, the information in the cloud storage is also encrypted. However, in any case the files in the paper basket stay unharmed so that a company always has the option of restoring at least the penultimate version.

Conclusion

In addition to all the here-mentioned features decision-makers, looking for a cloud storage for their company, also need to keep in mind that it may be of great importance where the data is stored. In case of doubt, if a provider only has storage in the USA, the data is often less secure than in the EU, where providers have to adhere to strict regulations. For many

users an on-premise cloud solution could be of interest. In this case the data does not leave the storage systems of the company.

Furthermore, those responsible need to decide for themselves which features are most important for their IT-environment. If they first create a complete catalogue of requirements and then compare it with the offers on the market, they have a good chance of finding a solution that exactly meets their requirements.